SITE INFORMATION Report Type: Closure Report General Site Information: Site: Folk Federal #2 Tank Battery COG Operating LLC Company: Section, Township and Range Unit H Sec. 17 T-17-S R-29-E Lease Number: API-30-015-20198 County: **Eddy County** GPS: 32.83619° N 104.09072° W Surface Owner: Federal Mineral Owner: Intersection of Hwy 82 and CR-211 west of Loco Hills, travel North 1.4 mi on CR-211. turn right Directions: 0.2 mi to location on left. Release Data: Date Released: 3/5/2011 5/5/2009 Type Release: Produced Water Oil Source of Contamination: Tank overflowed transport overflowed Fluid Released: NMOCD ARTESIA 180 bbls 192 bbls Fluids Recovered: 160 bbls 14 bbls Official Communication: Name: Pat Ellis lke 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) 631-0348 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

🛴 Acceptable Soil RRAL (mg/kg) 🧠

Total BTEX

50

TPH

1.000

Benzene

10



October 16, 2012

Mr. Mike Bratcher Environmental Engineer Specialist NMOCD District 2 811 S. First Street Artesia, New Mexico 88210



Re: Closure Report for the COG Operating LLC., Folk Federal Tank Battery, located 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 Tank Battery located Unit H, Section 17, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83619°, W 104.09072°. The site location is shown on Figures 1 and 2.

Previous Release

On May 5, 2009, a released of oil occurred at the facility. Tetra Tech assessed and performed the soil remediation at the site. However, the area of AH-1 showed chloride concentrations, which appeared to be historical and performed an assessment on this area. Tetra Tech submitted the Work Plan, dated March 1, 2011 for approval. The work plan had not been implemented at the site. The recent spill had migrated on top of the previous release footprint. The submitted Work Plan is enclosed in Appendix A.

Background

On March 5, 2011, the water tank overflowed causing the fluids to migrate outside the facility berm impacting an area approximately 60' x 60' onto the facility pad and on and across the lease road pooling in a native low lying pasture area measuring approximately 45' x 120'. The initial C-141



form is enclosed in Appendix B.

Groundwater

No water wells were listed within Section 17. The United States Geological Survey (USGS) database did show a well in Section 22, Township 17 South, Range 29 East with a depth of 80' below surface. The Geology and Groundwater Resources of Eddy County, New Mexico showed a well in Section 22, Township 17 South, Range 29 East with a reported depth of 79.7' below surface. According to the NMOCD groundwater map, the depth to groundwater in the area is approximately 75' to 100' below surface. The groundwater data is included in Appendix C.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the 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 on the regional groundwater data, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Assessment and Analytical Results

On May 5, 2011, Tetra Tech personnel inspected and sampled the spill area. A total of eight (8) auger holes (AH-1 through AH-8) 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 D. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all submitted samples were below RRAL for TPH and BTEX. Elevated chloride concentrations were detected and not defined at all of the sample locations. Deeper samples could not be collected due to a dense formation. On the edge of the lease road, auger holes (AH-4 and AH-5) showed chloride concentrations at 0-1' of 1,060 mg/kg and 2,870 mg/kg, respectively.



On June 28, 2011, Tetra Tech personnel were on location to supervise the installation of soil borings utilizing an air-rotary drilling rig to define the extent of the chloride impact, with the exception of AH-4 and AH-5 (lease road). A total of six (6) soil borings (SB-1 through SB-6) were installed with soil samples collected down to depths of 30.0' below surface. The soil boring results are shown in Table 1.

Referring to Table 1, the chloride impact was vertically defined and declined with depth. On the pad area, a deeper impact was found in the area of AH-1 (BH-1), declining to 1,540 mg/kg at 15.0' and 237 mg/kg at 20.0'. This impacted area appears to be part of the previous spill footprint.

A shallow chloride impact was detected at AH-2 (BH-2) 0-1' below surface. Chloride spikes at 5.0' (1,250 mg/kg) and 10.0' (1,170 mg/kg) were detected in the subsurface soils and appears to be cross-contaminated from the upper soils. The area of AH-3 (BH-3), located near the Agave Pipeline, showed a significant decline at 10.0' and 15.0' below surface. Auger holes AH-6 (BH-6), AH-7 (BH-7) and AH-8 (BH-8) detected elevated chloride concentrations from surface to 3.0' below surface which declined with depth.

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. The final excavation depths of the soil remediation were met as stated in the approved work plan. Approximately 1,400 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

According to the work plan submitted on March 1, 2011, the excavated area of AH-1 measured approximately 30' x 40' at a depth of 4.0' below surface. Once completed, the excavation bottom was capped with a 40 mil liner then backfilled with clean material to surface grade.

The areas of AH-2, AH-3, AH-6, AH-7 and AH-8 were excavated to depths of 4.0' below surface. Due to the close proximity of the Agave and Transwestern Pipelines, a surficial scrape was performed in the areas of AH-4 and AH-5.



Once excavated, Tetra Tech collected confirmation samples from the area of CS-1 (SB-4), CS-2 (SB-5), CS-3 (SB-6), CS-4 (SB-2) and CS-6 (SB-3). In addition, soil samples were collected on the lease road CS-5 (road) for evaluation. Confirmation samples were not collected at the area from the previous spill (area of AH-1). The confirmation sampling results are shown in Table 2.

Referring to Table 2, the confirmation sample results did not show a significant chloride impact to the soils and do not appear to be an environmental concern. Based on the field data, a verbal approval was given by the BLM to backfill the excavated areas with clean material to surface grade. As requested by the BLM, a dike was constructed along the south side of the lease road to contain future releases from impacting the pasture.

Based on the remediation activities performed at this location, COG requests closure for this site. The two C-141's (Finals) are included in Appendix B. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

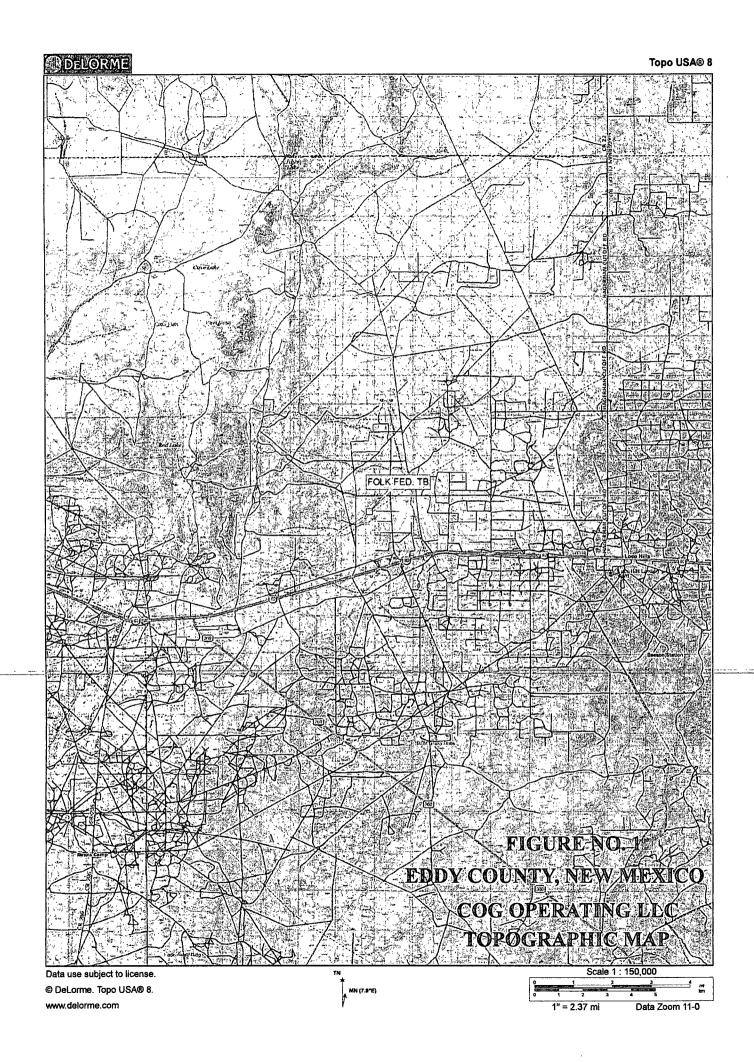
Respectfully submitted,

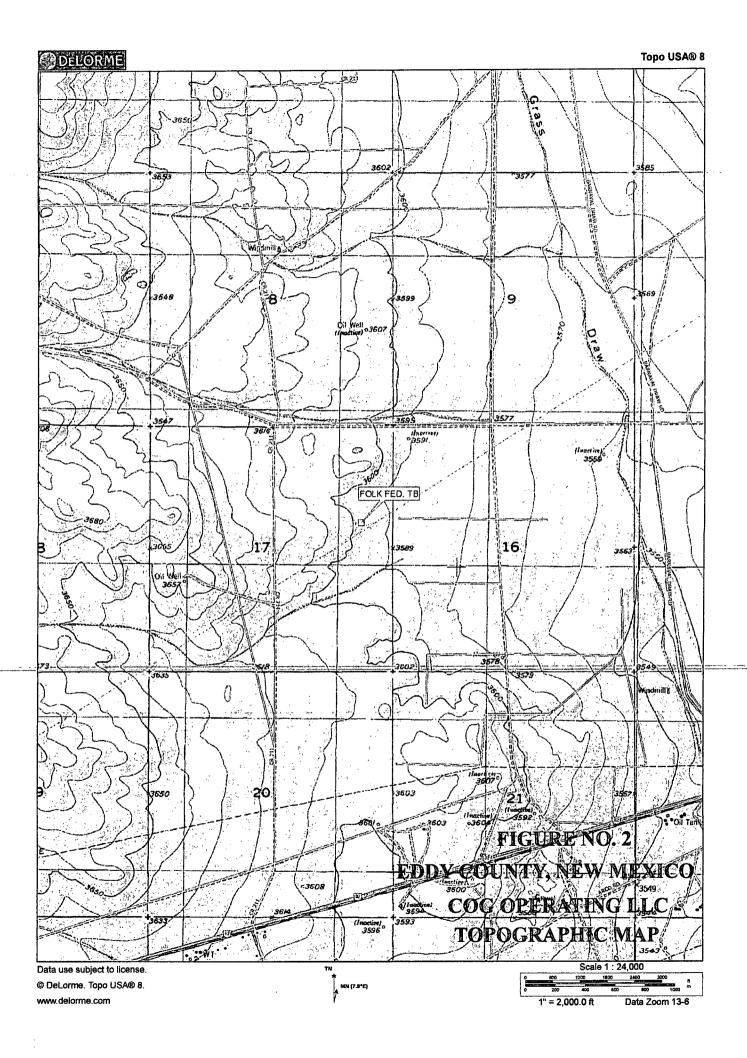
TETRA/TECH

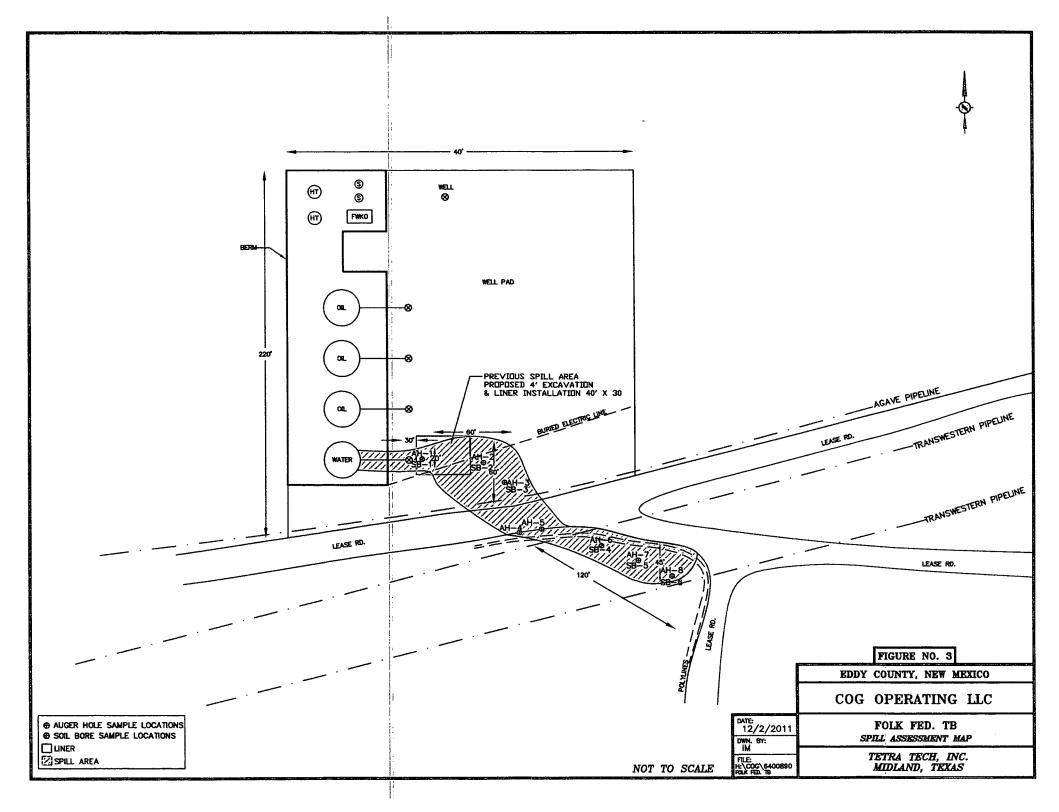
Ike Tavarez, PG Project Manager

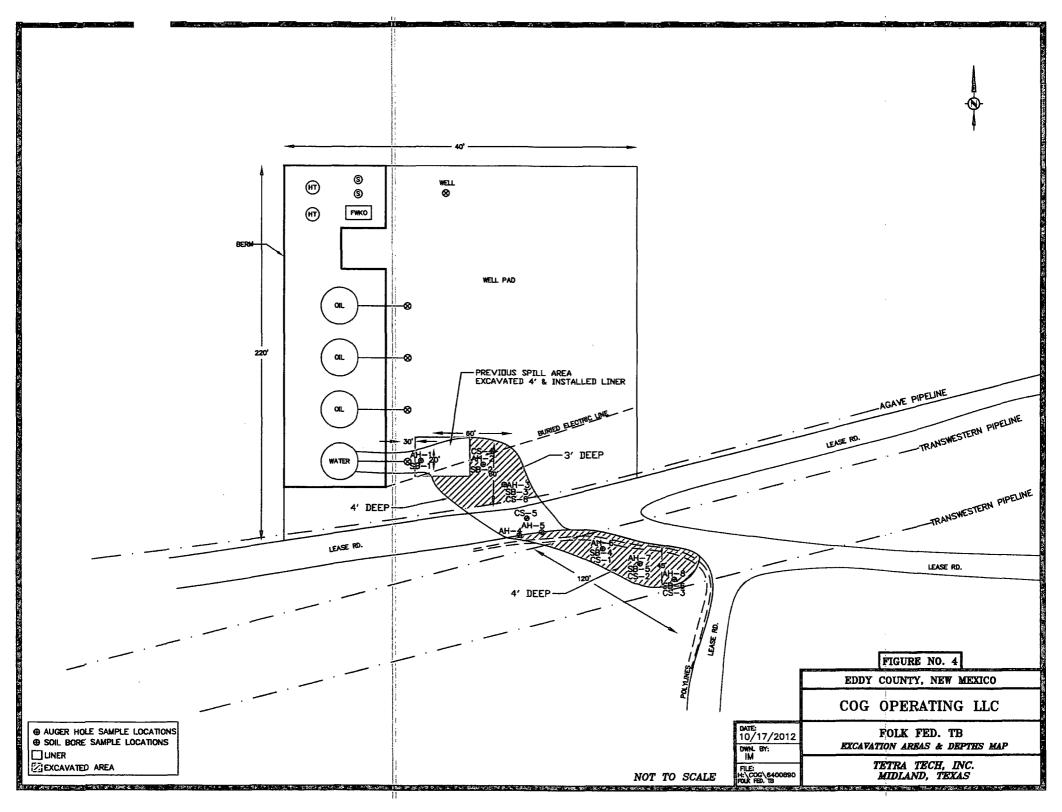
cc: Pat Ellis - COG cc: Terry Gregston - BLM

Figures









Tables

Table 1 COG Operating LLC. FOLK FEDERAL TANK BATTERY Eddy County, New Mexico

Sample		Sample	Soil	Status	Т	PH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	5/11/2011	0-0.5'		X	3.58	<50.0	3.58	<0.0200	0.133	<0.0200	₹0.0200	12,400
SB-1	6/28/2011	0-1'		X	_		-	-	- : .	-	-	4,300
		3'		X	-	- Market	, est	•	- t-		-	3,410
		5'	Х		-	-	-	-	-	-	-	2,380
		7'	Х		-	-		-	-	-	-	3,000
		10'	Χ		-	-	••	**	-	-	-	3,590
		15'	X		-	-	-	Ma.	-	-	-	1,540
		20'	X		-	-	-	•	-	-	-	237
		25'	X		-	••	-	•	-	-	-	<200
		30'	Х		-	-	-	-	-	-	<u>-</u>	207
AH-2	5/11/2011	0-0.5'		X	<2.00	<50.0	<50.0,	-		-	-	19,900
SB-2	6/28/2011	0-1'		X	-	- <u>\$</u>	j - j//	- ·	-	-	-	10,400
		3'		X	-			•	•	-	-	566
		5'	Х		-	-	••	-	•	-	_	1,250
		7'	Х		-	•	-	-	-	-	-	926
		10'	Х		-	-	-	-	-	-	-	1,170
		15'	Х		-	-	-	-	-	-	. -	343
		20'	Х		-	-	-	-	-	-	-	251
		25'	Х		-	-	-	-	-	-	-	<200
		30'	Х		-	-		-	-	-	-	<200

Table 1 COG Operating LLC. FOLK FEDERAL TANK BATTERY Eddy County, New Mexico

Sample		Sample	Soil	Status	Т	PH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-3	5/11/2011	0-1'		X	3.44	<50.0.	3.44	<0.0200	<0.0200	<0.0200	<0.0200	8,590
		1-1.5'		X		- ,	- · · · ·	-	-	- ,	-	8,260
		2-2.5'	. J	X	-	-	=		-	-	-	3,540
SB-3	6/28/2011	0-1'		X		-	*	•	- 1	-	## -	326
		3'		X	-	-	-	-	-	-	100 - 100 -	4,240
		5'	Х		-	-	-	-	-	-	-	2,710
		7'	Х		-	-	-	-	-	-	-	1,760
		10'	Х		-	-	-	-	-	-	. -	675
		15'	Х		-	-	-	-	-	-	-	316
		20'	X		<u>-</u>	-	-	-	-	-	_	268
		25'	Х		-	-	-	-	-		-	230
		30'	Х		-	-	-	-	-		-	396
AH-4	5/11/2011	0-1'	Х		56.3	473	529.3	<0.100	<0.100	<0.100	<0.100	1,060
AH-5	5/11/2011	0-1'	Х	* 1	<2.00	<50.0	<50.0	-	-	-		2,870

Table 1 COG Operating LLC. FOLK FEDERAL TANK BATTERY Eddy County New Mexico

Eddy County,	New Mexico
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Sample		Sample	Soil	Status	Т	PH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-6	5/11/2011	0-1'		X	<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	9,950
SB-4	6/29/2011	0-1	. y	X	<u>.</u>	-		-	·	<u>-</u>	<u> </u>	10,000
		3'		X	-	-	-	-	-	-	-	5,940
		5'	Х		-	-	-	-	-	-		1,270
		.7'	Х		-	-	-	-	-	-	-	316
		10'	Х		-	-	-	-	-	-	-	269
		15'	Х		-	-	-	-	-	-	-	432
		20'	Х		-	-	-	-	-	-	' -	559
AH-7	5/11/2011	0-1'		X	<2.00	<50.0	<50.0	-	- ,	. =	- 1	6,710
:		1-1.5'		X	· -	_		-	-	. =	-	5,530
		2-2.5'		X	-	, - :,			-	-		261
		2.5-3'		X	-	<u>-</u>	-	, -	-	_	- 1	1,140
SB-5	6/29/2011	0-1'		X	-	. -		- · · ·	-	=.	, g	469
;		3'		X	-	_	- 5	•	-	-		5,400
		5'	Х		-	-	-	-	-	-	-	364
		7'	Χ		-	-	-	-	-	-	· -	248
		10'	Х		-	-	-	-	-	-	-	3,770
		15'	Х	i	-	-	-	-	-	-		559
		20'	Х		-	-	-	••	-		-	549
		25'	Х		•		-	-	-	-	-	218

Table 1 COG Operating LLC. FOLK FEDERAL TANK BATTERY

Eddy County, New Mexico

Sample		Sample	Soil	Status	Т	PH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-8	5/11/2011	0-1'		X	<2.00.	<50.0	<50.0	-	-	-	-	8,790
		1-1.5'		X	-	•	•				-	7,650
		2-2.5'		X	~	* (*)	<u> </u>	<u>-</u>	-	-	-	15,400
SB-6	6/29/2011	0-1'	, (g.	X	-	- 2. 2.5 g		-	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	-	-	5,060
		3'		X	-	_	-	-		•		10,600
		5'	Х		•	-	-	-	-	-	: -	782
		7'	Х		-	-	-	-	-	-	-	1,360
		10'	Х		-	-	_	-	-	-	-	752
		15'	Х		-	-	-	-	-	-	-	247
		20'	Х		-	•	-	-	-	•	-	<200
		25'	Х		-	-	-		-	_	-	396

(--) Not Analyzed

Liner Depth

Excavated Depths

Table 2
COG Operating LLC
Folk Federal Tank Battery
Eddy County, New Mexico

Sample ID	Sample	Sample	Soil 9	Chloride	
	Date	Depth (ft)	In-Situ Remov		(mg/kg)
CS-1 North Wall (SB-4)	8/1/2012	•	X		385
CS-1 South Wall (SB-4)	11	-	Х		405
CS-1 West Wall (SB-4)	u	-	Х		215
CS-1 Bottom Hole (SB-4)	11	4	Х		317
CS-2 North Wall (SB-5)	7/31/2012	-	Х		439
CS-2 South Wall (SB-5)	8/1/2012	-	Х		410
CS-2 Bottom (SB-5)	8/1/2012	4	Х		405
CS-3 North Wall (SB-6)	8/2/2012	-	Х		171
CS-3 South Wall (SB-6)	ıı ı	_	Х		634
CS-3 East Wall (SB-6)	II	**	Х		444
CS-3 Bottom Hole (SB-6)	11	4	Х		442

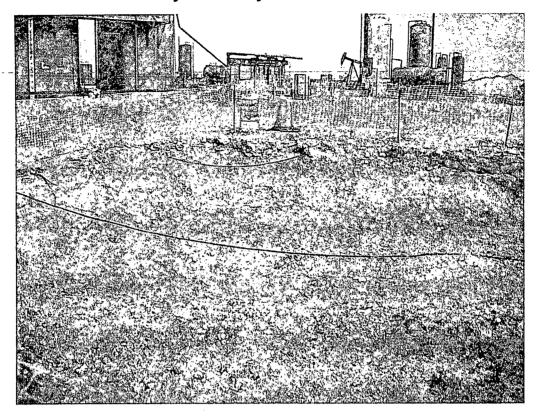
Table 2
COG Operating LLC
Folk Federal Tank Battery
Eddy County, New Mexico

Date Depth (ft) In-Situ Removed (mg/kg)	0	Sample	Sample	Soil	Status	Chloride
CS-4 South Wall (SB-2)	Sample ID	Date	I -	In-Situ	Removed	(mg/kg)
CS-4 South Wall (SB-2)	CS-4 North Wall (SB-2)	8/10/2012	-	Х		452
CS-4 Bottom Hole (SB-2) CS-5 Surface (Road) CS-5 (Road) CS-5 (Road) CS-5 (Road) CS-6 Bottom Hole (SB-3) CS-6 North Wall (SB-3) CS-6 East Wall (SB-3) CS-7	CS-4 South Wall (SB-2)	n	-	Х		731
CS-5 Surface (Road) 8/15/2012 - X 217 CS-5 (Road) " 1 X 197 CS-5 (Road) " 2 X 130 CS-6 Bottom Hole (SB-3) 8/15/2012 4 X 404 CS-6 North Wall (SB-3) " - X 260 CS-6 East Wall (SB-3) " - X 202	CS-4 East Wall (SB-2)	и	-	Х		236
CS-5 (Road) " 1 X 197 CS-5 (Road) " 2 X 130 CS-6 Bottom Hole (SB-3) 8/15/2012 4 X 404 CS-6 North Wall (SB-3) " - X 260 CS-6 East Wall (SB-3) " - X 202	CS-4 Bottom Hole (SB-2)	Ħ	4	Х		447
CS-5 (Road)	CS-5 Surface (Road)	8/15/2012	-	Х		217
CS-5 (Road) 2 X 130 CS-6 Bottom Hole (SB-3) 8/15/2012 4 X 404 CS-6 North Wall (SB-3) " - X 260 CS-6 East Wall (SB-3) " - X 202	CS-5 (Road)	ıı	1	Х		197
CS-6 North Wall (SB-3) " - X 260 CS-6 East Wall (SB-3) " - X 202	CS-5 (Road)	tī	2	Х		130
CS-6 North Wall (SB-3) - X 260 CS-6 East Wall (SB-3) - X 202	CS-6 Bottom Hole (SB-3)	8/15/2012	4	Х		404
CS-6 East Wall (SB-3) - X 202	CS-6 North Wall (SB-3)	11	-	Х		260
CS-6 West Wall (SB-3) " - X 154	CS-6 East Wall (SB-3)	II II		Х		202
	CS-6 West Wall (SB-3)	11	-	Х		154
CS-6 South Wall (SB-3) " - X 505	CS-6 South Wall (SB-3)	11	-	Х		505

