# SITE INFORMATION

		and a second				e e e en al anti anti anti anti anti anti anti anti			
General Site Ir	nformation	Report	t Type: Clos	ure ne	eport				
Site:		SENM SWD	System (Northw	est Cent	ral)				
Company:		COG Opera							
	ship and Range		5. 17 - T-17S - R-3	0E	· · · · · · · · · · · · · · · · · · ·				
Lease Numbe		NMNM-8602							
County:	······································	Eddy Conty	/			· · · · · · · · · · · · · · · · · · ·			
GPS:		1	32.83047° N		103.9	99600° W			
Surface Owne	r:	Federal							
Mineral Owner	r:								
Directions:			Ils at the intersection hi, turn left 0.4 mi, tu			n Cuttoff), travel north on			
		30-0	15-04180		30-	015-20472			
Release Data:			Spill #1	· · · · · · · · · · · · · · · · · · ·	Spill #2	Spill #3			
Date Released.		5/12/2010			12/15/2010	6/25/2012			
Type Release:		Produced			Oil	Oil and Water			
Source of Cont		the second s	e weld failed		Oil Tank	Produced water tank			
Fluid Released		300 bbls			23 bbls	700 bbls			
Fluids Recover		200 bbls			20 bbls	650bbis			
Official Comm	unication:	229-	536		2FP-573 2RP-1212				
Name:	Robert McNeill				lke Tavarez				
Company:	COG Operating, LL				Tetra Tech 4000 N. Big Spring				
Address:	One Concho Cente								
P.O. Box	600 W, Illinois Ave.			·····					
City:	Midland Texas, 797		+		Suite 401 Midland, Texas				
		01				· ···			
Phone number:					(432) 682-4559				
Fax:	(432) 684-7137								
Email:	rmcneill@concho	resources.cor	<u>n</u>		ike.tavarez@tetratech	n.com			
Ranking Criter	ia								
Depth to Ground	dwatar		Ranking Score		Site De				
<50 ft			20		Site Da	18			
50-99 ft			10						
>100 ft.		•	0		······································				
WellHead Protec	ction:		Ranking Score	r	Site Da	ta			
	1,000 ft., Private <200 ft		20		She Da				
	1,000 ft., Private >200 ft		0		0	······································			
Surface Body of	Water:		Ranking Score		Site Dat				
<200 ft.			20		Sile Da	.a			
200 ft - 1,000 ft.			10						
>1,000 ft.			0		0	······································			
Ť	otal Ranking Score:		0						
		in the start of the second		ł					
		Accepta	ble Soil RRAL (m	g/kg)		CONSERVATION			
		Benzene	Total BTEX	ТРН					
			10 50 5,000 JUN 0 4 20						

RECEIVED



May 19, 2014

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

# Re: Closure Report for the COG Operating LLC., Northwest Central (SENM SWD System), Unit N, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess three spills from the Northwest Central (SENM SWD System) Tank Battery located in Unit N, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83047°, W 103.99600°. The site location is shown on Figures 1 and 2.

#### Background

#### Spill #1

According to the State of New Mexico C-141 Initial Report, a leak was discovered on May 12, 2010, when approximately three hundred (300) barrels of produced water released from a poly line weld on a 6" transmission line. To alleviate the problem, COG personnel repaired the poly line. Two hundred (200) barrels of standing fluids were recovered. The spill initiated on the north of the facility, flowed south approximately 325' and migrated approximately 150' off the facility pad. The initial C-141 form is enclosed in Appendix A.

#### Spill #2

On December 15, 2010, an oil tank overflowed caused by a plugged equalizer line, releasing approximately 23 barrels of oil. COG recovered 20 barrels using a vacuum truck. The spill flowed south of the facility pad measuring approximately 3' x 100' and migrated on top of the spill #1 footprint.

#### <u>Spill #3</u>

On July 25, 2012, a 10,000 bbl open top water tank overflowed caused an electrical error and alarm that caused water to be diverted to the open top tank instead of the tank battery, releasing approximately 700 barrels of oil and 100 barrels of produced water. COG recovered 650 barrels of oil and 50 barrels of produced water using a vacuum truck. The spill flowed around the open top tank and migrated on top of the spill #1 footprint.

#### Groundwater

No water wells were listed within Section 17. According to the NMOCD groundwater map, the average depth to groundwater in this area appears to be 250' to 275' below surface. The groundwater data is shown in Appendix B.

#### Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

#### Soil Assessment and Analytical Results

#### Spill #1

On June 23, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of seven (7) auger holes (AH-1 through AH-7) were installed using a stainless steel hand auger to assess the impacted soils. Auger holes were not installed east of the tanks, due to the dense surface caliche in the area. In addition, the area of AH-4 appears to be near a closed reserve pit area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in the majority of the auger holes. Auger holes (AH-2 and AH-4) were vertically defined at 7'-8' and 2'-3', respectively. The remaining auger holes required additional delineation.

On August 17, 2010, Tetra Tech supervised the installation of eight (8) soil borings (SB-1 through SB-8). In the area north of the facility, additional soil borings were not installed due to the buried electrical lines and active underground lines in the area. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 2. The soil boring locations are shown on Figure 3.

Referring to Table 1, all of the soil borings were vertically defined and show a shallow chloride impact to the subsurface soils ranging from 1.0' to 7.0' below surface. Soil boring (SB-3 and SB-6) showed a shallow impact to the soil at 1.0' and 2.0' below surface. SB-2, SB-4, SB-5, SB-7 and SB-8 were vertically defined at approximately 3.0' to 5.0' below surface. The area of SB-1 did show the deepest impact of 5.0' to 7.0' below surface.

#### Spill #2

On December 15, 2010, a second spill occurred at the site when the tank overflowed east of the tank battery and flowed south encompassing part of the spill #1 footprint. On February 25, 2011, Tetra Tech supervised the installation of seven (7) soil borings (SB-1 through SB-7). Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 2. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 2, all of the submitted samples were below the RRAL for TPH and BTEX. The soil boring results showed a shallow chloride impact to the subsurface soils and were all defined at depths ranging from 3.0' to 7.0' below surface.

#### Spill #3

On July 31, 2012, Tetra Tech personnel inspected and sampled the spill area. A total of four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 3, all of the submitted samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in the majority of the auger holes. Auger hole (AH-4) was vertically defined at 2'-2.5' with a chloride level of 443 mg/kg. The remaining auger holes required additional delineation.

On September 31, 2012, Tetra Tech supervised the installation of two (2) soil borings (SB-1 and SB-2). Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 3. The soil boring locations are shown on Figure 3.

Referring to Table 3, all of the soil borings were vertically defined at 6.0' below surface and showed a shallow chloride impact to the subsurface soils ranging from 0' to 5.0' below surface. Soil borings (BH-1 and BH-2) showed a shallow impact to the soil with a maximum chloride level of 8,770 mg/kg (0-1.0') and 3,800 mg/kg (2.0'-3.0') and decreased to 413 mg/kg (6.0-7.0') and 118 mg/kg (6.0-7.0'), respectively.

### **Remedial Activities**

On February 17, 2014, Tetra Tech supervised the removal of impacted material as highlighted (green) in Table 1, 2 and 3 and shown on Figure 4. In order to remove the elevated chloride concentrations, the excavations ranged from 1.0' to 3.5' below surface.

Two areas (east and south) of water tank were capped with a clay material as shown on Figure 4. Due to numerous lines and equipment west of the water tank, the area was not excavated due to safety concerns. In this case, the impacted soil will be deferred until the abandonment of the facility. In addition, some of the proposed depths were not achieved due to limited access, lines and structures in the area. Once excavated, Tetra Tech collected confirmation samples from the excavation bottom holes and sidewalls. The sampling results are shown on Table 4.

Approximately 2,260 cubic yards of excavated soil was transported to proper disposal. Once excavated to the appropriate depths, the excavation was backfilled with clean soil.

#### Conclusion

Based on the assessment and remedial activities at this site, COG requests closure of the spill. A Final C-14's are enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remedial actions performed, please call me at (432) 682-4559.

