SITE INFORMATION

Report Type: Closure Report

General Site Information:		
Site:	Skelly Unit 942 Tank Battery	
Company:	COG Operating LLC	
Section, Township and Range	Unit B Sec. 22 T-17S R-31E	
Lease Number:	API 30-015-43645 NM - 029419A	
County:	Eddy County	
GPS:	32.82443° N	103.85564° W
Surface Owner:	Federal	
Mineral Owner:		
Directions:	From the intersection of Hwy 82 and 529, travel east on 82 for 1.9 mi, left 1.5 mi, left 0.1 mi to location	

Release Data:	
Date Released:	3/20/2011
Type Release:	Oil
Source of Contamination:	Oil tank ran over
Fluid Released:	15 bbls
Fluids Recovered:	14 bbls

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300		1910 N. Big Spring
P.O. Box			
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		432-682-4559
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		ike.tavarez@tetratech.com

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

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	5,000

TETRA TECH

October 3, 2011

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
1301 West Grand Avenue
Artesia, New Mexico 88210

Re: Closure Request for the COG Operating LLC., Skelly Unit 942, Unit B, Section 22, Township 17 South, Range 31 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Skelly Unit 942 Tank Battery, Unit B, Section 22, Township 17 South, Range 31 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.81730°, W 104.11283°. 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 March 20, 2011, and released approximately fifteen (15) barrels of oil from an oil tank running over as a result of rapid increase in production volume. Fourteen (14) barrels of fluid were recovered. To alleviate the problem, COG personnel returned the wells back into production at a slower rate after lease shut in. The entire spill was contained inside the facility berm and measured approximately 10' x 75'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 19. Based on the site location and NMOCD groundwater map, the average depth to groundwater in this area is greater than 100' below surface. The well report is shown in Appendix B.

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

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 April 20, 2011, Tetra Tech personnel inspected and sampled the spill area. Two auger holes (AH-1 and AH-2) 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 C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, auger hole (AH-1) exceeded the RRAL for TPH and total BTEX at 0-1', but decline below the RRAL at 1.0' below surface. Auger hole (AH-2) did show a deeper impact to the soils. The TPH and benzene concentrations declined below the RRAL at 2.0' and 3.0', respectively. However, the total BTEX showed a concentration of 84.4 mg/kg at 3.0' and was not vertically defined.

Closure Activities

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. Once the site was excavated to the appropriate depths, confirmation samples were collected from the site. A bottom hole sample (T-1) at 4.0' was collected and exhibited BTEX concentrations below the RRAL. As requested by the BLM, sidewall samples were collected for chloride evaluation and results are summarized in Table 2. Due to electrical line and equipment in the area, BLM approved the sample at CS-1 (west wall) of 1,570 mg/kg.

TETRA TECH

Approximately 60 cubic yards of impacted soil was transported to disposal. Based on the results, the excavation was backfilled with clean soil and brought up to surface grade. The final depths of the soil remediation for the entire spill met or exceeded the depths of the approved work plan. The excavation depths are highlighted in Table 1 and shown on Figure 4. A copy of the C-141 (Final) is included in Appendix A.

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

Respectfully submitted,
TETRA TECH

Ike Tavarez
Project Manager

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

Figures

FIGURE NO. 2
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

TN
MN (7.8°E)

Scale 1 : 24,000
0 600 1200 1800 2400 3000 ft
0 200 400 600 800 1000 m
1" = 2,000.0 ft Data Zoom 13-1