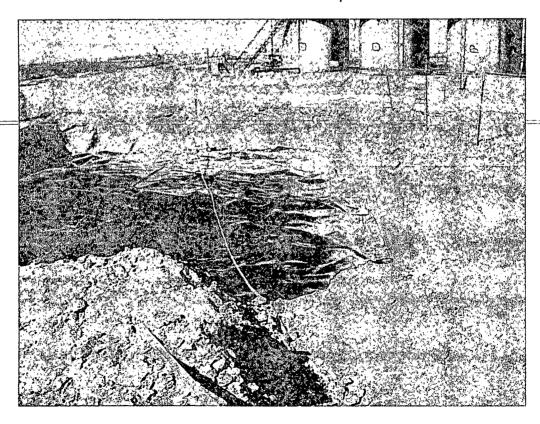
(-) Not Analyzed

Photos



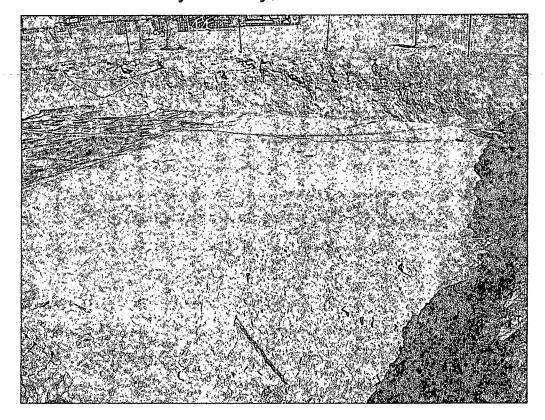


View North - Previous spill area

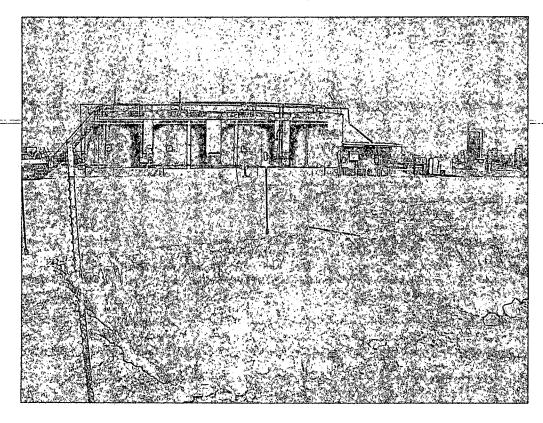


View West - Previous spill area, Liner Installation



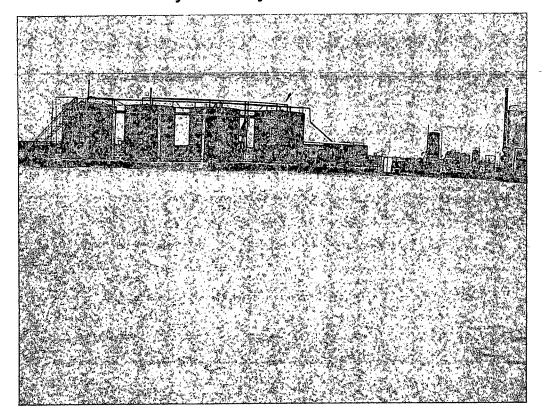


View North - Previous spill area, Backfill

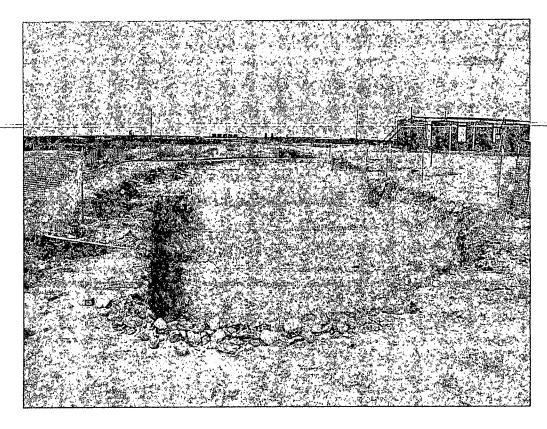


View West - Areas of AH-2 and AH-3



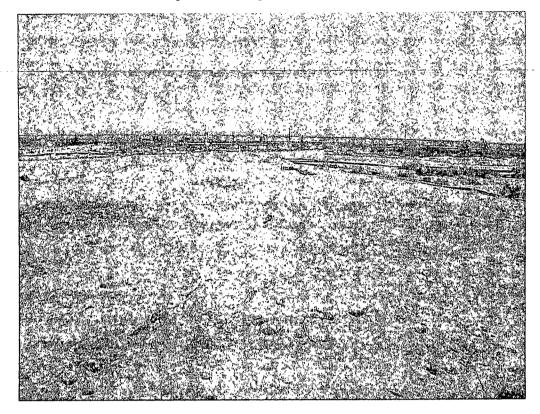


View West - Backfill

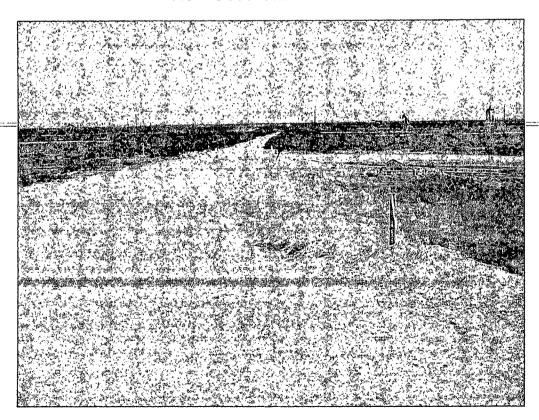


View West – Area of AH-8, AH-7 and AH-6





View Southeast - Backfill



View Southeast - Backfill

Appendix A



March 1, 2011

Mr. Mike Bratcher New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1301 W. Grand Ave. Artesia, New Mexico 88210

Re: Assessment Report and Work Plan for the Spill located at the COG Operating, LLC, Folk Federal #2 Tank Battery, Located in Unit Letter H, Section 17, Township 17 South, Range 29 East, Eddy County, New Maxico.

Mr. Bratcher:

Tetra Tech (Formerly Highlander Environmental Corp.) was contacted by COG Operating, LLC and Navajo Refining Company, L.P. (Navajo) to investigate a spill that occurred at the COG Folk Federal #2 Tank Battery. The tank battery is located in Unit Letter H, Section 17, Township 17 South, Range 29 East, Eddy County, New Mexico. The site coordinates are 32.83619° N, 104.09072° W. The Site is shown on Figures 1 and 2.

Background

According to the C-141 (Initial), Navajo released oil onto the ground when the transporter fell asleep while pumping out oil from COG' oil tanks, and the oil transport tank overflowed, on May 5, 2009. Approximately 192 barrels of crude oil was released and 14 barrels were recovered. The spill impacted the facility pad and ran down the lease road to south and east. The spill also extended south of the road out into the pasture. The spill location is shown on Figure 3. Navajo supervised the removal of the saturated soil to depths of 0.5'-7.0'. Approximately 1500 yds.³ of impacted soil was taken offsite for proper disposal. The initial C-141 is included in Appendix A.

Groundwater and Regulatory

The United States Geological Survey (USGS) database did show a well in Section 22, Township 17 South, Range 29 East that showed a depth of 80' below surface. The Geology and Groundwater Resources of Eddy County, New Mexico showed a well in Section 22, Township 17 South, Range 29 East to have been measured with a depth of 79.7' below surface. Copies of the well data are included in Appendix B.

A risk-based evaluation was performed for the Site in accordance with the 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 on the regional groundwater data, the proposed RRAL for TPH is 1,000 mg/kg.

Navajo Soil Assessment

On May 14, 2009, samples were collected from the spill area. A total of seven (7) auger holes were placed in the impacted area. The sample locations are shown on Figure 3. The soil samples were analyzed for TPH (Modified 8015), BTEX (8021 B), and Chloride (SM 4500-Cl B). Copies of the laboratory reports and chain of custody documents are included in Appendix C. The results are summarized in Table 1.

Corrective Action and Analytical Results

Referring to Table 1, none of the samples had TPH or BTEX concentrations exceeding the RRAL. Chloride impact was detected in the areas of AH-1, AH-3 and AH-7 and not vertically defined. On May 20, 2009, Navajo excavated the areas (AH-1, AH-3 and AH-7) with the elevated chloride impact. Once excavated, three test trenches were installed to define chloride impact in these areas. Trench T-1 was placed near AH-1 and samples were collected to total depth of 8.0' below surface and the chloride impact was not defined at this location, with a chloride concentration of 2,310 mg/kg. The remaining trenches T-2 (AH-3) and T-3 (AH-7) declined with depth and had chloride concentrations of 531 mg/kg (T-2, 7.0') and 552 mg/kg (T-3, 2.0') respectively. The results are summarized in Table 1.



Navajo Spill Conclusions

The remedial activities performed at the site, leaves no residual TPH or BTEX concentrations that exceeded the RRAL. The excavations was been backfilled with clean soil. Based upon the spill being from crude oil, it was suspected that the elevated chloride concentrations were the result of historic spills and were then not the responsibility of Navajo. The chloride concentrations in the area of auger hole AH-1 were determined to be the responsibility of COG.

Area AH-1 - Soil Assessment

On August 19, 2009 Tetra Tech installed boreholes to assess and define the extents area of AH-1. A total of five (5) boreholes were installed in the vicinity of AH-1. The borehole locations are shown in Figure 4. Copies of the laboratory reports and chain of custody documents are included in Appendix C. The results are summarized in Table 2

Referring to Table 2, all the boreholes showed chloride concentrations declining with depth. BH-3 showed slight chloride impact to the subsurface soils. Boreholes (BH-1 and BH-2) did show chloride impact above 1,000 mg/kg from 6.0' to 15.0', with chloride concentrations ranging from 1,160 mg/kg to 1,980 mg/kg. Borehole (BH-5) showed elevated chloride impact from 6.0' to 9.0' with concentrations of 1,680 mg/kg and 2,800 mg/kg, respectively. Borehole (BH-4) did show a chloride impact from surface to 15.0' below surface, with concentrations from 686 mg/kg at 6.0' to 5,660 mg/kg at 0-1'.

Work Plan

Based on the results, the chloride impact on the pad appears to be from historical spills. In order to remove some of the chloride impacted soil, COG proposes to excavate the soil to a depth of 4.0' below surface and capped the area with a 40 mil liner. The proposed excavated area will measure approximately 30' x 45'. The excavated soil will be hauled to proper disposal. Once excavated and capped, the area will be backfilled with clean fill material. The proposed excavated area is shown on Figure 5.

The goal of the remediation is to reduce the environmental liabilities for the protection of the groundwater. Based on site formation, the proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable. If the depths are not reached, a 40 mil liner will be installed at depth of 4' to 5' below surface to cap the impacted area.



Once the remedial activities are performed, a closure report will be submitted for review. If you have any question or comments concerning the assessment or the activities performed at the Site, please call me at (432) 682-4559.

Respectfully submitted,

Tetra Tech, Inc.

Tke Tavarez, P

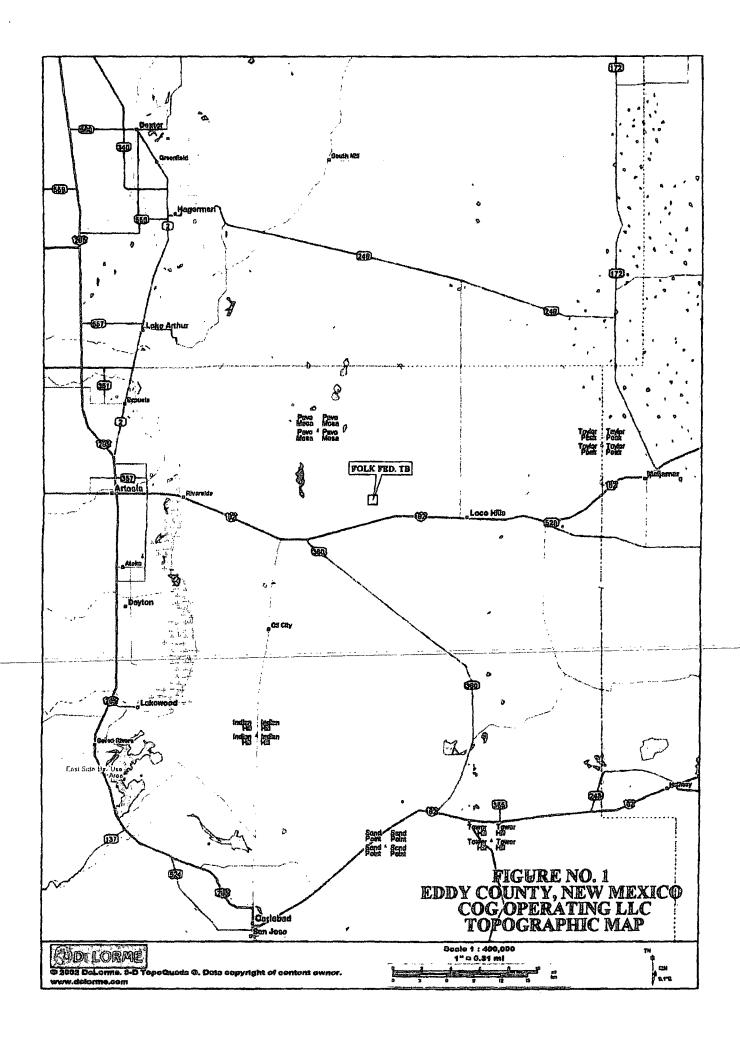
Ike Tavarez, P.Q. Senior Project Manager

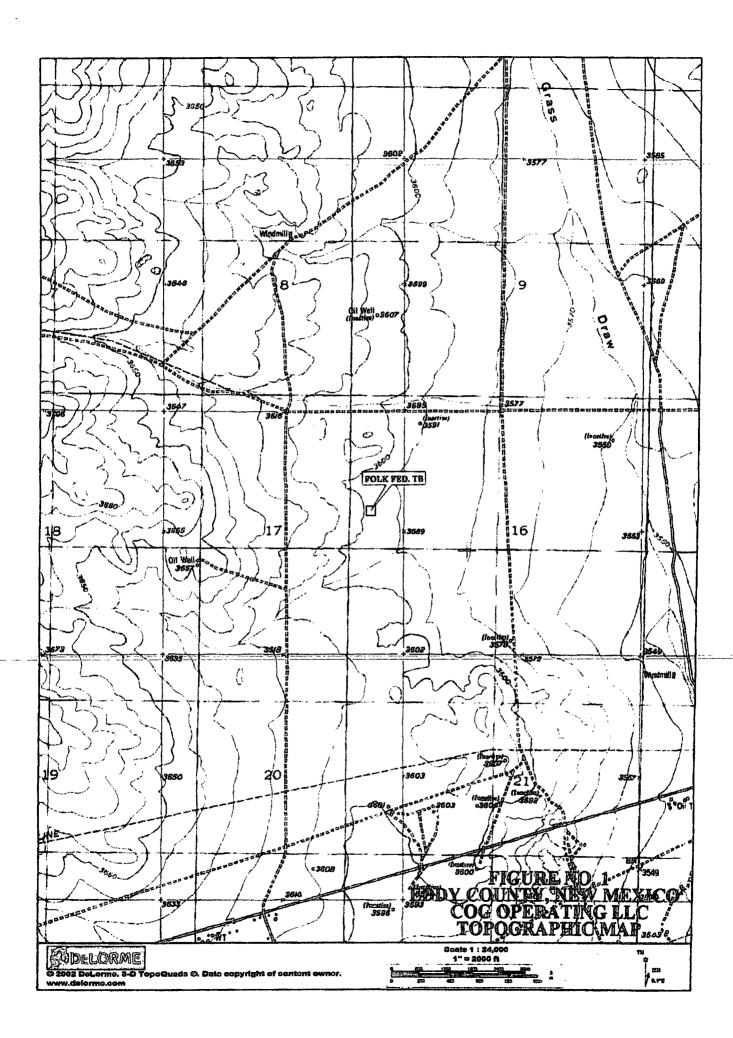
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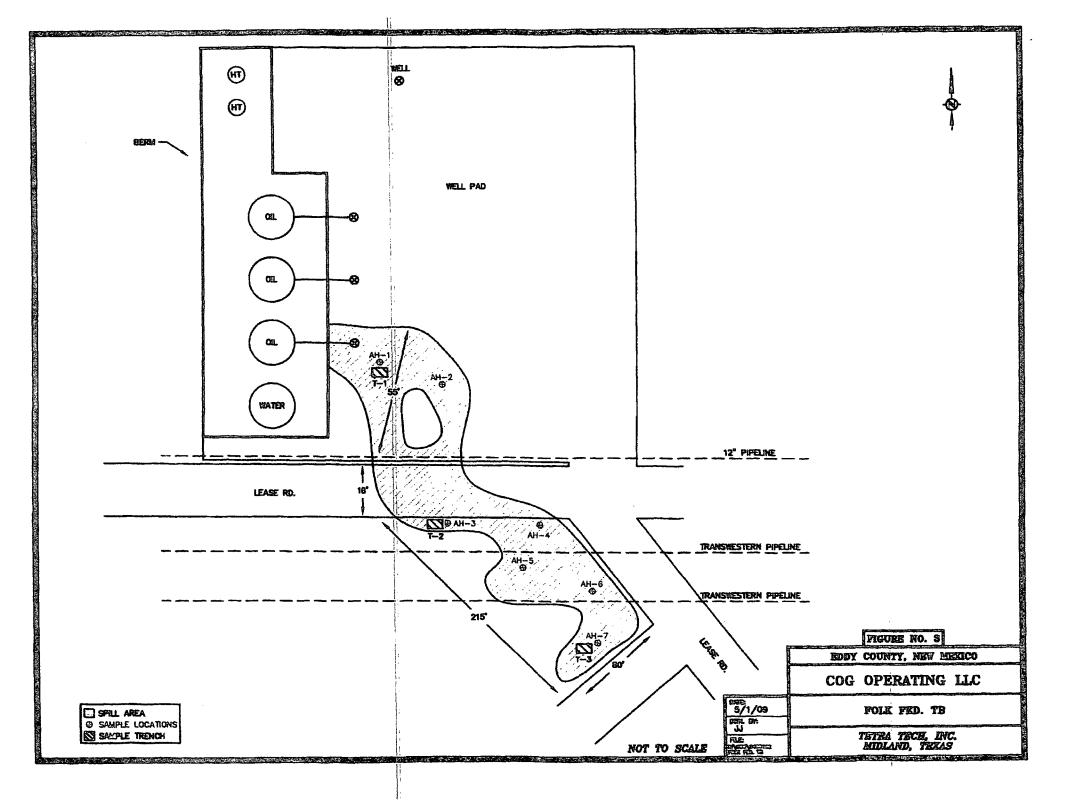
Pat Ellis - COG

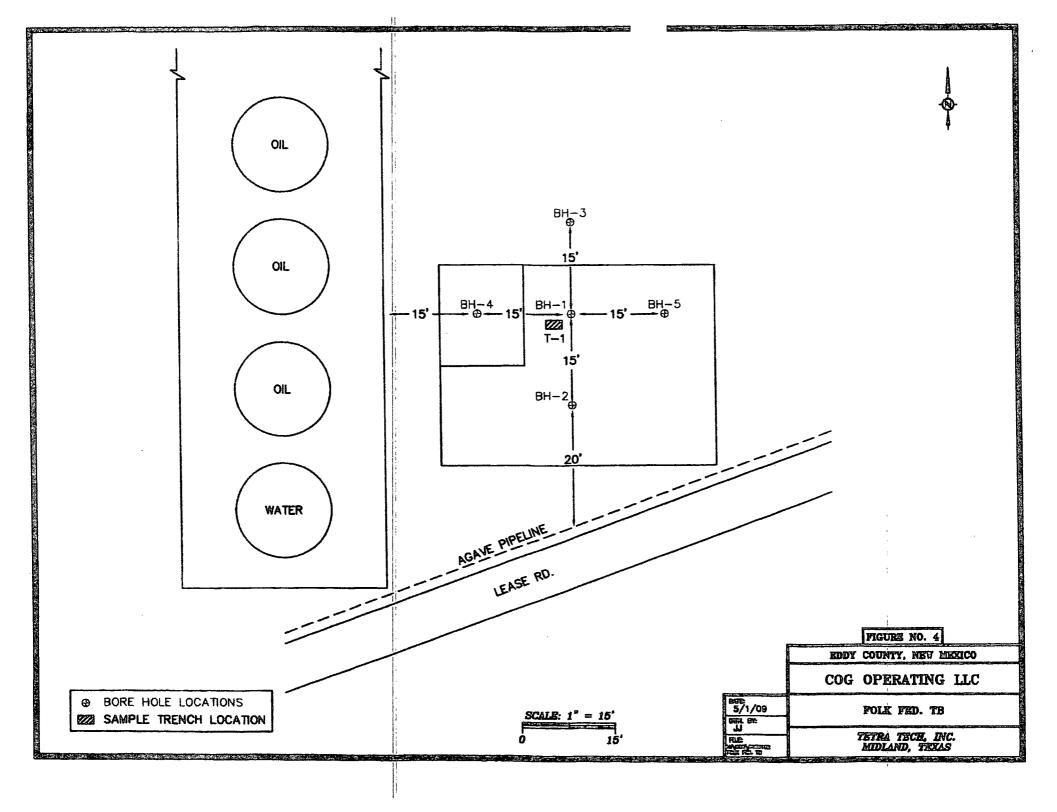
Terry Gregston - BLM

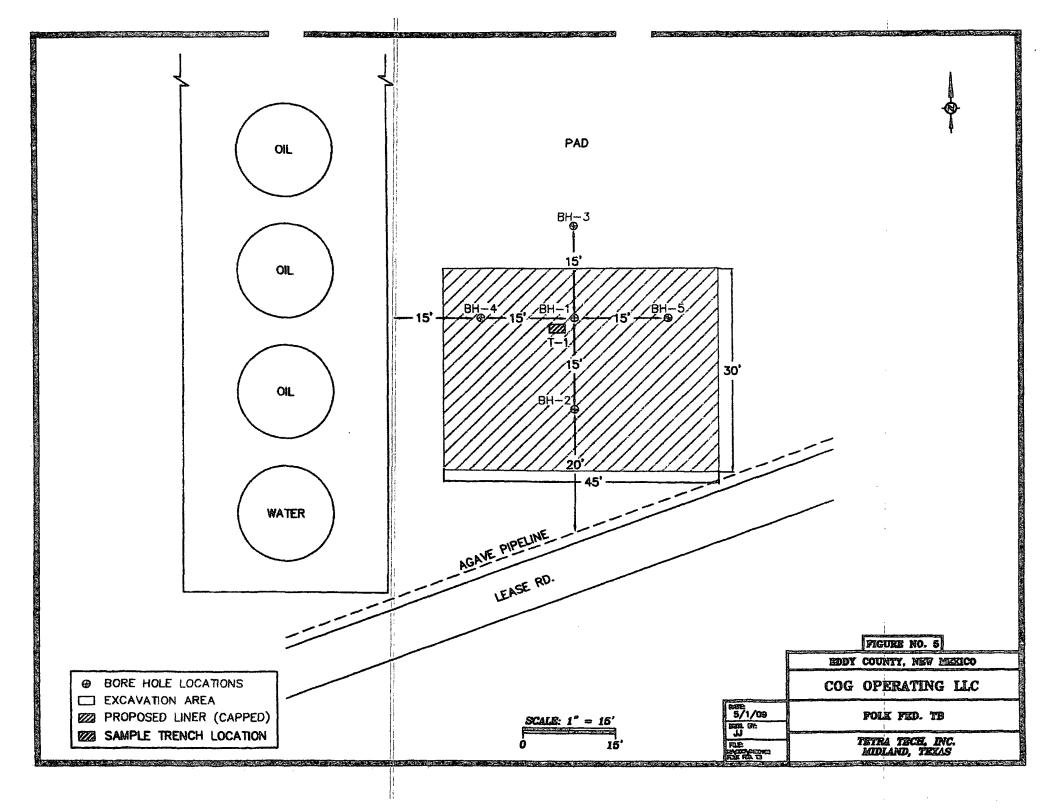
Figures











Tables

Table 1 COG Folk Tank Battery Eddy County, New Mexico

Sample	Date	Soi	Status	Sample	Excavation		TPH (mg/	kg)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sampled			Depth (ft)	Depth	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
		Insitu	Removed	(BEB)	(ft)							ļ	Visi Mary Mary Company
AH-I	5/14/2009		X	0-0.5	0.5	₹50 €	. i.23	1.23			1. 11.		1950
(T-1)	5/20/2009	х		0-1	0.5		_		-	-	-	: -	1500
(* */	5/20/2009	X		2		-		-	-	-	-	•	1020
	5/20/2009	X		4				_	_	-	-	-	2620
	5/20/2009	x		6		-	-	-	-	-	-	-	3400
	5/20/2009	X		8					-	-	-	-	2310
		 								·			
AH-2	5/14/2009	х		0-1	2	207.0	41.1	248.1	<0.01	0.185	0.428	0.939	<200
	5/14/2009	х		1-1.5			-	-	-	-	-	-	<200
	5/14/2009	х		2-2.5		-	-	-	-	-	-	-	<200
AH-3	5/14/2009		X	0-1:2	0.5	₹50.0	10.3	10.3	₹0.01		€0.018	<0.01	1020
	5/14/2009		X X	是第1:15美国		高等的	27:25				医图2个系统	學是漢語	1280
	5/14/2009		X	2-2.5		12.23			教の表現する				522
(T-2)	5/20/2009	х		0-1	2		-	-	 	-	-	· ·	931
	5/20/2009	Х		2			-		-	-		-	1290
	5/20/2009	х		5		-		-	-		-	-	896
	5/20/2009	х		7		-	-	-	-	-	~	-	531
		 					-						

