HOBBS OCD

HOBBS OCD

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

OCT 15 2010

State of New Mexico
Energy Minerals and Natural Resources

OCT 15 2010

Form C-141
Revised October 10, 2003

RECEIVED

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

RECEIVED

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	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	JC Federal #19	Facility Type	Well

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-025-38995

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	22	17S	32E	2160	North	2310	East	Lea

Latitude 32 49.288 **Longitude** 103 45.195

NATURE OF RELEASE

Type of Release Produced fluid (oil and water)	Volume of Release 15bbls	Volume Recovered 12bbls
Source of Release Stuffing box	Date and Hour of Occurrence 10/10/2010	Date and Hour of Discovery 10/10/2010 6:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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 stuffing box bolts were loose which allowed fluid to be released as the well pressured up. The stuffing box has been re-packed and the backpressure assembly has been cleaned,

Describe Area Affected and Cleanup Action Taken.*

Initially 15bbls of produced fluid was released from the stuffing box and we were able to recover 12bbls with a vacuum truck. The dimensions of the spill area measured 10 yards wide x 50 yards long to the south, east, and west of the well on the location. Also, to the east of the well pad a 3' x 30' stream went into the pasture. (The release consisted of oil and produced water, 9bbls of oil and 6bbls of produced water). The chloride concentration of the produced water is 135,000 mg/l. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM 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:~~ ENV ENGINEER Geoff Leking
Title: HSE Coordinator	Approval Date: 10/15/10 Expiration Date: 12/15/10
E-mail Address: jrusso@conchoresources.com	Conditions of Approval: SUBMIT FINAL C-141 BY 12/15/11 IRP- Attached ☐ 11-11-2764
Date: 10/15/2010 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

NOV 21 2011

TETRA TECH

March 1, 2011

Mr. Geoffrey Leking
Environmental Engineer
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Work Plan for the COG Operating LLC.
JC Federal #19 Well
Unit G, Section 22, Township 17 South, Range 32 East
Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the JC Federal #19 Well, Unit G, Section 22, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.82122°, W 103.75314°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on October 10, 2010, and released approximately fifteen (15) barrels of produced fluids due to loose bolts on a stuffing box. To alleviate the problem, COG personnel repacked the stuffing box and cleaned the backpressure assembly unit. Twelve (12) barrels of standing fluids were recovered. The majority of the spill was contained on the caliche pad impacting an area approximately 130' x 115'. The spill migrated east and impacted an area approximately 15' x 30' in the adjacent pasture. The initial C-141 forms is enclosed in Appendix C.

Groundwater

The United States Geological Survey (USGS) Well Reports did not list any wells in Section 21. However, the USGS Well Report did list two wells in Section 11 with reported depths of 70' and 88' below ground surface (bgs). To establish depth to groundwater, Tetra Tech previously installed a temporary monitor well in Section 30 to a depth of 180' bgs and did not encounter groundwater. The groundwater data is shown in Appendix A.

Tetra Tech
1910 North Big Spring, Midland,TX 79705
Tel 432.682.4559 Fax 432 682 3946 www tetratech.com

According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 100' below surface. The Water Well Data is shown in Appendix A.

Regulatory

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

Soil Assessment and Analytical Results

On October 25, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of nine (9) auger holes (AH-1 through AH-9) were installed using a stainless steel hand auger to assess the impacted 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 B. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the RRAL for TPH and BTEX. The chloride concentrations for AH-3 and AH-9 were below 250 mg/kg. The highest chloride concentrations were detected at the surface for AH-1 (0-1') of 3,420 mg/kg and AH-5 (0-1') of 2,190 mg/kg. Chloride concentrations declined to <200 mg/kg with depth with the exception of AH-1 at 7-7.5' with a concentration of 665 mg/kg. This chloride encountered at this depth appears to be historic based on the soil chloride profile and will not be addressed or further delineated as part of this remediation effort.

Work Plan

COG proposes to remove impacted material as highlighted (green) in Table 1. Once the areas are excavated to the appropriate depths, the

excavation will be backfilled with clean soil. Upon completion, a final report will be submitted to the NMOCD.

The area near AH-1 will be excavated to a depth of approximately 2.5' below surface. The area near AH-5 will be excavated to a depth of approximately 1' below surface. Confirmation samples will be collected and lab analysis will be provided for closure. The areas near AH-2, AH-4, AH-6, AH-7, and AH-8 did not have soils samples that exceeded 1,000 mg/kg. No excavation activities are planned for these areas. The proposed excavation areas and proposed depths are shown on Figure 4.

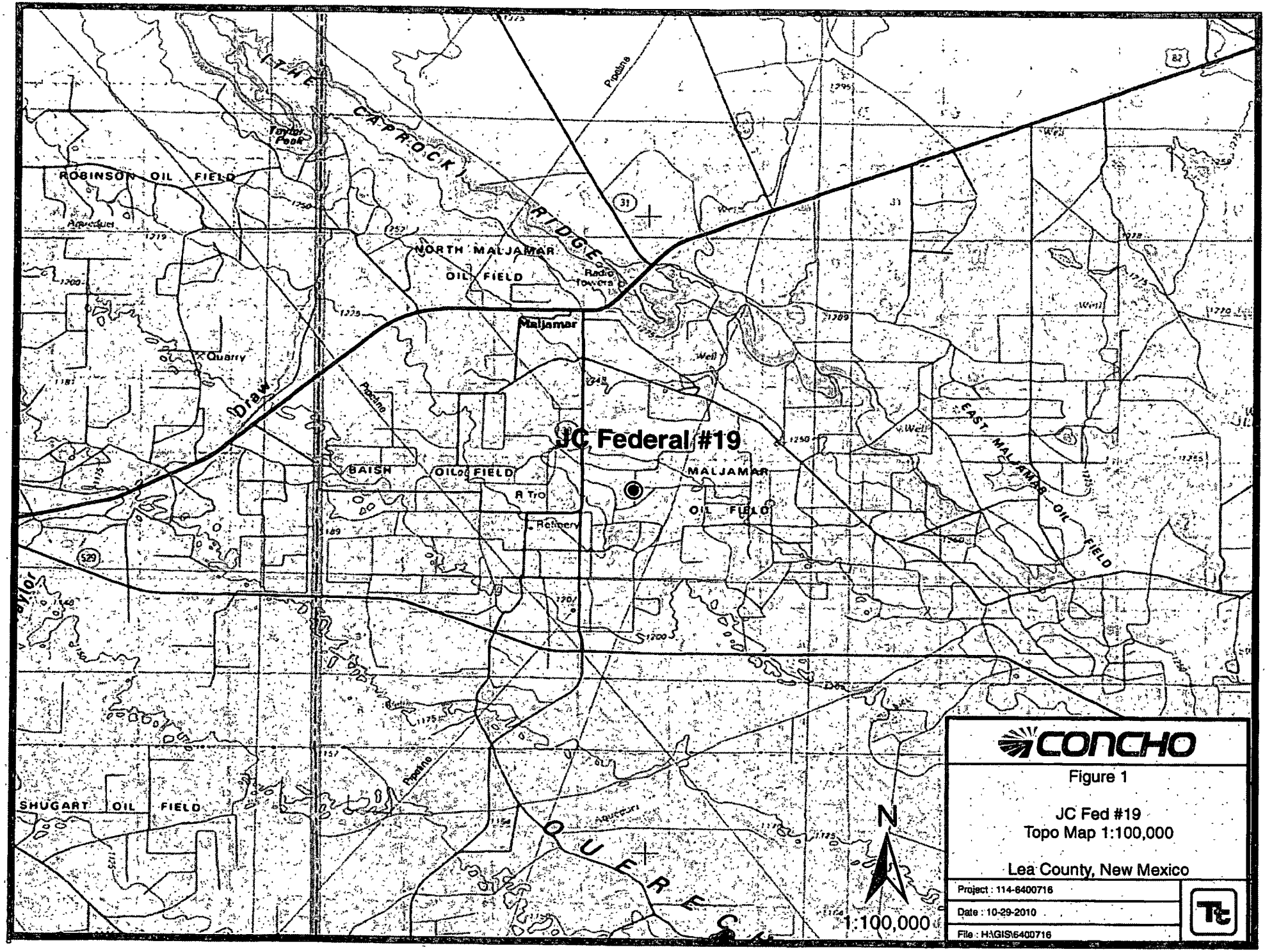
If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH, INC.

