

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

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

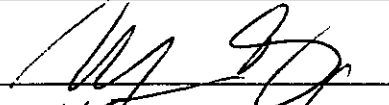
Name of Company COG Operating LLC	Contact Pat Ellis
Address 550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No. (432) 685-4332
Facility Name Pronghorn SWD #1	Facility Type Central Booster Station
Surface Owner: Federal	Mineral Owner Lease No. 30-025-32735

LOCATION OF RELEASE

Unit Letter I	Section 23	Township 17S	Range 32E	Feet from the 2310	North/South Line South	Feet from the 990	East/West Line East	County Lea
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Latitude N 32 43.833 ° Longitude W 103 43.965°

NATURE OF RELEASE

Type of Release: Salt Water	Volume of Release 450bbls	Volume Recovered 420bbls
Source of Release	Date and Hour of Occurrence 11-12-09 PM	Date and Hour of Discovery 11-12-09 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Notified BLM/OCD AM of 11-13-09	
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		
Describe Cause of Problem and Remedial Action Taken.* This leak was caused by a rotted rubber on a hugger clamp. The leak has been repaired and the line is back in service.		
Describe Area Affected and Cleanup Action Taken.* Tetra Tech inspected site and collected samples to define spills extent. Soil with elevated chloride concentrations was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech has prepared a closure report and submitted it to NMOCD for review.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature: 	OIL CONSERVATION DIVISION	
Printed Name: IKE TAVARES	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: IKE.Tavares@state.nm.gov	Conditions of Approval:	
Date: 3-23-12 Phone: 432-682-4559	Attached ☐	

* Attach Additional Sheets If Necessary

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Energy Minerals and Natural Resources

Oil Conservation Division
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Santa Fe, NM 87505

WEST
IRP- 2383

Form C-141
Revised October 10, 2003

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side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Kanicia Carrillo
Address	550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No.	432-685-4332
Facility Name	Pronghorn SWD #1	Facility Type	Central Booster Station
Surface Owner	Federal	Mineral Owner	
		Lease No.	30-025-32735

LOCATION OF RELEASE

Mewbourne Oil Company
QPBSSU 3-7 API# 30-025-24861

The leak site is located 0.11 miles southwest of this location.

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	23	17S	32E	2310	South	990	East	Lea

Latitude N32.43.846 Longitude W103.43.964

NATURE OF RELEASE

Type of Release- Salt Water	Volume of Release- 450bbbls	Volume Recovered- 420bbbls
Source of Release- Hugger clamp	Date and Hour of Occurrence- 11/12/09 PM	Date and Hour of Discovery 11/12/09 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Notified BLM/ OCD AM of 11/13/09	
By Whom? Rick Wright	Date and Hour 11/13/09 in the AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

This leak was caused by a rotted rubber on a hugger clamp. The leak has been repaired and the line is back in service.

Describe Area Affected and Cleanup Action Taken.*

The spill area is primarily in the pasture; no clean up action has been taken. 420 bbls recovered was taken directly from the culvert, limiting the environmental impact to an area of 20' x 75'.

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 your 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.

OIL CONSERVATION DIVISION

Signature: 	Approved by District Supervisor:		
Printed Name: Chasity Jackson			
Title: Agent for COG	Approval Date:	Expiration Date:	
E-mail Address: cjackson@conchoresources.com	Conditions of Approval:		Attached ☐
Date: 11/18/09	Phone: 432-685-4332		

* Attach Additional Sheets If Necessary

PLW 5101705015
2569

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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 Pronghorn SWD System	Facility Type SWD—Line (dresser sleeve rubber)	
Surface Owner: Federal	Mineral Owner	Lease No. 30-025-32735

LOCATION OF RELEASE

Unit Letter I	Section 23	Township 17S	Range 32E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea
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Latitude N 32 43.833 ° Longitude W 103 43.965°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 15bbls	Volume Recovered 10bbls
Source of Release Dresser Sleeve	Date and Hour of Occurrence 6-18-10	Date and Hour of Discovery 6-18-10 11:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Larry Johnson—OCD Geoffrey Leking—OCD Paul Evans--BLM	
By Whom? Josh Russo	Date and Hour 6-19-10 1:47 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

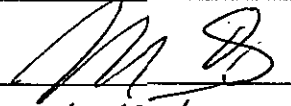
Describe Cause of Problem and Remedial Action Taken.*

The dresser sleeve rubber failed inside the valve box. This has been replaced and put back into service.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech inspected site and collected samples to define spills extent. Soil with elevated chloride concentrations was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech has prepared a closure report and submitted it to NMOCD for review.

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

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: IKE Tawara		Approved by District Supervisor:	
Title: Project Manager		Approval Date:	Expiration Date:
E-mail Address: ike.tawara@state.nm.gov		Conditions of Approval:	
Date: 3-28-12	Phone: 505-682-4559	Attached ☐	

Attach Additional Sheets If Necessary

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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	PRONGHORN SWD SYSTEM	Facility Type	SWD - LINE (dresser sleeve rubber)
Surface Owner	Federal	Mineral Owner	
		Lease No.	API# 30-025-32735

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	23	18S	32E					Lca

Latitude 32 43.833 Longitude 103 43.965

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	15bbls	Volume Recovered	10bbls
Source of Release	Dresser Sleeve	Date and Hour of Occurrence	06/18/2010	Date and Hour of Discovery	06/18/2010 11:00 a.m.
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Larry Johnson—OCD Geoffrey Leking—OCD Paul Evans—BLM		
By Whom?	Josh Russo	Date and Hour	06/19/2010	1:47 p.m.	
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

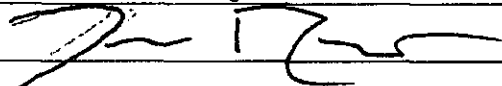
Describe Cause of Problem and Remedial Action Taken.*

The dresser sleeve rubber failed inside the valve box. This has been replaced and put back into service.

Describe Area Affected and Cleanup Action Taken.*

A valve dresser sleeve rubber failed and caused a 5bbls release in the valve box north of the lease road. No fluid could be recovered and the dimensions of the spill area are 20' x 30' on COG's ROW north of the valve box. Also, there was a small stream of fluid measuring 25' x 1' that went down the gutter of the lease road to the west. While making emergency repairs, we drained the line recovering 10bbls of produced water from the valve box. The chloride concentration in this area is 135,500 mg/l. (The closest well location to this release is the Mewbourne Oil Company, QPBSSU 3-7, NM OCD Order #R-9985, Init I, 2310 FSL 990 FEL, Sec. 23-T-18S-R32E, Lea county, NM, NMNM88523X). Tetra Tech will sample the spill site area to delineate any possible contamination and we will present a remediation work plan to the BLM/NMOCD for approval prior to any significant remediation work.

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

Signature:				OIL CONSERVATION DIVISION	
Printed Name:	Josh Russo			Approved by District Supervisor:	
Title:	HSE Coordinator			Approval Date:	Expiration Date:
E-mail Address:	jrusso@conchoresources.com			Conditions of Approval:	Attached ☐
Date:	06/22/2010			Phone:	432-212-2399

* Attach Additional Sheets If Necessary



TETRA TECH

RECEIVED

MAR 31 2011
HOBBSOCD

March 18, 2011

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

Re: Work Plan for the COG Operating LLC., Pronghorn SWD System Line Leak, Unit J, Section 23, Township 18 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess 2 separate spills at the Pronghorn SWD Line Leak located in Unit J, Section 23, Township 18 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32° 43.833', W 103° 43.965'. The site location is shown on Figures 1 and 2. These spills occurred on November 12, 2009 and June 18, 2010.

Background

November 12, 2009

According to the State of New Mexico C-141 Initial Report, the leak was discovered on November 12, 2009, and released approximately 450 barrels of produced water due to a failed rubber gasket on a hugger clamp. To alleviate the problem, COG personnel repaired the leak. Approximately 420 barrels of standing fluids were recovered. The spill migrated in two directions. One leg ran north impacting an area approximately 10' x 95', while the second leg ran east, parallel to the lease road, impacting an area approximately 3' X 150', and crossed the lease road impacting a third area approximately 4' x 120' parallel to the lease road. The spill area is shown on Figure 3. The initial C-141 form is enclosed in Appendix C.

Tetra Tech

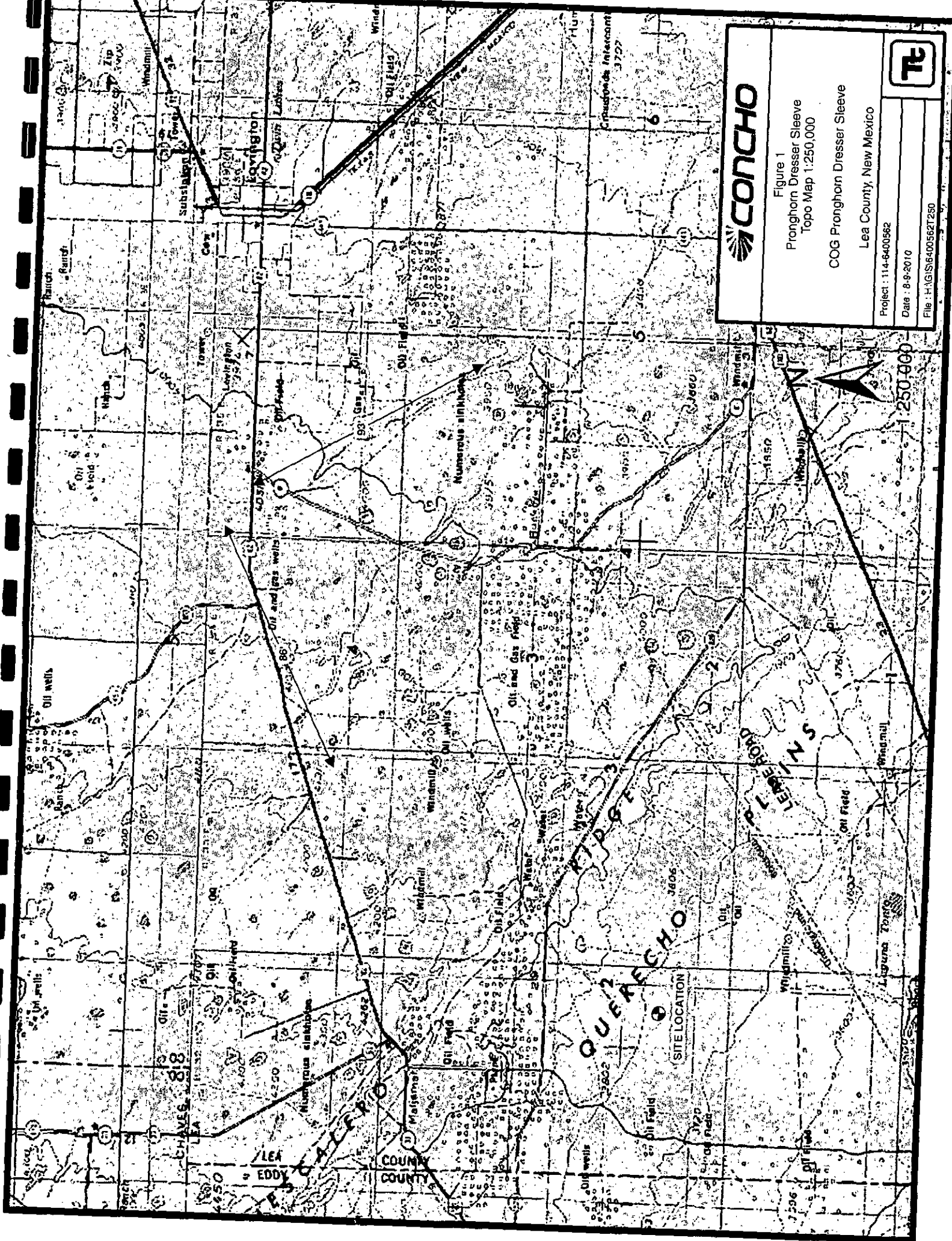
1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559

Fax 432.682.3946

www.tetrattech.com

DEC 22 2015



CONCHO

Figure 1
Pronghorn Dresser Sleeve
Topo Map 1:250,000
COG Pronghorn Dresser Sleeve
Lea County, New Mexico

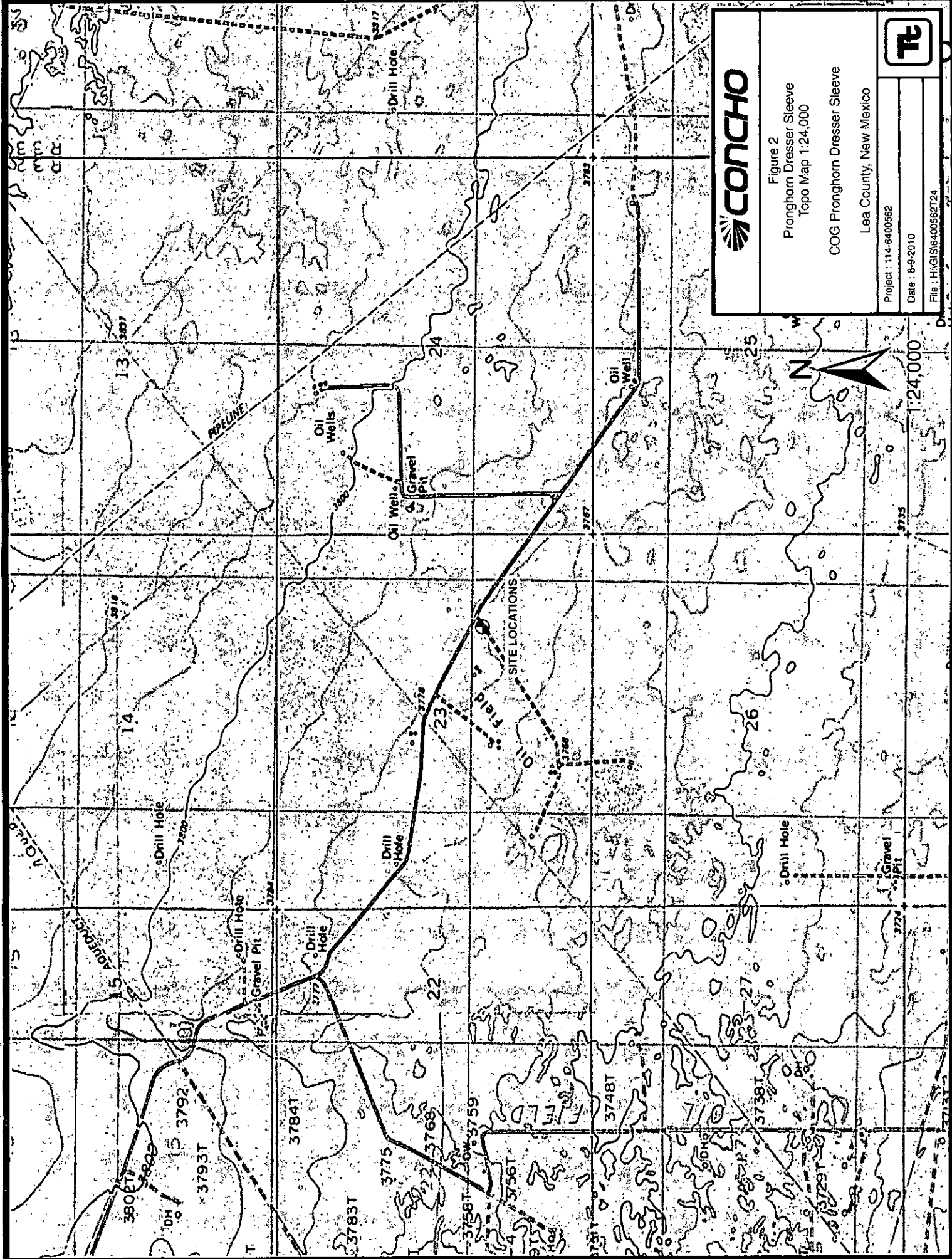
Project : 114-6400562

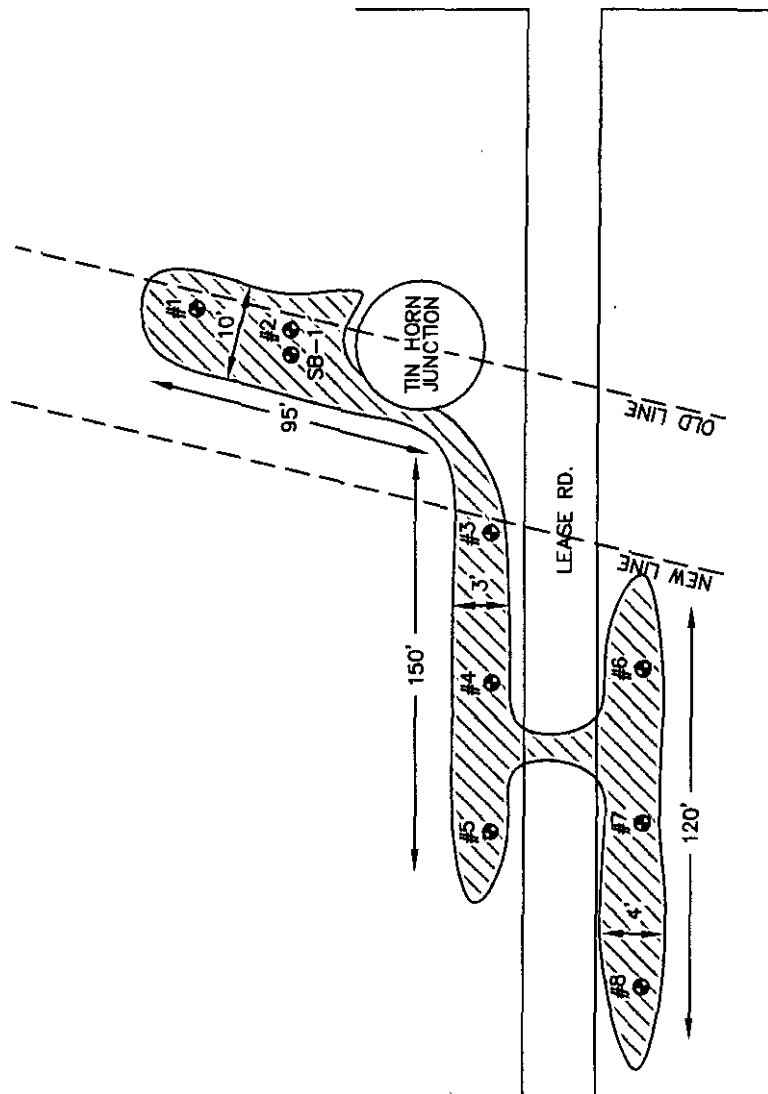
Date : 8-9-2010

File : H:\GIS\6400562\250



1:250,000





1st SPILL

FIGURE NO. 3

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

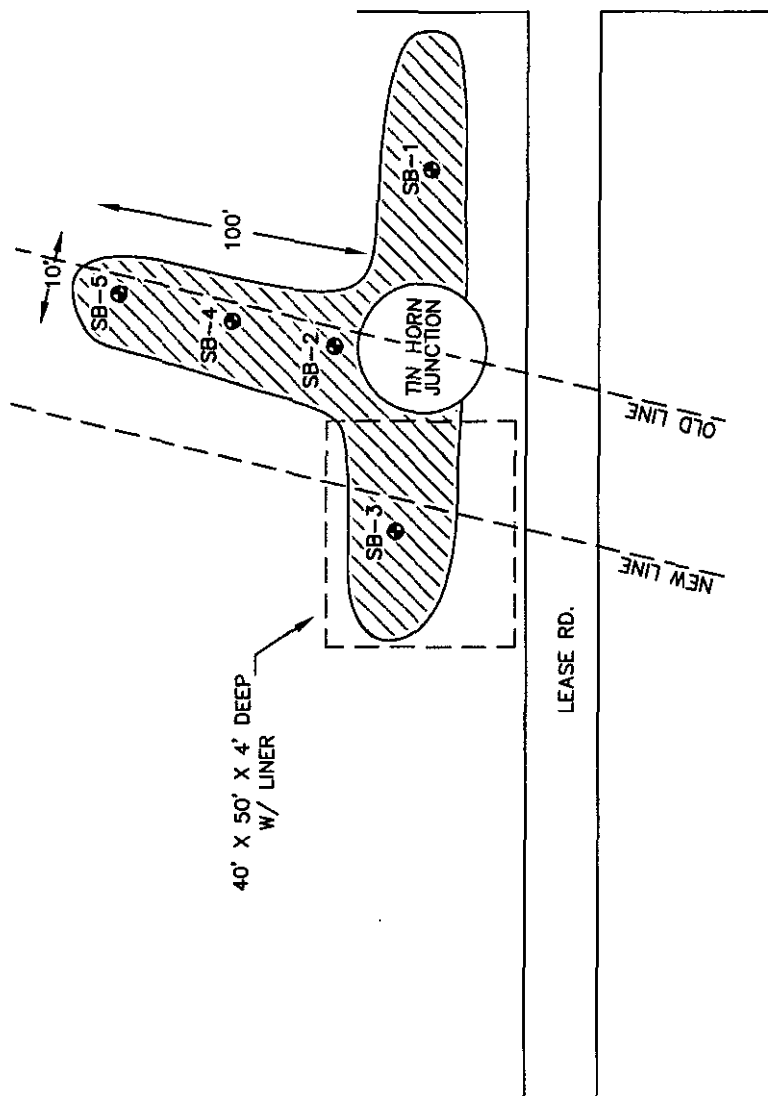
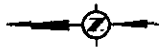
PRONGHORN SEC. 23

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 11/20/09
DWG. BY: JJ
FILE: H:\COG\1100372
PRONGHORN SEC. 23

NOT TO SCALE

- ☒ SPILL AREA (11/12/09)
- ☐ SAMPLE LOCATIONS (AUGER HOLES)
- ☐ SOIL BORE LOCATION



2nd SPILL

- ☒ 2nd SPILL AREA 6/18/10
- ☐ EXCAVATION AREA W/ LINER
- ☐ SOIL BORE LOCATION

FIGURE NO. 4

LEA COUNTY, NEW MEXICO
COG OPERATING LLC
PRONGHORN SEC. 23
TETRA TECH, INC. MIDLAND, TEXAS

DATE	11/20/09
DRAWN BY	JJ
FILE	14100574-000372 PRONGHORN SEC. 23

NOT TO SCALE

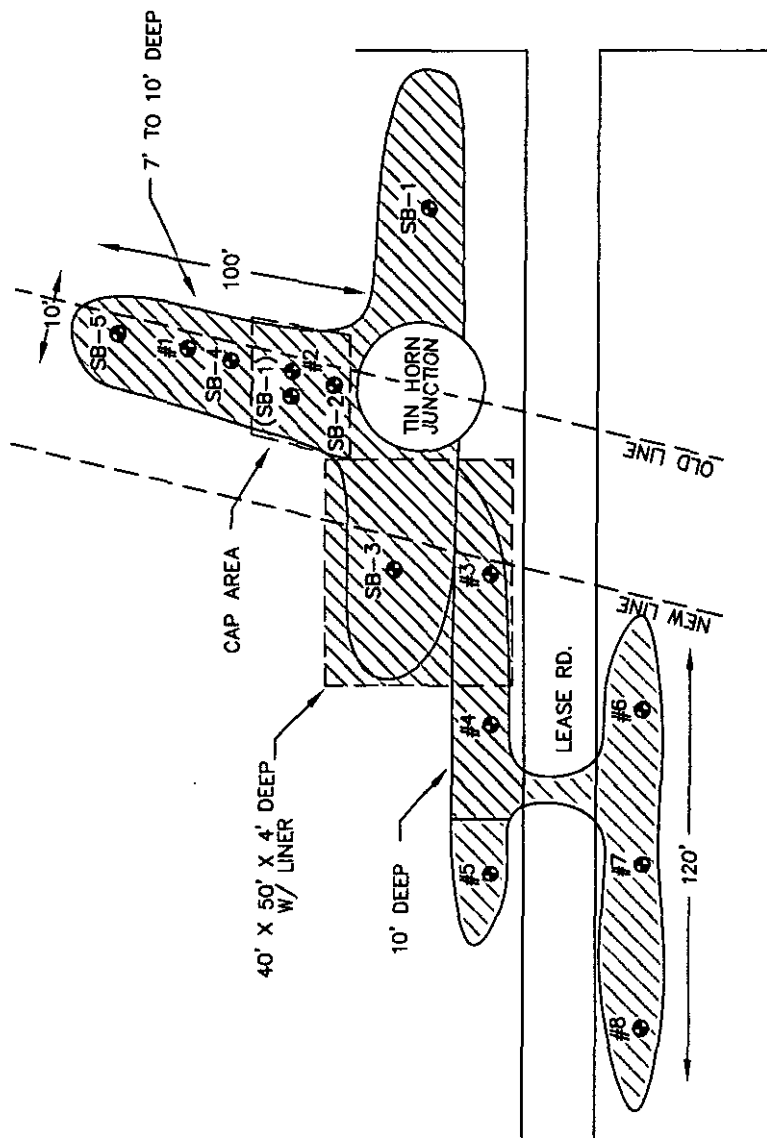


FIGURE NO. 5

LEA COUNTY, NEW MEXICO
COG OPERATING LLC
PRONGHORN SEC. 23
TETRA TECH, INC. MIDLAND, TEXAS

DATE:	11/20/09
DRAWN BY:	JJ
FILE:	HA/COG/4400272 PRONGHORN SEC. 23

NOT TO SCALE

Table 1

[illegible]

Table 1
COG Operating LLC
Pronghorn Main Line Section 23
LEA COUNTY, NEW MEXICO

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride
			In-Situ	Removed	DRO	GRO	Total					
AH-4	11/20/09	0-1'	X		<50.0	<1.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	3,280
		1-1.5'	X		-	-	-	-	-	-	-	2,230
		2-2.5'	X		-	-	-	-	-	-	-	1,010
		3-3.5'	X		-	-	-	-	-	-	-	1,250
		4-4.5'	X		-	-	-	-	-	-	-	1,340
		5-5.5'	X		-	-	-	-	-	-	-	340
		6-6.5'	X		-	-	-	-	-	-	-	452
AH-5	11/20/09	0-1'	X		<50.0	<1.0	<50.0	-	-	-	-	<200
		1-1.5'	X		-	-	-	-	-	-	-	<200
		2-2.5'	X		-	-	-	-	-	-	-	<200
AH-6	11/20/09	0-1'	X		<50.0	<1.0	<50.0	-	-	-	-	<200
		1-1.5'	X		-	-	-	-	-	-	-	<200
		2-2.5'	X		-	-	-	-	-	-	-	<200
AH-7	11/20/09	0-1'	X		<50.0	<1.0	<50.0	-	-	-	-	319
		1-1.5'	X		-	-	-	-	-	-	-	<200
		2-2.5'	X		-	-	-	-	-	-	-	<200
AH-8	11/20/09	0-1'	X		<50.0	<1.0	<50.0	-	-	-	-	<200
		1-1.5'	X		-	-	-	-	-	-	-	<200

(-) Not Analyzed
Proposed Excavation Depths

Table 2

**COG Operating LLC.
Pronghorn SWD Dresser Sleeve (0562)
LEA COUNTY, NEW MEXICO**

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
SB-1	7/21/2010	1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	3,940
	7/21/2010	3'		X		-	-	-	-	-	-	-	4,690
	7/21/2010	5'		X		-	-	-	-	-	-	-	3,240
	7/21/2010	7'		X		-	-	-	-	-	-	-	1,960
	7/21/2010	10'		X		-	-	-	-	-	-	-	2,570
	7/21/2010	15'		X		-	-	-	-	-	-	-	981
	7/21/2010	20'		X		-	-	-	-	-	-	-	769
	7/21/2010	25'		X		-	-	-	-	-	-	-	259
SB-2	7/21/2010	1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	3,500
	7/21/2010	3'		X		-	-	-	-	-	-	-	5,220
	7/21/2010	5'		X		-	-	-	-	-	-	-	3,050
	7/21/2010	7'		X		-	-	-	-	-	-	-	11,000
	7/21/2010	10'		X		-	-	-	-	-	-	-	9,710
	7/21/2010	15'		X		-	-	-	-	-	-	-	8,500
	7/21/2010	20'		X		-	-	-	-	-	-	-	5,490
	7/21/2010	25'		X		-	-	-	-	-	-	-	546
	7/21/2010	30'		X		-	-	-	-	-	-	-	1,660
	7/21/2010	40'		X		-	-	-	-	-	-	-	1,110
	7/21/2010	50'		X		-	-	-	-	-	-	-	614
	7/21/2010	60'		X		-	-	-	-	-	-	-	744
	7/21/2010	70'		X		-	-	-	-	-	-	-	<200
	7/21/2010	80'		X		-	-	-	-	-	-	-	389

Table 2

[illegible]

Table 2
COG Operating LLC.
Pronghorn SWD Dresser Sleeve (0562)
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
SB-5	7/21/2010	1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	3,390
	7/21/2010	3'		X		-	-	-	-	-	-	-	4,840
	7/21/2010	5'		X		-	-	-	-	-	-	-	5,870
	7/21/2010	7'		X		-	-	-	-	-	-	-	9,770
	7/21/2010	10'		X		-	-	-	-	-	-	-	5,570
	7/21/2010	15'		X		-	-	-	-	-	-	-	<200
	7/21/2010	20'		X		-	-	-	-	-	-	-	697

BEB Below Excavation Bottom
(-) Not Analyzed
☐ Proposed Excavated Depths

Water Well Data
Average Depth to Groundwater (ft)
COG - Pronghorn Line Lea County, New Mexico

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

17 South			32 East		
6	5	4	82	3	2
7	8	9	Maljama	11	70
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
180 dry	31	32	33	34	35

17 South			33 East		
6	90	5	4	3	155
7	167	8	9	10	11
18	17	16	15	14	13
188	180	21	22	23	24
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				155	