Table 1 COG Folk Tank Battery Eddy County, New Mexico

Sample	Date	Soi	Status	Sample	Excavation		TPH (mg/	kg)	Benzene	Toluene	Ethylbenzene	Xylene	Chloride
ID	Sampled	Ińsitu	Removed	Depth (ft) (BEB)	Depth (ft)	DRO	GRO	Total -	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-4	5/14/2009			0-1	2	<50.0	7.1	7.1	<0.01	<0.01	<0.01	<0.01	<200
	5/14/2009			1-1.5		•	_	-	•	-	-	-	<200
	5/14/2009			1.5-2.0		-	-	-	-		•	-	<200
			·										
AH-5	5/14/2009	Х		0-1	2	126	7.9	133.9	<0.01	0.0917	<0.01	0.242	<200
								·				ļ	
AH-6	5/14/2009	х		0-1	7	<50.0	7.07	7.07			-	-	<200
	5/14/200 9	X		1-1.5			-	-	-	-	-	-	<200
									· :		÷		
AH-7	5/14/2009		X	0.12	3.323	<50.0 €	6.05	6.05		李. 二、宣章			322
	5/14/2009		X	1:1.5		SERVICE							787
(T-3)	5/20/2009	х		0-1	3								939
	5/20/2009	х		2									552

(-) Not Analyzed

Excavated Soil

Sample Depths (ft) - Below Bottom Excavation

Table 2
COG Operating LLC
Folk Tank Battery
Eddy County, New Mexico

Sample	Date	Sample	Soil S	Status	tatus TPH (mg/kg)				Toluene	Ethlybenzene	Xylene	Chloride
ID	Sampled	Depth (ft)	in-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH-1	8/19/2009	0-1	€ x €	16:22:65a	Çe vezerîş							304
	8/19/2009	3-4	X	The state of				中 医囊膜炎	大学の大学等に	Same of the same		419
	8/19/2009	6-7	Х	1		ı	•	•	•	•		833
	8/19/2009	9-10	Х		•	•	•	-	•	•	-	791
	8/19/2009	12-13	Х		•	•		•	•	•		1,510
	8/19/2009	15-16	Х		•	•	•	•	•	•	•	1,160
	8/19/2009	20-21	Х		-	•	•	•	_	•	*	<200
						· .						
BH-2	8/19/2009	0-1	X	批談の	1970		• •					<200
	8/19/2009	3-4	X	14 注题	· Service · Ser				a Service Alley Louis		•	283
	8/19/2009	6-7	Х		-		•	•	-		-	1,980
	8/19/2009	9-10	Х		•	•	•	•		•	•	1,770
	8/19/2009	12-13	Х		•		•			-	-	1,580
	8/19/2009	15-16	Х	-		-	-	•	-	-	•	927
	8/19/2009	20-21	X	-	•		•	•	•		•	<200
				11								
			1 /									
BH-3	8/19/2009	0-1	х	ii .	•	•		•	-	•	-	<200
	8/19/2009	3-4	X		-		•	•		•	-	944
	8/19/2009	6-7	X		-		•	•	•	•	-	791
	8/19/2009	9-10	Х		•			-	-	•	•	486
	8/19/2009	12-13	Х		-		-	-	-	•	-	502
BH-4	8/19/2009	0-1	Z.X.	能認為聲出			8.1. * . T.			Carlos Statistics		5,560
	8/19/2009	3-4	ATX X	操注金器	4. 污痕							2,410
	8/19/2009	6-7	Х			-	•	_	-		-	686
	8/19/2009	9-10	х	li	-		-			-	-	3,290
	8/19/2009	12-13	Х		-						-	2,320
	8/19/2009	15-16	х		-	-	-	-	_		-	2,170
	8/19/2009	20-21	х				•			•		<200
		<u> </u>	-	<u> </u>	 					<u> </u>		

Table 2 COG Operating LLC Folk Tank Battery Eddy County, New Mexico

Sample	Date	Sample Depth (ft)	Soil S	tatus		TPH (mg/kg)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID.	Sampled		In-Situ	Removed		GRO	Totai	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH-5	8/19/2009	9-10-1	E SEX	area and								686
		3-4		期 次表示	7/2				第25年,19		2 2 3	845
	8/19/2009	6-7	Х		•	•		•	•	-		1,680
	8/19/2009	9-10	Х	-		•	•	9	•	•	•	2,800
	8/19/2009	12-13	х		•	-		•	•	-	•	963
	8/19/2009	15-16	х		-	•	•	•	•	-	•	287

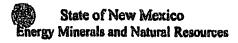
(-) Not Analyzed

Proposed Excavation Depths

Proposed Liner

Appendix A

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 80210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IY 1220 S. St. Francis Dr., Santo Fe, NM 07505





Form C-141 Revised October 10, 2003

Final Report

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side at form

Atteched [

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

regrease lagrification	in and Coffective Action	4	
	OPERATOR	図	Initial Report
me of Company COG OPERATING LLC	Contact Kanicia Carrillo		
dress 550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No. 432-685-4332		

Na Ad Facility Name - Folk Federal 2 - Bettery **Facility Type-Battery** Surface Owner BLM Mineral Owner Lease No.API# 30-015-20198 LOCATION OF RELEASE Range Unit Letter Section Township Feet from the North/South Line Feet from the East/West Line H 17 175 29E 1980 North 660 East Eddy Latitude Longitude NATURE OF RELEASE Type of Release- oil Volume of Release-192 bbis Volume Recovered- 14 bbls Source of Release-Navaio Truck Date and Hour of Occurrence-Date and Hour of Discovery 05/05/09- 6:40pm 05/05/09-6:40pm If YES, To Whom? Was Immediate Notice Given? ☑ Yes ☐ No ☐ Not Required Jim Amos w/BLM & Mike Brotcher w/OCD. By Whom? Kanicia Carrillo & Navalo Date and Hour May7, 2009, 1:00pm. 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. The Navajo transporter fell asleep while pumping out oil. Called immediately for vacuum truck to come out and pick up fluid. Describe Area Affected and Cleanup Action Taken. Approximately 1400 to 1500 years on bettery, pasture and road. Navajo will dig up saturated soll. Soll samples and final report will be aubmitted by Tetra_ Tech for your approval. 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 refeases 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, NMOCO 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: Kanicia Carrillo Title: Regulatory Analyst Approval Date: **Expiration Date:** E-mail Address: kandicarrillo@conchoresources.com Conditions of Approval:

Attach Additional Sheets If Necessary

Phone: 432-685-4332

Appendix B

District I 1625 N. French Dr., Hobbs, NM 88240 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

State of New Mexico Energy Minerals and Natural Resources

NOV 01 2012

OIL CONSERVATION DIVISION

Form C-141 Revised October 10, 2003

Oil Conservation Division 1220 South St. Francis Dr. NMOCD ARTESIA

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

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** Contact Pat Ellis Name of Company 550 W. Texas, Suite 1300 Midland, Texas 79701 Telephone No. (432) 230-0077 Address **Tank Battery** Facility Name Folk Federal Facility Type Mineral Owner Lease No. (API#) 30-015-20198 Surface Owner: Federal NMNM-0397623 LOCATION OF RELEASE Feet from the Unit Letter Section Township Range Feet from the North/South Line East/West Line County 29E Eddy Н 17 17S Latitude N 32.83619° Longitude W 104.09072° NATURE OF RELEASE Volume of Release 192 bbls Volume Recovered 14 bbls Type of Release: oil Source of Release: Water Tank Date and Hour of Occurrence Date and Hour of Discovery 05/05/2009 05/05/2009 6:40 p.m. If YES, To Whom? Was Immediate Notice Given? Mike Bratcher - OCD Jim Amos - BLM Date and Hour 05/07/2009 1:20 p.m. By Whom? Josh Russo If YES, Volume Impacting the Watercourse. Was a Watercourse Reached? ☐ Yes ☒ No N/A If a Watercourse was Impacted, Describe Fully.* Describe Cause of Problem and Remedial Action Taken.* Navajo transport fell asleep while pumping out oil. Navajo will dig out the saturated soil. Soil samples and final report will be submitted by Tetra Tech for your approval. Describe Area Affected and Cleanup Action Taken.* Tetra Tech personnel inspected the site and collected samples to define spill extents. Soil that exceeded RRAL was removed and hauled away for proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report and submitted it to NMOCD for review. 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

Signature: Approved by District Supervisor: Printed Name: Ike Tavarez (agent for COG) Title: Project Manager Approval Date: **Expiration Date:** E-mail Address: Ike.Tavarez@TetraTech.com Conditions of Approval: Attached 10-16-12

Phone: (432) 682-4559

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 lor regulations.

Attach Additional Sheets If Necessary

District I 1625 N. French Dr., Hobbs, NM 88240 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 NOV 01 2012

Form C-141 Revised October 10, 2003

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

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

Release Notification and Corrective Action

t francisco aproximi	***		_	Jase .	· · · · · · · · · · · · · · · · · · ·	utio.	OPERAT	TOR -	. CCIOII	Initis	al-Report	- Final Re	enort
Name of Co	mpany	COG	Operat	ing LI	LC		Contact		at Ellis		a report		7
Address		exas, Suite					Telephone N		230-007	7			
Facility Nar			olk Fede				Facility Typ		k Batter				
												20.015.20100	
Surface Ow	ner: Feder 	al 			Mineral Ov	wner		think the Market Stranger		Lease N		30-015-20198 4-0397623	
					LOCA	TIO	N OF REI	LEASE					
Unit Letter H	Section 17	Township 17S	Range 29E	Feet	from the	North	/South Line	Feet from the	East/W	est Line	County	Eddy	
			I	Latitud			Ü	e W 104.0907	2°				
- AB 1		71.337			NAT	URE	OF RELI			***		(0.111)	
Type of Release Source of Rel								Release 180 bbl.			Recovered 1 Hour of Dis		
Source of Kei	ease. Wate	LIANK					03/05/2011				1 8:00a.m	•	
Was Immedia	te Notice C						If YES, To						
										tcher—O			
By Whom? Josh Russo							Date and H	our 03/07/2011		egstonB	LIVI		
Was a Watero		hed?				,		lume Impacting t		course.			
			Yes 🛚	No			N/A						
If a Watercou	rse was Im	pacted, Descri	be Fully.*	:									
Describe Cau	se of Proble	em and Remed	lial Action	1 Taken	l.*								
Due to a new This caused the				unexpe	ected influx	of wat	er that neither	the water trucks	nor the tr	ansfer pu	mps were at	le to keep up with	h.
Describe Area	Affected a	and Cleanup A	ction Tak	en.*							- <u>1, 1 - 1, 1</u>		
												raway for proper it to NMOCD fo	
regulations all public health a should their o	l operators and operations had been to be the control of the contr	are required to onment. The ave failed to a ddition, NMO	report an acceptanc dequately CD accept	d/or file e of a C investig	e certain rel C-141 report gate and rer	ease not by the nediate	otifications and NMOCD made contamination	knowledge and u d perform correc arked as "Final R on that pose a thre e the operator of r	tive action eport" doc eat to grou	ns for rele es not reli und water	eases which eve the oper , surface wa	may endanger ator of liability ter, human health	h
	11							OIL CONS	SERVA	MOITA	DIVISIO	N	
Signature:/			_)										
Printed Name	: Ike Tavar	ez —					Approved by	District Superviso	or:				
Title: Project	Manager					Approval Date: Expiration Date:							
E-mail Addres			ch.com		· · · · · · · · · · · · · · · · · · ·	(Conditions of	Approval:			Attached		i
Date: 10.	-16-10		Phone:	(432) 6	82-4559						- [

^{*} Attach Additional Sheets If Necessary

District J 1625 N. Ffench Dr., Hobbs, NM 88240 District II
1301 W. Grand Avenue, Artesia, NM 86210
District III
1000 Rto Brezos Road, Aztec, NM 87410
District IY



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



Form C-141 Revised October 10, 2003

Oil Conservation Division 1220 South St. Francis Dr.

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back

1220 S. St. Fran	is Dr., Santa	Fe, NM 87509		Sa	nta Fe	Ce, NM 87505 side of form						side of form
period and the second second second second second		CONTRACTOR OF THE STATE OF THE	Reid	esse Notific	ation	and Co	rrective A	ction	ekkaralan peli bibar partengan	et the special entire is a standard and a second a second and a second a second and		e the thing that the last of the second consideration
						OPERA'	for		X Initia	l Report		Final Report
Name of Co							anicla Carrillo					
				id, TX 79701			Vo. 432-685-43	32				
Facility Nar	ne – raus	reseru x - R	HEMOTY			Facility Typ	e- Bauery					
Surface Ow	ner BLM			Mineral C)Wner			·	Lease N	lo.API# 30	0-015-2	0198
						of rei	LEASE					
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/W	est Line	County		
H	17	175	29E	1980	1	Vorth	660	E	ast		Eddy	,
			La	kitude		Longitud	e					
	•			NAT	ure	of reli	ease					
Type of Rele	se-oil				<u> </u>		Release-192 bbis		Volume P	ecovered-	4 bbis	
Source of Re	lease-Navaj	o Truck				Date and i- 05/05/09-	lour of Occurrence		Date and 05/05/09-	Hour of Dis	covery	
Was Immedia	ite Notice C			No. Cl. No. D.		If YES, To	Whom?			o ropin		
De. 19/1	Vaniala Ca			No Not Re			w/BLM & Mike i					
By Whom? Was a Water			<u> </u>			Date and Hour May7, 2009, 1:00pm. If YES, Volume Impacting the Watercourse.						
			Yes	No No								
If a Watercou	If a Watercourse was Impacted, Describe Fully.											
				•								
l												
Describe Cau	se of Proble	em and Remo	dial Action	Tokan o							-	
				g out oil. Called i	mmedia	tely for vacu	em truck to come	out and (pick up flu	ild.		
Describe Area	Affected	and Cleanup A	Action Tak	cn.*								
			battery, p	esture and road. N	avajo wi	ll dig up sen	rated soil. Soil sa	raples or	d Anal rep	ert will be	pubmitt	ed by Tetra
::Tech:for.your	opprover:-			Annual Control of the			•					ļ
I hereby certif	Ru that the l	nformation al	ven ahove	Is true and comp	rte to th	e hest of my	knowledge and m	Memirina	that mura	cost to ND&	300 m	las sad
regulations al	operators	are required to	report an	d/or file certain re	lease no	tifications en	d perform correct	live actie	ns for rela	eses which	may en	denger
public heelth	or the envir	coment. The	ecceptano	e of a C-141 repe investigate and re	rt by the	NMOCD IN	sked as "Pinal Re	port" de	es not reli	eve the oper	ater of	liability
or the environ	pensions n ment. In a	ddition. NMC	CD scoss rednaselà	invosingere and re tance of a C-141 i	econte Traces	communicati es not reliev	n una pose a une the occupior of n	esaoneib	uno water, ility for co	, surtece wa molisace v	ter, tuai Ath anv	other
federal, state,	or local lav	vs and/or requ	lations.				_		-	-	-	
	٠ . ١	•					OIL CONS	ERY	MOIT	DIVISIO	N	
Signature:	V		-									
Printed Name: Kanicia Carrillo						Approved by District Supervisor:						
Title: Regula					A	eproval Dat	:	E	upiration I	Date:	, , , , , , , , , , , , , , , , , , , 	
E-mail Addre			O THE COLUMNS	COM								
	14 1 14 14 14 14 14	- CHAPTERING		<u> </u>	─ ─┤ ~	Conditions of Approval:					Į.	

Attach Additional Sheets If Necessary

Phone: 432-685-4332

Date: 05/07/09

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District I
1625 N. French Dr., Hobbs, NM 88240
District II
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

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised October 10, 2003 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

						OPERA'	ГOR		🛭 Initi	al Report		Final Rep	ort
Name of Co	mpany	COG OP	ERATING	G LLC		Contact Pat Ellis							
Address		Texas, Suite	: 100, Mic	lland, TX 7970	1	Telephone l		230-007					_
Facility Nar	ne	Foll	c Federal			Facility Typ	e Tan	k Batter	у				_]
Surface Ow	ner Fe	deral		Mineral C	Owner		\$ 1 ***********************************		Lease N	No. (API# NMI	*) 30-0 VM-039		
	· · · -		<u>. </u>	LOCA	ATIO	N OF RE	LEASE						
Unit Letter H	Section 17	Township 17S	Range 29E	Feet from the		/South Line	Feet from the	East/W	est Line	County	Eddy		
<u> </u>			<u></u>	Latitude 32	50.154	Longitu	ıde 104 05.447	!		L			
				NAT	URE	OF REL	EASE						
Type of Relea		ced water				Volume of				Recovered			
Source of Re	lease Wa	iter tank				Date and F 03/05/2011	lour of Occurrenc			Hour of D: 1 8:00 a.		•	
Was Immedia	te Notice (liven?				If YES, To	ACCOUNT OF THE PARTY OF THE PAR		03/03/20	11 6:00 a.	111.		
""			Yes 🔲	No 🔲 Not Re	equired	1		Mike Br	atcher—C	CD			
	- 1 -								egstonE	BLM			
By Whom? Was a Watero							lour 03/07/2011 Dlume Impacting t						
Was a Water	ourse Reac		Yes 🏻	No		11 1 LO, VC	nume impacting t	ne watu	course.				
If a Watercou	rse was Im	pacted, Descri	be Fully.*					-			••		\dashv
Describe Cau	<u> </u>												_
This caused the	he water tar	k to overflow			x of wa	ter that neither	the water trucks	nor the t	ransfer pu	mps were a	ible to k	eep up with	
Describe Area	Affected a	ind Cleanup A	ction Take	en.*									
trucks. The w	vater ran on re immedia possible co	to the locatior tely scraped o ntamination fi	ı 60' x 60' f contamin	and traveled dov	vn the l I to thei	ease road 20' : r prior conditi	al-Tank-Battery, - x 90'; It then wen on. Tetra Tech w n work plan to the	t off into ill sampl	the pasture the spill	re 3' x 150 site area i	'. The l n the pa:	ocation and sture to	
regulations all public health should their o	operators or the environs had been been the environs had been the environs had been the environs had been the environs to be e	are required to onment. The ave failed to a Idition, NMO	report and acceptance dequately in CD accepta	Vor file certain re of a C-141 reponvestigate and re	elease nort by the emediat	otifications ar e NMOCD ma e contamination	knowledge and und perform correct arked as "Final Roon that pose a three the operator of r	tive action eport" do eat to gro esponsib	ons for rele es not reli und water ility for co	eases which eve the op- c, surface we compliance	h may en erator of ater, hu with any	ndanger Fliability man health	
		フ					OIL CONS	SERVA	MOITA	DIVISI	<u>ON</u>		
Signature:	/_		<u>(</u>	_/_	\prod								
Printed Name		Josh	Russo		/	Approved by	District Superviso)r:					
Title:		HSE Co	ordinator			Approval Dat	e:	E	xpiration l	Date:			
E-mail Addres	SS:	jrusso@concl	oresource	s.com		Conditions of	Approval:			Attache	d 🔲		
Date: 03 Attach Additi	/09/2011 onal Shee	Phone: ts If Necessa		12-2399									

Appendix C

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

	- 16 9	South	:	28 East			16.S	outh		29 East	<u> </u>		16	South		0 East	ļ.
	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	
	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	_
3	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	
9	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	_
10	29	28	27	26	25	110 30	29	28	27	26	25	30	29	28	27	26	_
11	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	_
										<u>, </u>					<u> </u>		
		South		28 East			17 S			29 East		<u> </u>		South		0 East	t
6	5	4	3	2		6	5	4	3	2	1	6	5	4	3	2	
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	
9	20	21	22	23	24	19	SITE 20	21	22	23	24	19	20	21	22	23	
30	29	28	79 27	26	25	30	29 210	28	80 27	26	25	30	29	28	27	26	_
31	32	33	34	35	36	31	208 '	33	34	35	36	31	32	33	34	35	
			53														
	18 9	South	:	28 East	:		18 S	outh	2	29 East	<u> </u>		18	South	3	0 East	t
6	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	
	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	
9	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	_
30	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	-
1	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	
	i	1	1	65	1 1	1		l	1		1 1	I	i	1			

	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 D

Summary Report

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

Report Date: August 24, 2012

Page Number: 1 of 2

Work Order: 12081904

Project Location: Eddy Co., NM

Project Name: COG/Folk Federal Tank Battery

Project Number: 114-6400890

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
307139	CS-5 Surface (Road)	soil	2012-08-15	00:00	2012-08-17
307140	CS-5 1' (Road)	soil	2012-08-15	00:00	2012-08-17
307141	CS-5 2' (Road)	soil	2012-08-15	00:00	2012-08-17
307142	CS-6 Bottom Hole 4' (SB-3)	soil .	2012-08-15	00:00	2012-08-17
307143	CS-6 North Wall (SB-3)	soil	2012-08-15	00:00	2012-08-17
307144	CS-6 East Wall (SB-3)	soil	2012-08-15	00:00	2012-08-17
307145	CS-6 West Wall (SB-3)	soil	2012-08-15	00:00	2012-08-17
307146	CS-6 South Wall (SB-3)	soil	2012-08-15	00:00	2012-08-17

Sample: 307139 - CS-5 Surface (Road)

Param	Flag	Result	Units	RL
Chloride		217	mg/Kg	4

Sample: 307140 - CS-5 1' (Road)

Param	Flag	Result	Units	RL
Chloride		197	mg/Kg	4

Sample: 307141 - CS-5 2' (Road)

Param	Flag	Result	Units	RL
Chloride		130	mg/Kg	4

Report Date: Aug	ust 24, 2012	Work Order: 12081904	Page 1	Number: 2 of 2
Sample: 307142	- CS-6 Bottom Hole 4	4' (SB-3)		
Param	Flag	Result	Units	RL
Chloride		404	mg/Kg	4
Sample: 307143	- CS-6 North Wall (S	B-3)		
Param	${f Flag}$	Result	Units	RL
Chloride		260	mg/Kg	4
Sample: 307144 Param Chloride	- CS-6 East Wall (SB Flag	Result 202	Units mg/Kg	RL 4
Sample: 307145	- CS-6 West Wall (SE	3-3)		
Param	Flag	Result	Units	RL
Chloride		154	mg/Kg	4
Sample: 307146	- CS-6 South Wall (Si	B-3)		
Param	Flag	Result	Units	RL
Chloride		505	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite All

El Paso, Midland. (BioAquatic) 2501 Mayes Rd., Suite 100 Carroliton.

Texas 75006

800-378-1296 806 - 794 - 1296 915-585-3443

FAX 915 - 585 - 4944 FAX 432 - 689 - 6313

432-689-6301 972-242-7750

Texas 79703 E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Texas 79922

Certifications

HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX, 79705

Report Date: August 24, 2012

Work Order:

12081904

Project Location: Eddy Co., NM

Project Name:

COG/Folk Federal Tank Battery

Project Number:

114-6400890

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
307139	CS-5 Surface (Road)	soil	2012-08-15	00:00	2012-08-17
307140	CS-5 1' (Road)	soil	2012-08-15	00:00	2012-08-17
307141	CS-5 2' (Road)	soil	2012-08-15	00:00	2012-08-17
307142	CS-6 Bottom Hole 4' (SB-3)	soil	2012-08-15	00:00	2012-08-17
307143	CS-6 North Wall (SB-3)	soil	2012-08-15	00:00	2012-08-17
307144	CS-6 East Wall (SB-3)	soil	2012-08-15	00:00	2012-08-17
307145	CS-6 West Wall (SB-3)	soil	2012-08-15	00:00	2012-08-17
307146	CS-6 South Wall (SB-3)	soil	2012-08-15	00:00	2012-08-17

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

Report Contents

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Sample 307139 (CS-5 Surface (Road))	5
Sample 307140 (CS-5 1' (Road))	5
Sample 307141 (CS-5 2' (Road))	5
Sample 307142 (CS-6 Bottom Hole 4' (SB-3))	5
Sample 307143 (CS-6 North Wall (SB-3))	6
Sample 307144 (CS-6 East Wall (SB-3))	6
Sample 307145 (CS-6 West Wall (SB-3))	6
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Case Narrative

Samples for project COG/Folk Federal Tank Battery were received by TraceAnalysis, Inc. on 2012-08-17 and assigned to work order 12081904. Samples for work order 12081904 were received intact at a temperature of 8.8 C. Samples were received on ice.