Aaron M. Hale
Senior Project Manager

cc: Pat Ellis – COG
cc: Jim Amos – BLM
cc: Terry Gregston - BLM

FIGURES



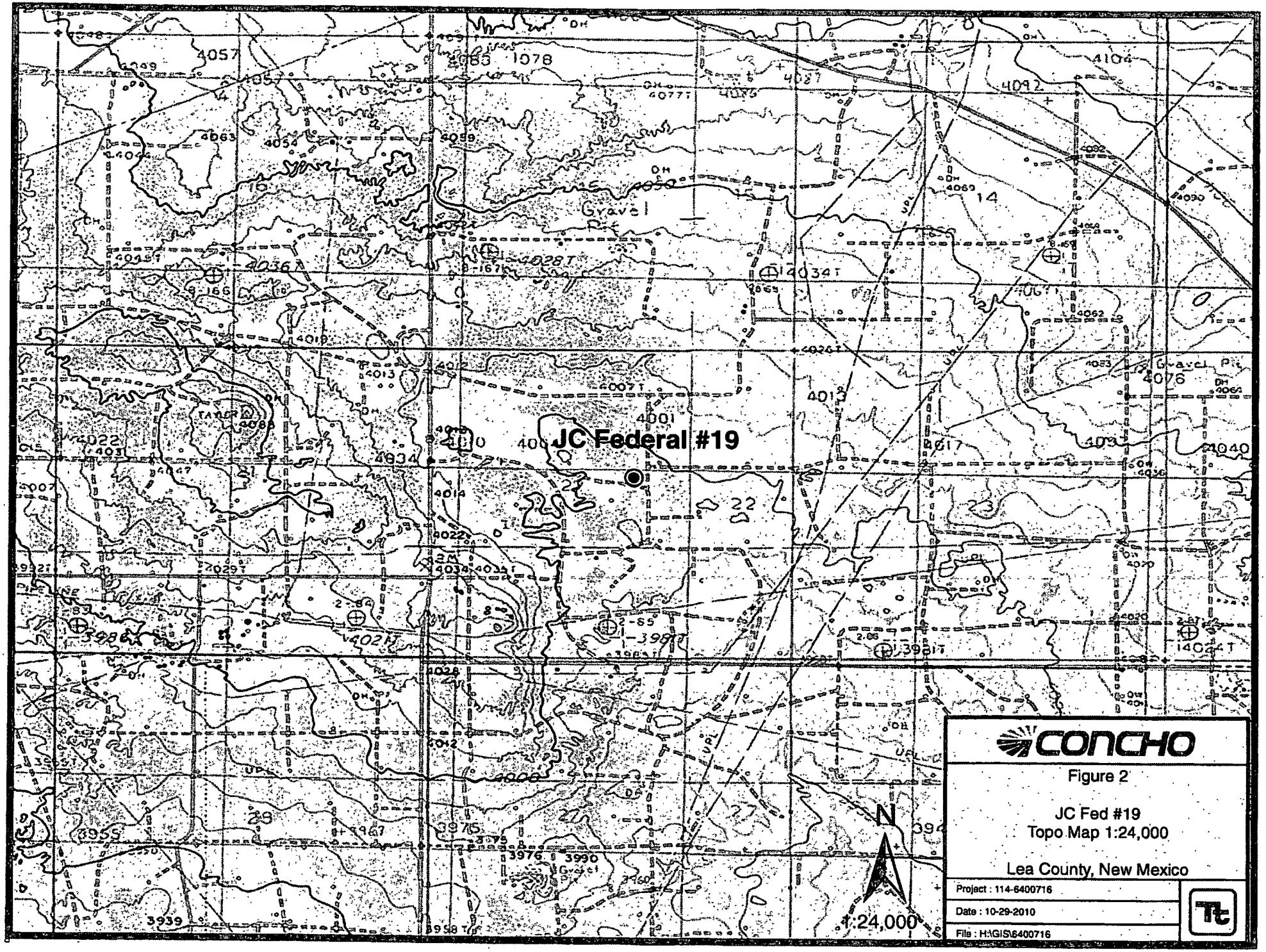
CONCHO

Figure 1

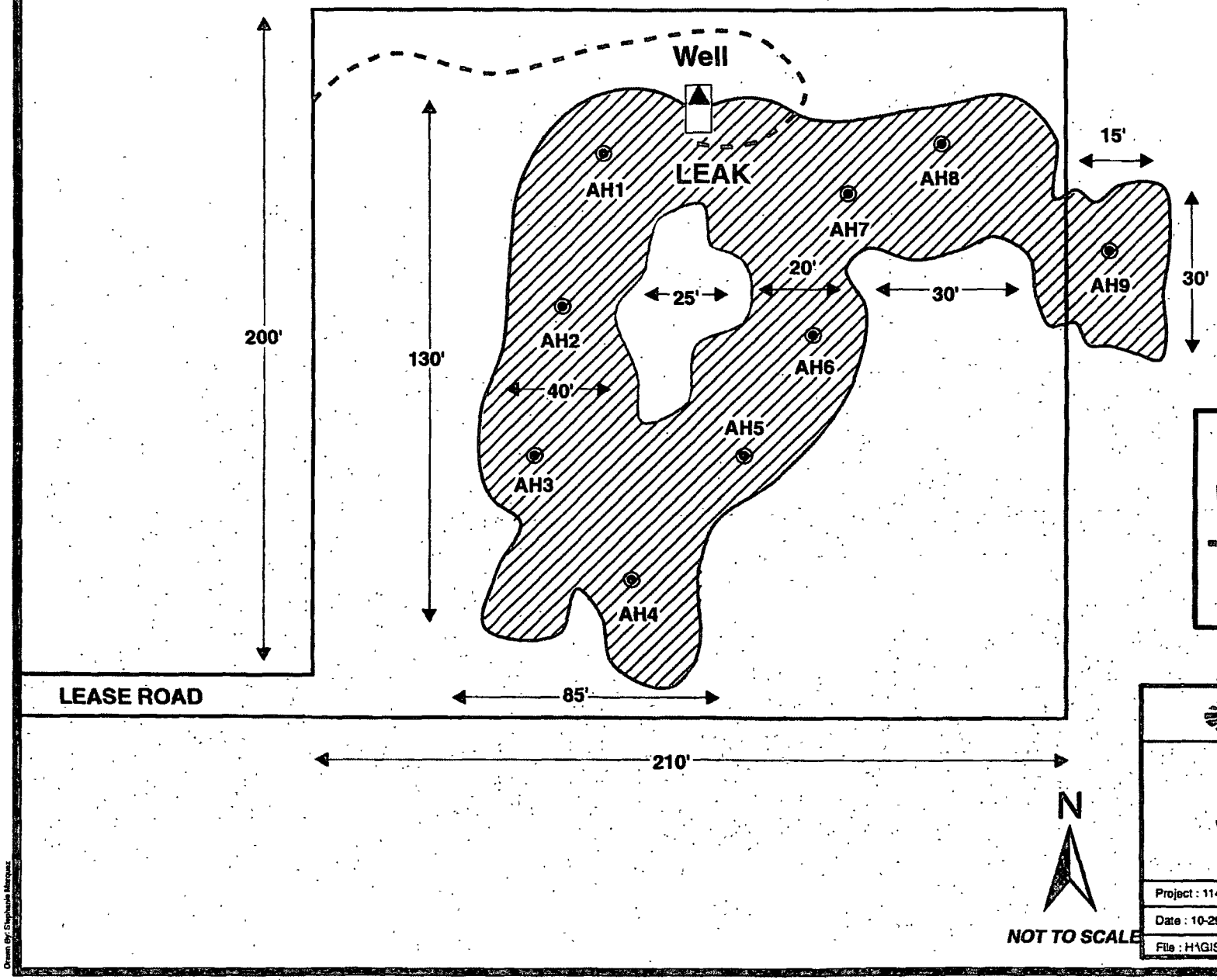
JC Fed #19
Topo Map 1:100,000

Lea County, New Mexico

Project : 114-6400716	
Date : 10-29-2010	
File : H:\GIS\6400716	


JC Federal #19
N
1:24,000
CONCHO
Figure 2
JC Fed #19
Topo Map 1:24,000
Lea County, New Mexico
Project : 114-6400716
Date : 10-29-2010
File : H:\GIS\6400716

JC Federal #19



EXPLANATION

- Spill
- Flowline
- Auger Hole Sample

CONCHO

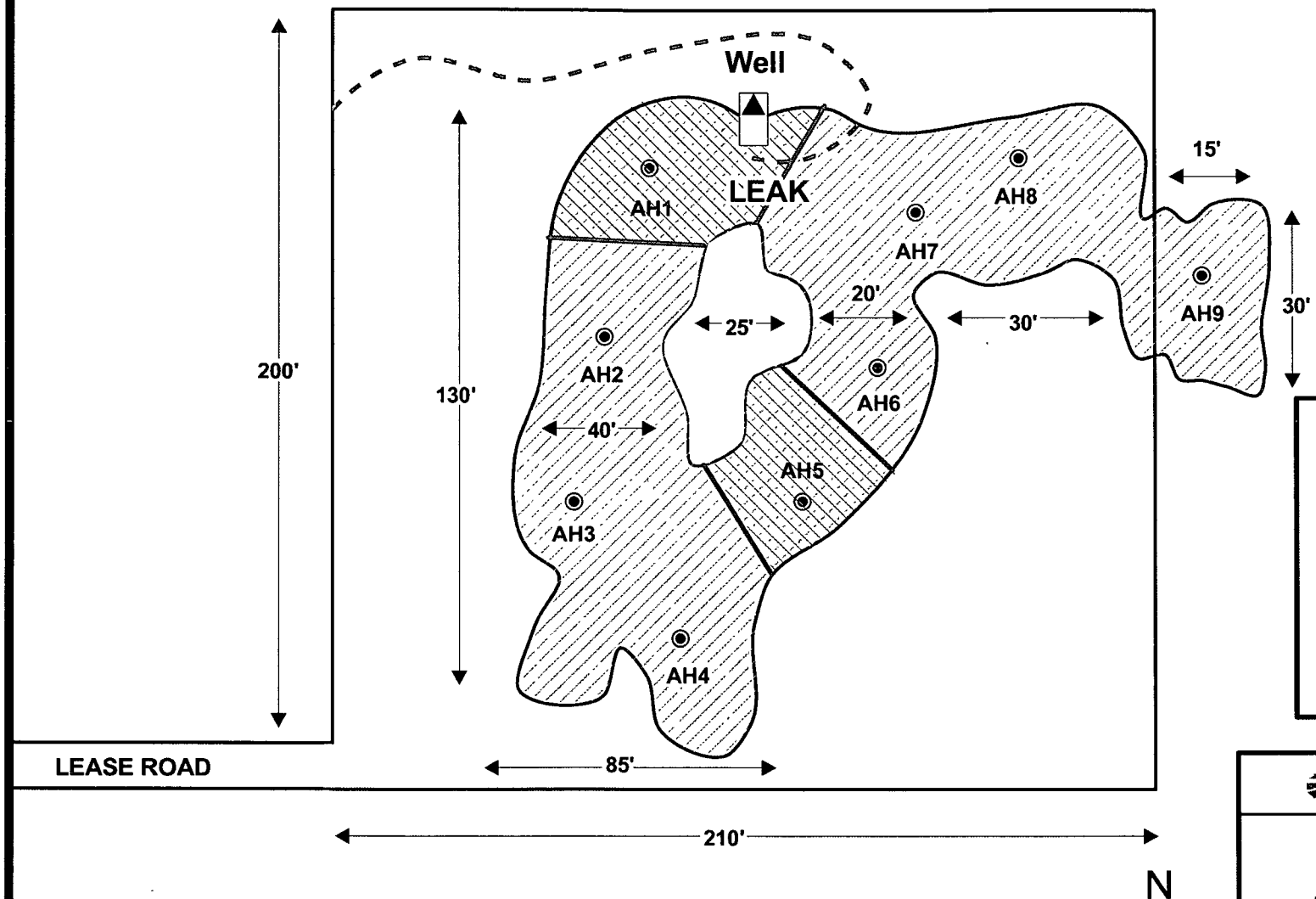
Figure 3
JC Fed #19
Spill Assessment Map
with Auger Hole Samples

