CONCHO

December 14, 2018

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

Shelly Tucker
Bureau of Land Management
620 E. Green St.
Carlsbad, NM 88220

Re: Work Plan
White Falcon Federal #11H, 21H, 22H CTB (9/16/18)
RP#: 1RP-5197
GPS: 32.16675, -103.40486
Unit Letter O, Section 31, Township 24 South, Range 35 East
Lea County, New Mexico

Ms. Hernandez/Ms. Tucker,

COG Operating, LLC (COG) is pleased to submit the following work plan report in response to a release that occurred at the White Falcon Federal #11H, 21H, 22H CTB located in Unit Letter O, Section 31, Township 24 South and Range 35 East in Lea County, New Mexico.

BACKGROUND

The release was discovered on September 16, 2018 and a C-141 initial report was submitted and approved by the New Mexico Oil Conservation Division (NMOCD). The release was caused by a 3rd party truck driver overturning his truck carrying crude oil from the White Falcon Federal #11H, 21H, 22H CTB. The release occurred along the edge of the lease road in the pasture. A vacuum truck was dispatched immediately to remove all freestanding fluids. Approximately fifty-four (54) barrels of crude oil was released and recovered five (5) barrels of fluid. The initial C-141 is shown in Appendix A.

GROUNDWATER AND REGULATORY

According to the USGS groundwater data, there is a water well in Section 30, with reported depth of approximately 130' below surface. The water well information is shown in Appendix B.

An 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 facilities in New Mexico (effective August 14, 2018). According to the site characterization evaluation, no other receptors (water wells, playas, karst, water course, lake beds or ordinance boundaries) were located within

each specific boundaries or distance from the site. The groundwater data and the site characterization evaluation data is summarized in Appendix B. The delineation and closure criteria are listed below:

General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
None Encountered	>100 feet

Delineation and Closure Criteria:

Remedial Action Levels (RALs)	
Chlorides	20,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
TPH (GRO and DRO)	1,000 mg/kg
Benzene	10 mg/kg
Total BTEX	50 mg/kg

PROPOSED WORK PLAN

- The area of AH-1 will be excavated to a depth of approximately 4.0' below surface and approximately 1.5' to 2.0' below surface in the areas of AH-2 and AH-3.
- All of the excavated material will be hauled to an NMOCD approved disposal facility.
- The excavation will be backfilled with clean material to grade.

SAMPLING PLAN

Once the excavation is complete, soil confirmation samples will be collected from the excavated areas for the constituents of concern. To collect representative samples, composite samples (5-point composite) will be collected every 200 square feet for the final confirmation sampling for the constituents of concern. Discrete soil samples will be collected from the excavation if any "hot spots" are encountered during the excavation.

REMEDIATION TIMEFRAME AND ESTIMATED VOLUME

The remediation will be performed 90 days after the work plan has been approved. Approximately 300 cubic yards of impacted soil will be excavated from the impacted area.

SITE RECLAMATION AND RESTORATION

Concho will perform the reclamation and revegetation in the pasture area per 19.15.29.13. Based on the assessment results, the reclamation will be achieved by removing the impacted soil above the Table 1 Closure Criteria (Groundwater <50 feet) constituents. The reclamation will be achieved by removing the soil to a depth of 4.0' below surface, if needed. Sidewall and bottom hole samples will be collected to confirm the removal of chlorides greater than 600 mg/kg or background (whichever is greater), TPH (GRO/DRO/MRO) of 100 mg/kg,

benzene of 10 mg/kg and total BTEX of 50 mg/kg. The backfilled material will be non-contaminated with concentrations below 600 mg/kg chlorides and reseeded per landowner guidelines when appropriate.

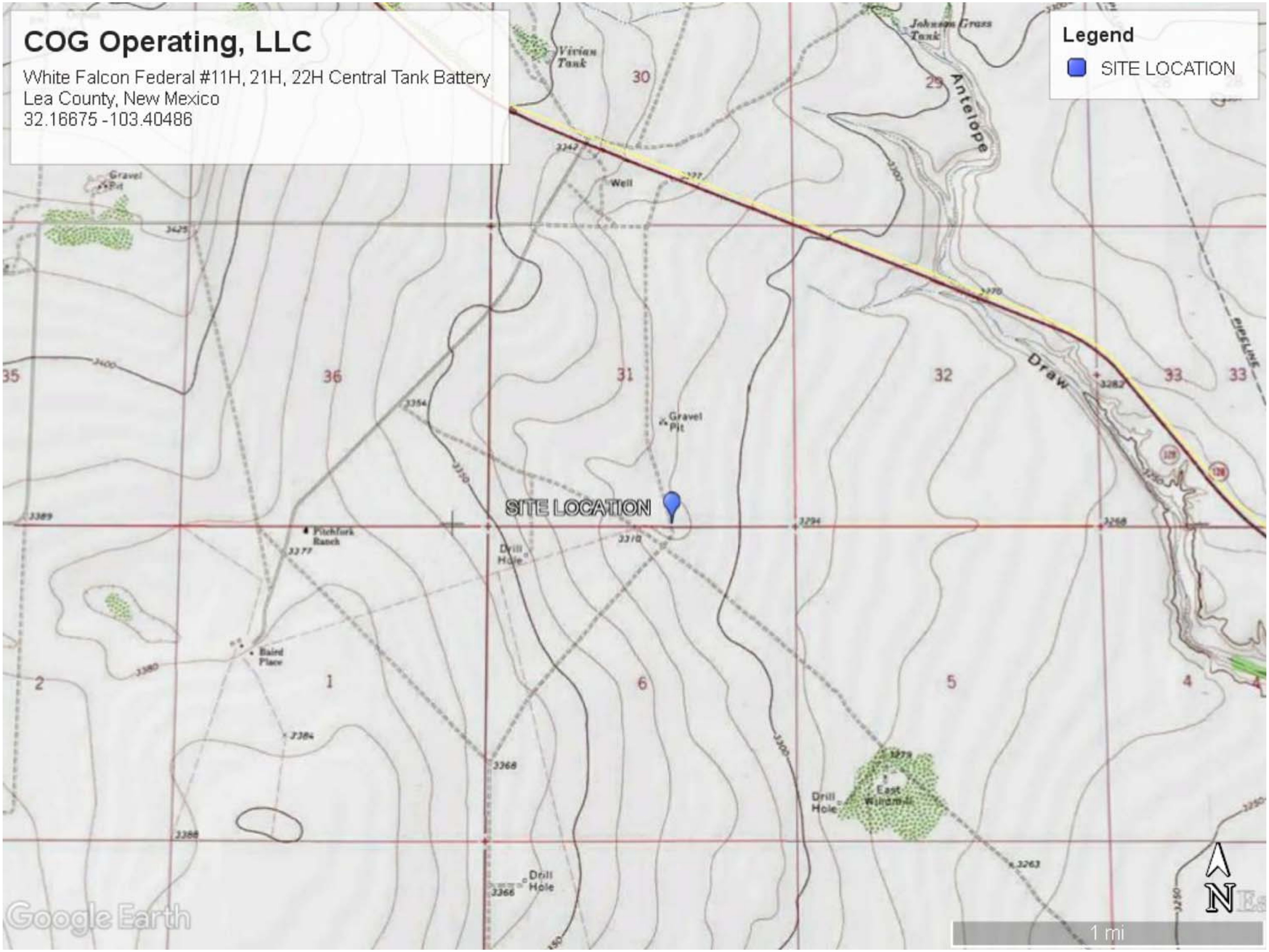
Once completed, COG will prepare a closure report for the release. Should you have any questions or concerns on the report, please do not hesitate to contact me.
Sincerely,

Concho Operating, LLC

Ike Tavarez, P. G.
Senior HSE Supervisor
itavarez@concho.com

CC:

Figures


COG Operating, LLC
White Falcon Federal #11H, 21H, 22H Central Tank Battery
Lea County, New Mexico
32.16675 -103.40486
Legend
SITE LOCATION
SITE LOCATION
Antelope Draw
Vivian Tank
Johnson Grass Tank
Gravel Pit
Well
Gravel Pit
Pitchfork Ranch
Baird Place
Drill Hole
Drill Hole
Drill Hole
East Windmill
PIPELINE
30
29
36
31
32
33
1
6
5
4
1 mi
N
Google Earth


COG Operating, LLC
White Falcon Federal #11H, 21H, 22H Central Tank Battery
Lea County, New Mexico
32.16675 -103.40486
Legend
Sample Locations
Spill Area
AH-1
AH-2
AH-3
N
200 ft
Google Earth


COG Operating
White Falcon Federal #11H, 21H 22H
32.16675 -103.40486
Proposed Excavation
Legend
Proposed Excavation Depth (1.5' to 2.0')
Proposed Excavation Depth (4.0')
Sample Locations
AH-1
AH-2
AH-3
Google Earth
© 2018 Google
N
100 ft

Tables

Table 1
COG Operating LLC.
White Falcon Federal #11H, 21H 22H
Lea County, New Mexico