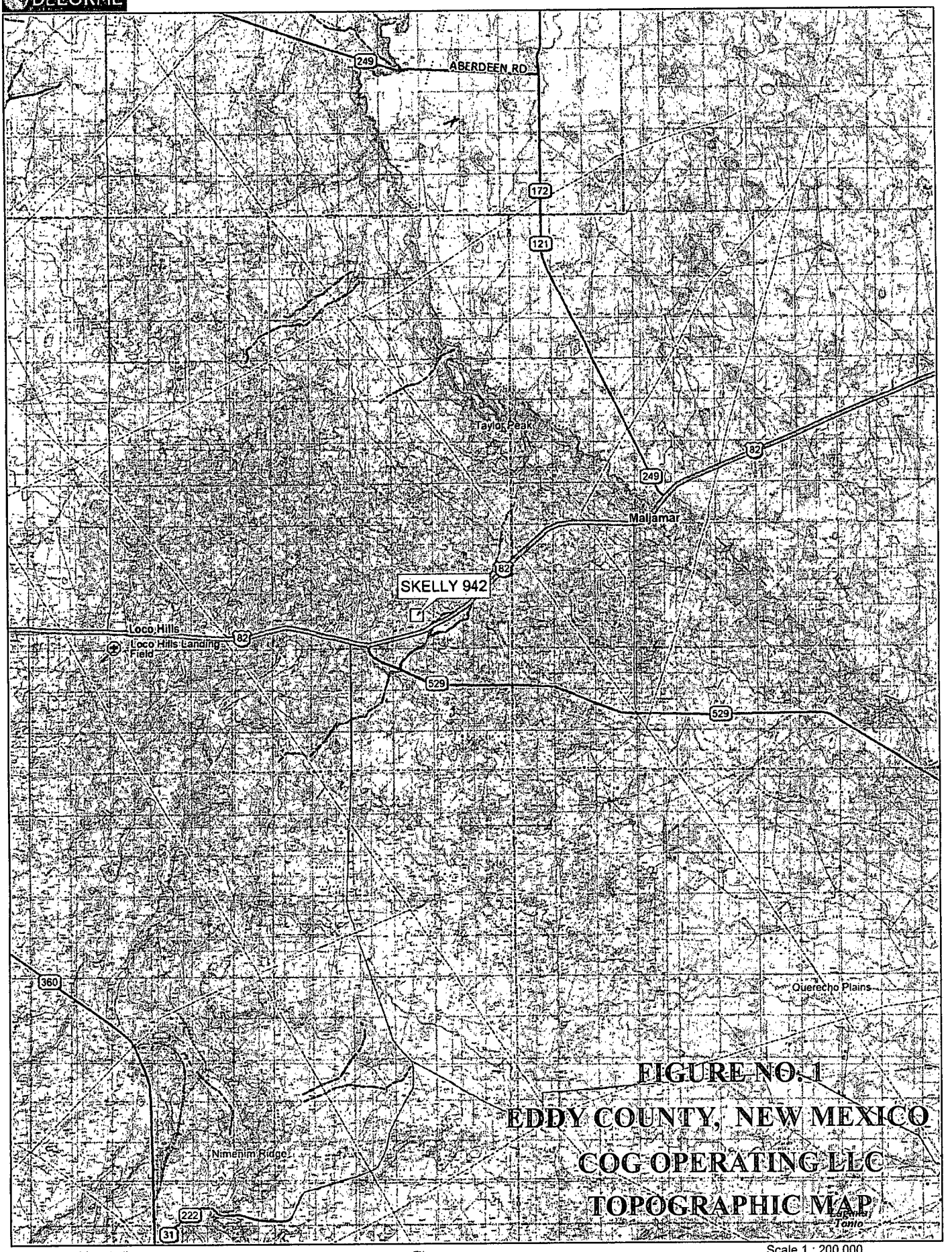


FIGURE NO. 1

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

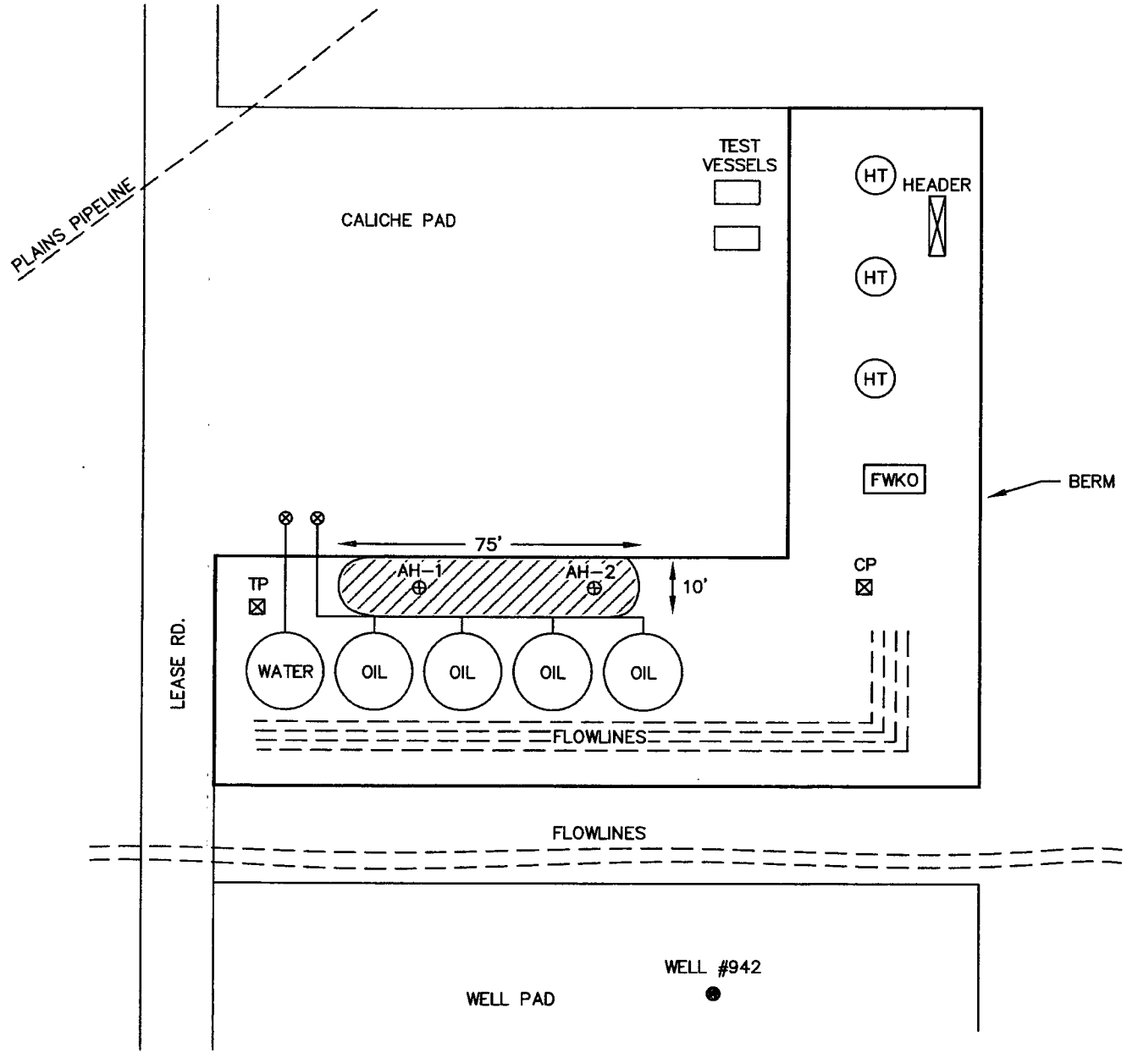
TN

MN (7.7°E)

Scale 1 : 200,000

1" = 3.16 mi

Data Zoom 10-0



SPILL AREA

AUGER HOLE SAMPLE LOCATIONS

NOT TO SCALE

FIGURE NO. 3

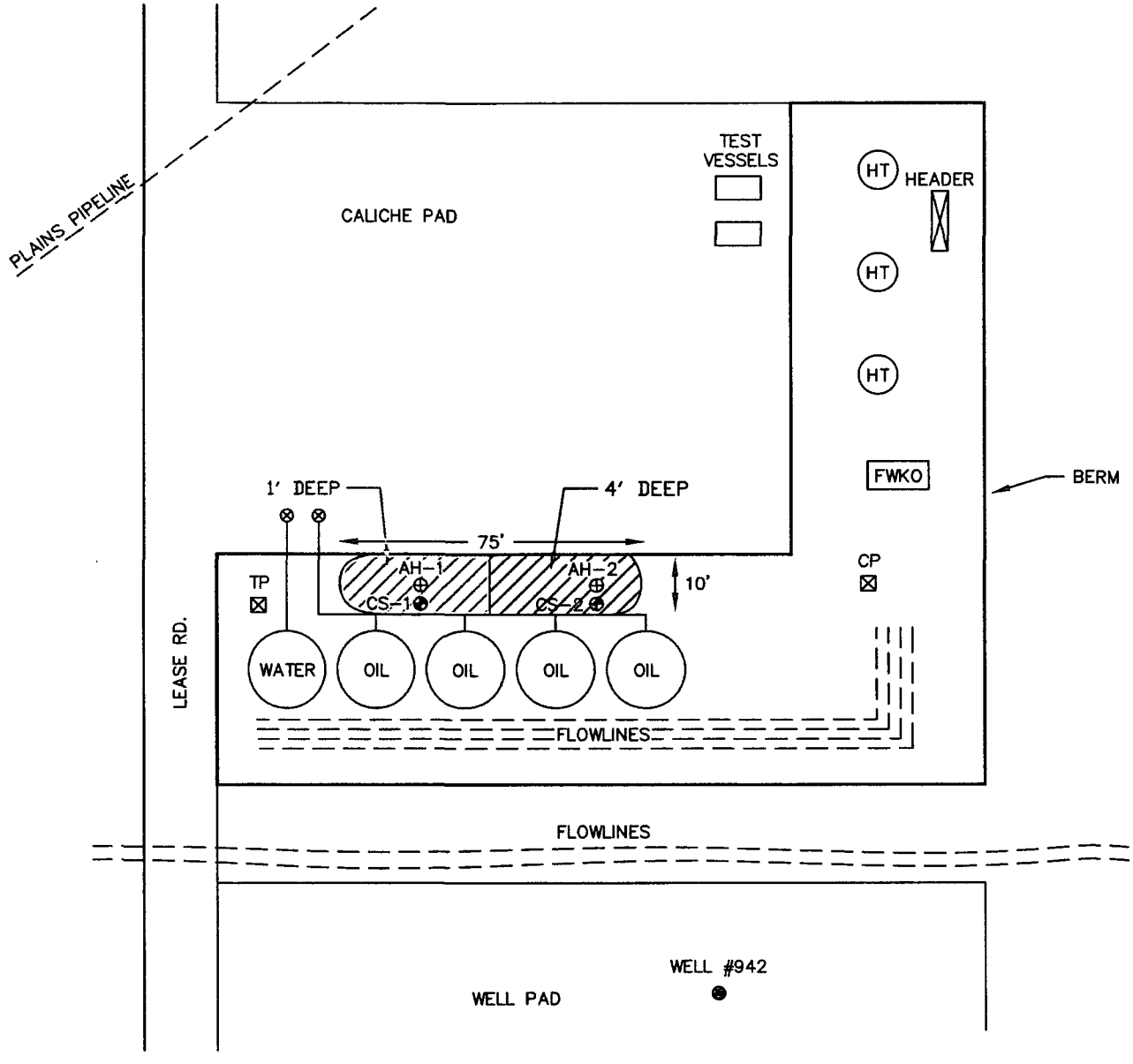
EDDY COUNTY, NEW MEXICO

COG OPERATING

SKELLY #942 TB

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 6/14/2011
DWN. BY: IM
FILE: H:\COG\6400872 SKELLY #942 TB



▨ EXCAVATION DEPTHS
⊕ AUGER HOLE SAMPLE LOCATIONS
⊕ CONFIRMATION SAMPLE LOCATIONS

NOT TO SCALE

DATE:	6/14/2011
DWN. BY:	IM
FILE:	H:\COG\6400872 SKELLY #942 TB

FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

COG OPERATING

SKELLY #942 TB

TETRA TECH, INC.
MIDLAND, TEXAS

Tables

Table 1
COG Operating LLC.
SKELLY 942
EDDY COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	4/20/2011	0-1'		X	2,010	3,890	5,900	20.2	120	85.3	97.2	322.7	202
	"	1-1.5'	X		99.6	291	390.6	0.245	0.881	0.372	1.54	3.0	643
	"	2-2.5'	X		-	-	-	-	-	-	-	-	<200
	"	3-3.5'	X		-	-	-	-	-	-	-	-	343
AH-2	4/20/2011	0-1'		X	2,150	4,390	6,540	22.1	138	102	127	389.1	<200
	"	1-1.5'		X	3,580	1,940	5,520	48.5	171	110	128	457.5	<200
	"	2-2.5'		X	3,590	724	4,314	76.7	181	103	113	473.7	<200
	"	3-3.5'		X	903	279	1,182	0.789	25.4	28	30.2	84.4	507
T-1	8/30/2011	Bottom Hole 4.0'	X		-	-	-	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-

BEB Below Excavation Bottom

(-) Not Analyzed

Excavated Depths

Table 2
COG Operating LLC.
SKELLY UNIT 942 TANK BATTERY
EDDY COUNTY, NEW MEXICO

Sample ID		Sample Date	Soil Status		Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed						
CS-1	North Wall	8/30/2011	X		-	-	-	-	-	<200
	South Wall	"	X		-	-	-	-	-	<200
	West Wall	"	X		-	-	-	-	-	1,570
CS-2	South Wall	8/30/2011	X		-	-	-	-	-	393
	North Wall	"	X		-	-	-	-	-	565
	East Wall	"	X		-	-	-	-	-	<200

BEB Below Excavation Bottom

(-) Not Analyzed

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Skelly Unit 942	Facility Type	Tank Battery

Surface Owner	Mineral Owner	Lease No.
Federal		(API#) 30-015-43645 NMNM – 029419A

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	22	17S	31E					Eddy

Latitude 32 49.510 **Longitude** 103 51.384

NATURE OF RELEASE

Type of Release Oil	Volume of Release 15bbls	Volume Recovered 14bbls
Source of Release Oil Tank	Date and Hour of Occurrence 03/20/2011	Date and Hour of Discovery 03/20/2011 7:00 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.	

RECEIVED
OCT 17 2011
NMOCD ARTESIA

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The oil tank ran over at the facility due to the lease being turned on after curtailment and rapidly increased production volumes. Return wells into production at a slower rate after a lease is shut in.