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

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

18 South			33 East		
6	5	4	3	2	1
7	8	100	9	10	11
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
			177		

19 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
		101			130

19 South			32 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
			250		

19 South			33 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

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

121 Temporary Well Drill by Tetra Tech

Summary Report

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

Report Date: December 1, 2009

Work Order: 9112319



Project Location: Lea County, NM
Project Name: COG/Pronghorn Sec. 23
Project Number: 114-6400372

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
215661	AH-1 0-1'	soil	2009-11-20	00:00	2009-11-23
215662	AH-1 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215663	AH-1 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215664	AH-1 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215665	AH-1 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215666	AH-1 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215667	AH-1 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215668	AH-1 7'-7.5'	soil	2009-11-20	00:00	2009-11-23
215669	AH-1 8'-8.5'	soil	2009-11-20	00:00	2009-11-23
215670	AH-2 0-1'	soil	2009-11-20	00:00	2009-11-23
215671	AH-2 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215672	AH-2 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215673	AH-2 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215674	AH-2 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215675	AH-2 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215676	AH-2 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215677	AH-2 7'-7.5'	soil	2009-11-20	00:00	2009-11-23
215678	AH-3 0-1'	soil	2009-11-20	00:00	2009-11-23
215679	AH-3 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215680	AH-3 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215681	AH-4 0-1'	soil	2009-11-20	00:00	2009-11-23
215682	AH-4 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215683	AH-4 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215684	AH-4 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215685	AH-4 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215686	AH-4 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215687	AH-4 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215688	AH-5 0-1'	soil	2009-11-20	00:00	2009-11-23
215689	AH-5 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215690	AH-5 2'-2.5'	soil	2009-11-20	00:00	2009-11-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
215691	AH-6 0-1'	soil	2009-11-20	00:00	2009-11-23
215692	AH-6 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215693	AH-6 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215694	AH-7 0-1'	soil	2009-11-20	00:00	2009-11-23
215695	AH-7 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215696	AH-7 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215697	AH-8 0-1'	soil	2009-11-20	00:00	2009-11-23
215698	AH-8 1'-1.5'	soil	2009-11-20	00:00	2009-11-23

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
215661 - AH-1 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
215670 - AH-2 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
215678 - AH-3 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
215681 - AH-4 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
215688 - AH-5 0-1'					<50.0	<1.00
215691 - AH-6 0-1'					<50.0	<1.00
215694 - AH-7 0-1'					<50.0	<1.00
215697 - AH-8 0-1'					<50.0	<1.00

Sample: 215661 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		4790	mg/Kg	4.00

Sample: 215662 - AH-1 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		3980	mg/Kg	4.00

Sample: 215663 - AH-1 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		5150	mg/Kg	4.00

Sample: 215664 - AH-1 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		8190	mg/Kg	4.00

Sample: 215665 - AH-1 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		4260	mg/Kg	4.00

Sample: 215666 - AH-1 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		4220	mg/Kg	4.00

Sample: 215667 - AH-1 6'-6.5'

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

Sample: 215668 - AH-1 7'-7.5'

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

Sample: 215669 - AH-1 8'-8.5'

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

Sample: 215670 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		4400	mg/Kg	4.00

Sample: 215671 - AH-2 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		4170	mg/Kg	4.00

Sample: 215672 - AH-2 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		4500	mg/Kg	4.00

Sample: 215673 - AH-2 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		8220	mg/Kg	4.00

Sample: 215674 - AH-2 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		9110	mg/Kg	4.00

Sample: 215675 - AH-2 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		16400	mg/Kg	4.00

Sample: 215676 - AH-2 6'-6.5'

Param	Flag	Result	Units	RL
Chloride		16300	mg/Kg	4.00

Sample: 215677 - AH-2 7'-7.5'

Param	Flag	Result	Units	RL
Chloride		2790	mg/Kg	4.00

Sample: 215678 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		3630	mg/Kg	4.00

Sample: 215679 - AH-3 1'-1.5'

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

Sample: 215680 - AH-3 2'-2.5'

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

Sample: 215681 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		3280	mg/Kg	4.00

Sample: 215682 - AH-4 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		2230	mg/Kg	4.00

Sample: 215683 - AH-4 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		1010	mg/Kg	4.00

Sample: 215684 - AH-4 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		1250	mg/Kg	4.00

Sample: 215685 - AH-4 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		1340	mg/Kg	4.00

Sample: 215686 - AH-4 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		340	mg/Kg	4.00

Sample: 215687 - AH-4 6'-6.5'

Param	Flag	Result	Units	RL
Chloride		452	mg/Kg	4.00

Sample: 215688 - AH-5 0-1'

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

Sample: 215689 - AH-5 1'-1.5'

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

Sample: 215690 - AH-5 2'-2.5'

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

Sample: 215691 - AH-6 0-1'

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

Sample: 215692 - AH-6 1'-1.5'

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

Sample: 215693 - AH-6 2'-2.5'

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

Sample: 215694 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		319	mg/Kg	4.00

Sample: 215695 - AH-7 1'-1.5'

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

Sample: 215696 - AH-7 2'-2.5'

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

Report Date: December 1, 2009

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Sample: 215697 - AH-8 0-1'

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

Sample: 215698 - AH-8 1'-1.5'

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

TRACE ANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•291•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB: 1752439743100-86536
NCTRCA WFWB38444Y0909

DBE: VN 20657

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: December 1, 2009

Work Order: 9112319



Project Location: Lea County, NM
Project Name: COG/Pronghorn Sec. 23
Project Number: 114-6400372

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
215661	AH-1 0-1'	soil	2009-11-20	00:00	2009-11-23
215662	AH-1 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215663	AH-1 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215664	AH-1 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215665	AH-1 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215666	AH-1 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215667	AH-1 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215668	AH-1 7'-7.5'	soil	2009-11-20	00:00	2009-11-23
215669	AH-1 8'-8.5'	soil	2009-11-20	00:00	2009-11-23
215670	AH-2 0-1'	soil	2009-11-20	00:00	2009-11-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
215671	AH-2 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215672	AH-2 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215673	AH-2 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215674	AH-2 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215675	AH-2 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215676	AH-2 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215677	AH-2 7'-7.5'	soil	2009-11-20	00:00	2009-11-23
215678	AH-3 0-1'	soil	2009-11-20	00:00	2009-11-23
215679	AH-3 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215680	AH-3 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215681	AH-4 0-1'	soil	2009-11-20	00:00	2009-11-23
215682	AH-4 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215683	AH-4 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215684	AH-4 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215685	AH-4 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215686	AH-4 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215687	AH-4 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215688	AH-5 0-1'	soil	2009-11-20	00:00	2009-11-23
215689	AH-5 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215690	AH-5 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215691	AH-6 0-1'	soil	2009-11-20	00:00	2009-11-23
215692	AH-6 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215693	AH-6 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215694	AH-7 0-1'	soil	2009-11-20	00:00	2009-11-23
215695	AH-7 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215696	AH-7 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215697	AH-8 0-1'	soil	2009-11-20	00:00	2009-11-23
215698	AH-8 1'-1.5'	soil	2009-11-20	00:00	2009-11-23

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

This report consists of a total of 31 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



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

Standard Flags

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

Case Narrative

Samples for project COG/Pronghorn Sec. 23 were received by TraceAnalysis, Inc. on 2009-11-23 and assigned to work order 9112319. Samples for work order 9112319 were received intact at a temperature of 13.0 deg. 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	56089	2009-11-25 at 11:00	65629	2009-11-25 at 03:26
Chloride (Titration)	SM 4500-Cl B	56074	2009-11-30 at 08:46	65636	2009-11-30 at 15:25
Chloride (Titration)	SM 4500-Cl B	56075	2009-11-30 at 08:47	65637	2009-11-30 at 15:26
Chloride (Titration)	SM 4500-Cl B	56076	2009-11-30 at 08:47	65638	2009-11-30 at 15:27
Chloride (Titration)	SM 4500-Cl B	56077	2009-11-30 at 08:48	65639	2009-11-30 at 15:28
TPH DRO - NEW	Mod. 8015B	56045	2009-11-24 at 11:05	65583	2009-11-24 at 11:05
TPH GRO	S 8015B	56089	2009-11-25 at 11:00	65630	2009-11-25 at 03:54

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 9112319 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: December 1, 2009
114-6400372

Work Order: 9112319
COG/Pronghorn Sec. 23

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Lea County, NM

Analytical Report

Sample: 215661 - AH-1 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.15	mg/Kg	1	2.00	108	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.92	mg/Kg	1	2.00	96	43.1 - 128.4

Sample: 215661 - AH-1 0-1'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-30	Analyzed By: AR
QC Batch: 65636	Sample Preparation: 2009-11-30	Prepared By: AR
Prep Batch: 56074		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4790	mg/Kg	100	4.00

Sample: 215661 - AH-1 0-1'

Laboratory: Midland	Analytical Method: Mod. 8015B	Prep Method: N/A
Analysis: TPH DRO - NEW	Date Analyzed: 2009-11-24	Analyzed By: kg
QC Batch: 65583	Sample Preparation: 2009-11-24	Prepared By: kg
Prep Batch: 56045		

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

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

Report Date: December 1, 2009
114-6400372

Work Order: 9112319
COG/Pronghorn Sec. 23

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Lea County, NM

Sample: 215661 - AH-1 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.11	mg/Kg	1	2.00	106	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.81	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215662 - AH-1 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3980	mg/Kg	100	4.00

Sample: 215663 - AH-1 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5150	mg/Kg	100	4.00

Sample: 215664 - AH-1 3'-3.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8190	mg/Kg	100	4.00

Report Date: December 1, 2009
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COG/Pronghorn Sec. 23

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Lea County, NM

Sample: 215665 - AH-1 4'-4.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65636

Prep Batch: 56074

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4260	mg/Kg	100	4.00

Sample: 215666 - AH-1 5'-5.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65636

Prep Batch: 56074

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4220	mg/Kg	100	4.00

Sample: 215667 - AH-1 6'-6.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65636

Prep Batch: 56074

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

Sample: 215668 - AH-1 7'-7.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65636

Prep Batch: 56074

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

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Sample: 215669 - AH-1 8'-8.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

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

Sample: 215670 - AH-2 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.13	mg/Kg	1	2.00	106	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.90	mg/Kg	1	2.00	95	43.1 - 128.4

Sample: 215670 - AH-2 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4400	mg/Kg	100	4.00

Sample: 215670 - AH-2 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 65583 Date Analyzed: 2009-11-24 Analyzed By: kg
Prep Batch: 56045 Sample Preparation: 2009-11-24 Prepared By: kg

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

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

Sample: 215670 - AH-2 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.09	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.81	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215671 - AH-2 1'-1.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65637	Date Analyzed:	2009-11-30
Prep Batch:	56075	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4170	mg/Kg	100	4.00

Sample: 215672 - AH-2 2'-2.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65637	Date Analyzed:	2009-11-30
Prep Batch:	56075	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4500	mg/Kg	100	4.00

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Sample: 215673 - AH-2 3'-3.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56075 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8220	mg/Kg	100	4.00

Sample: 215674 - AH-2 4'-4.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56075 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9110	mg/Kg	100	4.00

Sample: 215675 - AH-2 5'-5.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56075 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		16400	mg/Kg	100	4.00

Sample: 215676 - AH-2 6'-6.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56075 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		16300	mg/Kg	100	4.00

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Sample: 215677 - AH-2 7'-7.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56075 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2790	mg/Kg	100	4.00

Sample: 215678 - AH-3 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	1	2.00	93	43.1 - 128.4

Sample: 215678 - AH-3 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56075 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3630	mg/Kg	100	4.00

Sample: 215678 - AH-3 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 65583 Date Analyzed: 2009-11-24 Analyzed By: kg
Prep Batch: 56045 Sample Preparation: 2009-11-24 Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		102	mg/Kg	1	100	102	70 - 130

Sample: 215678 - AH-3 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.76	mg/Kg	1	2.00	88	61.7 - 121.1

Sample: 215679 - AH-3 1'-1.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-30	Analyzed By: AR
QC Batch: 65637	Sample Preparation: 2009-11-30	Prepared By: AR
Prep Batch: 56075		

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

Sample: 215680 - AH-3 2'-2.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-30	Analyzed By: AR
QC Batch: 65637	Sample Preparation: 2009-11-30	Prepared By: AR
Prep Batch: 56075		

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

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Sample: 215681 - AH-4 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.90	mg/Kg	1	2.00	95	43.1 - 128.4

Sample: 215681 - AH-4 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 65638
Prep Batch: 56076

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-11-30
Sample Preparation: 2009-11-30

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3280	mg/Kg	100	4.00

Sample: 215681 - AH-4 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 65583
Prep Batch: 56045

Analytical Method: Mod. 8015B
Date Analyzed: 2009-11-24
Sample Preparation: 2009-11-24

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		102	mg/Kg	1	100	102	70 - 130

Sample: 215681 - AH-4 0-1'

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Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215682 - AH-4 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56076 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2230	mg/Kg	100	4.00

Sample: 215683 - AH-4 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56076 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1010	mg/Kg	50	4.00

Sample: 215684 - AH-4 3'-3.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56076 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1250	mg/Kg	50	4.00

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Sample: 215685 - AH-4 4'-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65638	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56076				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1340	mg/Kg	50	4.00

Sample: 215686 - AH-4 5'-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65638	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56076				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		340	mg/Kg	50	4.00

Sample: 215687 - AH-4 6'-6.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65638	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56076				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		452	mg/Kg	50	4.00

Sample: 215688 - AH-5 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65638	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56076				

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

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Sample: 215688 - AH-5 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 65583
Prep Batch: 56045

Analytical Method: Mod. 8015B
Date Analyzed: 2009-11-24
Sample Preparation: 2009-11-24

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

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

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

Sample: 215688 - AH-5 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.10	mg/Kg	1	2.00	105	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.81	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215689 - AH-5 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 65638
Prep Batch: 56076

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-11-30
Sample Preparation: 2009-11-30

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

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

Sample: 215690 - AH-5 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 65638
Prep Batch: 56076

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-11-30
Sample Preparation: 2009-11-30

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

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

Sample: 215691 - AH-6 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65639 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56077 Sample Preparation: 2009-11-30 Prepared By: AR

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

Sample: 215691 - AH-6 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 65583 Date Analyzed: 2009-11-24 Analyzed By: kg
Prep Batch: 56045 Sample Preparation: 2009-11-24 Prepared By: kg

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

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

Sample: 215691 - AH-6 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	61.7 - 121.1

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Sample: 215692 - AH-6 1'-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65639	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56077				

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

Sample: 215693 - AH-6 2'-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65639	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56077				

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

Sample: 215694 - AH-7 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65639	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56077				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		319	mg/Kg	50	4.00

Sample: 215694 - AH-7 0-1'

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2009-11-24	Analyzed By:	kg
QC Batch:	65583	Sample Preparation:	2009-11-24	Prepared By:	kg
Prep Batch:	56045				

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

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

Sample: 215694 - AH-7 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215695 - AH-7 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65639 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56077 Sample Preparation: 2009-11-30 Prepared By: AR

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

Sample: 215696 - AH-7 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65639 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56077 Sample Preparation: 2009-11-30 Prepared By: AR

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

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Sample: 215697 - AH-8 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65639 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56077 Sample Preparation: 2009-11-30 Prepared By: AR

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

Sample: 215697 - AH-8 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 65583 Date Analyzed: 2009-11-24 Analyzed By: kg
Prep Batch: 56045 Sample Preparation: 2009-11-24 Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		108	mg/Kg	1	100	108	70 - 130

Sample: 215697 - AH-8 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.09	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.81	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215698 - AH-8 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65639 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56077 Sample Preparation: 2009-11-30 Prepared By: AR

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

Method Blank (1) QC Batch: 65583

QC Batch: 65583 Date Analyzed: 2009-11-24 Analyzed By: kg
Prep Batch: 56045 QC Preparation: 2009-11-24 Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		95.7	mg/Kg	1	100	96	70 - 130

Method Blank (1) QC Batch: 65629

QC Batch: 65629 Date Analyzed: Analyzed By:
Prep Batch: QC Preparation: Prepared By:

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00410	mg/Kg	0.01
Toluene		<0.00310	mg/Kg	0.01
Ethylbenzene		<0.00240	mg/Kg	0.01
Xylene		<0.00650	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.12	mg/Kg	1	2.00	106	64.9 - 122.7
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	43.9 - 121.9

Method Blank (1) QC Batch: 65630

QC Batch: 65630 Date Analyzed: Analyzed By:
Prep Batch: QC Preparation: Prepared By:

Parameter	Flag	MDL Result	Units	RL
GRO		<0.396	mg/Kg	1

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.10	mg/Kg	1	2.00	105	66.2 - 125
4-Bromofluorobenzene (4-BFB)		1.72	mg/Kg	1	2.00	86	62 - 120.5

Method Blank (1) QC Batch: 65636

QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 QC Preparation: 2009-11-30 Prepared By: AR

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

Method Blank (1) QC Batch: 65637

QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56075 QC Preparation: 2009-11-30 Prepared By: AR

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

Method Blank (1) QC Batch: 65638

QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56076 QC Preparation: 2009-11-30 Prepared By: AR

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

Method Blank (1) QC Batch: 65639

QC Batch: 65639 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56077 QC Preparation: 2009-11-30 Prepared By: AR

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

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Laboratory Control Spike (LCS-1)

QC Batch: 65583
Prep Batch: 56045

Date Analyzed: 2009-11-24
QC Preparation: 2009-11-24

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	220	mg/Kg	1	250	<5.86	88	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	222	mg/Kg	1	250	<5.86	89	57.4 - 133.4	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	102	104	mg/Kg	1	100	102	104	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 65629
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.00	mg/Kg	1	2.00	<0.00410	100	75.4 - 115.7
Toluene	1.99	mg/Kg	1	2.00	<0.00310	100	78.4 - 113.6
Ethylbenzene	1.95	mg/Kg	1	2.00	<0.00240	98	76 - 114.2
Xylene	5.82	mg/Kg	1	6.00	<0.00650	97	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.95	mg/Kg	1	2.00	<0.00410	98	75.4 - 115.7	2	20
Toluene	1.94	mg/Kg	1	2.00	<0.00310	97	78.4 - 113.6	2	20
Ethylbenzene	1.91	mg/Kg	1	2.00	<0.00240	96	76 - 114.2	2	20
Xylene	5.70	mg/Kg	1	6.00	<0.00650	95	76.9 - 113.6	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.13	2.11	mg/Kg	1	2.00	106	106	65 - 122.9
4-Bromofluorobenzene (4-BFB)	1.91	1.88	mg/Kg	1	2.00	96	94	43.8 - 124.9

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Laboratory Control Spike (LCS-1)

QC Batch: 65630
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	13.7	mg/Kg	1	20.0	<0.396	68	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	14.2	mg/Kg	1	20.0	<0.396	71	52.5 - 114.3	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)	2.13	2.19	mg/Kg	1	2.00	106	110	66.2 - 128.7
4-Bromofluorobenzene (4-BFB)	1.80	1.87	mg/Kg	1	2.00	90	94	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 65636
Prep Batch: 56074

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.6	mg/Kg	1	100	<2.18	100	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	104	mg/Kg	1	100	<2.18	104	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: 65637
Prep Batch: 56075

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115

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

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Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	104	mg/Kg	1	100	<2.18	104	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65638
Prep Batch: 56076

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.7	mg/Kg	1	100	<2.18	100	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65639
Prep Batch: 56077

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.8	mg/Kg	1	100	<2.18	100	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	98.5	mg/Kg	1	100	<2.18	98	85 - 115	1	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: 215697

QC Batch: 65583
Prep Batch: 56045

Date Analyzed: 2009-11-24
QC Preparation: 2009-11-24

Analyzed By: kg
Prepared By: kg

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matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	198	mg/Kg	1	250	<5.86	79	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	197	mg/Kg	1	250	<5.86	79	35.2 - 167.1	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	100	99.3	mg/Kg	1	100	100	99	70 - 130

Matrix Spike (MS-1) Spiked Sample: 215596

QC Batch: 65629
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	¹	3.04	mg/Kg	1	2.00	<0.00410	152	57.7 - 140.7
Toluene	²	3.12	mg/Kg	1	2.00	<0.00310	156	53.4 - 146.6
Ethylbenzene	³	3.21	mg/Kg	1	2.00	<0.00240	160	62.1 - 141.6
Xylene	⁴	9.65	mg/Kg	1	6.00	<0.00650	161	61.2 - 142.7

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

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2.51	mg/Kg	1	2.00	<0.00410	126	57.7 - 140.7	19	20
Toluene		2.56	mg/Kg	1	2.00	<0.00310	128	53.4 - 146.6	20	20
Ethylbenzene		2.65	mg/Kg	1	2.00	<0.00240	132	62.1 - 141.6	19	20
Xylene		7.92	mg/Kg	1	6.00	<0.00650	132	61.2 - 142.7	20	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)	2.08	2.00	mg/Kg	1	2	104	100	62.7 - 119.6

continued ...

¹Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

²Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

³Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

⁴Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	1.94	1.82	mg/Kg	1	2	97	91	49.6 - 136.7

Matrix Spike (MS-1) Spiked Sample: 215694

QC Batch: 65630
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	11.4	mg/Kg	1	20.0	<0.396	57	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	13.7	mg/Kg	1	20.0	<0.396	68	10 - 198.3	18	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)	2.06	2.12	mg/Kg	1	2	103	106	65.5 - 123
4-Bromofluorobenzene (4-BFB)	1.86	1.91	mg/Kg	1	2	93	96	58.6 - 140

Matrix Spike (MS-1) Spiked Sample: 215670

QC Batch: 65636
Prep Batch: 56074

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	13100	mg/Kg	100	10000	4400	87	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	13700	mg/Kg	100	10000	4400	93	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 215680

QC Batch: 65637
Prep Batch: 56075

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10500	mg/Kg	100	10000	<218	105	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10700	mg/Kg	100	10000	<218	107	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 215690

QC Batch: 65638
Prep Batch: 56076

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

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

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10200	mg/Kg	100	10000	<218	102	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 215770

QC Batch: 65639
Prep Batch: 56077

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	29100	mg/Kg	100	10000	19000	101	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	29300	mg/Kg	100	10000	19000	103	85 - 115	1	20

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

Standard (CCV-1)

QC Batch: 65583

Date Analyzed: 2009-11-24

Analyzed By: kg

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	218	87	80 - 120	2009-11-24

Standard (CCV-2)

QC Batch: 65583

Date Analyzed: 2009-11-24

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	221	88	80 - 120	2009-11-24

Standard (CCV-3)

QC Batch: 65583

Date Analyzed: 2009-11-24

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	231	92	80 - 120	2009-11-24

Standard (CCV-1)

QC Batch: 65629

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0968	97	80 - 120	2009-11-25
Toluene		mg/Kg	0.100	0.0964	96	80 - 120	2009-11-25
Ethylbenzene		mg/Kg	0.100	0.0953	95	80 - 120	2009-11-25
Xylene		mg/Kg	0.300	0.284	95	80 - 120	2009-11-25

Standard (CCV-2)

QC Batch: 65629

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0979	98	80 - 120	2009-11-25
Toluene		mg/Kg	0.100	0.0973	97	80 - 120	2009-11-25
Ethylbenzene		mg/Kg	0.100	0.0957	96	80 - 120	2009-11-25

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Xylene		mg/Kg	0.300	0.285	95	80 - 120	2009-11-25

Standard (CCV-1)

QC Batch: 65630

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.835	84	80 - 120	2009-11-25

Standard (CCV-2)

QC Batch: 65630

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.888	89	80 - 120	2009-11-25

Standard (CCV-3)

QC Batch: 65630

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.03	103	80 - 120	2009-11-25

Standard (ICV-1)

QC Batch: 65636

Date Analyzed: 2009-11-30

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	107	107	85 - 115	2009-11-30

Standard (CCV-1)

QC Batch: 65636

Date Analyzed: 2009-11-30

Analyzed By: AR

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	92.6	93	85 - 115	2009-11-30

Standard (ICV-1)

QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	93.9	94	85 - 115	2009-11-30

Standard (CCV-1)

QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	106	106	85 - 115	2009-11-30

Standard (ICV-1)

QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.8	99	85 - 115	2009-11-30

Standard (CCV-1)

QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-30

Standard (ICV-1)

QC Batch: 65639 Date Analyzed: 2009-11-30 Analyzed By: AR

Report Date: December 1, 2009
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Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-30

Standard (CCV-1)

QC Batch: 65639

Date Analyzed: 2009-11-30

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.0	99	85 - 115	2009-11-30

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Analysis Request of Chain of Custody Record

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ANALYSIS REQUEST
(Circle or Specify Method No.)**TETRA TECH**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COK		SITE MANAGER: Ike Tavares		PROJECT NAME: Eden / Panshown Sec. 23 Loc. 6, AM		PRESERVATIVE METHOD	
LAB ID. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	NUMBER OF CONTAINERS	☐ HCL ☐ HNO3 ☐ ICE ☐ NONE
2151661	11/20		5		X	1	
6662							X
6663							
6664							
6665							
6666							
6667							
6668							
6669							
6670							

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
	11/20/09	10:45		11/20/09	10:45

RECEIVING LABORATORY:	STATE	ZIP	PHONE	DATE
Midland	TX			

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:
13.0°C intact	B had TM and 5,000 npl/s run deeper samples Run B761 on 14 highest TPH

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

Order # 9112319

Analysis Request of Chain of Custody Record

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ANALYSIS REQUEST
(Circle or Specify Method No.)



TETRA TECH

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

SITE MANAGER:

IKr Tavaraz

CLIENT NAME:

COG

PROJECT NAME:

COG/Parryham Str. 23

PROJECT NO.:

114-640372

LAB. ID. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
6081	11/21		S	X		AH-4 0-1'
6082						AH-4 1'-1.5'
6083						AH-4 2'-2.5'
6084						AH-4 3'-3.5'
6085						AH-4 4'-4.5'
6086						AH-4 5'-5.5'
6087						AH-4 6'-6.5'
6088						AH-5 0-1'
6089						AH-5 1'-1.5'
6090						AH-5 2'-2.5'

PRESERVATIVE METHOD

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNO3

ICE

NONE

BTEX 00218	TPH 0015 WOC	PAH 0270	ROPA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 0240/0280/024	GC/MS Semi. Vol. 0270/0226	PCB's 0080/008	Pest. 008/008	Chloride	Gamm Spec.	Alpha Beta (A1)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
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RELINQUISHED BY (Signature) *[Signature]* Date *11/21/03* Time *10:15*

RELINQUISHED BY (Signature) *[Signature]* Date *11/21/03* Time *10:15*

RELINQUISHED BY (Signature) *[Signature]* Date *11/21/03* Time *10:15*

RECEIVING LABORATORY: *Tetra Tech*

ADDRESS: *1910 N. Big Spring St.*

CITY: *Midland* STATE: *TX* ZIP: *79705*

CONTACT: *[Signature]* PHONE: *[Signature]* DATE: *[Signature]*

REMARKS: *If Tetra Tech spends 5,000 mg/kg run deeper horizons*

SAMPLE CONDITION WHEN RECEIVED: *13.0°C intact*

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Order #: 9112319

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 4

ANALYSIS REQUEST
(Circle or Specify Method No.)