Lea County, New Mexico

Project : 114-6400716
Date : 10-29-2010
File : H:\GIS\6400716

Drawn By: Stephanie Marquez

JC Federal #19



EXPLANATION

- Spill
- 1' Excavation
- 2.5' Excavation
- Flowline
- Auger Hole Sample

N

NOT TO SCALE

CONCHO

Figure 4

JC Fed #19
Proposed Excavation Map

Lea County, New Mexico

Project	114-6400716
Date	3-1-2011
File	H:\GIS\6400716

Drawn By: Stephanie Marquez

TABLES

Table 1
COG Operating LLC.
JC FEDERAL #19
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	10/25/2010	0-1'		X		166	623	789	<0.100	<0.100	0.185	0.516	3,420
	"	1-1.5'		X		-	-	-	-	-	-	-	2,130
	"	2-2.5'		X		-	-	-	-	-	-	-	1,720
	"	3-3.5'		X		-	-	-	-	-	-	-	890
	"	4-4.5'		X		-	-	-	-	-	-	-	430
	"	5-5.5'		X		-	-	-	-	-	-	-	<200
	"	6-6.5'		X		-	-	-	-	-	-	-	<200
	"	7-7.5'		X		-	-	-	-	-	-	-	665
AH-2	10/25/2010	0-1'		X		<2.00	<50.0	<50.0	-	-	-	-	573
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
AH-3	10/25/2010	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<200
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200

Table 1
COG Operating LLC.
JC FEDERAL #19
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-4	10/25/2010	0-1'		X		<2.00	<50.0	<50.0	-	-	-	-	311
	"	1-1.5'		X		-	-	-	-	-	-	-	276
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
AH-5	10/25/2010	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	2,190
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	815
	"	3-3.5'		X		-	-	-	-	-	-	-	209
	"	4-4.5'		X		-	-	-	-	-	-	-	800
	"	5-5.5'		X		-	-	-	-	-	-	-	<200
	"	6.-6.5'		X		-	-	-	-	-	-	-	<200
AH-6	10/25/2010	0-1'		X		70.2	149	219.2	<0.0200	0.0392	0.129	0.560	474
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200

Table 1
COG Operating LLC.
JC FEDERAL #19
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-7	10/25/2010	0-1'		X		<2.00	<50.0	<50.0	-	-	-	-	357
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
AH-8	10/25/2010	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	833
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
AH-9	10/25/2010	0-1'	1' BEB	X		<2.00	<50.0	<50.0	-	-	-	-	<200
	"	1-1.5'	1' BEB	X		-	-	-	-	-	-	-	<200
	"	2-2.5'	1' BEB	X		-	-	-	-	-	-	-	<200
	"	3-3.5'	1' BEB	X		-	-	-	-	-	-	-	<200
	"	4-4.5'	1' BEB	X		-	-	-	-	-	-	-	<200

BEB Below Excavation Bottom

(--) Not Analyzed

Proposed Excavation depths

APPENDIX A

Water Well Data
Average Depth to Groundwater (ft)
COG - JC Federal #19
Lea County, New Mexico

16 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 288
18	17	16	15	14	13 113
19	20	21	22	23	24
30	29	28	27	26	25
31 290	32	33	34	35	36

17 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 271	35	36

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 400
18	17	16	15	14 317	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 261	36

16 South 32 East

6	5	4	3 65	2 265	1 265
7	8	9	10	11	12 215
18	17	16 221	15	14	13 215
19 220	20	21 210	22	23 210	24
30	29	28	27	26 243	25
31	32	33	34	35	36 260

17 South 32 East

6	5	4 82	3 175	2 60	1 225
7	8	9	10	11 70 88	12 120
18	17	16	15	14	13
19	20	21	22 SITE	23	24
30 180	29	28	27	26	25
31	32	33	34	35	36

18 South 32 East

6	5	4 65	3	2	1
7 460 82	8	9	10	11	12
18	17	16 84	15	14	13
19	20 164	21	22 429	23	24
30	29	28	27	26	25
31	32	33	34 117	35	36

16 South 33 East

6	5 180	4 150	3 130	2 148	1 142
7	8 200	9	10 182	11	12 142
18	17 182	16 180	15 175	14 143	13 110
19	20	21	22	23 120	24
30 191	29	28 190	27 130	26 143	25 120
31 190	32 168	33	34 160	35	36

17 South 33 East

6 90	5	4	3 155	2 158	1 150
7 167	8 173	9 161	10	11	12
18 188	17 180	16	15	14	13 165
19	20 190	21	22	23 115	24
30	29	28	27	26	25
31	32	33	34	35 155	36

18 South 33 East

6	5	4	3	2	1
7	8 100	9	10 62	11	12 143 140
18	17 85	16	15	14 36	13 60
19 >140	20	21	22	23	24 195
30 35	29	28	27	26	25
31	32	33	34 177	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
- Tetra Tech Temporary well (TD 180' - Dry Well)

SAMPLE LOG

Boring/Well: TMW-1 Dry Well in Sec 30 17S- 32E
Project Number: 114-6400224
Client: COG
Site Location: Pronghorn Section 30
Location: Lea County, New Mexico
Total Depth 180
Date Installed: 07/14/09

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5-6	--	Brown fine grain sand
10-11	--	Buff limestone
15-16	--	Tan to buff calcareous sand with chert intermixed.
20-21	--	Tan calcareous sand
25-26	--	Tan fine grain sand
30-31	--	Tan to yellow sandy clay
35-36	--	Reddish clayey sand with gravel
40-41	--	Red gravelly fine grain sand
45-46	--	Red to buff gravelly calcareous sand
50-51	--	Red fine grain sand
55-56	--	Red sandy silt
60-61	--	Red silty clay (dry)
65-66	--	Red coarse grain clayey sand
70-71	--	Red fine grain sand
75-76	--	Red fine grain sand
80-81	--	Red gravelly sand
85-86	--	Red fine grain silty clay with some sand intermixed
90-91	--	Red fine grain silty clay with some sand intermixed
95-96	--	Red fine grain silty clay with some sand intermixed
100-101	--	Red fine grain silty clay with some sand intermixed
105-106	--	Tan red fine grain sand
110-111	--	Tan fine grain sand
115-116	--	Tan fine grain sand
120-121	--	Tan to red fine grain sand
130-131	--	Red clay of high plasticity (Red bed)
140-141	--	Red clay of high plasticity (Red bed)
150-151	--	Red clay of high plasticity (Red bed) intermixed with gravel
160-161	--	Red clay of high plasticity (Red bed) intermixed with gravel
170-171	--	Red clay of high plasticity (Red bed) intermixed with gravel
180-181	--	Red clay of high plasticity (Red bed)

Total Depth is 181 feet Groundwater was not encountered

APPENDIX B

Summary Report

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

Report Date: November 9, 2010

Work Order: 10102933

Project Location: Lea Co., NM
Project Name: COG/JC Fed. #19
Project Number: 114-6400716

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
249169	AH-1 0-1'	soil	2010-10-25	00:00	2010-10-29
249170	AH-1 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249171	AH-1 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249172	AH-1 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249173	AH-1 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249174	AH-1 5-5.5'	soil	2010-10-25	00:00	2010-10-29
249175	AH-1 6-6.5'	soil	2010-10-25	00:00	2010-10-29
249176	AH-1 7-7.5'	soil	2010-10-25	00:00	2010-10-29
249177	AH-2 0-1'	soil	2010-10-25	00:00	2010-10-29
249178	AH-2 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249179	AH-2 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249180	AH-2 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249181	AH-2 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249182	AH-3 0-1'	soil	2010-10-25	00:00	2010-10-29
249183	AH-3 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249184	AH-3 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249185	AH-3 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249186	AH-3 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249187	AH-4 0-1'	soil	2010-10-25	00:00	2010-10-29
249188	AH-4 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249189	AH-4 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249190	AH-4 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249191	AH-4 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249192	AH-5 0-1'	soil	2010-10-25	00:00	2010-10-29
249193	AH-5 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249194	AH-5 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249195	AH-5 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249196	AH-5 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249197	AH-5 5-5.5'	soil	2010-10-25	00:00	2010-10-29
249198	AH-5 6-6.5'	soil	2010-10-25	00:00	2010-10-29

