SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	SRO SWD #104					
Company:	COG Operating LLC					
Section, Township and Range	Unit F	Sec 10	T26S	R28E		
Lease Number:	API-30-015-25864					
County:	Eddy County					
GPS:	32.05869° N			104.07691° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	South of Malaga at the intersection of Hwy 285 and CR 274 (White City Rd.) travel west on CR 274 for 0.6 miles, turn left and travel 0.1 miles to the site.					

Release Data:	1st Spill	2nd Spill
Date Released:	2/6/2013	2/26/2013
Type Release:	Produced Water	Oil and Produced Water
Source of Contamination:	Victaulic Clamp	4" Load Line Collar
Fluid Released:	700 bbls	200 bbls
Fluids Recovered:	650 bbls	190 bbls

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		1910 N. Big Spring
	600 W. Illinois Ave.		
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		ike.tavarez@tetratech.com

RECEIVED
NMOCD ARTESIA
AUG 23 2013

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

Acceptable Soil RRAL (mg/kg)		
Benzene	**Total BTEX**	**TPH**
10	50	1,000

TETRA TECH

July 15, 2013

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

Re: Closure Report for the COG Operating LLC., SRO SWD #104, Unit F, Section 10, Township 26 South, Range 28 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the SRO SWD #104 located in Unit F, Section 10, Township 26 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.05869°, W 104.07691°. The site location is shown on Figures 1 and 2.

Background

1st Spill

According to the State of New Mexico C-141 Initial Report, the leak was discovered on February 6, 2013, and released approximately seven hundred (700) barrels of produced water from a clamp on the inlet header. To alleviate the problem, COG personnel replaced the header. Six hundred fifty (650) barrels of standing fluids were recovered. The spill initiated inside a lined facility and breached the firewall migrating south and southwest into the pasture measuring approximately 85' to 110' wide and 240' long. The initial C-141 form is enclosed in Appendix A.

2nd Spill

According to the State of New Mexico C-141 Initial Report, the leak was discovered on February 26, 2013, and released approximately two hundred (200) barrels of produced fluid from the 4" load line collar. To alleviate the problem, COG personnel replaced the load line collar. One hundred ninety (190) barrels of standing fluids were recovered. The spill initiated inside a lined facility and breached the fire wall migrating south and southwest into the pasture measuring

Tetra Tech
1910 North Big Spring, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

approximately 85' to 110' wide and 240' long. The initial C-141 form is enclosed in Appendix A.

Hydrogeology and Groundwater

According to the Geology and Groundwater Resources of Eddy County, New Mexico (Report 3), the Rustler and Castile formation (Ochoa Series) is present west and east of the Pecos River. The Salado formation overlies the Castile formation east of the Pecos River and was removed by solution west of the river. The Rustler and Castile formations consist of anhydrite, gypsum, interbedded sandy clay and beds of dolomite. Groundwater from the Castile and Rustler formations west of the Pecos River is historically high in chloride and sulfate concentrations which increase towards the river.

According to the USGS, no water wells are listed in Section 10. One water well is reported in Section 18, with a depth to groundwater of 25' bgs. According to the NMOCD groundwater map the reported depth to groundwater in this area is approximately 80.0' 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 1,000 mg/kg.

Soil Assessment and Analytical Results

On March 13, 2013, Tetra Tech personnel inspected and sampled the spill area. Twelve (12) auger holes (AH-1 through AH-12) were installed using a stainless steel hand auger to assess the impacted soils. AH-8 through AH-12, were installed in a reserve pit in order to assess the hydrocarbon impact to the surface soils. Select 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 auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples in the spill footprint exceeded the TPH or BTEX RRAL. Elevated chloride concentrations were detected in all of the auger holes. In the areas of AH-1 through AH-5 the chloride highs were at a depth of 1.0' with concentrations of 4,470 mg/kg, 2,040 mg/kg, 6,570 mg/kg, 1,080 mg/kg and 2,620 mg/kg, respectively. The chlorides in AH-1 through AH-5 declined at a depth of 1.5' below surface and were vertically defined. The areas of AH-6 and AH-7 were not vertically defined.

The area of AH-3 did show elevated chloride levels at a depth of 2.0' to 2.5' below surface. Referring to Table 1, background samples were collected at the SRO 102 SWD in Unit G, Section 16, T26S, R28E in Eddy Co. New Mexico. The background samples were found to increase with depth and contain higher concentrations. This area is historically high in chloride and sulfate concentrations.

Site Remediation and Conclusion

On May 7, 2013, Tetra Tech personnel supervised the excavation of the impacted soils. Two trenches (CS-1 and CS-2) were installed in the areas of AH-6 and AH-7 to further delineate the vertical extent of the chloride release. The sampling results are summarized in Table 1. Referring to Table 1, the confirmation trench samples not show any chloride impacts below 4.0' below surface.

In order to remove the chloride impacts, the excavation depths ranged from 1.0' to 4.5' below surface. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. Confirmation samples were collected in the bottom of the AH-6 and AH-7 excavations and did not show chloride increasing chloride impacts. Approximately 970 cubic yards^3 of soil were removed and transported to R360 facility for proper disposal. The site was then backfilled with clean material to surface grade, ripped and seeded.

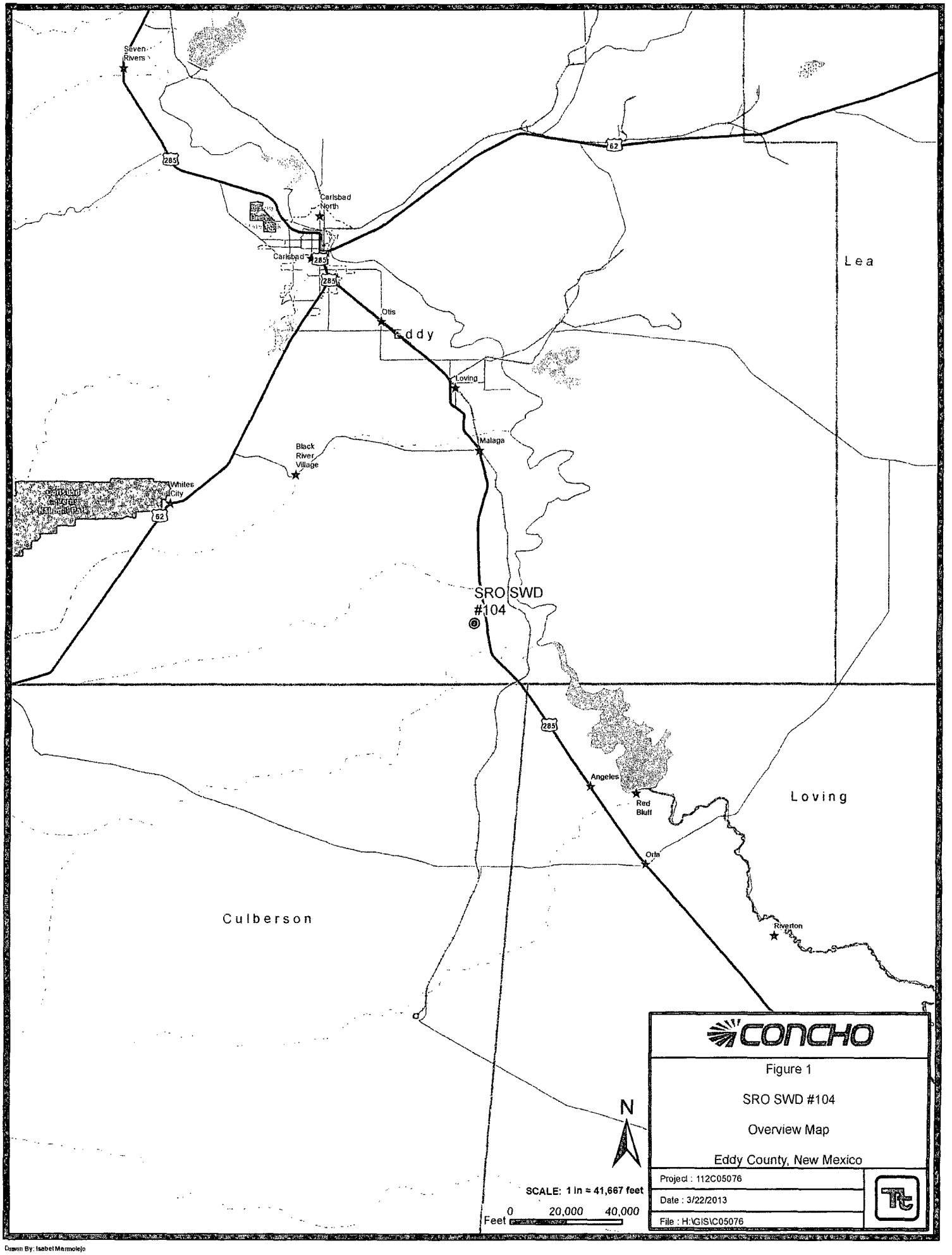
Based on the remediation activities performed at this location, COG requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