TETRA TECH

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

CLIENT NAME: COG		SITE MANAGER: ZK Tavaraz	
PROJECT NO.: 14-L-100372		PROJECT NAME: COG / Payson Site 23	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
	2014		
691	11/20		5 AH-6 0-1'
692			1-1.5'
693			2-2.5'
694			0-1'
695			1-1.5'
696			2-2.5'
697			0-1'
698			1-1.5'

RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RECEIVING LABORATORY:	DATE:	TIME:	RECEIVED BY: (Signature)	Date:	TIME:
ADDRESS:	STATE:	ZIP:	RECEIVED BY: (Signature)	Date:	TIME:
CONTACT:	PHONE:		RECEIVED BY: (Signature)	Date:	TIME:

NUMBER OF CONTAINERS	1
PREPARED (Y/N)	
PRESERVATIVE METHOD	
HCL	
HNO3	
ICE	
NONE	

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

REMARKS: **13.0% induct** **If total TPH exceeds 5,000 mg/kg run deeper horizons**

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

Run BTEX on 4 highest TPH

Summary Report

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

Report Date: January 20, 2010

Work Order: 10011513



Project Location: Lea County, NM
Project Name: COG/Pronghorn Sec. 23
Project Number: 114-6400372

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
219597	SB-1 4-5'	soil	2010-01-13	00:00	2010-01-14
219598	SB-1 6-7'	soil	2010-01-13	00:00	2010-01-14
219599	SB-1 8-9'	soil	2010-01-13	00:00	2010-01-14
219600	SB-1 10-11'	soil	2010-01-13	00:00	2010-01-14
219601	SB-1 15-16'	soil	2010-01-13	00:00	2010-01-14
219602	SB-1 20-21'	soil	2010-01-13	00:00	2010-01-14

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
219597 - SB-1 4-5'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00

Sample: 219597 - SB-1 4-5'

Param	Flag	Result	Units	RL
Chloride		4090	mg/Kg	4.00

Sample: 219598 - SB-1 6-7'

Param	Flag	Result	Units	RL
Chloride		7310	mg/Kg	4.00

Sample: 219599 - SB-1 8-9'

Param	Flag	Result	Units	RL
Chloride		13100	mg/Kg	4.00

Sample: 219600 - SB-1 10-11'

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

Sample: 219601 - SB-1 15-16'

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

Sample: 219602 - SB-1 20-21'

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

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 806•378•1296 806•794•1296 FAX 806•794•1296
200 East Sunset Road, Suite E El Paso, Texas 79922 806•585•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: lan@traceanalysis.com

Certifications

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

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: January 20, 2010

Work Order: 10011513



Project Location: Lea County, NM
Project Name: COG/Pronghorn Sec. 23
Project Number: 114-6400372

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
219597	SB-1 4-5'	soil	2010-01-13	00:00	2010-01-14
219598	SB-1 6-7'	soil	2010-01-13	00:00	2010-01-14
219599	SB-1 8-9'	soil	2010-01-13	00:00	2010-01-14
219600	SB-1 10-11'	soil	2010-01-13	00:00	2010-01-14
219601	SB-1 15-16'	soil	2010-01-13	00:00	2010-01-14
219602	SB-1 20-21'	soil	2010-01-13	00:00	2010-01-14

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

This report consists of a total of 13 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



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

Standard Flags

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

Case Narrative

Samples for project COG/Pronghorn Sec. 23 were received by TraceAnalysis, Inc. on 2010-01-14 and assigned to work order 10011513. Samples for work order 10011513 were received intact at a temperature of 17.0 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	57175	2010-01-19 at 14:00	66862	2010-01-19 at 11:58
Chloride (Titration)	SM 4500-Cl B	57115	2010-01-18 at 09:39	66836	2010-01-19 at 14:40
TPH DRO - NEW	Mod. 8015B	57147	2010-01-18 at 10:36	66823	2010-01-18 at 10:36
TPH GRO	S 8015B	57175	2010-01-19 at 14:00	66863	2010-01-19 at 12:26

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 10011513 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
COG/Pronghorn Sec. 23

Page Number: 4 of 13
Lea County, NM

Analytical Report

Sample: 219597 - SB-1 4-5'

Laboratory: Midland
Analysis: BTEX
QC Batch: 66862
Prep Batch: 57175

Analytical Method: S 8021B
Date Analyzed: 2010-01-19
Sample Preparation: 2010-01-19

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		2.10	mg/Kg	1	2.00	105	43.1 - 158.4

Sample: 219597 - SB-1 4-5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66836
Prep Batch: 57115

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-19
Sample Preparation: 2010-01-18

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4090	mg/Kg	100	4.00

Sample: 219597 - SB-1 4-5'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 66823
Prep Batch: 57147

Analytical Method: Mod. 8015B
Date Analyzed: 2010-01-18
Sample Preparation: 2010-01-18

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

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

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
COG/Pronghorn Sec. 23

Page Number: 5 of 13
Lea County, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		102	mg/Kg	1	100	102	70 - 130

Sample: 219597 - SB-1 4-5'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 66863
Prep Batch: 57175

Analytical Method: S 8015B
Date Analyzed: 2010-01-19
Sample Preparation: 2010-01-19

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.30	mg/Kg	1	2.00	115	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.17	mg/Kg	1	2.00	108	61.7 - 131.1

Sample: 219598 - SB-1 6-7'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66836
Prep Batch: 57115

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-19
Sample Preparation: 2010-01-18

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		7310	mg/Kg	100	4.00

Sample: 219599 - SB-1 8-9'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66836
Prep Batch: 57115

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-19
Sample Preparation: 2010-01-18

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		13100	mg/Kg	100	4.00

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
COG/Pronghorn Sec. 23

Page Number: 6 of 13
Lea County, NM

Sample: 219600 - SB-1 10-11'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 66836 Date Analyzed: 2010-01-19 Analyzed By: AR
Prep Batch: 57115 Sample Preparation: 2010-01-18 Prepared By: AR

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

Sample: 219601 - SB-1 15-16'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 66836 Date Analyzed: 2010-01-19 Analyzed By: AR
Prep Batch: 57115 Sample Preparation: 2010-01-18 Prepared By: AR

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

Sample: 219602 - SB-1 20-21'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 66836 Date Analyzed: 2010-01-19 Analyzed By: AR
Prep Batch: 57115 Sample Preparation: 2010-01-18 Prepared By: AR

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

Method Blank (1) QC Batch: 66823

QC Batch: 66823 Date Analyzed: 2010-01-18 Analyzed By: kg
Prep Batch: 57147 QC Preparation: 2010-01-18 Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
COG/Pronghorn Sec. 23

Page Number: 7 of 13
Lea County, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		91.6	mg/Kg	1	100	92	70 - 130

Method Blank (1) QC Batch: 66836

QC Batch: 66836
Prep Batch: 57115

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-18

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 66862

QC Batch: 66862
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00410	mg/Kg	0.01
Toluene		<0.00310	mg/Kg	0.01
Ethylbenzene		<0.00240	mg/Kg	0.01
Xylene		<0.00650	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.03	mg/Kg	1	2.00	102	64.9 - 142.7
4-Bromofluorobenzene (4-BFB)		1.90	mg/Kg	1	2.00	95	43.9 - 141.9

Method Blank (1) QC Batch: 66863

QC Batch: 66863
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.396	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.19	mg/Kg	1	2.00	110	66.2 - 145
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	62 - 120.5

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
COG/Pronghorn Sec. 23

Page Number: 8 of 13
Lea County, NM

Laboratory Control Spike (LCS-1)

QC Batch: 66823
Prep Batch: 57147

Date Analyzed: 2010-01-18
QC Preparation: 2010-01-18

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	284	mg/Kg	1	250	<5.86	114	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	295	mg/Kg	1	250	<5.86	118	57.4 - 133.4	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
n-Tricosane	102	105	mg/Kg	1	100	102	105	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 66836
Prep Batch: 57115

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-18

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	95.5	mg/Kg	1	100	<2.18	96	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	97.3	mg/Kg	1	100	<2.18	97	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 66862
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.02	mg/Kg	1	2.00	<0.00410	101	75.4 - 115.7
Toluene	1.85	mg/Kg	1	2.00	<0.00310	92	78.4 - 113.6

continued ...

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
COG/Pronghorn Sec. 23

Page Number: 9 of 13
Lea County, NM

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Ethylbenzene	1.76	mg/Kg	1	2.00	<0.00240	88	76 - 114.2
Xylene	5.34	mg/Kg	1	6.00	<0.00650	89	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.06	mg/Kg	1	2.00	<0.00410	103	75.4 - 115.7	2	20
Toluene	1.89	mg/Kg	1	2.00	<0.00310	94	78.4 - 113.6	2	20
Ethylbenzene	1.80	mg/Kg	1	2.00	<0.00240	90	76 - 114.2	2	20
Xylene	5.44	mg/Kg	1	6.00	<0.00650	91	76.9 - 113.6	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)	1.94	1.92	mg/Kg	1	2.00	97	96	65 - 142.9
4-Bromofluorobenzene (4-BFB)	1.97	1.96	mg/Kg	1	2.00	98	98	43.8 - 144.9

Laboratory Control Spike (LCS-1)

QC Batch: 66863
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.9	mg/Kg	1	20.0	<0.396	84	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.6	mg/Kg	1	20.0	<0.396	88	52.5 - 114.3	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)	2.10	2.12	mg/Kg	1	2.00	105	106	66.2 - 148.7
4-Bromofluorobenzene (4-BFB)	2.03	2.06	mg/Kg	1	2.00	102	103	64.1 - 127.4

Matrix Spike (MS-1) Spiked Sample: 219597

QC Batch: 66823
Prep Batch: 57147

Date Analyzed: 2010-01-18
QC Preparation: 2010-01-18

Analyzed By: kg
Prepared By: kg

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	323	mg/Kg	1	250	<5.86	129	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	328	mg/Kg	1	250	<5.86	131	35.2 - 167.1	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	97.8	98.0	mg/Kg	1	100	98	98	70 - 130

Matrix Spike (MS-1) Spiked Sample: 219677

QC Batch: 66836
Prep Batch: 57115

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-18

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11500	mg/Kg	100	10000	<218	115	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11000	mg/Kg	100	10000	<218	110	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 219728

QC Batch: 66862
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.42	mg/Kg	1	2.00	<0.00410	121	57.7 - 140.7
Toluene	2.26	mg/Kg	1	2.00	<0.00310	113	53.4 - 146.6
Ethylbenzene	2.22	mg/Kg	1	2.00	<0.00240	111	62.1 - 141.6
Xylene	6.71	mg/Kg	1	6.00	<0.00650	112	61.2 - 142.7

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

continued ...

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matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.32	mg/Kg	1	2.00	<0.00410	116	57.7 - 140.7	4	20
Toluene	2.17	mg/Kg	1	2.00	<0.00310	108	53.4 - 146.6	4	20
Ethylbenzene	2.12	mg/Kg	1	2.00	<0.00240	106	62.1 - 141.6	5	20
Xylene	6.42	mg/Kg	1	6.00	<0.00650	107	61.2 - 142.7	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)	1.93	2.11	mg/Kg	1	2	96	106	62.7 - 139.6
4-Bromofluorobenzene (4-BFB)	1.93	2.11	mg/Kg	1	2	96	106	49.6 - 146.7

Matrix Spike (MS-1) Spiked Sample: 219879

QC Batch: 66863
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.6	mg/Kg	1	20.0	<0.396	93	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	19.2	mg/Kg	1	20.0	<0.396	96	10 - 198.3	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)	2.29	2.13	mg/Kg	1	2	114	106	65.5 - 143
4-Bromofluorobenzene (4-BFB)	2.33	2.21	mg/Kg	1	2	116	110	58.6 - 140

Standard (CCV-1)

QC Batch: 66823

Date Analyzed: 2010-01-18

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	297	119	80 - 120	2010-01-18

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Standard (CCV-2)

QC Batch: 66823

Date Analyzed: 2010-01-18

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	290	116	80 - 120	2010-01-18

Standard (ICV-1)

QC Batch: 66836

Date Analyzed: 2010-01-19

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2010-01-19

Standard (CCV-1)

QC Batch: 66836

Date Analyzed: 2010-01-19

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.8	98	85 - 115	2010-01-19

Standard (CCV-1)

QC Batch: 66862

Date Analyzed: 2010-01-19

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.101	101	80 - 120	2010-01-19
Toluene		mg/Kg	0.100	0.0927	93	80 - 120	2010-01-19
Ethylbenzene		mg/Kg	0.100	0.0891	89	80 - 120	2010-01-19
Xylene		mg/Kg	0.300	0.270	90	80 - 120	2010-01-19

Standard (CCV-2)

QC Batch: 66862

Date Analyzed: 2010-01-19

Analyzed By: AG

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
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Lea County, NM.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.101	101	80 - 120	2010-01-19
Toluene		mg/Kg	0.100	0.0926	93	80 - 120	2010-01-19
Ethylbenzene		mg/Kg	0.100	0.0879	88	80 - 120	2010-01-19
Xylene		mg/Kg	0.300	0.265	88	80 - 120	2010-01-19

Standard (CCV-1)

QC Batch: 66863

Date Analyzed: 2010-01-19

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.07	107	80 - 120	2010-01-19

Standard (CCV-2)

QC Batch: 66863

Date Analyzed: 2010-01-19

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.994	99	80 - 120	2010-01-19

Analysis Request of Chain of Custody Record

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ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

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

[illegible]

REMARKS:

7,0°C interst

If $TPH > 5,000 \mu g/L$ run deeper.

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

Summary Report

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

Report Date: July 29, 2010

Work Order: 10072603



Project Name: COG/Pronghorn SWD Dresser Sleeve
Project Number: 114-6400562

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
238550	SB-1 1'	soil	2010-07-20	00:00	2010-07-23
238551	SB-1 3'	soil	2010-07-20	00:00	2010-07-23
238552	SB-1 5'	soil	2010-07-20	00:00	2010-07-23
238553	SB-1 7'	soil	2010-07-20	00:00	2010-07-23
238554	SB-1 10'	soil	2010-07-20	00:00	2010-07-23
238555	SB-1 15'	soil	2010-07-20	00:00	2010-07-23
238556	SB-1 20'	soil	2010-07-20	00:00	2010-07-23
238557	SB-1 25'	soil	2010-07-20	00:00	2010-07-23
238558	SB-2 1'	soil	2010-07-20	00:00	2010-07-23
238559	SB-2 3'	soil	2010-07-20	00:00	2010-07-23
238560	SB-2 5'	soil	2010-07-20	00:00	2010-07-23
238561	SB-2 7'	soil	2010-07-20	00:00	2010-07-23
238562	SB-2 10'	soil	2010-07-20	00:00	2010-07-23
238563	SB-2 15'	soil	2010-07-20	00:00	2010-07-23
238564	SB-2 20'	soil	2010-07-20	00:00	2010-07-23
238565	SB-2 25'	soil	2010-07-20	00:00	2010-07-23
238566	SB-2 30'	soil	2010-07-20	00:00	2010-07-23
238567	SB-2 40'	soil	2010-07-20	00:00	2010-07-23
238568	SB-2 50'	soil	2010-07-20	00:00	2010-07-23
238569	SB-2 60'	soil	2010-07-20	00:00	2010-07-23
238570	SB-2 70'	soil	2010-07-20	00:00	2010-07-23
238571	SB-2 80'	soil	2010-07-20	00:00	2010-07-23
238572	SB-3 1'	soil	2010-07-21	00:00	2010-07-23
238573	SB-3 3'	soil	2010-07-21	00:00	2010-07-23
238574	SB-3 5'	soil	2010-07-21	00:00	2010-07-23
238575	SB-3 7'	soil	2010-07-21	00:00	2010-07-23
238576	SB-3 10'	soil	2010-07-21	00:00	2010-07-23
238577	SB-3 15'	soil	2010-07-21	00:00	2010-07-23
238578	SB-3 20'	soil	2010-07-21	00:00	2010-07-23
238579	SB-3 25'	soil	2010-07-21	00:00	2010-07-23
238580	SB-3 30'	soil	2010-07-21	00:00	2010-07-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
238581	SB-3 40'	soil	2010-07-21	00:00	2010-07-23
238582	SB-3 50'	soil	2010-07-21	00:00	2010-07-23
238583	SB-3 60'	soil	2010-07-21	00:00	2010-07-23
238584	SB-3 70'	soil	2010-07-21	00:00	2010-07-23
238585	SB-4 1'	soil	2010-07-21	00:00	2010-07-23
238586	SB-4 3'	soil	2010-07-21	00:00	2010-07-23
238587	SB-4 5'	soil	2010-07-21	00:00	2010-07-23
238588	SB-4 7'	soil	2010-07-21	00:00	2010-07-23
238589	SB-4 10'	soil	2010-07-21	00:00	2010-07-23
238590	SB-4 15'	soil	2010-07-21	00:00	2010-07-23
238591	SB-4 20'	soil	2010-07-21	00:00	2010-07-23
238592	SB-4 25'	soil	2010-07-21	00:00	2010-07-23
238593	SB-4 30'	soil	2010-07-21	00:00	2010-07-23
238594	SB-4 40'	soil	2010-07-21	00:00	2010-07-23
238595	SB-4 50'	soil	2010-07-21	00:00	2010-07-23
238596	SB-5 1'	soil	2010-07-21	00:00	2010-07-23
238597	SB-5 3'	soil	2010-07-21	00:00	2010-07-23
238598	SB-5 5'	soil	2010-07-21	00:00	2010-07-23
238599	SB-5 7'	soil	2010-07-21	00:00	2010-07-23
238600	SB-5 10'	soil	2010-07-21	00:00	2010-07-23
238601	SB-5 15'	soil	2010-07-21	00:00	2010-07-23
238602	SB-5 20'	soil	2010-07-21	00:00	2010-07-23
238603	SB-4 60'	soil	2010-07-21	00:00	2010-07-23

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
238550 - SB-1 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238558 - SB-2 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238572 - SB-3 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238585 - SB-4 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238596 - SB-5 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 238550 - SB-1 1'

Param	Flag	Result	Units	RL
Chloride		3940	mg/Kg	4.00

Sample: 238551 - SB-1 3'

Param	Flag	Result	Units	RL
Chloride		4690	mg/Kg	4.00

Sample: 238552 - SB-1 5'

Param	Flag	Result	Units	RL
Chloride		3240	mg/Kg	4.00

Sample: 238553 - SB-1 7'

Param	Flag	Result	Units	RL
Chloride		1960	mg/Kg	4.00

Sample: 238554 - SB-1 10'

Param	Flag	Result	Units	RL
Chloride		2570	mg/Kg	4.00

Sample: 238555 - SB-1 15'

Param	Flag	Result	Units	RL
Chloride		981	mg/Kg	4.00

Sample: 238556 - SB-1 20'

Param	Flag	Result	Units	RL
Chloride		769	mg/Kg	4.00

Sample: 238557 - SB-1 25'

Param	Flag	Result	Units	RL
Chloride		259	mg/Kg	4.00

Sample: 238558 - SB-2 1'

Param	Flag	Result	Units	RL
Chloride		3500	mg/Kg	4.00

Sample: 238559 - SB-2 3'

Param	Flag	Result	Units	RL
Chloride		5220	mg/Kg	4.00

Sample: 238560 - SB-2 5'

Param	Flag	Result	Units	RL
Chloride		3050	mg/Kg	4.00

Sample: 238561 - SB-2 7'

Param	Flag	Result	Units	RL
Chloride		11000	mg/Kg	4.00

Sample: 238562 - SB-2 10'

Param	Flag	Result	Units	RL
Chloride		9710	mg/Kg	4.00

Sample: 238563 - SB-2 15'

Param	Flag	Result	Units	RL
Chloride		8500	mg/Kg	4.00

Sample: 238564 - SB-2 20'

Param	Flag	Result	Units	RL
Chloride		5490	mg/Kg	4.00

Sample: 238565 - SB-2 25'

Param	Flag	Result	Units	RL
Chloride		546	mg/Kg	4.00

Sample: 238566 - SB-2 30'

Param	Flag	Result	Units	RL
Chloride		1660	mg/Kg	4.00

Sample: 238567 - SB-2 40'

Param	Flag	Result	Units	RL
Chloride		1110	mg/Kg	4.00

Sample: 238568 - SB-2 50'

Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00

Sample: 238569 - SB-2 60'

Param	Flag	Result	Units	RL
Chloride		744	mg/Kg	4.00

Sample: 238570 - SB-2 70'

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

Sample: 238571 - SB-2 80'

Param	Flag	Result	Units	RL
Chloride		389	mg/Kg	4.00

Sample: 238572 - SB-3 1'

Param	Flag	Result	Units	RL
Chloride		6780	mg/Kg	4.00

Sample: 238573 - SB-3 3'

Param	Flag	Result	Units	RL
Chloride		2890	mg/Kg	4.00

Sample: 238574 - SB-3 5'

Param	Flag	Result	Units	RL
Chloride		5690	mg/Kg	4.00

Sample: 238575 - SB-3 7'

Param	Flag	Result	Units	RL
Chloride		1610	mg/Kg	4.00

Sample: 238576 - SB-3 10'

Param	Flag	Result	Units	RL
Chloride		3080	mg/Kg	4.00

Sample: 238577 - SB-3 15'

Param	Flag	Result	Units	RL
Chloride		8550	mg/Kg	4.00

Sample: 238578 - SB-3 20'

Param	Flag	Result	Units	RL
Chloride		4130	mg/Kg	4.00

Sample: 238579 - SB-3 25'

Param	Flag	Result	Units	RL
Chloride		839	mg/Kg	4.00

Sample: 238580 - SB-3 30'

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

Sample: 238581 - SB-3 40'

Param	Flag	Result	Units	RL
Chloride		390	mg/Kg	4.00

Sample: 238582 - SB-3 50'

Param	Flag	Result	Units	RL
Chloride		410	mg/Kg	4.00

Sample: 238583 - SB-3 60'

Param	Flag	Result	Units	RL
Chloride		302	mg/Kg	4.00

Sample: 238584 - SB-3 70'

Param	Flag	Result	Units	RL
Chloride		298	mg/Kg	4.00

Sample: 238585 - SB-4 1'

Param	Flag	Result	Units	RL
Chloride		8350	mg/Kg	4.00

Sample: 238586 - SB-4 3'

Param	Flag	Result	Units	RL
Chloride		4450	mg/Kg	4.00

Sample: 238587 - SB-4 5'

Param	Flag	Result	Units	RL
Chloride		4270	mg/Kg	4.00

Sample: 238588 - SB-4 7'

Param	Flag	Result	Units	RL
Chloride		4810	mg/Kg	4.00

Sample: 238589 - SB-4 10'

Param	Flag	Result	Units	RL
Chloride		903	mg/Kg	4.00

Sample: 238590 - SB-4 15'

Param	Flag	Result	Units	RL
Chloride		1150	mg/Kg	4.00

Sample: 238591 - SB-4 20'

Param	Flag	Result	Units	RL
Chloride		1270	mg/Kg	4.00

Sample: 238592 - SB-4 25'

Param	Flag	Result	Units	RL
Chloride		228	mg/Kg	4.00

Sample: 238593 - SB-4 30'

Param	Flag	Result	Units	RL
Chloride		238	mg/Kg	4.00

Sample: 238594 - SB-4 40'

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

Sample: 238595 - SB-4 50'

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

Sample: 238596 - SB-5 1'

Param	Flag	Result	Units	RL
Chloride		3390	mg/Kg	4.00

Sample: 238597 - SB-5 3'

Param	Flag	Result	Units	RL
Chloride		4840	mg/Kg	4.00

Sample: 238598 - SB-5 5'

Param	Flag	Result	Units	RL
Chloride		5870	mg/Kg	4.00

Sample: 238599 - SB-5 7'

Param	Flag	Result	Units	RL
Chloride		9770	mg/Kg	4.00

Sample: 238600 - SB-5 10'

Param	Flag	Result	Units	RL
Chloride		5570	mg/Kg	4.00

Sample: 238601 - SB-5 15'

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

Sample: 238602 - SB-5 20'

Param	Flag	Result	Units	RL
Chloride		697	mg/Kg	4.00

Sample: 238603 - SB-4 60'

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



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lah@traceanalysis.com

Certifications

WBENC: 237019

HUB: 1752439743100-86536
NCTRCA WFWB38444Y0909

DBE: VN 20657

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: July 29, 2010

Work Order: 10072603



Project Name: COG/Pronghorn SWD Dresser Sleeve
Project Number: 114-6400562

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
238550	SB-1 1'	soil	2010-07-20	00:00	2010-07-23
238551	SB-1 3'	soil	2010-07-20	00:00	2010-07-23
238552	SB-1 5'	soil	2010-07-20	00:00	2010-07-23
238553	SB-1 7'	soil	2010-07-20	00:00	2010-07-23
238554	SB-1 10'	soil	2010-07-20	00:00	2010-07-23
238555	SB-1 15'	soil	2010-07-20	00:00	2010-07-23
238556	SB-1 20'	soil	2010-07-20	00:00	2010-07-23
238557	SB-1 25'	soil	2010-07-20	00:00	2010-07-23
238558	SB-2 1'	soil	2010-07-20	00:00	2010-07-23
238559	SB-2 3'	soil	2010-07-20	00:00	2010-07-23
238560	SB-2 5'	soil	2010-07-20	00:00	2010-07-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
238561	SB-2 7'	soil	2010-07-20	00:00	2010-07-23
238562	SB-2 10'	soil	2010-07-20	00:00	2010-07-23
238563	SB-2 15'	soil	2010-07-20	00:00	2010-07-23
238564	SB-2 20'	soil	2010-07-20	00:00	2010-07-23
238565	SB-2 25'	soil	2010-07-20	00:00	2010-07-23
238566	SB-2 30'	soil	2010-07-20	00:00	2010-07-23
238567	SB-2 40'	soil	2010-07-20	00:00	2010-07-23
238568	SB-2 50'	soil	2010-07-20	00:00	2010-07-23
238569	SB-2 60'	soil	2010-07-20	00:00	2010-07-23
238570	SB-2 70'	soil	2010-07-20	00:00	2010-07-23
238571	SB-2 80'	soil	2010-07-20	00:00	2010-07-23
238572	SB-3 1'	soil	2010-07-21	00:00	2010-07-23
238573	SB-3 3'	soil	2010-07-21	00:00	2010-07-23
238574	SB-3 5'	soil	2010-07-21	00:00	2010-07-23
238575	SB-3 7'	soil	2010-07-21	00:00	2010-07-23
238576	SB-3 10'	soil	2010-07-21	00:00	2010-07-23
238577	SB-3 15'	soil	2010-07-21	00:00	2010-07-23
238578	SB-3 20'	soil	2010-07-21	00:00	2010-07-23
238579	SB-3 25'	soil	2010-07-21	00:00	2010-07-23
238580	SB-3 30'	soil	2010-07-21	00:00	2010-07-23
238581	SB-3 40'	soil	2010-07-21	00:00	2010-07-23
238582	SB-3 50'	soil	2010-07-21	00:00	2010-07-23
238583	SB-3 60'	soil	2010-07-21	00:00	2010-07-23
238584	SB-3 70'	soil	2010-07-21	00:00	2010-07-23
238585	SB-4 1'	soil	2010-07-21	00:00	2010-07-23
238586	SB-4 3'	soil	2010-07-21	00:00	2010-07-23
238587	SB-4 5'	soil	2010-07-21	00:00	2010-07-23
238588	SB-4 7'	soil	2010-07-21	00:00	2010-07-23
238589	SB-4 10'	soil	2010-07-21	00:00	2010-07-23
238590	SB-4 15'	soil	2010-07-21	00:00	2010-07-23
238591	SB-4 20'	soil	2010-07-21	00:00	2010-07-23
238592	SB-4 25'	soil	2010-07-21	00:00	2010-07-23
238593	SB-4 30'	soil	2010-07-21	00:00	2010-07-23
238594	SB-4 40'	soil	2010-07-21	00:00	2010-07-23
238595	SB-4 50'	soil	2010-07-21	00:00	2010-07-23
238596	SB-5 1'	soil	2010-07-21	00:00	2010-07-23
238597	SB-5 3'	soil	2010-07-21	00:00	2010-07-23
238598	SB-5 5'	soil	2010-07-21	00:00	2010-07-23
238599	SB-5 7'	soil	2010-07-21	00:00	2010-07-23
238600	SB-5 10'	soil	2010-07-21	00:00	2010-07-23
238601	SB-5 15'	soil	2010-07-21	00:00	2010-07-23
238602	SB-5 20'	soil	2010-07-21	00:00	2010-07-23
238603	SB-4 60'	soil	2010-07-21	00:00	2010-07-23

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

This report consists of a total of 42 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



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

Standard Flags

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

Case Narrative

Samples for project COG/Pronghorn SWD Dresser Sleeve were received by TraceAnalysis, Inc. on 2010-07-23 and assigned to work order 10072603. Samples for work order 10072603 were received intact at a temperature of 3.1 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	61781	2010-07-27 at 08:15	72100	2010-07-27 at 10:49
BTEX	S 8021B	61819	2010-07-28 at 08:30	72137	2010-07-28 at 10:41
Chloride (Titration)	SM 4500-Cl B	61767	2010-07-27 at 08:38	72091	2010-07-27 at 15:10
Chloride (Titration)	SM 4500-Cl B	61768	2010-07-27 at 10:39	72092	2010-07-27 at 15:11
Chloride (Titration)	SM 4500-Cl B	61786	2010-07-27 at 09:38	72121	2010-07-28 at 14:50
Chloride (Titration)	SM 4500-Cl B	61787	2010-07-28 at 09:39	72122	2010-07-28 at 14:51
Chloride (Titration)	SM 4500-Cl B	61788	2010-07-27 at 09:39	72123	2010-07-28 at 14:52
Chloride (Titration)	SM 4500-Cl B	61789	2010-07-27 at 09:39	72124	2010-07-28 at 14:53
TPH DRO - NEW	S 8015 D	61780	2010-07-27 at 14:14	72099	2010-07-27 at 14:14
TPH GRO	S 8015 D	61781	2010-07-27 at 08:15	72101	2010-07-27 at 11:16
TPH GRO	S 8015 D	61819	2010-07-28 at 08:30	72138	2010-07-28 at 11:08

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 10072603 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: 238550 - SB-1 1'

Laboratory: Midland

Analysis: BTEX

QC Batch: 72100

Prep Batch: 61781

Analytical Method: S 8021B

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.68	mg/Kg	1	2.00	84	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.67	mg/Kg	1	2.00	84	38.4 - 157

Sample: 238550 - SB-1 1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72091

Prep Batch: 61767

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3940	mg/Kg	100	4.00

Sample: 238550 - SB-1 1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 72099

Prep Batch: 61780

Analytical Method: S 8015 D

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		95.3	mg/Kg	1	100	95	70 - 130

Sample: 238550 - SB-1 1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 72101
Prep Batch: 61781

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.74	mg/Kg	1	2.00	87	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.68	mg/Kg	1	2.00	84	42 - 159

Sample: 238551 - SB-1 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72091
Prep Batch: 61767

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4690	mg/Kg	100	4.00

Sample: 238552 - SB-1 5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72091
Prep Batch: 61767

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3240	mg/Kg	100	4.00

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Sample: 238553 - SB-1 7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72091	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61767				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1960	mg/Kg	100	4.00

Sample: 238554 - SB-1 10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72091	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61767				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2570	mg/Kg	100	4.00

Sample: 238555 - SB-1 15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72091	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61767				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		981	mg/Kg	100	4.00

Sample: 238556 - SB-1 20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72091	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61767				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		769	mg/Kg	50	4.00

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Sample: 238557 - SB-1 25'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72092
Prep Batch: 61768

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		259	mg/Kg	50	4.00

Sample: 238558 - SB-2 1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 72100
Prep Batch: 61781

Analytical Method: S 8021B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.47	mg/Kg	1	2.00	74	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.48	mg/Kg	1	2.00	74	38.4 - 157

Sample: 238558 - SB-2 1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72092
Prep Batch: 61768

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3500	mg/Kg	100	4.00

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Sample: 238558 - SB-2 1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 72099

Prep Batch: 61780

Analytical Method: S 8015 D

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		99.8	mg/Kg	1	100	100	70 - 130

Sample: 238558 - SB-2 1'

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 72101

Prep Batch: 61781

Analytical Method: S 8015 D

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.52	mg/Kg	1	2.00	76	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.47	mg/Kg	1	2.00	74	42 - 159

Sample: 238559 - SB-2 3'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72092

Prep Batch: 61768

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5220	mg/Kg	100	4.00

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Sample: 238560 - SB-2 5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72092	Date Analyzed:	2010-07-27
Prep Batch:	61768	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3050	mg/Kg	100	4.00

Sample: 238561 - SB-2 7'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72092	Date Analyzed:	2010-07-27
Prep Batch:	61768	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11000	mg/Kg	100	4.00

Sample: 238562 - SB-2 10'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72092	Date Analyzed:	2010-07-27
Prep Batch:	61768	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9710	mg/Kg	100	4.00

