SITE INFORMATION **Report Type: Closure Report** General Site Information: Folk Federal Flow Lines Site: Company: **COG Operating LLC** Section, Township and Range Unit H Sec 17 **17S** 29E Lease Number: API-30-015-36862 Eddy County County: GPS: 32.83555° N 104.09180° W Surface Owner: Federal Mineral Owner: From the intersection of Hwy 82 and Old Loco Rd. travel north on Old Loco Rd. for 1.4 miles, Directions: turn right (east) and travel 0.3 miles to the site (on north side of the road). Release Data: Date Released: 7/5/2012 Produced Fluid Type Release: Source of Contamination: **Burned Flowlines** NOV 01 2012 Fluid Released: 5 bbls oil 5bbls water Fluids Recovered: 0 bbls The majority was consumed in a fire. NMOCD ARTESIA Official Communication: Name: Ike Tavarez Company: COG Operating, LLC Tetra Tech Address: 550 W. Texas Ave. Ste. 1300 1910 N. Big Spring P.O. Box City: Midland Texas, 79701 Midland, Texas Phone number: (432) 686-3023 (432) 682-4559 Fax: (432) 684-7137 Email: pellis@conchoresources.com ike.tavarez@tetratech.com

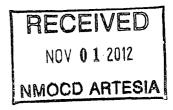
Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	. 10
>100 ft.	0	
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0

Accepta	ble Soil RRAL (n	ng/kg)
Benzene	Total BTEX	TPH
10	50	1,000



October 19, 2012

Mr. Mike Bratcher **Environmental Engineer Specialist** Oil Conservation Division, District 2 811 S. First Avenue Artesia, New Mexico 88210



Re: Closure Report for the COG Operating LLC., Folk Federal Flow Lines, Unit H, Section 17, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Folk Federal Flow lines located in Unit H. Section 17, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83555°, W 104.09180°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on July 5, 2012, and released approximately ten (10) barrels of produced fluids from several flow lines that were burned due to a lighting To alleviate the problem, COG personnel replaced the flow lines. Due to the fire, none of the standing fluids were recovered. The spill initiated in the pasture along the east and west side of the lease road affecting an area approximately 65' X 145' in the pasture. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 17. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 75' below surface. The groundwater data is shown in Figure B.



Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Assessment and Analytical Results

On July 12, 2012, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1, AH-2 and AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples exceeded the RRAL for TPH and BTEX. The area of AH-3 was not defined and detected an elevated chloride concentration of 14,400 mg/kg at 1.0'. Deeper samples were not collected due to the dense caliche formation. The areas of AH-1 and AH-2 did not show a significant chloride impact to the area.

Remediation and Conclusion

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. Approximately 320 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

On September 21, 2012, Tetra Tech installed two backhoe trenches (T-1 and T-2) in the areas of AH-3 to depths of 6.0' and 2.0' respectively, in



order to vertically define the impact in this area. The trenches chloride field screening results showed vertical delineation at 6.0' (T-1) and 2.0' (T-2) below surface. Based on the field screening results AH-1 was split into two excavation areas (AH-3 North and South). As discussed in the work plan, the area of AH-3 North excavated to a depth of 2.0' below surface, while AH-3 South was excavated further to a depth of 6.0' below surface.

Confirmation bottom hole samples and sidewall samples were collected and evaluated for chlorides. The bottom hole samples exhibited a chloride concentration of <20.0 mg/kg for AH-3 North (CS-1 Bottom) and 277 mg/kg for AH-3 South (CS-2 Bottom) at depths of 2.0' and 5.0' respectively. In addition, the highest chloride concentration in the sidewall samples was detected at 291 mg/kg in AH-3 South (CS-2 West Sidewall). The sampling results are shown in Table 1.

The excavation was then brought to grade with additional clean soil and the pasture was seeded with a BLM approved mixture. In addition the area was then ripped and windrows were installed in order to prevent erosion.

Based on the remedial activities performed, COG request closure of the site. A copy of the C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

Respectfully submitted,

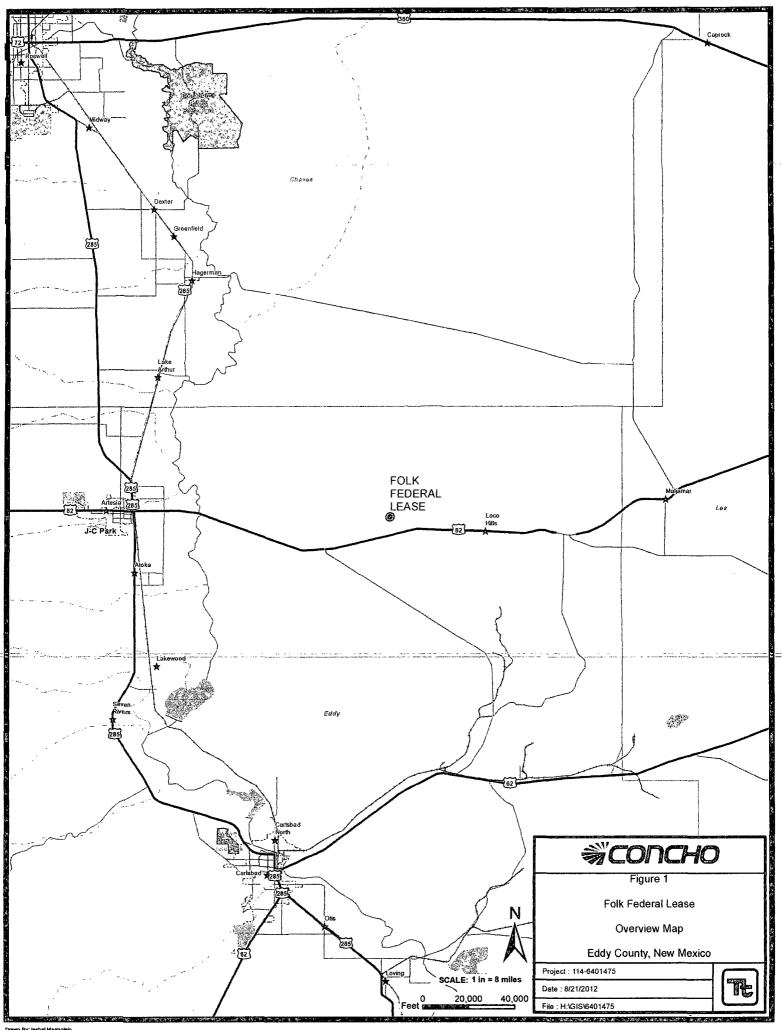
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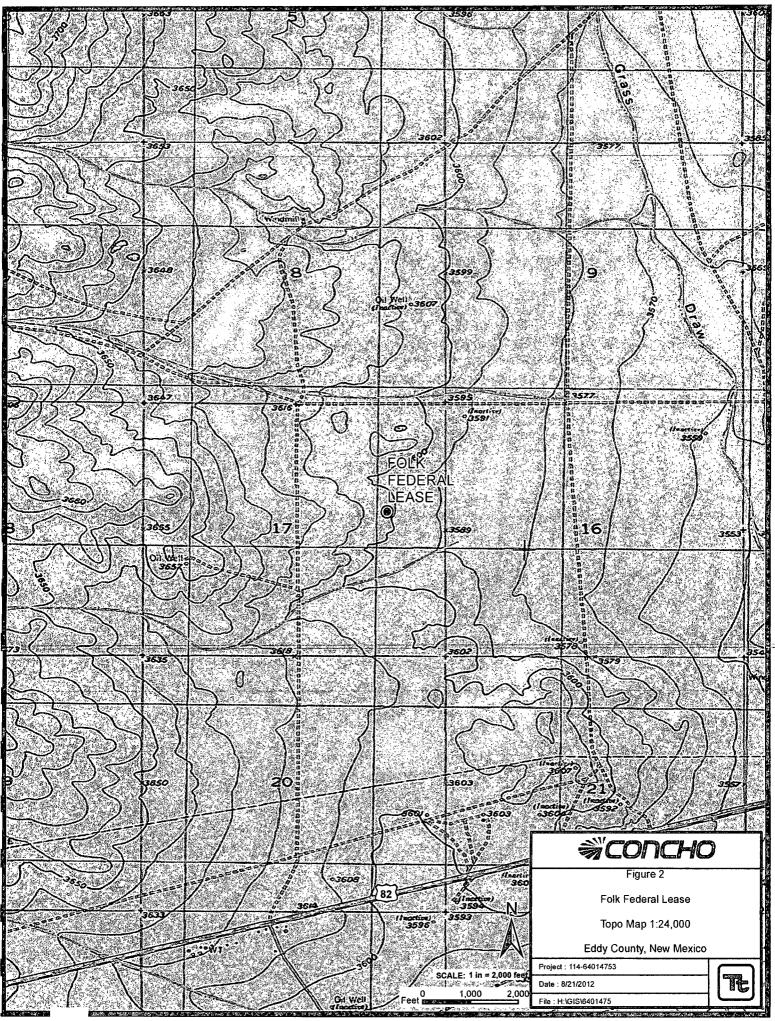
Ike Tavarez, PG Senior Project Manager