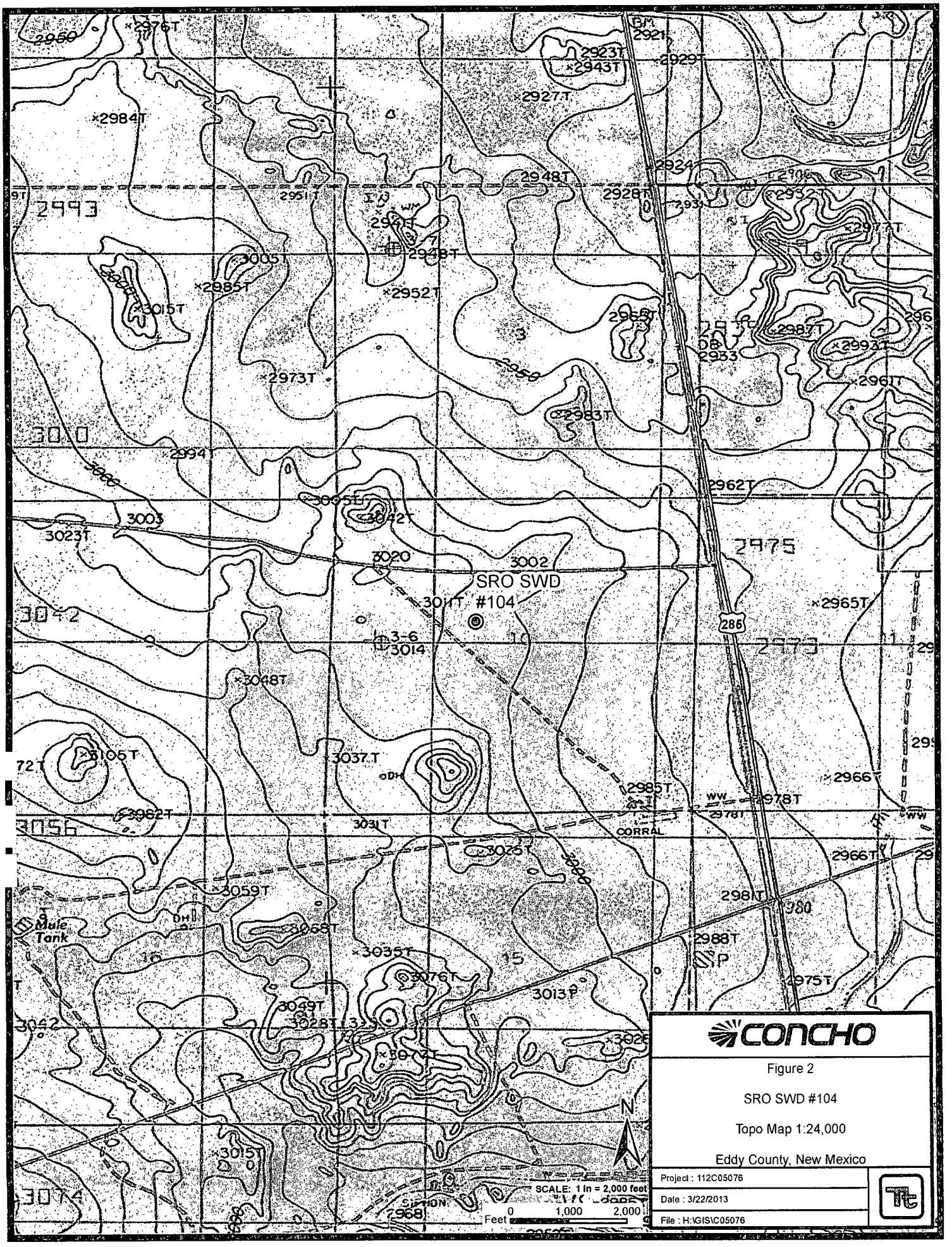
Ike Tavarez
Senior Project Manager

cc: Pat Ellis – COG

FIGURES



Drawn By: Isabel Marmolejo



CONCHO

Figure 2

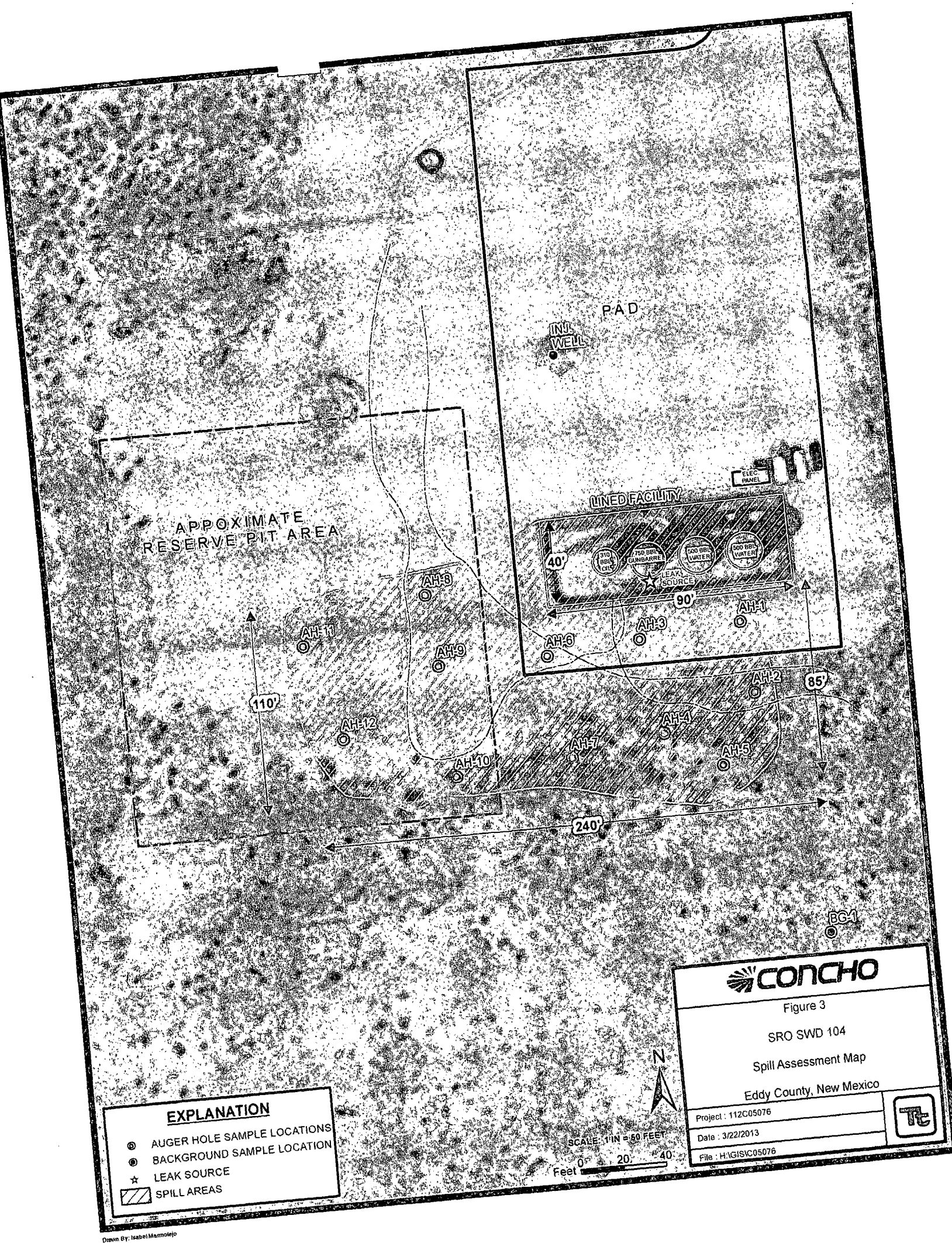
SRO SWD #104

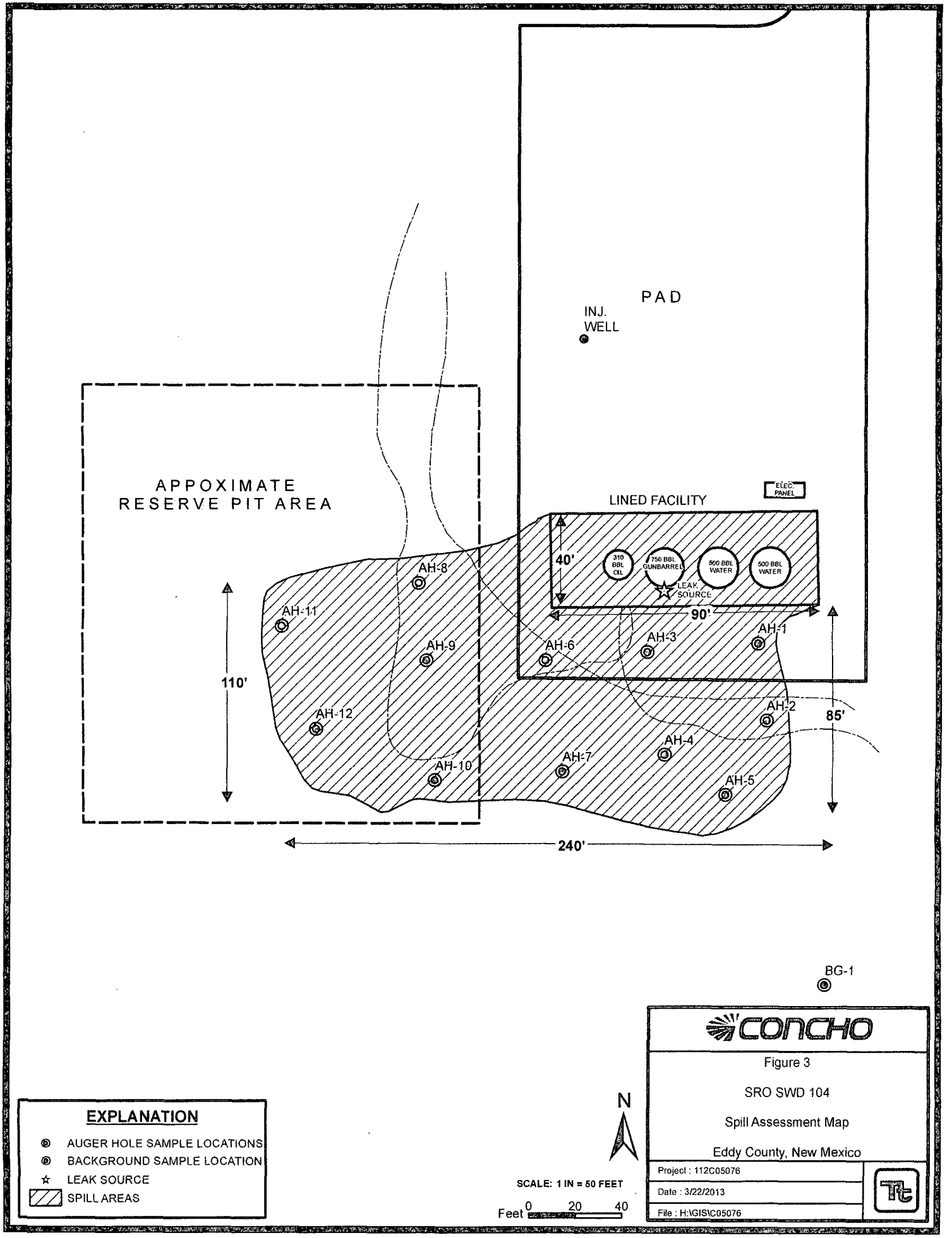
Topo Map 1:24,000

Eddy County, New Mexico

Project : 112C05076	
Date : 3/22/2013	
File : H:\GIS\C05076	

Drawn By: Isabel Marmolejo


PAD
INJ. WELL
ELEC. PANEL
LINED FACILITY
310 BBLS OIL
750 BBL GUNBARREL
500 BBL WATER
500 BBL WATER
LEAK SOURCE
40'
90'
APPOXIMATE RESERVE PIT AREA
110'
240'
85'
AH-1
AH-2
AH-3
AH-4
AH-5
AH-6
AH-7
AH-8
AH-9
AH-10
AH-11
AH-12
BG-1
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
BACKGROUND SAMPLE LOCATION
LEAK SOURCE
SPILL AREAS
N
SCALE: 1 IN = 50 FEET
0 20 40
Feet
CONCHO
Figure 3
SRO SWD 104
Spill Assessment Map
Eddy County, New Mexico
Project : 112C05076
Date : 3/22/2013
File : H:\GIS\C05076
Drawn By: Isabel Marmolejo


PAD
INJ.
WELL
APPOXIMATE
RESERVE PIT AREA
LINED FACILITY
ELEC. PANEL
310 BBL CYL
750 BBL GUNBARREL
500 BBL WATER
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40'
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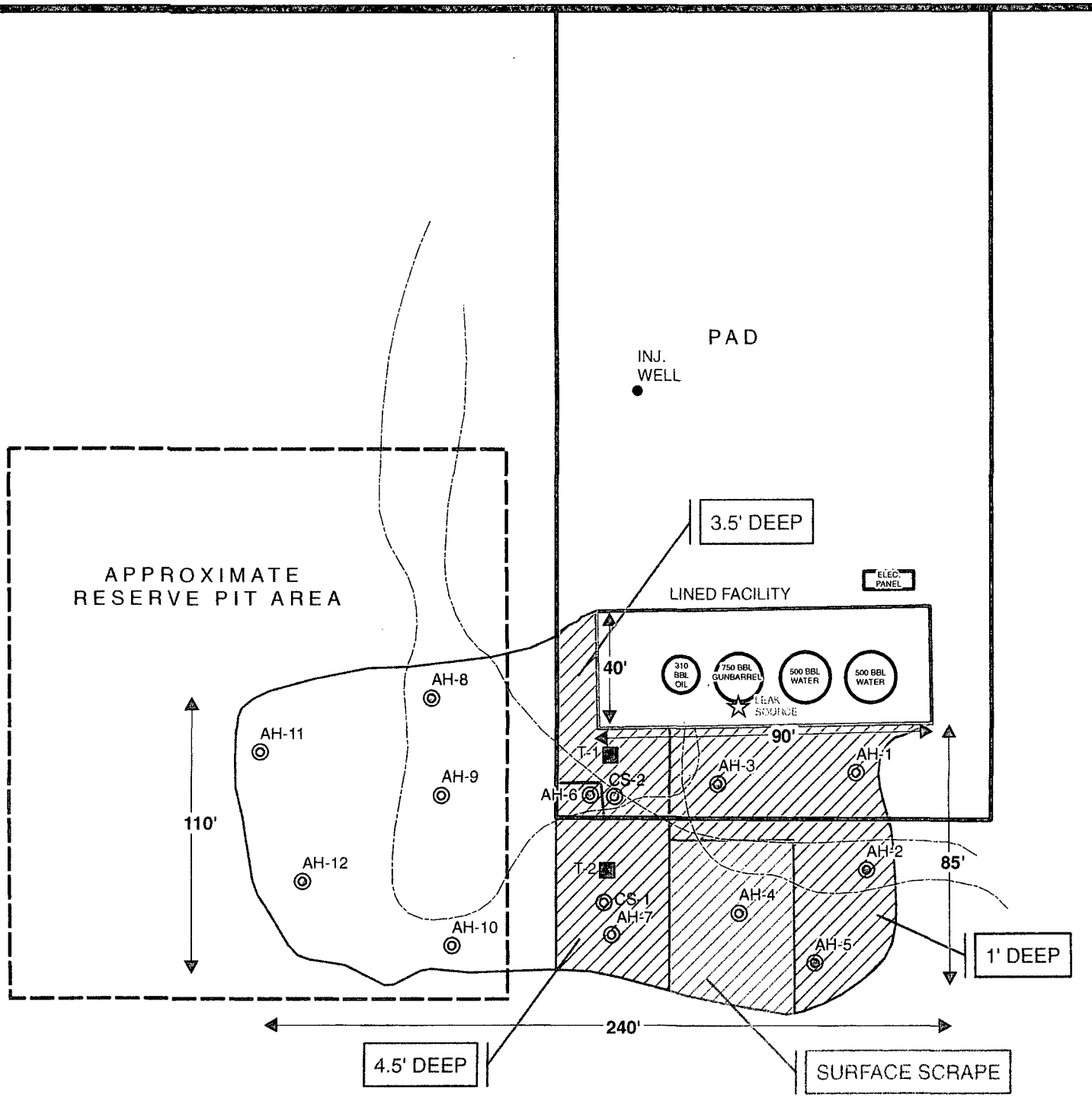
AH-1
AH-2
AH-3
AH-4
AH-5
AH-6
AH-7
AH-8
AH-9
AH-10
AH-11
AH-12
BG-1
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
BACKGROUND SAMPLE LOCATION
LEAK SOURCE
SPILL AREAS
N
SCALE: 1 IN = 50 FEET
Feet 0 20 40
CONCHO
Figure 3
SRO SWD 104
Spill Assessment Map
Eddy County, New Mexico
Project : 112C05076
Date : 3/22/2013
File : H:\GIS\C05076
Drawn By: Isabel Marmolejo