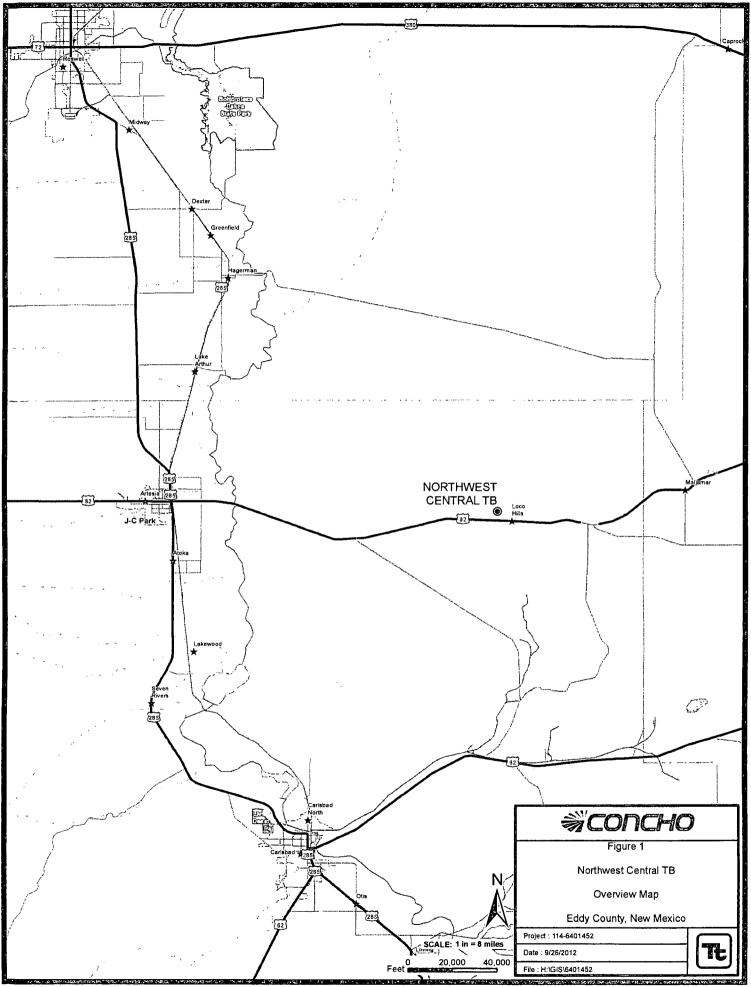
Respectfully submitted,

TETRA/TECH lke Tavárez

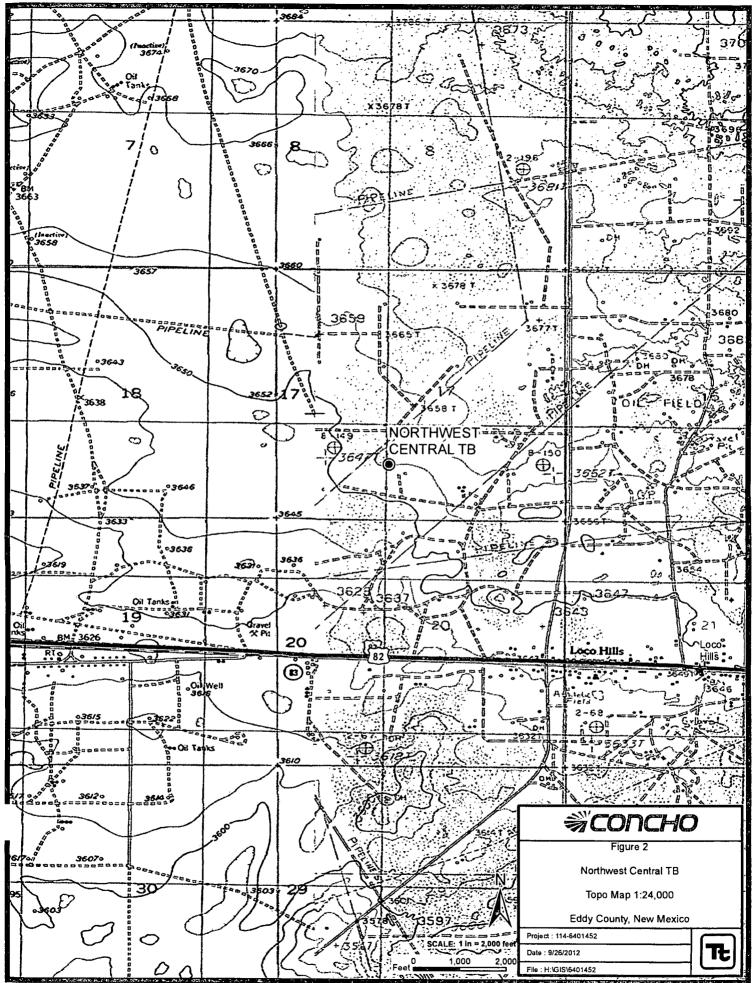
Project Manager

cc: Robert McNeill – COG cc: Mike Burton – BLM Jeff Robertson - BLM

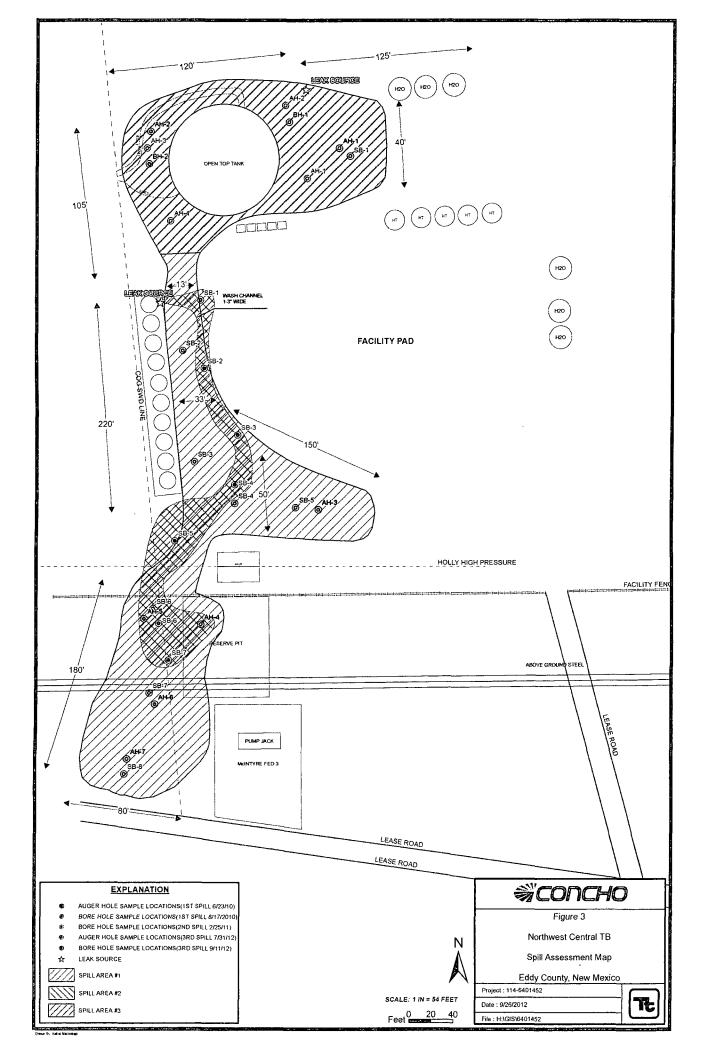
# Figures

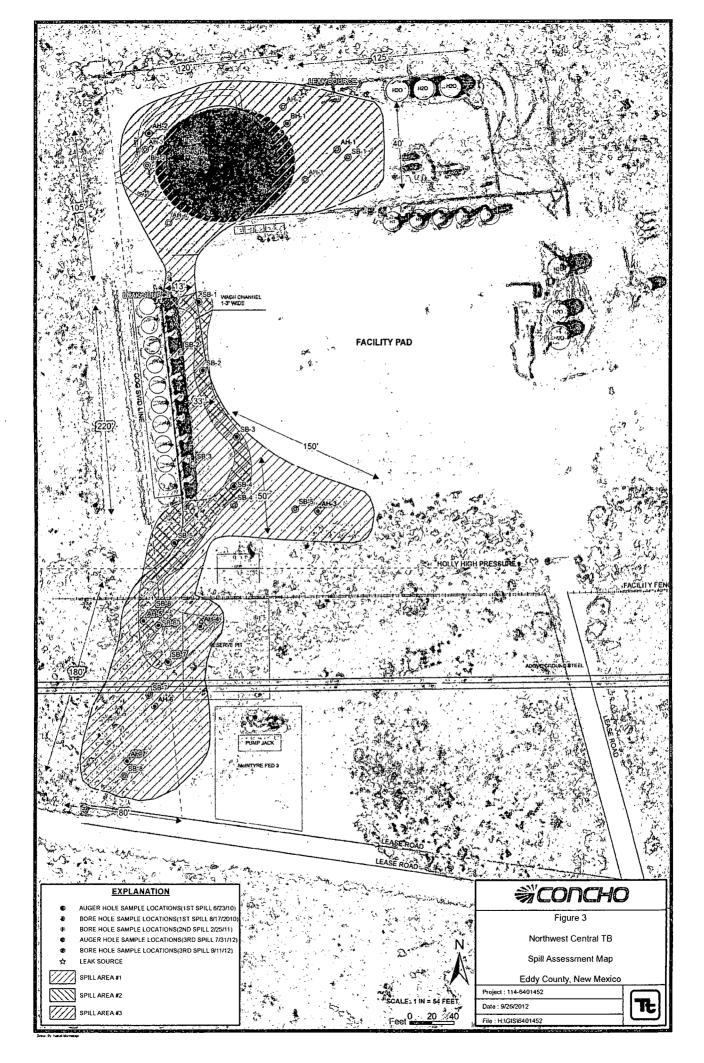


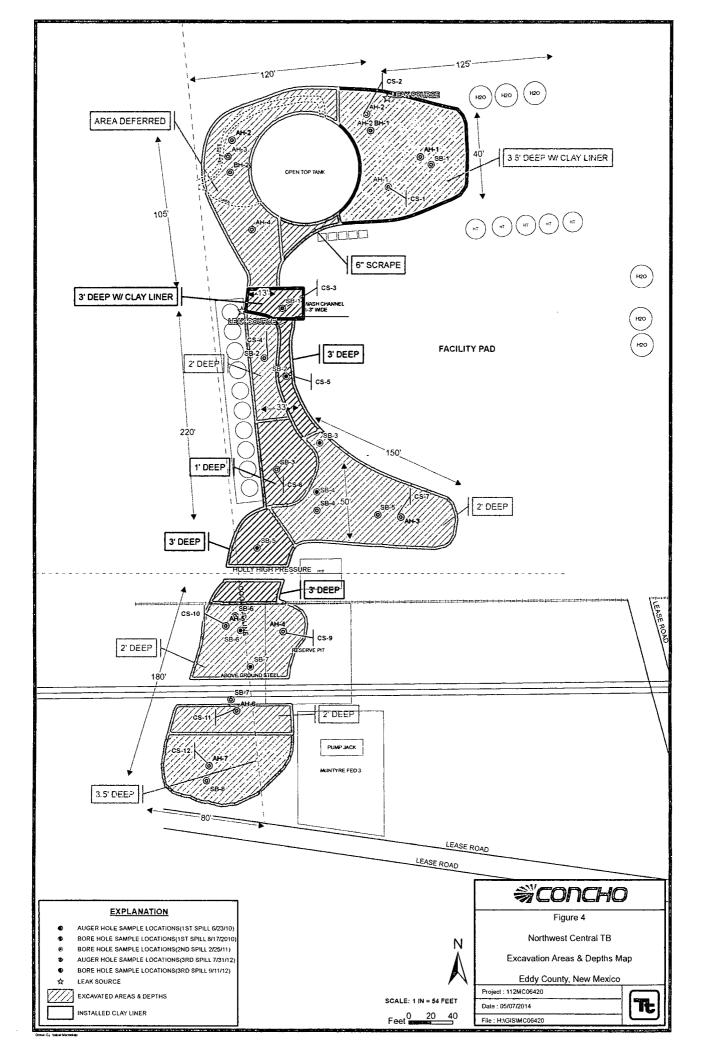
Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo







Tables

#### Table 1 COG Operating LLC. SENM SWD System Spill #1 Eddy COUNTY, NEW MEXICO

	Sample	Sample	Depth	Soi	Status	ΤР	H (mg/l	kg)	Benzene	Toluene	Ethlybenzene	Xylene	BTEX	Chloride
Sample ID	Date	Depth (ft)	1 -	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Total	(mg/kg)
AH-1	6/23/10	. 0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	·<0.0200	<0.02	15800
		1-1.5'			X		-	-		-		-	-	6220
3.5'		2-2.5'			X	•	-		÷	-				7440
SB-1	8/17/10	1'	ŕ		X	<50.0	<2.00	<50.0	- '	-		-	······	1,870
3.5' cap	u	3' .			. <u>Х</u>	-	-		· - ·	-		-		2,780
	u	5'		X		-	-	-	-	-	-	-		4,380
		7'		X		-	-	-	-	-	-	-		504
	u	10'		X		-	-	-	-	-	-	-		248
	u	15'		X		-	-	-	-	-	-	-		<200
	н	20'		X		-	-	-	-	-	-	-		<200
AH-2	6/23/10	0-1'		X		<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	4400
Deferred		1-1.5'		X		-	-	-	-	-		-	-	6410
		2-2.5'		X			-	-	-	-	-	-	-	7030
		3-3.5'		x		-	-	-	-	-	-	-	-	5660
		4-4.5'		X		-	-	-	-	-	-	-	-	3140
		5-5.5'		X			-	-	-	-	-	-	-	2270
		6-6.5'		X		-	-	-	-	-	-	-	-	1230
		7-7.5'	_	X		-		-	-	-	-	-	-	314
		8-8.5'		X		-	-	-	-	-	-	-	-	<200
SB-2	8/17/10	1			X	<sup>6</sup> <50.0	<2.00	<50.0	·	-	-	- 1		19;400
2'	n	3'		X		-	•	-	-	-	-	-		22,800
	н	5'		X		-	•	-	-	-	-	-		1,350
	u	7'		X		-	-	-	-		-	-		300
	u	10'		X		-	-	-	-	-	-	-		230
	н	15'		X		•	-	-	_	-	-	-		<200
	1	20'		Х		-	-	-	-	-	•	-		<200
SB-3	8/17/10	1'	а ,		X	<50.0	<2.00	<50.0	^<0.0200	<0.0200	<0.0200	<0.0200	· · ·	2,440
1'	"	3'		X		-	-	-	-	-	-	-		703
	"	5'		X			-	-	-	-	-	-		234
	u	7'		X		-	-	-	-	-	-	-		295
	n	10'		X		-	-	-	-	-	-	-		337
<b></b>	u	15'		X		-	-	-		-	-	-		244

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#### Table 1 COG Operating LLC. SENM SWD System Spill #1 Eddy COUNTY, NEW MEXICO

0	Sample	Sample	Depth		Status	TP	H (mg/	(g)	Benzene	Toluene	Ethlybenzene	Xylene	BTEX	Chloride
Sample ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Total	(mg/kg)
SB-4	8/17/10	-1'		·	Х	593	83.0	676.0	<0.100	0.481	0.245	1.21		6,330
2'		3'		Х		-	-	-	-	-	-	-		8,770
	u	5'		Х		-	-	-	-	-	-	-		399
	u	7'		Х		-	-	-	-	-	-	-		<200
	п	10'		Х		-	-	-	-	-	-	-		422
	u	15'		Х		-	-	-	-		-	-		413
	п	20'		Х		-	-	-	-	۰ <u>۰</u>	-	-		554
	u	25'		X		-	-	-	-	-	-	-		404
	в	30'		X		-	-	-	-	-	-	-		291
AH-3	6/23/10	0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	1850
2'														
SB-5	8/18/10	1'			X	3,060	<20.0	3,060	<0.200	<0.200	0.204	0.815		3,460
2'	н	3'		X		-	-	-	-	-	-	-		2,520
	н	5'		X	-	-	-	-	-	-	-	-		385
	11	7'		X		-	-	-	-	-	-	-		208
	81	10'		X		-	-	-	-	-	-	-		532
	u	15'		Х		-	-	-	-	-	-	-		449
	"	20'		X		-	-	-	-	-	-	-		319
AH-4	6/23/10	0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	6220
2'		1-1.5			X	-	-	_		-	-		-	3140
		2-2.5'		X		-	-	-	-	-	-		-	614
		3-3.5'		X		-	-	-	-	-	-	-		287
AH-5	6/23/10	0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	.1650
2'		1-1.5'			X	-	· · • · ·	-	•			-	-	3240
SB-6	8/18/10	1			Х	<50.0	<2.00	<50.0	<0.0200	<0:0200	<0.0200	<0.0200		<200
2'	"	3'	[	X	···· · ·· ···	-	-	-	•	-	-	-		<200
	u	5'		X		-	-	-	-	-	-	-		2,180
	11	7'		X		•	-	-	-	-	•	-		981
	н	10'		X		-	-	-	-	-	-	-		342
	н	15'		X		-	-	-	-	-	-	-		250
	н	20'		X		-	-	-	-		-	-		234

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# Table 1COG Operating LLC.SENM SWD SystemSpill #1Eddy COUNTY, NEW MEXICO

0	Sample	Sample	Depth	Soi	I Status	TP	H (mg/l	kg)	Benzene	Toluene	Ethlybenzene	Xylene	BTEX	Chloride
Sample ID	Date	Depth (ft)	•	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Total	(mg/kg)
AH-6	6/23/10	0-1'.	· .		X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	2420
2'														
SB-7	8/18/10	1'			Х	<50.0	<2.00	<50.0	-	-	-	-		3,470
2'	μ	3'		X		-	-	-		-	-			4,150
		5'		X	-	-	-	-	-	-	-			614
****	u	7'		X		-	-	-	-	-	-	-		594
	u	10'		X		-	-	-	-	-	-	-		468
	μ	15'		X		-	-	-	-	-	-	-		253
	п	20'		X		-	_	-		-	-	-		287
	0	25'		X		-	-	-	-	-		-		<200
	8	30'		X		-	-	-		-	-	-		292
AH-7	6/23/10	0-1'		<u> </u>	X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	2800
3.5		1-1.5'			х	-	-	-	-	-	-	-	-	4880
		2-2.5'			Х	-	-	-	-	-	-	•	-	6240
SB-8	8/18/10	1'			X	<50.0	<2.00	<50.0		-	-	-		863
3.5	н	3'		[	X	-	-	-	-	-	-	-	·····	1,430
	н	5'		X		-	-	-	-	-	-	-		1,900
	и	7'		X		-	-	-	-	-	•	-		1,260
· · · ·	u	10'		X		-	-	-	-	-	-	-		456
	м	15'		X		-	-	-	-	-	-	-		739
·····		20'		X		-		-	-	-	-	-		481
	ų	25'		X		-	-	-	-	-	-	-		496
	u	30'		X		-	-	-	-	-	-	-		337 ·
	"	40'		X		-	-	-	-	-	-	-		<200

BEB Below Excavation Bottom

(--) Not Analyzed

Excavated Depths

# Table 2COG Operating LLC.SENM SWD SystemSpill #2Eddy COUNTY, NEW MEXICO

	Sample	Sample	Soi	Status	T	PH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB-1	2/25/11	0-1'	• • •	X	· <50.0	6.69	6.69	<0.0200	<0.0200	0.140	0.391	15,400
3' сар	н.	: 3'		X	<b>-</b>			-	-	-	-	5,170
	n	5'	Х		-	-	- ·	-	-	-	-	4,380
	u	7'	Х		-	-	-	-	-	-	-	569
· · · · · · · · · · · · · · · · · · ·	a	10'	Х		-	-	-	-	-	-	-	489
	u	15'	Х		-	-	-	-	-	-	-	359
	n	20'	X		-	-	-	-	-		-	250
SB-2	2/25/11	0-1'	· .	X	<50.0	<2.00	<50.0	-		- <u>-</u> -	,	6,040
3'	ti ti	3'		Х	· _	- ,		-	-	-	-	'3,360
	"	5'	Х		-	-	-	-	-	-	-	405
		7'	Х		-	-	-	-	-	-	-	207
	"	10'	Х		-	-	-	-	-	-	•	281
	и	15'	X		-	-	-	-	-	-	-	252
	ti -	20'	X		-	-	-	-	-	-	-	232
SB-3	2/25/11	0-'1	· · .	. X	<50.0	<2.00	<50.0			_	- * `	498
2'	"	3'	Х		-	-	-	-	-	-	-	2,310
	"	5'	Х		-	-	-	-	-	-	-	957
	u u	7'	Х		-	-	-	-	-	-	-	<200
	u	10'	Х		-	-	-	-	-	-	-	249
	"	15'	Х		· _	-	-	-	-	-	-	234
	· · ·	20'	Х		-	-	-	-	-	-	-	<200
SB-4	3/1/11	0-1'		X	<50.0	<2.00	<50.0	-	-	-	-	1,210
2'	"	3'	Х		-	-	-	-	-	-	-	1,290
		5'	Х		-	-	-	-	-	-	-	857
	81	7'	Х		-	-	-	-	-	-	-	717
	n	10'	Х		-	-	-	-	-	-	-	339
	u .	15'	Х		-	-	-	-	-	-		204
	u	20'	Х		-	-	-	-	-	-	-	<200

# Table 2COG Operating LLC.SENM SWD SystemSpill #2Eddy COUNTY, NEW MEXICO

	Sample	Sample	Soi	l Status	Т	PH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB-5	3/1/11	0-1'		Х	3,530	1,730	5,260	2.86	82.8	64.8	86.0	5,300
2'	8	3'		Х	2960	2850	5810	3.60	75.1	69.9	89.6	5,180
	в	5'	Х		252	287	539	<0.100	0.602	3.71	6.61	3,680
	n	7'	Х		-	-	-	-	-	÷	-	1,300
	μ	10'	X		-	-	-	-	-	-	-	<200
	P	15'	X		-	-	-	-	-	-	-	<200
	13	20'	X		-	-	-	-	-	-	-	235
SB-6	3/1/11	0-1		X	3,870	1,530	5,400	<0.200	3.16	17.8	_34.7	<200
2'	14	3'	Х		<50.0	<2.00	<50.0	<0.0200	0.159	<0.0200	<0.0200	2,010
	u	5'	Х		-	-	-	-	-	-	-	1,000
	u	7'	X		-	-	-	-	-	-	-	418
	"	10'	X		-	-	-	-	-	•	-	354
	"	15'	Х		-	-	-	-	-	-	-	251
		20'	Х		-	-	-	-	-	-	-	<200
	n	25'	Х		-	-	-	-	-	-	-	221
	"	30'	Х		-	-	-	-	-	-	-	320
SB-7	3/1/11	0-1'	· · · ·	X	10,800	3,640	14,440	5.25	86.5	87.6	120	1,080
2'	u u	3'	X		1560	1240	2800	1.37	46.9	39.5	63.7	4,180
	п	5'	X		<50.0	<2.00	<50.0	<0.0200	<0.0200	0.15	<0.0200	2,500
	u	7'	X		-	-	-	-	-	-	-	419
	u	10'	X		-	-	-	-	-	-	-	792
	"	15'	X		-	-	-	-	-	-	-	324
	н .	20'	X		-	-	-	-	-	-	-	<200
	"	25'	X		-	-	-	-	-	-	-	279
	"	30'	X		-	-	-	-	-	-	-	<200

(--) Not Analyzed

Excavation Depths

Clay Liner Installed

Excav

### Table 3

### COG Operating LLC.

### North West Central Tank Battery

### Spill #3

### Eddy County, New Mexico

0	Sample	Sample	Soil	Status	1	ГРН (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
AH-1	7/31/2012	0-1	· · · ·	Х	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	430
3.5 cap	11	1-1.5		X	-			-	-		-	-	860
	61	2-2.5		X	: <b>-</b> <sup>1</sup> ·	· •	-	·	-	-	-	±	2,460
	11	3-3.5		X	-	÷	-	-	-	-	-	-	1,500
		4-4.5	X		-	-	-	-	-		-	-	2,650
AH-2	7/31/2012	0-1		X	<4.00	385	385	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,850
3.5 cap	u	1-1.5		Х	-	-	-	-	-	-		-	2,780
	+1	1.5-2		X	- ·	-	-	-	- ,	-	-		1,840
BH-1	9/11/2012	0-1		X	·		-	-		· <b>-</b>	-	- · ·	8,770
3.5 cap		2-3		Х	· - ·		-		-	· · · · ·			7,450
	11	4-5	Х		-	-	-	-	-	-	-	-	2,790
	"	6-7	Х		-	-	-	-	-	-	-	-	413
	п	9-10	Х		-	-	-	-	-	-	-	-	399
	"	14-15	Х		-	-	-	-	-	-	-	-	82.7
		19-20	Х		-	-	-	-	-	-	-	-	157