Sample ID	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*			
Average Depth to Groundwater (ft)		**>100'**											
NMOCD RAL Limits (mg/kg)				**-**	**-**	**-**	**2,500**	**-**	**-**	**1,000**	**10**	**50**	**20,000**
AH-1 (0-1')	9/25/2018	X		6310	8540	114	**15000**	6310	8540	**8,540**	**22.5**	**348**	<4.99
AH-1 (1-1.5')	9/25/2018	X		6710	7860	116	**14700**	6710	7860	**14,570**	**25.6**	**367**	56.0
AH-1 (2-2.5')	9/25/2018	X		9110	10400	144	**19700**	9110	10400	**19,510**	**53.8**	**533**	10.3
T-1 (2.0')	11/14/2018	X		<14.9	70.5	<14.9	70.5	<14.9	70.5	71	<0.00202	0.0487	-
T-1 (3.0')	11/14/2018	X		349	799	38.1	1190	349	799	**1,148**	0.172	6.50	-
T-1 (4.0')	11/14/2018	X		<15.0	41.2	<15.0	41.2	<15.0	41.2	41	<0.00202	0.00266	-
AH-2 (0-1')	9/25/2018	X		7580	9230	112	**16900**	7580	9230	**16,810**	**34.6**	**401**	34.2
AH-2 (1-1.5')	9/25/2018	X		7940	9720	125	**17800**	7940	9720	**17,660**	**31.7**	**439**	<4.97
AH-2 (1.5-2.0')	9/25/2018	X		<15.0	29.3	28.8	58.1	<15.0	29.3	29	<0.00199	0.0195	17.7
AH-3 (0-1')	9/25/2018	X		6670	9710	110	**16500**	6670	9710	**16,380**	**19**	**328**	<5.00
AH-3 (1-1.5')	9/25/2018	X		1910	3180	45.5	**5140**	1910	3180	**5,090**	3.76	**147**	<4.95
AH-3 (2-2.5')	9/25/2018	X		<15.0	22.7	19.9	42.6	<15.0	22.7	22.7	0.00341	0.0921	21.0
North (0-1')	9/25/2018	X		<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<5.04
South(0-1')	9/25/2018	X		<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<0.00199	0.0354	<4.98
East (0-1')	9/25/2018	X		<14.9	<14.9	<14.9	<14.9	<14.9	<14.9	<14.9	0.00337	0.0258	<5.00
West (0-1')	9/25/2018	X		<14.9	<14.9	<14.9	<14.9	<14.9	<14.9	<14.9	0.00261	0.00690	23.7

Proposed Excavation Depth

(-) 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	nCH1826433815
District RP	1RP-5197
Facility ID	fCH1826432689
Application ID	pCH1826434181

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Robert McNeill	Contact Telephone	(432) 683-7443
Contact email	RMcNeill@conhco.com	Incident # *(assigned by OCD)*	
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.16675 Longitude -103.40486

(NAD 83 in decimal degrees to 5 decimal places)

Site Name	White Falcon Federal #11H, 21H, 22H	Site Type	Central Tank Battery
Date Release Discovered	August 16, 2018	API# *(if applicable)*	

Unit Letter	Section	Township	Range	County
O	31	24S	35E	Lea

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

Fed Minerals

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) 54	Volume Recovered (bbls) 5
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by a 3rd party truck driver overturning his truck carrying oil from the White Falcon Federal #11H, 21H, 22H Tank Battery. The location of the spill is noted by the GPS above.
The release was in the pasture. A vacuum truck was dispatched to remove all freestanding fluids.
Concho will evaluate the site to determine if we may commence remediation immediately or delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

State of New Mexico
Oil Conservation Division

Incident ID	nCH1826433815
District RP	1RP-5197
Facility ID	fCH1826432689
Application ID	pCH1826434181

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

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Immediate notice was given by DeAnn Grant via e-mail September 17, 2018 to Olivia Yu.

Initial Response

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

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

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

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

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

Printed Name: DeAnn Grant Title: HSE Administrative Assistant

Signature: DeAnn Grant Date: 9/18/2018

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

OCD Only

RECEIVED
By CHernandez at 9:22 am, Sep 21, 2018

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1RP 5197
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?	>100 (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
515 Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1RP 5197
Facility ID	
Application ID	

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

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature: _____ _____ Date: 12/11/18

email: itavarez@concho.com Telephone: 432-683-7443

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1RP 5197
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

☐ Extents of contamination must be fully delineated.

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

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

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature:  Date: 12/11/18

email: itavarez@concho.com Telephone: 432-683-7443

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

Appendix B

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00366 POD1		CP	LE	4	1	1	10	24S	35E	654447	3567834*	1250		
CP 00573		CP	LE	1	4	1	10	24S	35E	654657	3567638*	405	300	105
CP 00839 POD1		CP	LE		4	3	30	24S	35E	650017	3561833*	175		
CP 00842 POD1		CP	LE		2	4	24	24S	35E	658834	3563982*	130		
CP 00845 POD1		CP	LE		1	3	10	24S	35E	654360	3567130*	190		
CP 01056 POD1		CP	LE	4	4	3	02	24S	35E	656465	3568304	5396	4399	997
CP 01057 POD1		CP	LE	4	2	3	02	24S	35E	656464	3568762	5390	4365	1025
CP 01119 POD2		CP	LE			4	23	24S	35E	657210	3564007	1572		
CP 01513 POD1		CP	LE	3	3	1	10	24S	35E	654184	3567350	186		
P 04623 POD4		P	RO	2	2	4	14	24S	35E	653797	3787492	250		

Average Depth to Water: **3021 feet**

Minimum Depth: **300 feet**

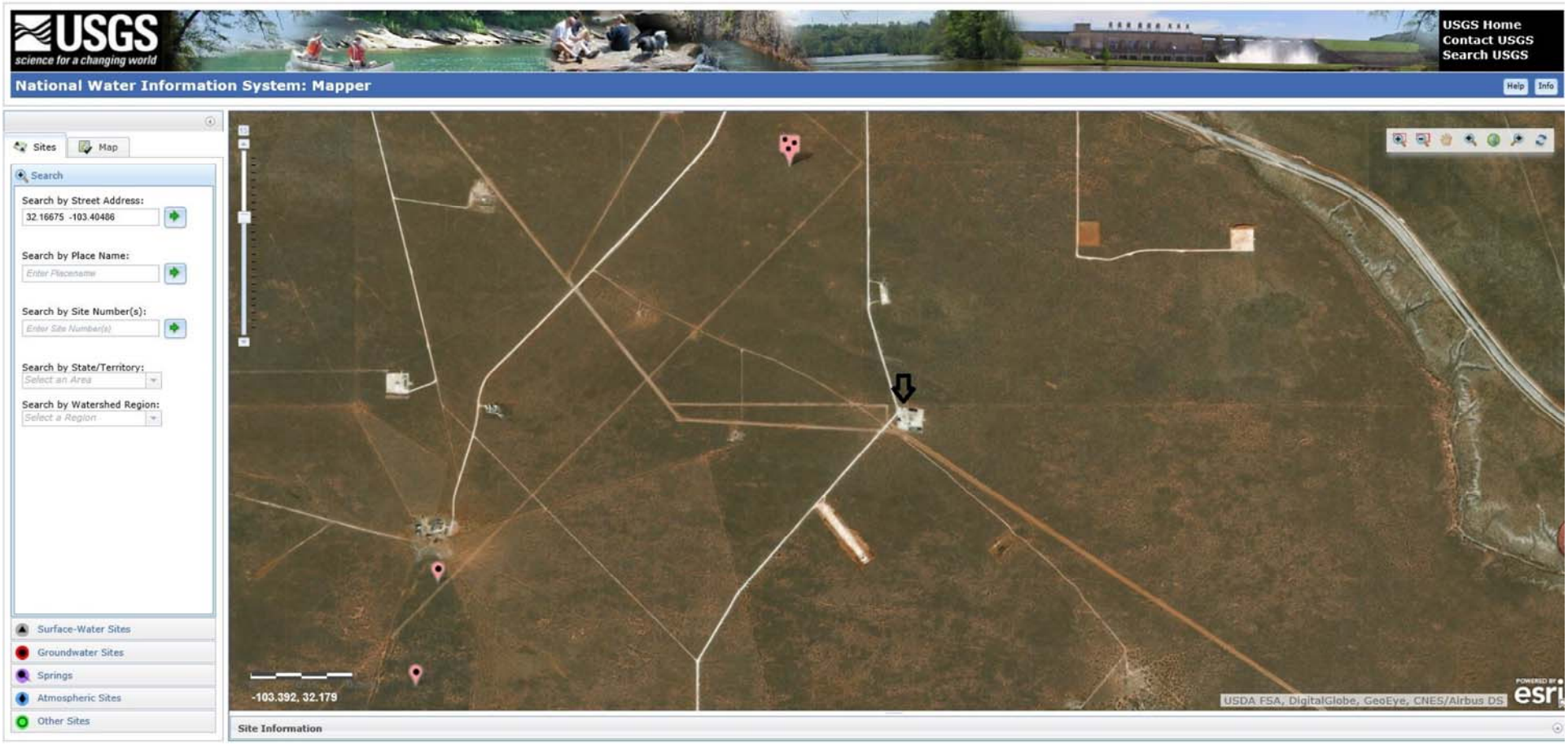
Maximum Depth: **4399 feet**

Record Count: 10

PLSS Search:

Township: 24S **Range:** 35E

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


USGS
science for a changing world
USGS Home
Contact USGS
Search USGS
National Water Information System: Mapper
Help
Info
Sites
Map
Search
Search by Street Address:
32.16675 -103.40486
Search by Place Name:
Enter Placename
Search by Site Number(s):
Enter Site Number(s)
Search by State/Territory:
Select an Area
Search by Watershed Region:
Select a Region
Surface-Water Sites
Groundwater Sites
Springs
Atmospheric Sites
Other Sites
-103.392, 32.179
USDA FSA, DigitalGlobe, GeoEye, CNES/Airbus DS
esri
Site Information

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Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 321039103243402