LEGEND

- AUGER HOLE SAMPLE LOCATIONS
- BACKGROUND SAMPLE LOCATION
- LEAK SOURCE
- CONFORMATION SAMPLE LOCATIONS
- TRENCH
- EXCAVATION AREAS

N

SCALE: 1 IN = 50 FEET

Feet 0 20 40

CONCHO

Figure 4

SRO SWD 104

Excavation Areas & Depths Map

Eddy County, New Mexico

Project : 112C05076

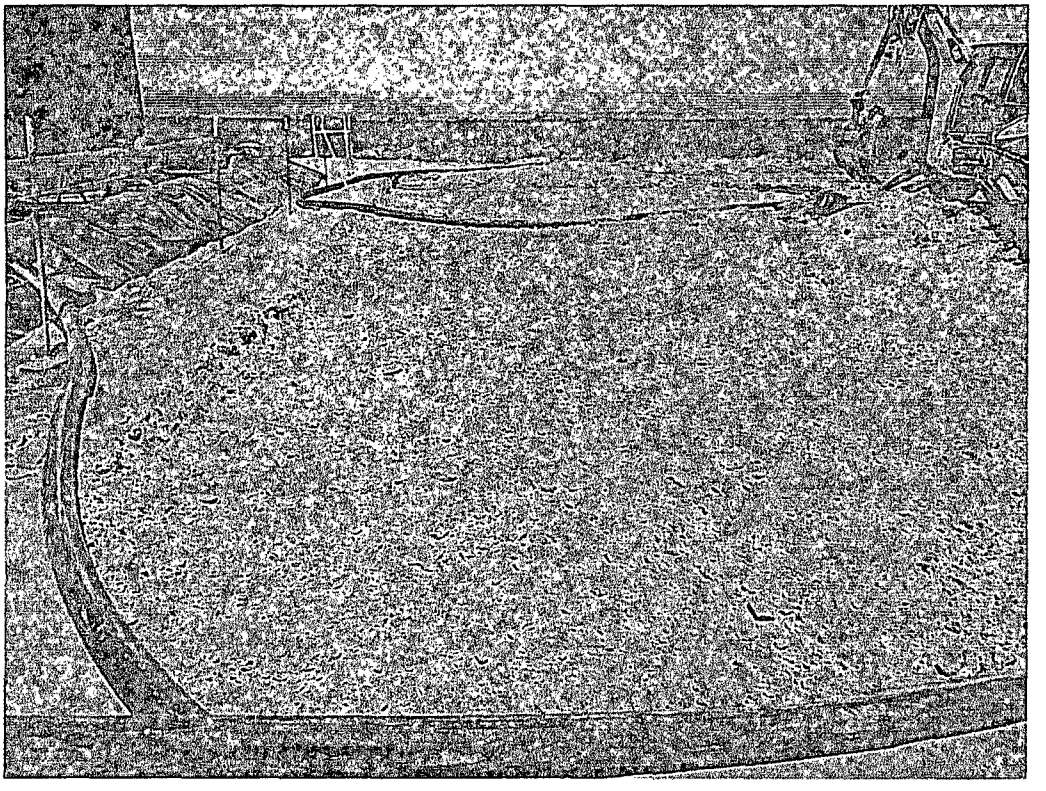
Date : 4/30/2013

File : H:\GIS\C05076

PHOTOGRAPHS

COG Operating LLC
SRO SWD #104
Eddy County, New Mexico

TETRA TECH

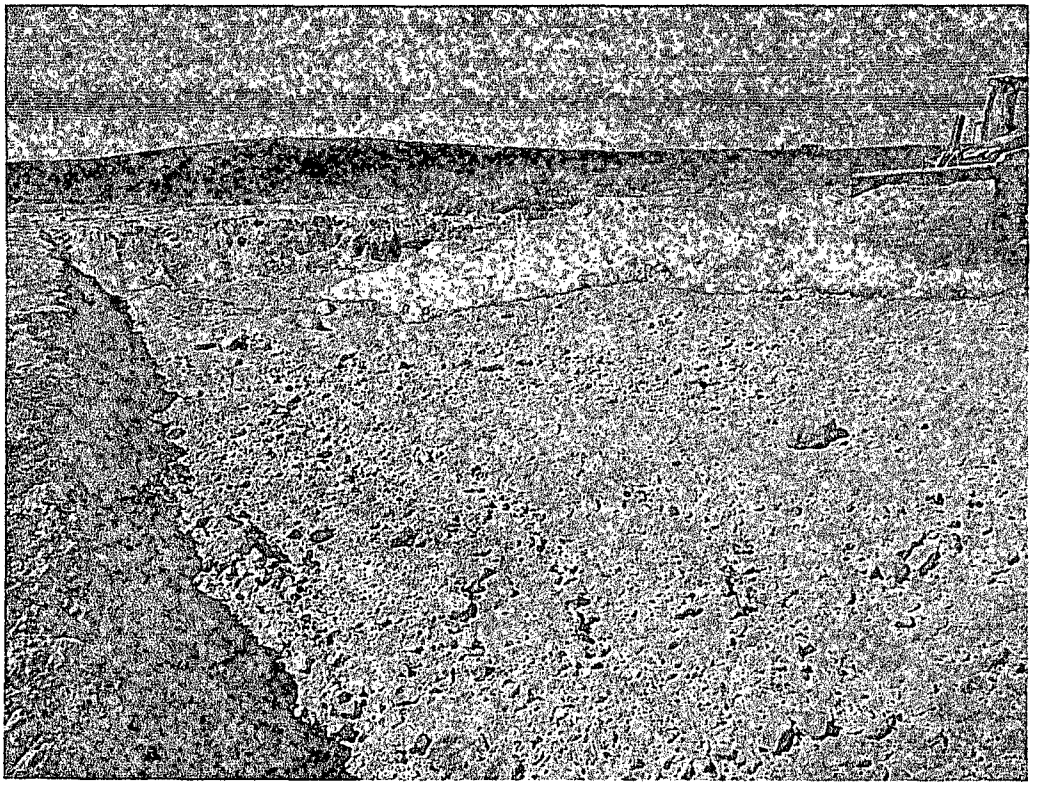


View East – Area of AH-1, AH-2, AH-3 and AH-5.

View Southeast – Area of AH-6.

COG Operating LLC
SRO SWD #104
Eddy County, New Mexico

TETRA TECH



View Southeast – Backfill

TABLES

Table 1
COG Operating LLC.
SRO Salt Water Disposal #104
Eddy County, New Mexico

Sample ID	Sample Date	BEB Sample Depth (ft)	Excavation Bottom Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	3/14/2013	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4,470
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	79.1
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	<20.0
AH-2	3/14/2013	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,040
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	440
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	480
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	549
AH-3	3/14/2013	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	6,570
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	384
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	1,090
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	314
AH-4	3/14/2013	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,080
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	379
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	538
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	558
AH-5	3/14/2013	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,620
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	917
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	765
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	322

Table 1
COG Operating LLC.
SRO Salt Water Disposal #104
Eddy County, New Mexico

Sample ID	Sample Date	BEB Sample Depth (ft)	Excavation Bottom Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-6	3/14/2013	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,120
	"	1-1.5	"		X	-	-	-	-	-	-	-	-	2,250
	"	2-2.5	"		X	-	-	-	-	-	-	-	-	2,660
CS-2 Bottom Hole	6/11/2013	3-3.5	0	X		-	-	-	-	-	-	-	-	1,380
T-1	6/11/2013	0	0		X	-	-	-	-	-	-	-	-	10,700
	"	2	"		X	-	-	-	-	-	-	-	-	5,810
	"	4	"	X		-	-	-	-	-	-	-	-	1,560
	"	6	"	X		-	-	-	-	-	-	-	-	204
	"	8	"	X		-	-	-	-	-	-	-	-	<20.0
	"	10	"	X		-	-	-	-	-	-	-	-	<20.0
	"	12	"	X		-	-	-	-	-	-	-	-	97.2
AH-7	3/14/2013	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	9,150
	"	1-1.5	"		X	-	-	-	-	-	-	-	-	3,310
	"	2-2.5	"		X	-	-	-	-	-	-	-	-	1,580
	"	3-3.5	"		X	-	-	-	-	-	-	-	-	2,160
CS-1 Bottom Hole	6/11/2013	4-4.5	0	X		-	-	-	-	-	-	-	-	691
T-2	6/11/2013	0	0		X	-	-	-	-	-	-	-	-	6,400
	"	2	"		X	-	-	-	-	-	-	-	-	2,410
	"	4	"		X	-	-	-	-	-	-	-	-	1,040
	"	6	"	X		-	-	-	-	-	-	-	-	194
	"	8	"	X		-	-	-	-	-	-	-	-	77.4
	"	10	"	X		-	-	-	-	-	-	-	-	82.2
	"	12	"	X		-	-	-	-	-	-	-	-	<20.0

Table 1
COG Operating LLC.
SRO Salt Water Disposal #104
Eddy County, New Mexico

Sample ID	Sample Date	BEB Sample Depth (ft)	Excavation Bottom Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
Reserve Pit Area														
AH-8	3/14/2013	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
AH-9	3/14/2013	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
AH-10	3/14/2013	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
AH-11	3/14/2013	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
AH-12	3/14/2013	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
Background	3/14/2013	0-1	0	X		-	-	-	-	-	-	-	-	<20.0
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	<20.0
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	79.1

(-) Not Analyzed

(BEB) Below Excavation Bottom

Excavation Depths

APPENDIX A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	600 West Illinois Avenue, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	SRO SWD #104	Facility Type	SWD

Surface Owner State	Mineral Owner	Lease No. (API#) 30-015-25864

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	10	26S	28E					Eddy

Latitude 32 03.534 **Longitude** 104 04.612

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 700bbls	Volume Recovered 650bbls
Source of Release Victaulic clamp on header	Date and Hour of Occurrence 02/06/2013	Date and Hour of Discovery 02/06/2013 11:30 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-OCD	
By Whom? Michelle Mullins	Date and Hour 02/07/2013 8:05 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A Victaulic clamp failed on the inlet header inside the facility. The inlet header has been replaced with new components that are coated and lined.