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
249199	AH-6 0-1'	soil	2010-10-25	00:00	2010-10-29
249200	AH-6 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249201	AH-6 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249202	AH-6 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249203	AH-6 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249204	AH-7 0-1'	soil	2010-10-25	00:00	2010-10-29
249205	AH-7 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249206	AH-7 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249207	AH-7 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249208	AH-7 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249209	AH-8 0-1'	soil	2010-10-25	00:00	2010-10-29
249210	AH-8 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249211	AH-8 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249212	AH-8 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249213	AH-8 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249214	AH-9 0-1' 1' BEB	soil	2010-10-25	00:00	2010-10-29
249215	AH-9 1-1.5' 1' BEB	soil	2010-10-25	00:00	2010-10-29
249216	AH-9 2-2.5' 1' BEB	soil	2010-10-25	00:00	2010-10-29
249217	AH-9 3-3.5' 1' BEB	soil	2010-10-25	00:00	2010-10-29
249218	AH-9 4-4.5' 1' BEB	soil	2010-10-25	00:00	2010-10-29

	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)
249169 - AH-1 0-1'	<0.100	<0.100	**0.185**	**0.516**	**623**	**166**
249177 - AH-2 0-1'					<50.0	<2.00
249182 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
249187 - AH-4 0-1'					<50.0	<2.00
249192 - AH-5 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
249199 - AH-6 0-1'	<0.0200	**0.0392**	**0.129**	**0.560**	**149**	**70.2**
249204 - AH-7 0-1'					<50.0	<2.00
249209 - AH-8 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
249214 - AH-9 0-1' 1' BEB					<50.0	<2.00

Sample: 249169 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**3420**	mg/Kg	4.00

Sample: 249170 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**2130**	mg/Kg	4.00

Sample: 249171 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**1720**	mg/Kg	4.00

Sample: 249172 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**890**	mg/Kg	4.00

Sample: 249173 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**430**	mg/Kg	4.00

Sample: 249174 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249175 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249176 - AH-1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**665**	mg/Kg	4.00

Sample: 249177 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**573**	mg/Kg	4.00

Sample: 249178 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249179 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249180 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249181 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249182 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249183 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249184 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249185 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249186 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249187 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**311**	mg/Kg	4.00

Sample: 249188 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**276**	mg/Kg	4.00

Sample: 249189 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249190 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249191 - AH-4 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249192 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**2190**	mg/Kg	4.00

Sample: 249193 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249194 - AH-5 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**815**	mg/Kg	4.00

Sample: 249195 - AH-5 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**209**	mg/Kg	4.00

Sample: 249196 - AH-5 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**800**	mg/Kg	4.00

Sample: 249197 - AH-5 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249198 - AH-5 6-6.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249199 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		**474**	mg/Kg	4.00

Sample: 249200 - AH-6 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249201 - AH-6 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249202 - AH-6 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249203 - AH-6 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249204 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		**357**	mg/Kg	4.00

Sample: 249205 - AH-7 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249206 - AH-7 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249207 - AH-7 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249208 - AH-7 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249209 - AH-8 0-1'

Param	Flag	Result	Units	RL
Chloride		**833**	mg/Kg	4.00

Sample: 249210 - AH-8 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249211 - AH-8 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249212 - AH-8 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249213 - AH-8 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249214 - AH-9 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249215 - AH-9 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249216 - AH-9 2-2.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249217 - AH-9 3-3.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 249218 - AH-9 4-4.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

TRACEANALYSIS, INC.

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6015 Harris Parkway, Suite 140 Ft. Worth, Texas 76132 817•201•5260
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Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: November 9, 2010

Work Order: 10102933

Project Location: Lea Co., NM
Project Name: COG/JC Fed. #19
Project Number: 114-6400716

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
249169	AH-1 0-1'	soil	2010-10-25	00:00	2010-10-29
249170	AH-1 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249171	AH-1 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249172	AH-1 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249173	AH-1 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249174	AH-1 5-5.5'	soil	2010-10-25	00:00	2010-10-29
249175	AH-1 6-6.5'	soil	2010-10-25	00:00	2010-10-29
249176	AH-1 7-7.5'	soil	2010-10-25	00:00	2010-10-29
249177	AH-2 0-1'	soil	2010-10-25	00:00	2010-10-29
249178	AH-2 1-1.5'	soil	2010-10-25	00:00	2010-10-29

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
249179	AH-2 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249180	AH-2 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249181	AH-2 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249182	AH-3 0-1'	soil	2010-10-25	00:00	2010-10-29
249183	AH-3 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249184	AH-3 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249185	AH-3 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249186	AH-3 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249187	AH-4 0-1'	soil	2010-10-25	00:00	2010-10-29
249188	AH-4 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249189	AH-4 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249190	AH-4 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249191	AH-4 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249192	AH-5 0-1'	soil	2010-10-25	00:00	2010-10-29
249193	AH-5 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249194	AH-5 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249195	AH-5 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249196	AH-5 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249197	AH-5 5-5.5'	soil	2010-10-25	00:00	2010-10-29
249198	AH-5 6-6.5'	soil	2010-10-25	00:00	2010-10-29
249199	AH-6 0-1'	soil	2010-10-25	00:00	2010-10-29
249200	AH-6 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249201	AH-6 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249202	AH-6 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249203	AH-6 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249204	AH-7 0-1'	soil	2010-10-25	00:00	2010-10-29
249205	AH-7 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249206	AH-7 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249207	AH-7 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249208	AH-7 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249209	AH-8 0-1'	soil	2010-10-25	00:00	2010-10-29
249210	AH-8 1-1.5'	soil	2010-10-25	00:00	2010-10-29
249211	AH-8 2-2.5'	soil	2010-10-25	00:00	2010-10-29
249212	AH-8 3-3.5'	soil	2010-10-25	00:00	2010-10-29
249213	AH-8 4-4.5'	soil	2010-10-25	00:00	2010-10-29
249214	AH-9 0-1' 1' BEB	soil	2010-10-25	00:00	2010-10-29
249215	AH-9 1-1.5' 1' BEB	soil	2010-10-25	00:00	2010-10-29
249216	AH-9 2-2.5' 1' BEB	soil	2010-10-25	00:00	2010-10-29
249217	AH-9 3-3.5' 1' BEB	soil	2010-10-25	00:00	2010-10-29
249218	AH-9 4-4.5' 1' BEB	soil	2010-10-25	00:00	2010-10-29

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

Standard Flags

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

Case Narrative

Samples for project COG/JC Fed. #19 were received by TraceAnalysis, Inc. on 2010-10-29 and assigned to work order 10102933. Samples for work order 10102933 were received intact at a temperature of 3.5 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	64292	2010-11-01 at 11:00	74940	2010-11-01 at 13:18
BTEX	S 8021B	64310	2010-11-02 at 10:15	74966	2010-11-02 at 10:31
BTEX	S 8021B	64352	2010-11-03 at 10:15	75018	2010-11-03 at 12:04
Chloride (Titration)	SM 4500-Cl B	64249	2010-11-01 at 09:32	74992	2010-11-03 at 14:10
Chloride (Titration)	SM 4500-Cl B	64249	2010-11-01 at 09:32	74993	2010-11-03 at 14:11
Chloride (Titration)	SM 4500-Cl B	64249	2010-11-01 at 09:32	74994	2010-11-03 at 14:11
Chloride (Titration)	SM 4500-Cl B	64249	2010-11-01 at 09:32	74995	2010-11-03 at 14:12
Chloride (Titration)	SM 4500-Cl B	64249	2010-11-01 at 09:32	74996	2010-11-03 at 14:13
TPH DRO - NEW	S 8015 D	64334	2010-11-01 at 13:25	75008	2010-11-01 at 15:34
TPH GRO	S 8015 D	64292	2010-11-01 at 11:00	74941	2010-11-01 at 13:45
TPH GRO	S 8015 D	64310	2010-11-02 at 10:15	74969	2010-11-02 at 10:57
TPH GRO	S 8015 D	64352	2010-11-03 at 10:15	75019	2010-11-03 at 12:31

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 10102933 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: 249169 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	74940	Date Analyzed:	2010-11-01	Analyzed By:	AG
Prep Batch:	64292	Sample Preparation:	2010-11-01	Prepared By:	AG

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.100		mg/Kg	5	0.0200
Toluene		<0.100		mg/Kg	5	0.0200
Ethylbenzene		**0.185**		mg/Kg	5	0.0200
Xylene		**0.516**		mg/Kg	5	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		5.05	mg/Kg	5	5.00	101	66.5 - 148
4-Bromofluorobenzene (4-BFB)		5.83	mg/Kg	5	5.00	117	50 - 189

Sample: 249169 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**3420**		mg/Kg	100	4.00

Sample: 249169 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	75008	Date Analyzed:	2010-11-01	Analyzed By:	kg
Prep Batch:	64334	Sample Preparation:	2010-11-01	Prepared By:	AG

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		**623**		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[1]	228	mg/Kg	1	100	228	70 - 130

Sample: 249169 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	74941	Date Analyzed:	2010-11-01	Analyzed By:	AG
Prep Batch:	64292	Sample Preparation:	2010-11-01	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**166**	mg/Kg	5	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.86	mg/Kg	5	5.00	97	73.4 - 122
4-Bromofluorobenzene (4-BFB)		5.64	mg/Kg	5	5.00	113	50 - 138

Sample: 249170 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2130**	mg/Kg	100	4.00

Sample: 249171 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1720**	mg/Kg	100	4.00

[1] High surrogate recovery due to peak interference.