# Table 3COG Operating LLC.North West Central Tank BatterySpill #3Eddy County, New Mexico

0	Sample	Sample	Soil	Status		ſPH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-3	7/31/2012	0-1	Х		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,600
deferred	н	1-1.5	Х		-	-	-	-	-	-	-	-	2,730
	n	2 <b>-</b> 2.5	Х		-	-	-	-	-	-	-	-	2,850
	Ш	3-3.5	Х		-	-	-	-	1	-	-	-	3,830
	Ш	4-4.5	Х		-	-	-	-	-	-	-	-	3,630
	u	5-5.5	X		-	-	-	-	-	-	-	-	1,850
BH-2	9/11/2012	0-1		Х	-	-	-	-	-	-	-	-	955
deferred	"	2-3		Х	-	-	-	-	-	_	-	-	3,800
		4-5	Х		-	-	-	-	-	-	-	-	2,260
		6-7	Х		-	-	-		-	-	-	_ ·	118
	11	9-10	Х		-	-	-	-	-	-	-	_	44.3
AH-4	7/31/2012	0-1		X	<4.00	76.3	76.3	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	5,650
deferred	11	1-1.5	Х		~	-	-	-	-	-	-	-	6,430
	u	2-2.5	Х		-	-	-	-	-	-	-	-	2,060
	11	3-3.5	Х		-	-	-	-	-	-	-	-	443
	"	4-4.5	Х		-	-	-	-	-	-	-	-	231
	Ш	5-5.5	Х		-	-	-	-	-		-	-	636

(-) Not Analyzed

Excavation Depths

Clay Liner Installed

# Table 4COG Operating LLC.Northwest Central Tank BatteryEddy County, New Mexico

	Semale ID	Sample	Sample	Soil	Status	Chloride
	Sample ID	Date	Depth (ft)	In-Situ	Removed	(mg/kg)
CS-1	AH-1 (3rd Spill) South Side Wall	2/20/2014	-	Х		680
	AH-1 (3rd Spill) East Side Wall	11	-	Х		5,920
	AH-1 (3rd Spill) West Side Wall	11	-	Х		593
Clay Cap	AH-1 (3rd Spill) Bottom Hole		-	Х		515
	AH-2 (3rd Spill) North Side Wall	2/20/2014		X		11,900
CS-2	AH-2 (3rd Spill) East Side Wall	. "		X		17,400
Clay Cap	AH-2 (3rd Spill) Bottom Hole			X		195
CS-3	SB-1 (2nd Spill) North Side Wall	2/25/2014	-	X		2,650
	SB-1 (2nd Spill) West Side Wall		-	Х		2,110
	SB-1 (2nd Spill) East Side Wall		-	Χ		48.7
Clay Cap	SB-1 (2nd Spill) Bottom Hole		-	Х	-	3,230
CS-4	SB-2 (1st Spill) West Side Wall	2/25/2014	-	Х		2,680
	SB-2 (1st Spill) Bottom Hole	u	-	Х		1,170
 CS-5	SB-2 (2nd Spill) East Side Wall	2/25/2014	-	X		468
	SB-2 (2nd Spill) Bottom Hole	H	-	Х		516
 CS-6	SB-3 (1st Spill) West Side Wall	2/25/2014	-	х		1,140
	SB-3 (1st Spill) Bottom Hole		-	Х		916
 CS-7	SB-5 (1st Spill) North Side Wall	2/25/2014	-	x		82.9
<u> </u>	SB-5 (1st Spill) South Side Wall	n	-	Х	1	848
	SB-5 (1st Spill) East Side Wall		-	Х		575
· · · · ·	SB-5 (1st Spill) Bottom Hole		-	X		624

## Table 4 COG Operating LLC. Northwest Central Tank Battery Eddy County, New Mexico

		Sample	Sample	Soil	Status	Chloride
	Sample ID	Date	Depth (ft)	In-Situ	Removed	(mg/kg)
* CS-8	SB-5 (2nd Spill) North Side Wall	3/6/2014	-	Х		800
	SB-5 (2nd Spill) East Side Wall	н	-	Х		1,200
	SB-5 (2nd Spill) Bottom Hole	11	-	X		900
* CS-9	AH-4 (1st Spill) East Side Wall	3/10/2014	-	x		500
	AH-4 (1st Spill) Bottom hole	II	-	Х		900
* CS-10	AH-5 (1st Spill) West Side Wall	3/10/2014	-	x		500
	AH-5 (1st Spill) Bottom hole	11	-	Х		750
* CS-11	SB-7 (1st Spill) West Side Wall	3/10/2014	-	x		550
	SB-7 (1st Spill) East Side Wall	Ш	-	х		600
	SB-7 (1st Spill) Bottom Hole 2'	11		Х		1,600
	SB-7 (1st Spill) Bottom Hole 3'	1)	-	Х		600
* CS-12	SB-8 (1st Spill) West Side Wall	3/10/2014	-	x		500
	SB-8 (1st Spill) East Side Wall	1)	-	X		650
	SB-8 (1st Spill) South Side Wall	ii ii	-	X		450
	SB-8 (1st Spill) Bottom Hole		-	Х		1,000

(-) Not Analyzed

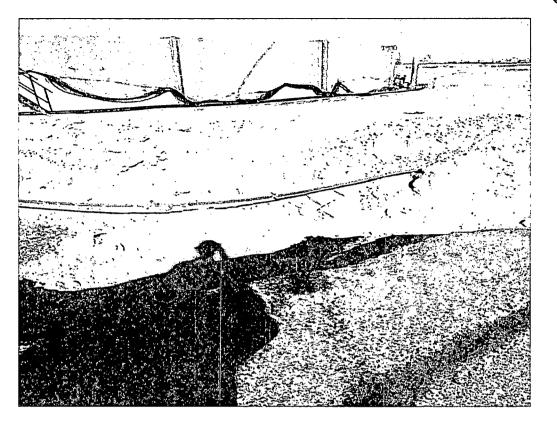
-

(BEB) Below Excavation Bottom

\* CS Field Chlorides

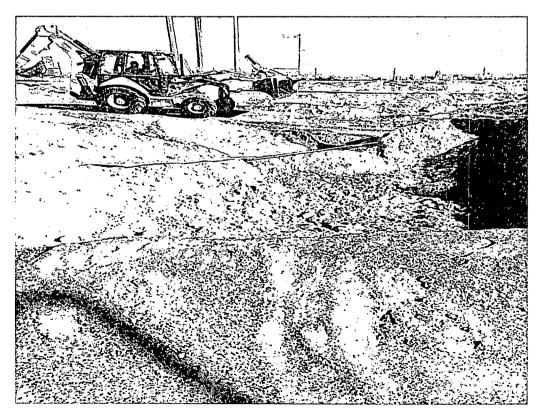
Photos

.

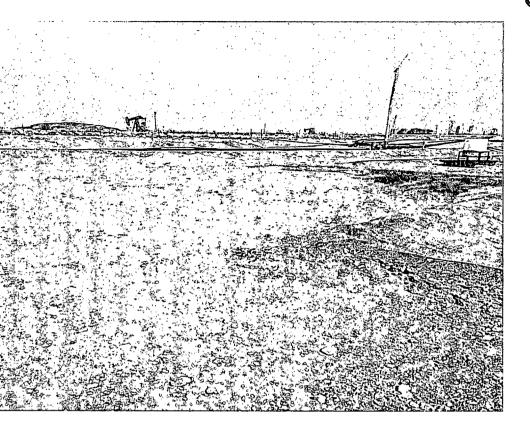


TETRA TECH

View Northwest - Area of AH-1 (Spill 3) at 3.0'

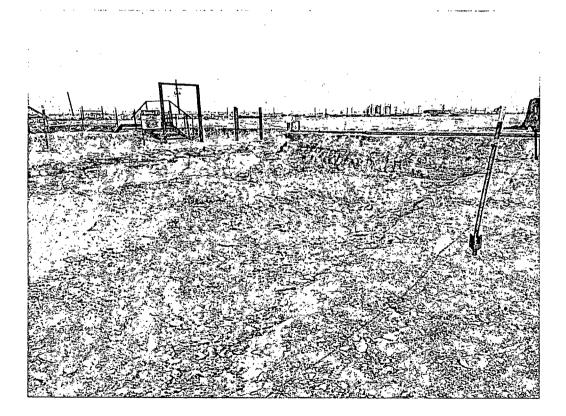


View North – Area of AH-2 (Spill 3) being Backfilled

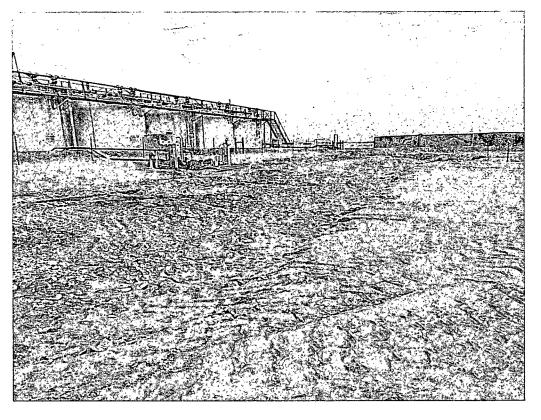


TETRA TECH

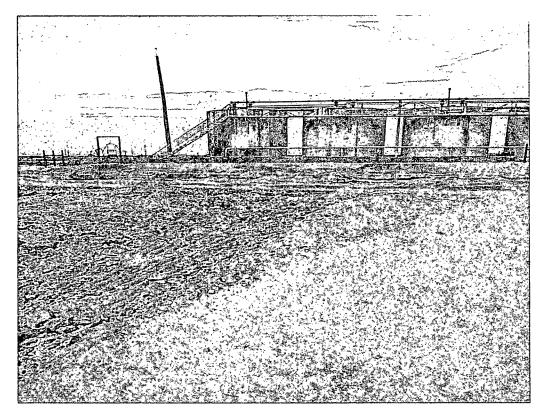
View North – Areas of AH-1 and AH-2 (Spill 3) Backfilled



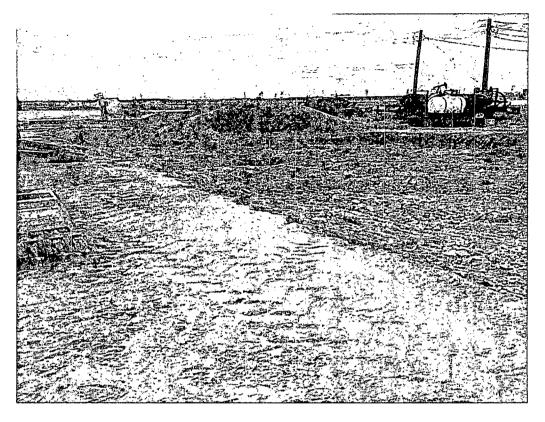
View North - Area of SB-1 (Spill 2) at 3.0'



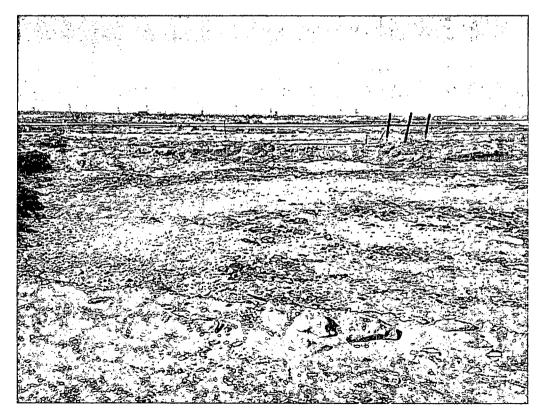
View North – Areas of SB-2 (Spill 1 and Spill 2) at 2.0'



View West – Areas of SB-3 and SB-4 (Spill 1) at 1.0' and 2.0' Respectively តា



View East - Area of AH-3 and SB-5 (Spill 1) at 2.0'

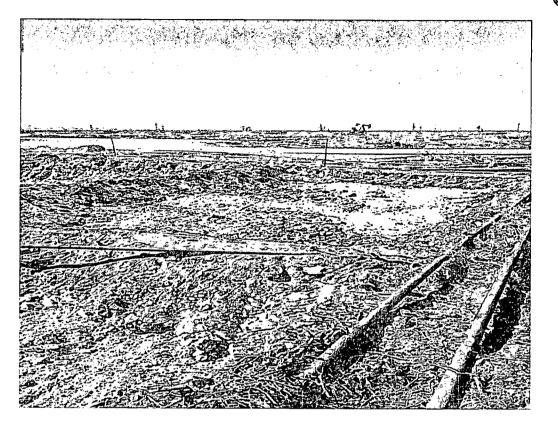


View West - Areas of AH-4 and AH-5 (Spill 2) at 3.0'

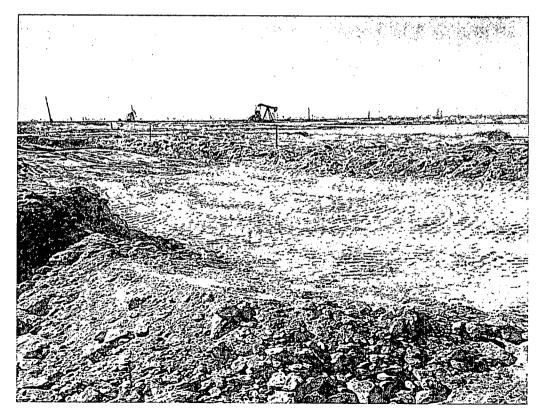


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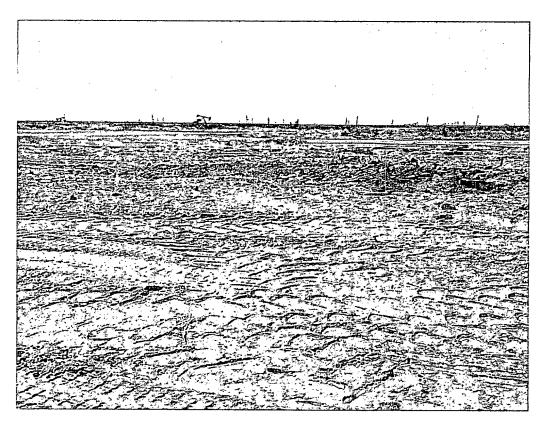
TETRA TECH



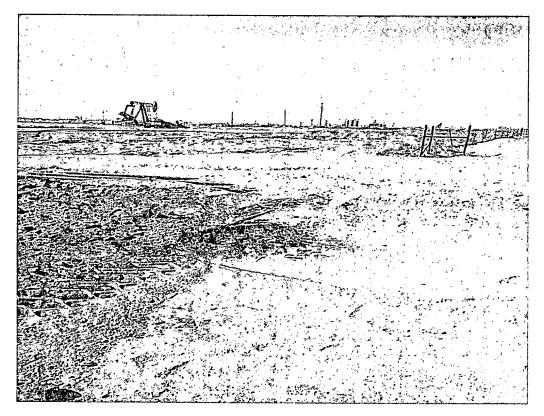
View East - Area of SB-7 (Spill 1) at 2.0'