Describe Area Affected and Cleanup Action Taken.*

Initially 15bbls of oil was released from the oil tank and we were able to recover 14bbls with a vacuum truck. The spill was completely contained inside the berm walls of the facility. The dimensions of the spill area measured 20' x 20'next to the oil tank. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD / BLM for approval prior to any significant remediation work.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: Josh Russo	Approved by District Supervisor:
Title: HSE Coordinator	Approval Date: / Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval: / Attached ☐
Date: 03/25/2011 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **COG Operating LLC**	Contact **Pat Ellis**
Address **550 W. Texas, Suite 1300 Midland, Texas 79701**	Telephone No. **(432) 685-4332**
Facility Name **Skelly Unit 942**	Facility Type **Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. API 30-025-43645

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	22	17S	31E					Eddy

Latitude N 32 49.510° **Longitude** W 103 51.384°

NATURE OF RELEASE

Type of Release: Oil	Volume of Release 15 bbls	Volume Recovered 14 bbls
Source of Release: Oil Tank	Date and Hour of Occurrence 3/20/2011	Date and Hour of Discovery 3/20/2011 7:00 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. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

RECEIVED
OCT 17 2011
NMOCD ARTESIA

Describe Cause of Problem and Remedial Action Taken.*

The oil tanks ran over at the facility due to the lease being turned on after curtailment and rapidly increased production volumes. Return wells into production at a slower rate after a lease shut in.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech inspected site and collected soil samples to define spills extent. The impacted soil, above the RRAL, were excavated and hauled for proper disposal. Based on the confirmation samples, the excavation was backfilled with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD and BLM for review.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez Agent for COG	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 10-4-11 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Skelly Unit #942
Eddy County, New Mexico

16 South 30 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	35	36

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

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 30 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	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 **SITE**	23	24
30	29	28	27	26	25
31	32	33	34 **271**	35	36

17 South 32 East

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

18 South 30 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	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

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

- 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
- SITE - Skelly Unit 942

Appendix C

Summary Report

Kim Dorey
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: May 5, 2011

Work Order: 11042205

Project Location: Eddy Co., NM
Project Name: COG/Skelly 942
Project Number: 114-6400872

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
264388	AH-1 0-1'	soil	2011-04-20	00:00	2011-04-21
264389	AH-1 1-1.5'	soil	2011-04-20	00:00	2011-04-21
264390	AH-1 2-2.5'	soil	2011-04-20	00:00	2011-04-21
264391	AH-1 3-3.5'	soil	2011-04-20	00:00	2011-04-21
264392	AH-2 0-1'	soil	2011-04-20	00:00	2011-04-21
264393	AH-2 1-1.5'	soil	2011-04-20	00:00	2011-04-21
264394	AH-2 2-2.5'	soil	2011-04-20	00:00	2011-04-21
264395	AH-2 3-3.5'	soil	2011-04-20	00:00	2011-04-21

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
264388 - AH-1 0-1'	**20.2**	**120**	**85.3**	**97.2**	**3890**	**2010**
264389 - AH-1 1-1.5'	**0.245**	**0.881**	**0.372**	**1.54**	**291**	**99.6**
264392 - AH-2 0-1'	**22.1**	**138**	**102**	**127**	**4390**	**2150**
264393 - AH-2 1-1.5'	**48.5**	**171**	**110**	**128**	**1940**	**3580**
264394 - AH-2 2-2.5'	**76.7**	**181**	**103**	**113**	**724**	**3590**
264395 - AH-2 3-3.5'	**0.789**	**25.4**	**28.0**	**30.2**	**279**	**903**

Sample: 264388 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**202**	mg/Kg	4

Sample: 264389 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**643**	mg/Kg	4

Sample: 264390 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 264391 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**343**	mg/Kg	4

Sample: 264392 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 264393 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 264394 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 264395 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**507**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: May 5, 2011

Work Order: 11042205

Project Location: Eddy Co., NM
Project Name: COG/Skelly 942
Project Number: 114-6400872

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
264388	AH-1 0-1'	soil	2011-04-20	00:00	2011-04-21
264389	AH-1 1-1.5'	soil	2011-04-20	00:00	2011-04-21
264390	AH-1 2-2.5'	soil	2011-04-20	00:00	2011-04-21
264391	AH-1 3-3.5'	soil	2011-04-20	00:00	2011-04-21
264392	AH-2 0-1'	soil	2011-04-20	00:00	2011-04-21
264393	AH-2 1-1.5'	soil	2011-04-20	00:00	2011-04-21
264394	AH-2 2-2.5'	soil	2011-04-20	00:00	2011-04-21
264395	AH-2 3-3.5'	soil	2011-04-20	00:00	2011-04-21

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

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

Report Contents

Case Narrative

Samples for project COG/Skelly 942 were received by TraceAnalysis, Inc. on 2011-04-21 and assigned to work order 11042205. Samples for work order 11042205 were received intact at a temperature of 9.4 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	68447	2011-04-25 at 09:04	80636	2011-04-25 at 09:04
BTEX	S 8021B	68516	2011-04-27 at 15:47	80730	2011-04-27 at 15:47
BTEX	S 8021B	68585	2011-04-28 at 11:00	80811	2011-04-28 at 17:50
BTEX	S 8021B	68707	2011-05-04 at 08:57	80945	2011-05-04 at 17:14
Chloride (Titration)	SM 4500-Cl B	68435	2011-04-25 at 11:20	80726	2011-04-27 at 15:43
TPH DRO - NEW	S 8015 D	68456	2011-04-25 at 09:52	80646	2011-04-25 at 09:52
TPH DRO - NEW	S 8015 D	68529	2011-04-27 at 10:16	80739	2011-04-27 at 10:16
TPH DRO - NEW	S 8015 D	68670	2011-05-03 at 14:00	80908	2011-05-03 at 14:00
TPH GRO	S 8015 D	68447	2011-04-25 at 09:04	80637	2011-04-25 at 09:04
TPH GRO	S 8015 D	68516	2011-04-27 at 15:47	80731	2011-04-27 at 15:47
TPH GRO	S 8015 D	68585	2011-04-28 at 11:00	80812	2011-04-28 at 18:17
TPH GRO	S 8015 D	68707	2011-05-04 at 08:57	80946	2011-05-04 at 17:14

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 11042205 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: 264388 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	80636	Date Analyzed:	2011-04-25	Analyzed By:	ME
Prep Batch:	68447	Sample Preparation:	2011-04-25	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**20.2**	mg/Kg	20	0.0200
Toluene		1	**120**	mg/Kg	20	0.0200
Ethylbenzene		1	**85.3**	mg/Kg	20	0.0200
Xylene		1	**97.2**	mg/Kg	20	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	22.1	mg/Kg	20	20.0	110	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1	40.5	mg/Kg	20	20.0	202	38.4 - 157

Sample: 264388 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	80726	Date Analyzed:	2011-04-27	Analyzed By:	AR
Prep Batch:	68435	Sample Preparation:	2011-04-27	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**202**	mg/Kg	50	4.00

Sample: 264388 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	80646	Date Analyzed:	2011-04-25	Analyzed By:	kg
Prep Batch:	68456	Sample Preparation:	2011-04-25	Prepared By:	kg

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**3890**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		1	297	mg/Kg	5	100	297	70 - 130

Sample: 264388 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	80637	Date Analyzed:	2011-04-25	Analyzed By:	ME
Prep Batch:	68447	Sample Preparation:	2011-04-25	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**2010**	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	21.8	mg/Kg	20	20.0	109	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1	44.8	mg/Kg	20	20.0	224	42 - 159

Sample: 264389 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	80730	Date Analyzed:	2011-04-27	Analyzed By:	ME
Prep Batch:	68516	Sample Preparation:	2011-04-27	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.245**	mg/Kg	1	0.0200
Toluene		1	**0.881**	mg/Kg	1	0.0200
Ethylbenzene		1	**0.372**	mg/Kg	1	0.0200
Xylene		1	**1.54**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	2.74	mg/Kg	1	2.00	137	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1	2.92	mg/Kg	1	2.00	146	38.4 - 157

Sample: 264389 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	80726	Date Analyzed:	2011-04-27	Analyzed By:	AR
Prep Batch:	68435	Sample Preparation:	2011-04-27	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**643**	mg/Kg	50	4.00

Sample: 264389 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	80739	Date Analyzed:	2011-04-27	Analyzed By:	kg
Prep Batch:	68529	Sample Preparation:	2011-04-27	Prepared By:	kg

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**291**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		1	124	mg/Kg	1	100	124	70 - 130

Sample: 264389 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	80731	Date Analyzed:	2011-04-27	Analyzed By:	ME
Prep Batch:	68516	Sample Preparation:	2011-04-27	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**99.6**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	2.44	mg/Kg	1	2.00	122	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1	2.76	mg/Kg	1	2.00	138	42 - 159

Sample: 264390 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	80726	Date Analyzed:	2011-04-27	Analyzed By:	AR
Prep Batch:	68435	Sample Preparation:	2011-04-27	Prepared By:	AR

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

Sample: 264391 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	80726	Date Analyzed:	2011-04-27	Analyzed By:	AR
Prep Batch:	68435	Sample Preparation:	2011-04-27	Prepared By:	AR