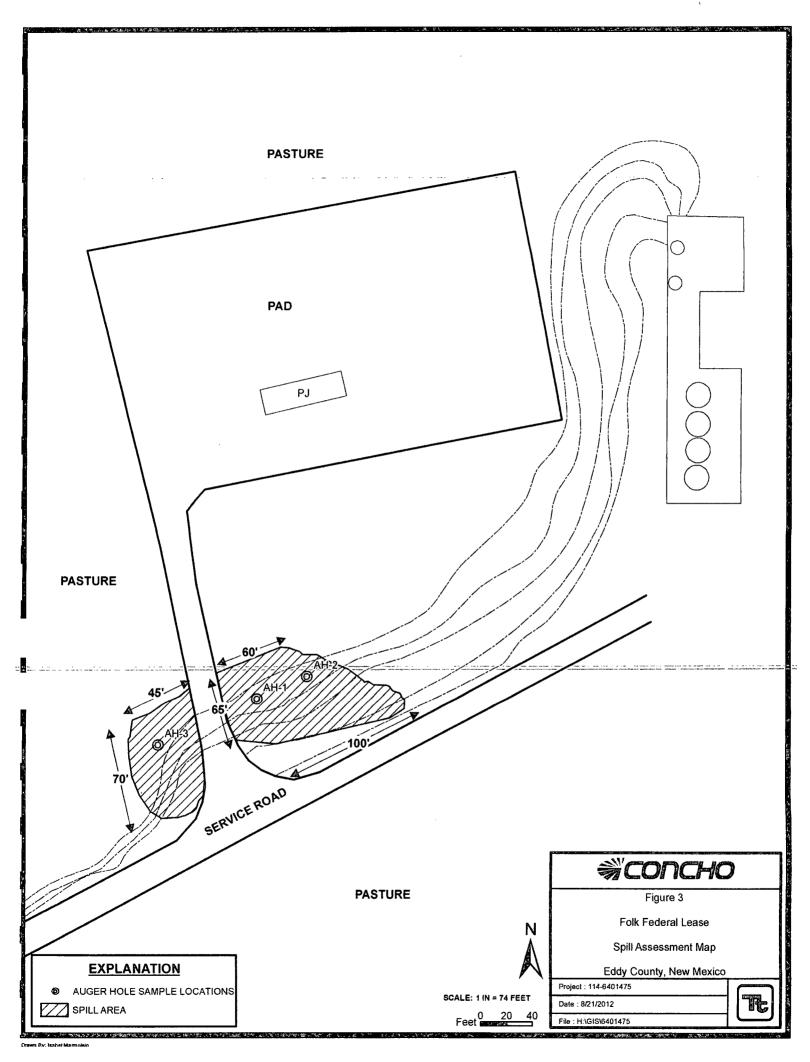
cc: Pat Ellis - COG

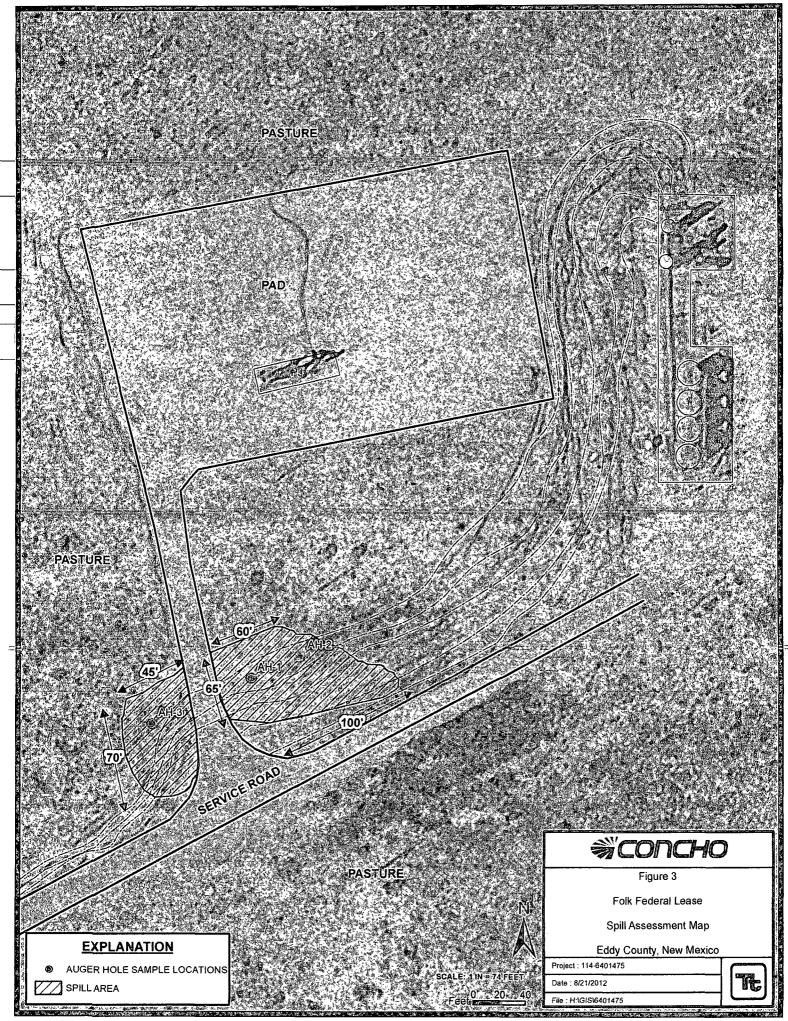
cc: Terry Gregston - BLM

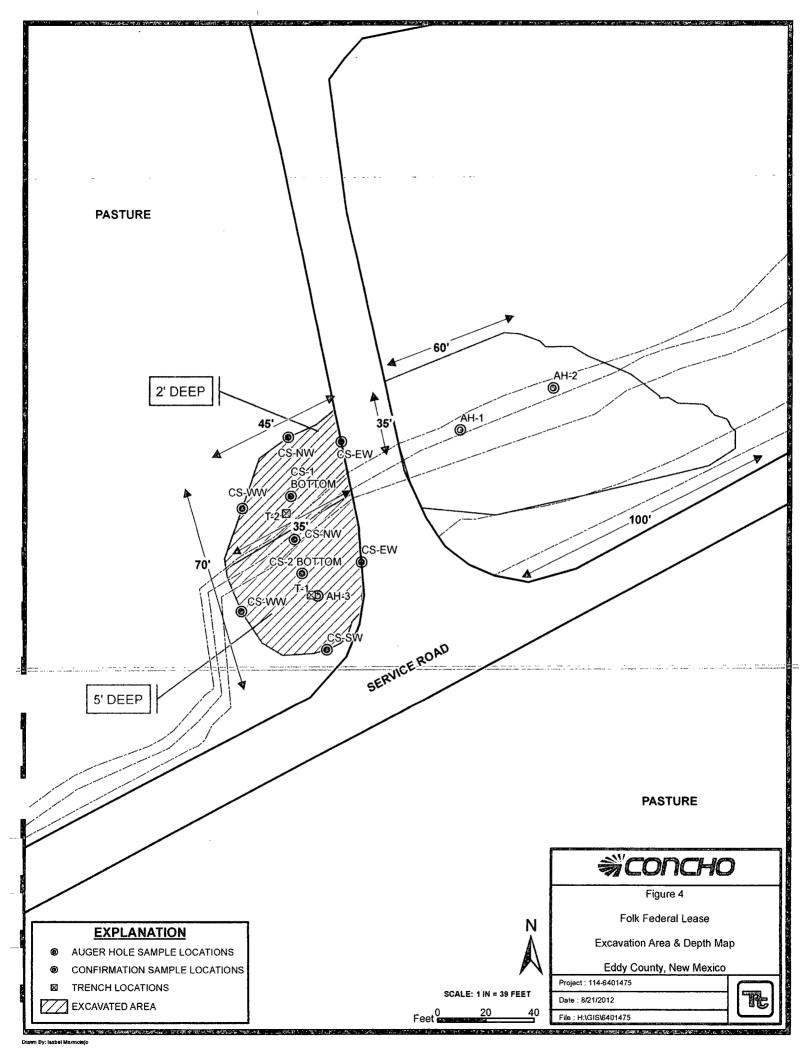
FIGURES











.