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

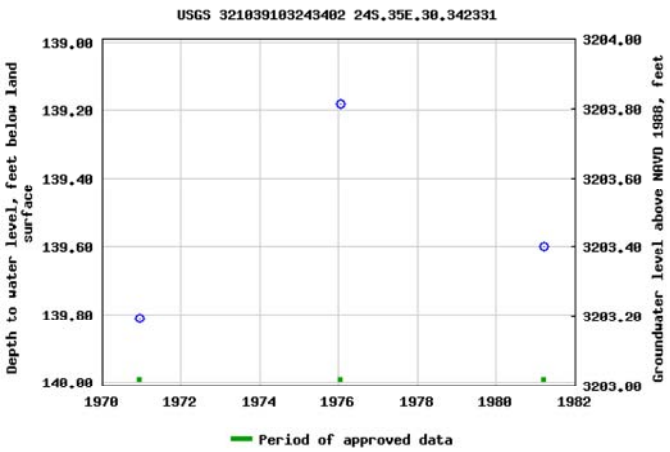
USGS 321039103243402 24S.35E.30.342331

Available data for this site | Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°10'39", Longitude 103°24'34" NAD27
Land-surface elevation 3,343 feet above NAVD88
The depth of the well is 176 feet below land surface.
This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

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Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 320934103253901

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

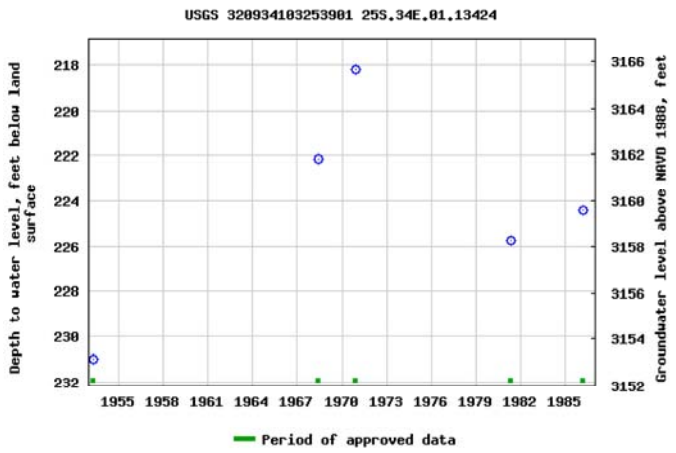
USGS 320934103253901 25S.34E.01.13424

Available data for this site | Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code --
Latitude 32°09'34", Longitude 103°25'39" NAD27
Land-surface elevation 3,384 feet above NAVD88
The depth of the well is 300 feet below land surface.
This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



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Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 320918103254301

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

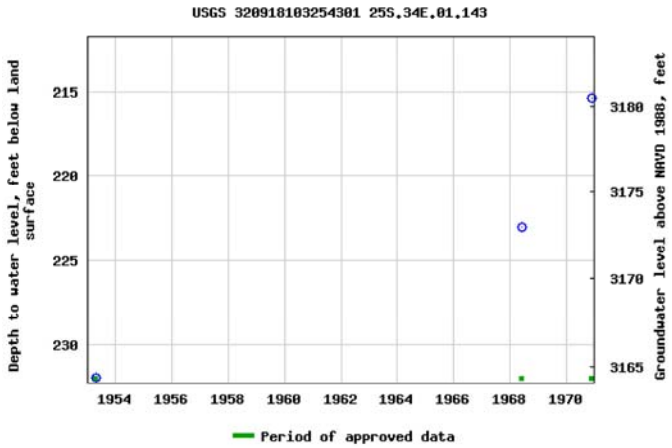
USGS 320918103254301 25S.34E.01.143

Available data for this site | Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°09'18", Longitude 103°25'43" NAD27
Land-surface elevation 3,396 feet above NAVD88

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

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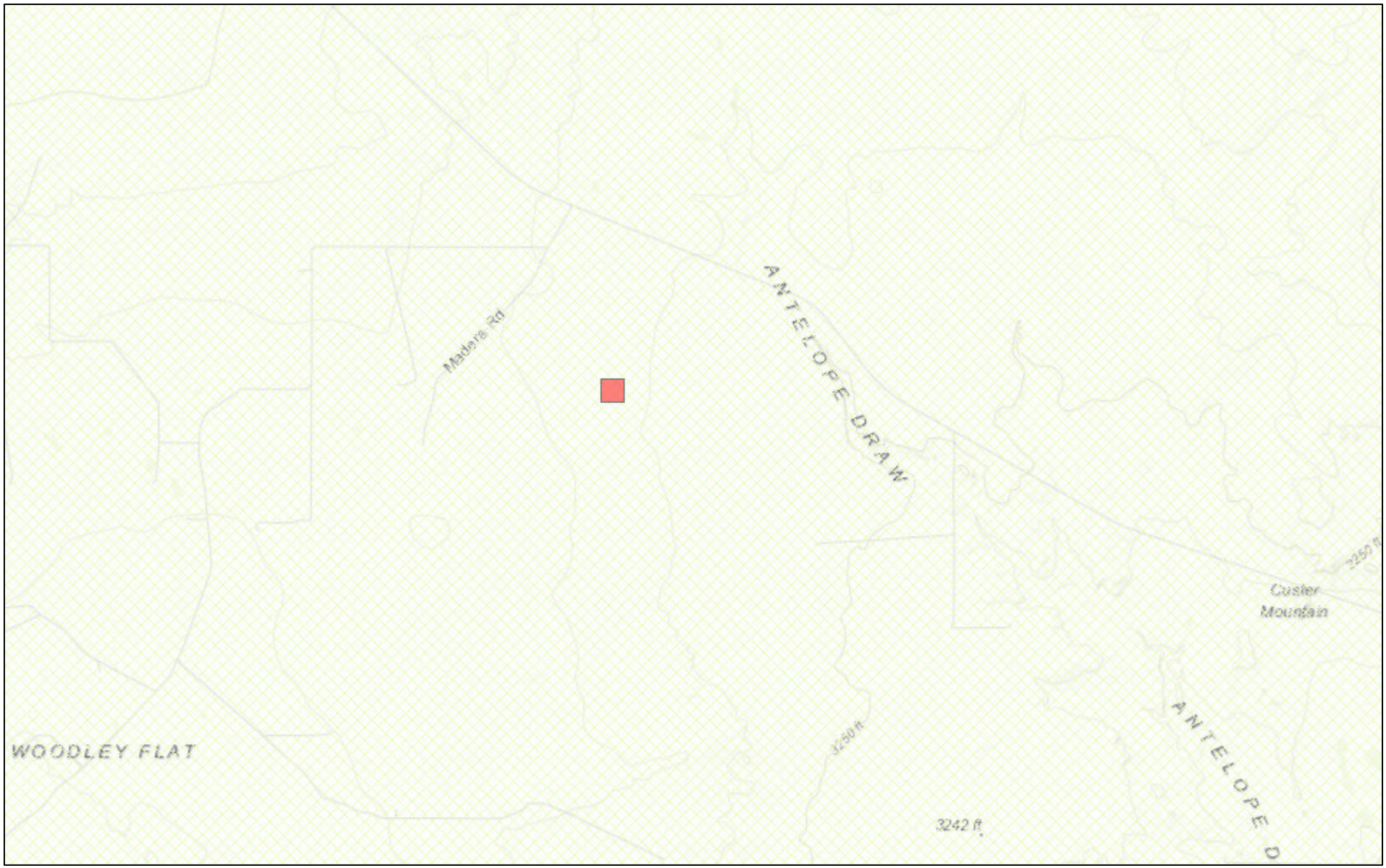
New Mexico NFHL Data



December 4, 2018

1:72,224

0 0.5 1 2 mi

0 1 2 4 km

FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

Appendix C

Certificate of Analysis Summary 600661

COG Operating LLC, Artesia, NM

Project Name: White Falcon Federal #11H, 21H, 22H Central Tank Battery

Project Id:
Contact: Ike Tavarez
Project Location: Lea County, New Mexico

Date Received in Lab: Fri Sep-28-18 10:10 am
Report Date: 04-DEC-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	600661-001		600661-002		600661-003		600661-004		600661-005		600661-006	
	Field Id:	AH-1 (0-1')		AH-1 (1-1.5')		AH-1 (2-2.5')		AH-2 (0-1')		AH-2 (1-1.5')		AH-2 (1.5-2.0')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-25-18 00:00		Sep-25-18 00:00		Sep-25-18 00:00		Sep-25-18 00:00		Sep-25-18 00:00		Sep-25-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-03-18 08:00		Oct-03-18 08:00		Oct-03-18 08:00		Oct-03-18 08:00		Oct-03-18 08:00		Sep-30-18 08:30	
	Analyzed:	Oct-03-18 10:41		Oct-03-18 11:02		Oct-03-18 11:24		Oct-03-18 11:46		Oct-03-18 12:07		Sep-30-18 12:35	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		22.5	2.01	25.6	1.99	53.8	2.00	34.6	2.01	31.7	2.02	<0.00199	0.00199
Toluene		115	2.01	126	1.99	190	2.00	142	2.01	151	2.02	0.00410	0.00199
Ethylbenzene		38.7	2.01	38.9	1.99	52.8	2.00	40.7	2.01	46.3	2.02	0.00207	0.00199
m,p-Xylenes		128	4.02	133	3.98	178	3.99	137	4.02	157	4.03	0.00859	0.00398
o-Xylene		43.4	2.01	43.4	1.99	58.2	2.00	46.2	2.01	52.7	2.02	0.00473	0.00199
Total Xylenes		171	2.01	176	1.99	236	2.00	183	2.01	210	2.02	0.0133	0.00199
Total BTEX		348	2.01	367	1.99	533	2.00	401	2.01	439	2.02	0.0195	0.00199
Chloride by EPA 300	***Extracted:***	Sep-28-18 17:00		Sep-28-18 17:00		Sep-28-18 17:00		Sep-28-18 17:00		Sep-28-18 17:00		Sep-28-18 17:00	
	Analyzed:	Sep-28-18 21:49		Sep-28-18 21:55		Sep-28-18 22:12		Sep-28-18 22:18		Sep-28-18 22:35		Sep-28-18 22:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.99	4.99	56.0	4.95	10.3	5.00	34.2	4.95	<4.97	4.97	17.7	4.95
TPH By SW8015 Mod	***Extracted:***	Sep-29-18 08:00		Sep-29-18 08:00		Sep-29-18 08:00		Sep-29-18 08:00		Sep-29-18 08:00		Sep-29-18 08:00	
	Analyzed:	Sep-30-18 08:09		Sep-30-18 08:28		Sep-30-18 08:47		Sep-30-18 09:06		Sep-30-18 09:24		Sep-29-18 21:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons		6310	74.9	6710	74.9	9110	75.0	7580	74.9	7940	74.9	<15.0	15.0
Diesel Range Organics		8540	74.9	7860	74.9	10400	75.0	9230	74.9	9720	74.9	29.3	15.0
Motor Oil Range Hydrocarbons (MRO)		114	74.9	116	74.9	144	75.0	112	74.9	125	74.9	28.8	15.0
Total TPH		15000	74.9	14700	74.9	19700	75.0	16900	74.9	17800	74.9	58.1	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 600661