View Southwest - Area of AH-6 and SB-7 (Spill 1) at 3.5



View West - Area of AH-6 and SB-7 (Spill 1) Backfilled



View North – Area of AH-5 and SB-6 (Spill 1) Backfilled

# Appendix A

i

State of New Mexico Energy Minerals and Natural Resources

> Oil Conservation Division 1220 South St. Francis Dr. 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         OPERATOR       Initial Report       Final Report       Final Report         Name of Company COG Operating LLC       Contact Robert McNeill       Address 600 W. Illinois Ave, Midland, Texas 79701       Telephone No. (432) 685-4332       Facility Name SENM SWD System (Northwest Central)       Facility Type Tank Battery         Surface Owner: Federal       Mineral Owner       Lease No. (API#)         LocATION OF RELEASE         Unit Letter       Section       Township       Range       Feet from the       North/South Line       Feet from the       East/West Line       County       Eddy         N       17       178       30E       Feet from the       North/South Line       Feet from the       East/West Line       County       Eddy         Type of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls       Source of Release: Or opduced water transmission line       Date and Hour of Occurrence       Date and Hour of Oscovery       5/12/2010       5/12/2010       5/12/2010       5/00pm       Free Stowery         Was Immediate Notice Given?       If Y Yes       No       Not Required       Mike Bratcher – OCD, Terry Gregston - BLM       Mike Bratcher – OCD, Terry Gregston - BLM       Source of Nick Stowers       Nick Stowers       Nick Stowers
Name of Company       COG Operating LLC       Contact Robert McNeill         Address 600 W. Illinois Ave, Midland, Texas 79701       Telephone No. (432) 685-4332         Facility Name       SENM SWD System (Northwest Central)       Facility Type       Tank Battery         Surface Owner: Federal       Mineral Owner       Lease No. (API#)         Unit Letter       Section       Township       Range       Section the       North/South Line       Feet from the       East/West Line       County         Unit Letter       Section       Township       Range       Section the       North/South Line       Feet from the       East/West Line       County         Latitude 32.853001° N       Longitude 103.959150° W       NATURE OF RELEASE       Volume of Release 300 bbls       Volume Recovered 200 bbls       Source of Release:       Produced water transmission line       Date and Hour of Discovery       S/12/2010
Address 600 W. IIIinois Ave, Midland, Texas 79701       Telephone No. (432) 685-4332         Facility Name SENM SWD System (Northwest Central)       Facility Type Tank Battery         Surface Owner: Federal       Mineral Owner         LOCATION OF RELEASE       Lease No. (API#)         Unit Letter       Section         17       Township         30E       Feet from the         North/South Line       Feet from the         Latitude 32.853001° N       Longitude 103.959150° W         Latitude 32.853001° N       Longitude 103.959150° W         Nature Of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls         Source of Release: 6" produced water transmission line       Date and Hour of Occurrence 5/12/2010 5/00pm       S/12/2010 5/00pm         Was Immediate Notice Given?       Yes       No       Not Required       Mike Bratcher – OCD, Terry Gregston - BLM         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm       If YES, Volume Impacting the Watercourse. N/A       N/A
Facility Name       SENM SWD System (Northwest Central)       Facility Type Tank Battery         Surface Owner: Federal       Mineral Owner       Lease No. (API#)         Surface Owner: Federal       Mineral Owner       Lease No. (API#)         LOCATION OF RELEASE         Unit Letter       Section       Township       Range       Feet from the       North/South Line       Feet from the       East/West Line       County         N       17       17S       30E       Feet from the       North/South Line       Feet from the       East/West Line       County         Latitude 32.853001° N       Longitude 103.959150° W       NaTURE OF RELEASE       Volume Recovered 200 bbls       Eddy         Source of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls       Date and Hour of Occurrence       Date and Hour of Discovery         Source of Release: 6° produced water transmission line       Date and Hour of Occurrence       Date and Hour of Sti2/2010       Sti2/2010       Sti2/2010         Was Immediate Notice Given?       Yes       No       Not Required       Mike Bratcher – OCD, Terry Gregston - BLM         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm       If YES, Volume Impacting the Watercourse.       N/A         If a Watercourse was Impacted, Describe Fully.*       If YES, Vo
Lease No. (API#)         Location of Release No. (API#)         Unit Letter       Section       Township       Range 30E       Feet from the       North/South Line       Feet from the       East/West Line       County         Unit Letter       17       Township       Range 30E       Feet from the       North/South Line       Feet from the       East/West Line       County       Eddy         Latitude 32.853001° N       Longitude 103.959150° W         Nature OF RELEASE         Type of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls         Source of Release: 6° produced water transmission line       Date and Hour of Occurrence 5/12/2010       Date and Hour of Discovery 5/12/2010       5/12/2010 5:00pm         Was Immediate Notice Given?       Yes       No       Not Required       Mike Bratcher – OCD, Terry Gregston - BLM       Mike Bratcher – OCD, Terry Gregston - BLM         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm       If YES, Volume Impacting the Watercourse.       N/A         If a Watercourse was Impacted, Describe Fully.*       Yes       No       N/A       N/A
LOCATION OF RELEASE         Unit Letter       Section       Township       Range 30E       Feet from the       North/South Line       Feet from the       East/West Line       County         N       17       17S       30E       Feet from the       North/South Line       Feet from the       East/West Line       County         Latitude 32.853001° N       Longitude 103.959150° W         NATURE OF RELEASE         Type of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls         Source of Release: 6° produced water transmission line       Date and Hour of Occurrence 5/12/2010       Date and Hour of Discovery 5/12/2010 5:00pm         Was Immediate Notice Given?       Yes       No       Not Required       Mike Bratcher – OCD, Terry Gregston - BLM         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm       If YES, Volume Impacting the Watercourse. N/A       N/A
Unit Letter N       Section 17       Township 17S       Range 30E       Feet from the 30E       North/South Line       Feet from the Feet from the Source of Release: Produced Water       County Eddy         Type of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls       Volume Recovered 200 bbls         Source of Release: 6" produced water transmission line       Date and Hour of Occurrence 5/12/2010       Date and Hour of Discovery 5/12/2010       Date and Hour of Discovery 5/12/2010         Was Immediate Notice Given?       Yes       No       Not Required       Mike Bratcher – OCD, Terry Gregston - BLM         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm       If YES, Volume Impacting the Watercourse. N/A       If yes No         If a Watercourse was Impacted, Describe Fully.*       Fully.*       Source of Pully.*       Source Pully.*
Unit Letter N       Section 17       Township 17S       Range 30E       Feet from the 30E       North/South Line       Feet from the Feet from the Latitude 32.853001° N       East/West Line       County Eddy         Latitude 32.853001° N         Longitude 103.959150° W         NATURE OF RELEASE         Type of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls         Source of Release: 6" produced water transmission line       Date and Hour of Occurrence 5/12/2010       Date and Hour of Discovery 5/12/2010         Was Immediate Notice Given?       Yes       No       Not Required       Mike Bratcher – OCD, Terry Gregston - BLM         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm       If YES, Volume Impacting the Watercourse. N/A       If a Watercourse was Impacted, Describe Fully.*
N       17       175       30E       Eddy         Latitude 32.853001° N       Longitude 103.959150° W       Eddy         NATURE OF RELEASE         Type of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls         Source of Release: 6" produced water transmission line       Date and Hour of Occurrence 5/12/2010       Date and Hour of Discovery 5/12/2010         Was Immediate Notice Given?       Yes       No       Not Required       If YES, To Whom?         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm       If YES, Volume Impacting the Watercourse.       N/A         If a Watercourse was Impacted, Describe Fully.*       Yes       No       N/A
NATURE OF RELEASE         Type of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls         Source of Release: 6" produced water transmission line       Date and Hour of Occurrence 5/12/2010       Date and Hour of Discovery 5/12/2010 5:00pm         Was Immediate Notice Given?       If YES, To Whom?       Mike Bratcher - OCD, Terry Gregston - BLM         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm         Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse. N/A         If a Watercourse was Impacted, Describe Fully.*
Type of Release: Produced Water       Volume of Release 300 bbls       Volume Recovered 200 bbls         Source of Release: 6" produced water transmission line       Date and Hour of Occurrence       Date and Hour of Discovery         Source of Release: 6" produced water transmission line       Date and Hour of Occurrence       Date and Hour of Discovery         Was Immediate Notice Given?       If YES, To Whom?       If YES, To Whom?         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm         Was a Watercourse Reached?       If YES, No         If a Watercourse was Impacted, Describe Fully.*
Source of Release: 6" produced water transmission line       Date and Hour of Occurrence       Date and Hour of Discovery         Source of Release: 6" produced water transmission line       Date and Hour of Occurrence       Date and Hour of Discovery         Was Immediate Notice Given?       Yes       No       If YES, To Whom?         By Whom? Josh Russo       Date and Hour 5/13/2010 4:09pm         Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse.         N/A       N/A
Since Given?       5/12/2010       5/12/2010       5:00pm         Was Immediate Notice Given?       If YES, To Whom?       If YES, To Whom?         By Whom? Josh Russo       Date and Hour 5/13/2010       4:09pm         Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse.         N/A       N/A
Image: Second
By Whom? Josh Russo     Date and Hour 5/13/2010 4:09pm       Was a Watercourse Reached?     If YES, Volume Impacting the Watercourse.       N/A     N/A
Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse.         N/A       N/A
If a Watercourse was Impacted, Describe Fully.*
N/A
Describe Cause of Problem and Remedial Action Taken.*
The group of the related was due to the follows of a new wold on a C <sup>2</sup> produced water transmission line. The line was immediately repaired and put had
The cause of the release was due to the failure of a poly weld on a 6" produced water transmission line. The line was immediately repaired and put back into service.
Describe Area Affected and Cleanup Action Taken.*
Initially 300bbls of produced water was released and COG was able to recover 200bbls with a vacuum truck. The main area of the release on the pad
location measured 150' x 130'. A stream then headed south on the pad with the dimensions of 5' x 100' before heading off the south end of the pad and
into the pasture. Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper
disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted 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
public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability
should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other
federal, state, or local laws and/or regulations.
OIL CONSERVATION DIVISION
Signatura
Signature:
Printed Name: Ike Tavarez MgCart & CuC Approved by District Supervisor:
Title: Project Manager Approval Date: Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com Conditions of Approval:
Date: $5 - 18 - 14$ Phone: (432) 682-4559

Attach Additional Sheets If Necessary

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

1220 0. 50. 1141		a i c, i vivi o 7505		Sa	inta F	e, NM 875	05			51	
	<u>ana an ini kana kan</u> aka		Rel	ease Notific	catio	n and Co	orrective A	ction	d 2 A transform - ang ang de an san sa sa sa sa sa sa sa		
						<b>OPERA</b> '	FOR	🔲 Initia	l Report	🖂 Fi	inal Report
Name of Co	ompany C	COG Operat	ing LLC			Contact Ro	bert McNeill				
Address 60	0 W. Illin	ois Ave, Mie	lland, T	exas 79701		Telephone 1	No. (432) 685-4	1332			
Facility Nar	ne McInt	yre DK Fed	(Northy	vest Central)		Facility Typ	e Tank Batte	ry			
Surface Ow	ner: Feder	al		Mineral C	)wner			Lease N	o. (API#)	NMNM-	86025
		_		LOCA	TIO	N OF RE	LEASE				
Unit Letter N	Section 17	Township 17S	Range 30E	Feet from the	North	/South Line	Feet from the	East/West Line	County	Eddy	
				Latitude 32 49.8	804° N	Longitu	<b>le</b> 103 59.782°	W			
				NAT	URE	OF REL	EASE				
Type of Rele							Release 23 bbls		ecovered 2		
Source of Re	lease: Oil T	ank				Date and H	Iour of Occurrenc )	e Date and I 12/15/201	Hour of Dis 0 8:00am	covery	
Was Immedia	ate Notice (		Yes 🕅	No 🛛 Not Ro	equired	If YES, To				<b></b>	
By Whom?					<u> </u>	Date and F	Iour				
Was a Water	course Reac			_			olume Impacting t	he Watercourse.			
			Yes 🛛			N/A					
If a Watercou	irse was Im	pacted, Descri	be Fully.	k							. ]
N/A											-
Describe Cau	ise of Proble	em and Remed	dial Actio	n Taken.*							
The equalizer	r line was p	lugged causing	g the oil ta	ank to overflow. T	he plug	gged equalizer	line has been cle	aned out.			
Describe Are	a Affected a	and Cleanup A	Action Tal	ten.*							ĺ
Initially 23bb	ols of oil wa	s released from	n the oil t	ank and COG was	s able to	o recover 20bl	ols with a vacuum	truck. The oil trave	eled south o	in the pad	location
3' x 100', and	d then off th	e pad roughly	30' towa	rds a prior spill lo	cation.	Tetra Tech in	spected site and c	ollected samples to	define spill	s extent. S	Soil that
				for proper dispose D for review.	al. Site	was then brou	ght up to surface	grade with clean ba	ckfill mater	rial. Tetra	Tech
	are report a	ind submitted		D tor review.							1
I hereby certi	fy that the i	nformation gi	ven above	is true and comp	lete to t	he best of my	knowledge and u	nderstand that purs	uant to NM	OCD rules	s and
regulations al	Il operators	are required to	o report ai	nd/or file certain r	elease n	otifications a	nd perform correc	tive actions for rele	ases which	may enda	nger
should their c	or the envir	ave failed to a	dequately	investigate and re	emediat	e NMOCD iii e contaminati	on that pose a thr	eport" does not relie eat to ground water,	surface wa	rator of fia iter humai	n health
or the enviror	nment. In a	ddition, NMO	CD accep					responsibility for co			
federal, state,	or local lay	vs-md/or regu	lations.								
		11 7	2				<u>OIL CON</u>	SERVATION	DIVISIC	<u>DN</u>	
Signature:	/	$\square \checkmark$			<b></b>						
Printed Name	e: Ike Tavar	ez A	an	for Calo		Approved by	District Supervis	or:			
Title: Project	Manager					Approval Dat	e:	Expiration I	Date:	-	
E-mail Addre	ess: Ike.Tav	arez@TetraTe	ch.com			Conditions of	Approval:	_ · · ·	Arrest	r	
Date: 5-	-19-1	14	Dhar						Attached		
		/	Phone	e: (432) 682-4559					1		

\* Attach Additional Sheets If Necessary

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

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

Santa Fe, NM 87505												
			Rele	ase Notific	eatior	n and Co	orrective A	ction	l			
				OPERATOR			🗌 Initial Report 🛛 🛛 Final Repo			Final Report		
		COG Operat	¥			Contact Robert McNeill						
		ois Ave, Mic				Telephone No. (432) 685-4332						
Facility Nai	ne North	west Centra	l Tank B	attery		Facility Type Tank Battery						<b>-</b>
Surface Ow	ner: Federa	al		Mineral C	Owner				Lease N	lo. (API#)3	30-015	-20972
				LOCA	TIO	N OF REI	LEASE					
Unit Letter N	Section 17	Township 17S	Range 30E	Feet from the					West Line	County	Eddy	1
Latitude 32 49.817° N Longitude 103 59.765° W												
TE CD (	011	<b>D</b> 1 117		NAT	URE	OF RELI			<u> </u>		47111	
		Produced Wa Obbl open top					Release 160 bbls	-		Recovered 1 Hour of Dis		
Source of ite	10,00	ooor open top	tank			06/25/2012				2 9:52am	covery	
Was Immedia	ate Notice G		Yes 🗌	No 🗌 Not Re	equired	If YES, To Mike Brat	Whom? cher – OCD, Jim	Amos	– BLM, T	erry Gregst	on - Bl	LM
By Whom? N						Date and H	our 06/26/2012	10:02ar	n			
Was a Watero	course Reac		Yes 🖾	No		If YES, Vo N/A	lume Impacting th	he Wate	ercourse.			-
If a Watercou	irse was Imp	pacted, Descri	be Fully.*						DRI	=CEIV	VEL	57
N/A										JUN 04	2011	
Describe Cau	se of Proble	em and Remed	lial Action	Taken.*					NM	OCD A	RTES	<u>MA</u>
10.000bbl.op	en ton tank (	overflowed di	ie to water	being diverted to	s open te	on instead of	ank battery, along	a with a	Landard			
							lectrical issue has				uni sys	iem. The
Describe Area	a Affected a	ind Cleanup A	ction Tak	en.*								
Initially 800 t	obls of fluid	were released	l from the	open top water ta	ink and (	COG was able	e to recover 700 b	bls with	n a vacuum	truck. The s	spill wa	s contained
on the pad loo	cation surrou	unding the tan	k and mea	sured an area of i	roughly	125' x 200'. '	Tetra Tech inspec	ted site	and collect	ted samples	to defin	ne spills
						r disposal. Si	e was then brough	ht up to	surface gra	ade with clea	nn back	fill material.
rena reen pr	epared closi	ure report and	submitted	to NMOCD for	review.							
							knowledge and ur					
regulations al	l operators a	are required to	report an	d/or file certain re	elease no	tifications ar	d perform correct	tive acti	ons for rele	eases which	may en	danger
should their o	perations ha	onment. The a	acceptance dequately	e of a C-141 repo	rt by the	: NMOCD ma	irked as "Final Re	eport" de	ound water	eve the oper	ator of ter hur	nan health
or the enviror	ment. In ac	dition, NMO	CD accept	ance of a C-141 r	report do	bes not relieve	the operator of r	esponsi	bility for co	ompliance w	ith any	other
federal, state,	or local law	and/or regul	lations.									
		$1 \sum$	$\neq$				OIL CONS	SERV	ATION	DIVISIC	<u>N</u>	
Signature: 4	. 1/	4	)	٨								
Printed Name	: Ike Tavare	a Mel	nt f	r Coc)	ŀ	Approved by	District Superviso	or:				
Title: Project	Manager	~ 7			F	Approval Date	e:	E	Expiration I	Date:		
E-mail Addre	ss: Ike.Tava	irez@TetraTe	ch.com		(	Conditions of	Approval:			Attached		
Date: 5-	-15. K	Phone:	(432) 682	-4559								
Attach Addit	ional Shee									1		