Describe Area Affected and Cleanup Action Taken.*

Initially 700bbls were released from the header and we were able to recover 650bbls with vacuum trucks. The release occurred inside the lined facility. The majority of the release was contained inside the walls of the tank battery. All free fluid has been recovered. Contaminated gravel has been removed from inside the facility and we have replaced with fresh gravel as necessary. The facility has been returned to its prior condition. Tetra Tech will sample the spill site area outside of the lined facility to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD 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: Senior Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@concho.com	Conditions of Approval:	Attached ☐
Date: 02/18/2013 Phone: 432-212-2399		

* 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

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

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	600 West Illinois Avenue, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	SRO SWD #104	Facility Type	SWD

Surface Owner STATE	Mineral Owner	Lease No. (API#) 30-015-25864

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	10	26S	28E					EDDY

Latitude 32.05890 **Longitude** 104.07743

NATURE OF RELEASE

Type of Release Oil and Produced water	Volume of Release 20bbls Oil 180bbls Produced water	Volume Recovered 20bbls Oil 170bbls Produced water
Source of Release 4" load line collar on gun barrel.	Date and Hour of Occurrence 02/26/2013	Date and Hour of Discovery 02/26/213 8:00am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - NMOCD	
By Whom? Michelle Mullins	Date and Hour 02/27/2013 10:02am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The 4" load line collar on the gun barrel rotted. We replaced the 4" load line collar on the gun barrel.

Describe Area Affected and Cleanup Action Taken.*

Initially 180bbls of produced water and 20bbls of oil were released from a rotted 4" collar we were able to recover 170bbls of produced water and 20bbls of oil with vacuum trucks. The release occurred inside the lined facility. The majority of the release was contained inside the walls of the tank battery. All free fluid has been recovered. Contaminated gravel has been removed from inside the facility and we have replaced with fresh gravel as necessary. The facility has been returned to its prior condition. Tetra Tech will sample the spill site area outside of the lined facility to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD 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: Senior Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@concho.com	Conditions of Approval:	Attached ☐
Date: 03/08/2013 Phone: 432-212-2399		

* 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

RECEIVED
AUG 23 2013
NMOCD ARTESIA

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

☐ Initial Report ☒ Final Report

Name of Company	**COG Operating LLC**	Contact	**Pat Ellis**
Address	**600 West Illinois Avenue, Midland, TX 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**SRO SWD #104**	Facility Type	**SWD**

Surface Owner: State	Mineral Owner	Lease No. (API#)30-015-25864

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	10	26S	28E					Eddy

Latitude N32.05890 ° **Longitude** W104.07743°

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release 20 bbls Oil 180 bbls Produced Water	Volume Recovered 20 bbls Oil 170 bbls Produced Water
Source of Release: 4'' load line collar on gun barrel	Date and Hour of Occurrence 02/26/2013	Date and Hour of Discovery 02/26/2013 8:00 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - NMOCD	
By Whom? Michelle Mullins	Date and Hour 02/27/2013 10:02 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The 4'' load line collar on the gun barrel rotted. We replaced the 4'' load line collar on the gun barrel.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected the site and collected samples to define the spill extents. Soil that exceeded the RRAL was removed and hauled away for proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report and submitted it to NMOCD for review.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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: Ike Tavarez (agent for COG)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike Tavarez@tetratech.com	Conditions of Approval:	Attached ☐
Date: 7-19-13 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
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1000 Rio Brazos Road, Aztec, NM 87410
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RECEIVED
AUG 23 2013
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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

☐ Initial Report ☒ Final Report

Name of Company	**COG Operating LLC**	Contact	**Pat Ellis**
Address	**600 West Illinois Avenue, Midland, TX 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**Dodd Federal Unit #128**	Facility Type	**Well Location**

Surface Owner: State	Mineral Owner	Lease No. (API#)30-015-25864

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	10	26S	28E					Eddy

Latitude N32.84810 ° **Longitude** W104.03795 °

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 700 bbls	Volume Recovered 650 bbls
Source of Release: Victaulic clamp on header	Date and Hour of Occurrence 02/06/2013	Date and Hour of Discovery 02/06/2013 11:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - NMOCD	
By Whom? Michelle Mullins	Date and Hour 02/07/2013 8:05 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A Victaulic clamp failed on the inlet header inside the facility. The inlet header has been replaced with new components that are coasted and lined.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected the site and collected samples to define the spill extents. Soil that exceeded the RRAL was removed and hauled away for proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report and submitted it to NMOCD for review.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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: Ike Tavarez (agent for COG)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike Tavarez@tetratech.com	Conditions of Approval:	Attached ☐
Date: 7-15-13 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
COG - SRO SWD #104
Eddy County, New Mexico

24 South 27 East

6	5	4	3	2	1
7	8 **26**	9 **43**	10	11	12 **27**
18 **34**	17	16	15	14	13 **31**
19	20	21	22 **70**	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 28 East

6 **70**	5 **30**	4 **30**	3	2 **55**	1 **60**
7	8 **50**	9	10 **17**	11 **20**	12 **73**
18	17 **42**	16 **29**	15 **18**	14 **52**	13 **34**
19	20 **48**	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 29 East

6	5	4	3	2	1
7 **160**	8	9	10	11	12
18	17	16 **18**	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 27 East

6	5	4	3	2	1
7	8	9	10	11	12 **92**
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33 **19**	34	35	36

25 South 28 East

6	5 **59**	4 **35**	3 **32**	2	1
7	8	9	10	11	12
18 **67**	17	16	15 **48** **49**	14	13
19	20 **96**	21	22	23	24
30	29 **15**	28 **90**	27	26 **30**	25
31	32	33	34	35	36 **40**

25 South 29 East

6 **40**	5	4	3	2	1
7	8	9	10 **40**	11	12
18	17	16	15 **60**	14	13
19	20	21	22	23	24
30 **30**	29	28	27	26	25
31	32	33	34	35	36

26 South 27 East

6	5 **12**	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 **35**
19	20	21	22 **50**	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 28 East

6	5	4	3	2 **120**	1
7	8	9	10 SITE	11	12 **100**
18 **25**	17	16	15	14 **120**	13 **56**
19	20	21	22 **120**	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **57** **69**	23	24
30	29	28	27	26	25
31	32	33	34	35	36

- New Mexico State Engineers Well Reports
- 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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: March 26, 2013

Work Order: 13031824

Project Location: Eddy Co., NM
Project Name: COG/SRO SWD #104
Project Number: 112C05076

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323794	Background 0-1'	soil	2013-03-14	00:00	2013-03-18
323795	Background 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323796	Background 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323797	Background 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323798	AH-1 0-1'	soil	2013-03-14	00:00	2013-03-18
323799	AH-1 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323800	AH-1 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323801	AH-1 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323802	AH-2 0-1'	soil	2013-03-14	00:00	2013-03-18
323803	AH-2 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323804	AH-2 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323805	AH-2 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323806	AH-3 0-1'	soil	2013-03-14	00:00	2013-03-18
323807	AH-3 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323808	AH-3 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323809	AH-3 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323810	AH-4 0-1'	soil	2013-03-14	00:00	2013-03-18
323811	AH-4 1-1.5'	soil	2013-03-14	00:00	2013-03-18

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323812	AH-4 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323813	AH-4 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323814	AH-5 0-1'	soil	2013-03-14	00:00	2013-03-18
323815	AH-5 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323816	AH-5 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323817	AH-5 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323818	AH-6 0-1'	soil	2013-03-14	00:00	2013-03-18
323819	AH-6 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323820	AH-6 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323821	AH-6 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323822	AH-7 0-1'	soil	2013-03-14	00:00	2013-03-18
323823	AH-7 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323824	AH-7 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323825	AH-7 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323826	AH-8 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18
323828	AH-9 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18
323830	AH-10 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18
323832	AH-11 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18
323834	AH-12 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18

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.

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

Report Contents

Case Narrative

Samples for project COG/SRO SWD #104 were received by TraceAnalysis, Inc. on 2013-03-18 and assigned to work order 13031824. Samples for work order 13031824 were received intact at a temperature of 2.2 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	84699	2013-03-25 at 10:55	99982	2013-03-25 at 10:58
BTEX	S 8021B	84712	2013-03-25 at 13:50	100009	2013-03-25 at 14:15
BTEX	S 8021B	84734	2013-03-26 at 10:39	100028	2013-03-26 at 10:41
Chloride (Titration)	SM 4500-Cl B	84675	2013-03-21 at 22:15	99955	2013-03-24 at 22:28
Chloride (Titration)	SM 4500-Cl B	84675	2013-03-21 at 22:15	99956	2013-03-24 at 22:29
Chloride (Titration)	SM 4500-Cl B	84675	2013-03-21 at 22:15	99957	2013-03-24 at 22:30
Chloride (Titration)	SM 4500-Cl B	84675	2013-03-21 at 22:15	99958	2013-03-24 at 22:31
TPH DRO - NEW	S 8015 D	84613	2013-03-20 at 10:00	99874	2013-03-21 at 09:58
TPH DRO - NEW	S 8015 D	84737	2013-03-25 at 10:00	100032	2013-03-26 at 11:30
TPH GRO	S 8015 D	84700	2013-03-25 at 10:57	99983	2013-03-25 at 10:58
TPH GRO	S 8015 D	84718	2013-03-25 at 14:05	100010	2013-03-25 at 14:19
TPH GRO	S 8015 D	84735	2013-03-26 at 10:40	100029	2013-03-26 at 10:46

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13031824 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 323794 - Background 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99955	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

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

Sample: 323795 - Background 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99955	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

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

Sample: 323796 - Background 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

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

Sample: 323797 - Background 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**79.1**	mg/Kg	5	4.00

Sample: 323798 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99982	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84699	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.74	mg/Kg	1	2.00	87	70 - 130

Sample: 323798 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4470**	mg/Kg	10	4.00

Sample: 323798 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			109	mg/Kg	1	100	109	70 - 130

Sample: 323798 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99983	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84700	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.69	mg/Kg	1	2.00	84	70 - 130

Sample: 323799 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**79.1**	mg/Kg	5	4.00

Sample: 323800 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

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

Sample: 323801 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

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

Sample: 323802 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99982	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84699	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	87	70 - 130

Sample: 323802 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**2040**	mg/Kg	10	4.00

Sample: 323802 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			97.5	mg/Kg	1	100	98	70 - 130

Sample: 323802 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99983	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84700	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.69	mg/Kg	1	2.00	84	70 - 130

Sample: 323803 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**440**	mg/Kg	5	4.00

Sample: 323804 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**480**	mg/Kg	5	4.00

Sample: 323805 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**549**	mg/Kg	5	4.00

Sample: 323806 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100028	Date Analyzed:	2013-03-26	Analyzed By:	AH
Prep Batch:	84734	Sample Preparation:	2013-03-25	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	70 - 130

Sample: 323806 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6570**	mg/Kg	10	4.00

Sample: 323806 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100032	Date Analyzed:	2013-03-26	Analyzed By:	CW
Prep Batch:	84737	Sample Preparation:	2013-03-25	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			111	mg/Kg	1	100	111	70 - 130

Sample: 323806 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100029	Date Analyzed:	2013-03-26	Analyzed By:	AH
Prep Batch:	84735	Sample Preparation:	2013-03-26	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Sample: 323807 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**384**	mg/Kg	5	4.00

Sample: 323808 - AH-3 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1090**	mg/Kg	5	4.00

Sample: 323809 - AH-3 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**314**	mg/Kg	5	4.00

Sample: 323810 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99982	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84699	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	89	70 - 130

Sample: 323810 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1080**	mg/Kg	10	4.00

Sample: 323810 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			86.9	mg/Kg	1	100	87	70 - 130

Sample: 323810 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99983	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84700	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	70 - 130

Sample: 323811 - AH-4 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**379**	mg/Kg	5	4.00

Sample: 323812 - AH-4 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**538**	mg/Kg	5	4.00

Sample: 323813 - AH-4 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**558**	mg/Kg	5	4.00

Sample: 323814 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99982	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84699	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	70 - 130

Sample: 323814 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2620**	mg/Kg	10	4.00

Sample: 323814 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			70.8	mg/Kg	1	100	71	70 - 130

Sample: 323814 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99983	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84700	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	1	2.00	85	70 - 130

Sample: 323815 - AH-5 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**917**	mg/Kg	10	4.00

Sample: 323816 - AH-5 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**765**	mg/Kg	5	4.00

Sample: 323817 - AH-5 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**322**	mg/Kg	5	4.00

Sample: 323818 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99982	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84699	Sample Preparation:	2013-03-23	Prepared By:	AH

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

continued ...