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	79857	2012-08-23 at 13:15	94227	2012-08-24 at 13:20
Chloride (Titration)	SM 4500-Cl B	79857	2012-08-23 at 13:15	94228	2012-08-24 at 13:21

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 12081904 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 24, 2012 114-6400890

Work Order: 12081904 COG/Folk Federal Tank Battery Page Number: 5 of 12 Eddy Co., NM

Analytical Report

Sample: 307139 - CS-5 Surface (Road)

Laboratory:

Midland

Analysis:

Chloride (Titration)

QC Batch:

94227

Analytical Method: Date Analyzed:

SM 4500-Cl B

2012-08-24

Prep Method: Analyzed By:

N/A AR

RL

4.00

Prep Batch:

79857

Sample Preparation:

2012-08-24

Prepared By:

5

AR

RL

Flag Cert Result Units Dilution Parameter Chloride 217 mg/Kg

Sample: 307140 - CS-5 1' (Road)

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

94228

Date Analyzed:

2012-08-24

Analyzed By: AR

Prep Batch: 79857

Sample Preparation: 2012-08-24 Prepared By: AR

RL

Cert Result Units Dilution RLParameter Flag Chloride 197 mg/Kg 4.00

Sample: 307141 - CS-5 2' (Road)

Laboratory:

Midland

94228

79857

Analysis: QC Batch: Prep Batch:

Chloride

Chloride (Titration)

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-08-24

2012-08-24

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

Cert Flag Parameter

RLResult

130

Dilution Units

RLmg/Kg 5 4.00 Report Date: August 24, 2012 114-6400890

Work Order: 12081904 COG/Folk Federal Tank Battery Page Number: 6 of 12 Eddy Co., NM

Sample: 307142 - CS-6 Bottom Hole 4' (SB-3)

Laboratory:

Midland

Analysis: QC Batch: Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-24

Prep Method: N/A Analyzed By: AR

Prep Batch:

94228 79857

Sample Preparation: 2012-08-24

RL

Prepared By: AR

Parameter Chloride

Flag Cert

Result Units 404 mg/Kg Dilution RL5 4.00

Sample: 307143 - CS-6 North Wall (SB-3)

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

94228

Date Analyzed:

2012-08-24 2012-08-24 Analyzed By: ARPrepared By: AR

Prep Batch:

Chloride

79857

Sample Preparation: RL

Flag Parameter Cert Result

Units 260 mg/Kg Dilution RL5 4.00

Sample: 307144 - CS-6 East Wall (SB-3)

-Laboratory: Midland

Analysis: QC Batch: Chloride (Titration)

Analytical Method:

SM 4500-Cl B 2012-08-24

Prep Method: N/A Analyzed By: AR

Prep Batch:

94228 79857 Date Analyzed: Sample Preparation:

2012-08-24

Prepared By: AR

RLParameter Flag Cert Chloride

Units Dilution Result RL202 mg/Kg 5 4.00

Sample: 307145 - CS-6 West Wall (SB-3)

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-24

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

QC Batch: Prep Batch: 94228 79857

Sample Preparation:

2012-08-24

114-6400890

Work Order: 12081904 COG/Folk Federal Tank Battery Page Number: 7 of 12

Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			154	mg/Kg	5	4.00

Sample: 307146 - CS-6 South Wall (SB-3)

Laboratory: Midland Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

AR

QC Batch: Prep Batch: 79857

94228

Date Analyzed: Sample Preparation:

2012-08-24 2012-08-24

Analyzed By: Prepared By: AR

RLFlag Parameter Cert Result Units Dilution RLChloride 505 mg/Kg 5 4.00

114-6400890

Work Order: 12081904 COG/Folk Federal Tank Battery Page Number: 8 of 12 Eddy Co., NM

Method Blanks

Method Blank (1)

QC Batch: 94227

QC Batch:

94227

Date Analyzed:

2012-08-24

Analyzed By: AR

Prep Batch: 79857

QC Preparation:

Cert

2012-08-23

Prepared By:

MDL

Flag Parameter Chloride

Result < 3.85

Units mg/Kg

RL

Method Blank (1)

QC Batch: 94228

QC Batch: Prep Batch:

94228 79857

Date Analyzed: QC Preparation:

2012-08-24 2012-08-23 Analyzed By: AR

Prepared By: AR

MDL

Parameter Flag Cert Result Chloride < 3.85

Units mg/Kg

RL

114-6400890

Work Order: 12081904 COG/Folk Federal Tank Battery

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

94227

Date Analyzed:

2012-08-24

Analyzed By: AR

Page Number: 9 of 12

Eddy Co., NM

Prep Batch: 79857

QC Preparation: 2012-08-23

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	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			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2590	mg/Kg	1	2500	< 3.85	104	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:

94228

Date Analyzed:

2012-08-24

Analyzed By: AR

Prep Batch: 79857

QC Preparation: 2012-08-23

Prepared By: AR

		LCS			Spike	Matrix		${f Rec.}$
Param	<u> </u>	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride		2640	mg/Kg	1	2500	< 3.85	106	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	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2550	mg/Kg	1	2500	< 3.85	102	85 - 115	4	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: 307130

QC Batch: 94227

Prep Batch: 79857

Date Analyzed: QC Preparation: 2012-08-23

2012-08-24

Analyzed By: AR

Prepared By: AR

114-6400890

Work Order: 12081904 COG/Folk Federal Tank Battery Page Number: 10 of 12

Eddy Co., NM

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			4000	mg/Kg	10	2500	1510	100	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}	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			4140	mg/Kg	10	2500	1510	105	78.9 - 121		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: 307149

QC Batch: 94228 Prep Batch: 79857

Date Analyzed:

QC Preparation:

2012-08-24 2012-08-23 Analyzed By: AR

Prepared By: AR

MS Spike Matrix Rec.

Param \mathbf{F} Dil. Result Limit \mathbf{C} Result Units Amount Rec. Chloride 15100 10 2500 12200 116 78.9 - 121 mg/Kg

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

			MSD			Spike	Matrix		${f Rec}.$		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			15000	mg/Kg	10	2500	12200	112	78.9 - 121	1	20

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

Report Date: August 24, 2012 114-6400890 Work Order: 12081904 COG/Folk Federal Tank Battery Page Number: 11 of 12 Eddy Co., NM

Calibration Standards

Standard (CCV-1)

QC Batch: 94227

Date Analyzed: 2012-08-24

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				\mathbf{True}	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2012-08-24

Standard (CCV-2)

QC Batch: 94227

Date Analyzed: 2012-08-24

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	100	100	85 - 115	2012-08-24

Standard (CCV-1)

QC Batch: 94228

Date Analyzed: 2012-08-24

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	101	101	85 - 115	2012-08-24

Standard (CCV-2)

QC Batch: 94228

Date Analyzed: 2012-08-24

Analyzed By: AR

Chloride			mg/Kg	100	99.3	99	85 - 115	2012-08-24
Param	Flag	Cert	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	$egin{array}{c} ext{Date} \ ext{Analyzed} \end{array}$
				CCVs	CCVs	m CCVs	Percent	D 1

Report Date: August 24, 2012 Work Order: 12081904 Page Number: 12 of 12 114-6400890 COG/Folk Federal Tank Battery Eddy Co., NM

Appendix

Report Definitions

Name	Definition
$\overline{ ext{MDL}}$	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

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.

Analysis Request of	Chain of Custody	/ Record		PAGE:		OF:
	<u>.</u>	,		ANALYSIS RE (Circle or Specify		n.)
1910 Midla	FRATECH N. Big Spring St. nd, Texas 79705 32-4559 • Fax (432) 682-3946		(Ext. to (62 BU DA 15		108
_(06	MANAGER: Tayarez	PRESERVATIVE METHOD	X BB 8	es 8260/624 8270/625		ns, pH,
PROJECT NO.: PROJECT NAME: DS90 Falk Fal	#2 TB	(Y/N)	5 MOD.		Os (Air)	stos)
LAB I.D. DATE TIME TIME BAB	SAMPLE IDENTIFICATION	HILLERED (Y/N) HCL HNO3 ICE NONE	BTEX 8021B TPH 8015 MOD PAH 8270 RCRA Metals Ag /	TCLP Volatiles TCLP Semi Volatiles TCLP Semi Volatiles RCi GC.MS Vol. 8240/8260/624 GC.MS Semi. Vol. 8270/625 PCB's 8080/608	Chloride Chloride Cemmfa Spec. Alpha Beta (A)	PLM (Asbestos) Major Anions/Cations, pH,
307139 8/15 S L CS-5	Surface (Road)	1			X	
140 1 5 K Cs-5	1' (Road)	-			X	
141 5 2 (5-5	2' (Road)	1			K	
المستحدد والمتابات المتابات المتاب المستحدد المستحد المتابات الأناب المستحدد المستحدد المتابات المتاب	Bottom hole (41) (5B.3)	\				
143 / S XC3.6 1	lorth wigh (58.3)	1			X	
144 S X (5-6 E	ast well (SB-3)	1			X	
149 S X (5-6 W	lest wall (SB-3)				X	
140 4 13.65	outh Wall (SB-3)	1			X	
REMINQUISHED RY: (Stgnature) Date: 277	1//2_ Verresept on presignature)		SAMPLET	D BY: (Print & Initial)		late:
Time: 12.05		Date()				ime:
RELINQUISHED BY: Signature) Date: Time:	RECEIVED BY: (Signature)	Date:	FEDEX	SHIPPED BY: (Circle) BUS DELIVERED UPS	AIRB OTHI	BILL #:
RELINQUISHED BY: (Signature) Date: Time:	RECEIVED BY: (Signature)	Date:		CH CONTACT PERSON:		Results by:
RECEIVING LABORATORY: TACE ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE:	TIME:	- II	e Taurez		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: REMARKS:	land all					
Please fill out all copies - Laboratory retain	is Yellow copy - Return Orginal copy to Tetr	ra Tech - Project Manager	retains Pink co	ppy - Accounting rece	ives Gold c	ору.

Report Date: August 21, 2012 Work Order: 12081318 Page Number: 1 of 3

Summary Report

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

Report Date: August 21, 2012

Work Order: 12081318

Project Location: Eddy Co., NM

Project Name: COG/Folk Fed. #2 TB

Project Number: 114-6400192A

			Date	Time	Date	
Sample	Description	Matrix	Taken	Taken	Received	
306617	CS-1 North Wall (SB-4)	soil	2012-08-01	00:00	2012-08-13	
306618	CS-1 South Wall (SB-4)	soil	2012-08-01	00:00	2012-08-13	
306619	CS-1 West Wall (SB-4)	soil	2012-08-01	00:00	2012-08-13	
306620	CS-1 Bottom Hole 4' (SB-4)	soil	2012-08-01	00:00	2012-08-13	
306621	CS-2 North Wall (SB-5)	soil	2012-07-31	00:00	2012-08-13	
306622	CS-2 South Wall (SB-5)	soil	2012-08-01	00:00	2012-08-13	
306623	CS-2 Bottom Hole 4' (SB-5)	soil	2012-08-01	00:00	2012-08-13	
306624	CS-3 North Wall (SB-6)	soil	2012-08-02	00:00	2012-08-13	
306625	CS-3 South Wall (SB-6)	soil	2012-08-02	00:00	2012-08-13	
306626	CS-3 East-Wall-(SB-6)	soil-	2012-08-02	00:00	2012-08-13	. =
306627	CS-3 Bottom Hole 4' (SB-6)	soil	2012-08-02	00:00	2012-08-13	
306628	CS-4 North Wall (SB-2)	soil	2012-08-10	00:00	2012-08-13	
306629	CS-4 South Wall (SB-2)	soil	2012-08-10	00:00	2012-08-13	
306630	CS-4 East Wall (SB-2)	soil	2012-08-10	00:00	2012-08-13	
306631	CS-4 Bottom Hole 4' (SB-2)	soil	2012-08-10	00:00	2012-08-13	

Sample: 306617 - CS-1 North Wall (SB-4)

Param	Flag	Result	Units	RL
Chloride		385	mg/Kg	5

Sample: 306618 - CS-1 South Wall (SB-4)

Param	Flag	Result	\mathbf{Units}	RL
Chloride		405	mg/Kg	5

Report Date: Augus	st 21, 2012	Work Order: 12081318	Page	Number: 2 of 3
Sample: 306619 -	CS-1 West Wall (SB-	-4)		
Param	Flag	Result	Units	RL
Chloride	6	215	mg/Kg	5
Sample: 306620 -	CS-1 Bottom Hole 4'	(SB-4)		
Param	Flag	Result	Units	RL
Chloride		317	mg/Kg	5
Sample: 306621 -	CS-2 North Wall (SE	3-5)		
Param	Flag	Result	Units	RL
Chloride		439	mg/Kg	5
Param Chloride	CS-2 South Wall (SB	Result 410	Units mg/Kg	RL 5
Sample: 306623 -	CS-2 Bottom Hole 4'	(SB-5)		
Param	Flag	Result	Units	RL
Chloride		405	mg/Kg	5
			· · · · · ·	•
Sample: 306624 -	CS-3 North Wall (SB	3-6)		
Param	Flag	Result	Units	RL
Chloride		171	mg/Kg	5_
Sample: 306625 -	CS-3 South Wall (SB	-6)		
Param	Flag	Result	Units	RL
Chloride		634	mg/Kg	5
Sample: 306626 -	CS-3 East Wall (SB-6	3)		
Param	Flag	Result	Units	RL
Chloride		444	mg/Kg	5

Param	\mathbf{Flag}	Result	Units	RL
Chloride		442	mg/Kg	5
Sample: 306628 -	CS-4 North Wall (SB-	-2)		
Param	Flag	Result	Units	RL
Chloride		452	mg/Kg	5
Param	CS-4 South Wall (SB-	Result	Units mg/Kg	RL 5
_	·	•	Units mg/Kg	RL 5
Param Chloride	Flag CS-4 East Wall (SB-2	Result 731		
Param Chloride Sample: 306630 -	Flag	Result 731	mg/Kg	5
Param Chloride Sample: 306630 - Param Chloride	Flag CS-4 East Wall (SB-2	Result 731) Result 236	mg/Kg Units	5 RL
Param Chloride Sample: 306630 - Param Chloride	Flag CS-4 East Wall (SB-2 Flag	Result 731) Result 236	mg/Kg Units	5 RL



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: August 21, 2012

Work Order: 12081318

Project Location:

Eddy Co., NM

Project Name:

COG/Folk Fed. #2 TB

Project Number:

114-6400192A

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

			Date	Time	\mathbf{Date}
Sample	Description	Matrix	Taken	Taken	Received
306617	CS-1 North Wall (SB-4)	soil	2012-08-01	00:00	2012-08-13
306618	CS-1 South Wall (SB-4)	soil	2012-08-01	00:00	2012-08-13
306619	CS-1 West Wall (SB-4)	soil	2012-08-01	00:00	2012-08-13
306620	CS-1 Bottom Hole 4' (SB-4)	soil	2012-08-01	00:00	2012-08-13
306621	CS-2 North Wall (SB-5)	soil	2012-07-31	00:00	2012-08-13
306622	CS-2 South Wall (SB-5)	soil	2012-08-01	00:00	2012-08-13
306623	CS-2 Bottom Hole 4' (SB-5)	soil	2012-08-01	00:00	2012-08-13
306624	CS-3 North Wall (SB-6)	soil	2012-08-02	00:00	2012-08-13
306625	CS-3 South Wall (SB-6)	soil	2012-08-02	00:00	2012-08-13
306626	CS-3 East Wall (SB-6)	soil	2012-08-02	00:00	2012-08-13
306627	CS-3 Bottom Hole 4' (SB-6)	soil	2012-08-02	00:00	2012-08-13
306628	CS-4 North Wall (SB-2)	soil	2012-08-10	00:00	2012-08-13
306629	CS-4 South Wall (SB-2)	soil	2012-08-10	00:00	2012-08-13
306630	CS-4 East Wall (SB-2)	soil	2012-08-10	00:00	2012-08-13
306631	CS-4 Bottom Hole 4' (SB-2)	soil	2012-08-10	00:00	2012-08-13

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 13 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

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Case Narrative

Samples for project COG/Folk Fed. #2 TB were received by TraceAnalysis, Inc. on 2012-08-13 and assigned to work order 12081318. Samples for work order 12081318 were received intact at a temperature of 0.8 C.

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

		Prep	Prep	$_{ m QC}$	Analysis
Test	Method	Batch	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	79770	2012-08-20 at 16:00	94110	2012-08-21 at 10:00
Chloride (Titration)	SM 4500-Cl B	79772	2012-08-20 at 16:00	94111	2012-08-21 at 13:00

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 12081318 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.

114-6400192A

Work Order: 12081318

Page Number: 5 of 13 COG/Folk Fed. #2 TB Eddy Co., NM

Analytical Report

Sample: 306617 - CS-1 North Wall (SB-4)

Laboratory: Lubbock

Analysis:

Chloride (Titration)

94110

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch:

79770

Date Analyzed: Sample Preparation:

2012-08-21 2012-08-20 Analyzed By:

LM Prepared By: LM

RL

Parameter Flag Cert Result Chloride 385

Units mg/Kg Dilution RL10 5.00

Sample: 306618 - CS-1 South Wall (SB-4)

Laboratory:

Lubbock

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch:

94110 79770 Date Analyzed: Sample Preparation:

2012-08-21 2012-08-20 Analyzed By: LM Prepared By: LM

RI

			$\mathbf{R}\mathbf{L}$			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			405	mg/Kg	10	5.00

Sample: 306619 - CS-1 West Wall (SB-4)

Laboratory:

Lubbock

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Units

mg/Kg

Prep Method: N/A

QC Batch: Prep Batch:

Parameter

Chloride

94110 79770

Date Analyzed: Sample Preparation:

Cert

2012-08-21 2012-08-20 Analyzed By: LM Prepared By: LM

Flag

RLResult 215

10

Dilution RL

5.00

114-6400192A

Work Order: 12081318 COG/Folk Fed. #2 TB Page Number: 6 of 13 Eddy Co., NM

Sample: 306620 - CS-1 Bottom Hole 4' (SB-4)

Laboratory: Lubbock

Analysis: Chloride (Titration) 94110

Analytical Method:

SM 4500-Cl B 2012-08-21

Prep Method: N/A Analyzed By: LM

QC Batch: Prep Batch: 79770 Date Analyzed: Sample Preparation:

2012-08-20

Prepared By: LM

RL

Result Units Dilution RLParameter Flag Cert 5.00 Chloride 317 mg/Kg 10

Sample: 306621 - CS-2 North Wall (SB-5)

Laboratory:

Lubbock

Analysis: Chloride (Titration) Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-21

Prep Method: N/A Analyzed By: LM

QC Batch: Prep Batch:

94110 79770 Sample Preparation: 2012-08-20

Prepared By: LM

RL

Parameter Cert Result Units Dilution RLFlag 439 Chloride 10 5.00 mg/Kg

Sample: 306622 - CS-2 South Wall (SB-5)

Laboratory:

Lubbock

Analysis: Chloride (Titration) QC Batch: 94110

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-21

Prep Method: N/A Analyzed By: LM

Prep Batch: 79770 Sample Preparation: 2012-08-20 Prepared By: LM

RLCert Flag

Parameter Result Units Dilution RLChloride 410 mg/Kg 20 5.00

Sample: 306623 - CS-2 Bottom Hole 4' (SB-5)

Laboratory:

Lubbock

Analysis: Chloride (Titration) QC Batch: 94110 Prep Batch: 79770

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-08-21 2012-08-20

Prep Method: N/A Analyzed By: LMPrepared By: LM

114-6400192A

Work Order: 12081318 COG/Folk Fed. #2 TB Page Number: 7 of 13

Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			405	mg/Kg	10	5.00

Sample: 306624 - CS-3 North Wall (SB-6)

Laboratory:

Lubbock

Analysis: Chloride (Titration)

Analytical Method: 94110 Date Analyzed:

SM 4500-Cl B

Prep Method: N/A Analyzed By: LM

QC Batch: Prep Batch: 79770

Sample Preparation:

2012-08-21 2012-08-20

Prepared By:

LM

			m RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			171	mg/Kg	10	5.00

Sample: 306625 - CS-3 South Wall (SB-6)

Laboratory:

Lubbock

Analysis: Chloride (Titration) Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch:

Chloride

94110 79770

Date Analyzed: Sample Preparation: 2012-08-21

Analyzed By: LM

2012-08-20

Prepared By: LM

Parameter Cert Flag

RLUnits Dilution Result RL634 20 5.00 mg/Kg

Sample: 306626 - CS-3 East Wall (SB-6)

Laboratory: Lubbock

Analysis: Chloride (Titration) QC Batch:

Analytical Method:

SM 4500-Cl B 2012-08-21

Prep Method: N/A Analyzed By: LM

Prep Batch: 79770

94110

Date Analyzed: Sample Preparation:

2012-08-20

Prepared By: LM

RLCert Result Units Dilution RLParameter Flag Chloride 444 mg/Kg 10 5.00

114-6400192A

Work Order: 12081318 COG/Folk Fed. #2 TB Page Number: 8 of 13 Eddy Co., NM

Sample: 306627 - CS-3 Bottom Hole 4' (SB-6)

Laboratory: Lubbock

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch: 79772

94111

Date Analyzed: Sample Preparation: 2012-08-21 2012-08-20 Analyzed By: LM Prepared By: LM

RL

Parameter Chloride

Flag Cert Result 442

Units mg/Kg Dilution 20

RL5.00

Sample: 306628 - CS-4 North Wall (SB-2)

Laboratory:

Lubbock

Analysis: Chloride (Titration) Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch:

94111 79772 Date Analyzed: Sample Preparation:

2012-08-21 2012-08-20 Analyzed By: LM Prepared By: LM

RL

Parameter Flag Dilution RLCert Result Units mg/Kg 5.00 Chloride 452 10

Sample: 306629 - CS-4 South Wall (SB-2)

Laboratory: Lubbock

Analysis: QC Batch:

Chloride (Titration) 94111

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-21

Units

mg/Kg

Prep Method: N/A Analyzed By:

Prep Batch:

79772

Sample Preparation:

2012-08-20

LM Prepared By: LM

Parameter Chloride

Cert Flag

RL

Result

731

Dilution RL

5.00

LM

20

Sample: 306630 - CS-4 East Wall (SB-2)

Laboratory: Lubbock Analysis:

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-21

Prep Method: N/A Analyzed By: LM

Prepared By:

QC Batch: 94111 Prep Batch: 79772

Sample Preparation:

2012-08-20

Work Order: 12081318

Page Number: 9 of 13

114-6400192A

COG/Folk Fed. #2 TB

Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			236	mg/Kg	10	5.00

Sample: 306631 - CS-4 Bottom Hole 4' (SB-2)

Laboratory: Lubbock

Chloride (Titration) Analysis:

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch: 79772

94111

Date Analyzed: Sample Preparation:

2012-08-21 2012-08-20 Analyzed By: LM Prepared By: LM

RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			447	mg/Kg	10	5.00

114-6400192A

Work Order: 12081318 COG/Folk Fed. #2 TB Page Number: 10 of 13 Eddy Co., NM

Method Blanks

Method Blank (1)

QC Batch: 94110

QC Batch:

94110

Date Analyzed:

2012-08-21

Analyzed By: LM

Prep Batch: 79770

QC Preparation:

2012-08-20

Prepared By: LM

MDL

RLParameter Flag Cert Result Units Chloride <3.05 mg/Kg

Method Blank (1)

QC Batch: 94111

QC Batch: Prep Batch: 79772

94111

Date Analyzed:

2012-08-21

Analyzed By: LM

QC Preparation: 2012-08-20

Prepared By: LM

			MDL		
Parameter	\mathbf{Flag}	Cert	Result	Units	RL
Chloride			< 3.05	mg/Kg	5

Matrix Spike (MS-1) Spiked Sample: 306626

QC Batch:

94110 Prep Batch: 79770 Date Analyzed: QC Preparation: 2012-08-20

2012-08-21

Analyzed By: LM

Prepared By: LM

			MS			Spike	Matrix	Result Rec.			
Param	${f F}$	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit		
Chloride			858	mg/Kg	10	500	443.9	83	80 - 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
Chloride			858	mg/Kg	10	500	443.9	83	80 - 120	0	20

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

114-6400192A

Work Order: 12081318 COG/Folk Fed. #2 TB Page Number: 11 of 13 Eddy Co., NM

Matrix Spike (xMS-1)

Spiked Sample:

QC Batch:

Date Analyzed: 94111

2012-08-21

Analyzed By: LM

Prep Batch: 79772

QC Preparation: 2012-08-20

Prepared By: LM

			MS			Spike	Matrix		Rec.
Param	${f F}$	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			3050	mg/Kg	50	500	2500	110	80 - 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
Chloride			3000	mg/Kg	50	500	2500	101	80 - 120	2	20

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

Report Date: August 21, 2012 114-6400192A Work Order: 12081318 - COG/Folk Fed. #2 TB

Page Number: 12 of 13 Eddy Co., NM

Calibration Standards

Standard (ICV-1)

QC Batch: 94110

Date Analyzed: 2012-08-21

Analyzed By: LM

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-08-21

Standard (CCV-1)

QC Batch: 94110

Date Analyzed: 2012-08-21

Analyzed By: LM

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-08-21

Standard (ICV-1)

QC Batch: 94111

Date Analyzed: 2012-08-21

Analyzed By: LM

				ICVs	ICVs	ICVs	Percent				
				True	Found	Percent	Recovery	Date			
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed			
Chloride			mg/Kg	100	98.6	98	85 - 115	2012-08-21			

Standard (CCV-1)

QC Batch: 94111

Date Analyzed: 2012-08-21

Analyzed By: LM

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-08-21

114-6400192A

Work Order: 12081318 COG/Folk Fed. #2 TB Page Number: 13 of 13 Eddy Co., NM

Appendix

Report Definitions

Name	Definition
$\overline{ ext{MDL}}$	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

	Certifying	Certification	Laboratory
C	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	Lubbock

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.