Table 1 COG Operating LLC. Folk Federal Flow Lines Eddy County, New Mexico

Comple ID	Sample	Sample		Status	7	TPH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
AH-1	7/31/2012	0-1	Х		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	722
		1-1.5	Х		-	_	_	-	-	_	-	-	125
	11	2-2.5	Х		-	-	-	_	-	-	-	-	<20.0
	II II	2.5-3	Х		-	-	-	-	-	-	-	-	81.9
AH-2	7/31/2012	0-1	Х		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<20.0
AH-3	7/31/2012	0-1		X 7.7	.5.93	170	176	·;<0.0200	<0.0200	<0.0200	<0.0200	i<0.0200 ₊	14,400 +
CS-1 Bottom	9/25/2012	2	Х	to the same and	-	· -	-	-	-	-	_	_	<20.0
CS-1 North Sidewall	9/25/2012	•	Х		-	-	-	-	-	-	-	-	<20.0
CS-1 East Sidewall	9/25/2012	-	Х		-	-	_	-	-	-	-	-	115
CS-1 West Sidewall	9/25/2012	_	Х		-	-	-	-	-	-	-	-	43.0
CS-2 Bottom	9/25/2012	5	Х	i i	-	-	_	-	-	-	-	_	277
CS-2 North Sidewall	9/25/2012	-	Х	A CONTRACTOR OF THE CONTRACTOR	-	-	-	_	-	_	-	_	167
CS-2 East Sidewall	9/25/2012	-	Х		-	-	-	-	_	-	-	_	<20.0
CS-2 South Sidewall	9/25/2012	-	Х	1	-	-	-	_	_	~	- :	-	<20.0
CS-2 West Sidewall	9/25/2012	-	Х		-	-	-	-	-	-	- ,	-	291
T-1	9/21/2012	6	Х	Amount of the second of the se	-	-	-	-	-	-	- :	-	80.7

(-)

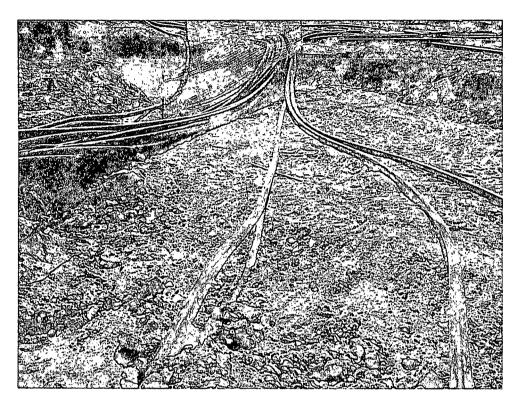
Not Analyzed

Excavated Depths

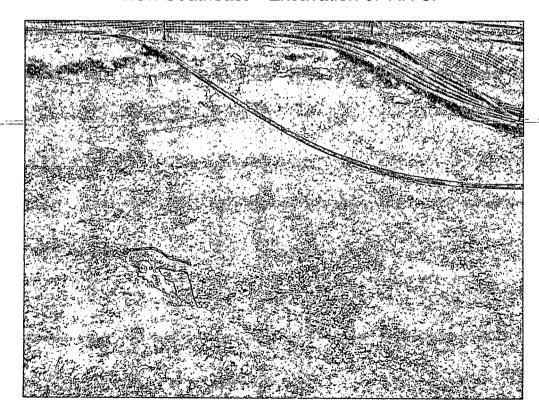
PHOTOGRAPHS

COG Operating LLC Folk Federal Lease Eddy County, New Mexico





View Southeast - Excavation of AH-3.



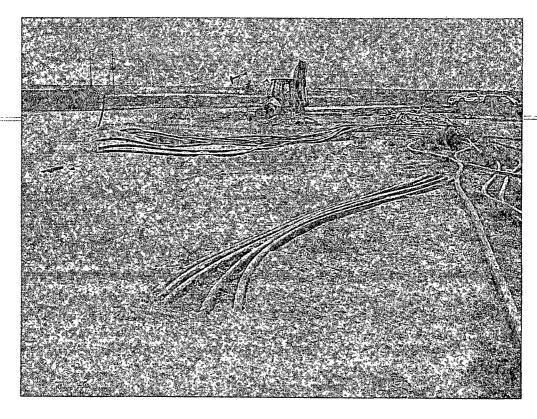
View East – Deeper excavation of AH-3.

COG Operating LLC Folk Federal Lease Eddy County, New Mexico





View Southeast - backfill



View Southeast - Area of AH-3

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Río Brazos Road, Aztec, NM 87410 District IV

State of New Mexico **Energy Minerals and Natural Resources**

Oil Conservation Division 1220 South St. Francis Dr.

Revised October 10, 2003 Submit 2 Copies to appropriate

Attached

District Office in accordance with Rule 116 on back side of form

Form C-141

1220 S. St. Francis Dr., Santa Fe, NM 87505 Santa Fe, NM 87505 Release Notification and Corrective Action **OPERATOR** ☐ Initial Report Final Report COG OPERATING LLC Name of Company Contact Pat Ellis 550 W. Texas, Suite 100, Midland, TX 79701 Telephone No. 432-230-0077 Address Facility Name Folk Federal Lease Facility Type **Flowlines** Surface Owner Federal Mineral Owner Lease No. (API#) 30-015-36862 Closest well location LOCATION OF RELEASE Unit Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County 175 29E н 17 Eddy **Latitude 32.83623** Longitude 104.09164 **NATURE OF RELEASE** Type of Release Produced fluid Volume of Release 5bbls oil Volume Recovered **Obbls** 5bbls water Majority consumed in fire Source of Release Burned flowlines Date and Hour of Occurrence Date and Hour of Discovery 07/05/2012 07/05/2012 3:30 P.M. Was Immediate Notice Given? If YES, To Whom? Mike Bratcher-OCD Jim Amos-BLM Terry Gregston-BLM By Whom? Michelle Mullins Date and Hour 07/06/2012 10:46 a.m. Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. ☐ Yes 🖾 No If a Watercourse was Impacted, Describe Fully.* Describe Cause of Problem and Remedial Action Taken.* A lighting storm caused a fire on our Folk Federal lease burning several flowlines, which caused the release of fluid. We are in the process of replacing all impacted flowlines. Describe Area Affected and Cleanup Action Taken.* Initially approximately 10bbls were released from the burned flowlines on our Folk Federal Lease due to a lighting fire. We were unable to recover any of the fluid from the flowlines because the majority of the fluid was consumed in the fire. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation workplan to the NMOCD/BLM for approval prior to any significant remediation work. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. OIL CONSERVATION DIVISION Signature: Approved by District Supervisor: Printed Name: Josh Russo Title: **HSE** Coordinator Approval Date: **Expiration Date:** E-mail Address: jrusso@conchoresources.com Conditions of Approval:

Phone:

432-212-2399

Date: 07/12/2012

Attach Additional Sheets If Necessary

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District III
1301 W. Grand Avenue, 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 RECE D

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

Form C-141 Revised October 10, 2003

NOV 0 1 2012 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

NIMOCD ARTESIA

Release Notification and Corrective Action

		<u> </u>				OPERA				al Report		Repor
Name of Co			Operating			Contact		at Ellis				
				nd, Texas 7970		Telephone N		230-0				
Facility Nar	ne Folk	Federal Le	ase			Facility Typ	e F	lowling	es			
Surface Ow	ner Fede	eral		Mineral O	wner				Lease N	Vo (API#)	30-015-36862	2
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	<u> </u>		L	atitude N 32.8	3623°	Longitud	e W 104.09164	4°		I		
				NAT	URE	OF RELI						
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Course CD	lang: P	d flai'					bbls water			ity consume		
Source of Re	iease: Burne	a flowlines				07/05/2012	Iour of Occurrenc	e		Hour of Dis 12 3:30 p.m		
Was Immedia	ate Notice C	iven?				If YES, To		1	_377037 2 0	. = 0.50 p.11	••	
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Was a Water					·		olume Impacting t					
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Printed Name	: Ike Tavare	ez 🗘	ges	-for C	06	ppproved by	District Superviso	or:		· · · · · · · · · · · · · · · · · · ·	<u> </u>	
Title: Project	Manager					Approval Dat	e:	E	Expiration	Date:		
E-mail Addres	ss: Ike.Tava	rez@TetraTe	ch.com		1	Conditions of	Approval-			_		
					 `	Concessions of	ppiorui.			Attached		
Date:		-12		432) 682-4559								
Attach Addit	ional Shee	ts If Necessa	nrv									-

APPENDIX B

Water Well Data Average Depth to Groundwater (ft) COG - Folk Federal Lease, Eddy County, New Mexico