COG Operating LLC, Artesia, NM

Project Name: White Falcon Federal #11H, 21H, 22H Central Tank Battery

Project Id:
Contact: Ike Tavarez
Project Location: Lea County, New Mexico

Date Received in Lab: Fri Sep-28-18 10:10 am
Report Date: 04-DEC-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	600661-007		600661-008		600661-009		600661-010		600661-011		600661-012	
	Field Id:	AH-3 (0-1')		AH-3 (1-1.5')		AH-3 (2-2.5')		North (0-1')		South(0-1')		East (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-25-18 00:00		Sep-25-18 00:00		Sep-25-18 00:00		Sep-25-18 00:00		Sep-25-18 00:00		Sep-25-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-03-18 08:00		Oct-02-18 15:00		Sep-30-18 08:30		Sep-30-18 08:30		Sep-30-18 08:30		Sep-30-18 08:30	
	Analyzed:	Oct-03-18 12:28		Oct-03-18 03:58		Sep-30-18 13:18		Sep-30-18 12:13		Sep-30-18 13:39		Sep-30-18 14:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		19.0	1.99	3.76	0.496	0.00341	0.00202	<0.00200	0.00200	<0.00199	0.00199	0.00337	0.00202
Toluene		105	1.99	41.1	0.496	0.0324	0.00202	<0.00200	0.00200	0.00876	0.00199	0.0108	0.00202
Ethylbenzene		35.9	1.99	18.3	0.496	0.00877	0.00202	<0.00200	0.00200	0.00225	0.00199	0.00335	0.00202
m,p-Xylenes		127	3.98	63.1	0.992	0.0386	0.00403	<0.00401	0.00401	0.0110	0.00398	0.00824	0.00404
o-Xylene		40.9	1.99	20.4	0.496	0.00889	0.00202	<0.00200	0.00200	0.0134	0.00199	<0.00202	0.00202
Total Xylenes		168	1.99	83.5	0.496	0.0475	0.00202	<0.00200	0.00200	0.0244	0.00199	0.00824	0.00202
Total BTEX		328	1.99	147	0.496	0.0921	0.00202	<0.00200	0.00200	0.0354	0.00199	0.0258	0.00202
Chloride by EPA 300	***Extracted:***	Sep-28-18 17:00		Sep-28-18 17:00		Sep-28-18 17:00		Sep-28-18 17:00		Sep-28-18 17:00		Oct-01-18 09:15	
	Analyzed:	Sep-28-18 22:46		Sep-28-18 22:52		Sep-28-18 22:57		Sep-28-18 23:03		Sep-28-18 23:09		Oct-01-18 10:24	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.00	5.00	<4.95	4.95	21.0	5.02	<5.04	5.04	<4.98	4.98	<5.00	5.00
TPH By SW8015 Mod	***Extracted:***	Sep-29-18 08:00		Sep-29-18 08:00		Sep-29-18 08:00		Sep-29-18 08:00		Sep-29-18 08:00		Sep-29-18 08:00	
	Analyzed:	Sep-30-18 09:43		Sep-29-18 21:38		Sep-29-18 21:57		Sep-29-18 22:54		Sep-29-18 23:13		Sep-29-18 23:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons		6670	74.8	1910	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Diesel Range Organics		9710	74.8	3180	15.0	22.7	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Motor Oil Range Hydrocarbons (MRO)		110	74.8	45.5	15.0	19.9	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Total TPH		16500	74.8	5140	15.0	42.6	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 600661

COG Operating LLC, Artesia, NM

Project Name: White Falcon Federal #11H, 21H, 22H Central Tank Battery

Project Id:
Contact: Ike Tavarez
Project Location: Lea County, New Mexico

Date Received in Lab: Fri Sep-28-18 10:10 am
Report Date: 04-DEC-18
Project Manager: Jessica Kramer

Analysis Requested								
	Lab Id:	600661-013						
	Field Id:	West (0-1')						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Sep-25-18 00:00						
BTEX by EPA 8021B	***Extracted:***	Sep-30-18 08:30						
	Analyzed:	Sep-30-18 14:23						
	Units/RL:	mg/kg	RL					
Benzene		0.00261	0.00201					
Toluene		0.00429	0.00201					
Ethylbenzene		<0.00201	0.00201					
m,p-Xylenes		<0.00402	0.00402					
o-Xylene		<0.00201	0.00201					
Total Xylenes		<0.00201	0.00201					
Total BTEX		0.00690	0.00201					
Chloride by EPA 300	***Extracted:***	Oct-01-18 09:15						
	Analyzed:	Oct-01-18 10:41						
	Units/RL:	mg/kg	RL					
Chloride		23.7	4.95					
TPH By SW8015 Mod	***Extracted:***	Sep-29-18 08:00						
	Analyzed:	Sep-29-18 23:51						
	Units/RL:	mg/kg	RL					
Gasoline Range Hydrocarbons		<14.9	14.9					
Diesel Range Organics		<14.9	14.9					
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9					
Total TPH		<14.9	14.9					

Kelsey Brooks
Project Manager

Analytical Report 600661

for

COG Operating LLC

Project Manager: Ike Tavarez

White Falcon Federal #11H, 21H, 22H Central Tank Battery

04-DEC-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

04-DEC-18

Project Manager: **Ike Tavarez**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **600661**
White Falcon Federal #11H, 21H, 22H Central Tank Battery
Project Address: Lea County, New Mexico

Ike Tavarez:

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) 600661. 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. 600661 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1 (0-1')	S	09-25-18 00:00		600661-001
AH-1 (1-1.5')	S	09-25-18 00:00		600661-002
AH-1 (2-2.5')	S	09-25-18 00:00		600661-003
AH-2 (0-1')	S	09-25-18 00:00		600661-004
AH-2 (1-1.5')	S	09-25-18 00:00		600661-005
AH-2 (1.5-2.0')	S	09-25-18 00:00		600661-006
AH-3 (0-1')	S	09-25-18 00:00		600661-007
AH-3 (1-1.5')	S	09-25-18 00:00		600661-008
AH-3 (2-2.5')	S	09-25-18 00:00		600661-009
North (0-1')	S	09-25-18 00:00		600661-010
South(0-1')	S	09-25-18 00:00		600661-011
East (0-1')	S	09-25-18 00:00		600661-012
West (0-1')	S	09-25-18 00:00		600661-013

Sample receipt non conformances and comments:

Project name change per Ike e-mail--KB

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3064851 Chloride by EPA 300
Lab Sample ID 600662-012 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 600661-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3064879 BTEX by EPA 8021B
Lab Sample ID 600661-010 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 600661-006, -009, -010, -011, -012, -013.
The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3064923 TPH By SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 600661-008,600661-001,600661-002,600661-007,600661-004,600661-005,600661-003.

Batch: LBA-3065147 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3065219 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-1 (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-001	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	09.28.18 21.49	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**6310**	74.9	mg/kg	09.30.18 08.09		5
Diesel Range Organics	C10C28DRO	**8540**	74.9	mg/kg	09.30.18 08.09		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**114**	74.9	mg/kg	09.30.18 08.09		5
Total TPH	PHC635	**15000**	74.9	mg/kg	09.30.18 08.09		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	09.30.18 08.09	
o-Terphenyl	84-15-1	232	%	70-135	09.30.18 08.09	**

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-1 (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-001	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.03.18 08.00	Basis:	Wet Weight
Seq Number:	3065219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**22.5**	2.01	mg/kg	10.03.18 10.41		1000
Toluene	108-88-3	**115**	2.01	mg/kg	10.03.18 10.41		1000
Ethylbenzene	100-41-4	**38.7**	2.01	mg/kg	10.03.18 10.41		1000
m,p-Xylenes	179601-23-1	**128**	4.02	mg/kg	10.03.18 10.41		1000
o-Xylene	95-47-6	**43.4**	2.01	mg/kg	10.03.18 10.41		1000
Total Xylenes	1330-20-7	**171**	2.01	mg/kg	10.03.18 10.41		1000
Total BTEX		**348**	2.01	mg/kg	10.03.18 10.41		1000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	121	%	70-130	10.03.18 10.41	
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.03.18 10.41	

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-1 (1-1.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-002	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**56.0**	4.95	mg/kg	09.28.18 21.55		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**6710**	74.9	mg/kg	09.30.18 08.28		5
Diesel Range Organics	C10C28DRO	**7860**	74.9	mg/kg	09.30.18 08.28		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**116**	74.9	mg/kg	09.30.18 08.28		5
Total TPH	PHC635	**14700**	74.9	mg/kg	09.30.18 08.28		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	09.30.18 08.28	
o-Terphenyl	84-15-1	218	%	70-135	09.30.18 08.28	**