Ana	aivs	sis F	Зe	O	ıu	est of Chai	n of Custouy	F	} ∈	0	n l	rd										PAG	E:						2
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			S see joule 19	200	A CANADA	TETRA T 1910 N. Big Sp Midland, Texas (432) 682-4559 • Fa	ring St. 79705)5 (Ext. to C35)		Cd Cr Pb Hg Se	P								.	TDS		
CLIENT NAME	: 	6				SITE MANAGER:		VERS		PF	RESE		ATIVE DD		TX1005						60/624	70/625					Is, pH, TDS		
PROJECT NO.	.:		PR		JECT	NAME: / 1/42/3		CONTAINERS	2			T		7	MOD.		Ag As	P P	olatiles		240/82	Vol. 82				<u> </u>	/Catior		
LAB I.D. NUMBER	DATE	TIME	MATRIX	Γ	GRAB	Coldy	Co, NOM DENTIFICATION	NUMBER OF	FILTERED (Y/N)	걸	HNO3	OE .	NONE	BTEX 8021B		PAH 8270	RCRA Metals	TCLP Wetals Ag As Ba	TCLP Semi Volatiles	RCI	GC.MS Vol. 8	GC.MS Semi. Vol. 8270/625	Pest. 808/60	Chloride	Gamma Spec.	Alpha Beta (Air) PLM (Asbestos)	Major Anions/Cations,		
306617,	8/,		3		X	05-1 dorthing	(53.4)	į				χ												χ					
618						CS-1 South wall	(53-4)	١																					
619						CS-1 West Will	(53.4)																						
620	J					15-1 Bettem Hele	y' (513-4)					\prod	Ī	Ī											·				
621	7/31					CS-2 North 1006	(58.5)					П		T															
677	7/31					CS-2 South was	(SB-5-)	\prod				П	T	T				T							·				
1-7-2	8/,					Cs-2 Bottom Hele	4' (58.5)					\prod		T					T			T							
624	/ 3/2					CS.3 North will	(58-6)							T															
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RELINQUISHED BY	1 1	Lil				Time: 1.7.3(2	CEIVED BY: (Signature)	1-	\ <u>~</u>	Tin	me:	1	130	<u>/</u>		_~	ile	be	Prin	20.6	25	To	_			Date: Time	-	727. 500	
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						Midland, Texas (432) 682-4559 • F	oring St. \$ 79705 ax (432) 682-3946							1 1	05 (Ext. to C35)	Cd Cr Pb Hg Se	Cd Vr Pd Hg Se				2					TDS			
CLIENT NAM	1E: CO	(2				SITE MANAGER:	1	NERS		PF		RVAT			TX1005	BB	Ba			60/624	8270/625					ns, pH,			
PROJECT N						NAME:		ONTA			Т	\top	T	1	MOD.	Ag As	Åg As	1	ames	40/82	/ol. 8;	۵			ر	Cation			
114- LAB I.D. NUMBER	<u>04001</u> DATE		×	COMP	GRAB	SAMPLE	IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	님	HNO3	NONE		(8021B	TPH 8015 N	RCRA Metals /	TCLP Metals Ag	TCLP Volatiles	ALT Serin VO	GC.MS Vol. 8240/8260/624	C.MS Semi. \	PCB's 8080/608	Chlonde	Gamma Spec.	Alpha Beta (Air)	PLM (Aspestos) Major Anions/Cations, pH, TDS			
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Page Number: 1 of 8

Summary Report

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

Report Date: July 18, 2011

Work Order: 11070105

Project Location: Eddy Co., NM

Project Name:

COG/Folk Federal Tank Battery

Project Number: 114-6400890

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
270899	SB-1 0-1'	soil	2011-06-28	00:00	2011-06-30
270900	SB-1 3'	soil	2011-06-28	00:00	2011-06-30
270901	SB-1 5'	soil	2011-06-28	00:00	2011-06-30
270902	SB-1 7'	soil	2011-06-28	00:00	2011-06-30
270903	SB-1 10'	soil	2011-06-28	00:00	2011-06-30
270904	SB-1 15'	soil	2011-06-28	00:00	2011-06-30
270905	SB-1 20'	soil	2011-06-28	00:00	2011-06-30
270906	SB-1 25'	soil	2011-06-28	00:00	2011-06-30
270907	SB-1 30'	soil	2011-06-28	00:00	2011-06-30
270908	- SB-2 0-1'	soil	2011-06-28 -		2011-06-30
270909	SB-2 3'	soil	2011-06-28	00:00	2011-06-30
270910	SB-2 5'	soil	2011-06-28	00:00	2011-06-30
270911	SB-2 7'	soil	2011-06-28	00:00	2011-06-30
270912	SB-2 10'	soil	2011-06-28	00:00	2011-06-30
270913	SB-2 15'	soil	2011-06-28	00:00	2011-06-30
270914	SB-2 20'	soil	2011-06-28	00:00	2011-06-30
270915	SB-2 25'	soil	2011-06-28	00:00	2011-06-30
270916	SB-2 30'	soil	2011-06-28	00:00	2011-06-30
270917	SB-3 0-1'	soil	2011-06-28	00:00	2011-06-30
270918	SB-3 5'	soil	2011-06-28	00:00	2011-06-30
270919	SB-3 7'	soil	2011-06-28	00:00	2011-06-30
270920	SB-3 10'	soil	2011-06-28	00:00	2011-06-30
270921	SB-3 15'	soil	2011-06-28	00:00	2011-06-30
270922	SB-3 20'	soil	2011-06-28	00:00	2011-06-30
270923	SB-3 25'	soil	2011-06-28	00:00	2011-06-30
270924	SB-3 30'	soil	2011-06-28	00:00	2011-06-30
270925	SB-3 3'	soil	2011-06-28	00:00	2011-06-30
270926	SB-4 0-1'	soil	2011-06-29	00:00	2011-06-30
270927	SB-4 3'	soil	2011-06-29	00:00	2011-06-30
270928	SB-4 5'	soil	2011-06-29	00:00	2011-06-30

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
270929	SB-4 7'	soil	2011-06-29	00:00	2011-06-30
270930	SB-4 10'	soil	2011-06-29	00:00	2011-06-30
270931	SB-4 15'	soil	2011-06-29	00:00	2011-06-30
270932	SB-4 20'	soil	2011-06-29	00:00	2011-06-30
270936	SB-5 0-1'	soil	2011-06-29	00:00	2011-06-30
270937	SB-5 3'	soil	2011-06-29	00:00	2011-06-30
270938	SB-5 5'	soil	2011-06-29	00:00	2011-06-30
270939	SB-5 7'	soil	2011-06-29	00:00	2011-06-30
270940	SB-5 10'	soil	2011-06-29	00:00	2011-06-30
270941	SB-5 15'	soil	2011-06-29	00:00	2011-06-30
270942	SB-5 20'	soil	2011-06-29	00:00	2011-06-30
270943	SB-5 25'	soil	2011-06-29	00:00	2011-06-30
270946	SB-6 0-1'	soil	2011-06-29	00:00	2011-06-30
270947	SB-6 3'	soil	2011-06-29	00:00	2011-06-30
270948	SB-6 5'	soil	2011-06-29	00:00	2011-06-30
270949	SB-6 7'	soil	2011-06-29	00:00	2011-06-30
270950	SB-6 10'	soil	2011-06-29	00:00	2011-06-30
270951	SB-6 15'	soil	2011-06-29	00:00	2011-06-30
270952	SB-6 20'	soil	2011-06-29	00:00	2011-06-30
270953	SB-6 25'	soil	2011-06-29	00:00	2011-06-30

Sample: 270899 - SB-1 0-1'

Param	\mathbf{Flag}	Result	Units	RL
Chloride		4300	mg/Kg	4

Sample: 270900 - SB-1 3'

Param	Flag	Result	Units	RL
Chloride		3410	mg/Kg	4

Sample: 270901 - SB-1 5'

Param	Flag	Result	Units	RL
Chloride		2380	mg/Kg	4

Sample: 270902 - SB-1 7'

Param	Flag	Result	Units	RL
Chloride		3000	mg/Kg	4

Report Date: July	18, 2011	Work Order: 11070105	F	Page Number: 3 of 8
Sample: 270903 -	- SB-1 10'			
Param	Flag	Result	Units	RL
Chloride		3590	mg/Kg	4
Sample: 270904 -	- SB-1 15'			
Param	Flag	Result	Units	RL
Chloride		1540	mg/Kg	4
Sample: 270905 -	- SB-1 20'			
Param	Flag	Result	Units	RL
Chloride		237	mg/Kg	4
Sample: 270906 - Param Chloride	- SB-1 25' Flag	Result <200	Units mg/Kg	RL 4
Sample: 270907 -	- SB-1 30'			
Param	Flag	Result	Units	RL
Chloride				
		207	mg/Kg	4
		207	mg/Kg	
Sample: 270908 -		207 Result	mg/Kg	
Sample: 270908 -	- SB-2 0-1'	207	mg/Kg	4
Sample: 270908 -	- SB-2 0-1' Flag	207 Result	mg/Kg Units	4 RL
Sample: 270908 - Param Chloride Sample: 270909 -	- SB-2 0-1' Flag - SB-2 3'	207 Result 10400	mg/Kg Units mg/Kg	RL 4
Sample: 270908 - Param Chloride	- SB-2 0-1' Flag	207 Result	mg/Kg Units	RL 4
Sample: 270908 - Param Chloride Sample: 270909 - Param	- SB-2 0-1' Flag - SB-2 3' Flag	Result 10400	mg/Kg Units mg/Kg Units	RL 4
Sample: 270908 - Param Chloride Sample: 270909 - Param Chloride	- SB-2 0-1' Flag - SB-2 3' Flag	Result 10400	mg/Kg Units mg/Kg Units	RL 4

Report Date: July	18, 2011	Work-Order: 11070105	Page N	Number: 4 of 8
Sample: 270911	- SB-2 7'			
Param	Flag	Result	Units	RL
Chloride		926	mg/Kg	4
Sample: 270912	- SB-2 10'			
Param	Flag	Result	Units	RL
Chloride		1170	mg/Kg	4
Sample: 270913	- SB-2 15'			
Param	Flag	Result	Units	RL
Chloride		343	mg/Kg	4
Sample: 270914	- SB-2 20'			
Param	Flag	Result	Units	RL
Chloride		251	mg/Kg	4
Sample: 270915 Param Chloride	- SB-2 25' Flag	Result <200	Units mg/Kg	RL 4
Omoride		\200	1115/118	
Sample: 270916		and the second second		
Param Chloride	Flag	Result	Units	RL
Chloride	A Maria	185	mg/Kg	4
Sample: 270917 -				
Param	Flag	Result	Units	RL
Chloride		326	mg/Kg	4
Sample: 270918 -	- SB-3 5'			
Param	Flag	Result	Units	RL
Chloride		2710	mg/Kg	

Report Date: July 18, 2011		Work Order: 11070105	Page I	Number: 5 of 8
Sample: 270919 - 5	SB-3 7'			
Param	Flag	Result	Units	RL
Chloride		1760	mg/Kg	4
Sample: 270920 - 5	SB-3 10'			
Param	Flag	Result	Units	RL
Chloride		675	mg/Kg	4
Sample: 270921 - 5	SB-3 15'			
Param	Flag	Result	Units	RL
Chloride		316	mg/Kg	4
Sample: 270922 - S Param Chloride	SB-3 20' Flag	Result 268	Units mg/Kg	RL 4
Sample: 270923 - 5	SB-3 25' Flag	Result	Units	m RL
Chloride		230	mg/Kg	4
Sample: 270924 - 5		TO THE HELLENGE COLORS OF COLORS OF THE COLO	·	u nu ninu nazuden u sin
Param	Flag	Result	Units	RL
Chloride		396	mg/Kg	4
Sample: 270925 - 5	SB-3 3'			
Param	Flag	Result	Units	RL
Chloride		4240	mg/Kg	4
Sample: 270926 - S	SB-4 0-1'			
Param	Flag	Result	Units	RL
Chloride		10000	mg/Kg	4

Report Date: July 18, 2011		Work Order: 11070105	Page	Number: 6 of 8
Sample: 270927 - Si	B-4 3'			
Param	Flag	Result	Units	RL
Chloride		5940	mg/Kg	4
Sample: 270928 - Si	B-4 5'			
Param	Flag	Result	Units	RL
Chloride		1270	mg/Kg	4
Sample: 270929 - Sl	B-4 7'			
Param	Flag	Result	Units	RL
Chloride	8	316	mg/Kg	4
Sample: 270930 - S		D 1	** **	D.
Param Chloride	Flag	Result 269	Units mg/Kg	RL 4
Sample: 270931 - Sl	D 4 15?			
_		Domite	¥\$*a	DI
Param Chloride	Flag	Result 432	Units mg/Kg	RL 4
Sample: 270932 - Sl	B-4 20'			
Param	Flag	Result	Units	RL
Chloride		559	mg/Kg	4
Sample: 270936 - Sl				
Param	Flag	Result	Units	RL
Chloride		469	mg/Kg	4
Sample: 270937 - Sl	B-5 3'			
Param	Flag	Result	Units	RL
Chloride		5400	mg/Kg	4

Report Date: July 18, 2011		Work Order: 11070105	Page	Page Number: 7 of 8	
Sample: 270938 -	- SB-5 5'				
Param	\mathbf{Flag}	Result	Units	RL	
Chloride		364	mg/Kg	4	
Sample: 270939 -	- SB-5 7'				
Param	\mathbf{Flag}	Result	Units	RL	
Chloride		248	mg/Kg	4	
Sample: 270940 -	- SB-5 10'				
Param	\mathbf{Flag}	Result	Units	RL	
Chloride		3770	mg/Kg	4	
Sample: 270941 - Param Chloride	Flag	Result 559	Units mg/Kg	RL 4	
Sample: 270942 -	SB-5 20'				
Param	- SB-5 20' Flag	Result	Units	RL	
Param Chloride	Flag	549	mg/Kg	4	
Param Chloride	Flag				
Param Chloride Sample: 270943 -	Flag	549 Result	mg/Kg	4 RL	
Param Chloride Sample: 270943 -	Flag - SB-5 25'	549	mg/Kg	4	
Param Chloride Sample: 270943 -	Flag - SB-5 25' - Flag	549 Result	mg/Kg	4 RL	
Param Chloride Sample: 270943 - Param Chloride Sample: 270946 - Param	Flag - SB-5 25' - Flag	Result 218	mg/Kg Units mg/Kg Units	RL 4	
Param Chloride Sample: 270943 - Param Chloride Sample: 270946 -	Flag - SB-5 25' Flag - SB-6 0-1'	8 Result 218	mg/Kg Units mg/Kg	RL 4	
Param Chloride Sample: 270943 - Param Chloride Sample: 270946 - Param	Flag SB-5 25' Flag SB-6 0-1' Flag	Result 218	mg/Kg Units mg/Kg Units	RL 4	
Param Chloride Sample: 270943 - Param Chloride Sample: 270946 - Param Chloride	Flag SB-5 25' Flag SB-6 0-1' Flag	Result 218	mg/Kg Units mg/Kg Units	RL 4	

Report Date: July 18, 2011		Work Order: 11070105	Page	Number: 8 of 8
Sample: 270948 -	SB-6 5'			
Param	Flag	Result	Units	RL
Chloride		782 .	mg/Kg	4
C 1 070010	CD 4 51			
Sample: 270949 -	SB-6 7'			
Param	Flag	Result	Units	RL
Chloride		1360	mg/Kg	4
Sample: 270950 -	SB-6 10'			
Param	Flag	Result	Units	RL
Chloride		752	mg/Kg	4
Sample: 270951 - Param Chloride	SB-6 15'	Result 247	Units mg/Kg	RL 4
Sample: 270952 -	SB-6 20'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
		in the control of the		
Sample: 270953 -	SB-6 25'			
Param	Flag	Result	Units	RL
Chloride		396	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E

5002 Basin Street, Suite A1 6015 Harris Parkway, Suite 110 - Ft. Worth, Texas 76132

Lubbock, Texas 79424 El Paso, Texas 79922

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817 • 201 • 5260

E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Oklahoma ISO 17025 Kansas

Analytical and Quality Control Report

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

Report Date: July 18, 2011

Work Order: 11070105

Project Location: Eddy Co., NM

Project Name:

COG/Folk Federal Tank Battery

114-6400890 Project Number:

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

Sample Description Matrix Taken Taken Received 270899 SB-1 0-1' soil 2011-06-28 00:00 2011-06-30 270900 SB-1 3' soil 2011-06-28 00:00 2011-06-30 270901 SB-1 5' soil 2011-06-28 00:00 2011-06-30 270902 SB-1 7' soil 2011-06-28 00:00 2011-06-30 270903 SB-1 10' soil 2011-06-28 00:00 2011-06-30 270904 SB-1 15' soil 2011-06-28 00:00 2011-06-30 270905 SB-1 20' soil 2011-06-28 00:00 2011-06-30 270906 SB-1 25' soil 2011-06-28 00:00 2011-06-30 270907 SB-1 30' soil 2011-06-28 00:00 2011-06-30 270908 SB-2 0-1' soil 2011-06-28 00:00 2011-06-30 270910 SB-2 3' soil 2011-06-28 00:00 2011-06-30				Date	1 11116	Date
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Sample	Description	Matrix	Taken	Taken	Received
270901 SB-1 5' soil 2011-06-28 00:00 2011-06-30 270902 SB-1 7' soil 2011-06-28 00:00 2011-06-30 270903 SB-1 10' soil 2011-06-28 00:00 2011-06-30 270904 SB-1 15' soil 2011-06-28 00:00 2011-06-30 270905 SB-1 20' soil 2011-06-28 00:00 2011-06-30 270906 SB-1 25' soil 2011-06-28 00:00 2011-06-30 270907 SB-1 30' soil 2011-06-28 00:00 2011-06-30 270908 SB-2 0-1' soil 2011-06-28 00:00 2011-06-30 270910 SB-2 3' soil 2011-06-28 00:00 2011-06-30 270911 SB-2 5' soil 2011-06-28 00:00 2011-06-30 270912 SB-2 10' soil 2011-06-28 00:00 2011-06-30 270913 SB-2 15' soil 2011-06-28 00:00 2011-06-30 270914 SB-2 20' soil 2011-06-28 00:00 2011-06-3	270899	SB-1 0-1'	soil	2011-06-28	00:00	2011-06-30
270902 SB-1 7' soil 2011-06-28 00:00 2011-06-30 270903 SB-1 10' soil 2011-06-28 00:00 2011-06-30 270904 SB-1 15' soil 2011-06-28 00:00 2011-06-30 270905 SB-1 20' soil 2011-06-28 00:00 2011-06-30 270906 SB-1 25' soil 2011-06-28 00:00 2011-06-30 270907 SB-1 30' soil 2011-06-28 00:00 2011-06-30 270908 SB-2 0-1' soil 2011-06-28 00:00 2011-06-30 270909 SB-2 3' soil 2011-06-28 00:00 2011-06-30 270910 SB-2 5' soil 2011-06-28 00:00 2011-06-30 270911 SB-2 7' soil 2011-06-28 00:00 2011-06-30 270912 SB-2 10' soil 2011-06-28 00:00 2011-06-30 270913 SB-2 15' soil 2011-06-28 00:00 2011-06-30 270914 SB-2 20' soil 2011-06-28 00:00 2011-06-3	270900	SB-1 3'	soil	2011-06-28	00:00	2011-06-30
270903 SB-1 10' soil 2011-06-28 00:00 2011-06-30 270904 SB-1 15' soil 2011-06-28 00:00 2011-06-30 270905 SB-1 20' soil 2011-06-28 00:00 2011-06-30 270906 SB-1 25' soil 2011-06-28 00:00 2011-06-30 270907 SB-1 30' soil 2011-06-28 00:00 2011-06-30 270908 SB-2 0-1' soil 2011-06-28 00:00 2011-06-30 270910 SB-2 3' soil 2011-06-28 00:00 2011-06-30 270911 SB-2 7' soil 2011-06-28 00:00 2011-06-30 270912 SB-2 10' soil 2011-06-28 00:00 2011-06-30 270913 SB-2 15' soil 2011-06-28 00:00 2011-06-30 270914 SB-2 20' soil 2011-06-28 00:00 2011-06-30 270915 SB-2 25' soil 2011-06-28 00:00 2011-06-30 <td>270901</td> <td>SB-1 5'</td> <td>soil</td> <td>2011-06-28</td> <td>00:00</td> <td>2011-06-30</td>	270901	SB-1 5'	soil	2011-06-28	00:00	2011-06-30
270904 SB-1 15' soil 2011-06-28 00:00 2011-06-30 270905 SB-1 20' soil 2011-06-28 00:00 2011-06-30 270906 SB-1 25' soil 2011-06-28 00:00 2011-06-30 270907 SB-1 30' soil 2011-06-28 00:00 2011-06-30 270908 SB-2 0-1' soil 2011-06-28 00:00 2011-06-30 270909 SB-2 3' soil 2011-06-28 00:00 2011-06-30 270910 SB-2 5' soil 2011-06-28 00:00 2011-06-30 270911 SB-2 7' soil 2011-06-28 00:00 2011-06-30 270912 SB-2 10' soil 2011-06-28 00:00 2011-06-30 270913 SB-2 15' soil 2011-06-28 00:00 2011-06-30 270914 SB-2 20' soil 2011-06-28 00:00 2011-06-30 270915 SB-2 25' soil 2011-06-28 00:00 2011-06-30 <td>270902</td> <td>SB-1 7'</td> <td>soil</td> <td>2011-06-28</td> <td>00:00</td> <td>2011-06-30</td>	270902	SB-1 7'	soil	2011-06-28	00:00	2011-06-30
270905 SB-1 20' soil 2011-06-28 00:00 2011-06-30 270906 SB-1 25' soil 2011-06-28 00:00 2011-06-30 270907 SB-1 30' soil 2011-06-28 00:00 2011-06-30 270908 SB-2 0-1' soil 2011-06-28 00:00 2011-06-30 270909 SB-2 3' soil 2011-06-28 00:00 2011-06-30 270910 SB-2 5' soil 2011-06-28 00:00 2011-06-30 270911 SB-2 7' soil 2011-06-28 00:00 2011-06-30 270912 SB-2 10' soil 2011-06-28 00:00 2011-06-30 270913 SB-2 15' soil 2011-06-28 00:00 2011-06-30 270914 SB-2 20' soil 2011-06-28 00:00 2011-06-30 270915 SB-2 25' soil 2011-06-28 00:00 2011-06-30	270903	SB-1 10'	soil	2011-06-28	00:00	2011-06-30
270906 SB-1 25' soil 2011-06-28 00:00 2011-06-30 270907 SB-1 30' soil 2011-06-28 00:00 2011-06-30 270908 SB-2 0-1' soil 2011-06-28 00:00 2011-06-30 270909 SB-2 3' soil 2011-06-28 00:00 2011-06-30 270910 SB-2 5' soil 2011-06-28 00:00 2011-06-30 270911 SB-2 7' soil 2011-06-28 00:00 2011-06-30 270912 SB-2 10' soil 2011-06-28 00:00 2011-06-30 270913 SB-2 15' soil 2011-06-28 00:00 2011-06-30 270914 SB-2 20' soil 2011-06-28 00:00 2011-06-30 270915 SB-2 25' soil 2011-06-28 00:00 2011-06-30	270904	SB-1 15'	soil	2011-06-28	00:00	2011-06-30
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	270906	SB-1 25'	soil	2011-06-28	00:00	2011-06-30
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	270908	SB-2 0-1'	soil	2011-06-28	00:00	2011-06-30
270911 SB-2 7' soil 2011-06-28 00:00 2011-06-30 270912 SB-2 10' soil 2011-06-28 00:00 2011-06-30 270913 SB-2 15' soil 2011-06-28 00:00 2011-06-30 270914 SB-2 20' soil 2011-06-28 00:00 2011-06-30 270915 SB-2 25' soil 2011-06-28 00:00 2011-06-30	270909	SB-2 3'	soil	2011-06-28	00:00	2011-06-30
270912 SB-2 10' soil 2011-06-28 00:00 2011-06-30 270913 SB-2 15' soil 2011-06-28 00:00 2011-06-30 270914 SB-2 20' soil 2011-06-28 00:00 2011-06-30 270915 SB-2 25' soil 2011-06-28 00:00 2011-06-30	270910	SB-2 5'	soil	2011-06-28	00:00	2011-06-30
270913 SB-2 15' soil 2011-06-28 00:00 2011-06-30 270914 SB-2 20' soil 2011-06-28 00:00 2011-06-30 270915 SB-2 25' soil 2011-06-28 00:00 2011-06-30	270911	SB-2 7'	soil	2011-06-28	00:00	2011-06-30
270914 SB-2 20' soil 2011-06-28 00:00 2011-06-30 270915 SB-2 25' soil 2011-06-28 00:00 2011-06-30	270912	SB-2 10'	soil	2011-06-28	00:00	2011-06-30
270915 SB-2 25' soil 2011-06-28 00:00 2011-06-30	270913	SB-2 15'	soil	2011-06-28	00:00	2011-06-30
	270914	SB-2 20'	soil	2011-06-28	00:00	2011-06-30
270916 SB-2 30' soil 2011-06-28 00:00 2011-06-30	270915	SB-2 25'	soil	2011-06-28	00:00	2011-06-30
	270916	SB-2 30'	soil	2011-06-28	00:00	2011-06-30

			Date	Time	Date
Sample	Description	Matrix	Taken	\mathbf{Taken}	Received
270917	SB-3 0-1'	soil	2011-06-28	00:00	2011-06-30
270918	SB-3 5'	soil	2011-06-28	00:00	2011-06-30
270919	SB-3 7'	soil	2011-06-28	00:00	2011-06-30
270920	SB-3 10'	soil	2011-06-28	00:00	2011-06-30
270921	SB-3 15'	soil	2011-06-28	00:00	2011-06-30
270922	SB-3 20'	soil	2011-06-28	00:00	2011-06-30
270923	SB-3 25'	soil	2011-06-28	00:00	2011-06-30
270924	SB-3 30'	soil	2011-06-28	00:00	2011-06-30
270925	SB-3 3'	soil	2011-06-28	00:00	2011-06-30
270926	SB-4 0-1'	soil	2011-06-29	00:00	2011-06-30
270927	SB-4 3'	soil	2011-06-29	00:00	2011-06-30
270928	SB-4 5'	soil	2011-06-29	00:00	2011-06-30
270929	SB-4 7'	soil	2011-06-29	00:00	2011-06-30
270930	SB-4 10'	soil	2011-06-29	00:00	2011-06-30
270931	SB-4 15'	soil	2011-06-29	00:00	2011-06-30
270932	SB-4 20'	soil	2011-06-29	00:00	2011-06-30
270936	SB-5 0-1'	soil	2011-06-29	00:00	2011-06-30
270937	SB-5 3'	soil	2011-06-29	00:00	2011-06-30
270938	SB-5 5'	soil	2011-06-29	00:00	2011-06-30
270939	SB-5 7'	soil	2011-06-29	00:00	2011-06-30
270940	SB-5 10'	soil	2011-06-29	00:00	2011-06-30
270941	SB-5 15'	soil	2011-06-29	00:00	2011-06-30
270942	SB-5 20'	soil	2011-06-29	00:00	2011-06-30
270943	SB-5 25'	soil	2011-06-29	00:00	2011-06-30
270946	SB-6 0-1'	soil	2011-06-29	00:00	2011-06-30
270947	SB-6 3'	soil	2011-06-29	00:00	2011-06-30
270948	SB-6 5'	soil	2011-06-29	00:00	2011-06-30
270949	SB-6 7'	soil	2011-06-29	00:00	2011-06-30
270950	SB-6 10'	soil	2011-06-29	00:00	2011-06-30
270951	SB-6 15'	soil	2011-06-29	00:00	2011-06-30
270952	SB-6 20'	soil	2011-06-29	00:00	2011-06-30
270953	SB-6 25'	soil	2011-06-29	00:00	2011-06-30

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 31 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

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Case Narrative

Samples for project COG/Folk Federal Tank Battery were received by TraceAnalysis, Inc. on 2011-06-30 and assigned to work order 11070105. Samples for work order 11070105 were received intact at a temperature of 8.0 C.