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

Sample: 264392 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	80636	Date Analyzed:	2011-04-25	Analyzed By:	ME
Prep Batch:	68447	Sample Preparation:	2011-04-25	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**22.1**	mg/Kg	10	0.0200
Toluene		1	**138**	mg/Kg	10	0.0200
Ethylbenzene		1	**102**	mg/Kg	10	0.0200
Xylene		1	**127**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	10.6	mg/Kg	10	10.0	106	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1	30.9	mg/Kg	10	10.0	309	38.4 - 157

Sample: 264392 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	80726	Date Analyzed:	2011-04-27	Analyzed By:	AR
Prep Batch:	68435	Sample Preparation:	2011-04-27	Prepared By:	AR

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

Sample: 264392 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	80646	Date Analyzed:	2011-04-25	Analyzed By:	kg
Prep Batch:	68456	Sample Preparation:	2011-04-25	Prepared By:	kg

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**4390**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		1	330	mg/Kg	5	100	330	70 - 130

Sample: 264392 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	80637	Date Analyzed:	2011-04-25	Analyzed By:	ME
Prep Batch:	68447	Sample Preparation:	2011-04-25	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**2150**	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	10.5	mg/Kg	10	10.0	105	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1	46.5	mg/Kg	10	10.0	465	42 - 159

Sample: 264393 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	80811	Date Analyzed:	2011-04-28	Analyzed By:	ME
Prep Batch:	68585	Sample Preparation:	2011-04-28	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**48.5**	mg/Kg	50	0.0200
Toluene		1	**171**	mg/Kg	50	0.0200
Ethylbenzene		1	**110**	mg/Kg	50	0.0200
Xylene		1	**128**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	48.0	mg/Kg	50	50.0	96	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1	75.9	mg/Kg	50	50.0	152	38.4 - 157

Sample: 264393 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	80726	Date Analyzed:	2011-04-27	Analyzed By:	AR
Prep Batch:	68435	Sample Preparation:	2011-04-27	Prepared By:	AR

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

Sample: 264393 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	80739	Date Analyzed:	2011-04-27	Analyzed By:	kg
Prep Batch:	68529	Sample Preparation:	2011-04-27	Prepared By:	kg

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**1940**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		1	335	mg/Kg	1	100	335	70 - 130

Sample: 264393 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	80812	Date Analyzed:	2011-04-28	Analyzed By:	ME
Prep Batch:	68585	Sample Preparation:	2011-04-28	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO		1	**3580**		mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	44.7	mg/Kg	50	50.0	89	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1	80.9	mg/Kg	50	50.0	162	42 - 159

Sample: 264394 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	80945	Date Analyzed:	2011-05-04	Analyzed By:	ME
Prep Batch:	68707	Sample Preparation:	2011-05-04	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Benzene		1	**76.7**		mg/Kg	20	0.0200
Toluene		1	**181**		mg/Kg	20	0.0200
Ethylbenzene		1	**103**		mg/Kg	20	0.0200
Xylene		1	**113**		mg/Kg	20	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	22.4	mg/Kg	20	20.0	112	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1	45.7	mg/Kg	20	20.0	228	38.4 - 157

Sample: 264394 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	80726	Date Analyzed:	2011-04-27	Analyzed By:	AR
Prep Batch:	68435	Sample Preparation:	2011-04-27	Prepared By:	AR

continued ...

sample 264394 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

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

Sample: 264394 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	80908	Date Analyzed:	2011-05-03	Analyzed By:	kg
Prep Batch:	68670	Sample Preparation:	2011-05-03	Prepared By:	kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**724**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		1	210	mg/Kg	1	100	210	70 - 130

Sample: 264394 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	80946	Date Analyzed:	2011-05-04	Analyzed By:	ME
Prep Batch:	68707	Sample Preparation:	2011-05-04	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**3590**	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	21.6	mg/Kg	20	20.0	108	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1	59.5	mg/Kg	20	20.0	298	42 - 159

Sample: 264395 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	80945	Date Analyzed:	2011-05-04	Analyzed By:	ME
Prep Batch:	68707	Sample Preparation:	2011-05-04	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.789**	mg/Kg	10	0.0200
Toluene		1	**25.4**	mg/Kg	10	0.0200
Ethylbenzene		1	**28.0**	mg/Kg	10	0.0200
Xylene		1	**30.2**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	10.0	mg/Kg	10	10.0	100	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1	16.5	mg/Kg	10	10.0	165	38.4 - 157

Sample: 264395 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	80726	Date Analyzed:	2011-04-27	Analyzed By:	AR
Prep Batch:	68435	Sample Preparation:	2011-04-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**507**	mg/Kg	50	4.00

Sample: 264395 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	80908	Date Analyzed:	2011-05-03	Analyzed By:	kg
Prep Batch:	68670	Sample Preparation:	2011-05-03	Prepared By:	kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**279**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		1	129	mg/Kg	1	100	129	70 - 130

Sample: 264395 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	80946	Date Analyzed:	2011-05-04	Analyzed By:	ME
Prep Batch:	68707	Sample Preparation:	2011-05-04	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**903**	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	9.71	mg/Kg	10	10.0	97	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1	21.3	mg/Kg	10	10.0	213	42 - 159

Method Blanks

Method Blank (1) QC Batch: 80636

QC Batch:	80636	Date Analyzed:	2011-04-25	Analyzed By:	ME
Prep Batch:	68447	QC Preparation:	2011-04-25	Prepared By:	ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.0118	mg/Kg	0.02
Toluene		1	<0.00600	mg/Kg	0.02
Ethylbenzene		1	<0.00850	mg/Kg	0.02
Xylene		1	<0.00613	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	2.08	mg/Kg	1	2.00	104	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1	2.23	mg/Kg	1	2.00	112	55.4 - 124

Method Blank (1) QC Batch: 80637

QC Batch:	80637	Date Analyzed:	2011-04-25	Analyzed By:	ME
Prep Batch:	68447	QC Preparation:	2011-04-25	Prepared By:	ME

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.753	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	2.02	mg/Kg	1	2.00	101	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1	1.93	mg/Kg	1	2.00	96	52.4 - 130

Method Blank (1) QC Batch: 80646

QC Batch:	80646	Date Analyzed:	2011-04-25	Analyzed By:	kg
Prep Batch:	68456	QC Preparation:	2011-04-25	Prepared By:	kg

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.7	mg/Kg	50

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

Method Blank (1) QC Batch: 80726

QC Batch:	80726	Date Analyzed:	2011-04-27	Analyzed By:	AR
Prep Batch:	68435	QC Preparation:	2011-04-25	Prepared By:	AR

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

Method Blank (1) QC Batch: 80730

QC Batch:	80730	Date Analyzed:	2011-04-27	Analyzed By:	ME
Prep Batch:	68516	QC Preparation:	2011-04-27	Prepared By:	ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.0118	mg/Kg	0.02
Toluene		1	<0.00600	mg/Kg	0.02
Ethylbenzene		1	<0.00850	mg/Kg	0.02
Xylene		1	<0.00613	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	1.89	mg/Kg	1	2.00	94	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1	1.85	mg/Kg	1	2.00	92	55.4 - 124

Method Blank (1) QC Batch: 80731

QC Batch:	80731	Date Analyzed:	2011-04-27	Analyzed By:	ME
Prep Batch:	68516	QC Preparation:	2011-04-27	Prepared By:	ME

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.753	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	1.74	mg/Kg	1	2.00	87	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1	1.59	mg/Kg	1	2.00	80	52.4 - 130

Method Blank (1) QC Batch: 80739

QC Batch: 80739 | Date Analyzed: 2011-04-27 | Analyzed By: kg
Prep Batch: 68529 | QC Preparation: 2011-04-27 | Prepared By: kg

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.7	mg/Kg	50

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

Method Blank (1) QC Batch: 80811

QC Batch: 80811 | Date Analyzed: 2011-04-28 | Analyzed By: ME
Prep Batch: 68585 | QC Preparation: 2011-04-28 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.0118	mg/Kg	0.02
Toluene		1	<0.00600	mg/Kg	0.02
Ethylbenzene		1	<0.00850	mg/Kg	0.02
Xylene		1	<0.00613	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	2.03	mg/Kg	1	2.00	102	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1	2.25	mg/Kg	1	2.00	112	55.4 - 124

Method Blank (1) QC Batch: 80812

QC Batch: 80812 | Date Analyzed: 2011-04-28 | Analyzed By: ME
Prep Batch: 68585 | QC Preparation: 2011-04-28 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.753	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	1.83	mg/Kg	1	2.00	92	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1	1.90	mg/Kg	1	2.00	95	52.4 - 130

Method Blank (1) QC Batch: 80908

QC Batch: 80908 | Date Analyzed: 2011-05-03 | Analyzed By: kg
Prep Batch: 68670 | QC Preparation: 2011-05-03 | Prepared By: kg

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.7	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		1	119	mg/Kg	1	100	119	70 - 130