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-1 (1-1.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-002	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.03.18 08.00	Basis:	Wet Weight
Seq Number:	3065219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**25.6**	1.99	mg/kg	10.03.18 11.02		1000
Toluene	108-88-3	**126**	1.99	mg/kg	10.03.18 11.02		1000
Ethylbenzene	100-41-4	**38.9**	1.99	mg/kg	10.03.18 11.02		1000
m,p-Xylenes	179601-23-1	**133**	3.98	mg/kg	10.03.18 11.02		1000
o-Xylene	95-47-6	**43.4**	1.99	mg/kg	10.03.18 11.02		1000
Total Xylenes	1330-20-7	**176**	1.99	mg/kg	10.03.18 11.02		1000
Total BTEX		**367**	1.99	mg/kg	10.03.18 11.02		1000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.03.18 11.02	
1,4-Difluorobenzene	540-36-3	88	%	70-130	10.03.18 11.02	

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-1 (2-2.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-003	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.3**	5.00	mg/kg	09.28.18 22.12		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**9110**	75.0	mg/kg	09.30.18 08.47		5
Diesel Range Organics	C10C28DRO	**10400**	75.0	mg/kg	09.30.18 08.47		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**144**	75.0	mg/kg	09.30.18 08.47		5
Total TPH	PHC635	**19700**	75.0	mg/kg	09.30.18 08.47		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	09.30.18 08.47	
o-Terphenyl	84-15-1	266	%	70-135	09.30.18 08.47	**

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-1 (2-2.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-003	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.03.18 08.00	Basis:	Wet Weight
Seq Number:	3065219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**53.8**	2.00	mg/kg	10.03.18 11.24		1000
Toluene	108-88-3	**190**	2.00	mg/kg	10.03.18 11.24		1000
Ethylbenzene	100-41-4	**52.8**	2.00	mg/kg	10.03.18 11.24		1000
m,p-Xylenes	179601-23-1	**178**	3.99	mg/kg	10.03.18 11.24		1000
o-Xylene	95-47-6	**58.2**	2.00	mg/kg	10.03.18 11.24		1000
Total Xylenes	1330-20-7	**236**	2.00	mg/kg	10.03.18 11.24		1000
Total BTEX		**533**	2.00	mg/kg	10.03.18 11.24		1000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	10.03.18 11.24	
1,4-Difluorobenzene	540-36-3	108	%	70-130	10.03.18 11.24	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-2 (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-004	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**34.2**	4.95	mg/kg	09.28.18 22.18		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**7580**	74.9	mg/kg	09.30.18 09.06		5
Diesel Range Organics	C10C28DRO	**9230**	74.9	mg/kg	09.30.18 09.06		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**112**	74.9	mg/kg	09.30.18 09.06		5
Total TPH	PHC635	**16900**	74.9	mg/kg	09.30.18 09.06		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	09.30.18 09.06	
o-Terphenyl	84-15-1	250	%	70-135	09.30.18 09.06	**

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-2 (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-004	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.03.18 08.00	Basis:	Wet Weight
Seq Number:	3065219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**34.6**	2.01	mg/kg	10.03.18 11.46		1000
Toluene	108-88-3	**142**	2.01	mg/kg	10.03.18 11.46		1000
Ethylbenzene	100-41-4	**40.7**	2.01	mg/kg	10.03.18 11.46		1000
m,p-Xylenes	179601-23-1	**137**	4.02	mg/kg	10.03.18 11.46		1000
o-Xylene	95-47-6	**46.2**	2.01	mg/kg	10.03.18 11.46		1000
Total Xylenes	1330-20-7	**183**	2.01	mg/kg	10.03.18 11.46		1000
Total BTEX		**401**	2.01	mg/kg	10.03.18 11.46		1000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	10.03.18 11.46	
4-Bromofluorobenzene	460-00-4	93	%	70-130	10.03.18 11.46	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-2 (1-1.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-005	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	09.28.18 22.35	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**7940**	74.9	mg/kg	09.30.18 09.24		5
Diesel Range Organics	C10C28DRO	**9720**	74.9	mg/kg	09.30.18 09.24		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**125**	74.9	mg/kg	09.30.18 09.24		5
Total TPH	PHC635	**17800**	74.9	mg/kg	09.30.18 09.24		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.30.18 09.24	
o-Terphenyl	84-15-1	252	%	70-135	09.30.18 09.24	**

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-2 (1-1.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-005	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.03.18 08.00	Basis:	Wet Weight
Seq Number:	3065219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**31.7**	2.02	mg/kg	10.03.18 12.07		1000
Toluene	108-88-3	**151**	2.02	mg/kg	10.03.18 12.07		1000
Ethylbenzene	100-41-4	**46.3**	2.02	mg/kg	10.03.18 12.07		1000
m,p-Xylenes	179601-23-1	**157**	4.03	mg/kg	10.03.18 12.07		1000
o-Xylene	95-47-6	**52.7**	2.02	mg/kg	10.03.18 12.07		1000
Total Xylenes	1330-20-7	**210**	2.02	mg/kg	10.03.18 12.07		1000
Total BTEX		**439**	2.02	mg/kg	10.03.18 12.07		1000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	10.03.18 12.07	
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.03.18 12.07	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-2 (1.5-2.0')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-006	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**17.7**	4.95	mg/kg	09.28.18 22.40		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	09.29.18 21.00	U	1
Diesel Range Organics	C10C28DRO	**29.3**	15.0	mg/kg	09.29.18 21.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**28.8**	15.0	mg/kg	09.29.18 21.00		1
Total TPH	PHC635	**58.1**	15.0	mg/kg	09.29.18 21.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	09.29.18 21.00	
o-Terphenyl	84-15-1	91	%	70-135	09.29.18 21.00	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-2 (1.5-2.0')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-006	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.30.18 08.30	Basis:	Wet Weight
Seq Number:	3064879				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.30.18 12.35	U	1
Toluene	108-88-3	**0.00410**	0.00199	mg/kg	09.30.18 12.35		1
Ethylbenzene	100-41-4	**0.00207**	0.00199	mg/kg	09.30.18 12.35		1
m,p-Xylenes	179601-23-1	**0.00859**	0.00398	mg/kg	09.30.18 12.35		1
o-Xylene	95-47-6	**0.00473**	0.00199	mg/kg	09.30.18 12.35		1
Total Xylenes	1330-20-7	**0.0133**	0.00199	mg/kg	09.30.18 12.35		1
Total BTEX		**0.0195**	0.00199	mg/kg	09.30.18 12.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	09.30.18 12.35	
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.30.18 12.35	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-3 (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-007	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.28.18 22.46	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**6670**	74.8	mg/kg	09.30.18 09.43		5
Diesel Range Organics	C10C28DRO	**9710**	74.8	mg/kg	09.30.18 09.43		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**110**	74.8	mg/kg	09.30.18 09.43		5
Total TPH	PHC635	**16500**	74.8	mg/kg	09.30.18 09.43		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.30.18 09.43	
o-Terphenyl	84-15-1	257	%	70-135	09.30.18 09.43	**

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-3 (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-007	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.03.18 08.00	Basis:	Wet Weight
Seq Number:	3065219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**19.0**	1.99	mg/kg	10.03.18 12.28		1000
Toluene	108-88-3	**105**	1.99	mg/kg	10.03.18 12.28		1000
Ethylbenzene	100-41-4	**35.9**	1.99	mg/kg	10.03.18 12.28		1000
m,p-Xylenes	179601-23-1	**127**	3.98	mg/kg	10.03.18 12.28		1000
o-Xylene	95-47-6	**40.9**	1.99	mg/kg	10.03.18 12.28		1000
Total Xylenes	1330-20-7	**168**	1.99	mg/kg	10.03.18 12.28		1000
Total BTEX		**328**	1.99	mg/kg	10.03.18 12.28		1000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.03.18 12.28	
1,4-Difluorobenzene	540-36-3	78	%	70-130	10.03.18 12.28	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-3 (1-1.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-008	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.28.18 22.52	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**1910**	15.0	mg/kg	09.29.18 21.38		1
Diesel Range Organics	C10C28DRO	**3180**	15.0	mg/kg	09.29.18 21.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**45.5**	15.0	mg/kg	09.29.18 21.38		1
Total TPH	PHC635	**5140**	15.0	mg/kg	09.29.18 21.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.29.18 21.38	
o-Terphenyl	84-15-1	140	%	70-135	09.29.18 21.38	**

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-3 (1-1.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-008	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**3.76**	0.496	mg/kg	10.03.18 03.58		250
Toluene	108-88-3	**41.1**	0.496	mg/kg	10.03.18 03.58		250
Ethylbenzene	100-41-4	**18.3**	0.496	mg/kg	10.03.18 03.58		250
m,p-Xylenes	179601-23-1	**63.1**	0.992	mg/kg	10.03.18 03.58		250
o-Xylene	95-47-6	**20.4**	0.496	mg/kg	10.03.18 03.58		250
Total Xylenes	1330-20-7	**83.5**	0.496	mg/kg	10.03.18 03.58		250
Total BTEX		**147**	0.496	mg/kg	10.03.18 03.58		250