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

		Prep	Prep	$_{ m QC}$	Analysis
Test	Method	Batch	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	70311	2011-07-06 at 08:36	82892	2011-07-08 at 15:54
Chloride (Titration)	SM 4500-Cl B	70311	2011-07-06 at 08:36	82893	2011-07-08 at 15:55
Chloride (Titration)	SM 4500-Cl B	70311	2011-07-06 at 08:36	82894	2011-07-08 at 15:56
Chloride (Titration)	SM 4500-Cl B	70311	2011-07-06 at 08:36	82895	2011-07-08 at 15:57
Chloride (Titration)	SM 4500-Cl B	70311	2011-07-06 at 08:36	82928	2011-07-11 at 14:05
Chloride (Titration)	SM 4500-Cl B	70604	2011-07-14 at 14:54	83123	2011-07-14 at 15:55

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 11070105 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.

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Report Date: July 18, 2011 114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 6 of 31 Eddy Co., NM

Analytical Report

Sample: 270899 - SB-1 0-1'

Laboratory: Midland

Analysis:

Chloride (Titration)

82892

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

Analyzed By: AR

QC Batch: Prep Batch:

70311

Date Analyzed: Sample Preparation:

2011-07-08 2011-07-06

100

4300

RL

Prepared By:

Result

Cert Parameter Flag Chloride

Units Dilution mg/Kg

RL4.00

Sample: 270900 - SB-1 3'

Laboratory: Midland

Analysis: QC Batch: Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B

Prep Method:

N/A Analyzed By: AR

RL

4.00

Prep Batch:

82892 70311

2011-07-08 2011-07-06 Sample Preparation:

Prepared By: AR

RL

Result Units Dilution Parameter Flag Cert Chloride 3410 mg/Kg 100

Sample: 270901 - SB-1 5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Units

mg/Kg

Prep Method: N/A Analyzed By: AR

QC Batch: Prep Batch:

Chloride

82892 70311

Date Analyzed: Sample Preparation:

2011-07-08 2011-07-06 Prepared By: AR

Parameter Flag Cert

RL Result 2380

Dilution RL4.00 100

Report Date 114-6400890	e: July 18, 2011		Work Order: 11070105 COG/Folk Federal Tank Battery			Page Number: 7 of 31 Eddy Co., NM		
Sample: 27	70902 - SB-1 7'							
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 82892 70311	Date Ar	cal Method: nalyzed: Preparation:	SM 4500-Cl B 2011-07-08 2011-07-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR		
		-	RL	·	D. 1			
Parameter Chloride	Flag	Cert	Result 3000	Units mg/Kg	Dilution 100	$\frac{RL}{4.00}$		
Sample: 27	70903 - SB-1 10'							
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 82892 70311	Date Ar	cal Method: nalyzed: Preparation:	SM 4500-Cl B 2011-07-08 2011-07-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR		
			RL					
Parameter Chloride	Flag	Cert	Result 3590	Units mg/Kg	Dilution 100	$\frac{\mathrm{RL}}{4.00}$		
Sl om	70004 SD 1 171							
_	'0904 - SB-1 15'							
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 82892 70311	Date An	eal Method: alyzed: Preparation:	SM 4500-Cl B 2011-07-08 2011-07-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR		
			RL					
Parameter	Flag	Cert	Result	\mathbf{Units}	Dilution	RL		

Analytical Method:

Sample Preparation: 2011-07-06

Date Analyzed:

SM 4500-Cl B

2011-07-08

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

Sample: 270905 - SB-1 20'

82892

Chloride (Titration)

Laboratory: Midland

Prep Batch: 70311

Analysis:

QC Batch:

Report Date: July 18, 2011 114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 8 of 31 Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			237	mg/Kg	50	4.00

Sample: 270906 - SB-1 25'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 82892 Analytical Method: Date Analyzed: SM 4500-Cl B 2011-07-08 Prep Method: N/A Analyzed By: AR

QC Batch: Prep Batch:

70311

Sample Preparation: 2011-07-06

Analyzed By: AR Prepared By: AR

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			<200	mg/Kg	50	4.00

Sample: 270907 - SB-1 30'

Laboratory:

Midland

Analysis: Chloride (Titration)
QC Batch: 82892

Analytical Method:

SM 4500-Cl B 2011-07-08 Prep Method: N/A Analyzed By: AR

Prep Batch: 70311

Date Analyzed: Sample Preparation:

2011-07-06

Analyzed By: AR Prepared By: AR

			m RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			207	mg/Kg	50	4.00

Sample: 270908 - SB-2 0-1'

Laboratory: Analysis: Midland

Analysis: Chloride (Titration)
QC Batch: 82892
Prep Batch: 70311

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2011-07-08

2011-07-06

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

RL

 Report Date: July 18, 2011

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 9 of 31

Eddy Co., NM

Sample: 270909 - SB-2 3'

Laboratory:

Midland

Analysis: QC Batch:

Prep Batch:

Chloride (Titration)

82893 70311

Analytical Method: Date Analyzed:

SM 4500-Cl B

2011-07-08

Prep Method: N/A Analyzed By: AR

Sample Preparation:

2011-07-06

Prepared By: AR

RL

Parameter Chloride

Flag Cert

Result 566

Units mg/Kg Dilution 50

RL4.00

Sample: 270910 - SB-2 5'

Laboratory:

Midland

Analysis: QC Batch: Chloride (Titration)

82893 70311

Analytical Method:

SM 4500-Cl B 2011-07-08

Prep Method: N/A Analyzed By:

AR

Prep Batch:

Date Analyzed: Sample Preparation:

2011-07-06

Prepared By: AR

RL

Parameter Cert Flag Chloride

Result 1250

Units mg/Kg Dilution

RL100 4.00

Sample: 270911 - SB-2 7'

Laboratory: Midland

Analysis:

Chloride (Titration) 82893

Analytical Method: Date Analyzed:

SM 4500-Cl B 2011-07-08

Prep Method: N/A Analyzed By: AR

QC Batch: Prep Batch:

70311

Sample Preparation:

2011-07-06

Prepared By: AR

Parameter Flag

Cert

Chloride

RLResult 926

Units mg/Kg

Dilution

100

RL4.00

Sample: 270912 - SB-2 10'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

82893

Date Analyzed: Sample Preparation:

2011-07-08 2011-07-06

Analyzed By: Prepared By:

AR AR

Prep Batch: 70311 Report Date: July 18, 2011

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 10 of 31

Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			1170	mg/Kg	100	4.00

Sample: 270913 - SB-2 15'

Laboratory: Midland

Analysis:

Chloride (Titration)

82893

Analytical Method:

SM 4500-Cl B 2011-07-08

Prep Method: N/A

QC Batch: Prep Batch: 70311 Date Analyzed: Sample Preparation:

2011-07-06

Analyzed By: AR Prepared By: AR

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			343	mg/Kg	50	4.00

Sample: 270914 - SB-2 20'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 82893

Analytical Method:

SM 4500-Cl B 2011-07-08

Prep Method: N/A Analyzed By: AR

Prep Batch: 70311

Date Analyzed: Sample Preparation:

2011-07-06

Prepared By: AR

RL

Parameter	Flag	Cert	Result	Units	Dilution	RL_
Chloride			251	mg/Kg		4:00

Sample: 270915 - SB-2 25'

Laboratory:

Parameter

Chloride

Midland

Analysis: QC Batch:

Chloride (Titration)

82893 Prep Batch: 70311

Analytical Method: Date Analyzed:

Cert

Sample Preparation:

SM 4500-Cl B 2011-07-08

2011-07-06

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

Flag

RLResult Units Dilution RL<200 mg/Kg 50 4.00

Report Date 114-6400890	e: July 18, 2011		k Order: 11070105 Page Number: 11 of 31 k Federal Tank Battery Eddy Co., NM			
Sample: 27	70916 - SB-2 30'					
Laboratory:		A 1 . 45 .	1 3 4 - 4 5 4 .	CM 4500 CL D	Down Madhad	NT / A
Analysis: QC Batch:	Chloride (Titration) 83123	Analytic Date An	cal Method:	SM 4500-Cl B 2011-07-14	Prep Method: Analyzed By:	N/A AR
Prep Batch:			Preparation:	2011-07-14	Prepared By:	AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			185	mg/Kg	25	4.00
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 82893 70311	Date An	cal Method: nalyzed: Preparation:	SM 4500-Cl B 2011-07-08 2011-07-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			326	mg/Kg	50	4.00
Laboratory:	'0918 - SB-3 5' Midland					
Analysis:	Chloride (Titration)		al Method:	SM 4500-Cl B	Prep Method:	- AT / A

Chloride				2710	mg/Kg	100	4.00
Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Prep Batch:	70311		Sample 1	Preparation:	2011-07-06	Prepared By:	AR
QC Batch:	82893		Date An	alyzed:	2011-07-08	Analyzed By:	AR

Sample: 270919 - SB-3 7'

Laboratory: Midland

Analysis: Chloride (Titration)

Analytical Method: SM 4500-Cl B

Prep Method: N/A

QC Batch: 82894

Date Analyzed: 2011-07-08

Analyzed By: AR

Prep Batch: 70311

Sample Preparation: 2011-07-06

Prepared By: AR

Report Date: July 18, 2011 Work Order: 11070105 Page Number: 12 of 31 114-6400890 COG/Folk Federal Tank Battery Eddy Co., NM RLParameter Flag Cert Result Units Dilution RLChloride 1760 mg/Kg 100 4.00 Sample: 270920 - SB-3 10' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 82894 Date Analyzed: 2011-07-08 Analyzed By: ARPrep Batch: 70311 Sample Preparation: 2011-07-06 Prepared By: AR RLDilution RLParameter Flag Cert Result Units 100 4.00 Chloride 675 mg/Kg

Prep Batch:	70311		Sample I	Preparation:	2011-07-06	Prepared By:	AK
				RL			
Parameter		Flag	Cert	Result	Units	Dilution	RL
Chloride				316	mg/Kg	50	= 4.00

Analytical Method:

Date Analyzed:

SM 4500-Cl B

2011-07-08

Prep Method: N/A

AR

Analyzed By:

Sample: 270922 - SB-3 20'

Sample: 270921 - SB-3 15'

82894

Chloride (Titration)

Laboratory: Midland

Analysis:

QC Batch:

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 82894 70311	Date	ytical Method: Analyzed: ple Preparation:	SM 4500-Cl B 2011-07-08 2011-07-06	Prep Method: Analyzed By: Prepared By:	AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chlorida			268	ma/Ka	50	4.00

Work Order: 11070105 Page Number: 13 of 31 Report Date: July 18, 2011 114-6400890 COG/Folk Federal Tank Battery Eddy Co., NM Sample: 270923 - SB-3 25' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 82894 Date Analyzed: 2011-07-08 Analyzed By: AR Sample Preparation: 2011-07-06 Prepared By: Prep Batch: 70311 AR RLCert Result Units Dilution RLParameter Flag 230 50 4.00 Chloride mg/Kg Sample: 270924 - SB-3 30' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 82894 Date Analyzed: 2011-07-08 Analyzed By: ARPrep Batch: 70311 Sample Preparation: 2011-07-06 Prepared By: AR RLDilution RLParameter Flag Cert Result Units 396 Chloride mg/Kg 50 4.00 Sample: 270925 - SB-3 3' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 82894 Date Analyzed: 2011-07-08 Analyzed By: AR Prep Batch: 70311 Sample Preparation: 2011-07-06 Prepared By: ARRLResult RLParameter Flag Cert Units Dilution Chloride 4240 mg/Kg 100 4.00

Sample: 270926 - SB-4 0-1'

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 82894 Date Analyzed: 2011-07-08 Analyzed By: AR Prep Batch: 70311 Sample Preparation: 2011-07-06 Prepared By: AR

Report Date: July 18, 2011 114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 14 of 31 Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			10000	mg/Kg	100	4.00

Sample: 270927 - SB-4 3'

Laboratory:

Midland

Analysis: Chloride (Titration) Analytical Method: Date Analyzed:

SM 4500-Cl B 2011-07-08

Prep Method: N/A Analyzed By: AR

QC Batch: 82894 Prep Batch: 70311

Sample Preparation: 2011-07-06 Prepared By: AR

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL_
Chloride			5940	mg/Kg	100	4.00

Sample: 270928 - SB-4 5'

Laboratory:

Midland

Chloride (Titration) Analysis: QC Batch: 82894 Prep Batch: 70311

Analytical Method: Date Analyzed:

SM 4500-Cl B 2011-07-08 Sample Preparation: 2011-07-06

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

RLDilution RLFlag Cert Result Units Parameter 1270 100 4:00: Chloride --mg/Kg

Sample: 270929 - SB-4 7'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 82895 Prep Batch: 70311

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2011-07-08 2011-07-06

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

Parameter Flag Cert Result Units Dilution RLChloride 316 mg/Kg 50 4.00

RL

Report Date 114-6400890	e: July 18, 2011	Work Order: 1107 COG/Folk Federal Tan		Page Number: 15 Eddy Co.,	
Sample: 27	0930 - SB-4 10'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	82895	Date Analyzed:	2011-07-08	Analyzed By:	AR
Prep Batch:	70311	Sample Preparation:	2011-07-06	Prepared By:	AR
		RL			
Parameter	Flag	Cert Result	Units	Dilution	RL
Chloride		269	mg/Kg	50	4.00
Sample: 27 Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 82895 70311	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-07-08 2011-07-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Cert Result	Units	Dilution	RL
Chloride		432	mg/Kg	50	4.00
Sample: 27 Laboratory: Analysis: QC Batch: Prep Batch:	0932 - SB-4 20' Midland Chloride (Titration) 82895 70311	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-07-08 2011-07-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Cert Result	Units	Dilution	RL
Chloride		559	mg/Kg	100	4.00
Chloride		Cert Result 559	mg/Kg	Diution 100	
_	0936 - SB-5 0-1'				
Laboratory:	Midland	Annalanti di Manala di J	CM 4500 Cl D	Dec. M. (1 1	NT /
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/F

Date Analyzed:

Sample Preparation:

2011-07-08

2011-07-06

Analyzed By: AR

Prepared By: AR

......

QC Batch:

Prep Batch: 70311

82895

Report Date: July 18, 2011

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 16 of 31

Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			469	mg/Kg	50	4.00

Sample: 270937 - SB-5 3'

Laboratory: Midland Analysis:

Chloride (Titration)

QC Batch: Prep Batch: 70311

82895

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B

2011-07-08 2011-07-06 Prep Method: N/A Analyzed By: AR

Prepared By: AR

	RL					
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			5400	mg/Kg	100	4.00

Sample: 270938 - SB-5 5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B 2011-07-08

Prep Method: N/A AR

QC Batch: Prep Batch:

82895 70311

2011-07-06 Sample Preparation:

Analyzed By:

Prepared By: AR

RL

Result Dilution RLParameter Units Flag Cert 4.00 Chloride 364 mg/Kg : 50

Sample: 270939 - SB-5 7'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch:

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

Prep Batch:

82895 70311

Date Analyzed: Sample Preparation:

2011-07-08 2011-07-06

Analyzed By: AR Prepared By: AR

RL

Parameter Cert Result Units Dilution RLFlag Chloride 248 mg/Kg 50 4.00

114-6400890	e: July-18, 2011	Work Or COG/Folk Fe	der: 11076 deral Tani	Page Number: 17 of 3 Eddy Co., NM		
Sample: 27	'0940 - SB-5 10'					
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 82895 70311	Analytical l Date Analy Sample Pre	zed:	SM 4500-Cl B 2011-07-08 2011-07-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR
•		-	RL		-	
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			3770	mg/Kg	100	4.00
Sample: 27 Laboratory: Analysis: QC Batch: Prep Batch:	70941 - SB-5 15' Midland Chloride (Titration) 82895 70311	Analytical l Date Analy Sample Pre	zed:	SM 4500-Cl B 2011-07-08 2011-07-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		•	RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			559	mg/Kg	50	4.00
Laboratory: Analysis: QC Batch:	Midland Chloride (Titration) 82928 70311	Analytical I Date Analy Sample Pre	zed:	SM 4500-Cl B 2011-07-11 2011-07-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Laboratory: Analysis:	Midland Chloride (Titration) 82928		zed: paration:	2011-07-11		AR
Laboratory: Analysis: QC Batch:	Midland Chloride (Titration) 82928	Date Analy	zed:	2011-07-11	Analyzed By:	AR

Analytical Method:

Sample Preparation: 2011-07-06

Date Analyzed:

SM 4500-Cl B

2011-07-11

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Laboratory: Midland

Prep Batch: 70311

82928

Chloride (Titration)

Analysis:

QC Batch:

Report Date: July 18, 2011

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 18 of 31

Eddy Co., NM

			m RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			218	mg/Kg	50	4.00

Sample: 270946 - SB-6 0-1'

Laboratory:

Midland

Analysis:

Chloride (Titration)

QC Batch: Prep Batch:

70311

82928

Analytical Method:

SM 4500-Cl B Date Analyzed:

2011-07-11 2011-07-06 Sample Preparation:

Prep Method: N/A Analyzed By: AR

Prepared By: AR

			KL			
Parameter	\mathbf{Flag}	Cert	Result	Units	Dilution	RL
Chloride			5060	mg/Kg	100	4.00

Sample: 270947 - SB-6 3'

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 82928 Prep Batch: 70311

Analytical Method:

SM 4500-Cl B Date Analyzed: 2011-07-11 Sample Preparation: 2011-07-06

Prep Method: N/A

Analyzed By: AR Prepared By: AR

RL

Flag Parameter Cert Result Units Dilution RL4.00 Chloride

Sample: 270948 - SB-6 5'

Laboratory:

Prep Batch:

Midland

70311

Analysis: Chloride (Titration) QC Batch: 82928

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2011-07-11 2011-07-06

Prep Method: N/A Analyzed By: AR

AR

Prepared By:

RL

Parameter Cert Units Dilution RLFlag Result Chloride 782 100 4.00 mg/Kg

Work Order: 11070105 Page Number: 19 of 31 Report Date: July 18, 2011 114-6400890 COG/Folk Federal Tank Battery Eddy Co., NM Sample: 270949 - SB-6 7' Midland Laboratory: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: Analysis: N/A QC Batch: 82928 Date Analyzed: 2011-07-11 Analyzed By: AR Sample Preparation: 2011-07-06 Prepared By: ARPrep Batch: 70311 RLParameter Flag Cert Result Units Dilution RLChloride 1360 mg/Kg 100 4.00

Midland Laboratory: Analytical Method: SM 4500-Cl B Prep Method: N/A Analysis: Chloride (Titration) QC Batch: 82928 Date Analyzed: 2011-07-11 Analyzed By: AR Sample Preparation: 2011-07-06 Prepared By: Prep Batch: 70311 AR RL

ParameterFlagCertResultUnitsDilutionRLChloride752mg/Kg1004.00

Sample: 270951 - SB-6 15'

Sample: 270950 - SB-6 10'

Midland Laboratory: Analytical Method: SM 4500-Cl B Analysis: Chloride (Titration) Prep Method: N/A QC Batch: 82928 Date Analyzed: 2011-07-11 Analyzed By: AR Prep Batch: 70311 Sample Preparation: 2011-07-06 Prepared By: AR

Sample: 270952 - SB-6 20'

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 82928 Date Analyzed: 2011-07-11 Analyzed By: AR Prep Batch: 70311 Sample Preparation: 2011-07-06 Prepared By: AR

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 20 of 31

Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			<200	mg/Kg	50	4.00

Sample: 270953 - SB-6 25'

Laboratory: Midland Analysis:

Chloride (Titration)

QC Batch:

82928

Analytical Method:

Date Analyzed:

SM 4500-Cl B 2011-07-11

Prep Method: N/A

Prep Batch: 70311

Sample Preparation: 2011-07-06

Analyzed By: Prepared By:

ARAR

RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			396	mg/Kg	50	4.00

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 21 of 31

Eddy Co., NM

Method Blanks

Method Blank (1)

QC Batch: 82892

QC Batch:

82892

Date Analyzed:

2011-07-08

Analyzed By: AR

Prep Batch: 70311

QC Preparation:

2011-07-06

Prepared By: AR

MDL

Parameter Chloride

Cert

Result < 3.85

Units mg/Kg

RL4

Method Blank (1)

QC Batch: 82893

Flag

QC Batch: Prep Batch: 70311

Chloride

82893

Date Analyzed: QC Preparation:

2011-07-08 2011-07-06 Analyzed By: AR

Prepared By:

Parameter

Cert

MDL Result < 3.85

UnitsRLmg/Kg

Method Blank (1)

QC Batch: 82894

QC Batch:

82894

Date Analyzed:

2011-07-08

Analyzed By: AR

Prep Batch:

70311

QC Preparation:

2011-07-06

Prepared By:

Cert Flag

Flag

Parameter Chloride

MDL Result

< 3.85

Units RLmg/Kg4

Method Blank (1)

QC Batch: 82895

82895 QC Batch: Prep Batch: 70311

Date Analyzed: QC Preparation:

2011-07-08 2011-07-06

Analyzed By: AR Prepared By: AR

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 22 of 31

Eddy Co., NM

			\mathtt{MDL}		
Parameter	Flag	Cert	Result	Units	RL
Chloride			< 3.85	mg/Kg	4

Method Blank (1)

QC Batch: 82928

QC Batch: Prep Batch: 70311

82928

Date Analyzed:

2011-07-11

Analyzed By: AR

QC Preparation: 2011-07-06

Prepared By: AR

			MDL		
Parameter	Flag	Cert	Result	Units	RL
Chloride			< 3.85	mg/Kg	4

Method Blank (1)

QC Batch: 83123

QC Batch: Prep Batch: 70604

83123

Date Analyzed:

QC Preparation: 2011-07-14

2011-07-14

Analyzed By: AR

Prepared By: AR

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

------Work Order: 11070105--COG/Folk Federal Tank Battery Page Number: 23 of 31 Eddy Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

114-6400890

Date Analyzed:

2011-07-08

Analyzed By: AR

Prep Batch: 70311

QC Preparation: 2011-07-06

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			96.3	mg/Kg	1	100	< 3.85	96	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			104	mg/Kg	1	100	< 3.85	104	85 - 115	8	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:

82893

Date Analyzed:

2011-07-08

Analyzed By: AR

Prep Batch: 70311

QC Preparation: 2011-07-06

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param F—C	===Result=	Units	=Dil.==	Amount_	-Result	Rec	Limit
Chloride	97.5	mg/Kg	1	100	< 3.85	98	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}	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			108	mg/Kg	1	100	<3.85	108	85 - 115	10	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:

82894

Date Analyzed:

2011-07-08

Analyzed By: AR

Prep Batch: 70311

QC Preparation: 2011-07-06

Prepared By: AR

114-6400890

Work Order: 11070105

Page Number: 24 of 31 Eddy Co., NM COG/Folk Federal Tank Battery

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			96.7	mg/Kg	1	100	< 3.85	97	85 - 115

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

			LCSD			Spike	Matrix		${ m Rec.}$		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			103	mg/Kg	1	100	< 3.85	103	85 - 115	6	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:

82895

Date Analyzed:

2011-07-08

Analyzed By: AR

Prep Batch: 70311

QC Preparation:

2011-07-06

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	${f F}$	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			97.0	mg/Kg	1	100	< 3.85	97	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			104	mg/Kg	1	100	< 3.85	104	85 - 115	7	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:

Date Analyzed:

2011-07-11

Analyzed By: AR

Prep Batch: 70311

QC Preparation: 2011-07-06

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			97.8	mg/Kg	1	100	< 3.85	98	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			104	mg/Kg	1	100	< 3.85	104	85 - 115	6	20

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

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 25 of 31 Eddy Co., NM

Laboratory Control Spike (LCS-1)

QC Batch:

83123

Date Analyzed:

2011-07-14

Analyzed By: AR

98

Prep Batch:

70604

QC Preparation: 2011-07-14

Prepared By: AR

Param	
Chloride	

LCS F \mathbf{C} Result 98.0

Spike Units Dil. Amount 100 mg/Kg

Matrix Result Rec

< 3.85

Rec. Limit

85 - 115

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

Param C Chloride

LCSD Result Units mg/Kg

Spike Dil. Amount 100 1

Matrix Result <3.85

Rec.

102

Rec. Limit 85 - 115

RPD RPD Limit

20

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

102

Matrix Spike (MS-1)

Spiked Sample: 270908

F

QC Batch:

82892

Date Analyzed:

2011-07-08

Analyzed By: AR

Prep Batch:

70311

QC Preparation:

2011-07-06

Prepared By: AR

MS

Matrix Result

Rec.

Param Chloride

Result 21400

Units Dil. mg/Kg 100 Amount 10000

Spike

Spike

10400

Matrix

Result

Rec. Limit 110 80 - 120

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

Param -----Chloride

MSD F C Result Units Dil Amount 22200

C

100

Spike Matrix Result 10000 10400

Rec.

Rec. Limit RPD Limit

RPD

Rec.

Limit

80 - 120

20

mg/Kg 118 80 - 120 Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 270918

F

QC Batch:

82893

Date Analyzed:

2011-07-08

Analyzed By: AR

Rec.

Prep Batch:

70311

AR

Param

QC Preparation:

2011-07-06

Dil.