Sample: 238563 - SB-2 15'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72092	Date Analyzed:	2010-07-27
Prep Batch:	61768	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8500	mg/Kg	100	4.00

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Sample: 238564 - SB-2 20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72092	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61768				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5490	mg/Kg	100	4.00

Sample: 238565 - SB-2 25'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72092	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61768				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		546	mg/Kg	100	4.00

Sample: 238566 - SB-2 30'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72092	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61768				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1660	mg/Kg	100	4.00

Sample: 238567 - SB-2 40'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72121	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61786				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1110	mg/Kg	100	4.00

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Sample: 238568 - SB-2 50'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72121	Date Analyzed:	2010-07-28
Prep Batch:	61786	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		614	mg/Kg	50	4.00

Sample: 238569 - SB-2 60'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72121	Date Analyzed:	2010-07-28
Prep Batch:	61786	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		744	mg/Kg	50	4.00

Sample: 238570 - SB-2 70'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72121	Date Analyzed:	2010-07-28
Prep Batch:	61786	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 238571 - SB-2 80'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72121	Date Analyzed:	2010-07-28
Prep Batch:	61786	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		389	mg/Kg	50	4.00

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Sample: 238572 - SB-3 1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 72100
Prep Batch: 61781

Analytical Method: S 8021B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.69	mg/Kg	1	2.00	84	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.71	mg/Kg	1	2.00	86	38.4 - 157

Sample: 238572 - SB-3 1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72121
Prep Batch: 61786

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6780	mg/Kg	100	4.00

Sample: 238572 - SB-3 1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 72099
Prep Batch: 61780

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

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

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Sample: 238572 - SB-3 1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 72101
Prep Batch: 61781

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.74	mg/Kg	1	2.00	87	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.70	mg/Kg	1	2.00	85	42 - 159

Sample: 238573 - SB-3 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72121
Prep Batch: 61786

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2890	mg/Kg	100	4.00

Sample: 238574 - SB-3 5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72121
Prep Batch: 61786

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5690	mg/Kg	100	4.00

Sample: 238575 - SB-3 7'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72121
Prep Batch: 61786

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

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Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1610	mg/Kg	100	4.00

Sample: 238576 - SB-3 10'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72121 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61786 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3080	mg/Kg	100	4.00

Sample: 238577 - SB-3 15'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8550	mg/Kg	100	4.00

Sample: 238578 - SB-3 20'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4130	mg/Kg	100	4.00

Sample: 238579 - SB-3 25'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

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Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		839	mg/Kg	50	4.00

Sample: 238580 - SB-3 30'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

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

Sample: 238581 - SB-3 40'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		390	mg/Kg	50	4.00

Sample: 238582 - SB-3 50'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		410	mg/Kg	50	4.00

Sample: 238583 - SB-3 60'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

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Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		302	mg/Kg	50	4.00

Sample: 238584 - SB-3 70'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		298	mg/Kg	50	4.00

Sample: 238585 - SB-4 1'

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 72100 Date Analyzed: 2010-07-27 Analyzed By: AG
Prep Batch: 61781 Sample Preparation: 2010-07-27 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.66	mg/Kg	1	2.00	83	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.68	mg/Kg	1	2.00	84	38.4 - 157

Sample: 238585 - SB-4 1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8350	mg/Kg	100	4.00

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Sample: 238585 - SB-4 1'

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-07-27	Analyzed By:	kg
QC Batch:	72099	Sample Preparation:	2010-07-27	Prepared By:	kg
Prep Batch:	61780				

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

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

Sample: 238585 - SB-4 1'

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-07-27	Analyzed By:	AG
QC Batch:	72101	Sample Preparation:	2010-07-27	Prepared By:	AG
Prep Batch:	61781				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.72	mg/Kg	1	2.00	86	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	42 - 159

Sample: 238586 - SB-4 3'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72122	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61787				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4450	mg/Kg	100	4.00

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Sample: 238587 - SB-4 5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72123 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61788 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4270	mg/Kg	100	4.00

Sample: 238588 - SB-4 7'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72123 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61788 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4810	mg/Kg	100	4.00

Sample: 238589 - SB-4 10'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72123 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61788 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		903	mg/Kg	100	4.00

Sample: 238590 - SB-4 15'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72123 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61788 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1150	mg/Kg	100	4.00

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Sample: 238591 - SB-4 20'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72123	Date Analyzed:	2010-07-28
Prep Batch:	61788	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1270	mg/Kg	100	4.00

Sample: 238592 - SB-4 25'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72123	Date Analyzed:	2010-07-28
Prep Batch:	61788	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		228	mg/Kg	50	4.00

Sample: 238593 - SB-4 30'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72123	Date Analyzed:	2010-07-28
Prep Batch:	61788	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		238	mg/Kg	50	4.00

Sample: 238594 - SB-4 40'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72123	Date Analyzed:	2010-07-28
Prep Batch:	61788	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

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Sample: 238595 - SB-4 50'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72123
Prep Batch: 61788

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

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

Sample: 238596 - SB-5 1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 72137
Prep Batch: 61819

Analytical Method: S 8021B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-28

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.66	mg/Kg	1	2.00	83	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.64	mg/Kg	1	2.00	82	38.4 - 157

Sample: 238596 - SB-5 1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72123
Prep Batch: 61788

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3390	mg/Kg	100	4.00

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Sample: 238596 - SB-5 1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 72099
Prep Batch: 61780

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		90.7	mg/Kg	1	100	91	70 - 130

Sample: 238596 - SB-5 1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 72138
Prep Batch: 61819

Analytical Method: S 8015 D
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-28

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.72	mg/Kg	1	2.00	86	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	42 - 159

Sample: 238597 - SB-5 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72124
Prep Batch: 61789

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4840	mg/Kg	100	4.00

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Sample: 238598 - SB-5 5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72124
Prep Batch: 61789

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5870	mg/Kg	100	4.00

Sample: 238599 - SB-5 7'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72124
Prep Batch: 61789

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9770	mg/Kg	100	4.00

Sample: 238600 - SB-5 10'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72124
Prep Batch: 61789

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5570	mg/Kg	100	4.00

Sample: 238601 - SB-5 15'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72124
Prep Batch: 61789

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

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

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Sample: 238602 - SB-5 20'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72124
Prep Batch: 61789

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		697	mg/Kg	50	4.00

Sample: 238603 - SB-4 60'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72124
Prep Batch: 61789

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

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

Method Blank (1) QC Batch: 72091

QC Batch: 72091
Prep Batch: 61767

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 72092

QC Batch: 72092
Prep Batch: 61768

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

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

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Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02
Toluene		<0.00950	mg/Kg	0.02
Ethylbenzene		<0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.91	mg/Kg	1	2.00	96	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1.75	mg/Kg	1	2.00	88	55.4 - 132

Method Blank (1) QC Batch: 72138

QC Batch: 72138
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.77	mg/Kg	1	2.00	88	52.4 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 72091
Prep Batch: 61767

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.6	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	3	20

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

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Laboratory Control Spike (LCS-1)

QC Batch: 72092
Prep Batch: 61768

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.6	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 72099
Prep Batch: 61780

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	223	mg/Kg	1	250	<14.5	89	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	217	mg/Kg	1	250	<14.5	87	57.4 - 133.4	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
n-Tricosane	93.4	92.1	mg/Kg	1	100	93	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 72100
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.04	mg/Kg	1	2.00	<0.0150	102	81.9 - 108
Toluene	2.05	mg/Kg	1	2.00	<0.00950	102	81.9 - 107

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control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Ethylbenzene	2.04	mg/Kg	1	2.00	<0.0106	102	78.4 - 107
Xylene	6.13	mg/Kg	1	6.00	<0.00930	102	79.1 - 107

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.98	mg/Kg	1	2.00	<0.0150	99	81.9 - 108	3	20
Toluene	1.98	mg/Kg	1	2.00	<0.00950	99	81.9 - 107	4	20
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.0106	97	78.4 - 107	5	20
Xylene	5.91	mg/Kg	1	6.00	<0.00930	98	79.1 - 107	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)	2.03	1.97	mg/Kg	1	2.00	102	98	70.2 - 114
4-Bromofluorobenzene (4-BFB)	2.02	1.99	mg/Kg	1	2.00	101	100	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 72101
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.5	mg/Kg	1	20.0	<1.65	82	69.9 - 95.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.7	mg/Kg	1	20.0	<1.65	88	69.9 - 95.4	7	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.07	2.12	mg/Kg	1	2.00	104	106	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.97	2.03	mg/Kg	1	2.00	98	102	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 72121
Prep Batch: 61786

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.5	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	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: 72122
Prep Batch: 61787

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.6	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	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: 72123
Prep Batch: 61788

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.9	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	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: 72124
Prep Batch: 61789

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.6	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 72137
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.00	mg/Kg	1	2.00	<0.0150	100	81.9 - 108
Toluene	1.98	mg/Kg	1	2.00	<0.00950	99	81.9 - 107
Ethylbenzene	1.95	mg/Kg	1	2.00	<0.0106	98	78.4 - 107
Xylene	5.86	mg/Kg	1	6.00	<0.00930	98	79.1 - 107

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.99	mg/Kg	1	2.00	<0.0150	100	81.9 - 108	0	20
Toluene	1.98	mg/Kg	1	2.00	<0.00950	99	81.9 - 107	0	20
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.0106	97	78.4 - 107	0	20
Xylene	5.86	mg/Kg	1	6.00	<0.00930	98	79.1 - 107	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)	1.84	1.80	mg/Kg	1	2.00	92	90	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.78	1.80	mg/Kg	1	2.00	89	90	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 72138
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.6	mg/Kg	1	20.0	<1.65	83	69.9 - 95.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.9	mg/Kg	1	20.0	<1.65	80	69.9 - 95.4	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)	2.09	2.05	mg/Kg	1	2.00	104	102	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.93	1.90	mg/Kg	1	2.00	96	95	68.2 - 132

Matrix Spike (MS-1) Spiked Sample: 238556

QC Batch: 72091
Prep Batch: 61767

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11100	mg/Kg	100	10000	769	103	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11400	mg/Kg	100	10000	769	106	85 - 115	3	20

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

Matrix Spike (MS-1) Spiked Sample: 238566

QC Batch: 72092
Prep Batch: 61768

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11400	mg/Kg	100	10000	1660	97	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11600	mg/Kg	100	10000	1660	99	85 - 115	2	20

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

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Matrix Spike (MS-1) Spiked Sample: 238572

QC Batch: 72099
Prep Batch: 61780

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	224	mg/Kg	1	250	<14.5	90	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	239	mg/Kg	1	250	<14.5	96	35.2 - 167.1	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	94.3	95.3	mg/Kg	1	100	94	95	70 - 130

Matrix Spike (MS-1) Spiked Sample: 238519

QC Batch: 72100
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	¹	2.31	mg/Kg	1	2.00	<0.0150	116	80.5 - 112
Toluene	²	2.35	mg/Kg	1	2.00	<0.00950	118	82.4 - 113
Ethylbenzene	³	2.35	mg/Kg	1	2.00	<0.0106	118	83.9 - 114
Xylene	⁴	7.09	mg/Kg	1	6.00	<0.00930	118	84 - 114

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

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2.07	mg/Kg	1	2.00	<0.0150	104	80.5 - 112	11	20
Toluene		2.09	mg/Kg	1	2.00	<0.00950	104	82.4 - 113	12	20
Ethylbenzene		2.11	mg/Kg	1	2.00	<0.0106	106	83.9 - 114	11	20
Xylene		6.36	mg/Kg	1	6.00	<0.00930	106	84 - 114	11	20

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

¹Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

²Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

³Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

⁴Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.39	1.19	mg/Kg	1	2	70	60	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1.44	1.21	mg/Kg	1	2	72	60	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 238467

QC Batch: 72101
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.3	mg/Kg	1	20.0	<1.65	76	61.8 - 114

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.3	mg/Kg	1	20.0	<1.65	76	61.8 - 114	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.44	1.02	mg/Kg	1	2	72	51	50 - 162
4-Bromofluorobenzene (4-BFB)	1.54	1.03	mg/Kg	1	2	77	52	50 - 162

Matrix Spike (MS-1) Spiked Sample: 238576

QC Batch: 72121
Prep Batch: 61786

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14100	mg/Kg	100	10000	3080	110	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	14300	mg/Kg	100	10000	3080	112	85 - 115	1	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: 238586

QC Batch: 72122
Prep Batch: 61787

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AR
Prepared By: AR

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	15200	mg/Kg	100	10000	4450	108	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	15300	mg/Kg	100	10000	4450	108	85 - 115	1	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: 238596

QC Batch: 72123
Prep Batch: 61788

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	13700	mg/Kg	100	10000	3390	103	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	13900	mg/Kg	100	10000	3390	105	85 - 115	1	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: 238603

QC Batch: 72124
Prep Batch: 61789

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9990	mg/Kg	100	10000	<218	100	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10100	mg/Kg	100	10000	<218	101	85 - 115	1	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: 238784

QC Batch: 72137
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.09	mg/Kg	1	2.00	0.031	103	80.5 - 112
Toluene	2.06	mg/Kg	1	2.00	<0.00950	103	82.4 - 113
Ethylbenzene	2.05	mg/Kg	1	2.00	<0.0106	102	83.9 - 114
Xylene	6.20	mg/Kg	1	6.00	<0.00930	103	84 - 114

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.21	mg/Kg	1	2.00	0.031	109	80.5 - 112	6	20
Toluene	2.20	mg/Kg	1	2.00	<0.00950	110	82.4 - 113	7	20
Ethylbenzene	2.21	mg/Kg	1	2.00	<0.0106	110	83.9 - 114	8	20
Xylene	6.69	mg/Kg	1	6.00	<0.00930	112	84 - 114	8	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.17	1.60	mg/Kg	1	2	58	80	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1.21	1.59	mg/Kg	1	2	60	80	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 238921

QC Batch: 72138
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.6	mg/Kg	1	20.0	<1.65	83	61.8 - 114

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	16.5	mg/Kg	1	20.0	<1.65	82	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)	1.20	1.77	mg/Kg	1	2	60	88	50 - 162
4-Bromofluorobenzene (4-BFB)	1.28	1.81	mg/Kg	1	2	64	90	50 - 162

Standard (ICV-1)

QC Batch: 72091

Date Analyzed: 2010-07-27

Analyzed By: AR

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Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.9	99	85 - 115	2010-07-27

Standard (CCV-1)

QC Batch: 72091

Date Analyzed: 2010-07-27

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-07-27

Standard (ICV-1)

QC Batch: 72092

Date Analyzed: 2010-07-27

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-07-27

Standard (CCV-1)

QC Batch: 72092

Date Analyzed: 2010-07-27

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2010-07-27

Standard (CCV-2)

QC Batch: 72099

Date Analyzed: 2010-07-27

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	262	105	80 - 120	2010-07-27

Standard (CCV-3)

QC Batch: 72099

Date Analyzed: 2010-07-27

Analyzed By: kg

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	264	106	80 - 120	2010-07-27

Standard (CCV-4)

QC Batch: 72099

Date Analyzed: 2010-07-27

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	251	100	80 - 120	2010-07-27

Standard (CCV-1)

QC Batch: 72100

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0952	95	80 - 120	2010-07-27
Toluene		mg/Kg	0.100	0.0952	95	80 - 120	2010-07-27
Ethylbenzene		mg/Kg	0.100	0.0905	90	80 - 120	2010-07-27
Xylene		mg/Kg	0.300	0.273	91	80 - 120	2010-07-27

Standard (CCV-2)

QC Batch: 72100

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.102	102	80 - 120	2010-07-27
Toluene		mg/Kg	0.100	0.102	102	80 - 120	2010-07-27
Ethylbenzene		mg/Kg	0.100	0.0979	98	80 - 120	2010-07-27
Xylene		mg/Kg	0.300	0.297	99	80 - 120	2010-07-27

Standard (CCV-3)

QC Batch: 72100

Date Analyzed: 2010-07-27

Analyzed By: AG

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.102	102	80 - 120	2010-07-27
Toluene		mg/Kg	0.100	0.100	100	80 - 120	2010-07-27
Ethylbenzene		mg/Kg	0.100	0.0959	96	80 - 120	2010-07-27
Xylene		mg/Kg	0.300	0.290	97	80 - 120	2010-07-27

Standard (CCV-1)

QC Batch: 72101

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.01	101	80 - 120	2010-07-27

Standard (CCV-2)

QC Batch: 72101

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.00	100	80 - 120	2010-07-27

Standard (CCV-3)

QC Batch: 72101

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.957	96	80 - 120	2010-07-27

Standard (ICV-1)

QC Batch: 72121

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2010-07-28

Report Date: July 29, 2010
114-6400562

Work Order: 10072603
COG/Pronghorn SWD Dresser Sleeve

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Standard (CCV-1)

QC Batch: 72121

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-07-28

Standard (ICV-1)

QC Batch: 72122

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.3	98	85 - 115	2010-07-28

Standard (CCV-1)

QC Batch: 72122

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2010-07-28

Standard (ICV-1)

QC Batch: 72123

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-07-28

Standard (CCV-1)

QC Batch: 72123

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.8	99	85 - 115	2010-07-28

Report Date: July 29, 2010
114-6400562

Work Order: 10072603
COG/Pronghorn SWD Dresser Sleeve

Page Number: 41 of 42

Standard (ICV-1)

QC Batch: 72124 Date Analyzed: 2010-07-28 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2010-07-28

Standard (CCV-1)

QC Batch: 72124 Date Analyzed: 2010-07-28 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-07-28

Standard (CCV-1)

QC Batch: 72137 Date Analyzed: 2010-07-28 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0979	98	80 - 120	2010-07-28
Toluene		mg/Kg	0.100	0.0972	97	80 - 120	2010-07-28
Ethylbenzene		mg/Kg	0.100	0.0925	92	80 - 120	2010-07-28
Xylene		mg/Kg	0.300	0.282	94	80 - 120	2010-07-28

Standard (CCV-2)

QC Batch: 72137 Date Analyzed: 2010-07-28 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0970	97	80 - 120	2010-07-28
Toluene		mg/Kg	0.100	0.0959	96	80 - 120	2010-07-28
Ethylbenzene		mg/Kg	0.100	0.0929	93	80 - 120	2010-07-28
Xylene		mg/Kg	0.300	0.280	93	80 - 120	2010-07-28

Standard (CCV-1)

QC Batch: 72138 Date Analyzed: 2010-07-28 Analyzed By: AG

Report Date: July 29, 2010
114-6400562

Work Order: 10072603
COG/Pronghorn SWD Dresser Sleeve

Page Number: 42 of 42

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.901	90	80 - 120	2010-07-28

Standard (CCV-2)

QC Batch: 72138

Date Analyzed: 2010-07-28

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.927	93	80 - 120	2010-07-28

Order # 100721003

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 6



TETRA TECH

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

CLIENT NAME: COG		SITE MANAGER: Ike Tavoriz		PROJECT NAME: COG / Pronghorn SUD Dresser Sleeve										
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	PRESERVATIVE METHOD		NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE
238550	2010	7/20	S		X	SB-1 1'			1					
551						SB-1 3'			1					
552						SB-1 5'			1					
553						SB-1 7'			1					
554						SB-1 10'			1					
555						SB-1 15'			1					
556						SB-1 20'			1					
557						SB-1 25'			1					
558						SB-2 1'			1					
559						SB-2 3'			1					

RELINQUISHED BY (Signature)	Date:	Time:	RECEIVED BY (Signature)	Date:	Time:
<i>[Signature]</i>	7/20	3:45	<i>[Signature]</i>	7/23	15:45

RELINQUISHED BY (Signature)	Date:	Time:	RECEIVED BY (Signature)	Date:	Time:
<i>[Signature]</i>	7/20	3:45	<i>[Signature]</i>	7/23	15:45

RELINQUISHED BY (Signature)	Date:	Time:	RECEIVED BY (Signature)	Date:	Time:
<i>[Signature]</i>	7/20	3:45	<i>[Signature]</i>	7/23	15:45

RECEIVING LABORATORY:	TRACE
ADDRESS:	Midland
CITY:	Midland
STATE:	TX
ZIP:	79705
PHONE:	

SAMPLE CONDITION WHEN RECEIVED:	3.1' cut out
REMARKS:	Run deeper sample if TPA speed 1000 m/ky SB-1 → SB-5

ANALYSIS REQUEST
(Circle or Specify Method No.)

PAH 8270	
RCRA Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Volatiles	
TCLP Semi Volatiles	
RCI	
GC/MS Vol. 8240/8260/824	
GC/MS Semi. Vol. 8270/825	
PCB's 8080/808	
Pest. 808/808	
Chloride	X
Gammax Spec.	X
Alpha Beta (Air)	X
PLM (Asbestos)	X
Major Anions/Cations, pH, TDS	

SAMPLED BY: (Print & Initial)	Kim	Date:	7/20/10
SAMPLE SHIPPED BY: (Circle)	FEDX	AIRBILL #:	
HAND DELIVERED	BUS	OTHER:	
TETRA TECH CONTACT PERSON:	Ike Tavoriz	Results by:	
RUSH Charges Authorized:	Yes	No	

Order # 100721003

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 6

TETRA TECH

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



CLIENT NAME: COG		SITE MANAGER: Ike Tavaraz			
PROJECT NO.: 114-6400562		PROJECT NAME: COG / Proughon SWD Dresser Sleeve			
LAB I.D. NUMBER	DATE	TIME	PRESERVATIVE METHOD		
			NUMBER OF CONTAINERS	NUMBER OF CONTAINERS	NUMBER OF CONTAINERS
258500	7/20		SB-2	5'	
261			SB-2	7'	
262			SB-2	10'	
263			SB-2	15'	
264			SB-2	20'	
265			SB-2	25'	
266			SB-2	30'	
267			SB-2	40'	
268			SB-2	50'	
269			SB-2	60'	
RELINQUISHED BY: (Signature)			Date: 7-23-10	Time: 15:45	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)			Date: 7-23-10	Time: 15:45	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)			Date: 7-23-10	Time: 15:45	RECEIVED BY: (Signature)
RECEIVING LABORATORY: TRACE			RECEIVED BY: (Signature)		
ADDRESS: Midland			STATE: TX		
CITY: Midland			ZIP: 79705		
CONTACT: 3.1 C. Cantu			PHONE: 723.10		
SAMPLE CONDITION WHEN RECEIVED:			REMARKS:		

ANALYSIS REQUEST (Circle or Specify Method No.)	
TPH 8015 MOD. TX1005 (Ext to C36)	
PAH 8270	
RCRA Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Volatiles	
TCLP Semi Volatiles	
RCI	
GC/MS Vol. 8240/8260/624	
GC/MS Semi. Vol. 8270/625	
PCB's 8080/608	
Post. 808/608	
Chlorides	
Gamma Spec.	
Alpha Beta (At)	
PLM (Asbestos)	
Major Anions/Cations, pH, TDS	

SAMPLED BY: (Print & Initial)	
Kim	Date: 7/21/10
SAMPLE SHIPPED BY: (Circle)	
FEDEX	BUS
HAND DELIVERED	UPS
TETRA TECH CONTACT PERSON:	
Ike Tavaraz	
Results by:	
RUSH Charges Authorized:	
Yes	No

PAGE: 5 OF: 6

ANALYSIS REQUEST
(Circle or Specify Method)

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

CLIENT NAME: COG				SITE MANAGER: Ike Tavares			
PROJECT NO: 114-6400562				PROJECT NAME: COG / Payhan SWO Dresser Sleeve			
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	
590	7/21		S		X	SB-4	15'
591						SB-4	20'
592						SB-4	25'
593						SB-4	30'
594						SO-4	40'
595						SO-4	50'
596						SO-5	1'
597						SO-5	3'
598						SO-5	5'
599						SB-5	7'
RELINQUISHED BY: (Signature)				Date: 7/23/10		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)				Date: 7/23/10		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)				Date: 7/23/10		RECEIVED BY: (Signature)	
RECEIVING LABORATORY: TRACE				DATE: 7/23/10		TIME: 15:45	
ADDRESS: Midland				STATE: TX		ZIP: 79701	
CONTACT: 310 344 0000				PHONE: 310 344 0000		FAX: 310 344 0000	
SAMPLE CONDITION WHEN RECEIVED: 310 344 0000				REMARKS: 310 344 0000			

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

PAGE: 2 OF: 2

ANALYSIS REQUEST
(Circle or Specify Method No.)



**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-4560**

[illegible]

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

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Pronghorn SWD Line					
Company:	COG Operating LLC					
Section, Township and Range	Unit J	Sec 23	T17S	R32E		
Lease Number:	30-025-32735					
County:	Lea County					
GPS:	32.73076° N, 103.73273° W					
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From Maljamar intersection of 82 and CR 126, Go south on 126 for 6.3 miles, turn left (south) stay to right, go 3.1, turn left, go 1.1 miles to location.					

Release Data:

Date Released:	11/12/2009, 06/18/10, 07/14/10
Type Release:	Produced Water
Source of Contamination:	Hugger clamp
Fluid Released:	450 bbls, 15 bbls, 100 bbls
Fluids Recovered:	420 bbls, 10 bbls, 70 bbls

Official Communication:

Name:	Pat Ellis	Ike Tavaréz
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@tetrattech.com

Ranking Criteria:

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	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:		10

Acceptable Soil IRRL (mg/kg)

Benzene	Total BTEX	TPH
10	50	5,000



TETRA TECH

March 13, 2012

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

Re: Closure Report for the COG Operating LLC., Pronghorn SWD System Line Leak, Unit J, Section 23, Township 18 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess 2 separate spills at the Pronghorn SWD Line Leak located in Unit J, Section 23, Township 18 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.43.833', W 103.43.965'. The site location is shown on Figures 1 and 2. These spills occurred on November 12, 2009 and June 18, 2010.

Background

November 12, 2009

According to the State of New Mexico C-141 Initial Report, the leak was discovered on July 31, 2009, and released approximately 450 barrels of produced water due to a failed rubber gasket on a hugger clamp. To alleviate the problem, COG personnel repaired the leak. Approximately 420 barrels of standing fluids were recovered. The spill migrated in two directions. One leg ran north impacting an area approximately 10' X 95', while the second leg ran east, parallel to the lease road, impacting an area approximately 3' X 15', and crossed the lease road impacting a third area approximately 4' X 120' parallel to the lease road. The spill area is shown on Figure 3. The initial C-141 form is enclosed in Appendix A.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559

Fax 432.682.3946

www.tetrattech.com



June 18, 2010

According to the State of New Mexico C-141 Initial Report, the leak occurred when a dresser sleeve failed at the valve box releasing approximately 15 barrels of produced water. A total of 10 barrels of standing fluid were recovered using a vacuum truck. The line was repaired and placed back into service. The spill migrated 100' northwest in the pasture on top of the foot print of the first spill. The spill area is shown on Figure 4. The initial C-141 form is enclosed in Appendix A.

Groundwater

The United States Geological Survey (USGS) data base did show wells in Section 7 and 16, Township 18 South, Range 32 East, with a reported depth to water of approximately 82' and 84' respectively. The New Mexico State Engineer Well Reports showed wells with reported depths of 65' (Section 4) and 460' (Section 7). The NMOCD ground water map shows wells in Section 20, 22 and 34, with groundwater depths at approximately 164', 429' and 117', respectively. Based on the groundwater map, the depth to groundwater for the site appears to be greater than 100' bgs. The well reports and average depth to water map are shown in Appendix B.

Regulatory

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

Soil Assessment and Analytical Results

Spill #1

On November 20, 2009, Tetra Tech personnel inspected and sampled the spill area. A total of eight (8) auger holes (AH-1 through AH-8) were installed using a stainless steel hand auger to assess the impacted



soils. 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, all the submitted samples were below the BTEX and TPH RRAL. No chloride impact was detected in the areas of AH-5, AH-6 and AH-8. In addition, a slight surface impact was detected at AH-7 of 319 mg/kg at 0-1'. However, the remaining auger holes did show chloride impact to the subsurface soils. Auger holes (AH-1, AH-3 and AH-4) were vertically defined to a depth of 6', 1' and 5', respectively. Auger hole (AH-2) was not vertically defined and showed a chloride impact of 2,790 mg/kg at 7' below surface.

On January 13, 2010, Tetra Tech supervised the installation of one soil boring to define the area of AH-2. The borehole was installed to a depth of 20' below surface. The soil boring results are shown in Table 1. Referring to Table 1, the chloride impact was vertically defined at 10' below surface, with a chloride concentration below the reporting limit (<200 mg/kg).

Spill #2

The second spill migrated on top of the first spill footprint in the pasture. On July 21, 2010, Tetra Tech supervised the installation of five (5) soil borings to define the extents of the impact. The soil borings were installed to depths ranging from 20' to 80' below surface. The soil boring results are shown in Table 2. The soil boring locations are shown on Figure 4.

Referring to Table 2, none of the samples selected for TPH and BTEX exceeded the RRAL. The analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg extended to 10' (SB-1 and SB-5), 20' (SB-3 and SB-4), and 40' (SB-2). All soil borings had chloride concentrations that decreased with depth and were vertically defined.

Recently, COG has installed a new SWD line (poly line) to replace the old SWD (PVC) line. The new line was installed southwest of the old SWD line, approximately 10' to 15'. Prior installation of the line, the area of SB-3 was excavated down to 4.0' below surface and hauled to proper disposal. The excavated area measured approximately 40' X 50'. The bottom of the excavation was lined with a 40 mil liner and the new SWD



TETRA TECH

poly line was then laid on top of the liner, and the area backfilled with clean soil.

Remedial Work and Closure Request

Tetra Tech personnel supervised the excavation of the site from April 19 through April 20, 2011. The excavation measured approximately 15' x 110', with an additional area of approximately 15' x 60'. Due to the active lines and sandy formation, the proposed excavation depths were not achieved. For safety concerns, the impacted areas were excavated to a depth of 4.0' to 5.0' below surface and lined with a 40 mi liner, if needed. Approximately 600 yards³ were removed and hauled to CRI Inc. for proper disposal. Photos of the excavation are attached. The excavation depths and liners are highlighted in Table 1 and shown on Figure 5.