	- 16	South		28 Easi			16 S	outh		29 East		atomatic.	- 16	Soutn-		30 East	
	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	ľ
	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	1
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31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	13
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7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	+
8	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	+
19	20	21	22	23	24	19	SITE 20	21	22	23	24	19	20	21	22	23	- 2
19	20	2'	79	23	24	13	20	21	80	23	24	1'9	20	21	22	23	ľ
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	18 5	South	2	28 East			18 S	outh	2	29 East	:		18	South	3	IO East	
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8	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	1
9	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	2
ō	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	2
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	New Mexico State Engineers Well Reports
	USGS Well Reports
	Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
	Geology and Groundwater Resources of Eddy County, NM (Report 3)
208	Abandoned Waterwell

APPENDIX C

Report Date: August 10, 2012 Work Order: 12080310

Summary Report

Ike Tavarez

Tetra Tech

1910 N. Big Spring Street

Midland, TX 79705

Report Date: August 10, 2012

Work Order: 12080310

Page Number: 1 of 2

Project Location: Eddy Co., NM

Project Name:

COG/Folk Federal Flow Lines

Project Number: 114-6401475

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
305709	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305710	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305711	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305712	AH-1 2.5-3'	soil	2012-07-31	00:00	2012-08-02
305713	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305714	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02

			BTEX		TPH DRO - NEW	TPH GRO
1	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
305709 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	<4.00
305713 - AH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	<4.00
305714 - AH-3 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	170	5.93

Sample: 305709 - AH-1 0-1'

Param	Flag	Result	${f Units}$	RL
Chloride		722	mg/Kg	4

Sample: 305710 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		125	mg/Kg	4

Sample: 305711 - AH-1 2-2.5'

Report Date: Aug	ust 10, 2012	Work Order: 12080310	Page :	Number: 2 of 2
Param	Flag	Result	${ m Units}$	m RL
Chloride		<20.0	mg/Kg	4
Sample: 305712	- AH-1 2.5-3'			
Param	Flag	Result	Units	RL
Chloride		81.9	ıng/Kg	4
Sample: 305713	- AH-2 0-1'			
Param	Flag	Result	Units	m RL
Chloride		<20.0	nig/Kg	4
Sample: 305714	- AH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		14400	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100

El Paso. Texas 79922 Midland. Texas 79703 Carrolizon. Texas 75006 915-585-3443

FAX 915 - 585 - 4944

432 689 6301 972-242-7750

FAX 432 - 689 - 8313

E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

NELAP DoD LELAP Oklahoma \mathbf{WBE} HUB NCTRCA DBE Kansas ISO 17025

Analytical and Quality Control Report

Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX, 79705

Report Date: August 10, 2012

Work Order:

12080310

Project Location: Eddy Co., NM

Project Name:

COG/Folk Federal Flow Lines

Project Number:

114-6401475

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
305709	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305710	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305711	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305712	AH-1 2.5-3'	soil	2012-07-31	00:00	2012-08-02
305713	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305714	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 23 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael april

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

Report Contents

Case Narrative	5
Analytical Report Sample 305709 (AH-1 0-1') Sample 305710 (AH-1 1-1.5') Sample 305711 (AH-1 2-2.5') Sample 305712 (AH-1 2.5-3') Sample 305713 (AH-2 0-1') Sample 305714 (AH-3 0-1')	6 6 7 7 8 8 9
QC Batch 93635 - Method Blank (1) QC Batch 93636 - Method Blank (1) QC Batch 93704 - Method Blank (1) QC Batch 93705 - Method Blank (1)	12 12 12 12 12 13
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QC Batch 93635 - CCV (1) QC Batch 93635 - CCV (2) QC Batch 93636 - CCV (1) QC Batch 93636 - CCV (2) QC Batch 93704 - CCV (1) QC Batch 93704 - CCV (2) QC Batch 93704 - CCV (3) QC Batch 93705 - CCV (1) QC Batch 93705 - CCV (1) QC Batch 93705 - CCV (2) QC Batch 93705 - CCV (2) QC Batch 93705 - CCV (2) QC Batch 93713 - CCV (1) QC Batch 93713 - CCV (2)	19 19 19 19 19 20 20 21 21 21 21
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Case Narrative

Samples for project COG/Folk Federal Flow Lines were received by TraceAnalysis, Inc. on 2012-08-02 and assigned to work order 12080310. Samples for work order 12080310 were received intact at a temperature of 4.7 C.

Samples were analyzed for the following tests using their respective methods.

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	79433	2012-08-07 at 15:57	93704	2012-08-07 at 15:57
Chloride (Titration)	SM 4500-Cl B	79384	2012-08-05 at 10:03	93635	2012-08-05 at 20:04
Chloride (Titration)	SM 4500-Cl B	79384	2012-08-05 at 10:03	93636	2012-08-05 at 20:12
TPH DRO - NEW	S 8015 D	79440	2012-08-07 at 08:00	93713	2012-08-08 at 08:36
TPH GRO	S 8015 D	79433	2012-08-07 at 15:57	93705	2012-08-07 at 15:57

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12080310 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: August 10, 2012 114-6401475 Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 6 of 23 Eddy Co., NM

Analytical Report

Sample: 305709 - AH-1 0-1'

Laboratory: Lubbock

Analysis: BTEX QC Batch: 93704 Prep Batch: 79433 Analytical Method: S 8021B
Date Analyzed: 2012-08-07
Sample Preparation: 2012-08-07

Prep Method: S 5035 Analyzed By: ZLM Prepared By: ZLM

RLFlag Cert Result Units Dilution RLParameter Benzene 0.0200 U < 0.0200 mg/Kg 1 1 Toluene < 0.0200 mg/Kg 1 0.0200υ Ethylbenzene 1 < 0.0200 mg/Kg 0.0200u Xylene 1 0.0200< 0.0200 mg/Kg

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	1	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 305709 - AH-1 0-1'

Laboratory:-Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 93635 Date Analyzed: Analyzed By: AR2012-08-05 Prep Batch: 79384 Sample Preparation: 2012-08-05 Prepared By: AR

			KL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			722	mg/Kg	5	4.00

Sample: 305709 - AH-1 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW
QC Batch: 93713
Prep Batch: 79440

Analytical Method: S 8015 D
Date Analyzed: 2012-08-08
Sample Preparation: 2012-08-07

Prep Method: N/A Analyzed By: CW Prepared By: CW

114-6401475

Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 7 of 23 Eddy Co., NM

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane			127	mg/Kg	1	100	127	49.3 - 157.5

Sample: 305709 - AH-1 0-1'

Laboratory:

Prep Batch:

Lubbock

Analysis: TPH GRO QC Batch:

93705

79433

Analytical Method:

S 8015 D 2012-08-07 Prep Method: S 5035 ZLMAnalyzed By:

Date Analyzed: Sample Preparation: 2012-08-07

Prepared By: ZLM

			RL			
Parameter	Flag	Cert	\mathbf{Result}	Units	Dilution	RL
GRO	υ	1	< 4.00	mg/Kg	1	4.00

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	70 - 130

Sample: 305710 - AH-1 1-1.5'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch:

93635 Prep Batch: 79384 Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-08-05 2012-08-05

Prep Method: N/A Analyzed By: ARPrepared By: AR

RLParameter Result RLFlag Cert Units Dilution Chloride 125 mg/Kg 4.005

Sample: 305711 - AH-1 2-2.5'

Laboratory:

Prep Batch:

Midland

Chloride (Titration) Analysis: QC Batch: 93635

79384

Analytical Method: Date Analyzed: Sample Preparation: SM 4500-Cl B 2012-08-05

2012-08-05

Prep Method: N/A ARAnalyzed By: Prepared By: AR

continued ...

Report Date: August 10, 2012	-
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-----Work Order: 12080310 COG/Folk Federal Flow Lines --Page-Number: 8 of 23 Eddy Co., NM

sample 305711 continued ...

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	Ü		< 20.0	mg/Kg	5	4.00

Sample: 305712 - AH-1 2.5-3'

Laboratory:

Midland

Analysis:

Chloride (Titration)

93635

Analytical Method: Date Analyzed:

SM 4500-Cl B

Prep Method: N/A Analyzed By: AR

QC Batch:

2012-08-05 Sample Preparation: 2012-08-05

Prep Batch:

79384

Prepared By: AR

RLParameter Flag Cert Result Units Dilution RLChloride 81.9 mg/Kg 5 4.00

Sample: 305713 - AH-2 0-1'

Laboratory:	Lubbock			
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method: S 5035
QC Batch:	93704	Date Analyzed:	2012-08-07	Analyzed By: ZLM
Prep Batch:	79433	Sample Preparation:	2012-08-07	Prepared By: ZLM
			RL	

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	1	< 0.0200	mg/Kg	1	0.0200
Toluene	U	1	< 0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	< 0.0200	mg/Kg	1	0.0200
Xylene	U	1	< 0.0200	mg/Kg	1	0.0200

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	70 - 130

114-6401475

Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 9 of 23

Eddy Co., NM

Sample: 305713 - AH-2 0-1'

Laboratory:

Midland

Chloride (Titration)

Analysis: QC Batch: 93636 Analytical Method:

SM 4500-Cl B

Prep Method: N/A Analyzed By:

AR.