sample 323818 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Xylene	Qs,U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.74	mg/Kg	1	2.00	87	70 - 130

Sample: 323818 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3120**	mg/Kg	10	4.00

Sample: 323818 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	70 - 130

Sample: 323818 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99983	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84700	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.69	mg/Kg	1	2.00	84	70 - 130

Sample: 323819 - AH-6 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2250**	mg/Kg	10	4.00

Sample: 323820 - AH-6 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2660**	mg/Kg	10	4.00

Sample: 323821 - AH-6 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3630**	mg/Kg	10	4.00

Sample: 323822 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99982	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84699	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Sample: 323822 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**9150**	mg/Kg	10	4.00

Sample: 323822 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	70 - 130

Sample: 323822 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99983	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84700	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	1	2.00	85	70 - 130

Sample: 323823 - AH-7 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3310**	mg/Kg	10	4.00

Sample: 323824 - AH-7 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1580**	mg/Kg	10	4.00

Sample: 323825 - AH-7 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	Sample Preparation:	2013-03-23	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2160**	mg/Kg	10	4.00

Sample: 323826 - AH-8 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99982	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84699	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Sample: 323826 - AH-8 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	J[illegible]	[illegible]	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			107	mg/Kg	1	100	107	70 - 130

Sample: 323826 - AH-8 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99983	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84700	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	70 - 130

Sample: 323828 - AH-9 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100009	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84712	Sample Preparation:	2013-03-23	Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr,U	[illegible]	<0.0200	mg/Kg	1	0.0200
Toluene	Qr,U	[illegible]	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qr,Qs,U	[illegible]	<0.0200	mg/Kg	1	0.0200
Xylene	Qr,Qs,U	[illegible]	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 323828 - AH-9 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			110	mg/Kg	1	100	110	70 - 130

Sample: 323828 - AH-9 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100010	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84718	Sample Preparation:		Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	1	2.00	94	70 - 130

Sample: 323830 - AH-10 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100009	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84712	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	70 - 130

Sample: 323830 - AH-10 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			101	mg/Kg	1	100	101	70 - 130

Sample: 323830 - AH-10 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100010	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84718	Sample Preparation:		Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.73	mg/Kg	1	2.00	86	70 - 130

Sample: 323832 - AH-11 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100009	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84712	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	70 - 130

Sample: 323832 - AH-11 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			111	mg/Kg	1	100	111	70 - 130

Sample: 323832 - AH-11 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100010	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84718	Sample Preparation:		Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	70 - 130

Sample: 323834 - AH-12 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100009	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84712	Sample Preparation:	2013-03-23	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	70 - 130

Sample: 323834 - AH-12 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	Sample Preparation:	2013-03-20	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			92.3	mg/Kg	1	100	92	70 - 130

Sample: 323834 - AH-12 0-1' Reserve Pit

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100010	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84718	Sample Preparation:		Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.74	mg/Kg	1	2.00	87	70 - 130
4-Bromofluorobenzene (4-BFB)			1.73	mg/Kg	1	2.00	86	70 - 130

Method Blanks

Method Blank (1) QC Batch: 100009

QC Batch:	100009	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84712	QC Preparation:	2013-03-25	Prepared By:	AH

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00810	mg/Kg	0.02
Toluene		1	<0.00750	mg/Kg	0.02
Ethylbenzene		1	<0.00730	mg/Kg	0.02
Xylene		1	<0.00700	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	70 - 130

Method Blank (1) QC Batch: 100010

QC Batch:	100010	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84718	QC Preparation:	2013-03-25	Prepared By:	AH

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	70 - 130

Method Blank (1) QC Batch: 100028

QC Batch:	100028	Date Analyzed:	2013-03-26	Analyzed By:	AH
Prep Batch:	84734	QC Preparation:	2013-03-26	Prepared By:	AH

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00810	mg/Kg	0.02
Toluene		1	<0.00750	mg/Kg	0.02
Ethylbenzene		1	<0.00730	mg/Kg	0.02
Xylene		1	<0.00700	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	70 - 130

Method Blank (1) QC Batch: 100029

QC Batch: 100029 | Date Analyzed: 2013-03-26 | Analyzed By: AH
Prep Batch: 84735 | QC Preparation: 2013-03-26 | Prepared By: AH

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	88	70 - 130

Method Blank (1) QC Batch: 100032

QC Batch: 100032 | Date Analyzed: 2013-03-26 | Analyzed By: CW
Prep Batch: 84737 | QC Preparation: 2013-03-25 | Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	21.7	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			97.3	mg/Kg	1	100	97	70 - 130

Method Blank (1) QC Batch: 99874

QC Batch:	99874	Date Analyzed:	2013-03-21	Analyzed By:	CW
Prep Batch:	84613	QC Preparation:	2013-03-20	Prepared By:	CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	8.44	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			105	mg/Kg	1	100	105	70 - 130

Method Blank (1) QC Batch: 99955

QC Batch:	99955	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	QC Preparation:	2013-03-21	Prepared By:	AR

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

Method Blank (1) QC Batch: 99956

QC Batch:	99956	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	QC Preparation:	2013-03-21	Prepared By:	AR

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

Method Blank (1) QC Batch: 99957

QC Batch:	99957	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	QC Preparation:	2013-03-21	Prepared By:	AR

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

Method Blank (1) QC Batch: 99958

QC Batch:	99958	Date Analyzed:	2013-03-24	Analyzed By:	AR
Prep Batch:	84675	QC Preparation:	2013-03-21	Prepared By:	AR

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

Method Blank (1) QC Batch: 99982

QC Batch:	99982	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84699	QC Preparation:	2013-03-25	Prepared By:	AH

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00810	mg/Kg	0.02
Toluene		1	<0.00750	mg/Kg	0.02
Ethylbenzene		1	<0.00730	mg/Kg	0.02
Xylene		1	<0.00700	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	70 - 130

Method Blank (1) QC Batch: 99983

QC Batch:	99983	Date Analyzed:	2013-03-25	Analyzed By:	AH
Prep Batch:	84700	QC Preparation:	2013-03-25	Prepared By:	AH

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 100009 | Date Analyzed: 2013-03-25 | Analyzed By: AH
Prep Batch: 84712 | QC Preparation: 2013-03-25 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.51	mg/Kg	1	2.00	<0.00810	76	70 - 130
Toluene		1	1.52	mg/Kg	1	2.00	<0.00750	76	70 - 130
Ethylbenzene		1	1.56	mg/Kg	1	2.00	<0.00730	78	70 - 130
Xylene		1	4.70	mg/Kg	1	6.00	<0.00700	78	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	[1] Qr	Qr	1	2.12	mg/Kg	1	2.00	<0.00810	106	70 - 130	34	20
Toluene	Qr	Qr	1	2.10	mg/Kg	1	2.00	<0.00750	105	70 - 130	32	20
Ethylbenzene	Qr	Qr	1	2.15	mg/Kg	1	2.00	<0.00730	108	70 - 130	32	20
Xylene	Qr	Qr	1	6.40	mg/Kg	1	6.00	<0.00700	107	70 - 130	31	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.92	1.93	mg/Kg	1	2.00	96	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.83	1.82	mg/Kg	1	2.00	92	91	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100010 | Date Analyzed: 2013-03-25 | Analyzed By: AH
Prep Batch: 84718 | QC Preparation: 2013-03-25 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.3	mg/Kg	1	20.0	<2.32	82	70 - 130

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

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control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	16.3	mg/Kg	1	20.0	<2.32	82	70 - 130	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.81	1.74	mg/Kg	1	2.00	90	87	70 - 130
4-Bromofluorobenzene (4-BFB)	1.78	1.81	mg/Kg	1	2.00	89	90	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100028 | Date Analyzed: 2013-03-26 | Analyzed By: AH
Prep Batch: 84734 | QC Preparation: 2013-03-26 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.76	mg/Kg	1	2.00	<0.00810	88	70 - 130
Toluene		1	1.72	mg/Kg	1	2.00	<0.00750	86	70 - 130
Ethylbenzene		1	1.76	mg/Kg	1	2.00	<0.00730	88	70 - 130
Xylene		1	5.32	mg/Kg	1	6.00	<0.00700	89	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.10	mg/Kg	1	2.00	<0.00810	105	70 - 130	18	20
Toluene		1	2.08	mg/Kg	1	2.00	<0.00750	104	70 - 130	19	20
Ethylbenzene		1	2.12	mg/Kg	1	2.00	<0.00730	106	70 - 130	19	20
Xylene		1	6.33	mg/Kg	1	6.00	<0.00700	106	70 - 130	17	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.92	1.91	mg/Kg	1	2.00	96	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.85	1.85	mg/Kg	1	2.00	92	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100029 | Date Analyzed: 2013-03-26 | Analyzed By: AH
Prep Batch: 84735 | QC Preparation: 2013-03-26 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.4	mg/Kg	1	20.0	<2.32	92	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.0	mg/Kg	1	20.0	<2.32	95	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.76	1.78	mg/Kg	1	2.00	88	89	70 - 130
4-Bromofluorobenzene (4-BFB)	1.81	1.83	mg/Kg	1	2.00	90	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100032 | Date Analyzed: 2013-03-26 | Analyzed By: CW
Prep Batch: 84737 | QC Preparation: 2013-03-25 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	255	mg/Kg	1	250	21.7	93	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	259	mg/Kg	1	250	21.7	95	70 - 130	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	112	114	mg/Kg	1	100	112	114	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 99874 | Date Analyzed: 2013-03-21 | Analyzed By: CW
Prep Batch: 84613 | QC Preparation: 2013-03-20 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		,	227	mg/Kg	1	250	8.44	87	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		,	226	mg/Kg	1	250	8.44	87	70 - 130	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	107	107	mg/Kg	1	100	107	107	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 99955 | Date Analyzed: 2013-03-24 | Analyzed By: AR
Prep Batch: 84675 | QC Preparation: 2013-03-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2730	mg/Kg	1	2500	<3.85	109	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2700	mg/Kg	1	2500	<3.85	108	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 99956 | Date Analyzed: 2013-03-24 | Analyzed By: AR
Prep Batch: 84675 | QC Preparation: 2013-03-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2460	mg/Kg	1	2500	<3.85	98	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2540	mg/Kg	1	2500	<3.85	102	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 99957 | Date Analyzed: 2013-03-24 | Analyzed By: AR
Prep Batch: 84675 | QC Preparation: 2013-03-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2660	mg/Kg	1	2500	<3.85	106	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2550	mg/Kg	1	2500	<3.85	102	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 99958 | Date Analyzed: 2013-03-24 | Analyzed By: AR
Prep Batch: 84675 | QC Preparation: 2013-03-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2450	mg/Kg	1	2500	<3.85	98	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2530	mg/Kg	1	2500	<3.85	101	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 99982 | Date Analyzed: 2013-03-25 | Analyzed By: AH
Prep Batch: 84699 | QC Preparation: 2013-03-25 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.72	mg/Kg	1	2.00	<0.00810	86	70 - 130
Toluene		1	1.73	mg/Kg	1	2.00	<0.00750	86	70 - 130
Ethylbenzene		1	1.79	mg/Kg	1	2.00	<0.00730	90	70 - 130
Xylene		1	5.36	mg/Kg	1	6.00	<0.00700	89	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.01	mg/Kg	1	2.00	<0.00810	100	70 - 130	16	20
Toluene		1	2.00	mg/Kg	1	2.00	<0.00750	100	70 - 130	14	20
Ethylbenzene		1	2.05	mg/Kg	1	2.00	<0.00730	102	70 - 130	14	20
Xylene		1	6.14	mg/Kg	1	6.00	<0.00700	102	70 - 130	14	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.90	1.92	mg/Kg	1	2.00	95	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.79	1.82	mg/Kg	1	2.00	90	91	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 99983 | Date Analyzed: 2013-03-25 | Analyzed By: AH
Prep Batch: 84700 | QC Preparation: 2013-03-25 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.9	mg/Kg	1	20.0	<2.32	90	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.3	mg/Kg	1	20.0	<2.32	96	70 - 130	8	20

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

continued ...