Sample: 249172 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**890**	mg/Kg	50	4.00

Sample: 249173 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**430**	mg/Kg	50	4.00

Sample: 249174 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249175 - AH-1 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249176 - AH-1 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**665**	mg/Kg	50	4.00

Sample: 249177 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**573**	mg/Kg	50	4.00

Sample: 249177 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	75008	Date Analyzed:	2010-11-01	Analyzed By:	kg
Prep Batch:	64334	Sample Preparation:	2010-11-01	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		106	mg/Kg	1	100	106	70 - 130

Sample: 249177 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	74941	Date Analyzed:	2010-11-01	Analyzed By:	AG
Prep Batch:	64292	Sample Preparation:	2010-11-01	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.67	mg/Kg	1	2.00	84	73.4 - 122
4-Bromofluorobenzene (4-BFB)		1.83	mg/Kg	1	2.00	92	50 - 138

Sample: 249178 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74992	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249179 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249180 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249181 - AH-2 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249182 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	74940	Date Analyzed:	2010-11-01	Analyzed By:	AG
Prep Batch:	64292	Sample Preparation:	2010-11-01	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.76	mg/Kg	1	2.00	88	66.5 - 148
4-Bromofluorobenzene (4-BFB)		1.89	mg/Kg	1	2.00	94	50 - 189

Sample: 249182 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249182 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	75008	Date Analyzed:	2010-11-01	Analyzed By:	kg
Prep Batch:	64334	Sample Preparation:	2010-11-01	Prepared By:	AG

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

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

Sample: 249182 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	74941	Date Analyzed:	2010-11-01	Analyzed By:	AG
Prep Batch:	64292	Sample Preparation:	2010-11-01	Prepared By:	AG

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<2.00		mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.72	mg/Kg	1	2.00	86	73.4 - 122
4-Bromofluorobenzene (4-BFB)		1.77	mg/Kg	1	2.00	88	50 - 138

Sample: 249183 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249184 - AH-3 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249185 - AH-3 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249186 - AH-3 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249187 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**311**	mg/Kg	50	4.00

Sample: 249187 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	75008	Date Analyzed:	2010-11-01	Analyzed By:	kg
Prep Batch:	64334	Sample Preparation:	2010-11-01	Prepared By:	AG

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

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

Sample: 249187 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	74941	Date Analyzed:	2010-11-01	Analyzed By:	AG
Prep Batch:	64292	Sample Preparation:	2010-11-01	Prepared By:	AG

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<2.00		mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[2]	1.16	mg/Kg	1	2.00	58	73.4 - 122
4-Bromofluorobenzene (4-BFB)		1.22	mg/Kg	1	2.00	61	50 - 138

Sample: 249188 - AH-4 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74993	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**276**		mg/Kg	50	4.00

[2]SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control. •

Sample: 249189 - AH-4 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249190 - AH-4 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249191 - AH-4 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249192 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	75018	Date Analyzed:	2010-11-03	Analyzed By:	AG
Prep Batch:	64352	Sample Preparation:	2010-11-03	Prepared By:	AG

Parameter	Flag	Result	RL Units	Dilution	RL
Benzene		<0.0200	mg/Kg	1	0.0200
Toluene		<0.0200	mg/Kg	1	0.0200

continued ...

sample 249192 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Ethylbenzene		<0.0200	mg/Kg	1	0.0200
Xylene		<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.96	mg/Kg	1	2.00	98	66.5 - 148
4-Bromofluorobenzene (4-BFB)		2.24	mg/Kg	1	2.00	112	50 - 189

Sample: 249192 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2190**	mg/Kg	100	4.00

Sample: 249192 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	75008	Date Analyzed:	2010-11-01	Analyzed By:	kg
Prep Batch:	64334	Sample Preparation:	2010-11-01	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		106	mg/Kg	1	100	106	70 - 130

Sample: 249192 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	75019	Date Analyzed:	2010-11-03	Analyzed By:	AG
Prep Batch:	64352	Sample Preparation:	2010-11-03	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	73.4 - 122
4-Bromofluorobenzene (4-BFB)		2.07	mg/Kg	1	2.00	104	50 - 138

Sample: 249193 - AH-5 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249194 - AH-5 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**815**	mg/Kg	50	4.00

Sample: 249195 - AH-5 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**209**	mg/Kg	50	4.00

Sample: 249196 - AH-5 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**800**	mg/Kg	50	4.00

Sample: 249197 - AH-5 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249198 - AH-5 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74994	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249199 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	74966	Date Analyzed:	2010-11-02	Analyzed By:	AG
Prep Batch:	64310	Sample Preparation:		Prepared By:	AG

Parameter	Flag	Result	RL Units	Dilution	RL
Benzene		<0.0200	mg/Kg	1	0.0200
Toluene		**0.0392**	mg/Kg	1	0.0200

continued ...

sample 249199 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Ethylbenzene		**0.129**	mg/Kg	1	0.0200
Xylene		**0.560**	mg/Kg	1	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[3]	1.28	mg/Kg	1	2.00	64	66.5 - 148
4-Bromofluorobenzene (4-BFB)		1.51	mg/Kg	1	2.00	76	50 - 189

Sample: 249199 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**474**	mg/Kg	50	4.00

Sample: 249199 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	75008	Date Analyzed:	2010-11-01	Analyzed By:	kg
Prep Batch:	64334	Sample Preparation:	2010-11-01	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**149**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		123	mg/Kg	1	100	123	70 - 130

Sample: 249199 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	74969	Date Analyzed:	2010-11-02	Analyzed By:	AG
Prep Batch:	64310	Sample Preparation:		Prepared By:	AG

[3]SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control. •

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**70.2**	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[4]	1.29	mg/Kg	1	2.00	64	73.4 - 122
4-Bromofluorobenzene (4-BFB)		2.00	mg/Kg	1	2.00	100	50 - 138

Sample: 249200 - AH-6 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249201 - AH-6 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249202 - AH-6 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

[4]Surrogate out due to peak interference.

Sample: 249203 - AH-6 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249204 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**357**	mg/Kg	50	4.00

Sample: 249204 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	75008	Date Analyzed:	2010-11-01	Analyzed By:	kg
Prep Batch:	64334	Sample Preparation:	2010-11-01	Prepared By:	AG

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

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

Sample: 249204 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	74969	Date Analyzed:	2010-11-02	Analyzed By:	AG
Prep Batch:	64310	Sample Preparation:		Prepared By:	AG

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<2.00		mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[5]	1.24	mg/Kg	1	2.00	62	73.4 - 122
4-Bromofluorobenzene (4-BFB)		1.33	mg/Kg	1	2.00	66	50 - 138

Sample: 249205 - AH-7 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249206 - AH-7 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249207 - AH-7 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

[5]SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control.

Sample: 249208 - AH-7 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74995	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249209 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	74966	Date Analyzed:	2010-11-02	Analyzed By:	AG
Prep Batch:	64310	Sample Preparation:		Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[6]	1.24	mg/Kg	1	2.00	62	66.5 - 148
4-Bromofluorobenzene (4-BFB)		1.42	mg/Kg	1	2.00	71	50 - 189

Sample: 249209 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**833**		mg/Kg	50	4.00

[6]SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control. •

Sample: 249209 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	75008	Date Analyzed:	2010-11-01	Analyzed By:	kg
Prep Batch:	64334	Sample Preparation:	2010-11-01	Prepared By:	AG

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

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

Sample: 249209 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	74969	Date Analyzed:	2010-11-02	Analyzed By:	AG
Prep Batch:	64310	Sample Preparation:		Prepared By:	AG

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<2.00		mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.64	mg/Kg	1	2.00	82	73.4 - 122
4-Bromofluorobenzene (4-BFB)		1.75	mg/Kg	1	2.00	88	50 - 138

Sample: 249210 - AH-8 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249211 - AH-8 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249212 - AH-8 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249213 - AH-8 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249214 - AH-9 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249214 - AH-9 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	75008	Date Analyzed:	2010-11-01	Analyzed By:	kg
Prep Batch:	64334	Sample Preparation:	2010-11-01	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		103	mg/Kg	1	100	103	70 - 130

Sample: 249214 - AH-9 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	74969	Date Analyzed:	2010-11-02	Analyzed By:	AG
Prep Batch:	64310	Sample Preparation:		Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[7]	1.02	mg/Kg	1	2.00	51	73.4 - 122
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	1	2.00	55	50 - 138

Sample: 249215 - AH-9 1-1.5' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

[7]SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control. •

Sample: 249216 - AH-9 2-2.5' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249217 - AH-9 3-3.5' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Sample: 249218 - AH-9 4-4.5' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74996	Date Analyzed:	2010-11-03	Analyzed By:	AR
Prep Batch:	64249	Sample Preparation:	2010-11-01	Prepared By:	AR

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

Method Blank (1) QC Batch: 74940

QC Batch:	74940	Date Analyzed:	2010-11-01	Analyzed By:	AG
Prep Batch:	64292	QC Preparation:	2010-11-01	Prepared By:	AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00750	mg/Kg	0.02
Toluene		<0.0109	mg/Kg	0.02
Ethylbenzene		<0.00630	mg/Kg	0.02

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method blank continued ...