AR.

Prep Batch: 79384 Date Analyzed: 2012-08-05 Sample Preparation:

2012-08-05 Prepared By:

RL

Dilution Units RLParameter Flag Cert Result Chloride <20.0 4.00mg/Kg 5 U

Sample: 305713 - AH-2 0-1'

Laboratory:

Midland

TPH DRO - NEW Analysis:

QC Batch: 93713 Prep Batch: 79440

Analytical Method:

Sample Preparation:

Date Analyzed:

S 8015 D 2012-08-08 2012-08-07

Units

mg/Kg

Prep Method: N/A

Analyzed By: CW Prepared By: CW

RL

Result Parameter Flag Cert < 50.0 DRO U 2

Dilution RL50.0

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	${ m Units}$	Dilution	Amount	Recovery	Limits
n-Tricosane			135	mg/Kg	1	100	135	49.3 - 157.5

Sample: 305713 - AH-2 0-1'

Laboratory:

Prep Batch:

......

Lubbock

79433

Analysis: TPH GRO QC Batch: 93705

Analytical Method: Date Analyzed:

Sample Preparation:

S 8015 D 2012-08-07 Prep Method: S 5035

Analyzed By: ZLM **ZLM**

2012-08-07

Prepared By:

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	1	< 4.00	mg/Kg	1	4.00

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.08	mg/Kg	1	2.00	104	70 - 130
4-Bromofluorobenzene (4-BFB)			2.19	mg/Kg	1	2.00	110	70 - 130

Work Order: 12080310

COG/Folk Federal Flow Lines

Page Number: 10 of 23 Eddy Co., NM

Sample: 305714 - AH-3 0-1'

Laboratory: Lubbock

114-6401475

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035 QC Batch: 93704 Date Analyzed: 2012-08-07 Analyzed By: ZLM Prep Batch: 79433 Sample Preparation: 2012-08-07 Prepared By: ZLM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	1	< 0.0200	mg/Kg	1	0.0200
Toluene	U	1	< 0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	< 0.0200	mg/Kg	1	0.0200
Xvlene	U	1	< 0.0200	mg/Kg	1	0.0200

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.87	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Sample: 305714 - AH-3 0-1'

Midland Laboratory:

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 93636 Date Analyzed: 2012-08-05 Analyzed By: ARPrep Batch: 79384 Sample Preparation: 2012-08-05 Prepared By: AR

;			· · · · . · . RL			
Parameter	Flag	Cert	Result	$\mathbf{U}_{\mathbf{nits}}$	Dilution	RL
Chloride			14400	mg/Kg	10	4.00

Sample: 305714 - AH-3 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A QC Batch: 93713 Date Analyzed: 2012-08-08 Analyzed By: CWPrep Batch: 79440 Sample Preparation: 2012-08-07 Prepared By: CW

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO		2	170	mg/Kg	1	50.0

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane			138	mg/Kg	1	100	138	49.3 - 157.5

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Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 11 of 23

Eddy Co., NM

Sample: 305714 - AH-3 0-1'

Laboratory: Analysis:

Lubbock TPH GRO

QC Batch: Prep Batch: 79433

93705

Analytical Method: Date Analyzed:

S 8015 D

2012-08-07

Prep Method:

S 5035 ZLM

Sample Preparation: 2012-08-07 Analyzed By: Prepared By: ZLM

RLRLParameter Flag Cert Result UnitsDilution $\overline{\text{GRO}}$ 5.93 4.00 mg/Kg В

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.98	mg/Kg	1	2.00	99	70 - 130
4-Bromofluorobenzene (4-BFB)			2.20	${ m mg/Kg}$	1	2.00	110	70 - 130

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Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 12 of 23 Eddy Co., NM

Method Blanks

Method Blank (1)

QC Batch: 93635

QC Batch: 93635 Date Analyzed:

2012-08-05

Analyzed By: AR

Prep Batch: 79384

QC Preparation: 2012-08-05 Prepared By: AR.

mg/Kg

mg/Kg

MDL

Parameter Chloride

Flag Cert Result < 3.85 Units RL

Method Blank (1)

QC Batch: 93636

QC Batch:

93636

Date Analyzed:

2012-08-05

Analyzed By: AR

Prep Batch:

Chloride

79384

QC Preparation:

2012-08-05

Prepared By: AR.

< 3.85

Parameter

Flag Cert

MDL Result

Units RL

Method Blank (1)

QC Batch: 93704

QC Batch: Prep Batch:

93704

Date Analyzed:

Cert

2012-08-07

Analyzed By: ZLM

79433

QC Preparation:

2012-08-07

Units

mg/Kg

mg/Kg

Prepared By:

ZLM

0.02

0.02

Parameter	Flag

Parameter Benzene

Cert

Result

1.75

1.74

Units RLmg/Kg 0.02mg/Kg

Ethylbenzene

Toluene

Surrogate	Flag
Trifluorotoluene (TFT)	
4-Bromofluorobenzene (4-BFB)	

< 0.00816 < 0.00560< 0.00460

MDL

Result

< 0.00365

Dilution

1

1

Amount

2.00

2.00

mg/Kg mg/Kg Spike Percent

88

87

0.02Recovery Recovery Limits 70 - 130

70 - 130

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Eddy Co., NM

Method Blank (1)

QC Batch: 93705

QC Batch: 93705 Prep Batch: 79433 Date Analyzed: 2012-08-07 QC Preparation: 2012-08-07 Analyzed By: ZLM

Prepared By: ZLM

Parameter Flag Cert Result

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	\mathbf{A} mount	Recovery	Limits
Trifluorotoluene (TFT)			2.04	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	70 - 130

Method Blank (1)

QC Batch: 93713

QC Batch: 93713 Prep Batch: 79440 Date Analyzed: 2012-08-08 QC Preparation: 2012-08-07 Analyzed By: CW

Prepared By: CW

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits _
n-Tricosane			130	mg/Kg	1	100	130	52 - 160.8

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Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 14 of 23

Eddy Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

93635

Date Analyzed:

2012-08-05

Analyzed By: AR.

Prep Batch:

79384

QC Preparation: 2012-08-05 Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			2500	mg/Kg	1	2500	< 3.85	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2570	mg/Kg	1	2500	< 3.85	103	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 93636

79384

Date Analyzed:

2012-08-05

Analyzed By: AR. Prepared By: AR.

QC Preparation: 2012-08-05

LCS Spike Matrix Rec. Param \mathbf{C} Dil. Limit Result Units Amount Result Rec. Chloride 85 - 115 2400 mg/Kg 2500 < 3.85

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			Spike	Matrix		$\operatorname{Rec.}$		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2480	mg/Kg	1	2500	< 3.85	99	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:

93704 79433

Date Analyzed:

2012-08-07

Analyzed By: ZLM

Prepared By: ZLM

QC Preparation: 2012-08-07

114-6401475

Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 15 of 23 Eddy Co., NM

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	$^{\mathrm{C}}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	1.81	mg/Kg	1	2.00	< 0.00365	90	75.4 - 120
Toluene		1	1.75	mg/Kg	1	2.00	< 0.00816	88	74.9 - 120
Ethylbenzene		ı	1.72	mg/Kg	1	2.00	< 0.00560	86	78.1 - 120
Xylene		1	5.18	mg/Kg	1	6.00	< 0.00460	86	77.3 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	\mathbf{Limit}
Benzene		1	1.76	mg/Kg	1	2.00	< 0.00365	88	75.4 - 120	3	20
Toluene		1	1.72	mg/Kg	1	2.00	< 0.00816	86	74.9 - 120	2	20
Ethylbenzene		1	1.73	mg/Kg	1	2.00	< 0.00560	86	78.1 - 120	1	20
Xylene		1	5.19	mg/Kg	1	6.00	< 0.00460	86	77.3 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.73	1.66	mg/Kg	1	2.00	86	83	70 - 130
4-Bromofluorobenzene (4-BFB)	1.81	1.74	mg/Kg	1	2.00	90	87	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93705 Prep Batch: 79433 Date Analyzed: QC Preparation: 2012-08-07