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.03.18 03.58	
1,4-Difluorobenzene	540-36-3	117	%	70-130	10.03.18 03.58	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-3 (2-2.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-009	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.0**	5.02	mg/kg	09.28.18 22.57		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	09.29.18 21.57	U	1
Diesel Range Organics	C10C28DRO	**22.7**	15.0	mg/kg	09.29.18 21.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**19.9**	15.0	mg/kg	09.29.18 21.57		1
Total TPH	PHC635	**42.6**	15.0	mg/kg	09.29.18 21.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.29.18 21.57	
o-Terphenyl	84-15-1	87	%	70-135	09.29.18 21.57	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**AH-3 (2-2.5')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-009	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.30.18 08.30	Basis:	Wet Weight
Seq Number:	3064879				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00341**	0.00202	mg/kg	09.30.18 13.18		1
Toluene	108-88-3	**0.0324**	0.00202	mg/kg	09.30.18 13.18		1
Ethylbenzene	100-41-4	**0.00877**	0.00202	mg/kg	09.30.18 13.18		1
m,p-Xylenes	179601-23-1	**0.0386**	0.00403	mg/kg	09.30.18 13.18		1
o-Xylene	95-47-6	**0.00889**	0.00202	mg/kg	09.30.18 13.18		1
Total Xylenes	1330-20-7	**0.0475**	0.00202	mg/kg	09.30.18 13.18		1
Total BTEX		**0.0921**	0.00202	mg/kg	09.30.18 13.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	79	%	70-130	09.30.18 13.18	
4-Bromofluorobenzene	460-00-4	93	%	70-130	09.30.18 13.18	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**North (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-010	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	09.28.18 23.03	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	09.29.18 22.54	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 22.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 22.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 22.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	09.29.18 22.54	
o-Terphenyl	84-15-1	80	%	70-135	09.29.18 22.54	

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COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**North (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-010	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.30.18 08.30	Basis:	Wet Weight
Seq Number:	3064879				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.30.18 12.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.30.18 12.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.30.18 12.13	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.30.18 12.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.30.18 12.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.30.18 12.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.30.18 12.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	09.30.18 12.13	
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.30.18 12.13	

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**South(0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-011	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.28.18 17.00	Basis:	Wet Weight
Seq Number:	3064851				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	09.28.18 23.09	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	09.29.18 23.13	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 23.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 23.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 23.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.29.18 23.13	
o-Terphenyl	84-15-1	94	%	70-135	09.29.18 23.13	

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**South(0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-011	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.30.18 08.30	Basis:	Wet Weight
Seq Number:	3064879				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.30.18 13.39	U	1
Toluene	108-88-3	**0.00876**	0.00199	mg/kg	09.30.18 13.39		1
Ethylbenzene	100-41-4	**0.00225**	0.00199	mg/kg	09.30.18 13.39		1
m,p-Xylenes	179601-23-1	**0.0110**	0.00398	mg/kg	09.30.18 13.39		1
o-Xylene	95-47-6	**0.0134**	0.00199	mg/kg	09.30.18 13.39		1
Total Xylenes	1330-20-7	**0.0244**	0.00199	mg/kg	09.30.18 13.39		1
Total BTEX		**0.0354**	0.00199	mg/kg	09.30.18 13.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.30.18 13.39	
4-Bromofluorobenzene	460-00-4	100	%	70-130	09.30.18 13.39	

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**East (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-012	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	CHE	Date Prep:	10.01.18 09.15	Basis:	Wet Weight
Seq Number:	3064901				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	10.01.18 10.24	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	09.29.18 23.32	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9	mg/kg	09.29.18 23.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.29.18 23.32	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.29.18 23.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	09.29.18 23.32	
o-Terphenyl	84-15-1	87	%	70-135	09.29.18 23.32	

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**East (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-012	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.30.18 08.30	Basis:	Wet Weight
Seq Number:	3064879				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00337**	0.00202	mg/kg	09.30.18 14.01		1
Toluene	108-88-3	**0.0108**	0.00202	mg/kg	09.30.18 14.01		1
Ethylbenzene	100-41-4	**0.00335**	0.00202	mg/kg	09.30.18 14.01		1
m,p-Xylenes	179601-23-1	**0.00824**	0.00404	mg/kg	09.30.18 14.01		1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.30.18 14.01	U	1
Total Xylenes	1330-20-7	**0.00824**	0.00202	mg/kg	09.30.18 14.01		1
Total BTEX		**0.0258**	0.00202	mg/kg	09.30.18 14.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.30.18 14.01	
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.30.18 14.01	

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**West (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-013	Date Collected:	09.25.18 00.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	CHE	Date Prep:	10.01.18 09.15	Basis:	Wet Weight
Seq Number:	3064901				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**23.7**	4.95	mg/kg	10.01.18 10.41		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.29.18 08.00	Basis:	Wet Weight
Seq Number:	3064923				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	09.29.18 23.51	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9	mg/kg	09.29.18 23.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.29.18 23.51	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.29.18 23.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.29.18 23.51	
o-Terphenyl	84-15-1	97	%	70-135	09.29.18 23.51	

Certificate of Analytical Results 600661

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**West (0-1')**	Matrix:	Soil	Date Received:	09.28.18 10.10
Lab Sample Id:	600661-013	Date Collected:	09.25.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.30.18 08.30	Basis:	Wet Weight
Seq Number:	3064879				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00261**	0.00201	mg/kg	09.30.18 14.23		1
Toluene	108-88-3	**0.00429**	0.00201	mg/kg	09.30.18 14.23		1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.30.18 14.23	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.30.18 14.23	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.30.18 14.23	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.30.18 14.23	U	1
Total BTEX		**0.00690**	0.00201	mg/kg	09.30.18 14.23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	70-130	09.30.18 14.23	
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.30.18 14.23	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 600661

COG Operating LLC

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3064851 Matrix: Solid Date Prep: 09.28.18
MB Sample Id: 7663246-1-BLK LCS Sample Id: 7663246-1-BKS LCSD Sample Id: 7663246-1-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	245	98	247	99	90-110	1	20	mg/kg	09.28.18 20:24	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3064901 Matrix: Solid Date Prep: 10.01.18
MB Sample Id: 7663267-1-BLK LCS Sample Id: 7663267-1-BKS LCSD Sample Id: 7663267-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	258	103	259	104	90-110	0	20	mg/kg	10.01.18 10:13	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3064851 Matrix: Soil Date Prep: 09.28.18
Parent Sample Id: 600661-002 MS Sample Id: 600661-002 S MSD Sample Id: 600661-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	56.0	248	334	112	324	108	90-110	3	20	mg/kg	09.28.18 22:01	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3064851 Matrix: Soil Date Prep: 09.28.18
Parent Sample Id: 600662-012 MS Sample Id: 600662-012 S MSD Sample Id: 600662-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.857	250	265	106	266	106	90-110	0	20	mg/kg	09.28.18 20:41	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3064901 Matrix: Soil Date Prep: 10.01.18
Parent Sample Id: 600488-005 MS Sample Id: 600488-005 S MSD Sample Id: 600488-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1200	253	1400	79	1400	79	90-110	0	20	mg/kg	10.01.18 11:49	X

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

QC Summary 600661

COG Operating LLC

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3064901 Matrix: Soil Date Prep: 10.01.18
Parent Sample Id: 600661-012 MS Sample Id: 600661-012 S MSD Sample Id: 600661-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	247	99	248	99	90-110	0	20	mg/kg	10.01.18 10:30	

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3064923 Matrix: Solid Date Prep: 09.29.18
MB Sample Id: 7663252-1-BLK LCS Sample Id: 7663252-1-BKS LCSD Sample Id: 7663252-1-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	954	95	940	94	70-135	1	20	mg/kg	09.29.18 17:49	
Diesel Range Organics	<8.13	1000	975	98	969	97	70-135	1	20	mg/kg	09.29.18 17:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		116		113		70-135	%	09.29.18 17:49
o-Terphenyl	100		101		100		70-135	%	09.29.18 17:49

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3064923 Matrix: Soil Date Prep: 09.29.18
Parent Sample Id: 600660-001 MS Sample Id: 600660-001 S MSD Sample Id: 600660-001 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	<7.99	998	898	90	926	93	70-135	3	20	mg/kg	09.29.18 18:47	
Diesel Range Organics	145	998	1090	95	1130	99	70-135	4	20	mg/kg	09.29.18 18:47	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		120		70-135	%	09.29.18 18:47
o-Terphenyl	100		103		70-135	%	09.29.18 18:47

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

QC Summary 600661

COG Operating LLC

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3064879 — Matrix: Solid — Date Prep: 09.30.18
MB Sample Id: 7663274-1-BLK — LCS Sample Id: 7663274-1-BKS — LCSD Sample Id: 7663274-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0819	81	0.0812	80	70-130	1	35	mg/kg	09.30.18 10:05	
Toluene	<0.00202	0.101	0.0759	75	0.0786	78	70-130	3	35	mg/kg	09.30.18 10:05	
Ethylbenzene	<0.00202	0.101	0.0862	85	0.0904	90	70-130	5	35	mg/kg	09.30.18 10:05	
m,p-Xylenes	<0.00403	0.202	0.169	84	0.179	89	70-130	6	35	mg/kg	09.30.18 10:05	
o-Xylene	<0.00202	0.101	0.0858	85	0.0904	90	70-130	5	35	mg/kg	09.30.18 10:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		106		94		70-130	%	09.30.18 10:05
4-Bromofluorobenzene	87		99		101		70-130	%	09.30.18 10:05

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3065147 — Matrix: Solid — Date Prep: 10.02.18
MB Sample Id: 7663421-1-BLK — LCS Sample Id: 7663421-1-BKS — LCSD Sample Id: 7663421-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0806	80	0.0858	85	70-130	6	35	mg/kg	10.02.18 18:24	
Toluene	<0.00202	0.101	0.0762	75	0.0825	82	70-130	8	35	mg/kg	10.02.18 18:24	
Ethylbenzene	<0.00202	0.101	0.0860	85	0.0947	94	70-130	10	35	mg/kg	10.02.18 18:24	
m,p-Xylenes	<0.00102	0.202	0.167	83	0.189	94	70-130	12	35	mg/kg	10.02.18 18:24	
o-Xylene	<0.00202	0.101	0.0856	85	0.0948	94	70-130	10	35	mg/kg	10.02.18 18:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		106		100		70-130	%	10.02.18 18:24
4-Bromofluorobenzene	90		102		105		70-130	%	10.02.18 18:24