Units

Prepared By:

Result Amount 12200 100 10000 2710 Chloride mg/Kg 95

MS

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

 \mathbf{C}

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 26 of 31 Eddy Co., NM

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			12500	mg/Kg	100	10000	2710	98	80 - 120	2	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: 270928

QC Batch:

82894

Date Analyzed:

2011-07-08

Analyzed By: AR

Prep Batch: 70311

QC Preparation:

2011-07-06

Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			12400	mg/Kg	100	10000	1270	111	80 - 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
Chloride			12700	mg/Kg	100	10000	1270	114	80 - 120	2	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: 270941

QC Batch: Prep Batch:

82895 70311 Date Analyzed:

2011-07-08 QC Preparation: 2011-07-06 Analyzed By: AR Prepared By: AR

MS Spike Matrix Rec. Param \mathbf{C} Result Units Dil. Amount Result Rec. Limit Chloride 11500 mg/Kg 100 10000 559 109 80 - 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}	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			10800	mg/Kg	100	10000	559	102	80 - 120	6	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: 270953

QC Batch:

82928

Date Analyzed:

2011-07-11

Analyzed By: AR Prepared By: AR

Prep Batch: 70311

QC Preparation: 2011-07-06

114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 27 of 31 Eddy Co., NM

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			10800	mg/Kg	100	10000	<385	104	80 - 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
Chloride			11400	mg/Kg	100	10000	<385	110	80 - 120	5	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: 270916

QC Batch:

83123

Date Analyzed:

2011-07-14

Analyzed By: AR

Prep Batch: 70604

QC Preparation: 2011-07-14

Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			9930	mg/Kg	100	10000	<385	97	80 - 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	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			10200	mg/Kg	100	10000	<385	100	80 - 120	3	20

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

Report Date: July 18, 2011 114-6400890

Work Order: 11070105 COG/Folk Federal Tank Battery Page Number: 28 of 31 Eddy Co., NM

Calibration Standards

Standard (ICV-1)

QC Batch: 82892

Date Analyzed: 2011-07-08

Analyzed By: AR

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		 	mg/Kg	100	102	102	85 - 115	2011-07-08

Standard (CCV-1)

QC Batch: 82892

Date Analyzed: 2011-07-08

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	97.9	98	85 - 115	2011-07-08

Standard (ICV-1)

QC Batch: 82893

Date Analyzed: 2011-07-08

Analyzed By: AR

	•	•		ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	94.4	94	85 - 115	2011-07-08

Standard (CCV-1)

QC Batch: 82893

Date Analyzed: 2011-07-08

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	106	106	85 - 115	2011-07-08

QC Batch: 828	394		Date A	nalyzed:	2011-07-08		Analy	zed By: AR		
				ICVs	ICVs	ICVs	Percent			
				True	Found	Percent	Recovery	Date		
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits			
Chloride			mg/Kg	100	98.9	99	85 - 115			
Standard (CC	V-1)									
QC Batch: 828	394		Date A	Analyzed:	2011-07-08		Analy	zed By: AR		
				CCVs	CCVs	CCVs	Percent			
				True	Found	Percent	Recovery	Date		
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Param Chloride Standard (ICV		Cert	Units mg/Kg	Conc. 100			Limits 85 - 115			
Chloride	V-1)	Cert	mg/Kg	100	Conc.	Recovery	85 - 115	2011-07-0		
Chloride Standard (ICV	V-1)	Cert	mg/Kg	100 Analyzed: ICVs	Conc. 101	Recovery 101	85 - 115	2011-07-0		
Chloride Standard (ICV QC Batch: 828	V-1)		mg/Kg Date A	100 Analyzed: ICVs True	Conc. 101 2011-07-08 ICVs Found	Recovery 101 ICVs Percent	85 - 115 Analy Percent Recovery	2011-07-0 zed By: AR		
Chloride Standard (ICV QC Batch: 828	V-1)	Cert	mg/Kg Date A Units	100 Analyzed: ICVs True Conc.	Conc. 101 2011-07-08 ICVs Found Conc.	ICVs Percent Recovery	Analy Percent Recovery Limits	zed By: AR Date Analyzed		
Chloride Standard (ICV QC Batch: 828	V-1)		mg/Kg Date A	100 Analyzed: ICVs True	Conc. 101 2011-07-08 ICVs Found	Recovery 101 ICVs Percent	85 - 115 Analy Percent Recovery	zed By: AR Date Analyzed		
Chloride Standard (ICV QC Batch: 828	V-1) 395 Flag		mg/Kg Date A Units	100 Analyzed: ICVs True Conc.	Conc. 101 2011-07-08 ICVs Found Conc.	ICVs Percent Recovery	Analy Percent Recovery Limits	zed By: AR Date Analyzed		
Chloride Standard (ICV QC Batch: 828 Param Chloride	V-1) Flag V-1)		mg/Kg Date A Units mg/Kg	100 Analyzed: ICVs True Conc. 100	Conc. 101 2011-07-08 ICVs Found Conc.	ICVs Percent Recovery	Analy Percent Recovery Limits 85 - 115	Analyzed 2011-07-08 halyzed By: AR y Date Analyzed 2011-07-08 halyzed By: AR y Date Analyzed 2011-07-08		
Chloride Standard (ICV QC Batch: 828 Param Chloride Standard (CC	V-1) Flag V-1)		mg/Kg Date A Units mg/Kg	100 Analyzed: ICVs True Conc. 100 Analyzed: CCVs	Conc. 101 2011-07-08 ICVs Found Conc. 99.5 2011-07-08 CCVs	ICVs Percent Recovery 100	Analy Percent Recovery Limits 85 - 115 Analy Percent	zed By: AR Date Analyzed 2011-07-0		
Chloride Standard (ICV QC Batch: 828 Param Chloride Standard (CC QC Batch: 828	V-1) Flag V-1)	Cert	mg/Kg Date A Units mg/Kg Date A	100 Analyzed: ICVs True Conc. 100 Analyzed: CCVs True	Conc. 101 2011-07-08 ICVs Found Conc. 99.5 2011-07-08 CCVs Found	ICVs Percent Recovery 100 CCVs Percent	Analy Percent Recovery Limits 85 - 115 Analy Percent Recovery	zed By: AR Date Analyzed 2011-07-0		
Chloride Standard (ICV QC Batch: 828 Param Chloride Standard (CC	V-1) Flag V-1)		mg/Kg Date A Units mg/Kg	100 Analyzed: ICVs True Conc. 100 Analyzed: CCVs	Conc. 101 2011-07-08 ICVs Found Conc. 99.5 2011-07-08 CCVs	ICVs Percent Recovery 100	Analy Percent Recovery Limits 85 - 115 Analy Percent	zed By: AR Date Analyzed 2011-07-0		

Date Analyzed: 2011-07-11

Analyzed By: AR

QC Batch: 82928

Report Date: J 114-6400890	fuly 18, 2011				er: 11070105 eral Tank Batte	ery	-	mber: 30 of 31 Eddy Co., NM
				ICVs	ICVs	ICVs	Percent	
_				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	93.9	94	85 - 115	2011-07-11
Standard (CC	CV-1)							
QC Batch: 829	928		Date A	analyzed:	2011-07-11		Analy	zed By: AR
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	106	106	85 - 115	2011-07-11
Standard (IC	V-1)							
QC Batch: 83	123		Date A	nalyzed:	2011-07-14		Analy	zed By: AR
				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2011-07-14

QC Batch: 831	.23		Date A	nalyzed: 2	011-07-14		Analy	zed By: AR
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2011-07-14

Standard (CCV-1)

Report Date: July 18, 2011 Work Order: 11070105 Page Number: 31 of 31 114-6400890 COG/Folk Federal Tank Battery Eddy Co., NM

Appendix

Laboratory Certifications

	Certifying	Certification	Laboratory
C	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

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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	ER: SHE	GUINEUS	F		ERV ETH	ATIVE OD	Ē	TX1005		8 8		8		3260/624	29/0/25					tions, pH,		
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	Tacares SHAN	RESERVATIVE METHOD		8 8	260/624	ns, pH,	
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CLIENT NAM	ME: 2(-)	7					SITE MANAGER:	avace		NERS	'		SERV ETH	ATIVE OD		TX1005		Ba	As Ba		_	60/62	8270/625						ns, pH			
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ADDRESS: CITY: TOTAL STATE: TX ZIP:		TIME:						_	ز	CK	•	TZ	, Lug	· •	2				Auth	H Cha orized 'es	:	No
SAMPLE CONDITION WHEN RECEIVED: REMARKS: 8,0°C 11+0C+ Please fill out all copies - Laboratory retains Yellow				Pmie	Ct P	lanage	r rot	- L	Piro	k cc	DV.	Acc	COLUM	tino	nec-	ive	- C	<u> </u>				

XW0 #: 11070105

Analysis Rec	uest of Chain of Custo	dy Record	PAGE: 6 OF:	6
7414190101100		ay 110001G	ANALYSIS REQUEST (Circle or Specify Method No.)	
	TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946		X1005 (Ext. to C35) 3a Cd Cr Pb Hg Se 3a Cd Vr Pd Hg Se 624 9H, TDS	
CLIENT NAME:	SITE MANAGER: :: TKC Takez	PRESERVATIVE METHOD	TX1005 TX1005 Ba Cd Ba Cd Ba Cd T70/625	
	ECT NAME: OG / FOIL Redney TB Filder Co. Alm	NUMBER OF CONTAINERS FILTERED (Y/N) HCL HNO3 OOH NONE	BTEX 8021B TPH 8015 MOD. TX1005 PAH 8270 RCRA Metals Ag As Ba Cd TCLP Wotatiles TCLP Volatiles TCLP Semi Volatiles RCI GC.MS Vol. 8240/8260/624 GC.MS Vol. 8240/8260/626 GC.MS Semi. Vol. 8270/625 PCB's 8080/608 Pest. 808/608 Chloride Gamma Spec. Alpha Beta (Air) PLM (Asbestos) Major Anions/Cations, pH, TI	
27 6/29 5	X SB-6 0-1'	III X		
0/3703000	3'			
0188 BOOK	5'	N		
OFFICE COMPANY	71			
950 9508	10'			
OF ORDER	15'			
CONTRACTOR	20'	1		
and the	25'	1		
954 (000)	30'	1		
000	40'	\		
RELINQUISHED BY: (Signature)	Date: 6/30/11 PECEIVED PY. (Signature) Time: 1645	Date: 6/39 Time: 16		130/11
RELINQUISHED BY: (Signature)	Date: PEOSINED 91: (Signature)	Date:	SAMPLE SHIPPED BY: (Circle) FEDEY BUS OTHER:	
RELINQUISHED BY: (Signature)	Date: RECEIVED BY: (Signature)	Date: Time:	TETRA TECH CONTACT PERSON: Results b	r:
RECEIVING LABORATORY: ADDRESS: CITY: CONTACT: P	RECEIVED BY: (Signature)	TIME:	Ike Tararez Rush Ch Authorize Yes	arges d: No
SAMPLE CONDITION WHEN RECEIVED:	REMARKS: - Laboratory retains Yellow copy - Return Orginal copy to	o Tetra Tech - Project Manage	er retains Pink cook - Accounting receives Gold cook	

Report Date: June 1, 2011 Work Order: 11051609 Page Number: 1 of 3

Summary Report

Ike Tavarez Tetra Tech 1910 N. Big Spring Stree

1910 N. Big Spring Street Midland, TX 79705 Report Date: June 1, 2011

Work Order: 11051609

Project Location: Eddy Co., NM

Project Name: COG/Folk Federal Tank Battery

Project Number: 114-6400890

				Date	Time	Date
	Sample	Description	Matrix	Taken	Taken	Received
	266551	AH-1 0-0.5'	soil	2011-05-11	00:00	2011-05-16
	266552	AH2 0-0.5'	soil	2011-05-11	00:00	2011-05-16
	266553	AH-3 0-1'	soil	2011-05-11	00:00	2011-05-16
	266554	AH-3 1-1.5'	soil	2011-05-11	00:00	2011-05-16
	266555	AH-3 2-2.5'	soil	2011-05-11	00:00	2011-05-16
	266556	AH-4 0-1'	soil	2011-05-11	00:00	2011-05-16
	266557	AH-5 0-1'	soil	2011-05-11	00:00	2011-05-16
	266558	AH-6 0-1'	soil	2011-05-11	00:00	2011-05-16
	266559	AH-7 0-1'	soil	2011-05-11	00:00	2011-05-16
137.1	266560	AH-7-1-1:5	soil===	2011=05-1:1	00:00	2011-05-16
	266561	AH-7 2-2.5'	soil	2011-05-11	00:00	2011-05-16
	266562	AH-7 2.5-3'	soil	2011-05-11	00:00	2011-05-16
	266563	AH-8 0-1'	soil	2011-05-11	00:00	2011-05-16
	266564	AH-8 1-1.5'	soil	2011-05-11	00:00	2011-05-16
	266565	AH-8 2-2.5'	soil	2011-05-11	00:00	2011-05-16

		1	BTEX		TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
266551 - AH-1 0-0.5'	< 0.0200	0.133	< 0.0200	< 0.0200	< 50.0	3.58
266552 - AH2 0-0.5'				- 1	<50.0	< 2.00
266553 - AH-3 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	3.44
266556 - AH-4 0-1'	< 0.100	< 0.100	< 0.100	< 0.100	473	56.3
266557 - AH-5 0-1'				İ	< 50.0	< 2.00
266558 - AH-6 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	< 2.00
266559 - AH-7 0-1'				}	< 50.0	< 2.00
266563 - AH-8 0-1'					< 50.0	< 2.00

Sample: 266551 - AH-1 0-0.5'

	1, 2011	Work Order: 11051609	Page 1	Page Number: 2 o			
Param	Flag	Result	Units				
Chloride		12400	mg/Kg				
Sample: 266552	- AH2 0-0.5'						
Param	Flag	Result	Units				
Chloride		19900	mg/Kg				
Sample: 266553	- AH-3 0-1'						
Param	Flag	Result	Units				
Chloride		8590	mg/Kg				
Sample: 266554	- AH-3 1-1.5'						
Param	Flag	Result	Units				
Chloride		8260	mg/Kg				
Chloride Sample: 266555		Result	Units				
Chloride Sample: 266555 Param Chloride	- AH-3 2-2.5' Flag		Units mg/Kg				
Chloride Sample: 266555 Param Chloride Sample: 266556	- AH-3 2-2.5' Flag - AH-4 0-1'	Result 3540	Units mg/Kg	.i.			
Chloride Sample: 266555 Param Chloride Sample: 266556 Param	- AH-3 2-2.5' Flag	Result 3540 Result	Units mg/Kg				
Chloride Sample: 266555 Param Chloride Sample: 266556 Param Chloride	- AH-3 2-2.5' Flag - AH-4 0-1' Flag	Result 3540	Units mg/Kg	:			
Chloride Sample: 266555 Param Chloride Sample: 266556 Param	- AH-3 2-2.5' Flag - AH-4 0-1' Flag	Result	Units mg/Kg Units mg/Kg				
Chloride Sample: 266555 Param Chloride Sample: 266556 Param Chloride Sample: 266557	- AH-3 2-2.5' Flag - AH-4 0-1' Flag	Result 3540 Result 1060	Units mg/Kg Units mg/Kg				
Chloride Sample: 266555 Param Chloride Sample: 266556 Param Chloride Sample: 266557	- AH-3 2-2.5' Flag - AH-4 0-1' Flag	Result	Units mg/Kg Units mg/Kg				
Chloride Sample: 266555 Param Chloride Sample: 266556 Param Chloride Sample: 266557	- AH-3 2-2.5' Flag - AH-4 0-1' Flag - AH-5 0-1' Flag	Result 3540 Result 1060	Units mg/Kg Units mg/Kg	.:			
Chloride Sample: 266555 Param Chloride Sample: 266556 Param Chloride Sample: 266557 Param Chloride	- AH-3 2-2.5' Flag - AH-4 0-1' Flag - AH-5 0-1' Flag	Result 3540 Result 1060	Units mg/Kg Units mg/Kg				

100.10 1 1 TTT-10 Equate de

	1, 2011	Work Order: 11051609	Pag	e Number: 3 of 3
Sample: 266559	- AH-7 0-1'			
Param	Flag	Result	Units	RL
Chloride		6710	mg/Kg	4
Sample: 266560	- AH-7 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		5530	mg/Kg	4
Sample: 266561	- AH-7 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		261	mg/Kg	4
Sample: 266562				
Param	- AH-7 2.5-3' Flag	Result 1140	Units mg/Kg	RL 4
Param Chloride	Flag	Result 1140	Units mg/Kg	
Param Chloride Sample: 266563	Flag			
Param Chloride Sample: 266563 Param	Flag	1140 Result	mg/Kg Units	4 RL
Param Chloride Sample: 266563	Flag	1140	mg/Kg	4
Param Chloride Sample: 266563 Param	Flag - AH-8 0-1' Flag	1140 Result	mg/Kg Units	4 RL
Param Chloride Sample: 266563 Param Chloride	Flag - AH-8 0-1' Flag	1140 Result 8790	mg/Kg Units mg/Kg	RL 4
Param Chloride Sample: 266563 Param Chloride	Flag - AH-8 0-1' Flag - AH-8 1-1.5'	1140 Result 8790	mg/Kg Units mg/Kg	RL 4
Param Chloride Sample: 266563 Param Chloride Sample: 266564	Flag - AH-8 0-1' Flag	Result 8790	mg/Kg Units mg/Kg	RL 4
Param Chloride Sample: 266563 Param Chloride Sample: 266564 Param	Flag - AH-8 0-1' Flag - AH-8 1-1.5' Flag	Result 8790	mg/Kg Units mg/Kg Units	RL 4
Param Chloride Sample: 266563 Param Chloride Sample: 266564 Param Chloride	Flag - AH-8 0-1' Flag - AH-8 1-1.5' Flag	Result 8790	mg/Kg Units mg/Kg Units	RL 4



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E-Mail: lab@traceanalysis.com

Certifications

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

Analytical and Quality Control Report

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

Report Date: June 1, 2011

Work Order:

Project Location: Eddy Co., NM

COG/Folk Federal Tank Battery Project Name:

114-6400890 Project Number:

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	$Tak\bar{e}n$	Received
266551	AH-1 0-0.5'	soil	2011-05-11	00:00	2011-05-16
266552	AH2 0-0.5'	soil	2011-05-11	00:00	2011-05-16
266553	AH-3 0-1'	soil	2011-05-11	00:00	2011-05-16
266554	AH-3 1-1.5'	soil	2011-05-11	00:00	2011-05-16
266555	AH-3 2-2.5'	soil	2011-05-11	00:00	2011-05-16
266556	AH-4 0-1'	soil	2011-05-11	00:00	2011-05-16
266557	AH-5 0-1'	soil	2011-05-11	00:00	2011-05-16
266558	AH-6 0-1'	soil	2011-05-11	00:00	2011-05-16
266559	AH-7 0-1'	soil	2011-05-11	00:00	2011-05-16
266560	AH-7 1-1.5'	soil	2011-05-11	00:00	2011-05-16
266561	AH-7 2-2.5'	soil	2011-05-11	00:00	2011-05-16
266562	AH-7 2.5-3'	soil	2011-05-11	00:00	2011-05-16
266563	AH-8 0-1'	soil	2011-05-11	00:00	2011-05-16
266564	AH-8 1-1.5'	soil	2011-05-11	00:00	2011-05-16
266565	AH-8 2-2.5'	soil	2011-05-11	00:00	2011-05-16

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 29 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

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

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Sample 266554 (AH-3 1-1.5')	9
Sample 266555 (AH-3 2-2.5')	10
Sample 266556 (AH-4 0-1')	10
Sample 266557 (AH-5 0-1')	11
Sample 266558 (AH-6 0-1')	12
Sample 266559 (AH-7 0-1')	14
Sample 266560 (AH-7 1-1.5')	15
Sample 266561 (AH-7 2-2.5')	15
Sample 266562 (AH-7 2.5-3')	15
Sample 266563 (AH-8 0-1')	16
Sample 266564 (AH-8 1-1.5')	17
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-	
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QC Batch 81337 - CCV (3)	26
QC Batch 81382 - CCV (1)	26
40 min 220 00 (x)	20

QC Batch 81382 - CCV (2	约 .											٠.							
QC Batch 81382 - CCV (3	3) .																		
QC Batch 81652 - ICV (1))		 		 														
QC Batch 81652 - CCV (1	.) .		 																
QC Batch 81653 - ICV (1) QC Batch 81653 - CCV (1))																		
QC Batch 81653 - CCV (1	.) .							 •	 ٠.				•						
ppendix																			
Laboratory Certifications																			
Standard Flags																			
Attachmenta																			

Case Narrative

Samples for project COG/Folk Federal Tank Battery were received by TraceAnalysis, Inc. on 2011-05-16 and assigned to work order 11051609. Samples for work order 11051609 were received intact at a temperature of 3.5 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	69052	2011-05-17 at 12:30	81336	2011-05-17 at 12:55
Chloride (Titration)	SM 4500-Cl B	69151	2011-05-20 at 10:57	81652	2011-05-26 at 14:23
Chloride (Titration)	SM 4500-Cl B	69151	2011-05-20 at 10:57	81653	2011-05-26 at 14:24
TPH DRO - NEW	S 8015 D	69091	2011-05-18 at 09:14	81382	2011-05-18 at 09:14
TPH GRO	S 8015 D	69052	2011-05-17 at 12:30	81337	2011-05-17 at 15:12

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 11051609 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: June 1, 2011 114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 6 of 29 Eddy Co., NM

Analytical Report

Sample: 266551 - AH-1 0-0.5'

Laboratory: Midland

Analysis:

BTEX

81336

Analytical Method:

S 8021B

2011-05-17

Prep Method: S 5035

QC Batch:

Date Analyzed:

Analyzed By:

ME

Prep Batch: 69052

Sample Preparation:

2011-05-17

Prepared By:

ME

			RL.			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene		1	< 0.0200	mg/Kg	1	0.0200
Toluene		1	0.133	mg/Kg	1	0.0200
Ethylbenzene		1	< 0.0200	mg/Kg	1	0.0200
Xylene		1	< 0.0200	mg/Kg	1	0.0200

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.56	mg/Kg	1	2.00	128	52.8 - 137
4-Bromofluorobenzene (4-BFB)			2.81	mg/Kg	1	2.00	140	38.4 - 157

Sample: 266551 - AH-1 0-0.5'

Laboratory: Midland

Analysis: QC Batch:

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B

Prep Method: N/A

Prep-Batch: 69151

81652

Sample Preparation: 2011-05-20 Prepared By: AR

2011-05-26

Analyzed By: AR

			L/L			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			12400	mg/Kg	100	4.00

Sample: 266551 - AH-1 0-0.5'

Laboratory:

Midland

Analysis:

TPH DRO - NEW

Analytical Method: Date Analyzed:

S 8015 D

Prep Method: N/A

QC Batch: Prep Batch: 69091

81382

Sample Preparation:

2011-05-18 2011-05-18

Analyzed By: Prepared By:

RL

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

Report Date: June 1, 2011 114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 7 of 29 Eddy Co., NM

						Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Cert	Result	$\mathbf{U}\mathbf{nits}$	Dilution	Amount	Recovery	Limits
n-Tricosane			102	mg/Kg	1	100	102	70 - 130

Sample: 266551 - AH-1 0-0.5'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 81337 Prep Batch: 69052

Analytical Method: S 8015 D Date Analyzed: 2011-05-17

2011-05-17

Sample Preparation:

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

RLFlag RLParameter Cert Result Units Dilution GRO 3.58 2.00 mg/Kg

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.90	mg/Kg	1	2.00	145	48.5 - 152
4-Bromofluorobenzene (4-BFB)			3.02	mg/Kg	1	2.00	151	42 - 159

Sample: 266552 - AH2 0-0.5'

Laboratory: Midland

Prep Batch:

Analysis: Chloride (Titration) QC Batch: 81652 69151

Analytical Method: Date Analyzed: Sample Preparation:

SM 4500-Cl B 2011-05-26 2011-05-20

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

RL Flag Parameter Cert Result Units Dilution RLChloride 19900 mg/Kg 100 4.00

Sample: 266552 - AH2 0-0.5'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 81382 Prep Batch: 69091

Analytical Method: S 8015 D Date Analyzed: 2011-05-18 Sample Preparation: 2011-05-18 Prep Method: N/A Analyzed By: kg Prepared By:

RLParameter Flag Cert Result Units Dilution RLDRO < 50.0 50.0 mg/Kg

Report Date: June 1, 2011 114-6400890

Work-Order:-11051609 ---COG/Folk Federal Tank Battery

Spike

Page Number: 8 of 29 Eddy Co., NM

Recovery

Percent

Surrogate	Flag	Cert	t]	Result	Units	i Dil	ution A	.mount	Recovery	Limits
n-Tricosane				87.5	mg/K	g	1	100	88	70 - 130
Sample: 266552 - A	H2 0-0.	.5'								
Laboratory: Midland Analysis: TPH GF QC Batch: 81337 Prep Batch: 69052	RO			Date An	cal Metho nalyzed: Preparati	2011-	.5 D .05-17 .05-17		Prep Metho Analyzed F Prepared E	By: ME
						RL				
Parameter		Flag		Cert		Result	Un	its	Dilution	RL
GRO				1		< 2.00	mg/	Kg	1	2.00
Comments			Tal	Ot	Danale	TT:4 -	D:1:	Spike	Percent	Recovery
Surrogate			Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)					2.65	mg/Kg	1	2.00	132	48.5 - 152
4-Bromofluorobenzene	(4-BFB))			2.68	mg/Kg	1	2.00	134	42 - 159

Sample: 266553 - AH-3 0-1'

Laboratory: Midland

Analysis:BTEXAnalytical Method:S 8021BQC Batch:81336Date Analyzed:2011-05-17Prep Batch:69052Sample Preparation:2011-05-17

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

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

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.44	mg/Kg	1	2.00	122	52.8 - 137
4-Bromofluorobenzene (4-BFB)			2.65	mg/Kg	1	2.00	132	38.4 - 157

Page Number: 9 of 29 Work Order: 11051609 Report Date: June 1, 2011 114-6400890 Eddy Co., NM COG/Folk Federal Tank Battery Sample: 266553 - AH-3 0-1' Midland Laboratory: Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: Analyzed By: 81652 Date Analyzed: 2011-05-26 AR Prep Batch: 69151 2011-05-20 Prepared By: Sample Preparation: ARRLParameter Flag Cert Result Units Dilution RLChloride 8590 mg/Kg 100 4.00 Sample: 266553 - AH-3 0-1' Midland Laboratory: Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A QC Batch: 81382 Date Analyzed: 2011-05-18 Analyzed By: kg kg Prep Batch: 69091 Sample Preparation: 2011-05-18 Prepared By: RL

Result

<50.0

Dilution

1

Units

Spike

Amount

100

mg/Kg

RL

50.0

Recovery

Limits

70 - 130

S 5035

ME

ME

Dilution

Percent

Recovery

88

Prep Method:

Analyzed By:

Prepared By:

Sample: 266553 - AH-3 0-1'

Parameter

Surrogate

n-Tricosane

DRO

Laboratory: Midland

Flag

Cert

Flag

Analysis: TPH GRO Analytical Method: S 8015 D
QC Batch: 81337 Date Analyzed: 2011-05-17
Prep Batch: 69052 Sample Preparation: 2011-05-17

Cert

1

Result

87.5

Units

mg/Kg

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.76	mg/Kg	1	2.00	138	48.5 - 152
4-Bromofluorobenzene (4-BFB)			2.97	mg/Kg	1	2.00	148	42 - 159

Report Date: June 1, 2011 Work Order: 11051609 Page Number: 10 of 29 114-6400890 COG/Folk Federal Tank Battery Eddy Co., NM Sample: 266554 - AH-3 1-1.5' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 81652 Date Analyzed: 2011-05-26 Analyzed By: ARPrep Batch: 69151 Sample Preparation: 2011-05-20 Prepared By: AR RLParameter Flag Cert Result Units Dilution RLChloride 8260 100 4.00 mg/Kg

Sample: 266555 - AH-3 2-2.5'

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 81652 Prep Batch: 69151

Analytical Method: Date Analyzed:

SM 4500-Cl B 2011-05-26 Sample Preparation: 2011-05-20

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

RLDilution RLParameter Flag Cert Result Units 3540 4.00 Chloride mg/Kg 100

Sample: 266556 - AH-4 0-1'

Laboratory: Midland Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035 QC Batch: 81336 Date Analyzed: 2011-05-17 Analyzed By: MEPrep Batch: 69052 Sample Preparation: 2011-05-17 Prepared By: ME

RLCert Result Units Dilution RLParameter Flag Benzene 0.0200 < 0.100 mg/Kg 5 1 Toluene < 0.100 mg/Kg 5 0.0200 Ethylbenzene < 0.100 mg/Kg 5 0.0200 < 0.100 mg/Kg 5 0.0200 Xylene

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			5.90	mg/Kg	5	5.00	118	52.8 - 137
4-Bromofluorobenzene (4-BFB)			6.54	mg/Kg	5	5.00	131	38.4 - 157

Report Date: June 1, 2011

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 11 of 29

Eddy Co., NM

Sample: 266556 - AH-4 0-1'

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 81652 Analytical Method:

SM 4500-Cl B

Prep Method: N/A Analyzed By: AR.