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.82	1.83	mg/Kg	1	2.00	91	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.82	1.90	mg/Kg	1	2.00	91	95	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 323957

QC Batch: 100009 | Date Analyzed: 2013-03-25 | Analyzed By: AH
Prep Batch: 84712 | QC Preparation: 2013-03-25 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.30	mg/Kg	1	2.00	<0.00810	115	70 - 130
Toluene		1	2.36	mg/Kg	1	2.00	<0.00750	118	70 - 130
Ethylbenzene		1	2.50	mg/Kg	1	2.00	<0.00730	125	70 - 130
Xylene		1	7.44	mg/Kg	1	6.00	<0.00700	124	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.44	mg/Kg	1	2.00	<0.00810	122	70 - 130	6	20
Toluene		1	2.52	mg/Kg	1	2.00	<0.00750	126	70 - 130	7	20
Ethylbenzene	Qs	Qs	2.68	mg/Kg	1	2.00	<0.00730	134	70 - 130	7	20
Xylene	Qs	Qs	7.99	mg/Kg	1	6.00	<0.00700	133	70 - 130	7	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.95	1.94	mg/Kg	1	2	98	97	70 - 130
4-Bromofluorobenzene (4-BFB)	1.78	1.76	mg/Kg	1	2	89	88	70 - 130

Matrix Spike (MS-1) Spiked Sample: 323957

QC Batch: 100010 | Date Analyzed: 2013-03-25 | Analyzed By: AH
Prep Batch: 84718 | QC Preparation: 2013-03-25 | Prepared By: AH

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	1	13.6	mg/Kg	1	20.0	<2.32	68	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.1	mg/Kg	1	20.0	<2.32	70	70 - 130	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.71	1.70	mg/Kg	1	2	86	85	70 - 130
4-Bromofluorobenzene (4-BFB)	1.81	1.83	mg/Kg	1	2	90	92	70 - 130

Matrix Spike (MS-1) Spiked Sample: 323806

QC Batch: 100028 | Date Analyzed: 2013-03-26 | Analyzed By: AH
Prep Batch: 84734 | QC Preparation: 2013-03-26 | Prepared By: AH

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	1	1.34	mg/Kg	1	2.00	<0.00810	67	70 - 130
Toluene	Qs	Qs	1	1.35	mg/Kg	1	2.00	<0.00750	68	70 - 130
Ethylbenzene	Qs	Qs	1	1.39	mg/Kg	1	2.00	<0.00730	70	70 - 130
Xylene	Qs	Qs	1	4.16	mg/Kg	1	6.00	<0.00700	69	70 - 130

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

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	Qs	Qs	1	1.33	mg/Kg	1	2.00	<0.00810	66	70 - 130	1	20
Toluene	Qs	Qs	1	1.35	mg/Kg	1	2.00	<0.00750	68	70 - 130	0	20
Ethylbenzene			1	1.41	mg/Kg	1	2.00	<0.00730	70	70 - 130	1	20
Xylene			1	4.22	mg/Kg	1	6.00	<0.00700	70	70 - 130	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.92	1.90	mg/Kg	1	2	96	95	70 - 130
4-Bromofluorobenzene (4-BFB)	1.89	1.83	mg/Kg	1	2	94	92	70 - 130

Matrix Spike (MS-1) Spiked Sample: 323806

QC Batch: 100029 | Date Analyzed: 2013-03-26 | Analyzed By: AH
Prep Batch: 84735 | QC Preparation: 2013-03-26 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	1	9.79	mg/Kg	1	20.0	2.34	37	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qs	Qs	1	9.62	mg/Kg	1	20.0	2.34	36	70 - 130	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.67	1.67	mg/Kg	1	2	84	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.84	1.84	mg/Kg	1	2	92	92	70 - 130

Matrix Spike (MS-1) Spiked Sample: 323806

QC Batch: 100032 | Date Analyzed: 2013-03-26 | Analyzed By: CW
Prep Batch: 84737 | QC Preparation: 2013-03-25 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	263	mg/Kg	1	250	<6.88	105	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	284	mg/Kg	1	250	<6.88	114	70 - 130	8	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	113	118	mg/Kg	1	100	113	118	70 - 130

Matrix Spike (MS-1) Spiked Sample: 323768

QC Batch: 99874 | Date Analyzed: 2013-03-21 | Analyzed By: CW
Prep Batch: 84613 | QC Preparation: 2013-03-20 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	258	mg/Kg	1	250	10.6	99	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	239	mg/Kg	1	250	10.6	91	70 - 130	8	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	108	113	mg/Kg	1	100	108	113	70 - 130

Matrix Spike (MS-1) Spiked Sample: 323795

QC Batch: 99955 | Date Analyzed: 2013-03-24 | Analyzed By: AR
Prep Batch: 84675 | QC Preparation: 2013-03-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2470	mg/Kg	5	2500	<19.2	99	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	5	2500	<19.2	104	78.9 - 121	5	20

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

Matrix Spike (MS-1) Spiked Sample: 323805

QC Batch: 99956 | Date Analyzed: 2013-03-24 | Analyzed By: AR
Prep Batch: 84675 | QC Preparation: 2013-03-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3100	mg/Kg	5	2500	549	102	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3190	mg/Kg	5	2500	549	106	78.9 - 121	3	20

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

Matrix Spike (MS-1) Spiked Sample: 323815

QC Batch: 99957 | Date Analyzed: 2013-03-24 | Analyzed By: AR
Prep Batch: 84675 | QC Preparation: 2013-03-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3360	mg/Kg	10	2500	917	98	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3680	mg/Kg	10	2500	917	110	78.9 - 121	9	20

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

Matrix Spike (MS-1) Spiked Sample: 323825

QC Batch: 99958 | Date Analyzed: 2013-03-24 | Analyzed By: AR
Prep Batch: 84675 | QC Preparation: 2013-03-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4780	mg/Kg	10	2500	2160	105	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			5000	mg/Kg	10	2500	2160	114	78.9 - 121	4	20

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

Matrix Spike (MS-1) Spiked Sample: 323826

QC Batch: 99982 | Date Analyzed: 2013-03-25 | Analyzed By: AH
Prep Batch: 84699 | QC Preparation: 2013-03-25 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	2.72	mg/Kg	1	2.00	<0.00810	136	70 - 130
Toluene	Qs	Qs	2.79	mg/Kg	1	2.00	<0.00750	140	70 - 130
Ethylbenzene	Qs	Qs	3.01	mg/Kg	1	2.00	<0.00730	150	70 - 130
Xylene	Qs	Qs	8.96	mg/Kg	1	6.00	<0.00700	149	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene			2.42	mg/Kg	1	2.00	<0.00810	121	70 - 130	12	20
Toluene			2.49	mg/Kg	1	2.00	<0.00750	124	70 - 130	11	20
Ethylbenzene	Qs	Qs	2.64	mg/Kg	1	2.00	<0.00730	132	70 - 130	13	20
Xylene	Qs	Qs	7.94	mg/Kg	1	6.00	<0.00700	132	70 - 130	12	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	1.93	mg/Kg	1	2	97	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.78	1.78	mg/Kg	1	2	89	89	70 - 130

Matrix Spike (MS-1) Spiked Sample: 323826

QC Batch: 99983 | Date Analyzed: 2013-03-25 | Analyzed By: AH
Prep Batch: 84700 | QC Preparation: 2013-03-25 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO			16.7	mg/Kg	1	20.0	<2.32	84	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO			17.4	mg/Kg	1	20.0	<2.32	87	70 - 130	4	20

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

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matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.74	1.71	mg/Kg	1	2	87	86	70 - 130
4-Bromofluorobenzene (4-BFB)	1.83	1.85	mg/Kg	1	2	92	92	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 100009 | Date Analyzed: 2013-03-25 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.102	102	80 - 120	2013-03-25
Toluene		1	mg/kg	0.100	0.102	102	80 - 120	2013-03-25
Ethylbenzene		1	mg/kg	0.100	0.104	104	80 - 120	2013-03-25
Xylene		1	mg/kg	0.300	0.310	103	80 - 120	2013-03-25

Standard (CCV-2)

QC Batch: 100009 | Date Analyzed: 2013-03-25 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0977	98	80 - 120	2013-03-25
Toluene		1	mg/kg	0.100	0.0967	97	80 - 120	2013-03-25
Ethylbenzene		1	mg/kg	0.100	0.0976	98	80 - 120	2013-03-25
Xylene		1	mg/kg	0.300	0.290	97	80 - 120	2013-03-25

Standard (CCV-3)

QC Batch: 100009 | Date Analyzed: 2013-03-25 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.102	102	80 - 120	2013-03-25
Toluene		1	mg/kg	0.100	0.100	100	80 - 120	2013-03-25
Ethylbenzene		1	mg/kg	0.100	0.101	101	80 - 120	2013-03-25
Xylene		1	mg/kg	0.300	0.301	100	80 - 120	2013-03-25

Standard (CCV-1)

QC Batch: 100010 | Date Analyzed: 2013-03-25 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.831	83	80 - 120	2013-03-25

Standard (CCV-2)

QC Batch: 100010 | Date Analyzed: 2013-03-25 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.815	82	80 - 120	2013-03-25

Standard (CCV-3)

QC Batch: 100010 | Date Analyzed: 2013-03-25 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.825	82	80 - 120	2013-03-25

Standard (CCV-1)

QC Batch: 100028 | Date Analyzed: 2013-03-26 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0810	81	80 - 120	2013-03-26
Toluene		1	mg/kg	0.100	0.0803	80	80 - 120	2013-03-26
Ethylbenzene		1	mg/kg	0.100	0.0835	84	80 - 120	2013-03-26
Xylene		1	mg/kg	0.300	0.249	83	80 - 120	2013-03-26

Standard (CCV-2)

QC Batch: 100028 | Date Analyzed: 2013-03-26 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0919	92	80 - 120	2013-03-26
Toluene		1	mg/kg	0.100	0.0911	91	80 - 120	2013-03-26
Ethylbenzene		1	mg/kg	0.100	0.0920	92	80 - 120	2013-03-26
Xylene		1	mg/kg	0.300	0.275	92	80 - 120	2013-03-26

Standard (CCV-3)

QC Batch: 100028 | Date Analyzed: 2013-03-26 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0907	91	80 - 120	2013-03-26
Toluene		1	mg/kg	0.100	0.0886	89	80 - 120	2013-03-26
Ethylbenzene		1	mg/kg	0.100	0.0881	88	80 - 120	2013-03-26
Xylene		1	mg/kg	0.300	0.265	88	80 - 120	2013-03-26

Standard (CCV-1)

QC Batch: 100029 | Date Analyzed: 2013-03-26 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.930	93	80 - 120	2013-03-26

Standard (CCV-2)

QC Batch: 100029 | Date Analyzed: 2013-03-26 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.866	87	80 - 120	2013-03-26

Standard (CCV-3)

QC Batch: 100029 | Date Analyzed: 2013-03-26 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.874	87	80 - 120	2013-03-26

Standard (CCV-1)

QC Batch: 100032 | Date Analyzed: 2013-03-26 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	244	98	80 - 120	2013-03-26

Standard (CCV-2)

QC Batch: 100032 | Date Analyzed: 2013-03-26 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	270	108	80 - 120	2013-03-26

Standard (CCV-3)

QC Batch: 100032 | Date Analyzed: 2013-03-26 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	252	101	80 - 120	2013-03-26

Standard (CCV-1)

QC Batch: 99874 | Date Analyzed: 2013-03-21 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	234	94	80 - 120	2013-03-21

Standard (CCV-2)

QC Batch: 99874 Date Analyzed: 2013-03-21 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	219	88	80 - 120	2013-03-21

Standard (CCV-3)

QC Batch: 99874 Date Analyzed: 2013-03-21 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	245	98	80 - 120	2013-03-21

Standard (CCV-4)

QC Batch: 99874 Date Analyzed: 2013-03-21 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	254	102	80 - 120	2013-03-21

Standard (CCV-1)

QC Batch: 99955 Date Analyzed: 2013-03-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.8	99	85 - 115	2013-03-24

Standard (CCV-2)

QC Batch: 99955 Date Analyzed: 2013-03-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2013-03-24

Standard (CCV-1)

QC Batch: 99956 Date Analyzed: 2013-03-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-03-24

Standard (CCV-2)

QC Batch: 99956 Date Analyzed: 2013-03-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2013-03-24

Standard (CCV-1)