Once excavated to the appropriate depths, the excavations were backfilled with clean material. The final C-141's are included in Appendix A. Based on the remedial activities performed at this site, COG requests closure of this site. If you require any additional information or have any questions or comments concerning this report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavares
Project Manager

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

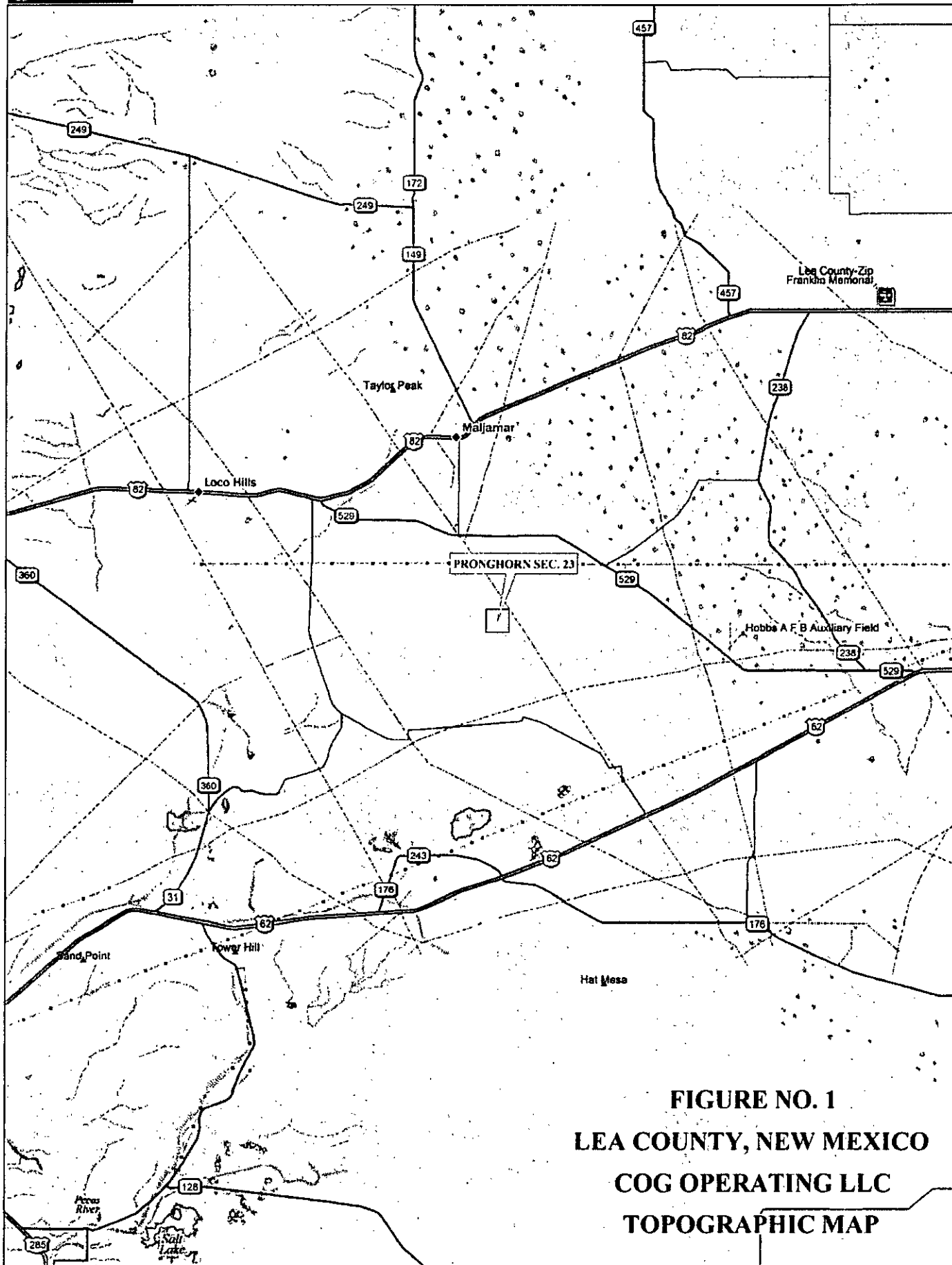
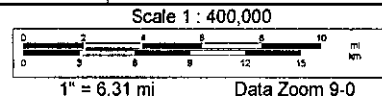


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

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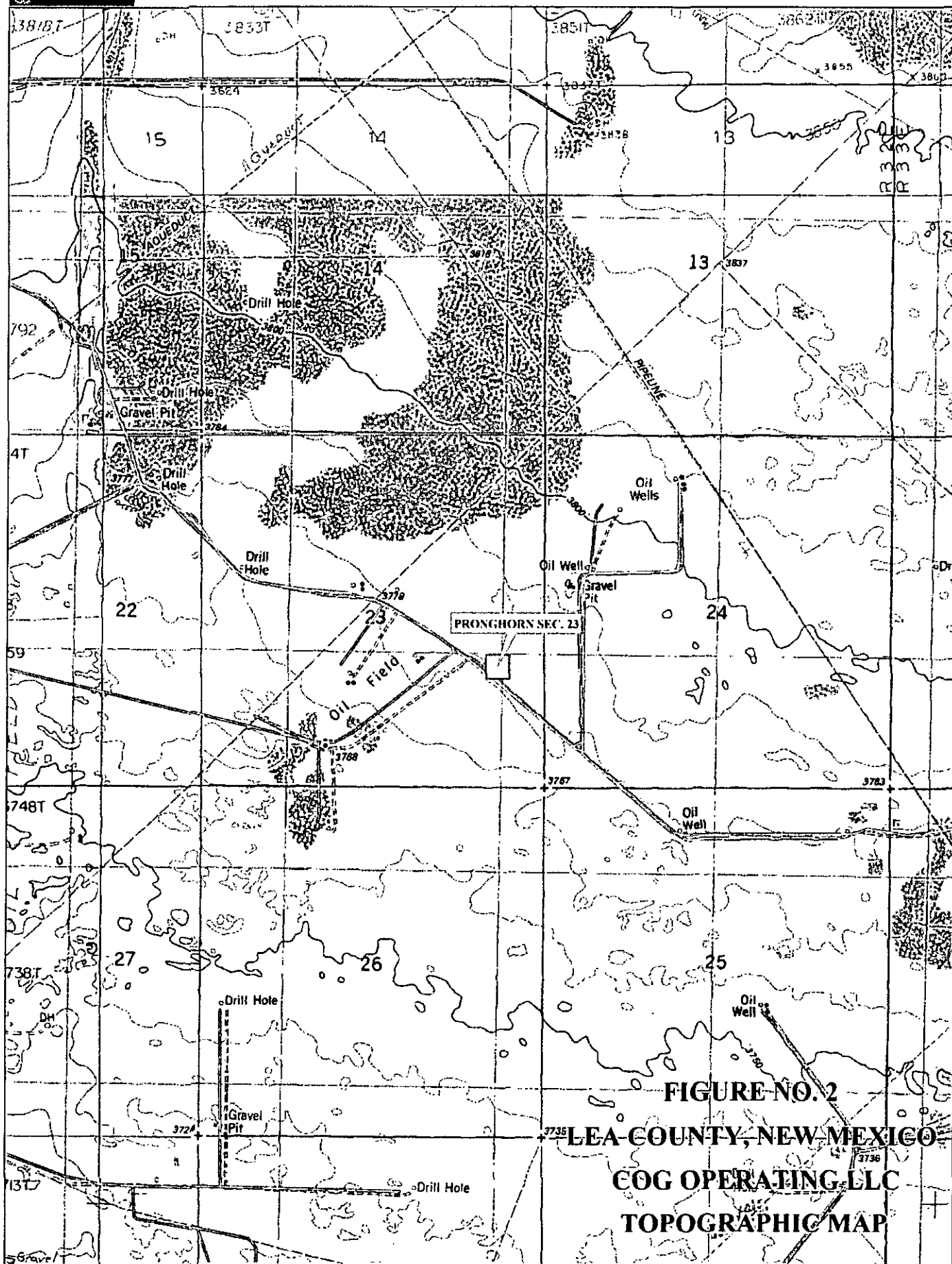
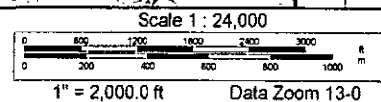


FIGURE NO. 2
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

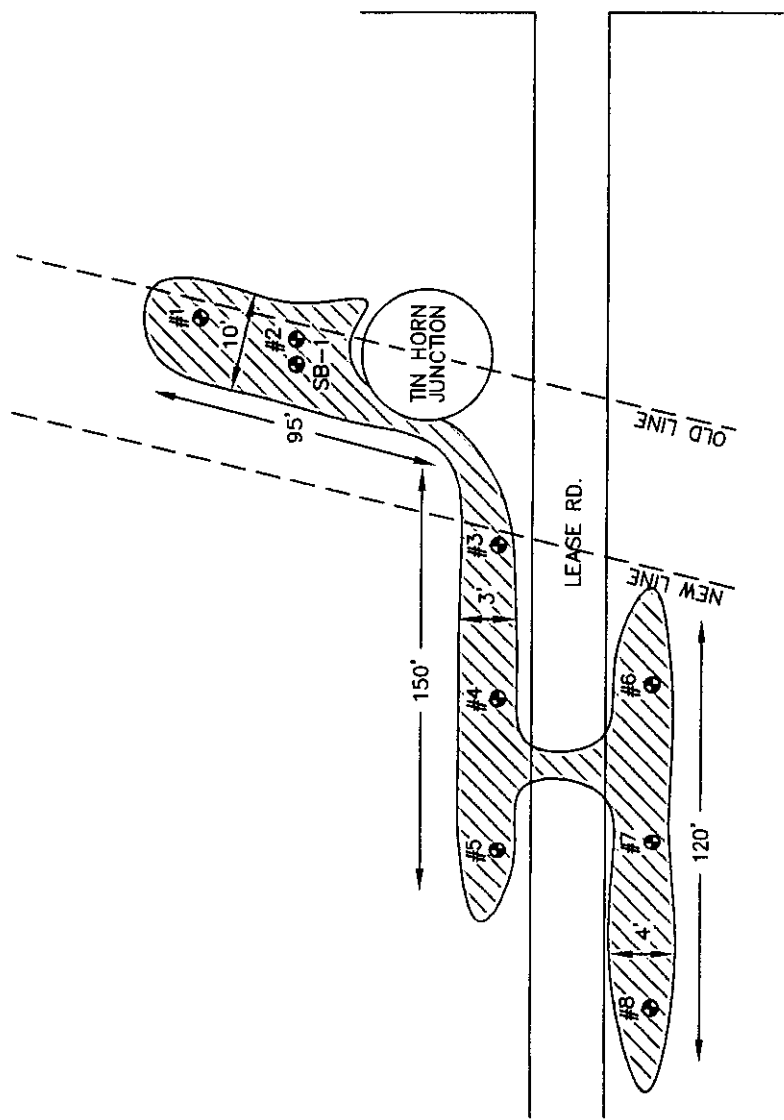
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Data Zoom 13-0



1st SPILL

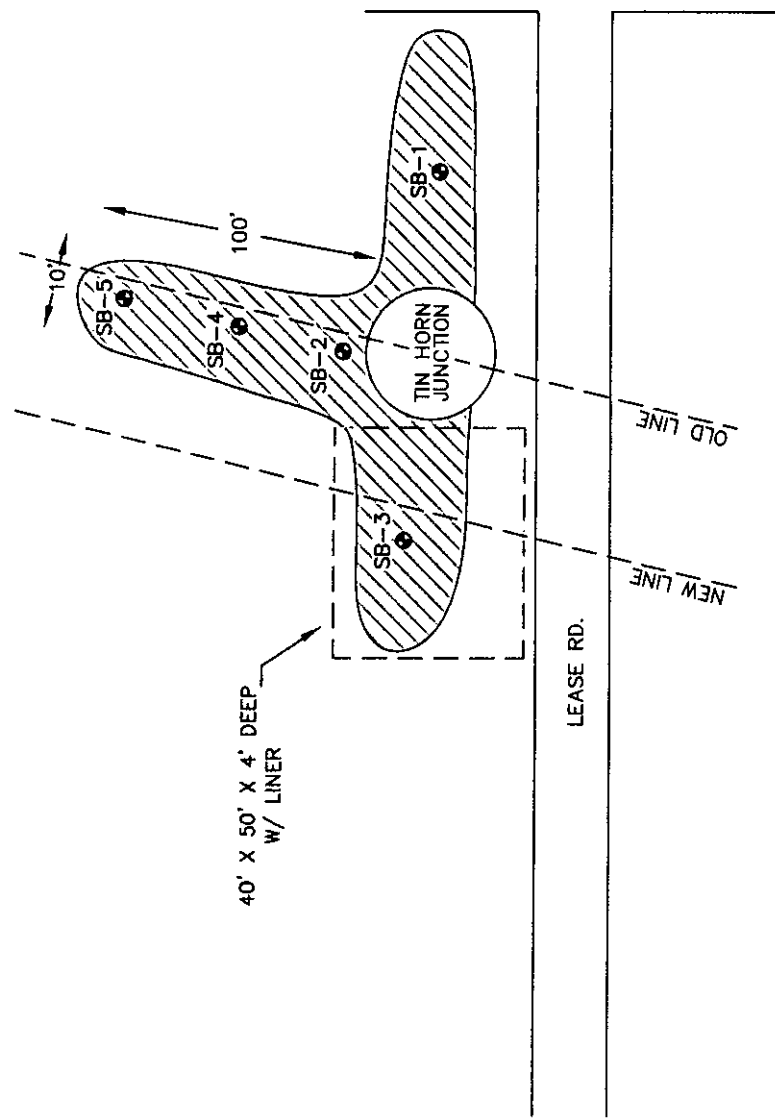
FIGURE NO. 3

LEA COUNTY, NEW MEXICO
COG OPERATING LLC
PRONGHORN SEC. 23
TETRA TECH, INC. MIDLAND, TEXAS

DATE: 11/20/09
DWN. BY: JJ
FILE: 11/20/09 11/20/09 11/20/09 SEC. 23

- ☒ SPILL AREA (11/12/09)
- ☒ SAMPLE LOCATIONS (AUGER HOLES)
- ☒ SOIL BORE LOCATION

NOT TO SCALE



2nd SPILL

FIGURE NO. 4

LEA COUNTY, NEW MEXICO
COG OPERATING LLC
PRONGHORN SEC. 23
TETRA TECH, INC. MIDLAND, TEXAS

DATE 11/20/09
DRAWN BY JJ
FILE 143054400372 PRONGHORN SEC. 23

- ☒ 2nd SPILL AREA 6/18/10
- ☐ EXCAVATION AREA W/ LINER
- ☐ SOIL BORE LOCATION

NOT TO SCALE

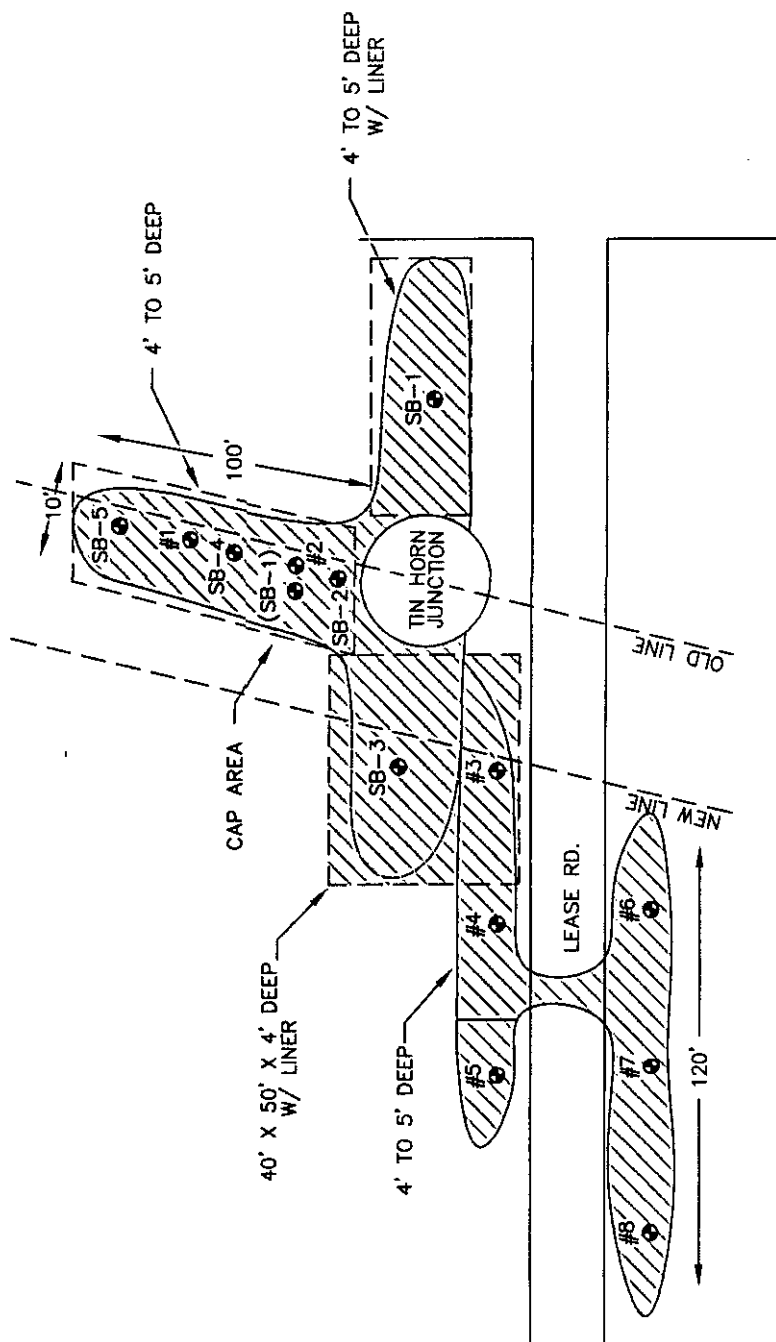


FIGURE NO. 5

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

PRONGHORN SEC. 23
EXCAVATION DEPTHS & LINER

TETRA TECH, INC.
MIDLAND, TEXAS

DATE
11/20/09

DWN. BY:
JJ

FILE:
PRONGHORN SEC. 23

- SPILL AREA
- LINER & CAP AREAS
- EXCAVATION AREA
- AUGER HOLE LOCATION
- SOIL BORE LOCATION (1/13/10) 7/21/10

NOT TO SCALE

Table 1
COG Operating LLC
Pronghorn Main Line Section 23 (Spill #1)
LEA COUNTY, NEW MEXICO

[illegible]

Table 1
COG Operating LLC
Pronghorn Main Line Section 23 (Spill #1)
LEA COUNTY, NEW MEXICO

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride
			In-Situ	Removed	DRO	GRO	Total					
AH-4	11/20/09	0-1'		X	<50.0	<1.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	3,280
		1-1.5'		X	-	-	-	-	-	-	-	2,230
		2-2.5'		X	-	-	-	-	-	-	-	1,010
		3-3.5'		X	-	-	-	-	-	-	-	1,250
		4-4.5'		X	-	-	-	-	-	-	-	1,340
		5-5.5'	X		-	-	-	-	-	-	-	340
		6-6.5'	X		-	-	-	-	-	-	-	452
AH-5	11/20/09	0-1'	X		<50.0	<1.0	<50.0	-	-	-	-	<200
		1-1.5'	X		-	-	-	-	-	-	-	<200
		2-2.5'	X		-	-	-	-	-	-	-	<200
AH-6	11/20/09	0-1'	X		<50.0	<1.0	<50.0	-	-	-	-	<200
		1-1.5'	X		-	-	-	-	-	-	-	<200
		2-2.5'	X		-	-	-	-	-	-	-	<200
AH-7	11/20/09	0-1'	X		<50.0	<1.0	<50.0	-	-	-	-	319
		1-1.5'	X		-	-	-	-	-	-	-	<200
		2-2.5'	X		-	-	-	-	-	-	-	<200
AH-8	11/20/09	0-1'	X		<50.0	<1.0	<50.0	-	-	-	-	<200
		1-1.5'	X		-	-	-	-	-	-	-	<200

(-) Not Analyzed

☐ Excavation Depths

☐ Liner Installation

Table 2

COG Operating LLC.
Pronghorn SWD Dresser Sleeve
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
SB-1	7/21/2010	1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	3,940
	7/21/2010	3'		X		-	-	-	-	-	-	-	4,690
	7/21/2010	5'		X		-	-	-	-	-	-	-	3,240
	7/21/2010	7'		X		-	-	-	-	-	-	-	1,960
	7/21/2010	10'		X		-	-	-	-	-	-	-	2,570
	7/21/2010	15'		X		-	-	-	-	-	-	-	981
	7/21/2010	20'		X		-	-	-	-	-	-	-	769
	7/21/2010	25'		X		-	-	-	-	-	-	-	259
SB-2	7/21/2010	1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	3,500
	7/21/2010	3'		X		-	-	-	-	-	-	-	5,220
	7/21/2010	5'		X		-	-	-	-	-	-	-	3,050
	7/21/2010	7'		X		-	-	-	-	-	-	-	11,000
	7/21/2010	10'		X		-	-	-	-	-	-	-	9,710
	7/21/2010	15'		X		-	-	-	-	-	-	-	8,500
	7/21/2010	20'		X		-	-	-	-	-	-	-	5,490
	7/21/2010	25'		X		-	-	-	-	-	-	-	546
	7/21/2010	30'		X		-	-	-	-	-	-	-	1,660
	7/21/2010	40'		X		-	-	-	-	-	-	-	1,110
	7/21/2010	50'		X		-	-	-	-	-	-	-	614
	7/21/2010	60'		X		-	-	-	-	-	-	-	744
	7/21/2010	70'		X		-	-	-	-	-	-	-	<200
	7/21/2010	80'		X		-	-	-	-	-	-	-	389

Table 2

COG Operating LLC.
Pronghorn SWD Dresser Sleeve
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
SB-5	7/21/2010	1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	3,390
	7/21/2010	3'		X		-	-	-	-	-	-	-	4,840
	7/21/2010	5'		X		-	-	-	-	-	-	-	5,870
	7/21/2010	7'		X		-	-	-	-	-	-	-	9,770
	7/21/2010	10'		X		-	-	-	-	-	-	-	5,570
	7/21/2010	15'		X		-	-	-	-	-	-	-	<200
	7/21/2010	20'		X		-	-	-	-	-	-	-	697

BEB Below Excavation Bottom

(-) Not Analyzed

☐ Excavated Depths

 Liner Installation

COG Operating LLC
Pronghorn SWD
Lea County, New Mexico



TETRA TECH



View North – SB-2, 4 and 5

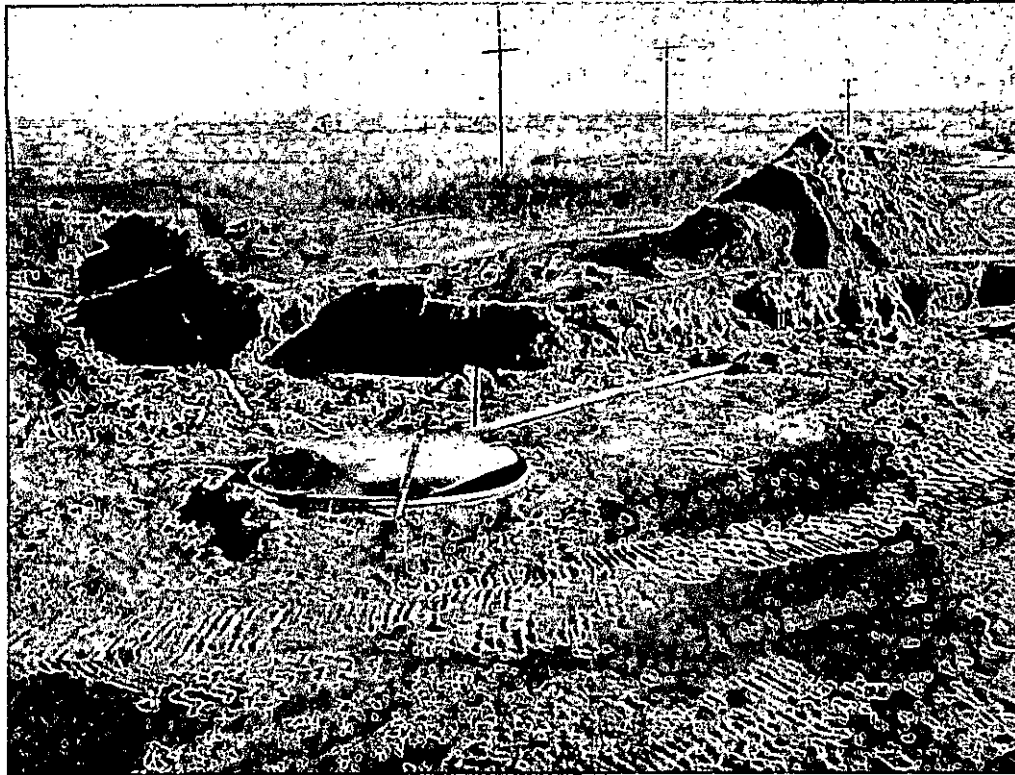


View East – SB-1

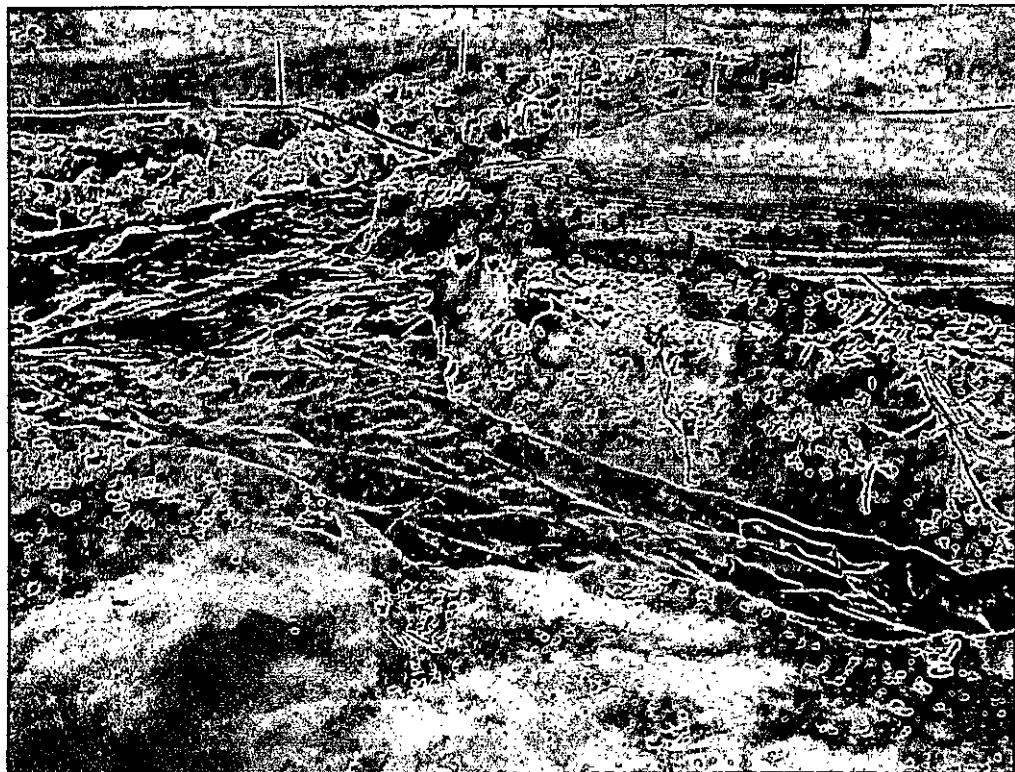
COG Operating LLC
Pronghorn SWD
Lea County, New Mexico



TETRA TECH



View Northeast



View Northwest - Liner

COG Operating LLC
Pronghorn SWD
Lea County, New Mexico



TETRA TECH



View West - Liner



Backfill

Water Well Data
Average Depth to Groundwater (ft)
COG - Pronghorn SWD System
Lea County, New Mexico

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

18 South 31 East					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				281	

19 South 31 East					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	101	34	35
			180		130

17 South 32 East					
6	5	4	82	3	2
7	8	9	75	10	11
18	17	16	15	14	13
19	20	21	22	23	24
30	180	29	28	27	26
31	32	33	34	35	36

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

19 South 32 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 33 East					
6	90	5	4	3	155
7	167	8	9	10	11
18	173	16	15	14	
19	188	20	21	22	23
30	29	28	27	26	
31	32	33	34	35	
					155

18 South 33 East					
6	5	4	3	2	
7	8	100	9	10	11
18	17	16	15	14	
19	20	21	22	23	
30	29	28	27	26	
31	32	33	34	35	

19 South 33 East					
6	5	4	3	2	
7	8	9	10	11	
18	17	16	15	14	
19	20	21	22	23	
30	29	28	27	26	92
31	32	33	34	35	

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data

Summary Report

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

Report Date: December 1, 2009

Work Order: 9112319



Project Location: Lea County, NM
Project Name: COG/Pronghorn Sec. 23
Project Number: 114-6400372

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
215661	AH-1 0-1'	soil	2009-11-20	00:00	2009-11-23
215662	AH-1 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215663	AH-1 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215664	AH-1 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215665	AH-1 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215666	AH-1 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215667	AH-1 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215668	AH-1 7'-7.5'	soil	2009-11-20	00:00	2009-11-23
215669	AH-1 8'-8.5'	soil	2009-11-20	00:00	2009-11-23
215670	AH-2 0-1'	soil	2009-11-20	00:00	2009-11-23
215671	AH-2 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215672	AH-2 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215673	AH-2 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215674	AH-2 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215675	AH-2 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215676	AH-2 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215677	AH-2 7'-7.5'	soil	2009-11-20	00:00	2009-11-23
215678	AH-3 0-1'	soil	2009-11-20	00:00	2009-11-23
215679	AH-3 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215680	AH-3 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215681	AH-4 0-1'	soil	2009-11-20	00:00	2009-11-23
215682	AH-4 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215683	AH-4 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215684	AH-4 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215685	AH-4 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215686	AH-4 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215687	AH-4 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215688	AH-5 0-1'	soil	2009-11-20	00:00	2009-11-23
215689	AH-5 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215690	AH-5 2'-2.5'	soil	2009-11-20	00:00	2009-11-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
215691	AH-6 0-1'	soil	2009-11-20	00:00	2009-11-23
215692	AH-6 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215693	AH-6 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215694	AH-7 0-1'	soil	2009-11-20	00:00	2009-11-23
215695	AH-7 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215696	AH-7 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215697	AH-8 0-1'	soil	2009-11-20	00:00	2009-11-23
215698	AH-8 1'-1.5'	soil	2009-11-20	00:00	2009-11-23

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
215661 - AH-1 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
215670 - AH-2 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
215678 - AH-3 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
215681 - AH-4 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
215688 - AH-5 0-1'					<50.0	<1.00
215691 - AH-6 0-1'					<50.0	<1.00
215694 - AH-7 0-1'					<50.0	<1.00
215697 - AH-8 0-1'					<50.0	<1.00

Sample: 215661 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		4790	mg/Kg	4.00

Sample: 215662 - AH-1 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		3980	mg/Kg	4.00

Sample: 215663 - AH-1 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		5150	mg/Kg	4.00

Sample: 215664 - AH-1 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		8190	mg/Kg	4.00

Sample: 215665 - AH-1 4'-4.5'

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296

This is only a summary. Please, refer to the complete report package for quality control data.