District 1 1625 N. French Dr., Hobbs, NM 88240						Form C-141	
District II 1301 W. Grand Avenue, Artesia, NM 88210	istrict II Energy Minerals 101 W. Grand Avenue, Artesia, NM 88210						Revised October 10, 2003
District III	serv	ation Div	vision			Submit 2 Copies to appropriate District Office in accordance	
1000 Rio Brazos Road, Aztec, NM 87410 District IV	1220 So	uth	St. Franc	is Dr.			with Rule 116 on back
1220 S. St. Francis Dr., Santa Fe, NM 87505	Santa	Fe.	NM 875	05			side of form
	Release Notificati	-			-		
r	velease nouncan		OPERA'				al Report 🔲 Final Report
Name of Company COG OPERA	TINGLLC	_	Contact		at Ellis	EA CHU	
Address 550 W. Texas, Suite 100		_	elephone 1		230-00	77	
Facility Name SENM SWD System	(Northwest Central)	F	acility Typ	e Tanl	k Batter	у	
Surface Owner Federal	Mineral Own						1
Surface Owner Federal			OF DE			Lease N	io,
Link Lower L Continue L Transition   Dec	LOCATI		OF REI	Feet from the	Enno	est Line	<u>C</u>
	nge   Feet from the   No 0E	1111/5	oum Line	reet from the	Lasuv	est Line	County Eddy
							2005
	Latitude 32 49.8	40	Longitu	ide 103 59.763			·····
	NATUR	E C	OF REL				
Type of Release Produced V	and the second		The second s	Release 300bbl	•	Volume P	lecovered 200bbls
Source of Release 6" produced water to				lour of Occurrenc			Hour of Discovery
			05/12/2010			05/12/201	0 5:00 p.m.
Was Immediate Notice Given?	s 🗋 No 🗌 Not Requir		If YES, To Whom? Mike Bratcher ~ OCD				
- D 10						regston – B	
By Whom? Josh Russo			Date and Hour 05/13/2010 4:09 p.m.				
Was a Watercourse Reached?			If YES, Volume Impacting the Watercourse.				
L Ye	is 🖾 No	- [					
If a Watercourse was Impacted, Describe Fully.*							
Describe Cause of Problem and Remedial A	Action Taken.*						
	<i>.</i> .						
The cause of the release was due to the failt into service.	ure of a poly weld on a 6" p	produ	ced water tr	ansmission line.	The line	was imme	diately repaired and put back
Describe Area Affected and Cleanup Action	n Taken.•						
Livially 2004bla as and used water was mil	and and one man able to a		300567-				- C.L 1
Initially 300bbls or produced water was rek location had the dimensions of 150'x130'.	A stream then headed sout	h an i	the pad loca	tion with the dime	ensions (	main area	of the release on the pad
end of the pad and into the pasture. The str	cam into the pasture went r	rough	ly 170', (Th	e closest well loca	ation to	the release	is the MCINTYRE DK
FEDERAL #3, Unit N, 17-17S-30E, 660 F	SL 1980 FWL 32.82917 -	103.9	99629, AP#	30-015-04186)	Tetra Te	ch will san	ple the spill site area to
delineate any possible contamination from t significant remediation.	the release and we will pres	sent a	remediation	work plan to the	BUW 1	NMOCDI	or approval before any
I hereby certify that the information given a							
regulations all operators are required to rep public health or the environment. The acce	ort and/or file certain release	se not	tifications an	id perform correct	tive acti	ons for rela	ases which may endanger
should their operations have failed to adeou	stely investigate and remer	diate -	contaminati	on that pose a thr	epuiti di estito m	ound water	surface water, human health
should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other							
federal, state, or local laws and/or regulatio	ns					•	
				OIL CONS	SERV	ATION	DIVISION
Signature:	$L \langle S \rangle$						
Printed Name: Josh Russ	50	<b>^</b>	pproved by	District Supervise	or:		
Title: HSE Coordi		1.	pproval Dat	•·	1,	·····	nto:
					t	xpiration I	
E-mail Address: jrusso@conchore		$\downarrow_{c}$	onditions of	Approval;			Attached
Date: 05/21/2010 Phone	: 432-212-2399						1

-

	03/21/20	10	1 110410
* Attach	Additional	Sheets	If Necessary

<u>District 1</u> 1625 N. French Dr., Hobbs, NM 88240 <u>District 11</u> 1301 W. Grand Avenue, Artesia, NM 88210 <u>District 111</u> 1000 Rio Brazos Road, Aztec, NM 87410 <u>District 1V</u> 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**

						<b>OPERA</b>	FOR		🛛 Initia	al Report		Final Report
Name of Co		COG OP			Contact		at Ellis					
Address				dland, TX 7970		Telephone 1		230-00				
Facility Nar	ne McIn	tyre DK Fed	eral (Noi	thwest Central)		Facility Typ	e Tanl	k Batter	y	····		···
Surface Ow	ner Fe	deral		Mineral O	wner				Lease N	Io. NMNN	1-8602	.5
				LOCA	TIOI	N OF RE	LEASE					
Unit Letter N	Section 17	Township 17S	Range 30E	Feet from the	North/	South Line	Feet from the	East/V	t/West Line County Eddy			
				Latitude 32 4			ide 103 59.782	<b>.</b>				
	NATURE OF RELEASE											
Type of Rele							Release 23bbls			ecovered 2		
Source of Rel	lease Oil 7	ank				Date and H 12/15/2010	lour of Occurrenc	τ		Hour of Dis 0 8:00e.m.		
Was Immedia	te Notice C	liven7		······		If YES, To			12/13/201	0.008.111		
Yes X No X Not Required												
By Whom?		,				Date and Hour						
Was a Water	ourse Read					If YES, Volume Impacting the Watercourse.						······································
			Yes 🛛	No								
If a Watercou	rse was Im	pacted, Descri	be Fully.*	1		L					<u> </u>	
Describe Cau	se of Proble	em and Reme	lial Action	n Taken.*		<u> </u>	······			• • • • • • • • • • • • • • • • • • •		
The equalizer	line was pl	ugged causing	g the oil ta	ink to overflow. T	The plug	ged equalized	r line has been cle	aned ou	l.			
Describe Area	Affected a	and Cleanup A	ction Tak	:en.*						·····		
x 100', and th contaminates,	Initially 23bbls of oil was released from the oil tank and we were able to recover 20bbls with a vacuum truck. The oil traveled south on the pad location 3' x 100', and then off the pad roughly 30' towards a prior spill location. All oil has been picked up with a vacuum truck, pad material has been scraped of contaminates, tanks and lines have been steamed. (Well location on the same pad, McIntyre Federal #6, (API#) 30-015-20972).											
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.												
						OIL CONSERVATION DIVISION						
Signature:										_		
Printed Name		Jash	Russo			Approved by District Supervisor:						
Title:		HSE Co	ordinator			Approval Dat	e:	E	Expiration	Date:		
E-mail Addre	\$\$:	jrusso@concl	oresource	es.com	(	Conditions of Approval:						
Date: 12/17/2010 Phone: 437-217-7399									•	1		

\* Attach Additional Sheets If Necessary

Deil 72

#1452

State of New Mexico Energy Minerals and Natural Resources

District 1 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 1301 W. Grand Avenue, Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Road, Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505

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**

	OPERATOR	$\boxtimes$	Initial Report	Final Report
Name of Company COG OPERATING LLC	Contact	Pat Ellis		
Address 550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077		
Facility Name Northwest Central Tank Battery	Facility Type	Tank Battery		

Surface Owner	Federal	Mineral Owner	Lease No. (API#) 30-015-20972
1			McIntvre Federal #6 - Closest well

#### LOCATION OF RELEASE

Unit Letter N	Section 17	Township 17S	Range 30E	Feet from the	North South Line	Feet from the	East/West Line	County Eddy
		l	l					<u> </u>

Latitude 32 49.817 Longitude 103 59.765

NATURE OF RELEASE

Type of Release Oil and Produced water	Volume of Release 700bbls oil 100bbls produced water	Volume Recovered 650bbls oil 50bbls produced water						
Source of Release 10,000bbl open top tank	Date and Hour of Occurrence 06 25 2012	Date and Hour of Discovery 06 25 2012 9:52 a.m.						
Was Immediate Notice Given?	Yes No Not Required If YES, To Whom? Mike Bratcher-OCD Jim Amos-BLM Terry Gregston-BLM							
By Whom? Michelle Mullins	Date and Hour 06/26/2012 10:02	a.m.						
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.							
If a Watercourse was Impacted, Describe Fully.*								
Describe Cause of Problem and Remedial Action Taken.*								
10,000 bbl open top tank at the Northwest Central Tank Battery overflowed due to water being diverted to open top instead of tank battery; Along with an electrical error on alarm system. The valve has been changed to divert water to the correct Northwest Central tanks and the electrical issue has been corrected.								
Describe Area Affected and Cleanup Action Taken.*								
Initially 800bbls of fluid were released from the open top water tank and we were able to recover 700bbls with a vacuum truck. The entire spill was contained on the pad location surrounding the tank and measured an area of roughly 125' x 200'. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD / BLM for approval prior to any significant remediation work.								
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.								

Signature:	OIL CONSERVATION DIVISION				
Printed Name: Josh Russo	Approved by District Supervisor:				
Title: HSE Coordinator	Approval Date:	Expiration Date:			
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached			
Date: 06 29/2012 Phone: 432-212-2399					

\* Attach Additional Sheets If Necessary

# Appendix B

#### Water Well Data Average Depth to Groundwater (ft) SENM SWD System (Northwest Central) **Eddy County, New Mexico**

	16 S	outh		29 East			16	6 Sou	uth	:	30 East			16	South	3	1 East	
6	5	4	3	2	1	6	5	4	4	3	2	1	6	5	4	3	2 <b>290</b>	1
7	8	9	10	11	12	7	8	- 9	9	10	11	12	7	8	9	10	11	12
18	17	16	15	14 220 dry	13	18	17		16	15	14	13	18	17	16	15	14 113 <b>314</b>	288 13 29
19 110	20	21	22	23	24	19	20	2	21	22	23	24	19	20	21	22	23	.24
30	29	28	27	26	25	30	29		28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	3	33	34	35	36	31 <b>290</b>	32	33	34	35	36
	17 Se	outh		29 East			17	Sou	uth		30 East			17 :	South	3'	1 East	
6	5	4	3	2	1	6	5	4		3	2	1	6	5	4	3		1
7	8	9	10	11	12	7	8	9	)	10	11	12	7	8	9	10	11	12
18	17	16	15	14	13	18	17	Site 1	16	15	14	13	18	17	16	15	14	13
19	20	21	22 <b>7</b> 80	6 23	24	19	20	80 2	21	22	23	24	19	20	21	22	23	24
30	29 <b>210</b> 208	28	27	26	25	30	29	2	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35 153	36	31	32	3	33	34	35	36	31	32	33	34 271	35	36
	18 So	outh		29 East			18	Sou	<i>i</i> th		30 East	<b>-</b>	<u></u>	18 :	South	31	l East	
6	5	4	3	2	1	6	5	4	ţ.	3	2	1	6	5	4	3	2	1
7	8	9	10 9	95 11	12	7	8	g	)	10	11	12	7	8	9	10	11	12 <b>400</b>
18	17	16	15	14	13	18	17	1	16	15	14	13	18	17	16	15 98	14 317	13
19	20	21	22	23	24 158	19	20	2	21	22	23 44	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	2	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	3	33	34	35	36	31	32	33	34	35 <b>261</b>	36
	New	Nexico	State	Engine	ers Well	Reports	<b>i</b>						L					l

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

# Appendix C

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Work Order: 10062804

# **Summary Report**

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

Work Order: 10062804

Project Location:	Eddy County, NM
Project Name:	COG/SENM SWD System
Project Number:	114-6400547

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
235925	AH-1 0-1'	soil	2010-06-23	00:00	2010-06-25
235926	AH-1 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235927	AH-1 2-2.5'	soil	2010-06-23	00:00	2010-06-25
235928	AH-2 0-1'	soil	2010-06-23	00:00	2010-06-25
235929	AH-2 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235930	AH-2 2-2.5'	soil	2010-06-23	00:00	2010-06-25
235931	AH-2 3-3.5'	soil	2010-06-23	00:00	2010-06-25
235932	AH-2 4-4.5'	soil	2010-06-23	00:00	2010-06-25
235933	AH-2 5-5.5'	soil	2010-06-23	00:00	2010-06-25
235934	AH-2 6-6.5'	soil	2010-06-23	00:00	2010-06-25
235935	AH-2 7-7.5'	soil	2010-06-23	00:00	2010-06-25
2359 <b>36</b>	AH-2 8-8.5'	soil	2010-06-23	00:00	2010-06-25
235937	AH-3 0-1'	soil	2010-06-23	00:00	2010-06-25
235938	AH-4 0-1'	soil	2010-06-23	00:00	2010-06-25
235939	AH-4 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235940	AH-4 2-2.5'	soil	2010-06-23	00:00	2010-06-25
235941	AH-4 3-3.5'	soii	2010-06-23	00:00	2010-06-25
235947	AH-5 0-1'	soil	2010-06-23	00:00	2010-06-25
235948	AH-5 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235949	AH-6 0-1'	soil	2010-06-23	00:00	2010-06-25
235950	AH-7 0-1'	soil	2010-06-23	00:00	2010-06-25
235951	AH-7 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235952	AH-7 2-2.5'	soil	2010-06-23	00:00	2010-06-25

	BTEX			TPH DRO - NEW	TPH GRO	
) 1	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
285925 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00

continued ....

#### Report Date: July 2, 2010

Work Order: 10062804

... continued

, ,			DTEV		TPH DRO - NEW	TPH GRO
	D		BTEX	Vulana	DRO	GRO
Barris Bald Cada	Benzene	Toluene	Ethylbenzene	Xylene	(mg/Kg)	(mg/Kg)
Sample - Field Code 285928 - AH-2 0-1'	(mg/Kg)	(mg/Kg) <0.0200	(mg/Kg) <0.0200	(ms/Ks) <0.0200	(me/Kg) <50.0	(ms/Ks) <2.00
235925 - AH-2 0-1' 235937 - AH-8 0-1'	<0.0200 <0.100	< 0.100	<0.100	<0.100	366	<10.0
235937 - AH-8 0-1 235938 - AH-4 0-1'	<0.100	<0.100	< 0.0200	<0.0200	<50.0	<2.00
285947 - AH-5 0-1'	<0.0200	<0.0200	< 0.0200	<0.0200	<50.0	<2.00
235949 - AH-6 0-1'	< 0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
235950 - AH-7 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
Sample: 235925 - AI	H-1 0-1'					
Param	Flag		Result		Units	RL
Chloride	p		15800		mg/Kg	4.00
Sample: 235926 - AI	H-1 1-1.5'					
Param	Flag		Result		Units	RL
Chloride			6220		mg/Kg	4.00
Qle, 00200# 17	1 1 9 9 21					
Sample: 235927 - Al Param	H-1 2-2.5' Flag		Result		Units	RL
-			Result 7440		Units mg/Kg	RL 4.00
Param Chloride	Flag					
Param	Flag I-2 0-1'					
Param Chloride Sample: 235928 - AF Param	Flag		7440		mg/Kg	4.00 RL
Param Chloride Sample: 235928 - AF	Flag I-2 0-1' Flag		7440 Result		mg/Kg Units	4.00
Param Chloride Sample: 235928 - AF Param Chloride	Flag I-2 0-1' Flag I-2 1-1.5'		7440 Result		mg/Kg Units	4.00 RL
Param Chloride Sample: 235928 - AF Param Chloride Sample: 235929 - AF	Flag I-2 0-1' Flag		7440 Result 4400		mg/Kg Units mg/Kg	4.00 RL 4.00
Param Chloride Sample: 235928 - AF Param Chloride Sample: 235929 - AF Param	Flag H-2 0-1' Flag H-2 1-1.5' Flag		7440 Result 4400 Result		mg/Kg Units mg/Kg Units	4.00 RL 4.00 RL
Param Chloride Sample: 235928 - AF Param Chloride Sample: 235929 - AF Param Chloride	Flag H-2 0-1' Flag H-2 1-1.5' Flag		7440 Result 4400 Result		mg/Kg Units mg/Kg Units	4.00 RL 4.00 RL

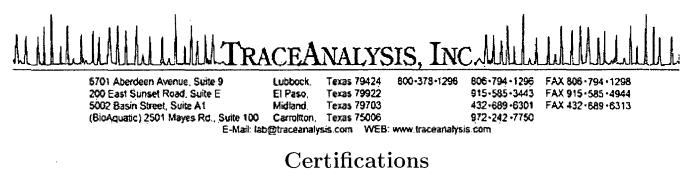
Report Date: July 2, 2010	Work Order: 10062804	Page	Page Number: 3 of 5		
Sample: 235931 - AH-2 3-3.5'					
Param Flag	Result	Units	RL		
Chloride	5860	mg/Kg	4.00		
Sample: 235932 - AH-2 4-4.5'					
Param Flag	Result	Units	RL		
Chloride	3140	mg/Kg	4.00		
Sample: 235933 - AH-2 5-5.5'					
Param Flag	Result	Units	RL		
Chloride	2270	mg/Kg	4.00		
Sample: 235934 - AH-2 6-6.5'					
Param Flag	Result	Units	RL		
Chloride	1230	mg/Kg	4.00		
Sample: 235935 - AH-2 7-7.5'					
Param Flag	Result	Units	RL		
Chloride	314	mg/Kg	4.00		
Sample: 235936 - AH-2 8-8.5'					
Param Flag	Result	Units	RL		
Chloride	<200	mg/Kg	4.00		
Sample: 235937 - AH-3 0-1'					
Param Flag	Result	Units	RL		
Chloride	1850	mg/Kg	4.00		
Sample: 235938 - AH-4 0-1'					
Param Flag	Result	Units	RL		
Chloride	6220	mg/Kg	4.00		