Prep Batch: 69151

Date Analyzed: Sample Preparation:

2011-05-26 2011-05-20

Prepared By: AR

RL

Parameter Chloride

 Cert

Result 1060

Units mg/Kg Dilution

100

Dilution

175

RL

4.00

RL

70 - 130

ME

Sample: 266556 - AH-4 0-1'

Laboratory:

n-Tricosane

Midland

Analysis:

TPH DRO - NEW

QC Batch: 81382 Prep Batch: 69091

Analytical Method:

Date Analyzed:

S 8015 D 2011-05-18 Sample Preparation: 2011-05-18 Prep Method: N/A Analyzed By: kg

RL

175

Parameter Flag Cert Result DRO

Flag

Units mg/Kg

100

Prepared By: kg

473 50.0 1 Spike Percent Recovery Dilution Limits Surrogate Flag Cert Result Units Amount Recovery

mg/Kg

Sample: 266556 - AH-4 0-1'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 81337

Prep Batch: 69052 Analytical Method: Date Analyzed:

S 8015 D 2011-05-17 Sample Preparation: 2011-05-17

1

Prep Method: S 5035 MEAnalyzed By:

Prepared By:

RL

Parameter Flag Cert Result Units Dilution RLGRO 56.3 mg/Kg 5 2.00

						Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			6.69	mg/Kg	5	5.00	134	48.5 - 152
4-Bromofluorobenzene (4-BFB)			6.76	mg/Kg	5	5.00	135	42 - 159

114-6400890 COG/Folk Federal Tank Battery Eddy Co., NM Sample: 266557 - AH-5 0-1' Laboratory: Midland Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: Analysis: N/A QC Batch: 81652 Date Analyzed: 2011-05-26 Analyzed By: AR Prep Batch: 69151 Sample Preparation: 2011-05-20 Prepared By: AR RLParameter Flag Cert Result Units Dilution RLChloride 2870 mg/Kg 100 4.00 Sample: 266557 - AH-5 0-1' Laboratory: Midland Analytical Method: Analysis: TPH DRO - NEW S 8015 D Prep Method: N/A QC Batch: Date Analyzed: 2011-05-18 81382 Analyzed By: kg Sample Preparation: Prep Batch: 69091 2011-05-18 Prepared By: kg RLFlag Cert Result Units Dilution RLParameter DRO < 50.0 mg/Kg 50.0 1 Spike Percent Recovery Flag Surrogate Cert Result Units Dilution Amount Recovery Limits n-Tricosane 89.8 mg/Kg ī 100 90 70 - 130 Sample: 266557 - AH-5 0-1' Laboratory: Midland Analytical Method: S 8015 D Prep Method: Analysis: TPH GRO S 5035 QC Batch: 81337 Date Analyzed: 2011-05-17 Analyzed By: ME Prep Batch: 69052 Sample Preparation: 2011-05-17 Prepared By: ME RLParameter Flag Cert Result Units Dilution RLGRO < 2.00 mg/Kg 2.00 1 Spike Percent Recovery Surrogate Flag Cert Result Units Dilution Amount Recovery Limits

2.61

2.62

mg/Kg

mg/Kg

1

1

2.00

2.00

130

131

48.5 - 152

42 - 159

Work Order: 11051609

Page Number: 12 of 29

Report Date: June 1, 2011

Trifluorotoluene (TFT)

4-Bromofluorobenzene (4-BFB)

Report Date: June 1, 2011 114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 13 of 29 Eddy Co., NM

Sample: 266558 - AH-6 0-1'

Laboratory: Midland

Analysis: BTEX QC Batch: 81336 Prep Batch: 69052

Analytical Method: S 8021B 2011-05-17 Date Analyzed: Sample Preparation: 2011-05-17

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

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

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.43	mg/Kg	1	2.00	122	52.8 - 137
4-Bromofluorobenzene (4-BFB)			2.62	mg/Kg	1	2.00	131	38.4 - 157

Sample: 266558 - AH-6 0-1'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 81652 Prep Batch: 69151

Analytical Method: Date Analyzed:

SM 4500-Cl B 2011-05-26 Sample Preparation: 2011-05-20

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

Parameter Flag		L'L			
	Cert	Result	Units	Dilution	RL
Chloride		9950	mg/Kg	100	4.00

Sample: 266558 - AH-6 0-1'

Laboratory:

Midland

TPH DRO - NEW Analysis: QC Batch: 81382 Prep Batch: 69091

Analytical Method: Date Analyzed:

S 8015 D 2011-05-18 Sample Preparation: 2011-05-18 Prep Method: N/A Analyzed By: Prepared By: kg

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

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane			87.7	mg/Kg	1	100	88	70 - 130

Report Date: June 1, 2011 Work Order: 11051609 Page Number: 14 of 29 114-6400890 COG/Folk Federal Tank Battery Eddy Co., NM Sample: 266558 - AH-6 0-1' Laboratory: Midland S 5035 Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: QC Batch: 81337 Date Analyzed: Analyzed By: 2011-05-17 ME Prep Batch: 69052 Sample Preparation: 2011-05-17 Prepared By: MERLCert Parameter Flag Result Units Dilution RLGRO < 2.00 mg/Kg 2.00 1 Spike Percent Recovery Surrogate Flag Cert Result Units Dilution Amount Recovery Limits Trifluorotoluene (TFT) 2.75 mg/Kg 2.00 138 48.5 - 152 1 4-Bromofluorobenzene (4-BFB) 2.73 mg/Kg 1 2.00 136 42 - 159 Sample: 266559 - AH-7 0-1' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 81652 Date Analyzed: 2011-05-26 Analyzed By: AR Prep Batch: 69151 Sample Preparation: 2011-05-20 Prepared By: AR RLParameter Result Flag Cert Units Dilution RLChloride 6710 mg/Kg 100 4.00

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - NI 81382 69091	H DRO - NEW 82		Analytical Method: Date Analyzed: Sample Preparation:		5 D 05-18 05-18	Prep Me Analyzec Preparec	, ,
					RL			
Parameter		Flag	Cert	Res	sult	Units	Dilution	RL
DRO			1	<5	60.0 mg/Kg		1	50.0
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			89.2	mg/Kg	1	100	89	70 - 130

Sample: 266559 - AH-7 0-1'

Report Date: June 1, 2011

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 15 of 29 Eddy Co., NM

Sample: 266559 - AH-7 0-1'

Laboratory:

Prep Batch:

Analysis: QC Batch: Midland TPH GRO

81337

69052

Analytical Method:

S 8015 D

Date Analyzed: 2011-05-17 Sample Preparation: 2011-05-17 Prep Method: S 5035

Analyzed By: ME Prepared By: ME

RL

Cert Result Units Dilution RLParameter Flag 2.00 GRO < 2.00 mg/Kg1

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.76	mg/Kg	1	2.00	138	48.5 - 152
4-Bromofluorobenzene (4-BFB)			2.73	mg/Kg	1	2.00	136	42 - 159

Sample: 266560 - AH-7 1-1.5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch:

81652 69151

Date Analyzed: 2011-05-26 Sample Preparation: 2011-05-20 Analyzed By: AR Prepared By: AR

RLDilution Result RLParameter Flag Cert Units Chloride 5530 100 4.00 mg/Kg

Sample: 266561 - AH-7 2-2.5'

Laboratory:

Chloride

Midland

Analysis: QC Batch: 81653

Chloride (Titration) Analytical Method:

SM 4500-Cl B 2011-05-26

Units

mg/Kg

Prep Method: N/A Analyzed By: AR

Prep Batch:

69151

Date Analyzed: Sample Preparation: 2011-05-20

261

Prepared By: AR

Flag Parameter Cert Result

RL

Dilution RL

4.00

50

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 16 of 29 Eddy Co., NM

Sample: 266562 - AH-7 2.5-3'

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 81653 Date Analyzed: 2011-05-26 Analyzed By: AR Sample Preparation: 2011-05-20 Prep Batch: 69151 Prepared By: AR

RLCert Result Dilution RLParameter Flag Units Chloride 1140 mg/Kg 100 4.00

Sample: 266563 - AH-8 0-1'

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A Analyzed By: QC Batch: 81653 Date Analyzed: 2011-05-26 AR Prep Batch: 69151 Sample Preparation: 2011-05-20 Prepared By: AR

RL Cert Result Units Dilution RLParameter Flag 8790 100 4.00 Chloride mg/Kg

Sample: 266563 - AH-8 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A QC Batch: -Date-Analyzed: 2011-05-18--Analyzed-By:--kg Prep Batch: 69091 Sample Preparation: 2011-05-18 Prepared By:

Flag Cert Result Units Dilution RLParameter DRO < 50.0 mg/Kg 50.0 Spike Percent Recovery Units Dilution Amount Recovery Limits Flag Cert Result Surrogate 100 92 70 - 130

mg/Kg

91.8

RL

1

Sample: 266563 - AH-8 0-1'

Laboratory: Midland

n-Tricosane

S 5035 TPH GRO Analytical Method: S 8015 D Analysis: Prep Method: QC Batch: Date Analyzed: 2011-05-17 81337 Analyzed By: ME Prep Batch: 69052 Sample Preparation: 2011-05-17 Prepared By: ME

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 17 of 29 Eddy Co., NM

RLParameter Flag Cert Result Units Dilution RLGRO

GRO		1		< 2.00	mg/I	ζg	1	2.00	
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	
Trifluorotoluene (TFT)			2.65	mg/Kg	1	2.00	132	48.5 - 152	
4-Bromofluorobenzene (4-BFB)			2.58	mg/Kg	1	2.00	129	42 - 159	

Sample: 266564 - AH-8 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 81653 Analytical Method:

SM 4500-Cl B 2011-05-26

Prep Method: N/A Analyzed By:

Prep Batch: 69151 Date Analyzed: Sample Preparation: 2011-05-20

ARPrepared By: AR

RLDilution RLParameter Flag Cert Result Units Chloride 7650 100 4.00 mg/Kg

Sample: 266565 - AH-8 2-2.5'

Laboratory: Midland

Prep Batch: 69151

Chloride (Titration) Analysis: QC Batch: 81653

Analytical Method:

SM 4500-Cl B Date Analyzed: 2011-05-26

Prep Method: N/A

Analyzed By: AR Sample Preparation: 2011-05-20 Prepared By: AR

RLCert Result Units Dilution RLParameter Flag 15400 4.00 Chloride mg/Kg 100

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 18 of 29 Eddy Co., NM

Method Blanks

Method Blank (1)

QC Batch: 81336

Flag

QC Batch: 81336

Date Analyzed: 2011-05-17

Analyzed By: ME Prepared By: AG

0.02

Prep Batch: 69052

Parameter

Ethylbenzene

Benzene

Toluene

Xylene

QC Preparation: 2011-05-17

 MDL

 Cert
 Result
 Units
 RL

 1
 <0.0118</td>
 mg/Kg
 0.02

 1
 <0.00600</td>
 mg/Kg
 0.02

 1
 <0.00850</td>
 mg/Kg
 0.02

mg/Kg

< 0.00613

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	1 100		1.90	mg/Kg	1	2.00	95	66.6 - 122
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	55.4 - 124

Method Blank (1)

QC Batch: 81337

QC Batch: 81337 Prep Batch: 69052 Date Analyzed: QC Preparation:

2011-05-17 2011-05-17 Analyzed By: ME Prepared By: AG

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.19	mg/Kg	1	2.00	110	67.6 - 150
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	52.4 - 130

Method Blank (1)

QC Batch: 81382

QC Batch: 81382 Prep Batch: 69091 Date Analyzed: 2011-05-18 QC Preparation: 2011-05-18 Analyzed By: kg Prepared By: kg

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 19 of 29

Eddy Co., NM

Parameter	Fla	ъg	Cert		DL sult	Units	m RL	
DRO ,				1	<1	5.7	mg/Kg	50
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			107	mg/Kg	1	100	107	70 - 130

Method Blank (1)

QC Batch: 81652

QC Batch: 81652 Prep Batch: 69151

Date Analyzed: QC Preparation:

2011-05-26 2011-05-20 Analyzed By: AR

Prepared By: AR

Method Blank (1)

QC Batch: 81653

QC Batch: 81653 Prep Batch: 69151

Date Analyzed: QC Preparation:

2011-05-26 2011-05-20 Analyzed By: AR Prepared By: AR

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 20 of 29 Eddy Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:

81336

69052

Date Analyzed:

Analyzed By: ME

Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.78	mg/Kg	1	2.00	< 0.0118	89	81.9 - 108
Toluene		1	2.01	mg/Kg	1	2.00	< 0.00600	100	81.9 - 118
Ethylbenzene		1	1.77	mg/Kg	1	2.00	< 0.00850	88	78.4 - 115
Xylene		1	5.28	mg/Kg	1	6.00	< 0.00613	88	79.1 - 116

QC Preparation: 2011-05-17

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}	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	2.05	mg/Kg	1	2.00	< 0.0118	102	81.9 - 108	14	20
Toluene		1	2.28	mg/Kg	1	2.00	< 0.00600	114	81.9 - 118	13	20
Ethylbenzene		1	1.97	mg/Kg	1	2.00	< 0.00850	98	78.4 - 115	11	20
Xylene		1	5.89	mg/Kg	1	6.00	< 0.00613	98	79.1 - 116	11	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)	1.72	1.77	mg/Kg	1	2.00	86	88	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1-82	1-84	mø/Kø-		2-00	q ₁	92	60-8121 ···

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 69052

81337

Date Analyzed: QC Preparation: 2011-05-17

2011-05-17

Analyzed By: ME Prepared By: AG

			LCS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO		1	16.8	mg/Kg	1	20.0	< 0.753	84	60.9 - 95.4

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

continued . . .

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 21 of 29 Eddy Co., NM

control spikes	continued				
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Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			1000 010								
			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		1	17.6	mg/Kg	1	20.0	< 0.753	88	60.9 - 95.4	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)	2.04	2.19	mg/Kg	1	2.00	102	110	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.96	2.10	mg/Kg	1	2.00	98	105	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 81382 Prep Batch: 69091 Date Analyzed: 2011-05-18 QC Preparation: 2011-05-18 Analyzed By: kg Prepared By: kg

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO			238	mg/Kg	1	250	<15.7	95	47.5 - 144.1

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO and residence to the second of		1	221	mg/Kg	1	250	<15.7	88	47.5 - 144.1	7	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	111	112	mg/Kg	1	100	111	112	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 81652 Prep Batch: 69151 Date Analyzed: 2011-05-26 QC Preparation: 2011-05-20 Analyzed By: AR Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			97.4	mg/Kg	1	100	< 3.85	97	85 - 115

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 22 of 29 Eddy Co., NM

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			104	mg/Kg	1	100	< 3.85	104	85 - 115	7	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:

81653

Date Analyzed:

2011-05-26

Analyzed By: AR

Prepared By: AR

Prep Batch: 69151

QC Preparation: 2011-05-20

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			95.7	mg/Kg	1	100	< 3.85	96	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	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			105	mg/Kg	1	100	< 3.85	105	85 - 115	9	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: 266604

QC Batch: 81336 Date-Analyzed: 2011-05-17 Analyzed By: ME
Prep Batch: 69052 QC Preparation: 2011-05-17 Prepared By: AG

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	1.97	mg/Kg	1	2.00	< 0.0118	98	80.5 - 112
Toluene		1	2.25	$_{ m mg/Kg}$	1	2.00	< 0.00600	112	82.4 - 113
Ethylbenzene		1	1.98	mg/Kg	1	2.00	0.1103	93	83.9 - 114
Xylene		1	5.78	mg/Kg	1	6.00	0.3528	90	84 - 114

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

_	_		MSD			Spike	Matrix	_	Rec.		RPD
Param	F	C	Result	\mathbf{U} nits	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	1.96	mg/Kg	1	2.00	< 0.0118	98	80.5 - 112	0	20
Toluene		1	2.21	mg/Kg	1	2.00	< 0.00600	110	82.4 - 113	2	20
Ethylbenzene		1	1.99	mg/Kg	1	2.00	0.1103	94	83.9 - 114	0	20
Xylene		1	5.83	mg/Kg	1	6.00	0.3528	91	84 - 114	1	20

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 23 of 29

Eddy Co., NM

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.15	2.51	mg/Kg	1	2	108	126	41.3 - 117
4-Bromofluorobenzene (4-BFB)	2.50	2.80	mg/Kg	1	2	125	140	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 266558

QC Batch:

81337

Date Analyzed:

2011-05-17

Analyzed By: ME

Prepared By: AG

Prep Batch: 69052

QC Preparation: 2011-05-17

			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO		1	22.2	mg/Kg	1	20.0	< 0.753	111	61.8 - 114

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	20.5	mg/Kg	1	20.0	< 0.753	102	61.8 - 114	8	20

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

Surrogate	MS Result	$rac{ ext{MSD}}{ ext{Result}}$	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.69	2.63	mg/Kg	1	2	134	132	50 - 162
4-Bromofluorobenzene (4-BFB)	2.83	2.76	mg/Kg	1	2	142	138	50 - 162

Matrix Spike (MS-1) Spiked Sample: 266559

QC Batch:

81382

Date Analyzed:

2011-05-18

Analyzed By: kg

Prep Batch: 69091

QC Preparation: 2011-05-18

Prepared By: kg

			MS			$\mathbf{S}_{\mathbf{P}i\mathbf{k}e}$	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	214	mg/Kg	1	250	<15.7	86	11.7 - 152.3

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	207	mg/Kg	1	250	<15.7	83	11.7 - 152.3	3	20

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

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 24 of 29

Eddy Co., NM

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	105	103	mg/Kg	1	100	105	103	70 - 130

Matrix Spike (MS-1)

Spiked Sample: 266560

QC Batch:

81652

Date Analyzed:

2011-05-26

Analyzed By: AR

Prep Batch: 69151

QC Preparation: 2011-05-20

Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			14400	mg/Kg	100	10000	5530	89	80 - 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
Chloride			15100	mg/Kg	100	10000	5530	96	80 - 120	5	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: 266565

QC Batch:

81653

Date Analyzed:

2011-05-26

Analyzed By: AR

Prep Batch: 69151

QC Preparation: 2011-05-20

Prepared By: AR

And the second of the second o		. 5. 7. 25.							
			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride		,	24800	mg/Kg	100	10000	15400	94	80 - 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
Chloride			25400	mg/Kg	100	10000	15400	100	80 - 120	2	20

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

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 25 of 29 Eddy Co., NM

Calibration Standards

Standard (CCV-1)

QC Batch: 81336

Date Analyzed: 2011-05-17

Analyzed By: ME

				CCVs True	CCVs Found	CCVs $\operatorname{Percent}$	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/Kg	0.100	0.0954	95	80 - 120	2011-05-17
Toluene		1	mg/Kg	0.100	0.107	107	80 - 120	2011-05-17
Ethylbenzene		1	mg/Kg	0.100	0.0935	94	80 - 120	2011-05-17
Xylene		1	mg/Kg	0.300	0.279	93	80 - 120	2011-05-17

Standard (CCV-2)

QC Batch: 81336

Date Analyzed: 2011-05-17

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0958	96	80 - 120	2011-05-17
Toluene		1	mg/Kg	0.100	0.106	106	80 - 120	2011-05-17
Ethylbenzene		1	mg/Kg	0.100	0.0910	91	80 - 120	2011-05-17
Xylene		1	mg/Kg	0.300	0.275	92	80 - 120	2011-05-17

Standard (CCV-3)

QC Batch: 81336

Date Analyzed: 2011-05-17

Analyzed By: ME

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/Kg	0.100	0.0915	92	80 - 120	2011-05-17
Toluene		1	mg/Kg	0.100	0.101	101	80 - 120	2011-05-17
Ethylbenzene		1	mg/Kg	0.100	0.0879	88	80 - 120	2011-05-17
Xylene		1	mg/Kg	0.300	0.262	87	80 - 120	2011-05-17

114-6400890	: June 1, 2011	_			er: 11051609 eral Tank Batte	ery		mber: 26 of 2 Eddy Co., NI
Standard (CCV-1)							
QC Batch:	81337		Date .	Analyzed:	2011-05-17		Analy	zed By: ME
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	1.18	118	80 - 120	2011-05-1
Standard (CCV-2)							
Standard (QC Batch:	•		Date 1	CCVs	2011-05-17 CCVs	CCVs	Percent	•
QC Batch:	81337	Cert.		CCVs True	CCVs Found	Percent	Percent Recovery	Date
Ì	•	Cert	Date durits mg/Kg	CCVs	CCVs		Percent	Date Analyzed
QC Batch:	81337 Flag		Units	CCVs True Conc.	CCVs Found Conc.	Percent Recovery	Percent Recovery Limits	Date Analyzed
QC Batch: Param GRO	81337 Flag CCV-3)		Units mg/Kg	CCVs True Conc. 1.00	CCVs Found Conc.	Percent Recovery	Percent Recovery Limits 80 - 120	Date Analyzed 2011-05-1
QC Batch: Param GRO Standard (81337 Flag CCV-3)		Units mg/Kg	CCVs True Conc. 1.00 Analyzed:	CCVs Found Conc. 1.11 2011-05-17 CCVs	Percent Recovery 111	Percent Recovery Limits 80 - 120 Analy	Date Analyzed 2011-05-1
QC Batch: Param GRO Standard (81337 Flag CCV-3)		Units mg/Kg	CCVs True Conc. 1.00	CCVs Found Conc. 1.11	Percent Recovery 111	Percent Recovery Limits 80 - 120	Date Analyzed 2011-05-1 zed By: ME

Standard (CCV-1)

QC Batch: 81382

Date Analyzed: 2011-05-18

Analyzed By: kg

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	219	88	80 - 120	2011-05-18

Standard (CCV-2)

QC Batch: 81382

Date Analyzed: 2011-05-18

Analyzed By: kg

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 27 of 29

Eddy Co., NM

				CCVs True	CCVs Found	CCVs $\operatorname{Percent}$	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	266	106	80 - 120	2011-05-18

Standard (CCV-3)

QC Batch: 81382

Date Analyzed: 2011-05-18

Analyzed By: kg

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	268	107	80 - 120	2011-05-18

Standard (ICV-1)

QC Batch: 81652

Date Analyzed: 2011-05-26

Analyzed By: AR

				ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.9	100	85 - 115	2011-05-26

Standard (CCV-1)

QC Batch: 81652

Date Analyzed: 2011-05-26

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	100	100	85 - 115	2011-05-26

Standard (ICV-1)

QC Batch: 81653

Date Analyzed: 2011-05-26

Analyzed By: AR

114-6400890

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 28 of 29 Eddy Co., NM

				ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	95.6	96	85 - 115	2011-05-26

Standard (CCV-1)

QC Batch: 81653

Date Analyzed: 2011-05-26

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	104	104	85 - 115	2011-05-26

Work Order: 11051609 COG/Folk Federal Tank Battery Page Number: 29 of 29

Eddy Co., NM

Appendix

Laboratory Certifications

	Certifying	Certification	Laboratory
C	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-10-TX	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.
- 2sr 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.

2001 # 11051609

An	Analysis Request of Chain of Custody Record								1		PAGE: OF: 2																			
2 48							i	tody					.A 	\dashv	ANALYSIS REQUEST (Circle or Specify Method No.)															
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Analysis Request of Chain of Custody Record								T	PAGE: A OF: A																					
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