Method Blank (1) QC Batch: 80945

QC Batch: 80945 | Date Analyzed: 2011-05-04 | Analyzed By: ME
Prep Batch: 68707 | QC Preparation: 2011-05-04 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.0118	mg/Kg	0.02
Toluene		1	<0.00600	mg/Kg	0.02
Ethylbenzene		1	<0.00850	mg/Kg	0.02
Xylene		1	<0.00613	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	1.84	mg/Kg	1	2.00	92	66.6 - 122

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method blank continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)		1	1.76	mg/Kg	1	2.00	88	55.4 - 124

Method Blank (1) QC Batch: 80946

QC Batch: 80946 | Date Analyzed: 2011-05-04 | Analyzed By: ME
Prep Batch: 68707 | QC Preparation: 2011-05-04 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.753	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	1.80	mg/Kg	1	2.00	90	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1	1.60	mg/Kg	1	2.00	80	52.4 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 80636 | Date Analyzed: 2011-04-25 | Analyzed By: ME
Prep Batch: 68447 | QC Preparation: 2011-04-25 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.64	mg/Kg	1	2.00	<0.0118	82	81.9 - 108
Toluene		1	1.98	mg/Kg	1	2.00	<0.00600	99	81.9 - 110
Ethylbenzene		1	2.09	mg/Kg	1	2.00	<0.00850	104	78.4 - 115
Xylene		1	6.30	mg/Kg	1	6.00	<0.00613	105	79.1 - 116

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.68	mg/Kg	1	2.00	<0.0118	84	81.9 - 108	2	20
Toluene		1	2.10	mg/Kg	1	2.00	<0.00600	105	81.9 - 110	6	20
Ethylbenzene		1	2.06	mg/Kg	1	2.00	<0.00850	103	78.4 - 115	1	20
Xylene		1	6.40	mg/Kg	1	6.00	<0.00613	107	79.1 - 116	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	2.10	2.11	mg/Kg	1	2.00	105	106	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1	2.38	2.41	mg/Kg	1	2.00	119	120	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 80637 | Date Analyzed: 2011-04-25 | Analyzed By: ME
Prep Batch: 68447 | QC Preparation: 2011-04-25 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.0	mg/Kg	1	20.0	<0.753	85	60.9 - 95.4

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	16.7	mg/Kg	1	20.0	<0.753	84	60.9 - 95.4	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	2.07	1.95	mg/Kg	1	2.00	104	98	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1	2.09	2.00	mg/Kg	1	2.00	104	100	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 80646 | Date Analyzed: 2011-04-25 | Analyzed By: kg
Prep Batch: 68456 | QC Preparation: 2011-04-25 | Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	218	mg/Kg	1	250	<15.7	87	47.5 - 144.1

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	213	mg/Kg	1	250	<15.7	85	47.5 - 144.1	2	20

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

Surrogate		LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	1	106	106	mg/Kg	1	100	106	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 80726 | Date Analyzed: 2011-04-27 | Analyzed By: AR
Prep Batch: 68435 | QC Preparation: 2011-04-25 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			97.0	mg/Kg	1	100	<3.85	97	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			101	mg/Kg	1	100	<3.85	101	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 80730 | Date Analyzed: 2011-04-27 | Analyzed By: ME
Prep Batch: 68516 | QC Preparation: 2011-04-27 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.06	mg/Kg	1	2.00	<0.0118	103	81.9 - 108
Toluene		1	2.07	mg/Kg	1	2.00	<0.00600	104	81.9 - 110
Ethylbenzene		1	2.07	mg/Kg	1	2.00	<0.00850	104	78.4 - 115
Xylene		1	6.23	mg/Kg	1	6.00	<0.00613	104	79.1 - 116

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.12	mg/Kg	1	2.00	<0.0118	106	81.9 - 108	3	20
Toluene		1	2.13	mg/Kg	1	2.00	<0.00600	106	81.9 - 110	3	20
Ethylbenzene		1	2.14	mg/Kg	1	2.00	<0.00850	107	78.4 - 115	3	20
Xylene		1	6.43	mg/Kg	1	6.00	<0.00613	107	79.1 - 116	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	2.05	1.84	mg/Kg	1	2.00	102	92	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1	2.11	1.93	mg/Kg	1	2.00	106	96	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 80731 | Date Analyzed: 2011-04-27 | Analyzed By: ME
Prep Batch: 68516 | QC Preparation: 2011-04-27 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	13.5	mg/Kg	1	20.0	<0.753	68	60.9 - 95.4

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.8	mg/Kg	1	20.0	<0.753	74	60.9 - 95.4	9	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	1.90	1.77	mg/Kg	1	2.00	95	88	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1	1.83	1.73	mg/Kg	1	2.00	92	86	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 80739 | Date Analyzed: 2011-04-27 | Analyzed By: kg
Prep Batch: 68529 | QC Preparation: 2011-04-27 | Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	222	mg/Kg	1	250	<15.7	89	47.5 - 144.1

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	246	mg/Kg	1	250	<15.7	98	47.5 - 144.1	10	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	1	115	120	mg/Kg	1	100	115	120	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 80811 | Date Analyzed: 2011-04-28 | Analyzed By: ME
Prep Batch: 68585 | QC Preparation: 2011-04-28 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.04	mg/Kg	1	2.00	<0.0118	102	81.9 - 108
Toluene		1	2.16	mg/Kg	1	2.00	<0.00600	108	81.9 - 110
Ethylbenzene		1	2.22	mg/Kg	1	2.00	<0.00850	111	78.4 - 115
Xylene		1	6.68	mg/Kg	1	6.00	<0.00613	111	79.1 - 116

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.07	mg/Kg	1	2.00	<0.0118	104	81.9 - 108	1	20
Toluene		1	2.21	mg/Kg	1	2.00	<0.00600	110	81.9 - 110	2	20
Ethylbenzene		1	2.28	mg/Kg	1	2.00	<0.00850	114	78.4 - 115	3	20
Xylene		1	6.88	mg/Kg	1	6.00	<0.00613	115	79.1 - 116	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	2.01	1.93	mg/Kg	1	2.00	100	96	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1	2.41	2.28	mg/Kg	1	2.00	120	114	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 80812 | Date Analyzed: 2011-04-28 | Analyzed By: ME
Prep Batch: 68585 | QC Preparation: 2011-04-28 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.8	mg/Kg	1	20.0	<0.753	79	60.9 - 95.4

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.3	mg/Kg	1	20.0	<0.753	76	60.9 - 95.4	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	1.67	1.91	mg/Kg	1	2.00	84	96	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1	1.82	2.06	mg/Kg	1	2.00	91	103	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 80908 | Date Analyzed: 2011-05-03 | Analyzed By: kg
Prep Batch: 68670 | QC Preparation: 2011-05-03 | Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	208	mg/Kg	1	250	<15.7	83	47.5 - 144.1

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	221	mg/Kg	1	250	<15.7	88	47.5 - 144.1	6	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	1	124	128	mg/Kg	1	100	124	128	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 80945 | Date Analyzed: 2011-05-04 | Analyzed By: ME
Prep Batch: 68707 | QC Preparation: 2011-05-04 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.84	mg/Kg	1	2.00	<0.0118	92	81.9 - 108
Toluene		1	1.99	mg/Kg	1	2.00	<0.00600	100	81.9 - 110
Ethylbenzene		1	2.07	mg/Kg	1	2.00	<0.00850	104	78.4 - 115
Xylene		1	6.19	mg/Kg	1	6.00	<0.00613	103	79.1 - 116

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.78	mg/Kg	1	2.00	<0.0118	89	81.9 - 108	3	20
Toluene		1	1.91	mg/Kg	1	2.00	<0.00600	96	81.9 - 110	4	20
Ethylbenzene		1	2.00	mg/Kg	1	2.00	<0.00850	100	78.4 - 115	3	20
Xylene		1	5.97	mg/Kg	1	6.00	<0.00613	100	79.1 - 116	4	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	1.78	1.65	mg/Kg	1	2.00	89	82	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1	1.81	1.70	mg/Kg	1	2.00	90	85	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 80946 | Date Analyzed: 2011-05-04 | Analyzed By: ME
Prep Batch: 68707 | QC Preparation: 2011-05-04 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	13.1	mg/Kg	1	20.0	<0.753	66	60.9 - 95.4

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	13.5	mg/Kg	1	20.0	<0.753	68	60.9 - 95.4	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	1.81	1.85	mg/Kg	1	2.00	90	92	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1	1.70	1.74	mg/Kg	1	2.00	85	87	68.2 - 132

Matrix Spike (MS-1) Spiked Sample: 264496

QC Batch: 80636 | Date Analyzed: 2011-04-25 | Analyzed By: ME
Prep Batch: 68447 | QC Preparation: 2011-04-25 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.67	mg/Kg	1	2.00	<0.0118	84	80.5 - 112
Toluene		1	2.12	mg/Kg	1	2.00	<0.00600	106	82.4 - 113
Ethylbenzene		1	2.31	mg/Kg	1	2.00	<0.00850	116	83.9 - 114
Xylene		1	7.01	mg/Kg	1	6.00	<0.00613	117	84 - 114