Report Date: July 2, 2010		Work Order: 10062804	Page	Number: 4 of 5
Sample: 235939 - A	H-4 1-1.5'	-		
Param	Flag	Result	Units	RL
Chloride		3140	mg/Kg	4.00
Sample: 235940 - A	H-4 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00
Sample: 235941 - A	H-4 3-3.5'			
Param	Flag	Result	Units	RL
Chloride	·····	287	mg/Kg	4.00
Sample: 235947 - A	H-5 0-1'			
Param	Flag	Result	Units	RL
Chloride		1650	mg/Kg	4.00
Sample: 235948 - Al	H-5 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		3240	mg/Kg	4.00
Sample: 235949 - Al	H-6 0-1'			
Param	Flag	Result	Units	RL
Chloride		2420	mg/Kg	4.00
Sample: 235950 - Al	H-7 0-1'			
Param	Flag	Result	Units	RL
Chloride		2800	mg/Kg	4.00
Sample: 235951 - Al	H-7 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		4880	mg/Kg	4.00

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Report Date: July 2, 2010		Work Order: 10062804		Page Number: 5 of 5			
Sample: 235952 - AH-7 2-2.5'							
Param	Flag	Result	Units	RL			
Chloride		6240	mg/Kg	4.00			

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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 10, 2012

Work Order: 12080309

Project Location:Eddy Co., NMProject Name:COG/NW Central Tank Battery (CTB)Project Number:114-6401452

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
305684	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305685	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305686	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305687	AH-1 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305688	AH-1 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305689	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305690	AH-2 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305691	AH-2 1.5-2'	soil	2012-07-31	00:00	2012-08-02
305692	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02
305693	AH-3 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305694	AH-3 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305695	AH-3 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305696	AH-3 4-4.5'	soil	. 2012-07-31	00:00	2012-08-02
305697	AH-3 5-5.5'	soil	2012-07-31	00:00	2012-08-02
305698	AH-4 0-1'	soil	2012-07-31	00:00	2012-08-02
305699	AH-4 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305700	AH-4 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305701	AH-4 3-3.5 <sup>°</sup>	soil	2012-07-31	00:00	2012-08-02

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
305702	AH-4 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305703	AH-4 5-5.5'	soil	2012-07-31	00:00	2012-08-02

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

This report consists of a total of 29 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael abel

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

# **Summary Report**

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

Report Date	August	10,	2012	
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Work Order: 12080309

Project Location:	Eddy Co., NM
Project Name:	COG/NW Central Tank Battery (CTB)
Project Number:	114-6401452

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
305684	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305685	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305686	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305687	AH-1 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305688	AH-1 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305689	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305690	AH-2 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305691	AH-2 1.5-2'	soil	2012-07-31	00:00	2012-08-02
305692	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02
305693	AH-3 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305694	AH-3 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305695	AH-3 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305696	AH-3 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305697	AH-3 5-5.5'	soil	2012-07-31	00:00	2012-08-02
305698	AH-4 0-1'	soil	2012-07-31	00:00	2012-08-02
305699	AH-4 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305700	AH-4 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305701	AH-4 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305702	AH-4 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305703	<u>AH-4 5-5.5'</u>	soil	2012-07-31	00:00	2012-08-02

	BTEX			TPH DRO - NEW	TPH GRO	
	Benzene	Toluenc	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
305684 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<4.00
305689 - AH-2 0-1'	< 0.0200	<0.0200	< 0.0200	<0.0200	385	<4.00
305692 - AH-3 0-1'	< 0.0200	<0.0200	<0.0200	< 0.0200	<50.0	<4.00
305698 - AH-4 0-1'	< 0.0200	< 0.0200	< 0.0200	<0.0200	76.3	<4.00

Report Date: August 10, 2012		Work Order: 12080309		Page Number: 2 of 4	
Sample: 305684 - AH-1 0-1	,				
Param	lag	Result	Units	RL	
Chloride		430	mg/Kg	4	
Sample: 305685 - AH-1 1-1.	.5'				
Param F	lag	Result	Units	RL	
Chloride		860	mg/Kg	4	
Sample: 305686 - AH-1 2-2.	5'				
Param F	lag	Result	Units	RL	
Chloride		2460	mg/Kg	4	
Sample: 305687 - AH-1 3-3.	5'				
Param F	lag	Result	Units	RL	
Chloride	·	1500	mg/Kg	4	
Sample: 305688 - AH-1 4-4.	5'				
Param F	lag	Result	Units	RL	
Chloride		2650	mg/Kg	4	
Sample: 305689 - AH-2 0-1'					
Param F	lag	Result	Units	$\mathbf{RL}$	
Chloride		3850	mg/Kg	4	
Sample: 305690 - AH-2 1-1.3	5'				
Param Fi	lag	Result	Units	RL	
Chloride		2780	mg/Kg	4	
Sample: 305691 - AH-2 1.5-2	2'				
Param Fi	ag	Result	Units	RL	
Chloride		1840	mg/Kg	4	

Report Date: August 10, 2012		12 Work Order: 12080309		Number: 3 of 4
Sample: 305692	- AH-3 0-1'			
Parani	Flag	Result	Units	RL
Chloride		2600	mg/Kg	4
Sample: 305693 -	- AH-3 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		2730	mg/Kg	4
Sample: 305694 -	· AH-3 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		2850	mg/Kg	4
Sample: 305695 -	· AH-3 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		3830	mg/Kg	4
Sample: 305696 -	AH-3 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		3630	mg/Kg	4
Sample: 305697 -	AH-3 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		1850	mg/Kg	4
Sample: 305698 -	AH-4 0-1'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		5650	mg/Kg	4
Sample: 305699 -	AH-4 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		6430	mg/Kg	4

Report Date: Augu	Leport Date: August 10, 2012 Work Order: 12080309			Page Number: 4 of 4	
Sample: 305700	- AH-4 2-2.5'				
Param	Flag	Result	Units	RL	
Chloride		2060	mg/Kg	4	
Sample: 305701	- AH-4 3-3.5'				
Param	Flag	Result	Units	RL	
Chloride		443	nıg/Kg_	4	
Sample: 305702	- AH-4 4-4.5'				
Param	Flag	Result	Units	RL	
Chloride	· · · · · · · · · · · · · · · · · · ·	231	mg/Kg	4	
Sample: 305703 -	- AH-4 5-5.5'				
Param	Flag	Result	Units	RL	
Chloride		636	mg/Kg	4	

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 FAX 915•585•4944

 432•689•6301
 FAX 432•699•6313

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**WBENC:** 237019

HUB:1752439743100-86536NCTRCAWFWB38444Y0909

Certifications

**DBE:** VN 20657

## **NELAP** Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 El Paso: T104704221-08-TX LELAP-02002 Midland: T104704392-08-TX

## Analytical and Quality Control Report

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

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Report Date: August 30, 2010

Work Order: 10082003

Project Location:Eddy County, NMProject Name:COG/SENM SWD SystemProject Number:114-6400547

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

			Date	Time	$\operatorname{Date}$
Sample	Description	Matrix	Taken	Taken	Received
241833	SB-1 1'	soil	2010-08-17	00:00	2010-08-20
241834	SB-1 3'	soil	2010-08-17	00:00	2010-08-20
241835	SB-1 5'	soil	2010-08-17	00:00	2010-08-20
241836	SB-1 7'	soil	2010-08-17	00:00	2010-08-20
241837	SB-1 10'	soil	2010-08-17	00:00	2010-08-20
241838	SB-1 15'	soil	2010-08-17	00:00	2010-08-20
241839	SB-1 20'	soil	2010-08-17	00:00	2010-08-20
241842	SB-2 1'	soil	2010-08-17	00:00	2010-08-20
241843	SB-2 3'	soil	2010-08-17	00:00	2010-08-20
241844	SB-2 5'	soil	2010-08-17	00:00	2010-08-20

Sample 241845 241846 241847 241848 241848 241849	Description SB-2 7' SB-2 10' SB-2 15' SB-2 20' SB-3 1'	Matrix soil soil soil	Date Taken 2010-08-17 2010-08-17	Time <u>Taken</u> 00:00 00:00	Received 2010-08-20
241845 241846 241847 241848	SB-2 7' SB-2 10' SB-2 15' SB-2 20'	soil soil			
$241846 \\ 241847 \\ 241848$	SB-2 10' SB-2 15' SB-2 20'		2010-08-17	00.00	0010 00 00
241847 241848	SB-2 15' SB-2 20'			00.00	2010-08-20
241848	SB-2 20'		2010-08-17	00:00	2010-08-20
		soil	2010-08-17	00:00	2010-08-20
211010	02 01	soil	2010-08-17	00:00	2010-08-20
241850	SB-3 3'	soil	2010-08-17	00:00	2010-08-20
241851	SB-3 5'	soil	2010-08-17	00:00	2010-08-20
241852	SB-3 7'	soil	2010-08-17	00:00	2010-08-20
241853	SB-3 10'	soil	2010-08-17	00:00	2010-08-20
241853	SB-3 15'	soil	2010-08-17	00:00	2010-08-20
241857	SB-4 1'	soil	2010-08-17	00:00	2010-08-20
241858	SB-4 3'	soil	2010-08-17	00:00	2010-08-20
241859	SB-4 5'	soil	2010-08-17	00:00	2010-08-20
241855	SB-4 7	soil	2010-08-17	00:00	2010-08-20
241860	SB-4 10'	soil	2010-08-17	00:00	2010-08-20
241801 241862	SB-4 10 SB-4 15'	soil	2010-08-17	00:00	2010-08-20
241862 241863	SB-4 15 SB-4 20'	soil	2010-08-17	00:00	2010-08-20
241803 241864	SB-4 20 SB-4 25'	soil	2010-08-17	00:00	2010-08-20
241865	SB-4 20'	soil	2010-08-17	00:00	2010-08-20
	SB-4 50 SB-5 1'	soil	2010-08-17	00:00	2010-08-20
$241867 \\ 241868$	SB-5 3'	soil	2010-08-18	00:00	2010-08-20
	SB-5 5'	soil	2010-08-18	00:00	2010-08-20
241869			2010-08-18	00:00	2010-08-20
241870	SB-5 7'	soil	2010-08-18	00:00	2010-08-20
241871	SB-5 10'	soil		00:00	2010-08-20
241872	SB-5 15'	soil	2010-08-18	00:00	2010-08-20
241873	SB-5 20'	soil	2010-08-18		2010-08-20
241876	SB-6 1'	soil	2010-08-18	00:00	
241877	SB-6 3'	soil	2010-08-18	00:00	2010-08-20
241878	SB-6 5'	soil	2010-08-18	00:00	2010-08-20
241879	SB-6 7'	soil	2010-08-18	00:00	2010-08-20
241880	SB-6 10'	soil	2010-08-18	00:00	2010-08-20
241881	SB-6 15'	soil	2010-08-18	00:00	2010-08-20
241882	SB-6 20'	soil	2010-08-18	00:00	2010-08-20
241883	SB-7 1'	soil	2010-08-18	00:00	2010-08-20
241884	SB-7 3'	soil	2010-08-18	00:00	2010-08-20
241885	SB-7 5'	soil	2010-08-18	00:00	2010-08-20
241886	SB-7 7'	soil	2010-08-18	00:00	2010-08-20
241887	SB-7 10'	soil	2010-08-18	00:00	2010-08-20
241888	SB-7 15'	soil	2010-08-18	00:00	2010-08-20
241889	SB-7 20'	soil	2010-08-18	00:00	2010-08-20
241890	SB-7 25'	soil	2010-08-18	00:00	2010-08-20
241891	SB-7 30'	soil	2010-08-18	00:00	2010-08-20
241892	SB-8 1'	soil	2010-08-18	00:00	2010-08-20
241893	SB-8 3'	soil	2010-08-18	00:00	2010-08-20
241894	SB-8 5'	soil	2010-08-18	00:00	2010-08-20
241895	SB-8 7'	soil	2010-08-18 ge 2 of 44	00:00	2010-08-20

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241896	SB-8 10'	soil	2010-08-18	00:00	2010-08-20
241897	SB-8 15'	soil	2010-08-18	00:00	2010-08-20
241898	SB-8 20'	soil	2010-08-18	00:00	2010-08-20
241899	SB-8 25'	soil	2010-08-18	00:00	2010-08-20
241900	SB-8 30'	soil	2010-08-18	00:00	2010-08-20
241901	SB-8 40 <sup>'</sup>	soil	2010-08-18	00:00	2010-08-20

a.

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

Michael about

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

Standard Flags

 ${\bf B}\,$  - The sample contains less than ten times the concentration found in the method blank.

# **Summary Report**

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

Report	Date:	August	30.	2010
Techore	24400		νυ,	BOID

Work Order: 10082003 

Project Location:	Eddy County, NM
Project Name:	COG/SENM SWD System
Project Number:	114-6400547

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
241833	SB-1 1'	soil	2010-08-17	00:00	2010-08-20
241834	SB-1 3'	soil	2010-08-17	00:00	2010-08-20
241835	SB-1 5'	Boil	2010-08-17	00:00	2010-08-20
241836	SB-1 7'	soil	2010-08-17	00:00	2010-08-20
241837	SB-1 10'	soil	2010-08-17	00:00	2010-08-20
241838	SB-1 15'	soil	2010-08-17	00:00	2010-08-20
241839	SB-1 20'	soil	2010-08-17	00:00	2010-08-20
241842	SB-2 1'	soil	2010-08-17	00:00	2010-08-20
241843	SB-2 3'	soil	2010-08-17	00:00	2010-08-20
241844	SB-2 5'	soil	2010-08-17	00:00	2010-08-20
241845	SB-2 7'	soil	2010-08-17	00:00	2010-08-20
241846	SB-2 10'	soil	2010-08-17	00:00	2010-08-20
241847	SB-2 15'	soil	2010-08-17	00:00	2010-08-20
241848	SB-2 20'	soil	2010-08-17	00:00	2010-08-20
241849	SB-3 1'	soil	2010-08-17	00:00	2010-08-20
241850	SB-3 3'	soil	2010-08-17	00:00	2010-08-20
241851	SB-3 5'	soil	2010-08-17	00:00	2010-08-20
241852	SB-3 7'	soil	2010-08-17	00:00	2010-08-20
241853	SB-3 10'	soil	2010-08-17	00:00	2010-08-20
241854	SB-3 15'	soil	2010-08-17	00:00	2010-08-20
241857	SB-4 1'	soil	2010-08-17	00:00	2010-08-20
241858	SB-4 3'	soil	2010-08-17	00:00	2010-08-20
241859	SB-4 5'	soil	2010-08-17	00:00	2010-08-20
241860	SB-4 7'	soii	2010-08-17	00:00	2010-08-20
241861	SB-4 10'	soil	2010-08-17	00:00	2010-08-20
241862	SB-4 15'	soll	2010-08-17	00:00	2010-08-20
241863	SB-4 20'	soil	2010-08-17	00:00	2010-08-20
241864	SB-4 25'	soil	2010-08-17	00:00	2010-08-20
241865	SB-4 30'	soil	2010-08-17	00:00	2010-08-20
241867	SB-5 1'	soil	2010-08-18	00:00	2010-08-20