Param	Flag	Result	Units	RL
Chloride		4260	mg/Kg	4.00

Sample: 215666 - AH-1 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		4220	mg/Kg	4.00

Sample: 215667 - AH-1 6'-6.5'

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

Sample: 215668 - AH-1 7'-7.5'

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

Sample: 215669 - AH-1 8'-8.5'

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

Sample: 215670 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		4400	mg/Kg	4.00

Sample: 215671 - AH-2 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		4170	mg/Kg	4.00

Sample: 215672 - AH-2 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		4500	mg/Kg	4.00

Sample: 215673 - AH-2 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		8220	mg/Kg	4.00

Sample: 215674 - AH-2 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		9110	mg/Kg	4.00

Sample: 215675 - AH-2 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		16400	mg/Kg	4.00

Sample: 215676 - AH-2 6'-6.5'

Param	Flag	Result	Units	RL
Chloride		16300	mg/Kg	4.00

Sample: 215677 - AH-2 7'-7.5'

Param	Flag	Result	Units	RL
Chloride		2790	mg/Kg	4.00

Sample: 215678 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		3630	mg/Kg	4.00

Sample: 215679 - AH-3 1'-1.5'

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

Sample: 215680 - AH-3 2'-2.5'

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

Sample: 215681 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		3280	mg/Kg	4.00

Sample: 215682 - AH-4 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		2230	mg/Kg	4.00

Sample: 215683 - AH-4 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		1010	mg/Kg	4.00

Sample: 215684 - AH-4 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		1250	mg/Kg	4.00

Sample: 215685 - AH-4 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		1340	mg/Kg	4.00

Sample: 215686 - AH-4 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		340	mg/Kg	4.00

Sample: 215687 - AH-4 6'-6.5'

Param	Flag	Result	Units	RL
Chloride		452	mg/Kg	4.00

Sample: 215688 - AH-5 0-1'

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

Sample: 215689 - AH-5 1'-1.5'

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

Sample: 215690 - AH-5 2'-2.5'

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

Sample: 215691 - AH-6 0-1'

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

Sample: 215692 - AH-6 1'-1.5'

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

Sample: 215693 - AH-6 2'-2.5'

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

Sample: 215694 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		319	mg/Kg	4.00

Sample: 215695 - AH-7 1'-1.5'

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

Sample: 215696 - AH-7 2'-2.5'

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

Sample: 215697 - AH-8 0-1'

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

Sample: 215698 - AH-8 1'-1.5'

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

TRACE ANALYSIS, INC.

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200 East Sunset Road, Suite F El Paso, Texas 79922 888•588•3443 915•588•3443 FAX 915•588•4944
6002 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

WBENC: 237019

HUB: 1752439743100-86536
NCTRC A WFWB38444Y0909

DBE: VN 20657

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: December 1, 2009

Work Order: 9112319



Project Location: Lea County, NM
Project Name: COG/Pronghorn Sec. 23
Project Number: 114-6400372

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
215661	AH-1 0-1'	soil	2009-11-20	00:00	2009-11-23
215662	AH-1 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215663	AH-1 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215664	AH-1 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215665	AH-1 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215666	AH-1 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215667	AH-1 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215668	AH-1 7'-7.5'	soil	2009-11-20	00:00	2009-11-23
215669	AH-1 8'-8.5'	soil	2009-11-20	00:00	2009-11-23
215670	AH-2 0-1'	soil	2009-11-20	00:00	2009-11-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
215671	AH-2 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215672	AH-2 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215673	AH-2 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215674	AH-2 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215675	AH-2 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215676	AH-2 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215677	AH-2 7'-7.5'	soil	2009-11-20	00:00	2009-11-23
215678	AH-3 0-1'	soil	2009-11-20	00:00	2009-11-23
215679	AH-3 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215680	AH-3 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215681	AH-4 0-1'	soil	2009-11-20	00:00	2009-11-23
215682	AH-4 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215683	AH-4 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215684	AH-4 3'-3.5'	soil	2009-11-20	00:00	2009-11-23
215685	AH-4 4'-4.5'	soil	2009-11-20	00:00	2009-11-23
215686	AH-4 5'-5.5'	soil	2009-11-20	00:00	2009-11-23
215687	AH-4 6'-6.5'	soil	2009-11-20	00:00	2009-11-23
215688	AH-5 0-1'	soil	2009-11-20	00:00	2009-11-23
215689	AH-5 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215690	AH-5 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215691	AH-6 0-1'	soil	2009-11-20	00:00	2009-11-23
215692	AH-6 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215693	AH-6 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215694	AH-7 0-1'	soil	2009-11-20	00:00	2009-11-23
215695	AH-7 1'-1.5'	soil	2009-11-20	00:00	2009-11-23
215696	AH-7 2'-2.5'	soil	2009-11-20	00:00	2009-11-23
215697	AH-8 0-1'	soil	2009-11-20	00:00	2009-11-23
215698	AH-8 1'-1.5'	soil	2009-11-20	00:00	2009-11-23

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

This report consists of a total of 31 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael Abel

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

Standard Flags

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

Case Narrative

Samples for project COG/Pronghorn Sec. 23 were received by TraceAnalysis, Inc. on 2009-11-23 and assigned to work order 9112319. Samples for work order 9112319 were received intact at a temperature of 13.0 deg. 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	56089	2009-11-25 at 11:00	65629	2009-11-25 at 03:26
Chloride (Titration)	SM 4500-Cl B	56074	2009-11-30 at 08:46	65636	2009-11-30 at 15:25
Chloride (Titration)	SM 4500-Cl B	56075	2009-11-30 at 08:47	65637	2009-11-30 at 15:26
Chloride (Titration)	SM 4500-Cl B	56076	2009-11-30 at 08:47	65638	2009-11-30 at 15:27
Chloride (Titration)	SM 4500-Cl B	56077	2009-11-30 at 08:48	65639	2009-11-30 at 15:28
TPH DRO - NEW	Mod. 8015B	56045	2009-11-24 at 11:05	65583	2009-11-24 at 11:05
TPH GRO	S 8015B	56089	2009-11-25 at 11:00	65630	2009-11-25 at 03:54

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 9112319 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

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Sample: 215661 - AH-1 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.15	mg/Kg	1	2.00	108	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.92	mg/Kg	1	2.00	96	43.1 - 128.4

Sample: 215661 - AH-1 0-1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65636

Prep Batch: 56074

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4790	mg/Kg	100	4.00

Sample: 215661 - AH-1 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 65583

Prep Batch: 56045

Analytical Method: Mod. 8015B

Date Analyzed: 2009-11-24

Sample Preparation: 2009-11-24

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

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

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

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Sample: 215661 - AH-1 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.11	mg/Kg	1	2.00	106	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.81	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215662 - AH-1 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3980	mg/Kg	100	4.00

Sample: 215663 - AH-1 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5150	mg/Kg	100	4.00

Sample: 215664 - AH-1 3'-3.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8190	mg/Kg	100	4.00

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Sample: 215665 - AH-1 4'-4.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65636	Date Analyzed:	2009-11-30
Prep Batch:	56074	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4260	mg/Kg	100	4.00

Sample: 215666 - AH-1 5'-5.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65636	Date Analyzed:	2009-11-30
Prep Batch:	56074	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4220	mg/Kg	100	4.00

Sample: 215667 - AH-1 6'-6.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65636	Date Analyzed:	2009-11-30
Prep Batch:	56074	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 215668 - AH-1 7'-7.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65636	Date Analyzed:	2009-11-30
Prep Batch:	56074	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

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Sample: 215669 - AH-1 8'-8.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

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

Sample: 215670 - AH-2 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.13	mg/Kg	1	2.00	106	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.90	mg/Kg	1	2.00	95	43.1 - 128.4

Sample: 215670 - AH-2 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4400	mg/Kg	100	4.00

Sample: 215670 - AH-2 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 65583 Date Analyzed: 2009-11-24 Analyzed By: kg
Prep Batch: 56045 Sample Preparation: 2009-11-24 Prepared By: kg

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

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

Sample: 215670 - AH-2 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.09	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.81	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215671 - AH-2 1'-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65637

Prep Batch: 56075

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4170	mg/Kg	100	4.00

Sample: 215672 - AH-2 2'-2.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65637

Prep Batch: 56075

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4500	mg/Kg	100	4.00

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Sample: 215673 - AH-2 3'-3.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65637	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56075				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8220	mg/Kg	100	4.00

Sample: 215674 - AH-2 4'-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65637	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56075				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9110	mg/Kg	100	4.00

Sample: 215675 - AH-2 5'-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65637	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56075				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		16400	mg/Kg	100	4.00

Sample: 215676 - AH-2 6'-6.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-11-30	Analyzed By:	AR
QC Batch:	65637	Sample Preparation:	2009-11-30	Prepared By:	AR
Prep Batch:	56075				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		16300	mg/Kg	100	4.00

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Sample: 215677 - AH-2 7'-7.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 65637
Prep Batch: 56075

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-11-30
Sample Preparation: 2009-11-30

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2790	mg/Kg	100	4.00

Sample: 215678 - AH-3 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	1	2.00	93	43.1 - 128.4

Sample: 215678 - AH-3 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 65637
Prep Batch: 56075

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-11-30
Sample Preparation: 2009-11-30

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3630	mg/Kg	100	4.00

Sample: 215678 - AH-3 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 65583
Prep Batch: 56045

Analytical Method: Mod. 8015B
Date Analyzed: 2009-11-24
Sample Preparation: 2009-11-24

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		102	mg/Kg	1	100	102	70 - 130

Sample: 215678 - AH-3 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.76	mg/Kg	1	2.00	88	61.7 - 121.1

Sample: 215679 - AH-3 1'-1.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-30	Analyzed By: AR
QC Batch: 65637	Sample Preparation: 2009-11-30	Prepared By: AR
Prep Batch: 56075		

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

Sample: 215680 - AH-3 2'-2.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-30	Analyzed By: AR
QC Batch: 65637	Sample Preparation: 2009-11-30	Prepared By: AR
Prep Batch: 56075		

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

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Sample: 215681 - AH-4 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.90	mg/Kg	1	2.00	95	43.1 - 128.4

Sample: 215681 - AH-4 0-1'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-11-30	Analyzed By: AR
QC Batch: 65638	Sample Preparation: 2009-11-30	Prepared By: AR
Prep Batch: 56076		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3280	mg/Kg	100	4.00

Sample: 215681 - AH-4 0-1'

Laboratory: Midland	Analytical Method: Mod. 8015B	Prep Method: N/A
Analysis: TPH DRO - NEW	Date Analyzed: 2009-11-24	Analyzed By: kg
QC Batch: 65583	Sample Preparation: 2009-11-24	Prepared By: kg
Prep Batch: 56045		

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		102	mg/Kg	1	100	102	70 - 130

Sample: 215681 - AH-4 0-1'

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Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215682 - AH-4 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56076 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2230	mg/Kg	100	4.00

Sample: 215683 - AH-4 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56076 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1010	mg/Kg	50	4.00

Sample: 215684 - AH-4 3'-3.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56076 Sample Preparation: 2009-11-30 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1250	mg/Kg	50	4.00

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Sample: 215685 - AH-4 4'-4.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65638	Date Analyzed:	2009-11-30
Prep Batch:	56076	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1340	mg/Kg	50	4.00

Sample: 215686 - AH-4 5'-5.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65638	Date Analyzed:	2009-11-30
Prep Batch:	56076	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		340	mg/Kg	50	4.00

Sample: 215687 - AH-4 6'-6.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65638	Date Analyzed:	2009-11-30
Prep Batch:	56076	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		452	mg/Kg	50	4.00

Sample: 215688 - AH-5 0-1'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65638	Date Analyzed:	2009-11-30
Prep Batch:	56076	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

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Sample: 215688 - AH-5 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 65583
Prep Batch: 56045

Analytical Method: Mod. 8015B
Date Analyzed: 2009-11-24
Sample Preparation: 2009-11-24

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

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

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

Sample: 215688 - AH-5 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.10	mg/Kg	1	2.00	105	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.81	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215689 - AH-5 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 65638
Prep Batch: 56076

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-11-30
Sample Preparation: 2009-11-30

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

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

Sample: 215690 - AH-5 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 65638
Prep Batch: 56076

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-11-30
Sample Preparation: 2009-11-30

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

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

Sample: 215691 - AH-6 0-1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65639

Prep Batch: 56077

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

Sample: 215691 - AH-6 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 65583

Prep Batch: 56045

Analytical Method: Mod. 8015B

Date Analyzed: 2009-11-24

Sample Preparation: 2009-11-24

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

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

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

Sample: 215691 - AH-6 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	61.7 - 121.1

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Sample: 215692 - AH-6 1'-1.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65639	Date Analyzed:	2009-11-30
Prep Batch:	56077	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 215693 - AH-6 2'-2.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65639	Date Analyzed:	2009-11-30
Prep Batch:	56077	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 215694 - AH-7 0-1'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	65639	Date Analyzed:	2009-11-30
Prep Batch:	56077	Sample Preparation:	2009-11-30
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		319	mg/Kg	50	4.00

Sample: 215694 - AH-7 0-1'

Laboratory:	Midland		
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B
QC Batch:	65583	Date Analyzed:	2009-11-24
Prep Batch:	56045	Sample Preparation:	2009-11-24
		Prep Method:	N/A
		Analyzed By:	kg
		Prepared By:	kg

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

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

Sample: 215694 - AH-7 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215695 - AH-7 1'-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65639

Prep Batch: 56077

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

Sample: 215696 - AH-7 2'-2.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 65639

Prep Batch: 56077

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-11-30

Sample Preparation: 2009-11-30

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

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Sample: 215697 - AH-8 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 65639
Prep Batch: 56077

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-11-30
Sample Preparation: 2009-11-30

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

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

Sample: 215697 - AH-8 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 65583
Prep Batch: 56045

Analytical Method: Mod. 8015B
Date Analyzed: 2009-11-24
Sample Preparation: 2009-11-24

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		108	mg/Kg	1	100	108	70 - 130

Sample: 215697 - AH-8 0-1'

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.09	mg/Kg	1	2.00	104	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.81	mg/Kg	1	2.00	90	61.7 - 121.1

Sample: 215698 - AH-8 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 65639
Prep Batch: 56077

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-11-30
Sample Preparation: 2009-11-30

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

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

Method Blank (1) QC Batch: 65583

QC Batch: 65583
Prep Batch: 56045

Date Analyzed: 2009-11-24
QC Preparation: 2009-11-24

Analyzed By: kg
Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		95.7	mg/Kg	1	100	96	70 - 130

Method Blank (1) QC Batch: 65629

QC Batch: 65629
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00410	mg/Kg	0.01
Toluene		<0.00310	mg/Kg	0.01
Ethylbenzene		<0.00240	mg/Kg	0.01
Xylene		<0.00650	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.12	mg/Kg	1	2.00	106	64.9 - 122.7
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	43.9 - 121.9

Method Blank (1) QC Batch: 65630

QC Batch: 65630
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Parameter	Flag	MDL Result	Units	RL
GRO		<0.396	mg/Kg	1

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.10	mg/Kg	1	2.00	105	66.2 - 125
4-Bromofluorobenzene (4-BFB)		1.72	mg/Kg	1	2.00	86	62 - 120.5

Method Blank (1) QC Batch: 65636

QC Batch: 65636 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56074 QC Preparation: 2009-11-30 Prepared By: AR

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

Method Blank (1) QC Batch: 65637

QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56075 QC Preparation: 2009-11-30 Prepared By: AR

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

Method Blank (1) QC Batch: 65638

QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56076 QC Preparation: 2009-11-30 Prepared By: AR

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

Method Blank (1) QC Batch: 65639

QC Batch: 65639 Date Analyzed: 2009-11-30 Analyzed By: AR
Prep Batch: 56077 QC Preparation: 2009-11-30 Prepared By: AR

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

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Laboratory Control Spike (LCS-1)

QC Batch: 65583
Prep Batch: 56045

Date Analyzed: 2009-11-24
QC Preparation: 2009-11-24

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	220	mg/Kg	1	250	<5.86	88	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	222	mg/Kg	1	250	<5.86	89	57.4 - 133.4	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	102	104	mg/Kg	1	100	102	104	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 65629
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.00	mg/Kg	1	2.00	<0.00410	100	75.4 - 115.7
Toluene	1.99	mg/Kg	1	2.00	<0.00310	100	78.4 - 113.6
Ethylbenzene	1.95	mg/Kg	1	2.00	<0.00240	98	76 - 114.2
Xylene	5.82	mg/Kg	1	6.00	<0.00650	97	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.95	mg/Kg	1	2.00	<0.00410	98	75.4 - 115.7	2	20
Toluene	1.94	mg/Kg	1	2.00	<0.00310	97	78.4 - 113.6	2	20
Ethylbenzene	1.91	mg/Kg	1	2.00	<0.00240	96	76 - 114.2	2	20
Xylene	5.70	mg/Kg	1	6.00	<0.00650	95	76.9 - 113.6	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.13	2.11	mg/Kg	1	2.00	106	106	65 - 122.9
4-Bromofluorobenzene (4-BFB)	1.91	1.88	mg/Kg	1	2.00	96	94	43.8 - 124.9

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Laboratory Control Spike (LCS-1)

QC Batch: 65630
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	13.7	mg/Kg	1	20.0	<0.396	68	52.5 - 114.3

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	14.2	mg/Kg	1	20.0	<0.396	71	52.5 - 114.3	4	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.13	2.19	mg/Kg	1	2.00	106	110	66.2 - 128.7
4-Bromofluorobenzene (4-BFB)	1.80	1.87	mg/Kg	1	2.00	90	94	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 65636
Prep Batch: 56074

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.6	mg/Kg	1	100	<2.18	100	85 - 115

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	104	mg/Kg	1	100	<2.18	104	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: 65637
Prep Batch: 56075

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115

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

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Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	104	mg/Kg	1	100	<2.18	104	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65638
Prep Batch: 56076

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.7	mg/Kg	1	100	<2.18	100	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65639
Prep Batch: 56077

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.8	mg/Kg	1	100	<2.18	100	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	98.5	mg/Kg	1	100	<2.18	98	85 - 115	1	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: 215697

QC Batch: 65583
Prep Batch: 56045

Date Analyzed: 2009-11-24
QC Preparation: 2009-11-24

Analyzed By: kg
Prepared By: kg

continued ...

matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	198	mg/Kg	1	250	<5.86	79	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	197	mg/Kg	1	250	<5.86	79	35.2 - 167.1	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	100	99.3	mg/Kg	1	100	100	99	70 - 130

Matrix Spike (MS-1) Spiked Sample: 215596

QC Batch: 65629
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1 3.04	mg/Kg	1	2.00	<0.00410	152	57.7 - 140.7
Toluene	2 3.12	mg/Kg	1	2.00	<0.00310	156	53.4 - 146.6
Ethylbenzene	3 3.21	mg/Kg	1	2.00	<0.00240	160	62.1 - 141.6
Xylene	4 9.65	mg/Kg	1	6.00	<0.00650	161	61.2 - 142.7

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.51	mg/Kg	1	2.00	<0.00410	126	57.7 - 140.7	19	20
Toluene	2.56	mg/Kg	1	2.00	<0.00310	128	53.4 - 146.6	20	20
Ethylbenzene	2.65	mg/Kg	1	2.00	<0.00240	132	62.1 - 141.6	19	20
Xylene	7.92	mg/Kg	1	6.00	<0.00650	132	61.2 - 142.7	20	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)	2.08	2.00	mg/Kg	1	2	104	100	62.7 - 119.6

continued ...

¹Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
²Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
³Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
⁴Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	1.94	1.82	mg/Kg	1	2	97	91	49.6 - 136.7

Matrix Spike (MS-1) Spiked Sample: 215694

QC Batch: 65630
Prep Batch:

Date Analyzed:
QC Preparation:

Analyzed By:
Prepared By:

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	11.4	mg/Kg	1	20.0	<0.396	57	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	13.7	mg/Kg	1	20.0	<0.396	68	10 - 198.3	18	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)	2.06	2.12	mg/Kg	1	2	103	106	65.5 - 123
4-Bromofluorobenzene (4-BFB)	1.86	1.91	mg/Kg	1	2	93	96	58.6 - 140

Matrix Spike (MS-1) Spiked Sample: 215670

QC Batch: 65636
Prep Batch: 56074

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	13100	mg/Kg	100	10000	4400	87	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	13700	mg/Kg	100	10000	4400	93	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 215680

QC Batch: 65637
Prep Batch: 56075

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10500	mg/Kg	100	10000	<218	105	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10700	mg/Kg	100	10000	<218	107	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 215690

QC Batch: 65638
Prep Batch: 56076

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

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

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10200	mg/Kg	100	10000	<218	102	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 215770

QC Batch: 65639
Prep Batch: 56077

Date Analyzed: 2009-11-30
QC Preparation: 2009-11-30

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	29100	mg/Kg	100	10000	19000	101	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	29300	mg/Kg	100	10000	19000	103	85 - 115	1	20

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

Standard (CCV-1)

QC Batch: 65583

Date Analyzed: 2009-11-24

Analyzed By: kg

Report Date: December 1, 2009
114-6400372

Work Order: 9112319
COG/Pronghorn Sec. 23

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Lea County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	218	87	80 - 120	2009-11-24

Standard (CCV-2)

QC Batch: 65583

Date Analyzed: 2009-11-24

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	221	88	80 - 120	2009-11-24

Standard (CCV-3)

QC Batch: 65583

Date Analyzed: 2009-11-24

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	231	92	80 - 120	2009-11-24

Standard (CCV-1)

QC Batch: 65629

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0968	97	80 - 120	2009-11-25
Toluene		mg/Kg	0.100	0.0964	96	80 - 120	2009-11-25
Ethylbenzene		mg/Kg	0.100	0.0953	95	80 - 120	2009-11-25
Xylene		mg/Kg	0.300	0.284	95	80 - 120	2009-11-25

Standard (CCV-2)

QC Batch: 65629

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0979	98	80 - 120	2009-11-25
Toluene		mg/Kg	0.100	0.0973	97	80 - 120	2009-11-25
Ethylbenzene		mg/Kg	0.100	0.0957	96	80 - 120	2009-11-25

continued ...

Report Date: December 1, 2009
114-6400372

Work Order: 9112319
COG/Pronghorn Sec. 23

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Lea County, NM

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Xylene		mg/Kg	0.300	0.285	95	80 - 120	2009-11-25

Standard (CCV-1)

QC Batch: 65630

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.835	84	80 - 120	2009-11-25

Standard (CCV-2)

QC Batch: 65630

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.888	89	80 - 120	2009-11-25

Standard (CCV-3)

QC Batch: 65630

Date Analyzed:

Analyzed By:

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.03	103	80 - 120	2009-11-25

Standard (ICV-1)

QC Batch: 65636

Date Analyzed: 2009-11-30

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	107	107	85 - 115	2009-11-30

Standard (CCV-1)

QC Batch: 65636

Date Analyzed: 2009-11-30

Analyzed By: AR

Report Date: December 1, 2009
114-6400372

Work Order: 9112319
COG/Pronghorn Sec. 23

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Lea County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	92.6	93	85 - 115	2009-11-30

Standard (ICV-1)

QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	93.9	94	85 - 115	2009-11-30

Standard (CCV-1)

QC Batch: 65637 Date Analyzed: 2009-11-30 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	106	106	85 - 115	2009-11-30

Standard (ICV-1)

QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.8	99	85 - 115	2009-11-30

Standard (CCV-1)

QC Batch: 65638 Date Analyzed: 2009-11-30 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-30

Standard (ICV-1)

QC Batch: 65639 Date Analyzed: 2009-11-30 Analyzed By: AR

Report Date: December 1, 2009
114-6400372

Work Order: 9112319
COG/Pronghorn Sec. 23

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Lea County, NM

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-30

Standard (CCV-1)

QC Batch: 65639

Date Analyzed: 2009-11-30

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.0	99	85 - 115	2009-11-30

Order # 9112319

Analysis Request of Chain of Custody Record

PAGE 1 OF 4



TETRA TECH

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

CLIENT NAME: COC		SITE MANAGER: Ike Tavaré	
PROJECT NO.: 114-2400372		PROJECT NAME: Edy / Penabum Sec. 23 Loc. Co, NM	
LAB ID. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
215661	11/20		AH-1 0-1'
6662			AH-1 1-1.5'
6663			AH-1 2-2.5'
6664			AH-1 3-3.5'
6665			AH-1 4-4.5'
6666			AH-1 5-5.5'
6667			AH-1 6-6.5'
6668			AH-1 7-7.5'
6669			AH-1 8-8.5'
6670			AH-2 0-1'

NUMBER OF CONTAINERS	PREPARED (Y/N)	PRESERVATIVE METHOD
1		HCL
		HNO3
		ICE
		NONE

BTX 8021B	TPH 8015 MOD	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8250/824	GC/MS Semi Vol. 8270/825	PCB's 8080/808	Pest. 806/808	Chloride	Gamma Spec.	Alpha Beta (Am)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X	X														

RELINQUISHED BY: (Signature)	Date: 11/20/03	Time: 10:45	RECEIVED BY: (Signature)	Date: 11/20/03	Time: 10:45
RELINQUISHED BY: (Signature)	Date: 11/20/03	Time: 10:45	RECEIVED BY: (Signature)	Date: 11/20/03	Time: 10:45
RELINQUISHED BY: (Signature)	Date: 11/20/03	Time: 10:45	RECEIVED BY: (Signature)	Date: 11/20/03	Time: 10:45
RELINQUISHED BY: (Signature)	Date: 11/20/03	Time: 10:45	RECEIVED BY: (Signature)	Date: 11/20/03	Time: 10:45

RECEIVING LABORATORY:	STATE: TX	ZIP: 79705	PHONE: (432) 682-4559
ADDRESS:	1910 N. Big Spring St.		
CITY:	Midland		
CONTRACT:	13.03c intact		

REMARKS: B had 7M and 5,000 npl/s run deeper samples
Run B761 on 14 highest TPH

LABORATORY RETAINS YELLOW COPY - RETURN ORIGINAL COPY TO TETRA TECH - PROJECT MANAGER RETAINS PINK COPY - ACCOUNTING RECEIVES GOLD COPY.

Order # 9112319

Analysis Request of Chain of Custody Record

PAGE 3 OF 24



TETRA TECH

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

CLIENT NAME: C061		SITE MANAGER: Ike Tavaraz	
PROJECT NO.: 114-640372		PROJECT NAME: C061 Perryman Str. 23	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
2051081	11/21		5 AH-4 0-1'
6082			AH-4 1-1.5'
6083			AH-4 2-2.5'
6084			AH-4 3-3.5'
6085			AH-4 4-4.5'
6086			AH-4 5-5.5'
6087			AH-4 6-6.5'
6088			AH-5 0-1'
6089			AH-5 1-1.5'
6090			AH-5 2-2.5'

ANALYSIS REQUEST (Circle or Specify Method No.)