Parameter	Flag	MDL Result	Units	RL
Xylene		<0.0144	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.00	mg/Kg	1	2.00	100	75.6 - 110
4-Bromofluorobenzene (4-BFB)		2.23	mg/Kg	1	2.00	112	41.5 - 139

Method Blank (1) QC Batch: 74941

QC Batch: 74941 Date Analyzed: 2010-11-01 Analyzed By: AG
Prep Batch: 64292 QC Preparation: 2010-11-01 Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.747	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	76.9 - 115
4-Bromofluorobenzene (4-BFB)		2.07	mg/Kg	1	2.00	104	45.8 - 147

Method Blank (1) QC Batch: 74966

QC Batch: 74966 Date Analyzed: 2010-11-02 Analyzed By: AG
Prep Batch: 64310 QC Preparation: 2010-11-02 Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00750	mg/Kg	0.02
Toluene		<0.0109	mg/Kg	0.02
Ethylbenzene		<0.00630	mg/Kg	0.02
Xylene		<0.0144	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.98	mg/Kg	1	2.00	99	75.6 - 110
4-Bromofluorobenzene (4-BFB)		2.20	mg/Kg	1	2.00	110	41.5 - 139

Method Blank (1) QC Batch: 74969

QC Batch: 74969 | Date Analyzed: 2010-11-02 | Analyzed By: AG
Prep Batch: 64310 | QC Preparation: 2010-11-02 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.747	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	76.9 - 115
4-Bromofluorobenzene (4-BFB)		2.02	mg/Kg	1	2.00	101	45.8 - 147

Method Blank (1) QC Batch: 74992

QC Batch: 74992 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 74993

QC Batch: 74993 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 74994

QC Batch: 74994 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 74995

QC Batch: 74995 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 74996

QC Batch: 74996 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 75008

QC Batch: 75008 | Date Analyzed: 2010-11-01 | Analyzed By: kg
Prep Batch: 64334 | QC Preparation: 2010-11-01 | Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<14.6	mg/Kg	50

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

Method Blank (1) QC Batch: 75018

QC Batch: 75018 | Date Analyzed: 2010-11-03 | Analyzed By: AG
Prep Batch: 64352 | QC Preparation: 2010-11-03 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00750	mg/Kg	0.02
Toluene		<0.0109	mg/Kg	0.02
Ethylbenzene		<0.00630	mg/Kg	0.02
Xylene		<0.0144	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.97	mg/Kg	1	2.00	98	75.6 - 110
4-Bromofluorobenzene (4-BFB)		2.22	mg/Kg	1	2.00	111	41.5 - 139

Method Blank (1) QC Batch: 75019

QC Batch: 75019 Date Analyzed: 2010-11-03 Analyzed By: AG
Prep Batch: 64352 QC Preparation: 2010-11-03 Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.747	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.05	mg/Kg	1	2.00	102	76.9 - 115
4-Bromofluorobenzene (4-BFB)		2.04	mg/Kg	1	2.00	102	45.8 - 147

Laboratory Control Spike (LCS-1)

QC Batch: 74940 Date Analyzed: 2010-11-01 Analyzed By: AG
Prep Batch: 64292 QC Preparation: 2010-11-01 Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.97	mg/Kg	1	2.00	<0.00750	98	81.7 - 120
Toluene	1.94	mg/Kg	1	2.00	<0.0109	97	81.8 - 120
Ethylbenzene	1.98	mg/Kg	1	2.00	<0.00630	99	79.8 - 120
Xylene	6.06	mg/Kg	1	6.00	<0.0144	101	74 - 123

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.00	mg/Kg	1	2.00	<0.00750	100	81.7 - 120	2	20
Toluene	1.94	mg/Kg	1	2.00	<0.0109	97	81.8 - 120	0	20
Ethylbenzene	2.00	mg/Kg	1	2.00	<0.00630	100	79.8 - 120	1	20
Xylene	6.11	mg/Kg	1	6.00	<0.0144	102	74 - 123	1	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)	1.98	1.79	mg/Kg	1	2.00	99	90	77.4 - 110

continued ...

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	2.25	2.04	mg/Kg	1	2.00	112	102	46 - 140

Laboratory Control Spike (LCS-1)

QC Batch: 74941 Date Analyzed: 2010-11-01 Analyzed By: AG
Prep Batch: 64292 QC Preparation: 2010-11-01 Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.3	mg/Kg	1	20.0	<0.747	92	56.5 - 98.2

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	18.9	mg/Kg	1	20.0	<0.747	94	56.5 - 98.2	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)	1.90	1.85	mg/Kg	1	2.00	95	92	76.5 - 118
4-Bromofluorobenzene (4-BFB)	1.99	1.94	mg/Kg	1	2.00	100	97	51.1 - 150

Laboratory Control Spike (LCS-1)

QC Batch: 74966 Date Analyzed: 2010-11-02 Analyzed By: AG
Prep Batch: 64310 QC Preparation: 2010-11-02 Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.98	mg/Kg	1	2.00	<0.00750	99	81.7 - 120
Toluene	1.94	mg/Kg	1	2.00	<0.0109	97	81.8 - 120
Ethylbenzene	1.97	mg/Kg	1	2.00	<0.00630	98	79.8 - 120
Xylene	6.02	mg/Kg	1	6.00	<0.0144	100	74 - 123

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.02	mg/Kg	1	2.00	<0.00750	101	81.7 - 120	2	20
Toluene	1.99	mg/Kg	1	2.00	<0.0109	100	81.8 - 120	2	20
Ethylbenzene	2.02	mg/Kg	1	2.00	<0.00630	101	79.8 - 120	2	20
Xylene	6.18	mg/Kg	1	6.00	<0.0144	103	74 - 123	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)	1.69	1.91	mg/Kg	1	2.00	84	96	77.4 - 110
4-Bromofluorobenzene (4-BFB)	1.89	2.17	mg/Kg	1	2.00	94	108	46 - 140

Laboratory Control Spike (LCS-1)

QC Batch: 74969 | Date Analyzed: 2010-11-02 | Analyzed By: AG
Prep Batch: 64310 | QC Preparation: 2010-11-02 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.9	mg/Kg	1	20.0	<0.747	94	56.5 - 98.2

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	19.2	mg/Kg	1	20.0	<0.747	96	56.5 - 98.2	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
Trifluorotoluene (TFT)	2.02	2.03	mg/Kg	1	2.00	101	102	76.5 - 118
4-Bromofluorobenzene (4-BFB)	2.10	2.08	mg/Kg	1	2.00	105	104	51.1 - 150

Laboratory Control Spike (LCS-1)

QC Batch: 74992 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.2	mg/Kg	1	100	<2.18	97	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	103	mg/Kg	1	100	<2.18	103	85 - 115	6	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 74993 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.3	mg/Kg	1	100	<2.18	97	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	5	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: 74994 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.1	mg/Kg	1	100	<2.18	97	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	5	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: 74995 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.2	mg/Kg	1	100	<2.18	97	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	103	mg/Kg	1	100	<2.18	103	85 - 115	6	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 74996 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	96.6	mg/Kg	1	100	<2.18	97	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	5	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: 75008 | Date Analyzed: 2010-11-01 | Analyzed By: kg
Prep Batch: 64334 | QC Preparation: 2010-11-01 | Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	230	mg/Kg	1	250	<14.6	92	47.5 - 144.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	224	mg/Kg	1	250	<14.6	90	47.5 - 144.1	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
n-Tricosane	121	119	mg/Kg	1	100	121	119	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 75018 | Date Analyzed: 2010-11-03 | Analyzed By: AG
Prep Batch: 64352 | QC Preparation: 2010-11-03 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.97	mg/Kg	1	2.00	<0.00750	98	81.7 - 120
Toluene	1.92	mg/Kg	1	2.00	<0.0109	96	81.8 - 120
Ethylbenzene	1.93	mg/Kg	1	2.00	<0.00630	96	79.8 - 120
Xylene	5.90	mg/Kg	1	6.00	<0.0144	98	74 - 123

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

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.00	mg/Kg	1	2.00	<0.00750	100	81.7 - 120	2	20
Toluene	1.94	mg/Kg	1	2.00	<0.0109	97	81.8 - 120	1	20
Ethylbenzene	1.97	mg/Kg	1	2.00	<0.00630	98	79.8 - 120	2	20
Xylene	6.03	mg/Kg	1	6.00	<0.0144	100	74 - 123	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
Trifluorotoluene (TFT)	1.88	1.90	mg/Kg	1	2.00	94	95	77.4 - 110
4-Bromofluorobenzene (4-BFB)	2.16	2.17	mg/Kg	1	2.00	108	108	46 - 140

Laboratory Control Spike (LCS-1)

QC Batch: 75019 | Date Analyzed: 2010-11-03 | Analyzed By: AG
Prep Batch: 64352 | QC Preparation: 2010-11-03 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.7	mg/Kg	1	20.0	<0.747	94	56.5 - 98.2

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	19.3	mg/Kg	1	20.0	<0.747	96	56.5 - 98.2	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)	1.97	1.90	mg/Kg	1	2.00	98	95	76.5 - 118
4-Bromofluorobenzene (4-BFB)	2.07	2.00	mg/Kg	1	2.00	104	100	51.1 - 150

Matrix Spike (MS-1) Spiked Sample: 249164

QC Batch: 74940 | Date Analyzed: 2010-11-01 | Analyzed By: AG
Prep Batch: 64292 | QC Preparation: 2010-11-01 | Prepared By: AG

continued ...

matrix spikes continued ...