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3065219 — Matrix: Solid — Date Prep: 10.03.18
MB Sample Id: 7663470-1-BLK — LCS Sample Id: 7663470-1-BKS — LCSD Sample Id: 7663470-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.105	105	0.101	100	70-130	4	35	mg/kg	10.03.18 08:13	
Toluene	<0.00201	0.100	0.0967	97	0.0954	94	70-130	1	35	mg/kg	10.03.18 08:13	
Ethylbenzene	<0.00201	0.100	0.110	110	0.106	105	70-130	4	35	mg/kg	10.03.18 08:13	
m,p-Xylenes	<0.00402	0.201	0.219	109	0.211	104	70-130	4	35	mg/kg	10.03.18 08:13	
o-Xylene	<0.00201	0.100	0.109	109	0.106	105	70-130	3	35	mg/kg	10.03.18 08:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		114		96		70-130	%	10.03.18 08:13
4-Bromofluorobenzene	76		100		97		70-130	%	10.03.18 08:13

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

QC Summary 600661

COG Operating LLC

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3064879 Matrix: Soil Date Prep: 09.30.18
Parent Sample Id: 600661-010 MS Sample Id: 600661-010 S MSD Sample Id: 600661-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.0470	47	0.0568	57	70-130	19	35	mg/kg	09.30.18 10:48	X
Toluene	0.00152	0.101	0.0450	43	0.0499	48	70-130	10	35	mg/kg	09.30.18 10:48	X
Ethylbenzene	<0.00202	0.101	0.0405	40	0.0446	45	70-130	10	35	mg/kg	09.30.18 10:48	X
m,p-Xylenes	<0.00102	0.202	0.0757	37	0.0813	40	70-130	7	35	mg/kg	09.30.18 10:48	X
o-Xylene	<0.00202	0.101	0.0405	40	0.0437	44	70-130	8	35	mg/kg	09.30.18 10:48	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	09.30.18 10:48
4-Bromofluorobenzene	111		111		70-130	%	09.30.18 10:48

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3065147 Matrix: Soil Date Prep: 10.02.18
Parent Sample Id: 600989-001 MS Sample Id: 600989-001 S MSD Sample Id: 600989-001 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	0.100	0.0724	72	0.0845	85	70-130	15	35	mg/kg	10.02.18 19:07	
Toluene	<0.00200	0.100	0.0660	66	0.0758	76	70-130	14	35	mg/kg	10.02.18 19:07	X
Ethylbenzene	<0.00200	0.100	0.0676	68	0.0785	79	70-130	15	35	mg/kg	10.02.18 19:07	X
m,p-Xylenes	<0.00401	0.200	0.131	66	0.154	77	70-130	16	35	mg/kg	10.02.18 19:07	X
o-Xylene	<0.00200	0.100	0.0672	67	0.0791	79	70-130	16	35	mg/kg	10.02.18 19:07	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		101		70-130	%	10.02.18 19:07
4-Bromofluorobenzene	106		100		70-130	%	10.02.18 19:07

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3065219 Matrix: Soil Date Prep: 10.03.18
Parent Sample Id: 600489-004 MS Sample Id: 600489-004 S MSD Sample Id: 600489-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0742	73	0.0242	24	70-130	102	35	mg/kg	10.03.18 14:13	XF
Toluene	<0.00201	0.101	0.0664	66	0.0220	22	70-130	100	35	mg/kg	10.03.18 14:13	XF
Ethylbenzene	<0.00201	0.101	0.0744	74	0.0218	22	70-130	109	35	mg/kg	10.03.18 14:13	XF
m,p-Xylenes	<0.00102	0.201	0.148	74	0.0412	21	70-130	113	35	mg/kg	10.03.18 14:13	XF
o-Xylene	<0.00201	0.101	0.0750	74	0.0211	21	70-130	112	35	mg/kg	10.03.18 14:13	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		94		70-130	%	10.03.18 14:13
4-Bromofluorobenzene	107		82		70-130	%	10.03.18 14:13

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

Analysis Request of Chain of Custody Record

Page 1 of 1

CONCHO

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

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: White Falcon Federal 16C (9/16/18)	
Project Location: (county, state) Lea County, New Mexico	**Project #:**
Invoice to: COG	
Receiving Laboratory: Xenco	**Sampler Signature:** Ike Tavarez

Comments: Run Deeper samples if TPH exceeds 1000 mg/kg. Run Deeper samples of benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: DATE	TIME	MATRIX WATER	SOIL		PRESERVATIVE METHOD HCL	HNO_3	ICE			# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	AH-1 (0-1')	9/25/2018			X				X			1		X		X													X							
	AH-1 (1-1.5')	9/25/2018			X				X			1		X		X													X							
	AH-1 (2-2.5)	9/25/2018			X				X			1		X		X													X							
	AH-2 (0-1')	9/25/2018			X				X			1		X		X													X							
	AH-2 (1-1.5')	9/25/2018			X				X			1		X		X													X							
	AH-2 (1.5-2.0)	9/25/2018			X				X			1		X		X													X							
	AH-3 (0-1')	9/25/2018			X				X			1		X		X													X							
	AH-3 (1-1.5')	9/25/2018			X				X			1		X		X													X							
	AH-3 (2-2.5)	9/25/2018			X				X			1		X		X													X							

Relinquished by:	Date:	Time:	Received by: Date: 9/28/18 Time: 1010
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature 3.0/0.0 IR

REMARKS:

- [x] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

600661 Page 1 of 2

CONCHO

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

Client Name: COG
Site Manager: Ike Tavarez
Project Name: White Falcon Federal 16C (9/16/18)
Project Location: (county, state) Lea County, New Mexico
Project #:
Invoice to: COG
Receiving Laboratory: Xenco
Sampler Signature: Ike Tavarez
Comments:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE (YEAR:)	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	HNO_3	ICE	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
	North (0-1')	9/25/2018			X			X	1		X		X												X				
	South (0-1')	9/25/2018			X			X	1		X		X												X				
	East (0-1')	9/25/2018			X			X	1		X		X												X				
	West (0-1)	9/25/2018			X			X	1		X		X												X				

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	9-28-18		[signature]	9/28/18	1010
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY
Sample Temperature: R2/0.0 3.0

REMARKS:
- [X] RUSH: Same Day 24 hr 48 hr (72 hr)
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: ____

ORIGINAL COPY

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 09/28/2018 10:10:00 AM

Work Order #: 600661

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)?	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 Date: 09/28/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 09/28/2018
Jessica Kramer

Certificate of Analysis Summary 605722

COG Operating LLC, Artesia, NM

Project Name: White Falcon Federal #11H, 21H, 22H Central Tank Battery

Project Id:
Contact: Ike Tavarez
Project Location: Lea County, NM

Date Received in Lab: Fri Nov-16-18 07:47 am
Report Date: 04-DEC-18
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	605722-001		605722-002		605722-003			
	Field Id:	T-1 (2.0')		T-1 (3.0')		T-1 (4.0')			
	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Nov-14-18 00:00		Nov-14-18 00:00		Nov-14-18 00:00			
BTEX by EPA 8021B	***Extracted:***	Nov-16-18 16:00		Nov-18-18 11:00		Nov-18-18 11:00			
	Analyzed:	Nov-17-18 00:00		** ** ** **		Nov-18-18 19:38			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		<0.00202	0.00202	0.172	0.00200	<0.00202	0.00202		
Toluene		<0.00202	0.00202	1.15 D	0.100	<0.00202	0.00202		
Ethylbenzene		0.00363	0.00202	1.41 D	0.100	<0.00202	0.00202		
m,p-Xylenes		0.00425	0.00403	2.25 D	0.200	<0.00403	0.00403		
o-Xylene		0.0408	0.00202	1.52 D	0.100	0.00266	0.00202		
Total Xylenes		0.0451	0.00202	3.77	0.100	0.00266	0.00202		
Total BTEX		0.0487	0.00202	6.50	0.00200	0.00266	0.00202		
TPH By SW8015 Mod	***Extracted:***	Nov-16-18 16:00		Nov-16-18 16:00		Nov-16-18 16:00			
	Analyzed:	Nov-17-18 22:28		Nov-17-18 22:46		Nov-17-18 23:04			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		<14.9	14.9	349	15.0	<15.0	15.0		
Diesel Range Organics		70.5	14.9	799	15.0	41.2	15.0		
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	38.1	15.0	<15.0	15.0		
Total TPH		70.5	14.9	1190	15.0	41.2	15.0		

Kelsey Brooks
Project Manager

Analytical Report 605722

for

COG Operating LLC

Project Manager: Ike Tavarez

White Falcon Federal #11H, 21H, 22H Central Tank Battery

04-DEC-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

04-DEC-18

Project Manager: **Ike Tavarez**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **605722**
White Falcon Federal #11H, 21H, 22H Central Tank Battery
Project Address: Lea County, NM

Ike Tavarez:

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) 605722. 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. 605722 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 605722

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 (2.0')	S	11-14-18 00:00		605722-001
T-1 (3.0')	S	11-14-18 00:00		605722-002
T-1 (4.0')	S	11-14-18 00:00		605722-003

Sample receipt non conformances and comments:

Project name change per Ike e-mail --KB

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3070050 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3070122 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 605722-002,605722-003.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 605722

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**T-1 (2.0')**	Matrix:	Soil	Date Received:	11.16.18 07.47
Lab Sample Id:	605722-001	Date Collected:	11.14.18 00.00		