☒	BTX 8021B
☒	TPH 8015 MOD (Ext to C39)
☐	PAH 8270
☐	ROPA Metals Ag As Ba Cd Cr Pb Hg Se
☐	TCLP Metals Ag As Ba Cd Cr Pb Hg Se
☐	TCLP Volatiles
☐	TCLP Semi Volatiles
☐	RCI
☐	GC/MS Vol. 6240/8290/824
☐	GC/MS Semi. Vol. 8270/825
☐	PCB's 8080/808
☐	Pest. 806/808
☒	Chloride
☐	Gamma Spec.
☐	Alpha Beta (Am)
☐	PLM (Asbestos)
☐	Major Anions/Cations, pH, TDS

RELINQUISHED BY (Signature)	Date: 11/21/07	Time: 01:45	RECEIVED BY (Signature)	Date: 11/21/07	Time: 01:45
RELINQUISHED BY (Signature)	Date: 11/21/07	Time: 01:45	RECEIVED BY (Signature)	Date: 11/21/07	Time: 01:45
RELINQUISHED BY (Signature)	Date: 11/21/07	Time: 01:45	RECEIVED BY (Signature)	Date: 11/21/07	Time: 01:45
RECEIVING LABORATORY:	ADDRESS: Midland STATE: TX ZIP: 79705 PHONE: (432) 682-4559				
CITY:	DATE: 11/21/07				
CONTACT:	TIME: 01:45				

REMARKS: If Total TPH exceeds 5,000 mg/kg run deeper horizons	
SAMPLE CONDITION WHEN RECEIVED: 13.0°C intact	

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

Run BTX on 4 highest TPH

Order #: 9112319

Analysis Request of Chain of Custody Record



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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: CCG		SITE MANAGER: Jke Tavaroz		PROJECT NAME: CCG / Perryborn Site 23		PRESERVATIVE METHOD			
PROJECT NO.: 114-L-100372		SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS		FILTERED (Y/N)			
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMB	GRAB	HCL	HNO3	ICE	NONE
215691	11/20		S	X	X			X	
692									
693									
694									
695									
696									
697									
698									

PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCF Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Post 808/608	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X													
X													
X													

RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
Jke Tavaroz	11/20/03	11:30	Jke Tavaroz	11/20/03	11:30

RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
Jke Tavaroz	11/20/03	11:30	Jke Tavaroz	11/20/03	11:30

RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
Jke Tavaroz	11/20/03	11:30	Jke Tavaroz	11/20/03	11:30

RECEIVING LABORATORY:	ADDRESS:	CITY:	STATE:	ZIP:	PHONE:	DATE:	TIME:
Tetra Tech	1910 N. Big Spring St.	Midland	TX	79705	(432) 682-4559	11/20/03	11:30

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:
13.0°C in 60 sec	If total TPH exceeds 5,000 mg/kg run deeper horizons

TERA-TECH CONTACT PERSON:	Results By:	RUSH Charges Authorized:	No
Jke Tavaroz	Jke Tavaroz		

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

Run BTEX on 4 highest TPH

Summary Report

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

Report Date: January 20, 2010

Work Order: 10011513



Project Location: Lea County, NM
Project Name: COG/Pronghorn Sec. 23
Project Number: 114-6400372

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
219597	SB-1 4-5'	soil	2010-01-13	00:00	2010-01-14
219598	SB-1 6-7'	soil	2010-01-13	00:00	2010-01-14
219599	SB-1 8-9'	soil	2010-01-13	00:00	2010-01-14
219600	SB-1 10-11'	soil	2010-01-13	00:00	2010-01-14
219601	SB-1 15-16'	soil	2010-01-13	00:00	2010-01-14
219602	SB-1 20-21'	soil	2010-01-13	00:00	2010-01-14

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
219597 - SB-1 4-5'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00

Sample: 219597 - SB-1 4-5'

Param	Flag	Result	Units	RL
Chloride		4090	mg/Kg	4.00

Sample: 219598 - SB-1 6-7'

Param	Flag	Result	Units	RL
Chloride		7310	mg/Kg	4.00

Sample: 219599 - SB-1 8-9'

Report Date: January 20, 2010

Work Order: 10011513

Page Number: 2 of 2

Param	Flag	Result	Units	RL
Chloride		13100	mg/Kg	4.00

Sample: 219600 - SB-1 10-11'

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

Sample: 219601 - SB-1 15-16'

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

Sample: 219602 - SB-1 20-21'

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

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 806•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite F El Paso, Texas 79922 915•585•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

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

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: January 20, 2010

Work Order: 10011513



Project Location: Lea County, NM
Project Name: COG/Pronghorn Sec. 23
Project Number: 114-6400372

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
219597	SB-1 4-5'	soil	2010-01-13	00:00	2010-01-14
219598	SB-1 6-7'	soil	2010-01-13	00:00	2010-01-14
219599	SB-1 8-9'	soil	2010-01-13	00:00	2010-01-14
219600	SB-1 10-11'	soil	2010-01-13	00:00	2010-01-14
219601	SB-1 15-16'	soil	2010-01-13	00:00	2010-01-14
219602	SB-1 20-21'	soil	2010-01-13	00:00	2010-01-14

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

This report consists of a total of 13 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael Abel

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

Standard Flags

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

Case Narrative

Samples for project COG/Pronghorn Sec. 23 were received by TraceAnalysis, Inc. on 2010-01-14 and assigned to work order 10011513. Samples for work order 10011513 were received intact at a temperature of 17.0 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	57175	2010-01-19 at 14:00	66862	2010-01-19 at 11:58
Chloride (Titration)	SM 4500-Cl B	57115	2010-01-18 at 09:39	66836	2010-01-19 at 14:40
TPH DRO - NEW	Mod. 8015B	57147	2010-01-18 at 10:36	66823	2010-01-18 at 10:36
TPH GRO	S 8015B	57175	2010-01-19 at 14:00	66863	2010-01-19 at 12:26

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 10011513 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
COG/Pronghorn Sec. 23

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Lea County, NM

Analytical Report

Sample: 219597 - SB-1 4-5'

Laboratory: Midland

Analysis: BTEX

QC Batch: 66862

Prep Batch: 57175

Analytical Method: S 8021B

Date Analyzed: 2010-01-19

Sample Preparation: 2010-01-19

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		2.10	mg/Kg	1	2.00	105	43.1 - 158.4

Sample: 219597 - SB-1 4-5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 66836

Prep Batch: 57115

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-01-19

Sample Preparation: 2010-01-18

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4090	mg/Kg	100	4.00

Sample: 219597 - SB-1 4-5'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 66823

Prep Batch: 57147

Analytical Method: Mod. 8015B

Date Analyzed: 2010-01-18

Sample Preparation: 2010-01-18

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

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

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
COG/Pronghorn Sec. 23

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Lea County, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		102	mg/Kg	1	100	102	70 - 130

Sample: 219597 - SB-1 4-5'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 66863
Prep Batch: 57175

Analytical Method: S 8015B
Date Analyzed: 2010-01-19
Sample Preparation: 2010-01-19

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.30	mg/Kg	1	2.00	115	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.17	mg/Kg	1	2.00	108	61.7 - 131.1

Sample: 219598 - SB-1 6-7'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66836
Prep Batch: 57115

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-19
Sample Preparation: 2010-01-18

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		7310	mg/Kg	100	4.00

Sample: 219599 - SB-1 8-9'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66836
Prep Batch: 57115

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-19
Sample Preparation: 2010-01-18

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		13100	mg/Kg	100	4.00

Report Date: January 20, 2010
114-6400372

Work Order: 10011513
COG/Pronghorn Sec. 23

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Lea County, NM

Sample: 219600 - SB-1 10-11'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	66836	Date Analyzed:	2010-01-19
Prep Batch:	57115	Sample Preparation:	2010-01-18
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 219601 - SB-1 15-16'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	66836	Date Analyzed:	2010-01-19
Prep Batch:	57115	Sample Preparation:	2010-01-18
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 219602 - SB-1 20-21'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	66836	Date Analyzed:	2010-01-19
Prep Batch:	57115	Sample Preparation:	2010-01-18
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Method Blank (1) QC Batch: 66823

QC Batch:	66823	Date Analyzed:	2010-01-18	Analyzed By:	kg
Prep Batch:	57147	QC Preparation:	2010-01-18	Prepared By:	kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		91.6	mg/Kg	1	100	92	70 - 130

Method Blank (1) QC Batch: 66836

QC Batch: 66836
Prep Batch: 57115

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-18

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 66862

QC Batch: 66862
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00410	mg/Kg	0.01
Toluene		<0.00310	mg/Kg	0.01
Ethylbenzene		<0.00240	mg/Kg	0.01
Xylene		<0.00650	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.03	mg/Kg	1	2.00	102	64.9 - 142.7
4-Bromofluorobenzene (4-BFB)		1.90	mg/Kg	1	2.00	95	43.9 - 141.9

Method Blank (1) QC Batch: 66863

QC Batch: 66863
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.396	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.19	mg/Kg	1	2.00	110	66.2 - 145
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	62 - 120.5

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Laboratory Control Spike (LCS-1)

QC Batch: 66823
Prep Batch: 57147

Date Analyzed: 2010-01-18
QC Preparation: 2010-01-18

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	284	mg/Kg	1	250	<5.86	114	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	295	mg/Kg	1	250	<5.86	118	57.4 - 133.4	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
n-Tricosane	102	105	mg/Kg	1	100	102	105	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 66836
Prep Batch: 57115

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-18

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	95.5	mg/Kg	1	100	<2.18	96	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	97.3	mg/Kg	1	100	<2.18	97	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 66862
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.02	mg/Kg	1	2.00	<0.00410	101	75.4 - 115.7
Toluene	1.85	mg/Kg	1	2.00	<0.00310	92	78.4 - 113.6

continued ...

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control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Ethylbenzene	1.76	mg/Kg	1	2.00	<0.00240	88	76 - 114.2
Xylene	5.34	mg/Kg	1	6.00	<0.00650	89	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.06	mg/Kg	1	2.00	<0.00410	103	75.4 - 115.7	2	20
Toluene	1.89	mg/Kg	1	2.00	<0.00310	94	78.4 - 113.6	2	20
Ethylbenzene	1.80	mg/Kg	1	2.00	<0.00240	90	76 - 114.2	2	20
Xylene	5.44	mg/Kg	1	6.00	<0.00650	91	76.9 - 113.6	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)	1.94	1.92	mg/Kg	1	2.00	97	96	65 - 142.9
4-Bromofluorobenzene (4-BFB)	1.97	1.96	mg/Kg	1	2.00	98	98	43.8 - 144.9

Laboratory Control Spike (LCS-1)

QC Batch: 66863
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.9	mg/Kg	1	20.0	<0.396	84	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.6	mg/Kg	1	20.0	<0.396	88	52.5 - 114.3	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)	2.10	2.12	mg/Kg	1	2.00	105	106	66.2 - 148.7
4-Bromofluorobenzene (4-BFB)	2.03	2.06	mg/Kg	1	2.00	102	103	64.1 - 127.4

Matrix Spike (MS-1) Spiked Sample: 219597

QC Batch: 66823
Prep Batch: 57147

Date Analyzed: 2010-01-18
QC Preparation: 2010-01-18

Analyzed By: kg
Prepared By: kg

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	323	mg/Kg	1	250	<5.86	129	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	328	mg/Kg	1	250	<5.86	131	35.2 - 167.1	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	97.8	98.0	mg/Kg	1	100	98	98	70 - 130

Matrix Spike (MS-1) Spiked Sample: 219677

QC Batch: 66836
Prep Batch: 57115

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-18

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11500	mg/Kg	100	10000	<218	115	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11000	mg/Kg	100	10000	<218	110	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 219728

QC Batch: 66862
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.42	mg/Kg	1	2.00	<0.00410	121	57.7 - 140.7
Toluene	2.26	mg/Kg	1	2.00	<0.00310	113	53.4 - 146.6
Ethylbenzene	2.22	mg/Kg	1	2.00	<0.00240	111	62.1 - 141.6
Xylene	6.71	mg/Kg	1	6.00	<0.00650	112	61.2 - 142.7

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

continued ...

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matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.32	mg/Kg	1	2.00	<0.00410	116	57.7 - 140.7	4	20
Toluene	2.17	mg/Kg	1	2.00	<0.00310	108	53.4 - 146.6	4	20
Ethylbenzene	2.12	mg/Kg	1	2.00	<0.00240	106	62.1 - 141.6	5	20
Xylene	6.42	mg/Kg	1	6.00	<0.00650	107	61.2 - 142.7	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)	1.93	2.11	mg/Kg	1	2	96	106	62.7 - 139.6
4-Bromofluorobenzene (4-BFB)	1.93	2.11	mg/Kg	1	2	96	106	49.6 - 146.7

Matrix Spike (MS-1) Spiked Sample: 219879

QC Batch: 66863
Prep Batch: 57175

Date Analyzed: 2010-01-19
QC Preparation: 2010-01-19

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.6	mg/Kg	1	20.0	<0.396	93	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	19.2	mg/Kg	1	20.0	<0.396	96	10 - 198.3	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)	2.29	2.13	mg/Kg	1	2	114	106	65.5 - 143
4-Bromofluorobenzene (4-BFB)	2.33	2.21	mg/Kg	1	2	116	110	58.6 - 140

Standard (CCV-1)

QC Batch: 66823

Date Analyzed: 2010-01-18

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	297	119	80 - 120	2010-01-18

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Standard (CCV-2)

QC Batch: 66823

Date Analyzed: 2010-01-18

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	290	116	80 - 120	2010-01-18

Standard (ICV-1)

QC Batch: 66836

Date Analyzed: 2010-01-19

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2010-01-19

Standard (CCV-1)

QC Batch: 66836

Date Analyzed: 2010-01-19

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.8	98	85 - 115	2010-01-19

Standard (CCV-1)

QC Batch: 66862

Date Analyzed: 2010-01-19

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.101	101	80 - 120	2010-01-19
Toluene		mg/Kg	0.100	0.0927	93	80 - 120	2010-01-19
Ethylbenzene		mg/Kg	0.100	0.0891	89	80 - 120	2010-01-19
Xylene		mg/Kg	0.300	0.270	90	80 - 120	2010-01-19

Standard (CCV-2)

QC Batch: 66862

Date Analyzed: 2010-01-19

Analyzed By: AG

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.101	101	80 - 120	2010-01-19
Toluene		mg/Kg	0.100	0.0926	93	80 - 120	2010-01-19
Ethylbenzene		mg/Kg	0.100	0.0879	88	80 - 120	2010-01-19
Xylene		mg/Kg	0.300	0.265	88	80 - 120	2010-01-19

Standard (CCV-1)

QC Batch: 66863

Date Analyzed: 2010-01-19

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.07	107	80 - 120	2010-01-19

Standard (CCV-2)

QC Batch: 66863

Date Analyzed: 2010-01-19

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.994	99	80 - 120	2010-01-19

Analysis Request of Chain of Custody Record

TETRA TECH

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



CLIENT NAME: COG		SITE MANAGER: Ike Tavaraz	
PROJECT NO.: 114-6400372		PROJECT NAME: COG / Pronghorn Sec 23 Valve Box	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
219597	2/13		Lea Co., NM
598	1/13		SB-1 4-5'
599	1/13		SB-1 6-7'
600	1/13		SB-1 8-9'
601	1/13		SB-1 10-11'
602	1/13		SB-1 15-16'
			SB-1 20-21'

PRESERVATIVE METHOD	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD			
			HCL	HNO3	ICE	NONE
TPH 8015 MOD	1					
BTEX 8021B	1					
PAH 8270	1					
TCRA Metals Ag As Ba Cd Cr Pb Hg Se	1					
TCRP Metals Ag As Ba Cd Cr Pb Hg Se	1					
TCRP Volatiles	1					
TCRP Semi Volatiles	1					
RCI	1					
GC/MS Vol. 8240/8260/824	1					
GC/MS Semi. Vol. 8270/825	1					
PCB's 8080/808	1					
Pest. 808/608	1					
Chloride	1					
Gamma Spec.	1					
Alpha Beta (Air)	1					
PLM (Asbestos)	1					
Major Anions/Cations, pH, TDS	1					

RELINQUISHED BY: (Signature)	Date: 1/14/10	Time: 16:45	RECEIVED BY: (Signature)	Date: 1/14/10	Time: 16:45
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RECEIVING LABORATORY:					
CITY:					
STATE:	ZIP:	PHONE:	DATE:		
REMARKS: If TPH > 5000 they run deeper samples / If total BTEX > 50 run deeper samples					

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ANALYSIS REQUEST
(Circle or Specify Method No.)

SAMPLED BY: (Print & Initial)	Date: 1/13/10	Time: 11:10
SAMPLE SHIPPED BY: (Circle)	AIRBILL #:	OTHER:
FEDEX	BUS	UPS
TETRA TECH CONTACT PERSON: Ike Tavaraz		
Results by:		
RUSH Charges Authorized:		
Yes	No	

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

Summary Report

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

Report Date: July 29, 2010

Work Order: 10072603



Project Name: COG/Pronghorn SWD Dresser Sleeve
Project Number: 114-6400562

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
238550	SB-1 1'	soil	2010-07-20	00:00	2010-07-23
238551	SB-1 3'	soil	2010-07-20	00:00	2010-07-23
238552	SB-1 5'	soil	2010-07-20	00:00	2010-07-23
238553	SB-1 7'	soil	2010-07-20	00:00	2010-07-23
238554	SB-1 10'	soil	2010-07-20	00:00	2010-07-23
238555	SB-1 15'	soil	2010-07-20	00:00	2010-07-23
238556	SB-1 20'	soil	2010-07-20	00:00	2010-07-23
238557	SB-1 25'	soil	2010-07-20	00:00	2010-07-23
238558	SB-2 1'	soil	2010-07-20	00:00	2010-07-23
238559	SB-2 3'	soil	2010-07-20	00:00	2010-07-23
238560	SB-2 5'	soil	2010-07-20	00:00	2010-07-23
238561	SB-2 7'	soil	2010-07-20	00:00	2010-07-23
238562	SB-2 10'	soil	2010-07-20	00:00	2010-07-23
238563	SB-2 15'	soil	2010-07-20	00:00	2010-07-23
238564	SB-2 20'	soil	2010-07-20	00:00	2010-07-23
238565	SB-2 25'	soil	2010-07-20	00:00	2010-07-23
238566	SB-2 30'	soil	2010-07-20	00:00	2010-07-23
238567	SB-2 40'	soil	2010-07-20	00:00	2010-07-23
238568	SB-2 50'	soil	2010-07-20	00:00	2010-07-23
238569	SB-2 60'	soil	2010-07-20	00:00	2010-07-23
238570	SB-2 70'	soil	2010-07-20	00:00	2010-07-23
238571	SB-2 80'	soil	2010-07-20	00:00	2010-07-23
238572	SB-3 1'	soil	2010-07-21	00:00	2010-07-23
238573	SB-3 3'	soil	2010-07-21	00:00	2010-07-23
238574	SB-3 5'	soil	2010-07-21	00:00	2010-07-23
238575	SB-3 7'	soil	2010-07-21	00:00	2010-07-23
238576	SB-3 10'	soil	2010-07-21	00:00	2010-07-23
238577	SB-3 15'	soil	2010-07-21	00:00	2010-07-23
238578	SB-3 20'	soil	2010-07-21	00:00	2010-07-23
238579	SB-3 25'	soil	2010-07-21	00:00	2010-07-23
238580	SB-3 30'	soil	2010-07-21	00:00	2010-07-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
238581	SB-3 40'	soil	2010-07-21	00:00	2010-07-23
238582	SB-3 50'	soil	2010-07-21	00:00	2010-07-23
238583	SB-3 60'	soil	2010-07-21	00:00	2010-07-23
238584	SB-3 70'	soil	2010-07-21	00:00	2010-07-23
238585	SB-4 1'	soil	2010-07-21	00:00	2010-07-23
238586	SB-4 3'	soil	2010-07-21	00:00	2010-07-23
238587	SB-4 5'	soil	2010-07-21	00:00	2010-07-23
238588	SB-4 7'	soil	2010-07-21	00:00	2010-07-23
238589	SB-4 10'	soil	2010-07-21	00:00	2010-07-23
238590	SB-4 15'	soil	2010-07-21	00:00	2010-07-23
238591	SB-4 20'	soil	2010-07-21	00:00	2010-07-23
238592	SB-4 25'	soil	2010-07-21	00:00	2010-07-23
238593	SB-4 30'	soil	2010-07-21	00:00	2010-07-23
238594	SB-4 40'	soil	2010-07-21	00:00	2010-07-23
238595	SB-4 50'	soil	2010-07-21	00:00	2010-07-23
238596	SB-5 1'	soil	2010-07-21	00:00	2010-07-23
238597	SB-5 3'	soil	2010-07-21	00:00	2010-07-23
238598	SB-5 5'	soil	2010-07-21	00:00	2010-07-23
238599	SB-5 7'	soil	2010-07-21	00:00	2010-07-23
238600	SB-5 10'	soil	2010-07-21	00:00	2010-07-23
238601	SB-5 15'	soil	2010-07-21	00:00	2010-07-23
238602	SB-5 20'	soil	2010-07-21	00:00	2010-07-23
238603	SB-4 60'	soil	2010-07-21	00:00	2010-07-23

Sample - Field Code	BTX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
238550 - SB-1 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238558 - SB-2 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238572 - SB-3 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238585 - SB-4 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238596 - SB-5 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 238550 - SB-1 1'

Param	Flag	Result	Units	RL
Chloride		3940	mg/Kg	4.00

Sample: 238551 - SB-1 3'

Param	Flag	Result	Units	RL
Chloride		4690	mg/Kg	4.00

Sample: 238552 - SB-1 5'

Param	Flag	Result	Units	RL
Chloride		3240	mg/Kg	4.00

Sample: 238553 - SB-1 7'

Param	Flag	Result	Units	RL
Chloride		1960	mg/Kg	4.00

Sample: 238554 - SB-1 10'

Param	Flag	Result	Units	RL
Chloride		2570	mg/Kg	4.00

Sample: 238555 - SB-1 15'

Param	Flag	Result	Units	RL
Chloride		981	mg/Kg	4.00

Sample: 238556 - SB-1 20'

Param	Flag	Result	Units	RL
Chloride		769	mg/Kg	4.00

Sample: 238557 - SB-1 25'

Param	Flag	Result	Units	RL
Chloride		259	mg/Kg	4.00

Sample: 238558 - SB-2 1'

Param	Flag	Result	Units	RL
Chloride		3500	mg/Kg	4.00

Sample: 238559 - SB-2 3'

Param	Flag	Result	Units	RL
Chloride		5220	mg/Kg	4.00

Sample: 238560 - SB-2 5'

Param	Flag	Result	Units	RL
Chloride		3050	mg/Kg	4.00

Sample: 238561 - SB-2 7'

Param	Flag	Result	Units	RL
Chloride		11000	mg/Kg	4.00

Sample: 238562 - SB-2 10'

Param	Flag	Result	Units	RL
Chloride		9710	mg/Kg	4.00

Sample: 238563 - SB-2 15'

Param	Flag	Result	Units	RL
Chloride		8500	mg/Kg	4.00

Sample: 238564 - SB-2 20'

Param	Flag	Result	Units	RL
Chloride		5490	mg/Kg	4.00

Sample: 238565 - SB-2 25'

Param	Flag	Result	Units	RL
Chloride		546	mg/Kg	4.00

Sample: 238566 - SB-2 30'

Param	Flag	Result	Units	RL
Chloride		1660	mg/Kg	4.00

Sample: 238567 - SB-2 40'

Param	Flag	Result	Units	RL
Chloride		1110	mg/Kg	4.00

Sample: 238568 - SB-2 50'

Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00

Sample: 238569 - SB-2 60'

Param	Flag	Result	Units	RL
Chloride		744	mg/Kg	4.00

Sample: 238570 - SB-2 70'

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

Sample: 238571 - SB-2 80'

Param	Flag	Result	Units	RL
Chloride		389	mg/Kg	4.00

Sample: 238572 - SB-3 1'

Param	Flag	Result	Units	RL
Chloride		6780	mg/Kg	4.00

Sample: 238573 - SB-3 3'

Param	Flag	Result	Units	RL
Chloride		2890	mg/Kg	4.00

Sample: 238574 - SB-3 5'

Param	Flag	Result	Units	RL
Chloride		5690	mg/Kg	4.00

Sample: 238575 - SB-3 7'

Param	Flag	Result	Units	RL
Chloride		1610	mg/Kg	4.00

Sample: 238576 - SB-3 10'

Param	Flag	Result	Units	RL
Chloride		3080	mg/Kg	4.00

Sample: 238577 - SB-3 15'

Param	Flag	Result	Units	RL
Chloride		8550	mg/Kg	4.00

Sample: 238578 - SB-3 20'

Param	Flag	Result	Units	RL
Chloride		4130	mg/Kg	4.00

Sample: 238579 - SB-3 25'

Param	Flag	Result	Units	RL
Chloride		839	mg/Kg	4.00

Sample: 238580 - SB-3 30'

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

Sample: 238581 - SB-3 40'

Param	Flag	Result	Units	RL
Chloride		390	mg/Kg	4.00

Sample: 238582 - SB-3 50'

Param	Flag	Result	Units	RL
Chloride		410	mg/Kg	4.00

Sample: 238583 - SB-3 60'

Param	Flag	Result	Units	RL
Chloride		302	mg/Kg	4.00

Sample: 238584 - SB-3 70'

Param	Flag	Result	Units	RL
Chloride		298	mg/Kg	4.00

Sample: 238585 - SB-4 1'

Param	Flag	Result	Units	RL
Chloride		8350	mg/Kg	4.00

Sample: 238586 - SB-4 3'

Param	Flag	Result	Units	RL
Chloride		4450	mg/Kg	4.00

Sample: 238587 - SB-4 5'

Param	Flag	Result	Units	RL
Chloride		4270	mg/Kg	4.00

Sample: 238588 - SB-4 7'

Param	Flag	Result	Units	RL
Chloride		4810	mg/Kg	4.00

Sample: 238589 - SB-4 10'

Param	Flag	Result	Units	RL
Chloride		903	mg/Kg	4.00

Sample: 238590 - SB-4 15'

Param	Flag	Result	Units	RL
Chloride		1150	mg/Kg	4.00

Sample: 238591 - SB-4 20'

Param	Flag	Result	Units	RL
Chloride		1270	mg/Kg	4.00

Sample: 238592 - SB-4 25'

Param	Flag	Result	Units	RL
Chloride		228	mg/Kg	4.00

Sample: 238593 - SB-4 30'

Param	Flag	Result	Units	RL
Chloride		238	mg/Kg	4.00

Sample: 238594 - SB-4 40'

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

Sample: 238595 - SB-4 50'

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

Sample: 238596 - SB-5 1'

Param	Flag	Result	Units	RL
Chloride		3390	mg/Kg	4.00

Sample: 238597 - SB-5 3'

Param	Flag	Result	Units	RL
Chloride		4840	mg/Kg	4.00

Sample: 238598 - SB-5 5'

Param	Flag	Result	Units	RL
Chloride		5870	mg/Kg	4.00

Sample: 238599 - SB-5 7'

Param	Flag	Result	Units	RL
Chloride		9770	mg/Kg	4.00

Sample: 238600 - SB-5 10'

Param	Flag	Result	Units	RL
Chloride		5570	mg/Kg	4.00

Sample: 238601 - SB-5 15'

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

Sample: 238602 - SB-5 20'

Param	Flag	Result	Units	RL
Chloride		697	mg/Kg	4.00

Sample: 238603 - SB-4 60'

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

TRACE ANALYSIS, INC.