2012-08-07

Analyzed By: ZLM Prepared By: ZLM

LCS Spike Matrix Rec. Param F Result \mathbf{C} Result Units Dil. Amount Rec. Limit mg/Kg **GRO** 19.2 20.0 1.14 96 68.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		1	20.1	mg/Kg	1	20.0	1.14	100	68.9 - 120	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.93	2.02	mg/Kg	1	2.00	96	101	70 - 130
4-Bromofluorobenzene (4-BFB)	2.09	1.91	mg/Kg	1	2.00	104	96	70 - 130

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Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 16 of 23

Eddy Co., NM

Laboratory Control Spike (LCS-1)

QC Batch:

93713

Date Analyzed:

2012-08-08

Analyzed By: CW

Prep Batch: 79440

QC Preparation: 2012-08-07

Prepared By:

CW

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		2	292	mg/Kg	1	250	<14.5	117	62 - 128.3

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		2	307	mg/Kg	1	250	<14.5	123	62 - 128.3	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	142	150	mg/Kg	1	100	142	150	58.6 - 149.6

Matrix Spike (MS-1)

Spiked Sample: 305712

QC Batch:

93635

Date Analyzed:

2012-08-05

Analyzed By: AR

Prep Batch:

79384

QC Preparation: 2012-08-05 Prepared By: AR

7.77.			1	•			2 - 1 - 1		
			MS			Spike	Matrix		$\mathrm{Rec}.$
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			2690	mg/Kg	5	2500	81.9	104	79.4 - 120.6

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2760	mg/Kg	5	2500	81.9	107	79.4 - 120.6	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 305732

QC Batch:

93636

Date Analyzed:

2012-08-05

Analyzed By: AR

Prep Batch: 79384

QC Preparation: 2012-08-05

Prepared By: AR.

114-6401475

Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 17 of 23 Eddy Co., NM

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			7320	mg/Kg	10	2500	4820	100	79.4 - 120.6

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	\mathbf{A} mount	Result	Rec.	Limit	RPD	$_{ m Limit}$
Chloride			7530	mg/Kg	10	2500	4820	108	79.4 - 120.6	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 305596

QC Batch:

93704

Date Analyzed:

2012-08-07

Analyzed By: ZLM

Prep Batch: 79433

QC Preparation: 2012-08-07

Prepared By: ZLM

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	${f Amount}$	Result	Rec.	\mathbf{Limit}
Benzene		1	1.80	mg/Kg	1	2.00	< 0.00365	90	37.6 - 142
Toluene		1	1.91	mg/Kg	1	2.00	< 0.00816	96	38.6 - 153
Ethylbenzene		1	2.04	mg/Kg	1	2.00	< 0.00560	102	36.7 - 172
Xylene		1	6.10	mg/Kg	1	6.00	< 0.00460	102	36.7 - 173

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

- m			MSD_{-}			Spike	Matrix		Rec.		RPD_{-}
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	1.64	mg/Kg	1	2.00	< 0.00365	82	37.6 - 142	9	20
Toluene		1	1.72	mg/Kg	1	2.00	< 0.00816	86	38.6 - 153	10	20
Ethylbenzene		1	1.83	mg/Kg	1	2.00	< 0.00560	92	36.7 - 172	11	20
Xylene		1	5.50	mg/Kg	1	6.00	< 0.00460	92	36.7 - 173	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.93	1.75	mg/Kg	1	2	96	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.81	mg/Kg	1	2	97	90	70 - 130

Matrix Spike (MS-1) Spiked Sample: 305596

QC Batch: 93705 Prep Batch: 79433 Date Analyzed:

2012-08-07 QC Preparation: 2012-08-07 Analyzed By: ZLM Prepared By: ZLM

114-6401475

Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 18 of 23 Eddy Co., NM

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO		1	14.9	mg/Kg	1	20.0	< 0.359	74	68.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		1	15.6	mg/Kg	1	20.0	< 0.359	78	68.9 - 120	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.77	1.75	mg/Kg	1	2	88	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	2.11	mg/Kg	1	2	99	106	70 - 130

Matrix Spike (MS-1) Spiked Sample: 305604

QC Batch: Prep Batch: 79440

93713

Date Analyzed:

2012-08-08

Analyzed By: CW

Prepared By: CW

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$
DRO		2	943	mg/Kg	1	250	751	77	45.5 - 127

QC Preparation: 2012-08-07

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		2	1010	mg/Kg	1	250	751	104	45.5 - 127	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MS	MSD			Spike	MS	MSD	Rec .
Surrogate			Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	Qar	Qar	158	169	mg/Kg	1	100	158	169	45.4 - 145.8

114-6401475

Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 19 of 23 Eddy Co., NM

Calibration Standards

Standard (CCV-1)

QC Batch: 93635

Date Analyzed: 2012-08-05

Analyzed By: AR.

				$rac{ ext{CCVs}}{ ext{True}}$	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.5	100	85 - 115	2012-08-05

Standard (CCV-2)

QC Batch: 93635

Date Analyzed: 2012-08-05

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	$\operatorname{Conc.}$	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-08-05

Standard (CCV-1)

QC Batch: 93636

Date Analyzed: 2012-08-05

Analyzed By: AR.

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-08-05

Standard (CCV-2)

QC Batch: 93636

Date Analyzed: 2012-08-05

Analyzed By: AR.

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.7	100	85 - 115	2012-08-05

114 - 6401475

Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 20 of 23 Eddy Co., NM

Standard (CCV-1)

QC Batch: 93704

Date Analyzed: 2012-08-07

Analyzed By: ZLM

				CCVs True	${ m CCVs} \ { m Found}$	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/kg	0.100	0.0928	93	80 - 120	2012-08-07
Toluene		1	mg/kg	0.100	0.0906	91	80 - 120	2012-08-07
Ethylbenzene		1	mg/kg	0.100	0.0891	89	80 - 120	2012-08-07
Xylene		1	mg/kg	0.300	0.268	89	80 - 120	2012-08-07

Standard (CCV-2)

QC Batch: 93704

Date Analyzed: 2012-08-07

Analyzed By: ZLM

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	\mathbf{U} nits	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/kg	0.100	0.0884	88	80 - 120	2012-08-07
Toluene		1	mg/kg	0.100	0.0860	86	80 - 120	2012-08-07
Ethylbenzene		1	mg/kg	0.100	0.0857	86	80 - 120	2012-08-07
Xylene		1	mg/kg	0.300	0.254	85	80 - 120	2012-08-07

Standard (CCV-3)

QC Batch: 93704

Date Analyzed: 2012-08-07

Analyzed By: ZLM

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	$_{ m Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	ıng/kg	0.100	0.0842	84	80 - 120	2012-08-07
Toluene		1	mg/kg	0.100	0.0816	82	80 - 120	2012-08-07
Ethylbenzene		1	mg/kg	0.100	0.0826	83	80 - 120	2012-08-07
Xylene		1	mg/kg	0.300	0.246	82	80 - 120	2012-08-07

Standard (CCV-1)

QC Batch: 93705

Date Analyzed: 2012-08-07

Analyzed By: ZLM

			C	OG/Folk Fe	Eddy Co., NM			
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.06	106	80 - 120	2012-08-07
Standard (CC	CV-2)							
QC Batch: 93	705		Date A	Analyzed: 2	2012-08-07		Analyz	ed By: ZLM
D	Dlag	Cert	Units	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
$\frac{\text{Param}}{\text{GRO}}$	Flag	Cert 1	mg/Kg	Conc. 1.00	Conc. 0.827	Recovery 83	Limits 80 - 120	Analyzed 2012-08-07
`	,							
QC Batch: 93' Param	,	Cert	Units	analyzed: 2 CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Analyz Percent Recovery Limits	Date Analyzed
QC Batch: 93' Param	705	Cert		CCVs True	CCVs Found	Percent	Percent Recovery	Date Analyzed
QC Batch: 93° Param GRO	705 Flag		Units	CCVs True Conc.	CCVs Found Conc.	Percent Recovery	Percent Recovery Limits	Date Analyzed 2012-08-07
QC Batch: 93° Param GRO Standard (CC	Flag		Units mg/Kg	CCVs True Conc. 1.00	CCVs Found Conc.	Percent Recovery	Percent Recovery Limits 80 - 120	Date Analyzed 2012-08-07
Standard (CC QC Batch: 93° Param GRO Standard (CC QC Batch: 93° Param	Flag		Units mg/Kg	CCVs True Conc. 1.00	CCVs Found Conc. 0.860	Percent Recovery	Percent Recovery Limits 80 - 120	Date Analyzed 2012-08-07

Date Analyzed: 2012-08-08

Report Date:-August 10, 2012 --

Standard (CCV-2)

QC Batch: 93713

Work-Order: 12080310 Page Number: 21 of 23

Analyzed By: CW

114 - 6401475

Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 22 of 23

Eddy Co., NM

				CCVs True	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	$\operatorname{Conc.}$	Recovery	Limits	${f Analyzed}$
DRO		2	mg/Kg	250	276	110	80 - 120	2012-08-08

Standard (CCV-3)

QC Batch: 93713

Date Analyzed: 2012-08-08

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		2	mg/Kg	250	280	112	80 - 120	2012-08-08

Work Order: 12080310 COG/Folk Federal Flow Lines Page Number: 23 of 23

Eddy Co., NM

Report Date: August 10, 2012 114-6401475

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	Lubbock
2	NELAP	T104704392-12-4	Midland

Standard Flags

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
- U The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.