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	11.17.18 22.28	U	1
Diesel Range Organics	C10C28DRO	**70.5**	14.9	mg/kg	11.17.18 22.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	11.17.18 22.28	U	1
Total TPH	PHC635	**70.5**	14.9	mg/kg	11.17.18 22.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	11.17.18 22.28	
o-Terphenyl	84-15-1	98	%	70-135	11.17.18 22.28	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070050				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.17.18 00.00	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.17.18 00.00	U	1
Ethylbenzene	100-41-4	**0.00363**	0.00202	mg/kg	11.17.18 00.00		1
m,p-Xylenes	179601-23-1	**0.00425**	0.00403	mg/kg	11.17.18 00.00		1
o-Xylene	95-47-6	**0.0408**	0.00202	mg/kg	11.17.18 00.00		1
Total Xylenes	1330-20-7	**0.0451**	0.00202	mg/kg	11.17.18 00.00		1
Total BTEX		**0.0487**	0.00202	mg/kg	11.17.18 00.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.17.18 00.00	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.17.18 00.00	

Certificate of Analytical Results 605722

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**T-1 (3.0')**	Matrix:	Soil	Date Received:	11.16.18 07.47
Lab Sample Id:	605722-002	Date Collected:	11.14.18 00.00		
Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**349**	15.0	mg/kg	11.17.18 22.46		1
Diesel Range Organics	C10C28DRO	**799**	15.0	mg/kg	11.17.18 22.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**38.1**	15.0	mg/kg	11.17.18 22.46		1
Total TPH	PHC635	**1190**	15.0	mg/kg	11.17.18 22.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.17.18 22.46	
o-Terphenyl	84-15-1	126	%	70-135	11.17.18 22.46	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.18.18 11.00	Basis:	Wet Weight
Seq Number:	3070122				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.172**	0.00200	mg/kg	11.17.18 00.19		1
Toluene	108-88-3	**1.15**	0.100	mg/kg	11.18.18 20.17	D	50
Ethylbenzene	100-41-4	**1.41**	0.100	mg/kg	11.18.18 20.17	D	50
m,p-Xylenes	179601-23-1	**2.25**	0.200	mg/kg	11.18.18 20.17	D	50
o-Xylene	95-47-6	**1.52**	0.100	mg/kg	11.18.18 20.17	D	50
Total Xylenes	1330-20-7	**3.77**	0.100	mg/kg	11.18.18 20.17		50
Total BTEX		**6.50**	0.00200	mg/kg	11.18.18 20.17		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.17.18 00.19	
4-Bromofluorobenzene	460-00-4	343	%	70-130	11.17.18 00.19	**

Certificate of Analytical Results 605722

COG Operating LLC, Artesia, NM

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Sample Id:	**T-1 (4.0')**	Matrix:	Soil	Date Received:	11.16.18 07.47
Lab Sample Id:	605722-003	Date Collected:	11.14.18 00.00		
Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	11.16.18 16.00	Basis:	Wet Weight
Seq Number:	3070133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	11.17.18 23.04	U	1
Diesel Range Organics	C10C28DRO	**41.2**	15.0	mg/kg	11.17.18 23.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.17.18 23.04	U	1
Total TPH	PHC635	**41.2**	15.0	mg/kg	11.17.18 23.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.17.18 23.04	
o-Terphenyl	84-15-1	93	%	70-135	11.17.18 23.04	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.18.18 11.00	Basis:	Wet Weight
Seq Number:	3070122				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.18.18 19.38	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.18.18 19.38	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.18.18 19.38	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.18.18 19.38	U	1
o-Xylene	95-47-6	**0.00266**	0.00202	mg/kg	11.18.18 19.38		1
Total Xylenes	1330-20-7	**0.00266**	0.00202	mg/kg	11.18.18 19.38		1
Total BTEX		**0.00266**	0.00202	mg/kg	11.18.18 19.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	11.18.18 19.38	
4-Bromofluorobenzene	460-00-4	131	%	70-130	11.18.18 19.38	**

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 605722

COG Operating LLC

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3070133 Matrix: Solid Date Prep: 11.16.18
MB Sample Id: 7666452-1-BLK LCS Sample Id: 7666452-1-BKS LCSD Sample Id: 7666452-1-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	960	96	966	97	70-135	1	20	mg/kg	11.17.18 19:26	
Diesel Range Organics	<8.13	1000	1030	103	1040	104	70-135	1	20	mg/kg	11.17.18 19:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		129		128		70-135	%	11.17.18 19:26
o-Terphenyl	108		103		106		70-135	%	11.17.18 19:26

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3070133 Matrix: Soil Date Prep: 11.16.18
Parent Sample Id: 605669-001 MS Sample Id: 605669-001 S MSD Sample Id: 605669-001 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	<8.00	1000	1110	111	1100	110	70-135	1	20	mg/kg	11.17.18 20:20	
Diesel Range Organics	<8.13	1000	1130	113	1130	113	70-135	0	20	mg/kg	11.17.18 20:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		128		70-135	%	11.17.18 20:20
o-Terphenyl	117		113		70-135	%	11.17.18 20:20

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3070050 Matrix: Solid Date Prep: 11.16.18
MB Sample Id: 7666419-1-BLK LCS Sample Id: 7666419-1-BKS LCSD Sample Id: 7666419-1-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	0.0998	0.102	102	0.107	107	70-130	5	35	mg/kg	11.16.18 15:23	
Toluene	<0.00200	0.0998	0.0955	96	0.0991	99	70-130	4	35	mg/kg	11.16.18 15:23	
Ethylbenzene	<0.00200	0.0998	0.106	106	0.111	111	70-130	5	35	mg/kg	11.16.18 15:23	
m,p-Xylenes	<0.00399	0.200	0.207	104	0.217	109	70-130	5	35	mg/kg	11.16.18 15:23	
o-Xylene	<0.00200	0.0998	0.101	101	0.106	106	70-130	5	35	mg/kg	11.16.18 15:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		95		96		70-130	%	11.16.18 15:23
4-Bromofluorobenzene	103		94		99		70-130	%	11.16.18 15:23

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

QC Summary 605722

COG Operating LLC

White Falcon Federal #11H, 21H, 22H Central Tank Battery

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3070122 Matrix: Solid Date Prep: 11.18.18
MB Sample Id: 7666432-1-BLK LCS Sample Id: 7666432-1-BKS LCSD Sample Id: 7666432-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.131	130	0.129	129	70-130	2	35	mg/kg	11.18.18 12:43	
Toluene	<0.00201	0.101	0.116	115	0.113	113	70-130	3	35	mg/kg	11.18.18 12:43	
Ethylbenzene	<0.00201	0.101	0.123	122	0.121	121	70-130	2	35	mg/kg	11.18.18 12:43	
m,p-Xylenes	<0.00402	0.201	0.239	119	0.234	117	70-130	2	35	mg/kg	11.18.18 12:43	
o-Xylene	<0.00201	0.101	0.115	114	0.113	113	70-130	2	35	mg/kg	11.18.18 12:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		99		100		70-130	%	11.18.18 12:43
4-Bromofluorobenzene	104		116		117		70-130	%	11.18.18 12:43

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3070050 Matrix: Soil Date Prep: 11.16.18
Parent Sample Id: 605690-005 MS Sample Id: 605690-005 S MSD Sample Id: 605690-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0890	88	0.0964	95	70-130	8	35	mg/kg	11.16.18 16:03	
Toluene	0.000691	0.101	0.0848	83	0.0848	83	70-130	0	35	mg/kg	11.16.18 16:03	
Ethylbenzene	<0.000569	0.101	0.0922	91	0.0908	90	70-130	2	35	mg/kg	11.16.18 16:03	
m,p-Xylenes	<0.00102	0.202	0.180	89	0.174	86	70-130	3	35	mg/kg	11.16.18 16:03	
o-Xylene	<0.000347	0.101	0.0906	90	0.0874	87	70-130	4	35	mg/kg	11.16.18 16:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		70-130	%	11.16.18 16:03
4-Bromofluorobenzene	114		105		70-130	%	11.16.18 16:03

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3070122 Matrix: Soil Date Prep: 11.18.18
Parent Sample Id: 605424-003 MS Sample Id: 605424-003 S MSD Sample Id: 605424-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0673	68	0.0974	98	70-130	37	35	mg/kg	11.18.18 13:23	XF
Toluene	<0.000454	0.0996	0.0541	54	0.0854	86	70-130	45	35	mg/kg	11.18.18 13:23	XF
Ethylbenzene	<0.00199	0.0996	0.0445	45	0.0875	88	70-130	65	35	mg/kg	11.18.18 13:23	XF
m,p-Xylenes	<0.00101	0.199	0.0857	43	0.170	85	70-130	66	35	mg/kg	11.18.18 13:23	XF
o-Xylene	<0.00199	0.0996	0.0437	44	0.0830	83	70-130	62	35	mg/kg	11.18.18 13:23	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		101		70-130	%	11.18.18 13:23
4-Bromofluorobenzene	126		124		70-130	%	11.18.18 13:23

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

Analysis Request of Chain of Custody Record

605722

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CONCHO

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

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: COG - White Falcon Federal 16 C (9-16-18)	
Project Location: (county, state) Lea County, NM	**Project #:**
Invoice to: COG - Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Ike Tavarez
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B / BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
					1																								
	T-1 (2.0')	11-14-18			1			1			X		X																
	T-1 (3.0')	11-14-18			1			1			X		X																
	T-1 (4.0')	11-14-18			1			1			X		X																

Relinquished by:	Date: 11-16-18	Time: 7:45 AM	Received by: Brad 11/16 0747 Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature: 1.4/1.3 C

REMARKS:

- ☑ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 11/16/2018 07:47:00 AM

Work Order #: 605722

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 11/16/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 11/16/2018
Jessica Kramer