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.50	mg/Kg	1	2.00	<0.0118	75	80.5 - 112	11	20
Toluene		1	1.93	mg/Kg	1	2.00	<0.00600	96	82.4 - 113	9	20
Ethylbenzene		1	2.11	mg/Kg	1	2.00	<0.00850	106	83.9 - 114	9	20
Xylene		1	6.40	mg/Kg	1	6.00	<0.00613	107	84 - 114	9	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	2.40	2.08	mg/Kg	1	2	120	104	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1	2.64	2.31	mg/Kg	1	2	132	116	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 264479

QC Batch: 80637 | Date Analyzed: 2011-04-25 | Analyzed By: ME
Prep Batch: 68447 | QC Preparation: 2011-04-25 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.0	mg/Kg	1	20.0	<0.753	75	61.8 - 114

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.0	mg/Kg	1	20.0	<0.753	85	61.8 - 114	12	20

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

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1	2.16	2.32	mg/Kg	1	2	108	116	50 - 162
4-Bromofluorobenzene (4-BFB)	1	2.22	2.37	mg/Kg	1	2	111	118	50 - 162

Matrix Spike (MS-1) Spiked Sample: 264479

QC Batch: 80646 | Date Analyzed: 2011-04-25 | Analyzed By: kg
Prep Batch: 68456 | QC Preparation: 2011-04-25 | Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	208	mg/Kg	1	250	<15.7	83	11.7 - 152.3

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	236	mg/Kg	1	250	<15.7	94	11.7 - 152.3	13	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	1	102	110	mg/Kg	1	100	102	110	70 - 130

Matrix Spike (MS-1) Spiked Sample: 264397

QC Batch: 80726 | Date Analyzed: 2011-04-27 | Analyzed By: AR
Prep Batch: 68435 | QC Preparation: 2011-04-25 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			21300	mg/Kg	100	10000	11400	99	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			22000	mg/Kg	100	10000	11400	106	80 - 120	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: 264497

QC Batch: 80730 | Date Analyzed: 2011-04-27 | Analyzed By: ME
Prep Batch: 68516 | QC Preparation: 2011-04-27 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.18	mg/Kg	1	2.00	<0.0118	109	80.5 - 112
Toluene		1	2.20	mg/Kg	1	2.00	0.166	102	82.4 - 113
Ethylbenzene		1	2.26	mg/Kg	1	2.00	0.1608	105	83.9 - 114
Xylene		1	6.78	mg/Kg	1	6.00	0.4904	105	84 - 114

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.10	mg/Kg	1	2.00	<0.0118	105	80.5 - 112	4	20
Toluene		1	2.14	mg/Kg	1	2.00	0.166	99	82.4 - 113	3	20
Ethylbenzene		1	2.22	mg/Kg	1	2.00	0.1608	103	83.9 - 114	2	20
Xylene		1	6.70	mg/Kg	1	6.00	0.4904	103	84 - 114	1	20

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

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1	2.25	2.43	mg/Kg	1	2	112	122	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1	2.25	2.48	mg/Kg	1	2	112	124	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 264383

QC Batch: 80731 | Date Analyzed: 2011-04-27 | Analyzed By: ME
Prep Batch: 68516 | QC Preparation: 2011-04-27 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.6	mg/Kg	1	20.0	<0.753	78	61.8 - 114

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.4	mg/Kg	1	20.0	<0.753	77	61.8 - 114	1	20

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

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1	2.37	2.14	mg/Kg	1	2	118	107	50 - 162
4-Bromofluorobenzene (4-BFB)	1	2.23	2.10	mg/Kg	1	2	112	105	50 - 162

Matrix Spike (MS-1) Spiked Sample: 264455

QC Batch: 80739 | Date Analyzed: 2011-04-27 | Analyzed By: kg
Prep Batch: 68529 | QC Preparation: 2011-04-27 | Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	233	mg/Kg	1	250	<15.7	93	11.7 - 152.3

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	224	mg/Kg	1	250	<15.7	90	11.7 - 152.3	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
n-Tricosane	1	103	106	mg/Kg	1	100	103	106	70 - 130

Matrix Spike (MS-1) Spiked Sample: 263391

QC Batch: 80811 | Date Analyzed: 2011-04-28 | Analyzed By: ME
Prep Batch: 68585 | QC Preparation: 2011-04-28 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.87	mg/Kg	1	2.00	<0.0118	94	80.5 - 112
Toluene		1	2.04	mg/Kg	1	2.00	<0.00600	102	82.4 - 113
Ethylbenzene		1	2.18	mg/Kg	1	2.00	<0.00850	109	83.9 - 114
Xylene		1	6.59	mg/Kg	1	6.00	<0.00613	110	84 - 114

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.98	mg/Kg	1	2.00	<0.0118	99	80.5 - 112	6	20
Toluene		1	2.14	mg/Kg	1	2.00	<0.00600	107	82.4 - 113	5	20
Ethylbenzene		1	2.31	mg/Kg	1	2.00	<0.00850	116	83.9 - 114	6	20
Xylene		1	7.60	mg/Kg	1	6.00	<0.00613	127	84 - 114	14	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	2.23	2.50	mg/Kg	1	2	112	125	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1	2.65	3.04	mg/Kg	1	2	132	152	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 264393

QC Batch: 80812 | Date Analyzed: 2011-04-28 | Analyzed By: ME
Prep Batch: 68585 | QC Preparation: 2011-04-28 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	4900	mg/Kg	50	1000	3580	132	61.8 - 114

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	5720	mg/Kg	50	1000	3580	214	61.8 - 114	15	20

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

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT) [1]	54.2	57.4	mg/Kg	50	50	108	115	50 - 162
4-Bromofluorobenzene (4-BFB) [1]	100	80.9	mg/Kg	50	50	200	162	50 - 162

Matrix Spike (MS-1) Spiked Sample: 264395

QC Batch: 80908 | Date Analyzed: 2011-05-03 | Analyzed By: kg
Prep Batch: 68670 | QC Preparation: 2011-05-03 | Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		[1]	690	mg/Kg	1	250	279	164	11.7 - 152.3

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		[1]	731	mg/Kg	1	250	279	181	11.7 - 152.3	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
n-Tricosane	[1]	170	161	mg/Kg	1	100	170	161	70 - 130

Matrix Spike (MS-1) Spiked Sample: 264395

QC Batch: 80945 | Date Analyzed: 2011-05-04 | Analyzed By: ME
Prep Batch: 68707 | QC Preparation: 2011-05-04 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[1]	10.4	mg/Kg	10	10.0	0.7887	96	80.5 - 112
Toluene		[1]	43.7	mg/Kg	10	10.0	25.387	183	82.4 - 113
Ethylbenzene		[1]	46.4	mg/Kg	10	10.0	27.9864	184	83.9 - 114
Xylene		[1]	69.7	mg/Kg	10	30.0	30.1963	132	84 - 114

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	9.64	mg/Kg	10	10.0	0.7887	88	80.5 - 112	8	20
Toluene		1	37.8	mg/Kg	10	10.0	25.387	124	82.4 - 113	14	20
Ethylbenzene		1	43.2	mg/Kg	10	10.0	27.9864	152	83.9 - 114	7	20
Xylene		1	66.7	mg/Kg	10	30.0	30.1963	122	84 - 114	4	20

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

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1	11.3	11.0	mg/Kg	10	10	113	110	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1	20.3	19.4	mg/Kg	10	10	203	194	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 264394

QC Batch: 80946 | Date Analyzed: 2011-05-04 | Analyzed By: ME
Prep Batch: 68707 | QC Preparation: 2011-05-04 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	3220	mg/Kg	20	400	3215.2	1	61.8 - 114

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	3320	mg/Kg	20	400	3215.2	1	61.8 - 114	3	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	20.8	23.0	mg/Kg	20	20	104	115	50 - 162
4-Bromofluorobenzene (4-BFB)	1	45.8	48.4	mg/Kg	20	20	229	242	50 - 162

Calibration Standards

Standard (CCV-2)

QC Batch: 80636 | Date Analyzed: 2011-04-25 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0806	81	80 - 120	2011-04-25
Toluene		1	mg/Kg	0.100	0.100	100	80 - 120	2011-04-25
Ethylbenzene		1	mg/Kg	0.100	0.105	105	80 - 120	2011-04-25
Xylene		1	mg/Kg	0.300	0.318	106	80 - 120	2011-04-25

Standard (CCV-3)

QC Batch: 80636 | Date Analyzed: 2011-04-25 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0853	85	80 - 120	2011-04-25
Toluene		1	mg/Kg	0.100	0.105	105	80 - 120	2011-04-25
Ethylbenzene		1	mg/Kg	0.100	0.109	109	80 - 120	2011-04-25
Xylene		1	mg/Kg	0.300	0.327	109	80 - 120	2011-04-25

Standard (CCV-2)

QC Batch: 80637 | Date Analyzed: 2011-04-25 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.898	90	80 - 120	2011-04-25

Standard (CCV-3)

QC Batch: 80637 | Date Analyzed: 2011-04-25 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.08	108	80 - 120	2011-04-25

Standard (CCV-2)

QC Batch: 80646 Date Analyzed: 2011-04-25 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	230	92	80 - 120	2011-04-25

Standard (CCV-3)

QC Batch: 80646 Date Analyzed: 2011-04-25 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	229	92	80 - 120	2011-04-25