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							1910 N. Bi Midland, T	A TECH ig Spring St. Fexas 79705 59 • Fax (432) 682-3946								05 (Ext. to C35)	Cd Cr Pb Hg Se	Pd Hg										TDS		
CLIENT NAM	IE: OG						SITE MANA	GER: Tavany		ERS	P		ERVA			TX1005	Ba	Ba			0/624	8270/625						S, PH,		
PROJECT NO.) .:	25		PF	ROJ	EC1) .	- CONTAIN						2 Mg0.	als Ag As	als Ag As	lles Votafiles		8240/826	ni. Vol. 82	809/	80	8C.	(Air)	stos)	ns/Cation		
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CLIENT NAM	1E: O <i>G</i>					SITE MANAGE	ER: TAVANA	NERS			ESEF MET	ITAVI GOH	/E	TX1005		Ba			60/624	8270/625						IS, DH,			
PROJECT NO	0.:		PR	OJI	ECT		dy cu ra.	CONTAIN	(N/A					GE S		ils Ag As	les	Volatiles	8240/82		809/	80	60.	(Air)	1	ns/Cations,			
LAB I.D. NUMBER	DATE 20 /2	TIME	MATRIX	COMP.	GRAB	SAMP	LE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	NONE	алск фол	PH 801	PAH 8270	TCLP Meta	TCLP Volati	TCLP Semi Volatiles	GC.MS Vol.	GC.MS Semi. Vol. 8270/625	PCB's 8080	Pest. 808/6	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/			
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Run deeper smaples of benzano exceeds 10 mg/m on total ATEX exceeds should

Page-Number: 1 of 2

Summary Report

Ike Tavarez

Tetra Tech

1910 N. Big Spring Street

Midland, TX 79705

Report Date: October 19, 2012

Work Order: 12101104

Project Location: Eddy Co., NM

Project Name:

COG/Folk Federal Flow Lines

Project Number: 114-6401475

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
311573	CS-1 Bottom 2'	soil	2012-09-25	00:00	2012-10-11
311574	CS-1 North Sidewall	soil	2012-09-25	00:00	2012-10-11
311575	CS-1 East Sidewall	soil	2012-09-25	00:00	2012-10-11
311576	CS-1 West Sidewall	soil	2012-09-25	00:00	2012-10-11
311577	CS-2 Bottom 5'	soil	2012-09-25	00:00	2012-10-11
311578	CS-2 North Sidewall	soil	2012-09-25	00:00	2012-10-11
-311579	====CS=2=East-Sidewall=====	soi]	2012-09-25===	====00:00====	2012-10-11
311580	CS-2 South Sidewall	soil	2012-09-25	00:00	2012-10-11
311581	CS-2 West Sidewall	soil	2012-09-25	00:00	2012-10-11
311582	T-1 6' (CS-2) AH-3	soil	2012-09-21	00:00	2012-10-11

Sample: 311573 - CS-1 Bottom 2'

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 311574 - CS-1 North Sidewall

Param	Flag	Result	\mathbf{Units}	RL
Chloride		<20.0	mg/Kg	4

Sample: 311575 - CS-1 East Sidewall

Report Date: Octo	ober 19, 2012	Work Order: 12101104]	Page Number: 2 of 2
Param	Flag	Result	Units	RL
Chloride		115	mg/Kg	4
Sample: 311576	- CS-1 West Sidewall			
Param	Flag	Result	Units	RL
Chloride		43.0	mg/Kg	4
Sample: 311577	- CS-2 Bottom 5'			
Param	Flag	Result	Units	RL
Chloride		277	mg/Kg	4
_	- CS-2 North Sidewall		TT	Di
Param Chloride	Flag	Result 167	Units mg/Kg	$\frac{RL}{4}$
Sample: 311579 Param Chloride	- CS-2 East Sidewall Flag	Result	Units .mg/Kg	RL 4
-	- CS-2 South Sidewall			D.I.
Param Chloride	Flag	Result <20.0	Units mg/Kg	$\frac{RL}{4}$
	- CS-2 West Sidewall			
Param	Flag	Result	Units	RL
Chloride		291	mg/Kg	4
Sample: 311582	- T-1 6' (CS-2) AH-3			
Param	Flag	Result	Units	RL
Chloride		80.7	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100

Texas 79424 El Paso. Texas 79922 Midland. Texas 79703 Carroldon, Texas 75006 806-794-1296 915-585-3443

FAX 915-585-4944 FAX 432 689 8313

432 689 6301

972-242-7750

E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

NELAP DoD LELAP WBE NCTRCA DBE Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez

Tetra Tech

1910 N. Big Spring Street Midland, TX, 79705

Report Date: October 19, 2012

Work Order:

מוצים בריכון התיכון התיכון בריכון בריכון התיכון התיכון התיכון התיכון התיכון התיכון

12101104

Project Location: Eddy Co., NM

Project Name:

COG/Folk Federal Flow Lines

Project Number: 114-6401475

Enclosed are the	ne Analytical Report and Quali	ty Control Report i	for the following sample	e(s) submitted to T	raceAnalysis, Inc.
			Date	Time	Date
Sample .	Description	Matrix	Taken	Taken	Received
311573	CS-1 Bottom 2'	soil	2012-09-25	00:00	2012-10-11
311574	CS-1 North Sidewall	soil	2012-09-25	00:00	2012-10-11
311575	CS-1 East Sidewall	soil	2012-09-25	00:00	2012-10-11
311576	CS-1 West Sidewall	soil	2012-09-25	00:00	2012-10-11
311577	CS-2 Bottom 5'	soil	2012-09-25	00:00	2012-10-11
311578	CS-2 North Sidewall	soil	2012-09-25	00:00	2012-10-11
311579	CS-2 East Sidewall	soil	2012-09-25	00:00	2012-10-11
311580	CS-2 South Sidewall	soil	2012-09-25	00:00	2012-10-11
311581	CS-2 West Sidewall	soil	2012-09-25	00:00	2012-10-11
311582	T-1 6' (CS-2) AH-3	soil	2012-09-21	00:00	2012-10-11

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 12 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael april

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

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Sample 311573 (CS-1 Bottom 2')	5
Sample 311574 (CS-1 North Sidewall)	5
Sample 311575 (CS-1 East Sidewall)	5
Sample 311576 (CS-1 West Sidewall)	
Sample 311577 (CS-2 Bottom 5')	6
Sample 311578 (CS-2 North Sidewall)	
Sample 311579 (CS-2 East Sidewall)	
Sample 311580 (CS-2 South Sidewall)	
Sample 311581 (CS-2 West Sidewall)	
Sample 311582 (T-1 6' (CS-2) AH-3)	
Method Blanks	8
QC Batch 95848 - Method Blank (1)	-
QC Batch 95849 - Method Blank (1)	0
Laboratory Control Spikes	9
QC Batch 95848 - LCS (1)	
QC Batch 95849 - LCS (1)	
QC Batch 95848 - MS (1)	9
QC Batch 95849 - MS (1)	10
Calibration Standards	11
QC Batch 95848 - CCV (1)	11.
QC Batch 95848 - CCV (2)	
QC Batch 95849 - CCV (1)	
QC Batch 95849 - CCV (2)	
QC Dated cools	
Appendix	12
Report Definitions	
Laboratory Certifications	
Standard Flags	12
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Case Narrative

Samples for project COG/Folk Federal Flow Lines were received by TraceAnalysis, Inc. on 2012-10-11 and assigned to work order 12101104. Samples for work order 12101104 were received intact without headspace and at a temperature of 2.1 C.

Samples were analyzed for the following tests using their respective methods.

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	81144	2012-10-16 at 11:19	95848	2012-10-17 at 15:49
Chloride (Titration)	SM 4500-Cl B	81144	2012-10-16 at 11:19	95849	2012-10-17 at 15:49

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12101104 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Page 4 of 12

Report Date: October 19, 2012 114-6401475

Work Order: 12101104 COG/Folk Federal Flow Lines Page Number: 5 of 12 Eddy Co., NM

Analytical Report

Sample: 311573 - CS-1 Bottom 2'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

95848

Date Analyzed:

2012-10-17

Analyzed By: AR.