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Certifications

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

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: July 29, 2010

Work Order: 10072603



Project Name: COG/Pronghorn SWD Dresser Sleeve
Project Number: 114-6400562

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
238550	SB-1 1'	soil	2010-07-20	00:00	2010-07-23
238551	SB-1 3'	soil	2010-07-20	00:00	2010-07-23
238552	SB-1 5'	soil	2010-07-20	00:00	2010-07-23
238553	SB-1 7'	soil	2010-07-20	00:00	2010-07-23
238554	SB-1 10'	soil	2010-07-20	00:00	2010-07-23
238555	SB-1 15'	soil	2010-07-20	00:00	2010-07-23
238556	SB-1 20'	soil	2010-07-20	00:00	2010-07-23
238557	SB-1 25'	soil	2010-07-20	00:00	2010-07-23
238558	SB-2 1'	soil	2010-07-20	00:00	2010-07-23
238559	SB-2 3'	soil	2010-07-20	00:00	2010-07-23
238560	SB-2 5'	soil	2010-07-20	00:00	2010-07-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
238561	SB-2 7'	soil	2010-07-20	00:00	2010-07-23
238562	SB-2 10'	soil	2010-07-20	00:00	2010-07-23
238563	SB-2 15'	soil	2010-07-20	00:00	2010-07-23
238564	SB-2 20'	soil	2010-07-20	00:00	2010-07-23
238565	SB-2 25'	soil	2010-07-20	00:00	2010-07-23
238566	SB-2 30'	soil	2010-07-20	00:00	2010-07-23
238567	SB-2 40'	soil	2010-07-20	00:00	2010-07-23
238568	SB-2 50'	soil	2010-07-20	00:00	2010-07-23
238569	SB-2 60'	soil	2010-07-20	00:00	2010-07-23
238570	SB-2 70'	soil	2010-07-20	00:00	2010-07-23
238571	SB-2 80'	soil	2010-07-20	00:00	2010-07-23
238572	SB-3 1'	soil	2010-07-21	00:00	2010-07-23
238573	SB-3 3'	soil	2010-07-21	00:00	2010-07-23
238574	SB-3 5'	soil	2010-07-21	00:00	2010-07-23
238575	SB-3 7'	soil	2010-07-21	00:00	2010-07-23
238576	SB-3 10'	soil	2010-07-21	00:00	2010-07-23
238577	SB-3 15'	soil	2010-07-21	00:00	2010-07-23
238578	SB-3 20'	soil	2010-07-21	00:00	2010-07-23
238579	SB-3 25'	soil	2010-07-21	00:00	2010-07-23
238580	SB-3 30'	soil	2010-07-21	00:00	2010-07-23
238581	SB-3 40'	soil	2010-07-21	00:00	2010-07-23
238582	SB-3 50'	soil	2010-07-21	00:00	2010-07-23
238583	SB-3 60'	soil	2010-07-21	00:00	2010-07-23
238584	SB-3 70'	soil	2010-07-21	00:00	2010-07-23
238585	SB-4 1'	soil	2010-07-21	00:00	2010-07-23
238586	SB-4 3'	soil	2010-07-21	00:00	2010-07-23
238587	SB-4 5'	soil	2010-07-21	00:00	2010-07-23
238588	SB-4 7'	soil	2010-07-21	00:00	2010-07-23
238589	SB-4 10'	soil	2010-07-21	00:00	2010-07-23
238590	SB-4 15'	soil	2010-07-21	00:00	2010-07-23
238591	SB-4 20'	soil	2010-07-21	00:00	2010-07-23
238592	SB-4 25'	soil	2010-07-21	00:00	2010-07-23
238593	SB-4 30'	soil	2010-07-21	00:00	2010-07-23
238594	SB-4 40'	soil	2010-07-21	00:00	2010-07-23
238595	SB-4 50'	soil	2010-07-21	00:00	2010-07-23
238596	SB-5 1'	soil	2010-07-21	00:00	2010-07-23
238597	SB-5 3'	soil	2010-07-21	00:00	2010-07-23
238598	SB-5 5'	soil	2010-07-21	00:00	2010-07-23
238599	SB-5 7'	soil	2010-07-21	00:00	2010-07-23
238600	SB-5 10'	soil	2010-07-21	00:00	2010-07-23
238601	SB-5 15'	soil	2010-07-21	00:00	2010-07-23
238602	SB-5 20'	soil	2010-07-21	00:00	2010-07-23
238603	SB-4 60'	soil	2010-07-21	00:00	2010-07-23

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

This report consists of a total of 42 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



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

Standard Flags

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

Case Narrative

Samples for project COG/Pronghorn SWD Dresser Sleeve were received by TraceAnalysis, Inc. on 2010-07-23 and assigned to work order 10072603. Samples for work order 10072603 were received intact at a temperature of 3.1 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	61781	2010-07-27 at 08:15	72100	2010-07-27 at 10:49
BTEX	S 8021B	61819	2010-07-28 at 08:30	72137	2010-07-28 at 10:41
Chloride (Titration)	SM 4500-Cl B	61767	2010-07-27 at 08:38	72091	2010-07-27 at 15:10
Chloride (Titration)	SM 4500-Cl B	61768	2010-07-27 at 10:39	72092	2010-07-27 at 15:11
Chloride (Titration)	SM 4500-Cl B	61786	2010-07-27 at 09:38	72121	2010-07-28 at 14:50
Chloride (Titration)	SM 4500-Cl B	61787	2010-07-28 at 09:39	72122	2010-07-28 at 14:51
Chloride (Titration)	SM 4500-Cl B	61788	2010-07-27 at 09:39	72123	2010-07-28 at 14:52
Chloride (Titration)	SM 4500-Cl B	61789	2010-07-27 at 09:39	72124	2010-07-28 at 14:53
TPH DRO - NEW	S 8015 D	61780	2010-07-27 at 14:14	72099	2010-07-27 at 14:14
TPH GRO	S 8015 D	61781	2010-07-27 at 08:15	72101	2010-07-27 at 11:16
TPH GRO	S 8015 D	61819	2010-07-28 at 08:30	72138	2010-07-28 at 11:08

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 10072603 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: July 29, 2010
114-6400562

Work Order: 10072603
COG/Pronghorn SWD Dresser Sleeve

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Analytical Report

Sample: 238550 - SB-1 1'

Laboratory: Midland

Analysis: BTEX

QC Batch: 72100

Prep Batch: 61781

Analytical Method: S 8021B

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.68	mg/Kg	1	2.00	84	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.67	mg/Kg	1	2.00	84	38.4 - 157

Sample: 238550 - SB-1 1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72091

Prep Batch: 61767

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3940	mg/Kg	100	4.00

Sample: 238550 - SB-1 1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 72099

Prep Batch: 61780

Analytical Method: S 8015 D

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		95.3	mg/Kg	1	100	95	70 - 130

Sample: 238550 - SB-1 1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 72101
Prep Batch: 61781

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.74	mg/Kg	1	2.00	87	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.68	mg/Kg	1	2.00	84	42 - 159

Sample: 238551 - SB-1 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72091
Prep Batch: 61767

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4690	mg/Kg	100	4.00

Sample: 238552 - SB-1 5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72091
Prep Batch: 61767

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3240	mg/Kg	100	4.00

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COG/Pronghorn SWD Dresser Sleeve

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Sample: 238553 - SB-1 7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72091	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61767				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1960	mg/Kg	100	4.00

Sample: 238554 - SB-1 10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72091	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61767				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2570	mg/Kg	100	4.00

Sample: 238555 - SB-1 15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72091	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61767				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		981	mg/Kg	100	4.00

Sample: 238556 - SB-1 20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72091	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61767				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		769	mg/Kg	50	4.00

Report Date: July 29, 2010
114-6400562

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COG/Pronghorn SWD Dresser Sleeve

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Sample: 238557 - SB-1 25'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72092	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61768				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		259	mg/Kg	50	4.00

Sample: 238558 - SB-2 1'

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-07-27	Analyzed By:	AG
QC Batch:	72100	Sample Preparation:	2010-07-27	Prepared By:	AG
Prep Batch:	61781				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.47	mg/Kg	1	2.00	74	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.48	mg/Kg	1	2.00	74	38.4 - 157

Sample: 238558 - SB-2 1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72092	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61768				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3500	mg/Kg	100	4.00

Report Date: July 29, 2010
114-6400562

Work Order: 10072603
COG/Pronghorn SWD Dresser Sleeve

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Sample: 238558 - SB-2 1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 72099
Prep Batch: 61780

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		99.8	mg/Kg	1	100	100	70 - 130

Sample: 238558 - SB-2 1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 72101
Prep Batch: 61781

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.52	mg/Kg	1	2.00	76	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.47	mg/Kg	1	2.00	74	42 - 159

Sample: 238559 - SB-2 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72092
Prep Batch: 61768

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5220	mg/Kg	100	4.00

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Sample: 238560 - SB-2 5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72092	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61768				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3050	mg/Kg	100	4.00

Sample: 238561 - SB-2 7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72092	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61768				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11000	mg/Kg	100	4.00

Sample: 238562 - SB-2 10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72092	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61768				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9710	mg/Kg	100	4.00

Sample: 238563 - SB-2 15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-27	Analyzed By:	AR
QC Batch:	72092	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61768				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8500	mg/Kg	100	4.00

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Sample: 238564 - SB-2 20'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72092	Date Analyzed:	2010-07-27
Prep Batch:	61768	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5490	mg/Kg	100	4.00

Sample: 238565 - SB-2 25'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72092	Date Analyzed:	2010-07-27
Prep Batch:	61768	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		546	mg/Kg	100	4.00

Sample: 238566 - SB-2 30'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72092	Date Analyzed:	2010-07-27
Prep Batch:	61768	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1660	mg/Kg	100	4.00

Sample: 238567 - SB-2 40'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72121	Date Analyzed:	2010-07-28
Prep Batch:	61786	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1110	mg/Kg	100	4.00

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Sample: 238568 - SB-2 50'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72121	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61786				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		614	mg/Kg	50	4.00

Sample: 238569 - SB-2 60'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72121	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61786				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		744	mg/Kg	50	4.00

Sample: 238570 - SB-2 70'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72121	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61786				

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

Sample: 238571 - SB-2 80'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72121	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61786				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		389	mg/Kg	50	4.00

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Sample: 238572 - SB-3 1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 72100
Prep Batch: 61781

Analytical Method: S 8021B
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.69	mg/Kg	1	2.00	84	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.71	mg/Kg	1	2.00	86	38.4 - 157

Sample: 238572 - SB-3 1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72121
Prep Batch: 61786

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6780	mg/Kg	100	4.00

Sample: 238572 - SB-3 1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 72099
Prep Batch: 61780

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

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

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Sample: 238572 - SB-3 1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 72101
Prep Batch: 61781

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.74	mg/Kg	1	2.00	87	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.70	mg/Kg	1	2.00	85	42 - 159

Sample: 238573 - SB-3 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72121
Prep Batch: 61786

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2890	mg/Kg	100	4.00

Sample: 238574 - SB-3 5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72121
Prep Batch: 61786

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5690	mg/Kg	100	4.00

Sample: 238575 - SB-3 7'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72121
Prep Batch: 61786

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

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Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1610	mg/Kg	100	4.00

Sample: 238576 - SB-3 10'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72121

Prep Batch: 61786

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-07-28

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3080	mg/Kg	100	4.00

Sample: 238577 - SB-3 15'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72122

Prep Batch: 61787

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-07-28

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8550	mg/Kg	100	4.00

Sample: 238578 - SB-3 20'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72122

Prep Batch: 61787

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-07-28

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4130	mg/Kg	100	4.00

Sample: 238579 - SB-3 25'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72122

Prep Batch: 61787

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-07-28

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		839	mg/Kg	50	4.00

Sample: 238580 - SB-3 30'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

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

Sample: 238581 - SB-3 40'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		390	mg/Kg	50	4.00

Sample: 238582 - SB-3 50'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		410	mg/Kg	50	4.00

Sample: 238583 - SB-3 60'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 Sample Preparation: 2010-07-27 Prepared By: AR

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Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		302	mg/Kg	50	4.00

Sample: 238584 - SB-3 70'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72122

Prep Batch: 61787

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-07-28

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		298	mg/Kg	50	4.00

Sample: 238585 - SB-4 1'

Laboratory: Midland

Analysis: BTEX

QC Batch: 72100

Prep Batch: 61781

Analytical Method: S 8021B

Date Analyzed: 2010-07-27

Sample Preparation: 2010-07-27

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.66	mg/Kg	1	2.00	83	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.68	mg/Kg	1	2.00	84	38.4 - 157

Sample: 238585 - SB-4 1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72122

Prep Batch: 61787

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-07-28

Sample Preparation: 2010-07-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8350	mg/Kg	100	4.00

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Sample: 238585 - SB-4 1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 72099
Prep Batch: 61780

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

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

Sample: 238585 - SB-4 1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 72101
Prep Batch: 61781

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.72	mg/Kg	1	2.00	86	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	42 - 159

Sample: 238586 - SB-4 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72122
Prep Batch: 61787

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4450	mg/Kg	100	4.00

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Sample: 238587 - SB-4 5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72123	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61788				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4270	mg/Kg	100	4.00

Sample: 238588 - SB-4 7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72123	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61788				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4810	mg/Kg	100	4.00

Sample: 238589 - SB-4 10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72123	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61788				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		903	mg/Kg	100	4.00

Sample: 238590 - SB-4 15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72123	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61788				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1150	mg/Kg	100	4.00

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Sample: 238591 - SB-4 20'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72123	Date Analyzed:	2010-07-28
Prep Batch:	61788	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1270	mg/Kg	100	4.00

Sample: 238592 - SB-4 25'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72123	Date Analyzed:	2010-07-28
Prep Batch:	61788	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		228	mg/Kg	50	4.00

Sample: 238593 - SB-4 30'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72123	Date Analyzed:	2010-07-28
Prep Batch:	61788	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		238	mg/Kg	50	4.00

Sample: 238594 - SB-4 40'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72123	Date Analyzed:	2010-07-28
Prep Batch:	61788	Sample Preparation:	2010-07-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

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Sample: 238595 - SB-4 50'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72123	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61788				

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

Sample: 238596 - SB-5 1'

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-07-28	Analyzed By:	AG
QC Batch:	72137	Sample Preparation:	2010-07-28	Prepared By:	AG
Prep Batch:	61819				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.66	mg/Kg	1	2.00	83	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.64	mg/Kg	1	2.00	82	38.4 - 157

Sample: 238596 - SB-5 1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72123	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61788				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3390	mg/Kg	100	4.00

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Sample: 238596 - SB-5 1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 72099
Prep Batch: 61780

Analytical Method: S 8015 D
Date Analyzed: 2010-07-27
Sample Preparation: 2010-07-27

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		90.7	mg/Kg	1	100	91	70 - 130

Sample: 238596 - SB-5 1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 72138
Prep Batch: 61819

Analytical Method: S 8015 D
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-28

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.72	mg/Kg	1	2.00	86	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	42 - 159

Sample: 238597 - SB-5 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 72124
Prep Batch: 61789

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-07-28
Sample Preparation: 2010-07-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4840	mg/Kg	100	4.00

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Sample: 238598 - SB-5 5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72124	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61789				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5870	mg/Kg	100	4.00

Sample: 238599 - SB-5 7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72124	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61789				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9770	mg/Kg	100	4.00

Sample: 238600 - SB-5 10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72124	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61789				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5570	mg/Kg	100	4.00

Sample: 238601 - SB-5 15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-07-28	Analyzed By:	AR
QC Batch:	72124	Sample Preparation:	2010-07-27	Prepared By:	AR
Prep Batch:	61789				

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

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Sample: 238602 - SB-5 20'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72124 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61789 Sample Preparation: 2010-07-27 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		697	mg/Kg	50	4.00

Sample: 238603 - SB-4 60'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72124 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61789 Sample Preparation: 2010-07-27 Prepared By: AR

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

Method Blank (1) QC Batch: 72091

QC Batch: 72091 Date Analyzed: 2010-07-27 Analyzed By: AR
Prep Batch: 61767 QC Preparation: 2010-07-27 Prepared By: AR

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

Method Blank (1) QC Batch: 72092

QC Batch: 72092 Date Analyzed: 2010-07-27 Analyzed By: AR
Prep Batch: 61768 QC Preparation: 2010-07-27 Prepared By: AR

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

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Method Blank (1) QC Batch: 72099

QC Batch: 72099
Prep Batch: 61780

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: kg
Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<14.5	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		79.0	mg/Kg	1	100	79	70 - 130

Method Blank (1) QC Batch: 72100

QC Batch: 72100
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02
Toluene		<0.00950	mg/Kg	0.02
Ethylbenzene		<0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.19	mg/Kg	1	2.00	110	66.6 - 122
4-Bromofluorobenzene (4-BFB)		2.06	mg/Kg	1	2.00	103	55.4 - 132

Method Blank (1) QC Batch: 72101

QC Batch: 72101
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.29	mg/Kg	1	2.00	114	67.6 - 150
4-Bromofluorobenzene (4-BFB)		2.06	mg/Kg	1	2.00	103	52.4 - 130

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Method Blank (1) QC Batch: 72121

QC Batch: 72121 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61786 QC Preparation: 2010-07-27 Prepared By: AR

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

Method Blank (1) QC Batch: 72122

QC Batch: 72122 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61787 QC Preparation: 2010-07-28 Prepared By: AR

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

Method Blank (1) QC Batch: 72123

QC Batch: 72123 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61788 QC Preparation: 2010-07-27 Prepared By: AR

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

Method Blank (1) QC Batch: 72124

QC Batch: 72124 Date Analyzed: 2010-07-28 Analyzed By: AR
Prep Batch: 61789 QC Preparation: 2010-07-27 Prepared By: AR

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

Method Blank (1) QC Batch: 72137

QC Batch: 72137 Date Analyzed: 2010-07-28 Analyzed By: AG
Prep Batch: 61819 QC Preparation: 2010-07-28 Prepared By: AG

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Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02
Toluene		<0.00950	mg/Kg	0.02
Ethylbenzene		<0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.91	mg/Kg	1	2.00	96	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1.75	mg/Kg	1	2.00	88	55.4 - 132

Method Blank (1) QC Batch: 72138

QC Batch: 72138
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.77	mg/Kg	1	2.00	88	52.4 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 72091
Prep Batch: 61767

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.6	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	3	20

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

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Laboratory Control Spike (LCS-1)

QC Batch: 72092
Prep Batch: 61768

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.6	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 72099
Prep Batch: 61780

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	223	mg/Kg	1	250	<14.5	89	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	217	mg/Kg	1	250	<14.5	87	57.4 - 133.4	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
n-Tricosane	93.4	92.1	mg/Kg	1	100	93	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 72100
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.04	mg/Kg	1	2.00	<0.0150	102	81.9 - 108
Toluene	2.05	mg/Kg	1	2.00	<0.00950	102	81.9 - 107

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Ethylbenzene	2.04	mg/Kg	1	2.00	<0.0106	102	78.4 - 107
Xylene	6.13	mg/Kg	1	6.00	<0.00930	102	79.1 - 107

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.98	mg/Kg	1	2.00	<0.0150	99	81.9 - 108	3	20
Toluene	1.98	mg/Kg	1	2.00	<0.00950	99	81.9 - 107	4	20
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.0106	97	78.4 - 107	5	20
Xylene	5.91	mg/Kg	1	6.00	<0.00930	98	79.1 - 107	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)	2.03	1.97	mg/Kg	1	2.00	102	98	70.2 - 114
4-Bromofluorobenzene (4-BFB)	2.02	1.99	mg/Kg	1	2.00	101	100	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 72101
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.5	mg/Kg	1	20.0	<1.65	82	69.9 - 95.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.7	mg/Kg	1	20.0	<1.65	88	69.9 - 95.4	7	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.07	2.12	mg/Kg	1	2.00	104	106	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.97	2.03	mg/Kg	1	2.00	98	102	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 72121
Prep Batch: 61786

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.5	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	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: 72122
Prep Batch: 61787

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.6	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	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: 72123
Prep Batch: 61788

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.9	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	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: 72124
Prep Batch: 61789

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.6	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 72137
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.00	mg/Kg	1	2.00	<0.0150	100	81.9 - 108
Toluene	1.98	mg/Kg	1	2.00	<0.00950	99	81.9 - 107
Ethylbenzene	1.95	mg/Kg	1	2.00	<0.0106	98	78.4 - 107
Xylene	5.86	mg/Kg	1	6.00	<0.00930	98	79.1 - 107

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.99	mg/Kg	1	2.00	<0.0150	100	81.9 - 108	0	20
Toluene	1.98	mg/Kg	1	2.00	<0.00950	99	81.9 - 107	0	20
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.0106	97	78.4 - 107	0	20
Xylene	5.86	mg/Kg	1	6.00	<0.00930	98	79.1 - 107	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)	1.84	1.80	mg/Kg	1	2.00	92	90	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.78	1.80	mg/Kg	1	2.00	89	90	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 72138
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.6	mg/Kg	1	20.0	<1.65	83	69.9 - 95.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.9	mg/Kg	1	20.0	<1.65	80	69.9 - 95.4	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)	2.09	2.05	mg/Kg	1	2.00	104	102	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.93	1.90	mg/Kg	1	2.00	96	95	68.2 - 132

Matrix Spike (MS-1) Spiked Sample: 238556

QC Batch: 72091

Date Analyzed: 2010-07-27

Analyzed By: AR

Prep Batch: 61767

QC Preparation: 2010-07-27

Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11100	mg/Kg	100	10000	769	103	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11400	mg/Kg	100	10000	769	106	85 - 115	3	20

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

Matrix Spike (MS-1) Spiked Sample: 238566

QC Batch: 72092

Date Analyzed: 2010-07-27

Analyzed By: AR

Prep Batch: 61768

QC Preparation: 2010-07-27

Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11400	mg/Kg	100	10000	1660	97	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11600	mg/Kg	100	10000	1660	99	85 - 115	2	20

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

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Matrix Spike (MS-1) Spiked Sample: 238572

QC Batch: 72099
Prep Batch: 61780

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	224	mg/Kg	1	250	<14.5	90	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	239	mg/Kg	1	250	<14.5	96	35.2 - 167.1	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	94.3	95.3	mg/Kg	1	100	94	95	70 - 130

Matrix Spike (MS-1) Spiked Sample: 238519

QC Batch: 72100
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1	2.31	mg/Kg	1	2.00	<0.0150	116	80.5 - 112
Toluene	2	2.35	mg/Kg	1	2.00	<0.00950	118	82.4 - 113
Ethylbenzene	3	2.35	mg/Kg	1	2.00	<0.0106	118	83.9 - 114
Xylene	4	7.09	mg/Kg	1	6.00	<0.00930	118	84 - 114

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

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2.07	mg/Kg	1	2.00	<0.0150	104	80.5 - 112	11	20
Toluene		2.09	mg/Kg	1	2.00	<0.00950	104	82.4 - 113	12	20
Ethylbenzene		2.11	mg/Kg	1	2.00	<0.0106	106	83.9 - 114	11	20
Xylene		6.36	mg/Kg	1	6.00	<0.00930	106	84 - 114	11	20

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

¹ Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

² Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

³ Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

⁴ Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

Report Date: July 29, 2010
114-6400562

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COG/Pronghorn SWD Dresser Sleeve

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.39	1.19	mg/Kg	1	2	70	60	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1.44	1.21	mg/Kg	1	2	72	60	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 238467

QC Batch: 72101
Prep Batch: 61781

Date Analyzed: 2010-07-27
QC Preparation: 2010-07-27

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.3	mg/Kg	1	20.0	<1.65	76	61.8 - 114

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.3	mg/Kg	1	20.0	<1.65	76	61.8 - 114	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.44	1.02	mg/Kg	1	2	72	51	50 - 162
4-Bromofluorobenzene (4-BFB)	1.54	1.03	mg/Kg	1	2	77	52	50 - 162

Matrix Spike (MS-1) Spiked Sample: 238576

QC Batch: 72121
Prep Batch: 61786

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14100	mg/Kg	100	10000	3080	110	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	14300	mg/Kg	100	10000	3080	112	85 - 115	1	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: 238586

QC Batch: 72122
Prep Batch: 61787

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AR
Prepared By: AR

Report Date: July 29, 2010
114-6400562

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	15200	mg/Kg	100	10000	4450	108	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	15300	mg/Kg	100	10000	4450	108	85 - 115	1	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: 238596

QC Batch: 72123
Prep Batch: 61788

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	13700	mg/Kg	100	10000	3390	103	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	13900	mg/Kg	100	10000	3390	105	85 - 115	1	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: 238603

QC Batch: 72124
Prep Batch: 61789

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-27

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9990	mg/Kg	100	10000	<218	100	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10100	mg/Kg	100	10000	<218	101	85 - 115	1	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: 238784

QC Batch: 72137
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Report Date: July 29, 2010
114-6400562

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.09	mg/Kg	1	2.00	0.031	103	80.5 - 112
Toluene	2.06	mg/Kg	1	2.00	<0.00950	103	82.4 - 113
Ethylbenzene	2.05	mg/Kg	1	2.00	<0.0106	102	83.9 - 114
Xylene	6.20	mg/Kg	1	6.00	<0.00930	103	84 - 114

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.21	mg/Kg	1	2.00	0.031	109	80.5 - 112	6	20
Toluene	2.20	mg/Kg	1	2.00	<0.00950	110	82.4 - 113	7	20
Ethylbenzene	2.21	mg/Kg	1	2.00	<0.0106	110	83.9 - 114	8	20
Xylene	6.69	mg/Kg	1	6.00	<0.00930	112	84 - 114	8	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.17	1.60	mg/Kg	1	2	58	80	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1.21	1.59	mg/Kg	1	2	60	80	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 238921

QC Batch: 72138
Prep Batch: 61819

Date Analyzed: 2010-07-28
QC Preparation: 2010-07-28

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.6	mg/Kg	1	20.0	<1.65	83	61.8 - 114

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	16.5	mg/Kg	1	20.0	<1.65	82	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)	1.20	1.77	mg/Kg	1	2	60	88	50 - 162
4-Bromofluorobenzene (4-BFB)	1.28	1.81	mg/Kg	1	2	64	90	50 - 162

Standard (ICV-1)

QC Batch: 72091

Date Analyzed: 2010-07-27

Analyzed By: AR

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Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.9	99	85 - 115	2010-07-27

Standard (CCV-1)

QC Batch: 72091

Date Analyzed: 2010-07-27

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-07-27

Standard (ICV-1)

QC Batch: 72092

Date Analyzed: 2010-07-27

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-07-27

Standard (CCV-1)

QC Batch: 72092

Date Analyzed: 2010-07-27

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2010-07-27

Standard (CCV-2)

QC Batch: 72099

Date Analyzed: 2010-07-27

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	262	105	80 - 120	2010-07-27

Standard (CCV-3)

QC Batch: 72099

Date Analyzed: 2010-07-27

Analyzed By: kg

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	264	106	80 - 120	2010-07-27

Standard (CCV-4)

QC Batch: 72099

Date Analyzed: 2010-07-27

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	251	100	80 - 120	2010-07-27

Standard (CCV-1)

QC Batch: 72100

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0952	95	80 - 120	2010-07-27
Toluene		mg/Kg	0.100	0.0952	95	80 - 120	2010-07-27
Ethylbenzene		mg/Kg	0.100	0.0905	90	80 - 120	2010-07-27
Xylene		mg/Kg	0.300	0.273	91	80 - 120	2010-07-27

Standard (CCV-2)

QC Batch: 72100

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.102	102	80 - 120	2010-07-27
Toluene		mg/Kg	0.100	0.102	102	80 - 120	2010-07-27
Ethylbenzene		mg/Kg	0.100	0.0979	98	80 - 120	2010-07-27
Xylene		mg/Kg	0.300	0.297	99	80 - 120	2010-07-27

Standard (CCV-3)

QC Batch: 72100

Date Analyzed: 2010-07-27

Analyzed By: AG

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.102	102	80 - 120	2010-07-27
Toluene		mg/Kg	0.100	0.100	100	80 - 120	2010-07-27
Ethylbenzene		mg/Kg	0.100	0.0959	96	80 - 120	2010-07-27
Xylene		mg/Kg	0.300	0.290	97	80 - 120	2010-07-27

Standard (CCV-1)

QC Batch: 72101

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.01	101	80 - 120	2010-07-27

Standard (CCV-2)

QC Batch: 72101

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.00	100	80 - 120	2010-07-27

Standard (CCV-3)

QC Batch: 72101

Date Analyzed: 2010-07-27

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.957	96	80 - 120	2010-07-27

Standard (ICV-1)

QC Batch: 72121

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2010-07-28

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Standard (CCV-1)

QC Batch: 72121

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-07-28

Standard (ICV-1)

QC Batch: 72122

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.3	98	85 - 115	2010-07-28

Standard (CCV-1)

QC Batch: 72122

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2010-07-28

Standard (ICV-1)

QC Batch: 72123

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-07-28

Standard (CCV-1)

QC Batch: 72123

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.8	99	85 - 115	2010-07-28

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Standard (ICV-1)

QC Batch: 72124

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2010-07-28

Standard (CCV-1)

QC Batch: 72124

Date Analyzed: 2010-07-28

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-07-28

Standard (CCV-1)

QC Batch: 72137

Date Analyzed: 2010-07-28

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0979	98	80 - 120	2010-07-28
Toluene		mg/Kg	0.100	0.0972	97	80 - 120	2010-07-28
Ethylbenzene		mg/Kg	0.100	0.0925	92	80 - 120	2010-07-28
Xylene		mg/Kg	0.300	0.282	94	80 - 120	2010-07-28

Standard (CCV-2)

QC Batch: 72137

Date Analyzed: 2010-07-28

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0970	97	80 - 120	2010-07-28
Toluene		mg/Kg	0.100	0.0959	96	80 - 120	2010-07-28
Ethylbenzene		mg/Kg	0.100	0.0929	93	80 - 120	2010-07-28
Xylene		mg/Kg	0.300	0.280	93	80 - 120	2010-07-28

Standard (CCV-1)

QC Batch: 72138

Date Analyzed: 2010-07-28

Analyzed By: AG

Report Date: July 29, 2010
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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.901	90	80 - 120	2010-07-28

Standard (CCV-2)

QC Batch: 72138

Date Analyzed: 2010-07-28

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.927	93	80 - 120	2010-07-28

Analysis Request of Chain of Custody Record



TETRA TECH

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

CLIENT NAME: COG		SITE MANAGER: Fke Tavaraz		PROJECT NAME: COG / Prognostic SUD Dresser Sleeve		PRESERVATIVE METHOD	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	NUMBER OF CONTAINERS	NUMBER OF CONTAINERS
238570	7/20	2010	S		X	1	1
571	7/20					1	1
572	7/21					1	1
573						1	1
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RECEIVING LABORATORY:		DATE: 7-23-10		TIME: 15:45	
ADDRESS: Midland		STATE: TX		ZIP: 79705	
CONTACT: Fke Tavaraz		PHONE: (432) 682-4559		FAX: (432) 682-3946	
SAMPLE CONDITION WHEN RECEIVED:		REMARKS:		3.1c is	

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

PAGE: 4 OF: 6

ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

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

CLIENT NAME: CCG		SITE MANAGER: Ike Tavaraz		PROJECT NAME: CCG / Pronghorn SWD Design Sleeve		PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION													
23850	2010	7/21	S		X	SB-3	30'												
581						SB-3	40'												
582						SB-3	50'												
583						SB-3	60'												
584						SB-3	70'												
585						SB-4	1'												
586						SB-4	3'												
587						SB-4	5'												
588						SB-4	7'												
589						SB-4	10'												

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DATE: 7-23-10

DATE: 7-23-10

DATE: 7-23-10

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TIME: 1:45

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RECEIVING LABORATORY: TRACE

ADDRESS: _____

CITY: Midland STATE: TX ZIP: _____

CONTACT: _____ PHONE: _____

DATE: 7-23-10

TIME: 15:45

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DATE: 7-23-10

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SAMPLE CONDITION WHEN RECEIVED:

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Analysis Request of Chain of Custody Record

PAGE: 5 OF: 6

ANALYSIS REQUEST
(Circle or Specify Method No.)

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



CLIENT NAME: COG		SITE MANAGER: Ike Tavaraz	
PROJECT NO.: 114-6400562		PROJECT NAME: COG / Prayhan SWD Dresser Sleeve	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
590	7/21		SB-4 15'
591			SB-4 20'
592			SB-4 25'
593			SB-4 30'
594			SB-4 40'
595			SB-4 50'
596			SB-5 1'
597			SB-5 3'
598			SB-5 5'
599			SB-5 7'

PRESERVATIVE METHOD		NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE
LAB I.D. NUMBER	DATE						
590	7/21	1				X	
591		1				X	
592		1				X	
593		1				X	
594		1				X	
595		1				X	
596		1				X	
597		1				X	
598		1				X	
599		1				X	

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RELINQUISHED BY: (Signature)	Date: 7/21/00	RECEIVED BY: (Signature)	Date: 7/21/00

RECEIVING LABORATORY: TRACE
ADDRESS: Midland STATE TX
CITY: Midland STATE TX
CONTACT: 31C JTA

DATE: 7-23-10 TIME: 15:45

REMARKS:

PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/824	GC/MS Semi. Vol. 8270/826	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
BTEX 8021B													
PH 8018 MOD													
TK1005 (Ext. to C35)													

SAMPLED BY: (Print & Initial) Kim Date: 7/21/00

SAMPLE SHIPPED BY: (Circle) AIRBILL #:
FEDEX BUS
HAND DELIVERED UPS
TETRA TECH CONTACT PERSON: Ike Tavaraz

RESULTS BY: RUSH Charges Authorized: Yes No

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PAGE: 6 OF: 6

ANALYSIS REQUEST

(Circle or Specify Method No.)



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

[illegible]

SAMPLE CONDITION WHEN RECEIVED:

31. 31. 31.

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