Standard (ICV-1)

QC Batch: 80726 Date Analyzed: 2011-04-27 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.5	100	85 - 115	2011-04-27

Standard (CCV-1)

QC Batch: 80726 Date Analyzed: 2011-04-27 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2011-04-27

Standard (CCV-1)

QC Batch: 80730 Date Analyzed: 2011-04-27 Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.107	107	80 - 120	2011-04-27
Toluene		1	mg/Kg	0.100	0.108	108	80 - 120	2011-04-27
Ethylbenzene		1	mg/Kg	0.100	0.108	108	80 - 120	2011-04-27
Xylene		1	mg/Kg	0.300	0.328	109	80 - 120	2011-04-27

Standard (CCV-2)

QC Batch: 80730 Date Analyzed: 2011-04-27 Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.103	103	80 - 120	2011-04-27
Toluene		1	mg/Kg	0.100	0.103	103	80 - 120	2011-04-27
Ethylbenzene		1	mg/Kg	0.100	0.102	102	80 - 120	2011-04-27
Xylene		1	mg/Kg	0.300	0.308	103	80 - 120	2011-04-27

Standard (CCV-1)

QC Batch: 80731 Date Analyzed: 2011-04-27 Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.935	94	80 - 120	2011-04-27

Standard (CCV-2)

QC Batch: 80731 Date Analyzed: 2011-04-27 Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.01	101	80 - 120	2011-04-27

Standard (CCV-3)

QC Batch: 80739 Date Analyzed: 2011-04-27 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	274	110	80 - 120	2011-04-27

Standard (CCV-4)

QC Batch: 80739 Date Analyzed: 2011-04-27 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	277	111	80 - 120	2011-04-27

Standard (CCV-1)

QC Batch: 80811 Date Analyzed: 2011-04-28 Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.105	105	80 - 120	2011-04-28
Toluene		1	mg/Kg	0.100	0.109	109	80 - 120	2011-04-28
Ethylbenzene		1	mg/Kg	0.100	0.111	111	80 - 120	2011-04-28
Xylene		1	mg/Kg	0.300	0.338	113	80 - 120	2011-04-28

Standard (CCV-2)

QC Batch: 80811 | Date Analyzed: 2011-04-28 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.104	104	80 - 120	2011-04-28
Toluene		1	mg/Kg	0.100	0.107	107	80 - 120	2011-04-28
Ethylbenzene		1	mg/Kg	0.100	0.109	109	80 - 120	2011-04-28
Xylene		1	mg/Kg	0.300	0.331	110	80 - 120	2011-04-28

Standard (CCV-1)

QC Batch: 80812 | Date Analyzed: 2011-04-28 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.916	92	80 - 120	2011-04-28

Standard (CCV-2)

QC Batch: 80812 | Date Analyzed: 2011-04-28 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.03	103	80 - 120	2011-04-28

Standard (CCV-1)

QC Batch: 80908 | Date Analyzed: 2011-05-03 | Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	218	87	80 - 120	2011-05-03

Standard (CCV-2)

QC Batch: 80908 | Date Analyzed: 2011-05-03 | Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	222	89	80 - 120	2011-05-03

Standard (CCV-1)

QC Batch: 80945 | Date Analyzed: 2011-05-04 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0912	91	80 - 120	2011-05-04
Toluene		1	mg/Kg	0.100	0.0980	98	80 - 120	2011-05-04
Ethylbenzene		1	mg/Kg	0.100	0.102	102	80 - 120	2011-05-04
Xylene		1	mg/Kg	0.300	0.306	102	80 - 120	2011-05-04

Standard (CCV-2)

QC Batch: 80945 | Date Analyzed: 2011-05-04 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0903	90	80 - 120	2011-05-04
Toluene		1	mg/Kg	0.100	0.0963	96	80 - 120	2011-05-04
Ethylbenzene		1	mg/Kg	0.100	0.101	101	80 - 120	2011-05-04
Xylene		1	mg/Kg	0.300	0.301	100	80 - 120	2011-05-04

Standard (CCV-1)

QC Batch: 80946 | Date Analyzed: 2011-05-04 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.855	86	80 - 120	2011-05-04

Standard (CCV-2)

QC Batch: 80946 | Date Analyzed: 2011-05-04 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.07	107	80 - 120	2011-05-04

Appendix

Laboratory Certifications

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

Standard Flags

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

Attachments

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

*WO #: 1104 2205

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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.: 114-6100872

PROJECT NAME: COG / Skelly 942

Eddy Co., NM

LAB I.D. NUMBER	DATE 2011	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD / TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
264388	4/20		S		X	AH-1 0-1'	1				X		X	X										X				
389						1-1.5'	1				X																	
390						2-2.5'	1				X																	
391						3-3.5'	1				X																	
392						AH-2 0-1'	1				X		X	X															
393						1-1.5'	1				X																	
394						2-2.5'	1				X																	
395						3-3.5'	1				X																	

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 4-21-11 Time: 17:00	RECEIVED BY: (Signature)	Date: 4/21/11 Time: 17:00
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) TF KD Date: 4/21/11 Time:

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

AIRBILL #:

OTHER:

RECEIVING LABORATORY: TRACE

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 9.4c intact

REMARKS: If total TPH exceeds 5000 mg/kg run deeper
If BTEX exceeds 50 or Benzene exceeds 10 run deeper

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

Summary Report

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

Report Date: September 7, 2011

Work Order: 11090220

Project Location: Eddy Co., NM
Project Name: COG/Skelly Unit 942 Tank Battery
Project Number: 114-6400872

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
276412	T-1 (Area of AH-2) 4.0' Bottom Hole	soil	2011-08-30	00:00	2011-09-02

	BTEX			
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)
276412 - T-1 (Area of AH-2) 4.0' Bottom Hole	<0.0200	<0.0200	<0.0200	<0.0200

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: September 7, 2011

Work Order: 11090220

Project Location: Eddy Co., NM
Project Name: COG/Skelly Unit 942 Tank Battery
Project Number: 114-6400872

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
276412	T-1 (Area of AH-2) 4.0' Bottom Hole	soil	2011-08-30	00:00	2011-09-02

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

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

Report Contents

Case Narrative

Samples for project COG/Skelly Unit 942 Tank Battery were received by TraceAnalysis, Inc. on 2011-09-02 and assigned to work order 11090220. Samples for work order 11090220 were received intact at a temperature of 5.8 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	71750	2011-09-04 at 16:18	84489	2011-09-05 at 10:30

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 11090220 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: 276412 - T-1 (Area of AH-2) 4.0' Bottom Hole

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	84489	Date Analyzed:	2011-09-05	Analyzed By:	AG
Prep Batch:	71750	Sample Preparation:	2011-09-04	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.23	mg/Kg	1	2.00	112	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	1	2.00	102	70.6 - 179

Method Blanks

Method Blank (1) QC Batch: 84489

QC Batch:	84489	Date Analyzed:	2011-09-05	Analyzed By:	AG
Prep Batch:	71750	QC Preparation:	2011-09-04	Prepared By:	AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.0118	mg/Kg	0.02
Toluene		1	<0.00600	mg/Kg	0.02
Ethylbenzene		1	<0.00850	mg/Kg	0.02
Xylene		1	<0.00613	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	65.9 - 111.8
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	88	48.4 - 123.1

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 84489 | Date Analyzed: 2011-09-05 | Analyzed By: AG
Prep Batch: 71750 | QC Preparation: 2011-09-04 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.95	mg/Kg	1	2.00	<0.0118	98	77.4 - 121.7
Toluene		1	1.93	mg/Kg	1	2.00	<0.00600	96	88.6 - 121.6
Ethylbenzene		1	1.88	mg/Kg	1	2.00	<0.00850	94	74.3 - 117.9
Xylene		1	5.64	mg/Kg	1	6.00	<0.00613	94	73.4 - 118.8

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.92	mg/Kg	1	2.00	<0.0118	96	77.4 - 121.7	2	20
Toluene		1	1.91	mg/Kg	1	2.00	<0.00600	96	88.6 - 121.6	1	20
Ethylbenzene		1	1.89	mg/Kg	1	2.00	<0.00850	94	74.3 - 117.9	0	20
Xylene		1	5.64	mg/Kg	1	6.00	<0.00613	94	73.4 - 118.8	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	1.88	mg/Kg	1	2.00	94	94	65.5 - 116.7
4-Bromofluorobenzene (4-BFB)	1.90	1.83	mg/Kg	1	2.00	95	92	56.2 - 132.1

Matrix Spike (MS-1) Spiked Sample: 275973

QC Batch: 84489 | Date Analyzed: 2011-09-05 | Analyzed By: AG
Prep Batch: 71750 | QC Preparation: 2011-09-04 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.98	mg/Kg	1	2.00	<0.0118	99	69.4 - 123.6
Toluene		1	2.04	mg/Kg	1	2.00	<0.00600	102	75.4 - 134.3
Ethylbenzene		1	2.12	mg/Kg	1	2.00	<0.00850	106	58.8 - 133.7
Xylene		1	6.31	mg/Kg	1	6.00	<0.00613	105	57 - 134.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.05	mg/Kg	1	2.00	<0.0118	102	69.4 - 123.6	4	20
Toluene		1	2.11	mg/Kg	1	2.00	<0.00600	106	75.4 - 134.3	3	20
Ethylbenzene		1	2.20	mg/Kg	1	2.00	<0.00850	110	58.8 - 133.7	4	20
Xylene		1	6.56	mg/Kg	1	6.00	<0.00613	109	57 - 134.2	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)	2.12	2.16	mg/Kg	1	2	106	108	79.4 - 141.1
4-Bromofluorobenzene (4-BFB)	2.07	2.12	mg/Kg	1	2	104	106	71 - 167