Prep Batch: 81144

Sample Preparation: 2012-10-16 Prepared By:

AR.

RL

Parameter Result Units Dilution RLFlag Cert Chloride <20.0 mg/Kg 4.005

Sample: 311574 - CS-1 North Sidewall

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

95848

Date Analyzed:

2012-10-17

Analyzed By: AR.

Prep Batch: 81144

Sample Preparation:

2012-10-16

Prepared By: AR

RL

Parameter	Flag	Cert	Result	Units	Dilution	
Chloride	U		< 20.0	mg/Kg	5	4.00

Sample: 311575 - CS-1 East Sidewall

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

95848

Date Analyzed:

2012-10-17

Analyzed By: ARAR

Prep Batch: 81144

Sample Preparation: 2012-10-16 Prepared By:

RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			115	mg/Kg	5	4.00

Report Date: October 19, 2012 - -- Work Order: 12101104 Page Number: 6 of 12 114-6401475 COG/Folk Federal Flow Lines Eddy Co., NM Sample: 311576 - CS-1 West Sidewall Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 95848 Date Analyzed: Analyzed By: 2012-10-17 AR. Prep Batch: 81144 Sample Preparation: 2012-10-16 Prepared By: AR. RLParameter Flag Cert Result Units Dilution RLChloride 43.0 mg/Kg 4.005 Sample: 311577 - CS-2 Bottom 5' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 95848 Date Analyzed: 2012-10-17 Analyzed By: AR. Prep Batch: 81144 Sample Preparation: 2012-10-16 Prepared By: AR. RLParameter Flag Cert Result Units Dilution RLChloride 277mg/Kg 5 4.00

Analysis:	Chloride (Titration)		Analyti	ical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848		Date A	.nalyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144		Sample	Preparation:	2012-10-16	Prepared By:	AR
				RL			
Parameter	Flag	5	Cert	Result	Units	Dilution	RL
Chloride				167	mg/Kg	5	4.00

Sample: 311579 - CS-2 East Sidewall

Sample: 311578 - CS-2 North Sidewall

Midland

Laboratory:

Laboratory:	Midland .				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR.
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

Report Date: October 19, 2012 114-6401475

Work Order: 12101104 COG/Folk Federal Flow Lines Page Number: 7 of 12 Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	U		< 20.0	mg/Kg	5	4.00

Sample: 311580 - CS-2 South Sidewall

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 95848 Prep Batch: 81144 Analytical Method:

Date Analyzed: 2012-10-17 Sample Preparation: 2012-10-16

Prep Method: N/A SM 4500-Cl B Analyzed By: AR. Prepared By: AR.

RLParameter Cert Result Units Dilution RLFlag Chloride <20.0 mg/Kg 5 4.00

Sample: 311581 - CS-2 West Sidewall

Laboratory: Midland

Prep Batch:

Analysis: Chloride (Titration) QC Batch: 95848 81144

Analytical Method: Date Analyzed: Sample Preparation: SM 4500-Cl B 2012-10-17 2012-10-16

Prep Method: N/A Analyzed By: AR. Prepared By: AR.

RLParameter RLFlag Cert Result Units Dilution Chloride 291 mg/Kg 4.00

Sample: 311582 - T-1 6' (CS-2) AH-3

Laboratory: Midland

Prep Batch:

Analysis: Chloride (Titration) QC Batch: 95849

81144

Date Analyzed: Sample Preparation:

SM 4500-Cl B 2012-10-17 2012-10-16

Prep Method: N/AAnalyzed By: AR. Prepared By: AR

RLParameter Flag Cert Result Units Dilution RL80.7 Chloride mg/Kg 5 4.00

Analytical Method:

Report Date: October 19, 2012

114-6401475

Work Order: 12101104 COG/Folk Federal Flow Lines Page Number: 8 of 12 Eddy Co., NM

Method Blanks

Method Blank (1)

QC Batch: 95848

QC Batch: 95848 Date Analyzed:

2012-10-17

Analyzed By: AR.

Prep Batch: 81144

QC Preparation: 2012-10-16 Prepared By: AR.

Parameter Flag Cert

Result Units mg/Kg < 3.85

MDL

RL4

Method Blank (1)

QC Batch: 95849

QC Batch:

Chloride

95849

Date Analyzed: 2012-10-17 Analyzed By: AR

Prep Batch: 81144 QC Preparation: 2012-10-16 Prepared By: AR

MDL Result Units RLParameter Flag Cert < 3.85 mg/Kg Chloride

Report Date: October 19, 2012 114-6401475

---- Work Order: 12101104 COG/Folk Federal Flow Lines Page Number: 9 of 12 Eddy Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

95848

Date Analyzed:

2012-10-17

Analyzed By: AR

Prepared By: AR

Prep Batch: 81144

QC Preparation:

2012-10-16

			LCS			\mathbf{Spike}	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	${f A}{f mount}$	Result	Rec.	${f Limit}$
Chloride			2630	mg/Kg	1	2500	< 3.85	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			\mathbf{Spike}	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2580	mg/Kg	1	2500	< 3.85	103	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

95849

Date Analyzed:

2012-10-17

Analyzed By: AR.

Prep Batch:

81144

QC Preparation:

2012-10-16

Prepared By:

		LCS			Spike	Matrix		Rec.
Param	F	C Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
Chloride		2710	mg/Kg	1	2500	< 3.85	108	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	-		2630	mg/Kg	1	2500	< 3.85	105	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 311581

OC Batch: 95848 Prep Batch: 81144

Date Analyzed: 2012-10-17 QC Preparation: 2012-10-16 Analyzed By: AR

Prepared By: AR Report Date: October 19, 2012

114-6401475

Work Order: 12101104 COG/Folk Federal Flow Lines Page Number: 10 of 12

Eddy Co., NM

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			2750	mg/Kg	5	2500	291	98	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	Limit
Chloride			2830	mg/Kg	5	2500	291	102	78.9 - 121	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 311639

QC Batch:

95849

Date Analyzed:

2012-10-17

Analyzed By: AR

Prep Batch: 81144

QC Preparation: 2012-10-16

Prepared By: AR.

			MS			Spike	Matrix		Rec.
Param	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Chloride			3430	mg/Kg	5	2500	954	99	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			3280	mg/Kg	5	2500	954	93	78.9 - 121	4	20

Percent-recovery-is-based-on-the-spike-result.-RPD-is-based-on-the-spike-and-spike-duplicate-result:-

Report-Date: October 19, 2012 - 114-6401475

Work Order: 12101104 COG/Folk Federal Flow Lines Page Number: 11 of 12 Eddy Co., NM

Calibration Standards

Standard (C	CCV-1	١
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QC Batch: 95848

Date Analyzed: 2012-10-17

Analyzed By: AR

				$rac{ ext{CCVs}}{ ext{True}}$	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-10-17

Standard (CCV-2)

QC Batch: 95848

Date Analyzed: 2012-10-17

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				${ m True}$	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2012-10-17

Standard-(CCV-1)

QC Batch: 95849

Date Analyzed: 2012-10-17

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	${ m Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-10-17

Standard (CCV-2)

QC Batch: 95849

Date Analyzed: 2012-10-17

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.6	100	85 - 115	2012-10-17

Chain of Cus

Analysis Request of Chain of Custody Record						-	PAGE: / OF: /																						
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PROJECT N	0.: ~(0147	5	PROJECT NAME: COto/ Folk Fed Flow line Eddy G, NM				CONTA	(N)					BTEX 8021B TPH 8015 MOD. TX100 PAH 8270 PAH 8270 CCLP Metals Ag As Ba Co TCLP Volatiles TCLP Semi Volatiles GC.MS Vol. 8240/8260/624 GC.MS Semi Vol. 8270/625 PCB's 8080/608 Pest. 808/608 Chloride> Gamma Spec. Alpha Beta (Air) PLM (Asbestos)												stos)	200			
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	Eddy C, Nig Sample Identification	NUMBER OF CONTAINERS	FILTERED (Y/N)	된	HN03	ICE	NONE		TPH 8015	, 99,	RCRA Metals Ag	TCLP Metals Ag	TCLP Volatiles	RCI	GC.MS Vol.	GC.MS Sen	PCB's 8080/608	Pest. 808/608 Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos) Major Anjons/Catjons off TDS	major cum-		
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511						15-Z Bottom 5'													$oldsymbol{\perp}$				Ш			\perp	\perp	\coprod	
578						05-2 North Sidewall					Ц							<u> </u>					\			_	$oldsymbol{\perp}$	Ц	
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