Report Date: August 30, 2010

Work Order: 10082003

Page Number: 2 of 10

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241868	SB-5 3'	soil	2010-08-18	00:00	2010-08-20
241869	SB-5 5'	soil	2010-08-18	00:00	2010-08-20
241870	SB-5 7'	soil	2010-08-18	00:00	2010-08-20
241871	SB-5 10'	soil	2010-08-18	00:00	2010-08-20
241872	SB-5 15'	soil	2010-08-18	00:00	2010-08-20
241873	SB-5 20'	soil	2010-08-18	00:00	2010-08-20
241876	SB-6 1'	soil	2010-08-18	00:00	2010-08-20
241877	SB-6 3'	soil	2010-08-18	00:00	2010-08-20
241878	SB-6 5'	soil	2010-08-18	00:00	2010-08-20
241879	SB-6 7'	soil	2010-08-18	00:00	2010-08-20
241880	SB-6 10'	soil	2010-08-18	00:00	2010-08-20
241881	SB-6 15'	soil	2010-08-18	00:00	2010-08-20
241882	SB-6 20'	soil	2010-08-18	00:00	2010-08-20
241883	SB-7 1'	soil	2010-08-18	00:00	2010-08-20
241884	SB-7 3'	soil	2010-08-18	00:00	2010-08-20
241885	SB-7 5'	soil	2010-08-18	00:00	2010-08-20
241886	SB-7 7'	soil	2010-08-18	00:00	2010-08-20
241887	SB-7 10'	soil	2010-08-18	00:00	2010-08-20
241888	SB-7 15'	soil	2010-08-18	00:00	2010-08-20
241889	SB-7 20'	soil	2010-08-18	00:00	2010-08-20
241890	SB-7 25'	soil	2010-08-18	00:00	2010-08-20
241891	SB-7 30'	soil	2010-08-18	00:00	2010-08-20
241892	SB-8 1'	soil	2010-08-18	00:00	2010-08-20
241893	SB-8 3'	soil	2010-08-18	00:00	2010-08-20
241894	SB-8 5'	soil	2010-08-18	00:00	2010-08-20
241895	SB-8 7'	soil	2010-08-18	00:00	2010-08-20
241896	SB-8 10'	soil	2010-08-18	00:00	2010-08-20
241897	SB-8 15'	soil	2010-08-18	00:00	2010-08-20
241898	SB-8 20'	soil	2010-08-18	00:00	2010-08-20
241899	SB-8 25'	soil	2010-08-18	00:00	2010-08-20
241900	SB-8 30'	soil	2010-08-18	00:00	2010-08-20
241901	SB-8 40'	soil	2010-08-18	00:00	2010-08-20

	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)
241833 - SB-1 1'					<50.0	<2.00
241842 - SB-2 1'				1	<50.0	<2.00
241849 - SB-3 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
241857 - SB-4 1'	<0.100	0.481	0.245	1.21	593	88.0
241867 - SB-5 1'	<0.200	<0.200	0.204	0.815	3060	<20.0
241876 - SB-6 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
241883 - SB-7 1'					<50.0	<2.00
241892 - SB-8 1'					<50.0	<2.00

Sample: 241833 - SB-1 1'

Report Date: August 30, 2010		30, 2010 Work Order: 10082003		Page Number: 3 of 1	
Param	Flag	Result	Units	R	
Chloride		1870	mg/Kg	4.0	
Sample: 241834	- SB-1 3'				
Param	Flag	Result	Units	R	
Chloride		2780	mg/Kg	4.0	
Sample: 241835	- SB-1 5'				
Param	Flag	Result	Units	RI	
Chloride		4380	mg/Kg	4.0	
Sample: 241836	- SB-1 7'				
Param	Flag	Result	Units	RI	
Chloride		504	mg/Kg	4.00	
Sample: 241837	- SB-1 10'				
Param	Flag	Result	Units		
Param Chloride		Result 248	Units mg/Kg	RI 4.00	
	Flag				
Chloride Sample: 241838 Param	Flag	248 Result	mg/Kg Units	4.00	
Chloride Sample: 241838	Flag	248	mg/Kg	4.00 RL	
Chloride Sample: 241838 Param	Flag - SB-1 15' Flag	248 Result	mg/Kg Units	4.00 RL	
Chloride Sample: 241838 Param Chloride Sample: 241839 - Param	Flag - SB-1 15' Flag	248 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00 RL	
Chloride Sample: 241838 Param Chloride Sample: 241839	Flag - SB-1 15' Flag - SB-1 20'	248 Result <200	mg/Kg Units mg/Kg	4.00 RI 4.00 RL	
Chloride Sample: 241838 Param Chloride Sample: 241839 - Param	Flag	248 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00 RL	
Chloride Sample: 241838 Param Chloride Sample: 241839 Param Chloride	Flag	248 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00	

Report Date: August 30, 2010		Work Order: 10082003	Page I	Number: 4 of 10
Sample: 241843	- SB-2 3'			
Param	Flag	Result	Units	RL
Chloride		22800	mg/Kg	4.00
Sample: 241844	- SB-2 5'			
Param	Flag	Result	Units	RL
Chloride	гад	1350	mg/Kg	4.00
Sample: 241845	- SB-2 7'			
Param	Flag	Result	Units	RL
Chloride		300	mg/Kg	4.00
Sample: 241846 Param Chloride	- SB-2 10' Flag	Result 230	Units mg/Kg	RL 4.00
Sample: 241847 Param Chloride	- SB-2 15' Flag	Result <200	Units mg/Kg	
	······································		mg/ ng	4.00
Sample: 241848 ·	- SB-2 20'			
Param	- SB-2 20' Flag	Result	Units	RL
-		Result <200	Units mg/Kg	4.00
Param	Flag		mg/Kg	4.00
Param Chloride	Flag		mg/Kg	4.00
Param Chloride Sample: 241849 - Param	Flag • SB-3 1'	<200	mg/Kg	4.00 RL
Param Chloride Sample: 241849 •	Flag • SB-3 1' Flag	<200 Result	mg/Kg Units	4.00 RL
Param Chloride Sample: 241849 - Param Chloride	Flag • SB-3 1' Flag	<200 Result	mg/Kg Units	4.00

Report Datc: August 30, 2010		Work Order: 10082003	Page	Number: 5 of 10
Sample: 241851	- SB-3 5'			
Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00
Sample: 241852	- SB-3 7'			
Param	Flag	Result	Units	RL
Chloride		295	mg/Kg	4.00
Sample: 241853	- SB-3 10'			
Param	Flag	Result	Units	RL
Chloride		337	mg/Kg	4.00
Sample: 241854	- SB-3 15'			
Param	Flag	Result	Units	RL
Chloride		244	mg/Kg	4.00
Sample: 241857	- SB-4 1'			
Param	Flag	Result	Units	RL
Chloride		6630	mg/Kg	4.00
Sample: 241858 ·	- SB-4 3'			
Param	Flag	Result	Units	RL
Chloride		8770	mg/Kg	4.00
Sample: 241859 -	- SB-4 5'			
Param	Flag	Result	Units	RL
Chloride	······································	399	mg/Kg	4.00
Sample: 241860 -	· SB-4 7'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

TraccAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.

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Report Date: August 30, 2010		Work Order: 10082003		Page Number: 6 of 10
Sample: 241861	- SB-4 10'			
Param	Flag	Result	Units	RL
Chloride		422	mg/Kg	4.00
Sample: 241862	- SB-4 15'			
Param	Flag	Result	Units	RL
Chloride		413	mg/Kg	4.00
Sample: 241863	- SB-4 20'			
Param	Flag	Result	Units	RL
Chloride		554	mg/Kg	4.00
Sample: 241864	- SB-4 25'			
Param	Flag	Result	Units	RL
Chloride		404	mg/Kg	4.00
Sample: 241865	- SB-4 30'			
Param	Flag	Result	Units	RL
Chloride		291	mg/Kg	4.00
Sample: 241867	- SB-5 1'			
Param	Flag	Result	Units	RL
Chloride		3460	mg/Kg	4.00
Sample: 241868	- SB-5 3'			
Param	Flag	Result	Units	RL
Chloride		2520	mg/Kg	4.00
Sample: 241869	- SB-5 5'			
Param	Flag	Result	Units	RL
Chloride		385	mg/Kg	4.00

Report Date: August 30, 2010		Work Order: 10082003		Page Number: 7 of 10
Sample: 241870	- SB-5 7'			
Param	Flag	Result	Units	RL
Chloride		208	mg/Kg	4.00
Sample: 241871	- SB-5 10'			
Param	Flag	Result	Units	RL
Chloride		532	mg/Kg	4.00
Sample: 241872	- SB-5 15'			
Param	Flag	Result	Units	RL
Chloride		449	mg/Kg	4.00
Sample: 241873	- SB-5 20'			
Param	Flag	Result	Units	RL
Chloride		319	mg/Kg	4.00
Sample: 241876	- SB-6 1'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 241877	- SB-6 3'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 241878	- SB-6 5'			
Param	Flag	Result	Units	RL
Chloride		2180	mg/Kg	4.00
Sample: 241879	- SB-6 7'			
Param	Flag	Result	Units	RL
Chloride		981	mg/Kg	4.00

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Report Date: August 30, 2010		Work Order: 10082003	Page	Number: 8 of 10
Sample: 241880	- SB-6 10'			
Param	Flag	Result	Units	RL
Chloride		342	mg/Kg	4.00
Sample: 241881	- SB-6 15'			
Param	Flag	Result	Units	RL
Chloride	······································	250	mg/Kg	4.00
Sample: 241882	- SB-6 20'			
Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00
Sample: 241883	- SB-7 1'			
Param	Flag	Result	Units	RL
Chloride		3470	mg/Kg	4.00
Sample: 241884	- SB-7 3'			
Param	Flag	Result	Units	RL
Chloride		4150	mg/Kg	4.00
Sample: 241885	- SB-7 5'			
Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00
Sample: 241886	- SB-7 7'			
Param	Flag	Result	Units	RL
Chloride		594	mg/Kg	4.00
Sample: 241887 -	- SB-7 10'			
Param	Flag	Result	Units	RL
Chloride		468	mg/Kg	4.00

and the strength of the

Report Date: August 30, 2010		Work Order: 10082003	Pag	e Number: 9 of 10
Sample: 241888	- SB-7 15'			
Param	Flag	Result	Units	RL
Chloride		253	mg/Kg	4.00
Sample: 241889	- SB-7 20'			
Param	Flag	Result	Units	RL
Chloride		287	mg/Kg	4.00
Sample: 241890 -	- SB-7 25'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 241891 -	- SB-7 30'			
Param	Flag	Result	Units	RL
Chloride		292	mg/Kg	4.00
Sample: 241892 -	- SB-8 1'			
Param	Flag	Result	Units	RL
Chloride		863	mg/Kg	4.00
Sample: 241893 -	· SB-8 3'			
Param	Flag	Result	Units	RL
Chloride		1430	mg/Kg	4.00
Sample: 241894 -	SB-8 5'			
Param	Flag	Result	Units	RL
Chloride		1900	mg/Kg	4.00
Sample: 241895 -	SB-8 7'			
Param	Flag	Result	Units	RL
Chloride		1260	mg/Kg	4.00

ALC: NOTE: NOT

Report Date: August 30, 2010		Work Order: 10082003	Page	Number: 10 of 10
Sample: 241896	- SB-8 10'			
Param	Flag	Result	Units	RL
Chloride		456	mg/Kg	4.00
Sample: 241897	- SB-8 15'			
Param	Flag	Result	Units	RL
Chloride		739	mg/Kg	4.00
Sample: 241898	- SB-8 20'			
Param	Flag	Result	Units	RL
Chloride		481	mg/Kg	4.00
Sample: 241899	- SB-8 25'			
Param	Flag	Result	Units	RL
Chloride		496	mg/Kg	4.00
Sample: 241900	- SB-8 30'			
Param	Flag	Result	Units	RL
Chloride		337	mg/Kg	4.00
Sample: 241901	- SB-8 40'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

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## **NELAP** Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 El Paso: T104704221-08-TX LELAP-02002

Midland: T104704392-08-TX

# Analytical and Quality Control Report

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

Report Date: March 22, 2011

Work Order: 11030728

Project Location:Eddy County, NMProject Name:COG/North West Central Tank BatteryProject Number:114-6400547

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
259804	SB-1 0-1'	soil	2011-02-25	00:00	2011-03-04
259805	SB-1 3'	soil	2011-02-25	00:00	2011-03-04
259806	SB-1 5'	soil	2011-02-25	00:00	2011-03-04
259807	SB-1 7'	soil	2011-02-25	00:00	2011-03-04
259808	SB-1 10'	soil	2011-02-25	00:00	2011-03-04
259809	SB-1 15'	soil	2011-02-25	00:00	2011-03-04
259810	SB-1 20'	soil	2011-02-25	00:00	2011-03-04
259811	SB-2 0-1'	soil	2011-02-25	00:00	2011-03-04
259812	SB-2 3'	soil	2011-02-25	00:00	2011-03-04
259813	SB-2 5'	soil	2011-02-25	00:00	2011-03-04

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
259814	SB-2 7'	soil	2011-02-25	00:00	2011-03-04
259815	SB-2 10	soil	2011-02-25	00:00	2011-03-04
259816	SB-2 15'	soil	2011-02-25	00:00	2011-03-04
259817	SB-2 20'	soil	2011-02-25	00:00	2011 - 03 - 04
259818	SB-3 0-1	soil	2011-02-25	00:00	2011-03-04
259819	SB-3-3'	soil	2011-02-25	00:00	2011-03-04
259820	SB-3 5'	soil	2011-02-25	00:00	2011-03-04
259821	SB-3 7'	soil	2011-02-25	00:00	2011-03-04
259822	SB-3 10 <sup>°</sup>	soil	2011-02-25	00:00	2011-03-04
259823	SB-3 15'	soil	2011-02-25	00:00	2011-03-04
259824	SB-3 20'	soil	2011-02-25	00:00	2011-03-04
259825	SB-4 0-1	soil	2011-03-01	00:00	2011-03-04
259826	SB-4-3'	soil	2011-03-01	00:00	2011-03-04
259827	SB-4 5	soil	2011-03-01	00:00	2011-03-04
259828	SB-4 7'	soil	2011-03-01	00:00	2011-03-04
259829	SB-4 10 <sup>3</sup>	soil	2011-03-01	00:00	2011-03-04
259830	SB-4 15'	soil	2011-03-01	00:00	2011 - 03 - 04
259831	SB-4 20	soil	2011-03-01	00:00	2011-03-04
259832	SB-5 0-1	soil	2011-03-01	00:00	2011-03-04
259833	SB-5-3'	soil	2011-03-01	00:00	2011-03-04
259834	SB-5-5'	soil	2011-03-01	00:00	2011-03-04
259835	SB-5 7'	soil	2011-03-01	00:00	2011-03-04
259836	SB-5 10 <sup>°</sup>	soil	2011-03-01	00:00	2011-03-04
259837	SB-5-15'	soil	2011-03-01	00:00	2011-03-04
259838	SB-5 201	soil	2011-03-01	00:00	2011-03-04
259839	SB-6 0-1	soil	2011-03-01	00:00	2011-03-04
259840	SB-6 3	soil	2011-03-01	00:00	2011-03-04
259841	SB-65'	soil	2011-03-01	00:00	2011-03-04
259842	SB-6 7'	soil	2011-03-01	00:00	2011-03-04
259843	SB-6 10 <sup>*</sup>	soil	2011-03-01	00:00	2011-03-04
259844	SB-6 15	soil	2011-03-01	00:00	2011-03-04
259845	SB-6 20'	soil	2011-03-01	00:00	2011-03-04
259846	SB-6 25	soil	2011-03-01	00:00	2011-03-04
259847	SB-6-30 <sup>3</sup>	soil	2011-03-01	00:00	2011-03-04
259848	SB-7 0-1'	soil	2011-03-01	00:00	2011-03-04
259849	SB-7 3'	soil	2011-03-01	00:00	2011-03-04
259850	SB-7 5	soil	2011-03-01	00:00	2011-03-04
259851	SB-7 7	soil	2011-03-01	00:00	2011-03-04
259852	SB-7 10 <sup>*</sup>	soil	2011-03-01	00:00	2011-03-04
259853	SB-7 15'	soil	2011-03-01	00:00	2011-03-04
259854	SB-7 20'	soil	2011-03-01	00:00	2011-03-04
259855	SB-7 25	soil	2011-03-01	00:00	2011-03-04
259856	SB-7 30'	soil	2011-03-01	00:00	2011-03-04

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.

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This report consists of a total of 58 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael abul

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

Standard Flags

 $\,B\,$  - The sample contains less than ten times the concentration found in the method blank.