Calibration Standards

Standard (CCV-2)

QC Batch: 84489 | Date Analyzed: 2011-09-05 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0965	96	80 - 120	2011-09-05
Toluene		1	mg/Kg	0.100	0.0953	95	80 - 120	2011-09-05
Ethylbenzene		1	mg/Kg	0.100	0.0928	93	80 - 120	2011-09-05
Xylene		1	mg/Kg	0.300	0.275	92	80 - 120	2011-09-05

Standard (CCV-3)

QC Batch: 84489 | Date Analyzed: 2011-09-05 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0967	97	80 - 120	2011-09-05
Toluene		1	mg/Kg	0.100	0.0958	96	80 - 120	2011-09-05
Ethylbenzene		1	mg/Kg	0.100	0.0924	92	80 - 120	2011-09-05
Xylene		1	mg/Kg	0.300	0.276	92	80 - 120	2011-09-05

Appendix

Laboratory Certifications

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

Standard Flags

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

Attachments

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

*wo #: 1090220

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

CLIENT NAME: COG Operating LLC

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640 0872

PROJECT NAME: Skelly Unit 942 Tank Battery
Eddy County, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
276412	8/30/11		S		/	T-1 (Area of AH-2) 4.0' Bottom Hole	1						X															

RELINQUISHED BY: (Signature) Date: 9/2/11 Time: 12:30pm
RECEIVED BY: (Signature) Date: 9/2/11 Time: 12:50

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

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

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.8° Intact

REMARKS: carry-in *All tests-Midland

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

Summary Report

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

Report Date: September 14, 2011

Work Order: 11090219

Project Location: Eddy Co., NM
Project Name: COG/Skelly Unit 942 Tank Battery
Project Number: 114-6400872

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
276406	CS-1 North Wall	soil	2011-08-30	00:00	2011-09-02
276407	CS-1 South Wall	soil	2011-08-30	00:00	2011-09-02
276408	CS-1 West Wall	soil	2011-08-30	00:00	2011-09-02
276409	CS-2 South Wall	soil	2011-08-30	00:00	2011-09-02
276410	CS-2 North Wall	soil	2011-08-30	00:00	2011-09-02
276411	CS-2 East Wall	soil	2011-08-30	00:00	2011-09-02

Sample: 276406 - CS-1 North Wall

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 276407 - CS-1 South Wall

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 276408 - CS-1 West Wall

Param	Flag	Result	Units	RL
Chloride		**1570**	mg/Kg	4

Sample: 276409 - CS-2 South Wall

Param	Flag	Result	Units	RL
Chloride		**393**	mg/Kg	4

Sample: 276410 - CS-2 North Wall

Param	Flag	Result	Units	RL
Chloride		**565**	mg/Kg	4

Sample: 276411 - CS-2 East Wall

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: September 14, 2011

Work Order: 11090219

Project Location: Eddy Co., NM
Project Name: COG/Skelly Unit 942 Tank Battery
Project Number: 114-6400872

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
276406	CS-1 North Wall	soil	2011-08-30	00:00	2011-09-02
276407	CS-1 South Wall	soil	2011-08-30	00:00	2011-09-02
276408	CS-1 West Wall	soil	2011-08-30	00:00	2011-09-02
276409	CS-2 South Wall	soil	2011-08-30	00:00	2011-09-02
276410	CS-2 North Wall	soil	2011-08-30	00:00	2011-09-02
276411	CS-2 East Wall	soil	2011-08-30	00:00	2011-09-02

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

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

Report Contents

Case Narrative

Samples for project COG/Skelly Unit 942 Tank Battery were received by TraceAnalysis, Inc. on 2011-09-02 and assigned to work order 11090219. Samples for work order 11090219 were received intact at a temperature of 5.8 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	71786	2011-09-07 at 09:50	84674	2011-09-13 at 16:24
Chloride (Titration)	SM 4500-Cl B	71786	2011-09-07 at 09:50	84675	2011-09-13 at 16:24

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 11090219 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: 276406 - CS-1 North Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	84674	Date Analyzed:	2011-09-13	Analyzed By:	AR
Prep Batch:	71786	Sample Preparation:	2011-09-07	Prepared By:	AR

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

Sample: 276407 - CS-1 South Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	84674	Date Analyzed:	2011-09-13	Analyzed By:	AR
Prep Batch:	71786	Sample Preparation:	2011-09-07	Prepared By:	AR

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

Sample: 276408 - CS-1 West Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	84675	Date Analyzed:	2011-09-13	Analyzed By:	AR
Prep Batch:	71786	Sample Preparation:	2011-09-07	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1570**	mg/Kg	50	4.00

Sample: 276409 - CS-2 South Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	84675	Date Analyzed:	2011-09-13	Analyzed By:	AR
Prep Batch:	71786	Sample Preparation:	2011-09-07	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**393**	mg/Kg	50	4.00

Sample: 276410 - CS-2 North Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	84675	Date Analyzed:	2011-09-13	Analyzed By:	AR
Prep Batch:	71786	Sample Preparation:	2011-09-07	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**565**	mg/Kg	50	4.00

Sample: 276411 - CS-2 East Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	84675	Date Analyzed:	2011-09-13	Analyzed By:	AR
Prep Batch:	71786	Sample Preparation:	2011-09-07	Prepared By:	AR

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

Method Blanks

Method Blank (1) QC Batch: 84674

QC Batch:	84674	Date Analyzed:	2011-09-13	Analyzed By:	AR
Prep Batch:	71786	QC Preparation:	2011-09-07	Prepared By:	AR

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

Method Blank (1) QC Batch: 84675

QC Batch:	84675	Date Analyzed:	2011-09-13	Analyzed By:	AR
Prep Batch:	71786	QC Preparation:	2011-09-07	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 84674 | Date Analyzed: 2011-09-13 | Analyzed By: AR
Prep Batch: 71786 | QC Preparation: 2011-09-07 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			97.3	mg/Kg	1	100	<3.85	97	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			104	mg/Kg	1	100	<3.85	104	85 - 115	7	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 84675 | Date Analyzed: 2011-09-13 | Analyzed By: AR
Prep Batch: 71786 | QC Preparation: 2011-09-07 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			97.3	mg/Kg	1	100	<3.85	97	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			106	mg/Kg	1	100	<3.85	106	85 - 115	9	20

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

Matrix Spike (MS-1) Spiked Sample: 276407

QC Batch: 84674 | Date Analyzed: 2011-09-13 | Analyzed By: AR
Prep Batch: 71786 | QC Preparation: 2011-09-07 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10500	mg/Kg	100	10000	<385	105	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			11200	mg/Kg	100	10000	<385	112	79.4 - 120.6	6	20

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

Matrix Spike (MS-1) Spiked Sample: 276411

QC Batch: 84675 | Date Analyzed: 2011-09-13 | Analyzed By: AR
Prep Batch: 71786 | QC Preparation: 2011-09-07 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10400	mg/Kg	100	10000	<385	102	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			11300	mg/Kg	100	10000	<385	111	79.4 - 120.6	8	20

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

Calibration Standards

Standard (ICV-1)

QC Batch: 84674 | Date Analyzed: 2011-09-13 | Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2011-09-13

Standard (CCV-1)

QC Batch: 84674 | Date Analyzed: 2011-09-13 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2011-09-13

Standard (ICV-1)

QC Batch: 84675 | Date Analyzed: 2011-09-13 | Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.4	99	85 - 115	2011-09-13

Standard (CCV-1)

QC Batch: 84675 | Date Analyzed: 2011-09-13 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2011-09-13

Appendix

Laboratory Certifications

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

Standard Flags

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

Attachments

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

& WO #: 1109021 9

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG Operating LLC

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640 0872

PROJECT NAME: Skelly Unit 942 Tank Battery Eddy Co. NM.

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
27406	8/30/11		S		✓	CS-1 North Wall	1				✓														X				
407	8/30/11		S		✓	CS-1 South Wall	1				✓														X				
408	8/30/11		S		✓	CS-1 West Wall	1				✓														X				
409	8/30/11		S		✓	CS-2 South Wall	1				✓														X				
410	8/30/11		S		✓	CS-2 North Wall	1				✓														X				
411	8/30/11		S		✓	CS-2 East Wall	1				✓														X				

RELINQUISHED BY: (Signature) — Date: 9/2/11 Time: 12:50 P.M. — RECEIVED BY: (Signature) — Date: 9/2/11 Time: 12:50

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

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

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

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

TETRA TECH CONTACT PERSON: IKE Tavarez — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes (No)

SAMPLE CONDITION WHEN RECEIVED: 5.8° Intact

REMARKS: X All tests Midland

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