QC Batch: 99957 Date Analyzed: 2013-03-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2013-03-24

Standard (CCV-2)

QC Batch: 99957 Date Analyzed: 2013-03-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.5	100	85 - 115	2013-03-24

Standard (CCV-1)

QC Batch: 99958 Date Analyzed: 2013-03-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2013-03-24

Standard (CCV-2)

QC Batch: 99958 Date Analyzed: 2013-03-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.5	100	85 - 115	2013-03-24

Standard (CCV-1)

QC Batch: 99982 Date Analyzed: 2013-03-25 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0956	96	80 - 120	2013-03-25
Toluene		1	mg/kg	0.100	0.0951	95	80 - 120	2013-03-25
Ethylbenzene		1	mg/kg	0.100	0.0989	99	80 - 120	2013-03-25
Xylene		1	mg/kg	0.300	0.295	98	80 - 120	2013-03-25

Standard (CCV-2)

QC Batch: 99982 Date Analyzed: 2013-03-25 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0869	87	80 - 120	2013-03-25
Toluene		1	mg/kg	0.100	0.0864	86	80 - 120	2013-03-25
Ethylbenzene		1	mg/kg	0.100	0.0882	88	80 - 120	2013-03-25
Xylene		1	mg/kg	0.300	0.264	88	80 - 120	2013-03-25

Standard (CCV-3)

QC Batch: 99982 Date Analyzed: 2013-03-25 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.101	101	80 - 120	2013-03-25
Toluene		1	mg/kg	0.100	0.100	100	80 - 120	2013-03-25
Ethylbenzene		1	mg/kg	0.100	0.102	102	80 - 120	2013-03-25
Xylene		1	mg/kg	0.300	0.302	101	80 - 120	2013-03-25

Standard (CCV-1)

QC Batch: 99983 Date Analyzed: 2013-03-25 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.806	81	80 - 120	2013-03-25

Standard (CCV-2)

QC Batch: 99983 | Date Analyzed: 2013-03-25 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.822	82	80 - 120	2013-03-25

Standard (CCV-3)

QC Batch: 99983 | Date Analyzed: 2013-03-25 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.831	83	80 - 120	2013-03-25

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 RPD for MS/MSD are within laboratory control limits and show the batch to be under control.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

1003824

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 1 OF: 5

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112C05076

PROJECT NAME: COG/SRO SWD #184

Eddy Co, NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
323794	3/14		S		X	Background (0-1')	1				X	
795						Background (1-1.5')	1				X	
796						Background (2-2.5')	1				X	
797						Background (3-3.5')	1				X	
798						AH1 (0-1')	1				X	
799						(1-1.5')	1				X	
800						(2-2.5')	1				X	
801						(3-3.5')	1				X	
802						AH2 (0-1')	1				X	
803						(1-1.5')	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X	X											X				

RELINQUISHED BY: (Signature) — Date: 3-18-13 Time: 1403 — RECEIVED BY: (Signature) — Date: 3/18/13 Time: 1403

SAMPLED BY: (Print & Initial) RE/TF — Date: — Time:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.2°

REMARKS: Run deeper sample if TPH exceeds 1000 mg/kg. Run deeper sample & Benzene exceeds 10 mg/kg and Total BTEX exceeds 50 mg/kg. AH

Please fill out all copies - Laboratory retains Yellow copy / Return Orgidal copy to Tetra Tech - Project Manager retains Pink copy / Accounting receives Gold copy.

Midland all

13031824

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112C05076

PROJECT NAME: COG / 5RO SWD #104 Eddy Co, NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
804	3/14		S		X	AH2 (2-2.5')	1				X													X				
805			S		X	(3-3.5')	1				X																	
806			S		X	AH3 (0-1')	1				X		X	X														
807			S		X	(1-1.5')	1				X																	
808			S		X	(2-2.5')	1				X																	
809			S		X	(3-3.5')	1				X																	
810			S		X	AH4 (0-1')	1				X		X	X														
811			S		X	(1-1.5')	1				X																	
812			S		X	(2-2.5')	1				X																	
813			S		X	(3-3.5')	1				X																	

RELINQUISHED BY: (Signature) Date: 3-18-13 Time: 1403
RECEIVED BY: (Signature) Date: 3/18/13 Time: 1405
SAMPLED BY: (Print & Initial) RR/TF Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez Results by:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.2
REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

AH

1303 1824

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112C05076

PROJECT NAME: COG / SRO SWD # 104 Eddy Co, NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
814			S		X	AH 5 (0-1')	1				X	
815			S		X	(1-1.5')	1				X	
816			S		X	(2-2.5')	1				X	
817			S		X	(3-3.5')	1				X	
818			S		X	AH 6 (0-1')	1				X	
819			S		X	(1-1.5')	1				X	
820			S		X	(2-2.5')	1				X	
821			S		X	(3-3.5')	1				X	
822			S		X	AH 7 (0-1')	1				X	
823			S		X	(1-1.5')	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TPH 8015 MOD. / TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X	X											X				
X	X															
X	X															

RELINQUISHED BY: (Signature) — Date: 3-18-13 Time: 1403 — RECEIVED BY: (Signature) — Date: 3/18/13 Time: 1403

SAMPLED BY: (Print & Initial) RR/IT — Date: — Time:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

ADDRESS: — CITY: Midland — STATE: — ZIP:

CONTACT: — PHONE: — DATE: — TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.2°

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

1303182 4

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 5

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112C05076

PROJECT NAME: COG / SRO SWD #104 Eddy Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 Mod. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
824	3/14		S		X	AH 7 (2-2.5')	1				X														X			
825			S		X	(3-3.5')	1				X														X			
826			S		X	AH 8 (0-1') Reserve pit	1				X		X	X														
827			S		X	(1-1.5')	1				X																	
828			S		X	AH 9 (0-1') Reserve Pit	1				X		X	X														
829			S		X	(1-1.5')	1				X																	
830			S		X	AH 10 (0-1') Reserve Pit	1				X		X	X														
831			S		X	(1-1.5')	1				X																	
832			S		X	AH 11 (0-1') Reserve Pit	1				X		X	X														
833			S		X	(1-1.5')	1				X																	

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 3-18-13 Time: 1403 — RECEIVED BY: (Signature) — Date: 3/18/13 Time: 1403

SAMPLED BY: (Print & Initial) RK/TF — Date: — Time:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

ADDRESS: Ft. — CITY: Midland — STATE: — ZIP: — CONTACT: — PHONE: — DATE: — TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.2°

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

AH

1303182424

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 12C050076

PROJECT NAME: COG / SRS SWD #104
Eddy Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 608/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
834	3/14		S		X	AH 12 (0-1') Reserve Pit	1				X		X	X															
835	3/14		S		X	AH 12 (1-1.5')	1				X																		

RELINQUISHED BY: (Signature)	Date: 3-18-13 Time: 1403	RECEIVED BY: (Signature)	Date: 3/18/13 Time: 14:03
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) RF / TF — Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED: 2.2°

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

AH

Summary Report

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

Report Date: June 25, 2013

Work Order: 13061839

Project Location: Eddy Co., NM
Project Name: COG/SRO SWD #104
Project Number: 112C05076

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
332623	CS 1 BH (AH-7) 4-4.5'	soil	2013-06-11	00:00	2013-06-18
332624	CS 2 BH (AH-6) 3-3.5'	soil	2013-06-11	00:00	2013-06-18
332627	T1 (AH-6) 0'	soil	2013-06-11	00:00	2013-06-18
332628	T1 (AH-6) 2'	soil	2013-06-11	00:00	2013-06-18
332629	T1 (AH-6) 4'	soil	2013-06-11	00:00	2013-06-18
332630	T1 (AH-6) 6'	soil	2013-06-11	00:00	2013-06-18
332631	T1 (AH-6) 8'	soil	2013-06-11	00:00	2013-06-18
332632	T1 (AH-6) 10'	soil	2013-06-11	00:00	2013-06-18
332633	T1 (AH-6) 12'	soil	2013-06-11	00:00	2013-06-18
332634	T2 (AH-7) 0'	soil	2013-06-11	00:00	2013-06-18
332635	T2 (AH-7) 2'	soil	2013-06-11	00:00	2013-06-18
332636	T2 (AH-7) 4'	soil	2013-06-11	00:00	2013-06-18
332637	T2 (AH-7) 6'	soil	2013-06-11	00:00	2013-06-18
332638	T2 (AH-7) 8'	soil	2013-06-11	00:00	2013-06-18
332639	T2 (AH-7) 10'	soil	2013-06-11	00:00	2013-06-18
332640	T2 (AH-7) 12'	soil	2013-06-11	00:00	2013-06-18

Sample: 332623 - CS 1 BH (AH-7) 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**691**	mg/Kg	4

Sample: 332624 - CS 2 BH (AH-6) 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**1380**	mg/Kg	4

Sample: 332627 - T1 (AH-6) 0'

Param	Flag	Result	Units	RL
Chloride		**10700**	mg/Kg	4

Sample: 332628 - T1 (AH-6) 2'

Param	Flag	Result	Units	RL
Chloride		**5810**	mg/Kg	4

Sample: 332629 - T1 (AH-6) 4'

Param	Flag	Result	Units	RL
Chloride		**1560**	mg/Kg	4

Sample: 332630 - T1 (AH-6) 6'

Param	Flag	Result	Units	RL
Chloride		**204**	mg/Kg	4

Sample: 332631 - T1 (AH-6) 8'

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

Sample: 332632 - T1 (AH-6) 10'

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

Sample: 332633 - T1 (AH-6) 12'

Param	Flag	Result	Units	RL
Chloride		**97.2**	mg/Kg	4

Sample: 332634 - T2 (AH-7) 0'

Param	Flag	Result	Units	RL
Chloride		**6400**	mg/Kg	4

Sample: 332635 - T2 (AH-7) 2'

Param	Flag	Result	Units	RL
Chloride		**2410**	mg/Kg	4

Sample: 332636 - T2 (AH-7) 4'

Param	Flag	Result	Units	RL
Chloride		**1040**	mg/Kg	4

Sample: 332637 - T2 (AH-7) 6'

Param	Flag	Result	Units	RL
Chloride		**194**	mg/Kg	4

Sample: 332638 - T2 (AH-7) 8'

Param	Flag	Result	Units	RL
Chloride		**77.4**	mg/Kg	4

Sample: 332639 - T2 (AH-7) 10'

Param	Flag	Result	Units	RL
Chloride		**82.2**	mg/Kg	4

Sample: 332640 - T2 (AH-7) 12'

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

Summary Report

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

Report Date: March 26, 2013

Work Order: 13031824

Project Location: Eddy Co., NM
Project Name: COG/SRO SWD #104
Project Number: 112C05076

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323794	Background 0-1'	soil	2013-03-14	00:00	2013-03-18
323795	Background 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323796	Background 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323797	Background 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323798	AH-1 0-1'	soil	2013-03-14	00:00	2013-03-18
323799	AH-1 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323800	AH-1 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323801	AH-1 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323802	AH-2 0-1'	soil	2013-03-14	00:00	2013-03-18
323803	AH-2 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323804	AH-2 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323805	AH-2 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323806	AH-3 0-1'	soil	2013-03-14	00:00	2013-03-18
323807	AH-3 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323808	AH-3 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323809	AH-3 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323810	AH-4 0-1'	soil	2013-03-14	00:00	2013-03-18
323811	AH-4 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323812	AH-4 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323813	AH-4 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323814	AH-5 0-1'	soil	2013-03-14	00:00	2013-03-18
323815	AH-5 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323816	AH-5 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323817	AH-5 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323818	AH-6 0-1'	soil	2013-03-14	00:00	2013-03-18
323819	AH-6 1-1.5'	soil	2013-03-14	00:00	2013-03-18
323820	AH-6 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323821	AH-6 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323822	AH-7 0-1'	soil	2013-03-14	00:00	2013-03-18
323823	AH-7 1-1.5'	soil	2013-03-14	00:00	2013-03-18

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323824	AH-7 2-2.5'	soil	2013-03-14	00:00	2013-03-18
323825	AH-7 3-3.5'	soil	2013-03-14	00:00	2013-03-18
323826	AH-8 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18
323828	AH-9 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18
323830	AH-10 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18
323832	AH-11 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18
323834	AH-12 0-1' Reserve Pit	soil	2013-03-14	00:00	2013-03-18