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# **Summary Report**

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

Report Date:	March	22,	2011	
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Work	Order:	11030728

Project Location:	Eddy County, NM
Project Name:	COG/North West Central Tank Battery
Project Number:	114-6400547

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
259804	SB-1 0-1'	sol	2011-02-25	00:00	2011-03-04
259805	SB-1 3'	soil	2011-02-25	00:00	2011-03-04
259806	SB-1 5'	soil	2011-02-25	00:00	2011-03-04
259807	SB-1 7'	soll	2011-02-25	00:00	2011-03-04
259808	SB-1 10'	soil	2011-02-25	00:00	2011-03-04
259809	SB-1 15'	воil	2011-02-25	00:00	2011-03-04
259810	SB-1 20'	soil	2011-02-25	00:00	2011-03-04
259811	SB-2 0-1'	soil	2011-02-25	00:00	2011-03-04
259812	SB-2 3'	soil	2011-02-25	00:00	2011-03-04
259813	SB-2 5'	soil	2011-02-25	00:00	2011-03-04
259814	SB-2 7'	soil	2011-02-25	00:00	2011-03-04
259815	SB-2 10'	soil	2011-02-25	00:00	2011-03-04
259816	SB-2 15'	soil	2011-02-25	00:00	2011-03-04
259817	SB-2 20'	soil	2011-02-25	00:00	2011-03-04
259818	SB-3 0-1'	soil	2011-02-25	00:00	2011-03-04
259819	SB-3 3'	soil	2011-02-25	00:00	2011-03-04
259820	SB-3 5'	soil	2011-02-25	00:00	2011-03-04
259821	SB-3 7	soil	2011-02-25	00:00	2011-03-04
259822	SB-3 10'	soil	2011-02-25	00:00	2011-03-04
259823	SB-3 15	soil	2011-02-25	00:00	2011-03-04
259824	SB-3 20'	soil	2011-02-25	00:00	2011-03-04
259825	SB-4 ()-1'	soil	2011-03-01	00:00	2011-03-04
259826	SB-4 3'	soil	2011-03-01	00:00	2011-03-04
259827	SB-4 5'	soil	2011-03-01	00:00	2011-03-04
259828	SB-4 7'	soll	2011-03-01	00:00	2011-03-04
259829	SB-4 10'	soil	2011-03-01	00:00	2011-03-04
259830	SB-4 15'	soil	2011-03-01	00:00	2011-03-04
259831	SB-4 20'	soil	2011-03-01	00:00	2011-03-04
259832	SB-5 0-1'	яoil	2011-03-01	00:00	2011-03-04
250833	SB-5 3'	soil	2011-03-01	00:00	2011-03-04

Report Date: March 22, 2011

Work Order: 11030728

Page Number: 2 of 9

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
259834	SB-5 5'	soil	2011-03-01	00:00	2011-03-04
259835	SB-5 7'	soil	2011-03-01	00:00	2011-03-04
259836	SB-5 10'	soil	2011-03-01	00:00	2011-03-04
259837	SB-5 15'	soil	2011-03-01	00:00	2011-03-04
259838	SB-5 20'	soil	2011-03-01	00:00	2011-03-04
259839	SB-6 0-1'	soil	2011-03-01	00:00	2011-03-04
259840	SB-6 3'	soil	2011-03-01	00:00	2011-03-04
259841	SB-6 5'	soil	2011-03-01	00:00	2011-03-04
259842	SB-6 7'	soil	2011-03-01	00:00	2011-03-04
259843	SB-6 10'	soil	2011-03-01	00:00	2011-03-04
259844	SB-6 15'	soil	2011-03-01	00:00	2011-03-04
259845	SB-6 20'	soil	2011-03-01	00:00	2011-03-04
259846	SB-6 25'	soil	2011-03-01	00:00	2011-03-04
259847	SB-6 30'	soil	2011-03-01	00:00	2011-03-04
259848	SB-7 0-1'	soil	2011-03-01	00:00	2011-03-04
259849	SB-7 3'	soil	2011-03-01	00:00	2011-03-04
259850	SB-7 5'	soil	2011-03-01	00:00	2011-03-04
259851	SB-7 7'	soil	2011-03-01	00:00	2011-03-04
259852	SB-7 10'	soil	2011-03-01	00:00	2011-03-04
259853	SB-7 15'	soil	2011-03-01	00:00	2011-03-04
259854	SB-7 20'	soil	2011-03-01	00:00	2011-03-04
259855	SB-7 25'	soil	2011-03-01	00:00	2011-03-04
259856	SB-7 30'	soil	2011-03-01	00:00	2011-03-04

	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)	(ms/Ks)
259804 - SB-1 0-1'	<0.0200	< 0.0200	0.140	0.391	<50.0	6.69
259811 - SB-2 0-1'				1	<50.0	<2.00
259818 - SB-3 0-1'					<50.0	<2.00
259825 - SB-4 0-1'				1	<50.0	<2.00
259832 - SB-5 0-1'	2.86	82.8	64.8	86.0	3530	1780
259833 - SB-5 3'	3.60	75.1	69.9	89.6	2960	2850
259834 - 8B-5 5'	<0.100	0.602	3.71	6.61	252	287
259839 - SB-6 0-1'	< 0.200	3.16	17.8	84.7	3870	1530
259840 - SB-6 3'	<0.0200	0.159	< 0.0200	<0.0200	<50.0	<2.00
259848 - SB-7 0-1'	5.25	86.5	87.6	120	10800	3640
259849 - SB-7 3'	1.37	46.9	39.5	63.7	1560	1240
259850 - SB-7 5'	< 0.0200	< 0.0200	0.150	< 0.0200	<50.0	<2.00

Sample: 259804 - SB-1 0-1'

Param	Flag	Result	Units	RL
Chloride		15400	mg/Kg	4.00

Sample: 259805 - SB-1 3'

lumber: 3 of 9	Page N	Work Order: 11030728	Report Date: March 22, 2011	
RL	Units	Result	Flag	Param
4.00	mg/Kg	5170		Chloride
			8 - SB-1 5'	Sample: 259806
RL	Units	Result	Flag	Param
4.00	mg/Kg	4380		Chloride
			7 - SB-1 7'	Sample: 259807
RL	Units	Result	Flag	Parain
4.00	mg/Kg	569		Chloride
			8 - SB-1 10'	Sample: 259808
RL	Units	Result	Flag	Param
4.00	nıg/Kg	489		Chloride
			9 - SB-1 15'	Sample: 259809
RL	Units	Result	Flag	Param
4.00	nig/Kg	359	······································	Chloride
			) - SB-1 20'	Sample: 259810
RL	Units	Result	Flag	Param
4.00	mg/Kg	250		Chloride
			l - SB-2 0-1'	Sample: 259811
RL	Units	Result	Flag	Param
4.00	mg/Kg	6040		
			2 - SB-2 3'	Sample: 259812
RL	Units	Result	Flag	Param.
4.00	mg/Kg	3360	¥	
	Units	Result	2 - SB-2 3' Flag	Chloride Sample: 259812 Param Chloride

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Report Date: March 22, 2011		Work Order: 11030728	Рад	ge Number: 4 of 9
Sample: 259813	- SB-2 5'			
Param	Flag	Result	Units	RL
Chloride		405	mg/Kg	4.00
Sample: 259814	- SB-2 7'			
Param	Flag	Result	Units	RL
Chloride		207	mg/Kg	4.00
Sample: 259815	- SB-2 10'			
Param	Flag	Result	Units	RL
Chloride		281	mg/Kg	4.00
Sample: 259816	- SB-2 15'			
Parani	Flag	Result	Units	RL
Chloride	<u></u>	252	mg/Kg	4.00
Sample: 259817	- SB-2 20'			
Param	Flag	Result	Units	RL
Chloride		232	mg/Kg	4.00
Sample: 259818	- SB-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		498	mg/Kg	4.00
Sample: 259819	- SB-3 3'			
Parani	Flag	Result	Units	RL
Chloride		2310	mg/Kg	4.00
Sample: 259820 -	- SB-3 5'			
Param	Flag	Result	Units	RL
Chloride		957	mg/Kg	4.00

Report Date: March 22, 2011		Work Order: 11030728		Page Number: 5 of 9	
Sample: 259821 - SB-3 7'					
Param H	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 259822 - SB-3 10'					
Param F	lag	Result	Units	RL	
Chloride		249	mg/Kg	4.00	
Sample: 259823 - SB-3 15'					
Param H	lag	Result	Units	RL	
Chloride		234	mg/Kg	4.(10	
Sample: 259824 - SB-3 20'					
Param H	lag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 259825 - SB-4 0-1'					
Param F	lag	Result	Units	RL	
Chloride		1210	mg/Kg	4.00	
Sample: 259826 - SB-4 3'					
Param F	lag	Result	Units	RL	
Chloride		1290	mg/Kg	4.00	
Sample: 259827 - SB-4 5'					
	lag	Result	Units	RL	
Chloride		857	mg/Kg	4.00	
Sample: 259828 - SB-4 7'					
Param F	lag	Result	Units	RL	
Chloride		717	mg/Kg	4.00	

Report Date: March	22, 2011	Work Order: 11030728	Page	Number: 6 of 9
Sample: 259829 -	SB-4 10'			
Param	Flag	Result	Units	RL
Chlorkle		339	mg/Kg	4.00
Sample: 259830 -	SB-4 15'			
Param	Flag	Result	Units	RL
Chloride		204	mg/Kg	4.00
Sample: 259831 -	SB-4 20'			
Param	Flag	Result	Units	RL
Chloride		<200	щд/Кд	4.00
Sample: 259832 -	SB-5 0-1'			
Param	Flag	Result	Units	RL
Chloride		5300	mg/Kg	4.00
Sample: 259833 -	SB-5 3'			
Param	Flag	Result	Units	RL
Chloride		5180	ing/Kg	4.00
Sample: 259834 -	SB-5 5'			
Param	Flag	Result	Units	RL
Chloride		3680	mg/Kg	4.00
Sample: 259835 - 3	SB-5 7'			
Peran	Flag	Result	Units	RL
Chloride		1300	mg/Kg	4.00
Sample: 259836 - 3	SB-5 10'			
Parau	Flag	Result	Units	RL
Chloride		<200	nıg/Kg	4.00

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Report Date: March 22, 2	011	Work Order: 11030728	Page Number: 7	
Sample: 259637 - SB-5	15'			
Param	Fing	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 259838 - SB-5	20'			
Param	Flag	Result	Units	RL
Chloride		235	mg/Kg	4.00
Sample: 259839 - SB-6	0-1'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 259840 - SB-6	3'			
Param	Flag	Result	Units	RL
Chloride		2010	mg/Kg	4.00
Sample: 259841 - SB-6	5'			
Param	Flag	Result	Units	RL
Chloride		1000	mg/Kg	4.00
Sample: 259842 - SB-6	7'			
Param	Fisg	Result	Units	RL
Chloride		418	_mg/Kg	4.00
Sample: 259843 - SB-6	10'			
Param	Flag	Result	Units	RL
Chloride		354	nıg/Kg	4.00
Sample: 259844 - SB-6	15'			
Parani	Flag	Result	Units	RL
Chloride		251	nıg/Kg	4.00

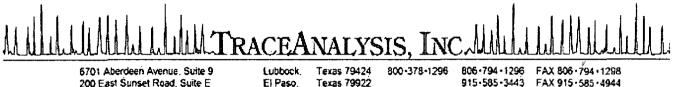
and stand fritting 2.4 week

Report Date: March 22, 2011		port Date: March 22, 2011 Work Order: 11030728		Page Number: 8 of 9	
Sample: 259845 - S	B-6 20'				
Param	Flag	Result	Units	RL	
Chloride	······································	<200	mg/Kg	4.00	
Sample: 259846 - S	B-6 25'				
Param	Flag	Result	Units	RL	
Chloride		221	mg/Kg	4.00	
Sample: 259847 - S	B-6 30'				
Param	Flag	Result	Units	RL	
Chloride		320	mg/Kg	4.00	
Sample: 259848 - S	B-7 0-1'				
Param	Flag	Result	Units	RL	
Chloride		1080	mg/Kg	4.00	
Sample: 259849 - S	B-7 3'				
Param	Flag	Result	Units	RL	
Chloride		4180	mg/Kg	4.00	
Sample: 259850 - S	B-7 5'				
Param	Flag	Result	Units	RL	
Chloride		2500	nıg/Kg	4.00	
Sample: 259851 - S	B-7 7'				
Param	Flag	Result	Units	RL	
Chloride		419	mg/Kg	4.00	
Sample: 259852 - S	B-7 10'				
Param	Flag	Result	Units	RL	
Chloride	······································	792	mg/Kg	4.00	

Report Date: March 22, 2011		eport Date: March 22, 2011 Work Order: 11030728		Page Number: 9 of 9	
Sample: 259853 - SB-7 15'					
Param	Flag	Result	Units	RL	
Chloride		324	mg/Kg	4.00	
Sample: 259854	- SB-7 20'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 259855	- SB-7 25'				
Param	Flag	Result	Units	RL	
Chloride		279	ing/Kg	4.00	
Sample: 259856	- SB-7 30'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	

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Certifications

NCTRCA NELAP DoD LELAP Oklahoma ISO 17025 WBE HUB DBE Kansas

# Analytical and Quality Control Report

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

Report Date: September 24, 2012

Work Order: 12091435 

Project Location: Eddy Co., NM Project Name: COG/NW Central Tank Battery (CTB) Project Number: 114-6401452

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
309405	Bore Hole 1 0-1'	soil	2012-09-11	00:00	2012-09-14
309406	Bore Hole 1 2-3'	soil	2012-09-11	00:00	2012-09-14
309407	Bore Hole 1 4-5'	soil	2012-09-11	00:00	2012-09-14
309408	Bore Hole 1 6-7'	soil	2012-09-11	00:00	2012-09-14
309409	Bore Hole 1 9-10'	soil	2012-09-11	00:00	2012-09-14
309410	Bore Hole 1 14-15'	soil	2012-09-11	00:00	2012 - 09 - 14
309411	Bore Hole 1 19-20'	soil	2012-09-11	00:00	2012-09-14
309412	Bore Hole 2 0-1'	soil	2012-09-11	00:00	2012-09-14
309413	Bore Hole 2 2-3'	soil	2012-09-11	00:00	2012-09-14
309414	Bore Hole 2 4-5'	soil	2012-09-11	00:00	2012-09-14
309415	Bore Hole 2 6-7'	soil	2012-09-11	00:00	2012-09-14
309416	Bore Hole 2 9-10 <sup>°</sup>	soil	2012-09-11	00:00	2012-09-14

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.

Michael about

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

## **Summary Report**

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

Report	Date:	September	24,	2012	
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Work Order: 12091435

Project Location:Eddy Co., NMProject Name:COG/NW Central Tank Battery (CTB)Project Number:114-6401452

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
309405	Bore Hole 1 0-1'	soil	2012-09-11	00:00	2012-09-14
309406	Bore Hole 1 2-3'	soil	2012-09-11	00:00	2012-09-14
309407	Bore Hole 1 4-5'	soil	2012-09-11	00:00	2012-09-14
309408	Bore Hole 1 6-7'	soil	2012-09-11	00:00	2012-09-14
309409	Bore Hole 1 9-10'	soil	2012-09-11	00:00	2012-09-14
309410	Bore Hole 1 14-15'	soil	2012-09-11	00:00	2012-09-14
309411	Bore Hole 1 19-20'	soil	2012-09-11	00:00	2012-09-14
309412	Bore Hole 2 0-1'	soil	2012-09-11	00:00	2012-09-14
309413	Bore Hole 2 2-3'	soil	2012-09-11	00:00	2012-09-14
309414	Bore Hole 2 4-5'	soil	2012-09-11	00:00	2012-09-14
309415	Bore Hole 2 6-7'	soil	2012-09-11	00:00	2012-09-14
309416	Bore Hole 2 9-10'	soil	2012-09-11	00:00	2012-09-14

#### Sample: 309405 - Bore Hole 1 0-1'

Param	Flag	Result	Units	RL
Chloride		8770	mg/Kg	4

### Sample: 309406 - Bore Hole 1 2-3'

Param	Flag	Result	Units	RL
Chloride		7450	mg/Kg	4

#### Sample: 309407 - Bore Hole 1 4-5'

Report Date: September 24, 2012		Work Order: 12091435	Page	Page Number: 2 of 3	
Param	Flag	Result	Units	RL	
Chloride		2790	mg/Kg	4	
Sample: 309408	- Bore Hole 1 6-7'				
Param	Flag	Result	Units	RL	
Chloride		413	mg/Kg	4	
Sample: 309409	- Bore Hole 1 9-10'				
Param	Flag	Result	Units	RL	
Chloride		399	nıg/Kg	4	
Sample: 309410	- Bore Hole 1 14-15'				
Param	Flag	Result	Units	RL	
Chloride		82.7	mg/Kg	4	
Sample: 309411	- Bore Hole 1 19-20'				
Param	Flag	Result	Units	RL	
Chloride		157	mg/Kg	4	
Sample: 309412	- Bore Hole 2 0-1'				
Param	Flag	Result	Units	$\mathbf{RL}$	
Chloride		955	mg/Kg	4	
Sample: 309413 -	- Bore Hole 2 2-3'				
Param	Flag	Result	Units	RL	
Chloride		3800	mg/Kg	4	
Sample: 309414 ·	- Bore Hole 2 4-5'				
Param	Flag	Result	Units	RL	
Chloride		2260	mg/Kg	4	

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Report Date: September 24, 2012		Work Order: 12091435	Page	Number: 3 of 3	
Sample: 309415 - Bore Hole 2 6-7'					
Param	Flag	Result	Units	RL	
Chloride		118	mg/Kg	4	
Sample: 309416	- Bore Hole 2 9-10'				
Param	Flag	Result	Units	RL	
Chloride		44.3	mg/Kg	4	