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2.38	mg/Kg	1	2.00	<0.00750	119	75.7 - 125
Toluene		2.37	mg/Kg	1	2.00	<0.0109	118	74.4 - 125
Ethylbenzene	[8]	2.89	mg/Kg	1	2.00	<0.00630	144	72.2 - 128
Xylene		7.78	mg/Kg	1	6.00	<0.0144	130	63 - 131

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

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1.98	mg/Kg	1	2.00	<0.00750	99	75.7 - 125	18	20
Toluene		1.96	mg/Kg	1	2.00	<0.0109	98	74.4 - 125	19	20
Ethylbenzene	[9]	2.07	mg/Kg	1	2.00	<0.00630	104	72.2 - 128	33	20
Xylene	[10]	6.32	mg/Kg	1	6.00	<0.0144	105	63 - 131	21	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)	[11]	1.80	1.48	mg/Kg	1	2	90	74	78.8 - 109
4-Bromofluorobenzene (4-BFB)		2.02	1.66	mg/Kg	1	2	101	83	50 - 136

Matrix Spike (MS-1) Spiked Sample: 249127

QC Batch: 74941 | Date Analyzed: 2010-11-01 | Analyzed By: AG
Prep Batch: 64292 | QC Preparation: 2010-11-01 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.2	mg/Kg	1	20.0	<0.747	76	50 - 150

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

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	[12]	19.0	mg/Kg	1	20.0	<0.747	95	50 - 150	22	20

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

[8]Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[9]MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.
[10]MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.
[11]Surrogate out due to peak interference.
[12]MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	[13] [14]	0.954	1.18	mg/Kg	1	2	48	59	71.6 - 117
4-Bromofluorobenzene (4-BFB)		1.12	1.30	mg/Kg	1	2	56	65	50 - 170

Matrix Spike (MS-1) Spiked Sample: 249293

QC Batch: 74966 | Date Analyzed: 2010-11-02 | Analyzed By: AG
Prep Batch: 64310 | QC Preparation: 2010-11-02 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.39	mg/Kg	1	2.00	<0.00750	120	75.7 - 125
Toluene	2.36	mg/Kg	1	2.00	<0.0109	118	74.4 - 125
Ethylbenzene	2.45	mg/Kg	1	2.00	<0.00630	122	72.2 - 128
Xylene	7.48	mg/Kg	1	6.00	<0.0144	125	63 - 131

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.99	mg/Kg	1	2.00	<0.00750	100	75.7 - 125	18	20
Toluene	1.97	mg/Kg	1	2.00	<0.0109	98	74.4 - 125	18	20
Ethylbenzene	2.06	mg/Kg	1	2.00	<0.00630	103	72.2 - 128	17	20
Xylene	6.31	mg/Kg	1	6.00	<0.0144	105	63 - 131	17	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)	[15] [16]	0.884	1.46	mg/Kg	1	2	44	73	78.8 - 109
4-Bromofluorobenzene (4-BFB)		1.02	1.65	mg/Kg	1	2	51	82	50 - 136

Matrix Spike (MS-1) Spiked Sample: 249241

QC Batch: 74969 | Date Analyzed: 2010-11-02 | Analyzed By: AG
Prep Batch: 64310 | QC Preparation: 2010-11-02 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.7	mg/Kg	1	20.0	<0.747	94	50 - 150

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

[13]Surrogate out due to peak interference.
[14]Surrogate out due to peak interference.
[15]Surrogate out due to peak interference.
[16]Surrogate out due to peak interference.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	19.4	mg/Kg	1	20.0	<0.747	97	50 - 150	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)	[17] [18]	1.36	0.759	mg/Kg	1	2	68	38	71.6 - 117
4-Bromofluorobenzene (4-BFB)	[19]	1.56	0.911	mg/Kg	1	2	78	46	50 - 170

Matrix Spike (MS-1) Spiked Sample: 249178

QC Batch: 74992 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9820	mg/Kg	100	10000	<218	98	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10100	mg/Kg	100	10000	<218	101	85 - 115	3	20

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

Matrix Spike (MS-1) Spiked Sample: 249188

QC Batch: 74993 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10300	mg/Kg	100	10000	276	100	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10500	mg/Kg	100	10000	276	102	85 - 115	2	20

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

[17] Surrogate out due to peak interference.
[18] Surrogate out due to peak interference.
[19] Surrogate out due to peak interference.

Matrix Spike (MS-1) Spiked Sample: 249198

QC Batch: 74994 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9770	mg/Kg	100	10000	<218	98	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	9940	mg/Kg	100	10000	<218	99	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 249208

QC Batch: 74995 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10100	mg/Kg	100	10000	<218	101	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10300	mg/Kg	100	10000	<218	103	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 249218

QC Batch: 74996 | Date Analyzed: 2010-11-03 | Analyzed By: AR
Prep Batch: 64249 | QC Preparation: 2010-11-01 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9670	mg/Kg	100	10000	<218	97	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10000	mg/Kg	100	10000	<218	100	85 - 115	3	20

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

Matrix Spike (MS-1) Spiked Sample: 249214

QC Batch: 75008 | Date Analyzed: 2010-11-01 | Analyzed By: kg
Prep Batch: 64334 | QC Preparation: 2010-11-01 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	194	mg/Kg	1	250	<14.6	78	11.7 - 152.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	192	mg/Kg	1	250	<14.6	77	11.7 - 152.3	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
n-Tricosane	117	114	mg/Kg	1	100	117	114	70 - 130

Matrix Spike (MS-1) Spiked Sample: 249294

QC Batch: 75018 | Date Analyzed: 2010-11-03 | Analyzed By: AG
Prep Batch: 64352 | QC Preparation: 2010-11-03 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.90	mg/Kg	1	2.00	<0.00750	95	75.7 - 125
Toluene	1.85	mg/Kg	1	2.00	<0.0109	92	74.4 - 125
Ethylbenzene	1.86	mg/Kg	1	2.00	<0.00630	93	72.2 - 128
Xylene	5.68	mg/Kg	1	6.00	<0.0144	95	63 - 131

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.90	mg/Kg	1	2.00	<0.00750	95	75.7 - 125	0	20
Toluene	1.85	mg/Kg	1	2.00	<0.0109	92	74.4 - 125	0	20
Ethylbenzene	1.87	mg/Kg	1	2.00	<0.00630	94	72.2 - 128	0	20
Xylene	5.71	mg/Kg	1	6.00	<0.0144	95	63 - 131	0	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	1.89	mg/Kg	1	2	96	94	78.8 - 109
4-Bromofluorobenzene (4-BFB)	2.20	2.16	mg/Kg	1	2	110	108	50 - 136

Matrix Spike (MS-1) Spiked Sample: 249192

QC Batch: 75019 | Date Analyzed: 2010-11-03 | Analyzed By: AG
Prep Batch: 64352 | QC Preparation: 2010-11-03 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.6	mg/Kg	1	20.0	<0.747	93	50 - 150

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	19.8	mg/Kg	1	20.0	<0.747	99	50 - 150	6	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)	2.04	1.99	mg/Kg	1	2	102	100	71.6 - 117
4-Bromofluorobenzene (4-BFB)	2.15	2.10	mg/Kg	1	2	108	105	50 - 170

Standard (CCV-2)

QC Batch: 74940 | Date Analyzed: 2010-11-01 | Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.101	101	80 - 120	2010-11-01
Toluene		mg/Kg	0.100	0.0985	98	80 - 120	2010-11-01
Ethylbenzene		mg/Kg	0.100	0.101	101	80 - 120	2010-11-01
Xylene		mg/Kg	0.300	0.308	103	80 - 120	2010-11-01

Standard (CCV-3)

QC Batch: 74940 | Date Analyzed: 2010-11-01 | Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0964	96	80 - 120	2010-11-01
Toluene		mg/Kg	0.100	0.0933	93	80 - 120	2010-11-01
Ethylbenzene		mg/Kg	0.100	0.0954	95	80 - 120	2010-11-01
Xylene		mg/Kg	0.300	0.290	97	80 - 120	2010-11-01

Standard (CCV-2)

QC Batch: 74941 Date Analyzed: 2010-11-01 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.18	118	80 - 120	2010-11-01

Standard (CCV-3)

QC Batch: 74941 Date Analyzed: 2010-11-01 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.13	113	80 - 120	2010-11-01

Standard (CCV-1)

QC Batch: 74966 Date Analyzed: 2010-11-02 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0984	98	80 - 120	2010-11-02
Toluene		mg/Kg	0.100	0.0964	96	80 - 120	2010-11-02
Ethylbenzene		mg/Kg	0.100	0.0984	98	80 - 120	2010-11-02
Xylene		mg/Kg	0.300	0.301	100	80 - 120	2010-11-02

Standard (CCV-2)

QC Batch: 74966 Date Analyzed: 2010-11-02 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0967	97	80 - 120	2010-11-02
Toluene		mg/Kg	0.100	0.0937	94	80 - 120	2010-11-02
Ethylbenzene		mg/Kg	0.100	0.0944	94	80 - 120	2010-11-02
Xylene		mg/Kg	0.300	0.289	96	80 - 120	2010-11-02

Standard (CCV-1)

QC Batch: 74969 Date Analyzed: 2010-11-02 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.12	112	80 - 120	2010-11-02

Standard (CCV-2)