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
323798 - AH-1 0-1'	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323802 - AH-2 0-1'	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323806 - AH-3 0-1'	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00 Qs
323810 - AH-4 0-1'	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323814 - AH-5 0-1'	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323818 - AH-6 0-1'	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323822 - AH-7 0-1'	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323826 - AH-8 0-1' Reserve Pit	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323828 - AH-9 0-1' Reserve Pit	<0.0200 Qr	<0.0200 Qr	<0.0200 Qr,Qs	<0.0200 Qr,Qs	<50.0	<4.00 Qs
323830 - AH-10 0-1' Reserve Pit	<0.0200 Qr	<0.0200 Qr	<0.0200 Qr,Qs	<0.0200 Qr,Qs	<50.0	<4.00 Qs
323832 - AH-11 0-1' Reserve Pit	<0.0200 Qr	<0.0200 Qr	<0.0200 Qr,Qs	<0.0200 Qr,Qs	<50.0	<4.00 Qs
323834 - AH-12 0-1' Reserve Pit	<0.0200 Qr	<0.0200 Qr	<0.0200 Qr,Qs	<0.0200 Qr,Qs	<50.0	<4.00 Qs

Sample: 323794 - Background 0-1'

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

Sample: 323795 - Background 1-1.5'

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

Sample: 323796 - Background 2-2.5'

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

Sample: 323797 - Background 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**79.1**	mg/Kg	4

Sample: 323798 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**4470**	mg/Kg	4

Sample: 323799 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**79.1**	mg/Kg	4

Sample: 323800 - AH-1 2-2.5'

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

Sample: 323801 - AH-1 3-3.5'

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

Sample: 323802 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**2040**	mg/Kg	4

Sample: 323803 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**440**	mg/Kg	4

Sample: 323804 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**480**	mg/Kg	4

Sample: 323805 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**549**	mg/Kg	4

Sample: 323806 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**6570**	mg/Kg	4

Sample: 323807 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**384**	mg/Kg	4

Sample: 323808 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**1090**	mg/Kg	4

Sample: 323809 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**314**	mg/Kg	4

Sample: 323810 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**1080**	mg/Kg	4

Sample: 323811 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**379**	mg/Kg	4

Sample: 323812 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**538**	mg/Kg	4

Sample: 323813 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**558**	mg/Kg	4

Sample: 323814 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**2620**	mg/Kg	4

Sample: 323815 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**917**	mg/Kg	4

Sample: 323816 - AH-5 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**765**	mg/Kg	4

Sample: 323817 - AH-5 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**322**	mg/Kg	4

Sample: 323818 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		**3120**	mg/Kg	4

Sample: 323819 - AH-6 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**2250**	mg/Kg	4

Sample: 323820 - AH-6 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2660**	mg/Kg	4

Sample: 323821 - AH-6 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**3630**	mg/Kg	4

Sample: 323822 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		**9150**	mg/Kg	4

Sample: 323823 - AH-7 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**3310**	mg/Kg	4

Sample: 323824 - AH-7 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**1580**	mg/Kg	4

Sample: 323825 - AH-7 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**2160**	mg/Kg	4

TRACEANALYSIS, INC.

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: June 25, 2013

Work Order: 13061839

Project Location: Eddy Co., NM
Project Name: COG/SRO SWD #104
Project Number: 112C05076

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
332623	CS 1 BH (AH-7) 4-4.5'	soil	2013-06-11	00:00	2013-06-18
332624	CS 2 BH (AH-6) 3-3.5'	soil	2013-06-11	00:00	2013-06-18
332627	T1 (AH-6) 0'	soil	2013-06-11	00:00	2013-06-18
332628	T1 (AH-6) 2'	soil	2013-06-11	00:00	2013-06-18
332629	T1 (AH-6) 4'	soil	2013-06-11	00:00	2013-06-18
332630	T1 (AH-6) 6'	soil	2013-06-11	00:00	2013-06-18
332631	T1 (AH-6) 8'	soil	2013-06-11	00:00	2013-06-18
332632	T1 (AH-6) 10'	soil	2013-06-11	00:00	2013-06-18
332633	T1 (AH-6) 12'	soil	2013-06-11	00:00	2013-06-18
332634	T2 (AH-7) 0'	soil	2013-06-11	00:00	2013-06-18
332635	T2 (AH-7) 2'	soil	2013-06-11	00:00	2013-06-18
332636	T2 (AH-7) 4'	soil	2013-06-11	00:00	2013-06-18
332637	T2 (AH-7) 6'	soil	2013-06-11	00:00	2013-06-18
332638	T2 (AH-7) 8'	soil	2013-06-11	00:00	2013-06-18
332639	T2 (AH-7) 10'	soil	2013-06-11	00:00	2013-06-18
332640	T2 (AH-7) 12'	soil	2013-06-11	00:00	2013-06-18

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

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

Report Contents

Case Narrative

Samples for project COG/SRO SWD #104 were received by TraceAnalysis, Inc. on 2013-06-18 and assigned to work order 13061839. Samples for work order 13061839 were received intact at a temperature of 11.3 C. Samples were not on ice when received.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	86840	2013-06-21 at 13:49	102556	2013-06-24 at 12:41
Chloride (Titration)	SM 4500-Cl B	86840	2013-06-21 at 13:49	102587	2013-06-24 at 15:06
Chloride (Titration)	SM 4500-Cl B	86840	2013-06-21 at 13:49	102588	2013-06-24 at 16:07

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13061839 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 332623 - CS 1 BH (AH-7) 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102556	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**691**	mg/Kg	5	4.00

Sample: 332624 - CS 2 BH (AH-6) 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102556	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1380**	mg/Kg	5	4.00

Sample: 332627 - T1 (AH-6) 0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**10700**	mg/Kg	10	4.00

Sample: 332628 - T1 (AH-6) 2'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5810**	mg/Kg	10	4.00

Sample: 332629 - T1 (AH-6) 4'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1560**	mg/Kg	10	4.00

Sample: 332630 - T1 (AH-6) 6'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**204**	mg/Kg	5	4.00

Sample: 332631 - T1 (AH-6) 8'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

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

Sample: 332632 - T1 (AH-6) 10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

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

Sample: 332633 - T1 (AH-6) 12'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**97.2**	mg/Kg	5	4.00

Sample: 332634 - T2 (AH-7) 0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6400**	mg/Kg	10	4.00

Sample: 332635 - T2 (AH-7) 2'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**2410**	mg/Kg	10	4.00

Sample: 332636 - T2 (AH-7) 4'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1040**	mg/Kg	10	4.00

Sample: 332637 - T2 (AH-7) 6'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102588	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**194**	mg/Kg	5	4.00

Sample: 332638 - T2 (AH-7) 8'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102588	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**77.4**	mg/Kg	5	4.00

Sample: 332639 - T2 (AH-7) 10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102588	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**82.2**	mg/Kg	5	4.00

Sample: 332640 - T2 (AH-7) 12'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102588	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

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

Method Blanks

Method Blank (1) QC Batch: 102556

QC Batch:	102556	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	QC Preparation:	2013-06-21	Prepared By:	AR

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

Method Blank (1) QC Batch: 102587

QC Batch:	102587	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	QC Preparation:	2013-06-21	Prepared By:	AR

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

Method Blank (1) QC Batch: 102588

QC Batch:	102588	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	QC Preparation:	2013-06-21	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 102556 | Date Analyzed: 2013-06-24 | Analyzed By: AR
Prep Batch: 86840 | QC Preparation: 2013-06-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2720	mg/Kg	1	2500	<3.85	109	85 - 115

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

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

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

Laboratory Control Spike (LCS-1)

QC Batch: 102587 | Date Analyzed: 2013-06-24 | Analyzed By: AR
Prep Batch: 86840 | QC Preparation: 2013-06-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	1	2500	<3.85	105	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2520	mg/Kg	1	2500	<3.85	101	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 102588 | Date Analyzed: 2013-06-24 | Analyzed By: AR
Prep Batch: 86840 | QC Preparation: 2013-06-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2470	mg/Kg	1	2500	<3.85	99	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	85 - 115	5	20

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

Matrix Spike (MS-1) Spiked Sample: 332624

QC Batch: 102556 | Date Analyzed: 2013-06-24 | Analyzed By: AR
Prep Batch: 86840 | QC Preparation: 2013-06-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3920	mg/Kg	5	2500	1380	102	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3790	mg/Kg	5	2500	1380	96	78.9 - 121	3	20

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

Matrix Spike (MS-1) Spiked Sample: 332636

QC Batch: 102587 | Date Analyzed: 2013-06-24 | Analyzed By: AR
Prep Batch: 86840 | QC Preparation: 2013-06-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3250	mg/Kg	10	2500	1040	88	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3500	mg/Kg	10	2500	1040	98	78.9 - 121	7	20

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

Matrix Spike (MS-1) Spiked Sample: 332838

QC Batch:	102588	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	QC Preparation:	2013-06-21	Prepared By:	AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2760	mg/Kg	5	2500	<19.2	110	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2870	mg/Kg	5	2500	<19.2	115	78.9 - 121	4	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 102556 | Date Analyzed: 2013-06-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2013-06-24

Standard (CCV-2)

QC Batch: 102556 | Date Analyzed: 2013-06-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2013-06-24

Standard (CCV-1)

QC Batch: 102587 | Date Analyzed: 2013-06-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2013-06-24

Standard (CCV-2)

QC Batch: 102587 | Date Analyzed: 2013-06-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-06-24

Standard (CCV-1)

QC Batch: 102588 | Date Analyzed: 2013-06-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2013-06-24

Standard (CCV-2)

QC Batch: 102588 | Date Analyzed: 2013-06-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-06-24

Appendix

Report Definitions

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

Laboratory Certifications

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

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

13061839

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112C05076

PROJECT NAME: COG / SRO 104 SWD

Eddy Co, NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
332623	6/10		S		X	CS 1 BH (AH 7) 4-4.5'	1																	X				
624	6/11		S		X	CS 2 BH (AH 6) 3-3.5'	1																	X				
625			S		X	CS 3 BH (AH 3) 1'	1																	X (Hold)				
626			S		X	CS 4 BH (AH 4) 0'	1																	X (Hold)				
627			S		X	T1 (AH 6) 0'	1																	X				
628			S		X	2'	1																	X				
629			S		X	4'	1																	X				
630			S		X	6'	1																	X				
631			S		X	8'	1																	X				
632			S		X	10	1																	X				

RELINQUISHED BY: (Signature) — Date: 6/11/13 Time: 1200 — RECEIVED BY: (Signature) — Date: 6-11-13 Time: 1200

RELINQUISHED BY: (Signature) — Date: 6-12-13 Time: 1624 — RECEIVED BY: (Signature) — Date: 6/12/13 Time: 16:24

RELINQUISHED BY: (Signature) — Date: Time: — RECEIVED BY: (Signature) — Date: Time:

SAMPLED BY: (Print & Initial) — Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

ADDRESS: — CITY: Midland STATE: ZIP:

CONTACT: PHONE: DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1.3°

REMARKS: Midland all

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

13061839

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 2 OF: 2

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: LOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 12605076

PROJECT NAME: LOG / SRO 104 SWD Eddy Co, NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
633	6/11		S		X	T1 (AH6) 12'	1					
634			S		X	T2 (AH7) 0'	1					
635			S		X	2'	1					
636			S		X	4'	1					
637			S		X	6'	1					
638			S		X	8'	1					
639			S		X	10'	1					
640			S		X	12'	1					
641			S		X	CS-5 BH (AH-2) 1'						

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
												X				
												X				
												X				
												X				
												X				
												X				
												X				
												X				

RELINQUISHED BY: (Signature) — Date: 6/11/13 Time: 1730
RECEIVED BY: (Signature) — Date: 6-11-13 Time: 1730

RELINQUISHED BY: (Signature) — Date: 6-18-13 Time: 1624
RECEIVED BY: (Signature) — Date: 6/18/13 Time: 16:24

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

SAMPLED BY: (Print & Initial) — Date: Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS
AIRBILL #:
OTHER:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 11.3°

REMARKS: added CS-5 - Rec but not listed

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.