QC Batch: 74969 Date Analyzed: 2010-11-02 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.13	113	80 - 120	2010-11-02

Standard (ICV-1)

QC Batch: 74992 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.9	99	85 - 115	2010-11-03

Standard (CCV-1)

QC Batch: 74992 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-11-03

Standard (ICV-1)

QC Batch: 74993 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-11-03

Standard (CCV-1)

QC Batch: 74993 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2010-11-03

Standard (ICV-1)

QC Batch: 74994 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.1	99	85 - 115	2010-11-03

Standard (CCV-1)

QC Batch: 74994 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-11-03

Standard (ICV-1)

QC Batch: 74995 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-11-03

Standard (CCV-1)

QC Batch: 74995 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.0	99	85 - 115	2010-11-03

Standard (ICV-1)

QC Batch: 74996 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.7	100	85 - 115	2010-11-03

Standard (CCV-1)

QC Batch: 74996 Date Analyzed: 2010-11-03 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-11-03

Standard (CCV-1)

QC Batch: 75008 Date Analyzed: 2010-11-01 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	244	98	80 - 120	2010-11-01

Standard (CCV-2)

QC Batch: 75008 Date Analyzed: 2010-11-01 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	213	85	80 - 120	2010-11-01

Standard (CCV-3)

QC Batch: 75008 Date Analyzed: 2010-11-01 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	213	85	80 - 120	2010-11-01

Standard (CCV-1)

QC Batch: 75018 Date Analyzed: 2010-11-03 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.103	103	80 - 120	2010-11-03
Toluene		mg/Kg	0.100	0.100	100	80 - 120	2010-11-03
Ethylbenzene		mg/Kg	0.100	0.102	102	80 - 120	2010-11-03
Xylene		mg/Kg	0.300	0.312	104	80 - 120	2010-11-03

Standard (CCV-2)

QC Batch: 75018 Date Analyzed: 2010-11-03 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0945	94	80 - 120	2010-11-03
Toluene		mg/Kg	0.100	0.0914	91	80 - 120	2010-11-03
Ethylbenzene		mg/Kg	0.100	0.0911	91	80 - 120	2010-11-03
Xylene		mg/Kg	0.300	0.278	93	80 - 120	2010-11-03

Standard (CCV-1)

QC Batch: 75019 Date Analyzed: 2010-11-03 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.14	114	80 - 120	2010-11-03

Standard (CCV-2)

QC Batch: 75019 Date Analyzed: 2010-11-03 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.11	111	80 - 120	2010-11-03

Xwo #: 18102933

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:	SITE MANAGER:
COG	Ike Tavarez

PROJECT NO.:	PROJECT NAME:
114-4400716	COG / JC Fed # 14 Lea Co., NM

LAB I.D. NUMBER	DATE 2010	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 8082/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
249169	10/25		S		X	AH-1 0-1'	1				X			X											X				
170						AH-1 1'-1.5'																							
171						AH-1 2'-2.5'																							
172						AH-1 3'-3.5'																							
173						AH-1 4'-4.5'																							
174						AH-1 5'-5.5'																							
175						AH-1 6'-6.5'																							
176						AH-1 7'-7.5'																							
177						AH-2 0-1'								X															
178						AH-2 1'-1.5'																							

RELINQUISHED BY: (Signature)	Date: 10/25/10 Time: 1100	RECEIVED BY: (Signature)	Date: 10/29/10 Time: 1100
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) ST / IF — Date: 10/25/10 Time:

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.5°C intact

REMARKS: If total TPH exceeds 1000 mg/kg run deeper samples. If 2nd BTEX or 5 highest TPH. If total BTEX exceeds 50 mg/kg or Benzene exceeds 10 mg/kg run deeper samples

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

XAll tests-Midland

dWO#: 10102933

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.: 114-1400716

PROJECT NAME: COG / JC Fed #19
Lea Co, NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
24979	10/25		S		X	AH-2 2'-2.5'	1				X	
180						AH-2 3'-3.5'						
181						AH-2 4'-4.5'						
182						AH-3 0-1'						
183						AH-3 1'-1.5'						
184						AH-3 2'-2.5'						
185						AH-3 3'-3.5'						
186						AH-3 4'-4.5'						
187						AH-4 0-1'						
188						AH-4 1'-1.5'						

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: 10/25/10 Time: 1100 — RECEIVED BY: (Signature) — Date: 10/26/10 Time: 1150

SAMPLED BY: (Print & Initial) JT/TF — Date: 10/25/10 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: TX ZIP: CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.5°C intact

REMARKS: If total TPH exceeds 1,000 mg/kg run deeper samples / Run BTEX on 5 highest TPH. If total BTEX exceeds 50 mg/kg or Benzene exceeds 10 mg/kg run deeper samples

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

XTO #: 1010 2933

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.: 114-6400N	PROJECT NAME: COG / JC Fed # 19 Lea Co NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD (Ext. to C35)	TX1005	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
249189	10/25		S		X	AH-4 2'-2.5'	1				X															X				
190						AH-4 3'-3.5'																									
191						AH-4 4'-4.5'																									
192						AH-5 0-1'									X																
193						AH-5 1'-1.5'																									
194						AH-5 2'-2.5'																									
195						AH-5 3'-3.5'																									
196						AH-5 4'-4.5'																									
197						AH-5 5'-5.5'																									
198						AH-5 6'-6.5'																									

RELINQUISHED BY: (Signature)	Date: 10/29/10 Time: 1:00	RECEIVED BY: (Signature)	Date: 10/29/10 Time: 11:00
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) JT | TF — Date: 10/25/10 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 — RECEIVED BY: (Signature)
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED: 3.5° C intact

REMARKS: If total TPH exceeds 1,000 mg/kg run deeper samples / Run BTEX on 5 highest TPH If total BTEX exceeds 50 mg/kg or Benzene exceeds 10 mg/kg run deeper samples

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

XTO #: 1op2933

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:	SITE MANAGER:
COG	Ike Tavarez

PROJECT NO.:	PROJECT NAME:
114-6406716	COG / JC Fed #19

LAB I.D. NUMBER	DATE 2010	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	CHLORIDES	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
249199	10/25		S		X	AH-6 0-1'	1				X			X											X			
200						AH-6 1'-1.5'																							
201						AH-6 2'-2.5'																							
202						AH-6 3'-3.5'																							
203						AH-6 4'-4.5'																							
204						AH-7 0-1'								X															
205						AH-7 1'-1.5'																							
206						AH-7 2'-2.5'																							
207						AH-7 3'-3.5'																							
208						AH-7 4'-4.5'																							

RELINQUISHED BY: (Signature)	Date: 10/27/10 Time: 11:00	RECEIVED BY: (Signature)	Date: 10/29/10 Time: 11:30
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

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

SAMPLE SHIPPED BY: (Circle) PEDEX 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: TX ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED: 3.5° c intact

REMARKS: If total TPH exceeds 1,000 mg/kg run deeper samples. Run BTEX on 5' higher TPH. If total BTEX exceeds 50 mg/kg or Benzene exceeds 10 mg/kg run deeper samples

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

Xwo #: 10102933

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: 5 of 5

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-1400716
PROJECT NAME: COG / JC Fed #19
Lea Co. NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD.	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
249209	10/25		S		X	AH-8 0-1'	1				X				X											X				
210						AH-8 1'-1.5'																									
211						AH-8 2'-2.5'																									
212						AH-8 3'-3.5'																									
213						AH-8 4'-4.5'																									
214						AH-9 0-1' 1'BEB									X																
215						AH-9 1'-1.5' 1'BEB																									
216						AH-9 2'-2.5' 1'BEB																									
217						AH-9 3'-3.5' 1'BEB																									
218						AH-9 4'-4.5' 1'BEB																									

RELINQUISHED BY: (Signature) — Date: 10/29/10 Time: 1100 — RECEIVED BY: (Signature) — Date: 10/29/10 Time: 1130
SAMPLED BY: (Print & Initial) JT / TF — Date: 10/25/10 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: TX ZIP:
CONTACT: PHONE: DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.5c INTACT

REMARKS: If total TPH exceeds 1,000 mg/kg run deeper samples / Run BTEX on 5 highest TPH If total BTEX exceeds 50 mg/kg or Benzene exceeds 10 mg/kg run deeper samples

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

APPENDIX C

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, 2002

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 Repo

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	JC Federal #19	Facility Type	Well

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-025-38995

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	22	17S	32E	2160	North	2310	East	Lea

Latitude 32 49.288 **Longitude** 103 45.195

NATURE OF RELEASE

Type of Release Produced fluid (oil and water)	Volume of Release 15bbls	Volume Recovered 12bbls
Source of Release Stuffing box	Date and Hour of Occurrence 10/10/2010	Date and Hour of Discovery 10/10/2010 6:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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 stuffing box bolts were loose which allowed fluid to be released as the well pressured up. The stuffing box has been re-packed and the backpressure assembly has been cleaned,

Describe Area Affected and Cleanup Action Taken.*

Initially 15bbls of produced fluid was released from the stuffing box and we were able to recover 12bbls with a vacuum truck. The dimensions of the spill area measured 10 yards wide x 50 yards long to the south, east, and west of the well on the location. Also, to the east of the well pad a 3' x 30' stream went into the pasture. (The release consisted of oil and produced water, 9bbls of oil and 6bbls of produced water). The chloride concentration of the produced water is 135,000 mg/l. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM prior to any significant remediation work.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Josh Russo	Approved by District Supervisor:	
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 10/15/2010 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary