SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	**Myox 29 State Com #3H**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit N**	**Sec 29**	**T25S**	**R28E**		
Lease Number:	**API# 30-015-39404**					
County:	**Eddy County**					
GPS:	**32.09375° N**			**104.11177° W**		
Surface Owner:	State					
Mineral Owner:						
Directions:	From Malaga, Take 285 (Pecos Hwy) south approx. 8.1 miles and turn to the west on caliche road. Travel 1.3 miles on the caliche road and turn south. Travel south approx 0.4 miles and follow the road to the west 1.0 miles to the location.					

Release Data:	
Date Released:	11/17/2012
Type Release:	Produced Water
Source of Contamination:	Stroage Tank
Fluid Released:	12 bbls
Fluids Recovered:	10 bbls

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

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	20
50-99 ft	10	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:	**20**	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	100

TETRA TECH

March 4, 2013

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

Re: Closure Report for the COG Operating LLC., Myox 29 State Com #3H Well, Section 29, Township 25 South, Range 28 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Myox 29 State Com #3H well located in Unit N, Section 29, Township 25 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.09375°, W 104.11177°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on November 17, 2012, and released approximately twelve two (12) barrels of produced fluid from a storage tank. Ten (10) barrels of standing fluids were recovered. The spill initiated in the pasture on the southwest edge of the pad adjacent to the lease road entering the well location. The initial C-141 form is enclosed in Appendix A.

Groundwater

According to the New Mexico State Engineers Office no water wells were listed within Section 29, but two wells were listed in Sections 20 and 28 with depths to groundwater of 96.0' and 90.0' below surface, respectively. According to the NMOCD groundwater map, one well is listed in Section 29 with a depth to groundwater of 15.0' below surface. This well appears to be located near a draw with a relative elevation of 2969'. The site relative elevation is approximately 2974', which indicates the groundwater depth at

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

the site could be at approximately 20.0' below surface. Based on the limited groundwater data, Tetra Tech will inventory water wells in the area and confirm the groundwater depth from any water wells accessible near the area. The groundwater data is shown on 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 100 mg/kg.

Soil Assessment and Analytical Results

On December 6, 2012, Tetra Tech personnel inspected and sampled the spill area. Seven (7) auger holes (AH-1 through AH-7) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole and spill area are shown on Figure 3.

Referring to Table 1, none of the auger hole samples exceeded the RRAL for either TPH or BTEX. A shallow chloride impact was detected in all auger holes with the maximum chloride concentration of 2,960 mg/kg detected in the area of AH-6 at 0-1.0'. Auger holes (AH-1, AH-3, AH-4, AH-6 and AH-7) did show a surface chloride impact at 0-1' and 1-1.5' below surface which significantly declined with depth. The chloride concentrations spiked in the areas of AH-2, AH-4, AH-6 and AH-7 at 5-5.5' to 1,030 mg/kg 2,110 mg/kg, 1,130 mg/kg and 1,370 mg/kg, respectively. These areas were not vertically defined.

TETRA TECH

Remediation and Conclusion

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. The final excavation depths of the soil remediation were met as stated in the approved work plan. Approximately 40 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

As proposed in the work plan, a background trench was installed at the site. The sampling results are shown in Table 1. Referring to Table 1, the background chlorides showed highs of 888 mg/kg at 8.0' and 3,360 mg/kg at 10.0' below surface. A trench (T-1) was installed in the areas of AH-4 to define extents and showed a chloride of 2,030 mg/kg at 7.0' below surface. Deeper samples were not collected due to the dense formation. The chloride concentrations detected appear to be background.

Based on the background chlorides, AH-1 and AH-3 were excavated to a depth of 1.0' below and 2.0' in the areas of AH-6 and AH-7. The remaining areas were not excavated as the deeper chlorides appeared to be background concentrations.

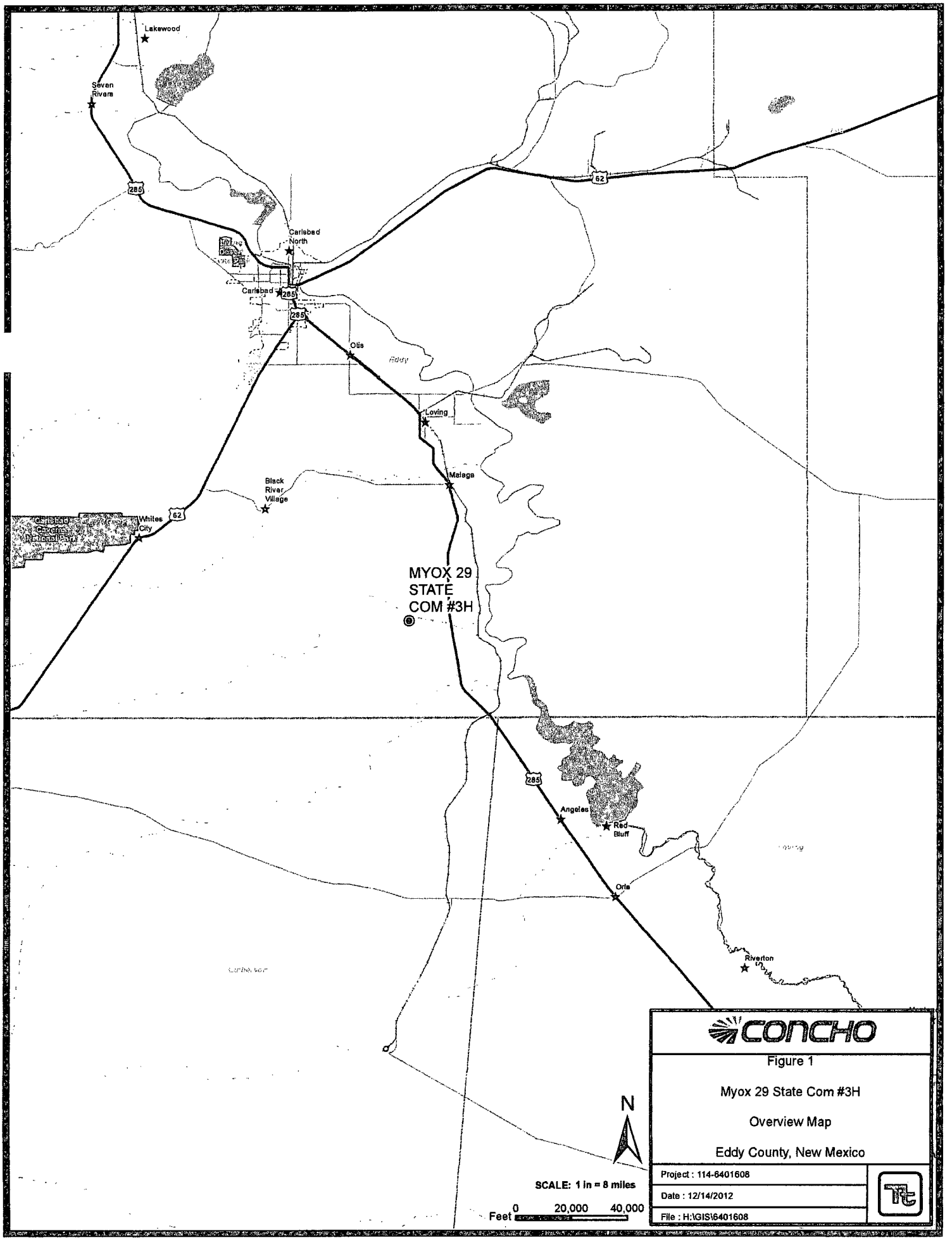
Based on the remedial activities performed, COG request closure of the site. A copy of the C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

cc: Pat Ellis – COG

Figures



CONCHO

Figure 1

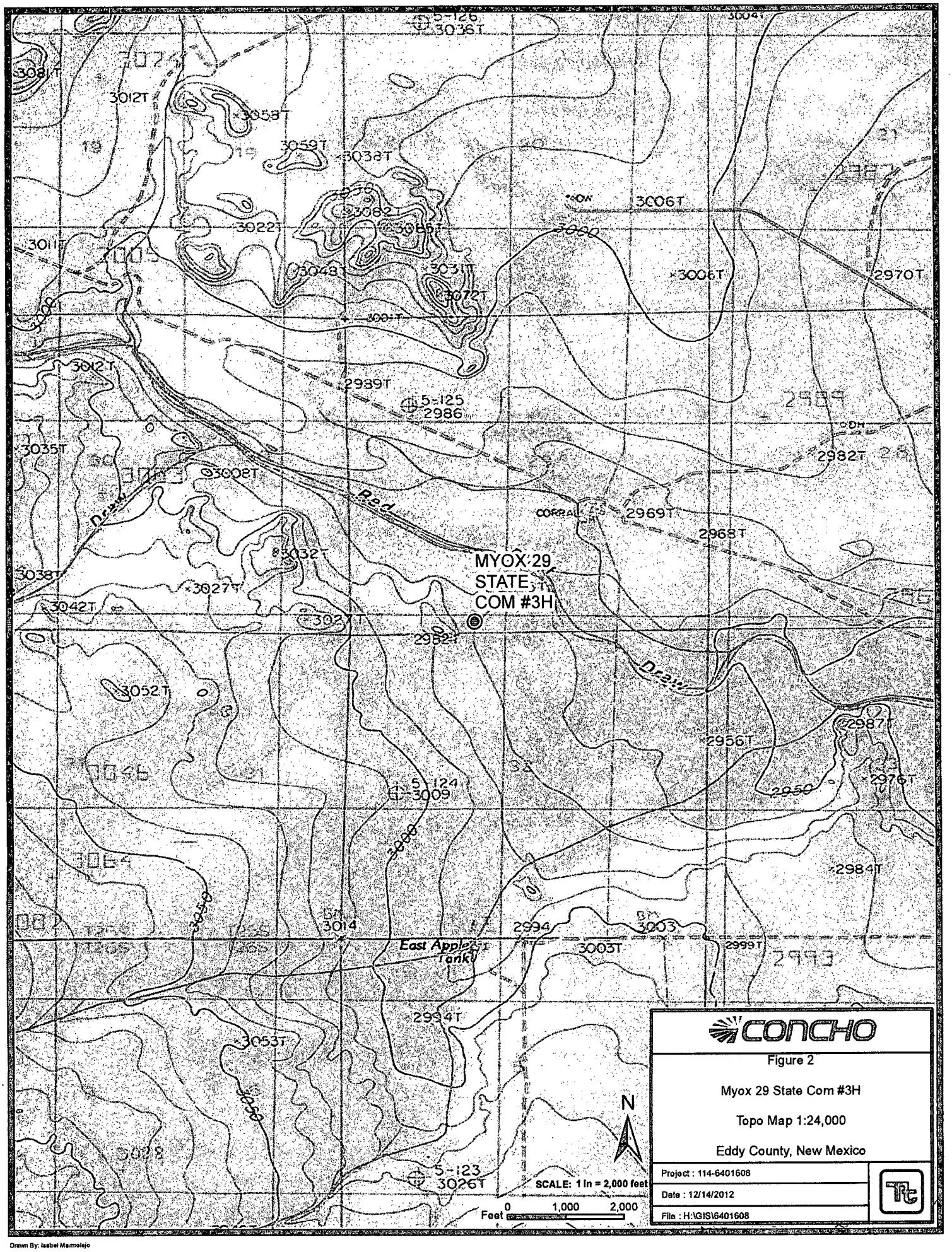
Myox 29 State Com #3H

Overview Map

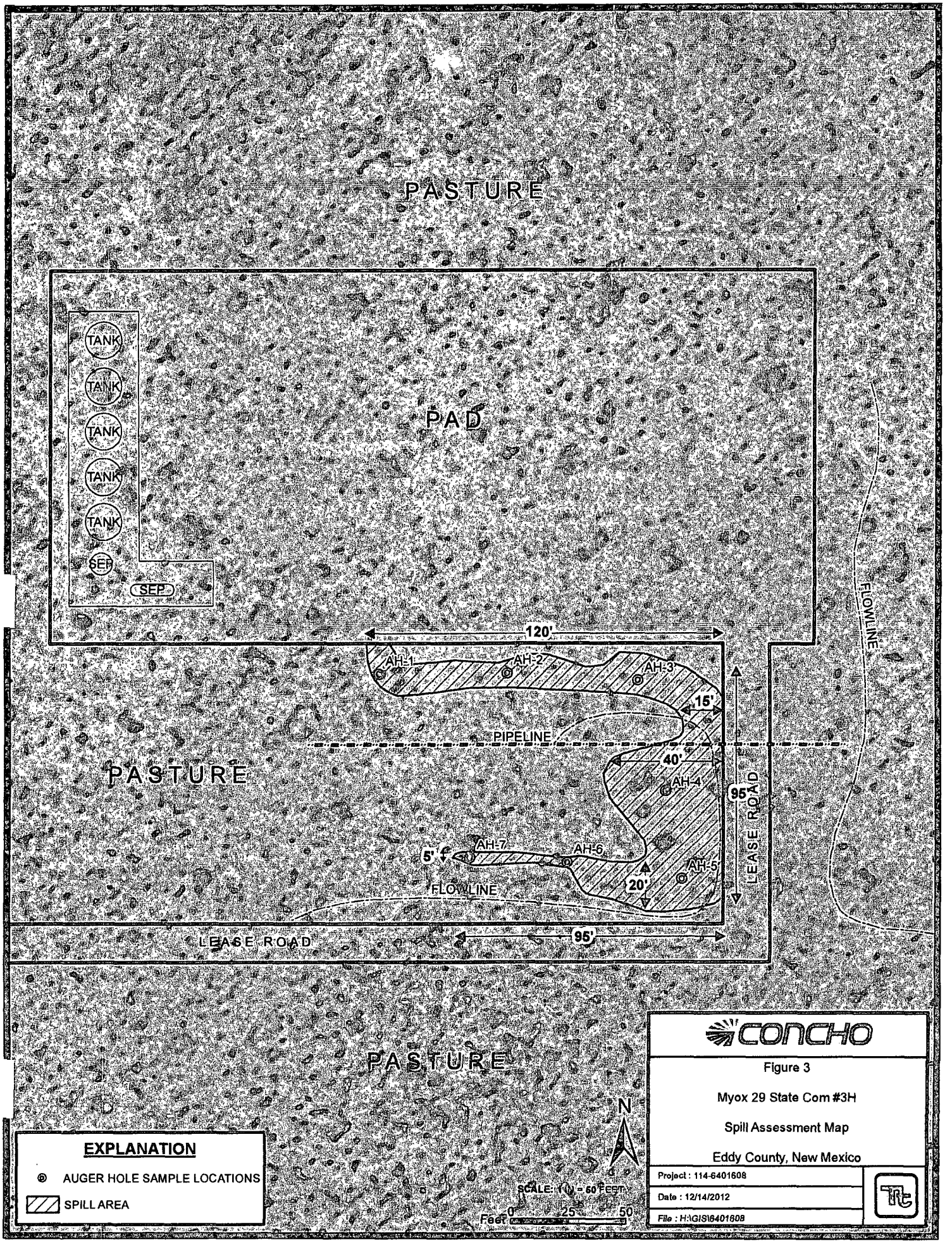
Eddy County, New Mexico

Project : 114-6401608	
Date : 12/14/2012	
File : H:\GIS\6401608	

Drawn By: Isabel Manmolejo



Drawn By: Isabel Marmolejo



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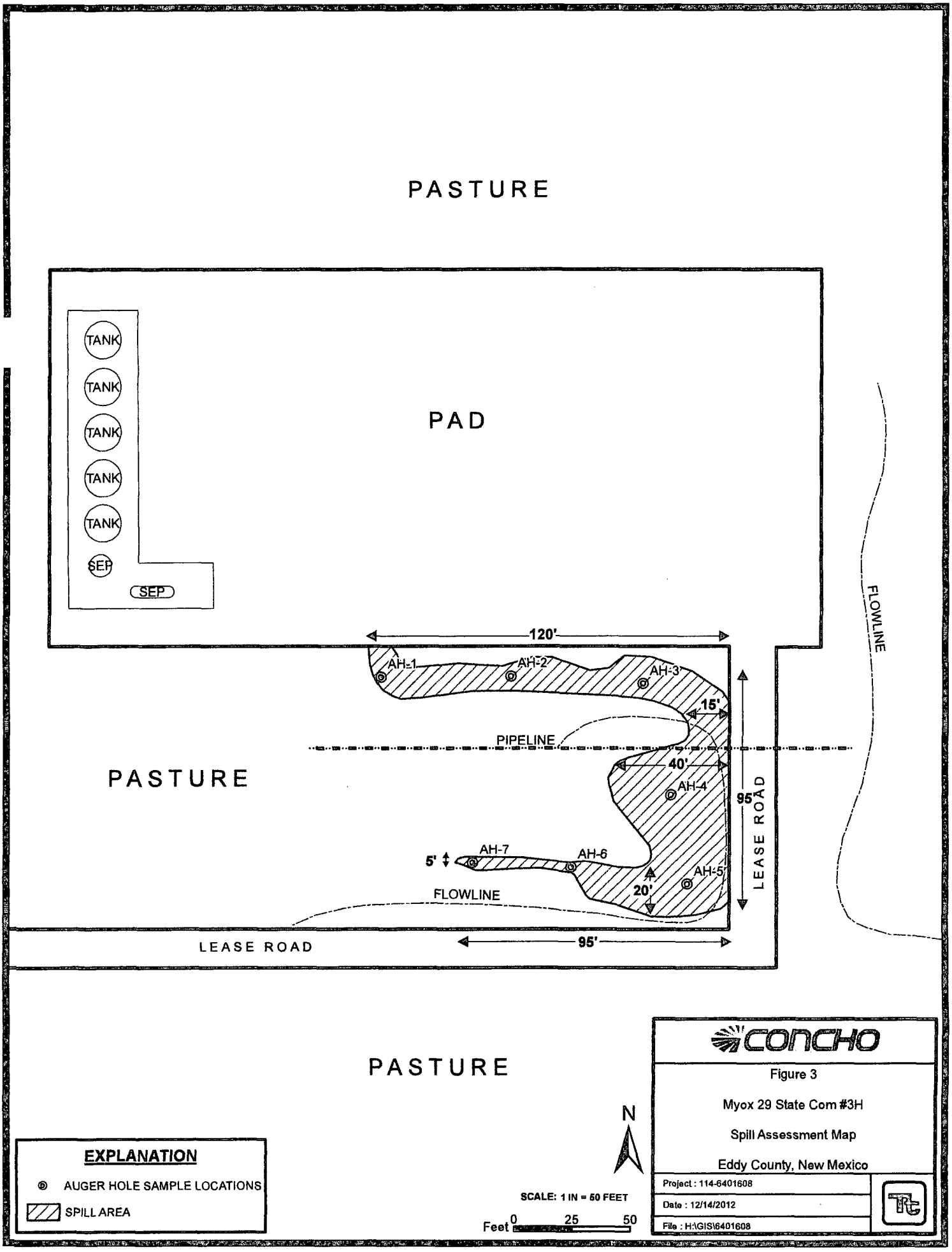
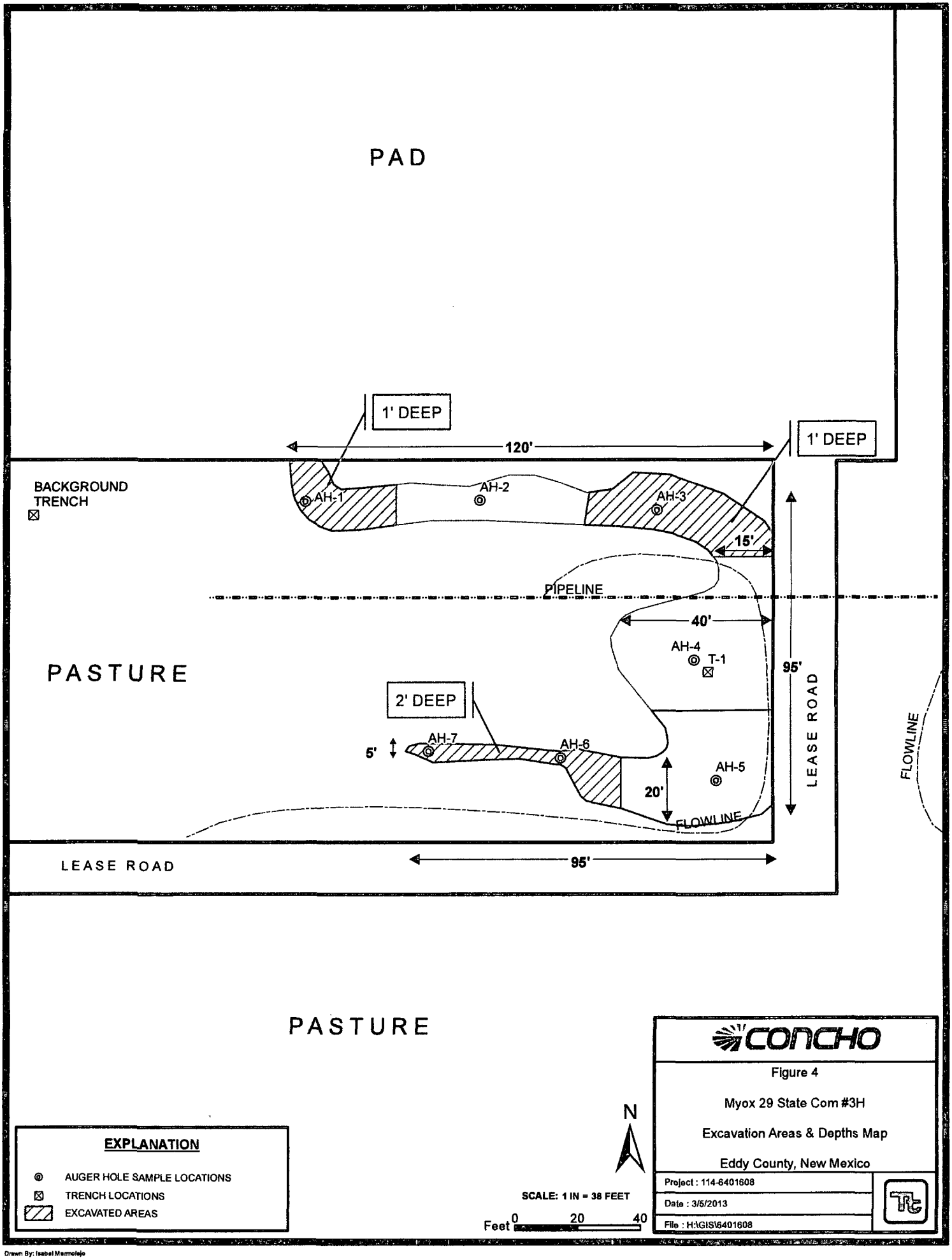

PASTURE
PAD
TANK
TANK
TANK
TANK
TANK
SEP
SEP
120'
AH-1
AH-2
AH-3
15'
PIPELINE
PASTURE
40'
AH-4
95'
LEASE ROAD
5'
AH-7
AH-6
AH-5
20'
FLOWLINE
FLOWLINE
LEASE ROAD
95'
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
SPILL AREA
N
SCALE: 1 IN = 50 FEET
Feet 0 25 50
CONCHO
Figure 3
Myox 29 State Com #3H
Spill Assessment Map
Eddy County, New Mexico
Project : 114-6401608
Date : 12/14/2012
File : H:\GIS\6401608
Drawn By: Isabel Marmolejo


PAD
1' DEEP
120'
1' DEEP
BACKGROUND
TRENCH
AH-1
AH-2
AH-3
15'
PIPELINE
40'
AH-4
T-1
95'
PASTURE
2' DEEP
5'
AH-7
AH-6
AH-5
20'
LEASE ROAD
FLOWLINE
FLOWLINE
LEASE ROAD
95'
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
TRENCH LOCATIONS
EXCAVATED AREAS
N
SCALE: 1 IN = 38 FEET
Feet 0 20 40
CONCHO
Figure 4
Myox 29 State Com #3H
Excavation Areas & Depths Map
Eddy County, New Mexico
Project : 114-6401608
Date : 3/5/2013
File : H:\GIS\6401608
Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Myox 29 State Commingle #3H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	12/6/2012	0-1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,660
	"	1-1.5	X		-	-	-	-	-	-	-	-	320
	"	2-2.5	X		-	-	-	-	-	-	-	-	305
	"	3-3.5	X		-	-	-	-	-	-	-	-	1,410
	"	4-4.5	X		-	-	-	-	-	-	-	-	635
	"	5-5.5	X		-	-	-	-	-	-	-	-	769
AH-2	12/6/2012	0-1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	821
	"	1-1.5	X		-	-	-	-	-	-	-	-	138
	"	2-2.5	X		-	-	-	-	-	-	-	-	1,120
	"	3-3.5	X		-	-	-	-	-	-	-	-	1,020
	"	4-4.5	X		-	-	-	-	-	-	-	-	1,030
AH-3	12/6/2012	0-1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,800
	"	1-1.5	X		-	-	-	-	-	-	-	-	306
	"	2-2.5	X		-	-	-	-	-	-	-	-	38.9
	"	3-3.5	X		-	-	-	-	-	-	-	-	126
	"	4-4.5	X		-	-	-	-	-	-	-	-	122
	"	5-5.5	X		-	-	-	-	-	-	-	-	112

Table 1
COG Operating LLC.
Myox 29 State Commingle #3H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-4	12/6/2012	0-1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	948
	"	1-1.5	X		-	-	-	-	-	-	-	-	486
	"	2-2.5	X		-	-	-	-	-	-	-	-	141
	"	3-3.5	X		-	-	-	-	-	-	-	-	108
	"	4-4.5	X		-	-	-	-	-	-	-	-	537
	"	5-5.5	X		-	-	-	-	-	-	-	-	2,110
T-1	2/19/2013	3	X		-	-	-	-	-	-	-	-	152
	"	5	X		-	-	-	-	-	-	-	-	1,620
	"	7	X		-	-	-	-	-	-	-	-	2,030
AH-5	12/6/2012	0-1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	734
	"	1-1.5	X		-	-	-	-	-	-	-	-	251
	"	2-2.5	X		-	-	-	-	-	-	-	-	320
	"	3-3.5	X		-	-	-	-	-	-	-	-	463
	"	4-4.5	X		-	-	-	-	-	-	-	-	389
	"	5-5.5	X		-	-	-	-	-	-	-	-	54.2

Table 1
COG Operating LLC.
Myox 29 State Commingle #3H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-6	12/6/2012	0-1		X	<8.00	<50.0	<50.0	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	2,960
	"	1-1.5		X	-	-	-	-	-	-	-	-	2,880
	"	2-2.5	X		-	-	-	-	-	-	-	-	440
	"	3-3.5	X		-	-	-	-	-	-	-	-	284
	"	4-4.5	X		-	-	-	-	-	-	-	-	660
	"	5-5.5	X		-	-	-	-	-	-	-	-	1,130
AH-7	12/6/2012	0-1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,630
	"	1-1.5		X	-	-	-	-	-	-	-	-	2,420
	"	2-2.5	X		-	-	-	-	-	-	-	-	812
	"	3-3.5	X		-	-	-	-	-	-	-	-	1,380
	"	4-4.5	X		-	-	-	-	-	-	-	-	1,790
	"	5-5.5	X		-	-	-	-	-	-	-	-	1,370
Background	2/18/2013	0	X		-	-	-	-	-	-	-	-	<20
	"	2	X		-	-	-	-	-	-	-	-	60.9
	"	4	X		-	-	-	-	-	-	-	-	81.2
	"	6	X		-	-	-	-	-	-	-	-	264
	"	8	X		-	-	-	-	-	-	-	-	888
	"	10	X		-	-	-	-	-	-	-	-	3,360

(-) Not Analyzed

Excavation Depths

Photos

COG Operating LLC
Myox 29 State Com #3H
Eddy County, New Mexico

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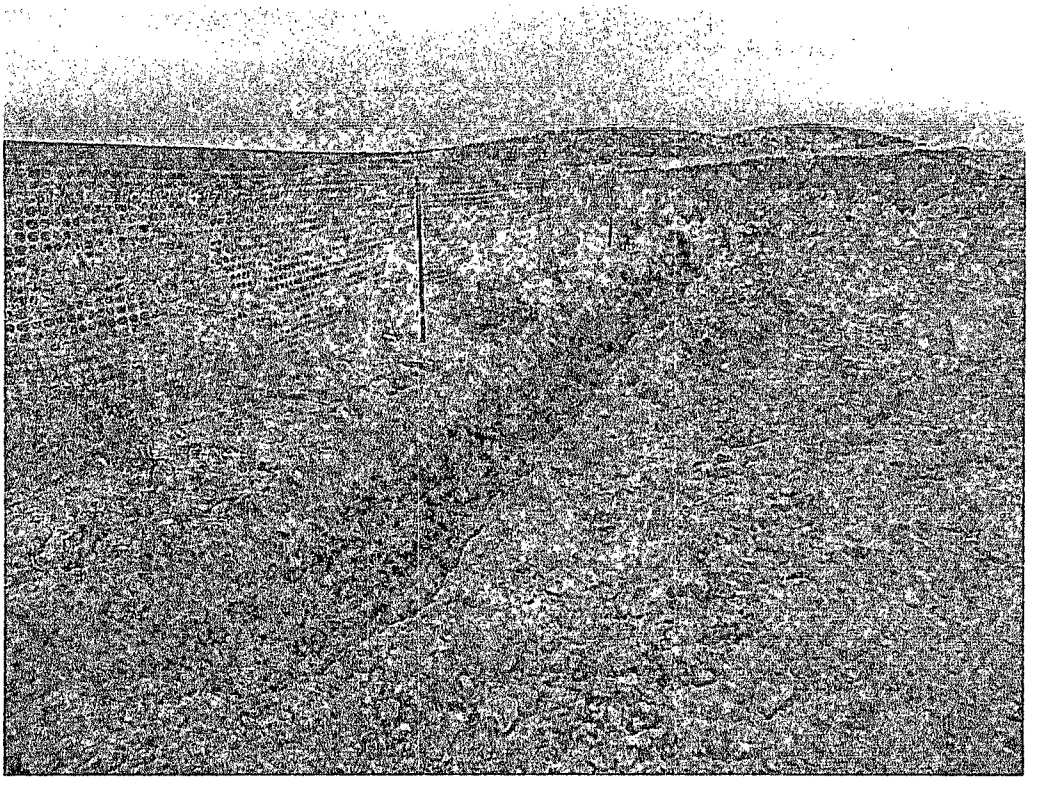
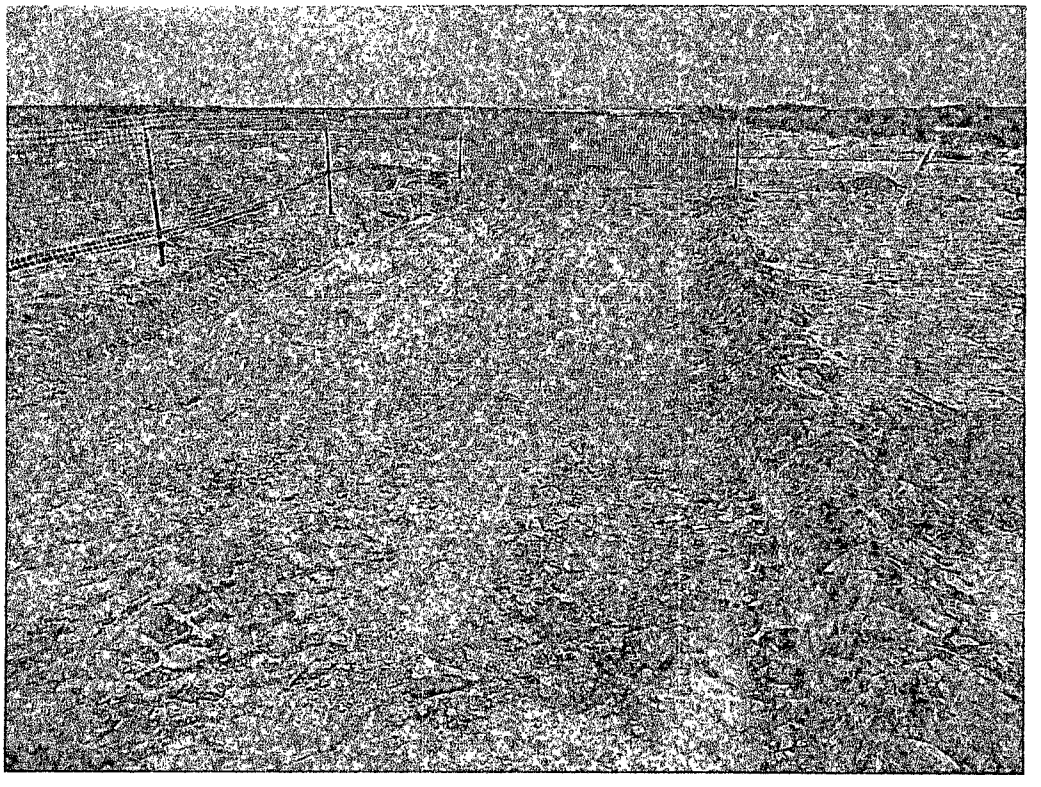


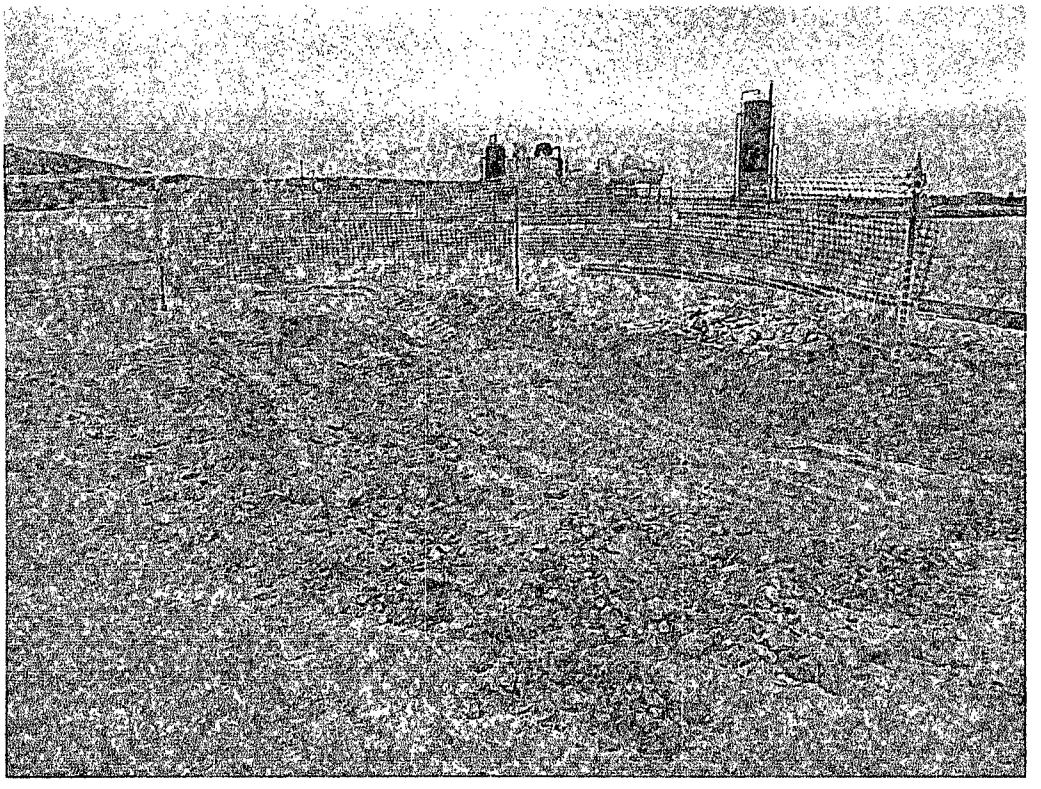
View West – Area of AH-6 and AH-7



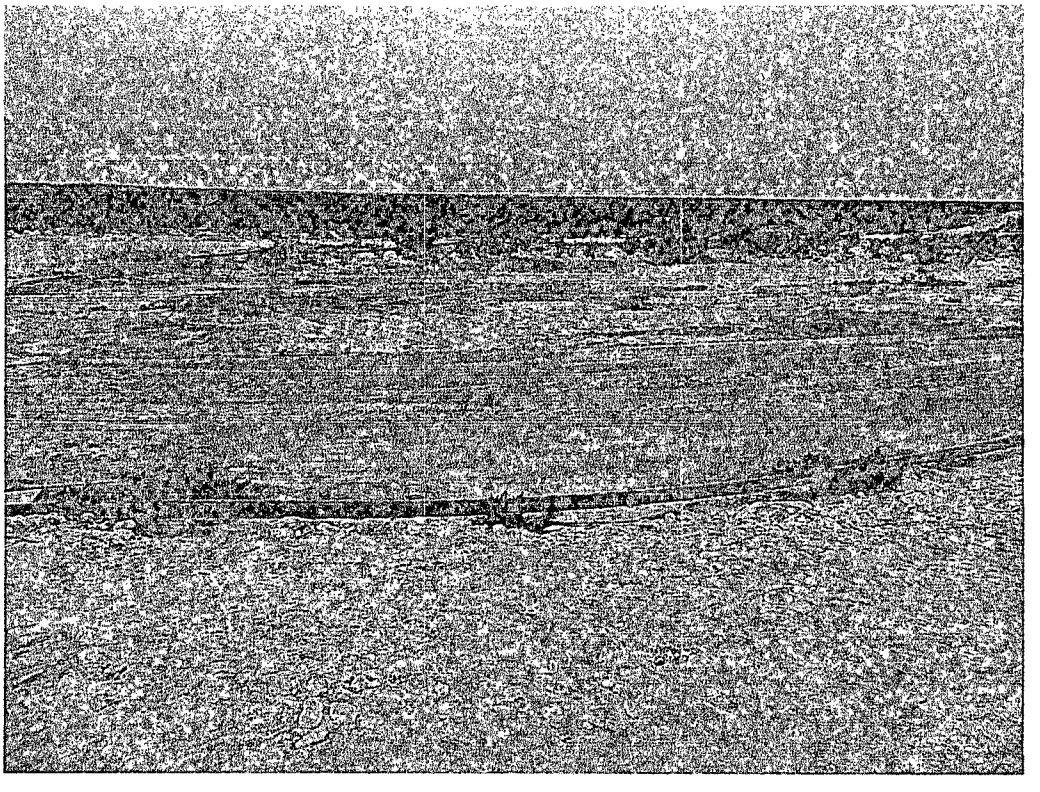
View East – Area of AH-3

COG Operating LLC
Myox 29 State Com #3H
Eddy County, New Mexico

TETRA TECH



View West – Area of AH-1



View South - Backfill

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

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APR 23 2013
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Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	**COG Operating LLC**	Contact	**Pat Ellis**
Address	**600 West Illinois Avenue, Midland, TX 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**Myox 29 State Com #3H**	Facility Type	**Well Location**

Surface Owner: State	Mineral Owner	Lease No. (API#) 30-015-39404

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	29	25S	28E					Eddy

Latitude N 32.09375° **Longitude** W 104.11177°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 12 bbls	Volume Recovered 10 bbls
Source of Release: Storage Tank	Date and Hour of Occurrence 11/17/2012	Date and Hour of Discovery 11/17/2012 7:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom? Josh Russo	Date and Hour 3/15/10 4:59 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A 2" valve was left open on a storage tank which allowed the release of fluid. The valve has been sealed to prevent reoccurrence.

Describe Area Affected and Cleanup Action Taken.*

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

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez	Approved by District Supervisor:
Title: Project Manager	Approval Date: / Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval: / Attached ☐
Date: 3-11-13 Phone: (432) 682-4559	

Attach Additional Sheets If Necessary

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	600 West Illinois Avenue, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Myox 29 State Com #3H	Facility Type	Well location

Surface Owner State	Mineral Owner	Lease No. (API#) 30-015-39404

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	29	25S	28E					Eddy

Latitude 32 05.669 **Longitude** 104 06.699

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 12bbls	Volume Recovered 10bbls
Source of Release Storage tank	Date and Hour of Occurrence 11/17/2012	Date and Hour of Discovery 11/17/2012 7:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A 2" valve was left open on a storage tank which allowed the release of fluid. The valve has been sealed to prevent reoccurrence.

Describe Area Affected and Cleanup Action Taken.*

Initially 12bbls of produced water were released from the storage tank and we were able to recover 10bbls with a vacuum truck. The release occurred at the southwest edge of the pad adjacent to the lease road entering the well location. 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 for approval prior to any significant remediation work.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Josh Russo	Approved by District Supervisor:	
Title: Senior Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@concho.com	Conditions of Approval:	Attached ☐
Date: 11/29/2012 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Myox 29 State Commingle #3H
Eddy County, New Mexico

24 South 27 East

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

24 South 28 East

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

24 South 29 East

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

25 South 27 East

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

25 South 28 East

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

25 South 29 East

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

26 South 27 East

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

26 South 28 East

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

26 South 29 East

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

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System

Appendix C

Summary Report

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

Report Date: March 1, 2013

Work Order: 13022008

Project Location: Eddy Co., NM
Project Name: COG/Myox 29 State Com. #3H
Project Number: 114-6401608

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
321699	BG 0' Background	soil	2013-02-18	00:00	2013-02-20
321700	BG 2' Background	soil	2013-02-18	00:00	2013-02-20
321701	BG 4' Background	soil	2013-02-18	00:00	2013-02-20
321702	BG 6' Background	soil	2013-02-18	00:00	2013-02-20
321703	BG 8' Background	soil	2013-02-18	00:00	2013-02-20
321704	BG 10' Background	soil	2013-02-18	00:00	2013-02-20
321705	T-1 (AH-4) 3'	soil	2013-02-19	00:00	2013-02-20
321706	T-1 (AH-4) 5'	soil	2013-02-19	00:00	2013-02-20
321707	T-1 (AH-4) 7'	soil	2013-02-19	00:00	2013-02-20

Sample: 321699 - BG 0' Background

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

Sample: 321700 - BG 2' Background

Param	Flag	Result	Units	RL
Chloride		**60.9**	mg/Kg	4

Sample: 321701 - BG 4' Background

continued ...

sample 321701 continued ...

Param	Flag	Result	Units	RL

Param	Flag	Result	Units	RL
Chloride		**81.2**	mg/Kg	4

Sample: 321702 - BG 6' Background

Param	Flag	Result	Units	RL
Chloride		**264**	mg/Kg	4

Sample: 321703 - BG 8' Background

Param	Flag	Result	Units	RL
Chloride		**888**	mg/Kg	4

Sample: 321704 - BG 10' Background

Param	Flag	Result	Units	RL
Chloride		**3360**	mg/Kg	4

Sample: 321705 - T-1 (AH-4) 3'

Param	Flag	Result	Units	RL
Chloride		**152**	mg/Kg	4

Sample: 321706 - T-1 (AH-4) 5'

Param	Flag	Result	Units	RL
Chloride		**1620**	mg/Kg	4

Sample: 321707 - T-1 (AH-4) 7'

Param	Flag	Result	Units	RL
Chloride		**2030**	mg/Kg	4

TRACEANALYSIS, INC.

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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: March 1, 2013

Work Order: 13022008

Project Location: Eddy Co., NM
Project Name: COG/Myox 29 State Com. #3H
Project Number: 114-6401608

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
321699	BG 0' Background	soil	2013-02-18	00:00	2013-02-20
321700	BG 2' Background	soil	2013-02-18	00:00	2013-02-20
321701	BG 4' Background	soil	2013-02-18	00:00	2013-02-20
321702	BG 6' Background	soil	2013-02-18	00:00	2013-02-20
321703	BG 8' Background	soil	2013-02-18	00:00	2013-02-20
321704	BG 10' Background	soil	2013-02-18	00:00	2013-02-20
321705	T-1 (AH-4) 3'	soil	2013-02-19	00:00	2013-02-20
321706	T-1 (AH-4) 5'	soil	2013-02-19	00:00	2013-02-20
321707	T-1 (AH-4) 7'	soil	2013-02-19	00:00	2013-02-20

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

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

Report Contents

Case Narrative

Samples for project COG/Myox 29 State Com. #3H were received by TraceAnalysis, Inc. on 2013-02-20 and assigned to work order 13022008. Samples for work order 13022008 were received intact at a temperature of 0.8 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	84150	2013-02-27 at 13:47	99333	2013-02-28 at 13:48

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 13022008 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: 321699 - BG 0' Background

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	Sample Preparation:	2013-02-27	Prepared By:	AR

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

Sample: 321700 - BG 2' Background

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**60.9**	mg/Kg	5	4.00

Sample: 321701 - BG 4' Background

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**81.2**	mg/Kg	5	4.00

Sample: 321702 - BG 6' Background

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**264**		mg/Kg	5	4.00

Sample: 321703 - BG 8' Background

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**888**		mg/Kg	5	4.00

Sample: 321704 - BG 10' Background

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**3360**		mg/Kg	10	4.00

Sample: 321705 - T-1 (AH-4) 3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**152**	mg/Kg	5	4.00

Sample: 321706 - T-1 (AH-4) 5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1620**	mg/Kg	5	4.00

Sample: 321707 - T-1 (AH-4) 7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2030**	mg/Kg	10	4.00

Method Blanks

Method Blank (1) QC Batch: 99333

QC Batch:	99333	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84150	QC Preparation:	2013-02-27	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 99333 | Date Analyzed: 2013-02-28 | Analyzed By: AR
Prep Batch: 84150 | QC Preparation: 2013-02-27 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2440	mg/Kg	1	2500	<3.85	98	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2570	mg/Kg	1	2500	<3.85	103	85 - 115	5	20

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

Matrix Spike (MS-1) Spiked Sample: 321707

QC Batch: 99333 | Date Analyzed: 2013-02-28 | Analyzed By: AR
Prep Batch: 84150 | QC Preparation: 2013-02-27 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4420	mg/Kg	10	2500	2030	96	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			4890	mg/Kg	10	2500	2030	114	78.9 - 121	10	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 99333 | Date Analyzed: 2013-02-28 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-02-28

Standard (CCV-2)

QC Batch: 99333 | Date Analyzed: 2013-02-28 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.7	100	85 - 115	2013-02-28

Appendix

Report Definitions

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

Laboratory Certifications

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

Standard Flags

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

Attachments

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

13022008

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-6401608
PROJECT NAME: COG-Myox 29 State Com #3H Eddy Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chlorides (circled)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
321699	2/18		S		X	BG 0' Background	1																		X				
700	↓		↓		↓	BG 2' "	1																		X				
701						BG 4' "	1																		X				
702						BG 6' "	1																		X				
703						BG 8' "	1																		X				
704						BG 10' "	1																		X				
705	2/19					T-1 (AH-4) 2'	1																		X				
706	↓					T-1 (AH-4) 5'	1																		X				
707						T-1 (AH-4) 7'	1																		X				

RELINQUISHED BY: (Signature) Marcus Kuzawski Date: 2-20-13 Time: 1035
RECEIVED BY: (Signature) [signature] Date: 2/20/13 Time: 10:35
SAMPLED BY: (Print & Initial) Marcus Kuzawski / MK Date: Time:

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 0.8°C
REMARKS: Midland all

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

Summary Report

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

Report Date: December 20, 2012

Work Order: 12120719

Project Location: Eddy Co., NM
Project Name: COG/Myox 29 State Com. #3H
Project Number: 114-6401608

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
316090	AH-1 (0-1')	soil	2012-12-06	00:00	2012-12-07
316091	AH-1 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316092	AH-1 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316093	AH-1 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316094	AH-1 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316095	AH-1 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316096	AH-2 (0-1')	soil	2012-12-06	00:00	2012-12-07
316097	AH-2 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316098	AH-2 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316099	AH-2 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316100	AH-2 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316101	AH-3 (0-1')	soil	2012-12-06	00:00	2012-12-07
316102	AH-3 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316103	AH-3 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316104	AH-3 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316105	AH-3 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316106	AH-3 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316107	AH-4 (0-1')	soil	2012-12-06	00:00	2012-12-07
316108	AH-4 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316109	AH-4 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316110	AH-4 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316111	AH-4 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316112	AH-4 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316113	AH-5 (0-1')	soil	2012-12-06	00:00	2012-12-07
316114	AH-5 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316115	AH-5 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316116	AH-5 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316117	AH-5 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316118	AH-5 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316119	AH-6 (0-1')	soil	2012-12-06	00:00	2012-12-07

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
316120	AH-6 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316121	AH-6 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316122	AH-6 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316123	AH-6 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316124	AH-6 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316125	AH-7 (0-1')	soil	2012-12-06	00:00	2012-12-07
316126	AH-7 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316127	AH-7 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316128	AH-7 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316129	AH-7 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316130	AH-7 (5-5.5')	soil	2012-12-06	00:00	2012-12-07

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
316090 - AH-1 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qs	<4.00
316096 - AH-2 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qs	<4.00
316101 - AH-3 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qs	<4.00
316107 - AH-4 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qs	<4.00
316113 - AH-5 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qs	<4.00
316119 - AH-6 (0-1')	<0.0400 [1]	<0.0400	<0.0400	<0.0400	<50.0 Qs	<8.00 [2]
316125 - AH-7 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qs	<4.00

Sample: 316090 - AH-1 (0-1')

Param	Flag	Result	Units	RL
Chloride		**1660**	mg/Kg	4

Sample: 316091 - AH-1 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**320**	mg/Kg	4

Sample: 316092 - AH-1 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		**305**	mg/Kg	4

Sample: 316093 - AH-1 (3-3.5')

[1]Dilution due to surfactants.
[2]Dilution due to surfactants.

Param	Flag	Result	Units	RL
Chloride		**1410**	mg/Kg	4

Sample: 316094 - AH-1 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		**635**	mg/Kg	4

Sample: 316095 - AH-1 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		**769**	mg/Kg	4

Sample: 316096 - AH-2 (0-1')

Param	Flag	Result	Units	RL
Chloride		**821**	mg/Kg	4

Sample: 316097 - AH-2 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**138**	mg/Kg	4

Sample: 316098 - AH-2 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		**1120**	mg/Kg	4

Sample: 316099 - AH-2 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		**1020**	mg/Kg	4

Sample: 316100 - AH-2 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		**1030**	mg/Kg	4

Sample: 316101 - AH-3 (0-1')

Param	Flag	Result	Units	RL
Chloride		**1800**	mg/Kg	4

Sample: 316102 - AH-3 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**306**	mg/Kg	4

Sample: 316103 - AH-3 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		**38.9**	mg/Kg	4

Sample: 316104 - AH-3 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		**126**	mg/Kg	4

Sample: 316105 - AH-3 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		**122**	mg/Kg	4

Sample: 316106 - AH-3 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		**112**	mg/Kg	4

Sample: 316107 - AH-4 (0-1')

Param	Flag	Result	Units	RL
Chloride		**948**	mg/Kg	4

Sample: 316108 - AH-4 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**486**	mg/Kg	4

Sample: 316109 - AH-4 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		**141**	mg/Kg	4

Sample: 316110 - AH-4 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		**108**	mg/Kg	4

Sample: 316111 - AH-4 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		**537**	mg/Kg	4

Sample: 316112 - AH-4 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		**2110**	mg/Kg	4

Sample: 316113 - AH-5 (0-1')

Param	Flag	Result	Units	RL
Chloride		**734**	mg/Kg	4

Sample: 316114 - AH-5 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**251**	mg/Kg	4

Sample: 316115 - AH-5 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		**320**	mg/Kg	4

Sample: 316116 - AH-5 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		**463**	mg/Kg	4

Sample: 316117 - AH-5 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		**389**	mg/Kg	4

Sample: 316118 - AH-5 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		**54.2**	mg/Kg	4

Sample: 316119 - AH-6 (0-1')

Param	Flag	Result	Units	RL
Chloride		**2960**	mg/Kg	4

Sample: 316120 - AH-6 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**2880**	mg/Kg	4

Sample: 316121 - AH-6 (2-2.5')

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

Sample: 316122 - AH-6 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		**284**	mg/Kg	4

Sample: 316123 - AH-6 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		**660**	mg/Kg	4

Sample: 316124 - AH-6 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		**1130**	mg/Kg	4

Sample: 316125 - AH-7 (0-1')

Param	Flag	Result	Units	RL
Chloride		**1630**	mg/Kg	4

Sample: 316126 - AH-7 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**2420**	mg/Kg	4

Sample: 316127 - AH-7 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		**812**	mg/Kg	4

Sample: 316128 - AH-7 (3-3.5')

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

Sample: 316129 - AH-7 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		**1790**	mg/Kg	4

Sample: 316130 - AH-7 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		**1370**	mg/Kg	4

TRACEANALYSIS, INC.

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: December 20, 2012

Work Order: 12120719

Project Location: Eddy Co., NM
Project Name: COG/Myox 29 State Com. #3H
Project Number: 114-6401608

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
316090	AH-1 (0-1')	soil	2012-12-06	00:00	2012-12-07
316091	AH-1 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316092	AH-1 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316093	AH-1 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316094	AH-1 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316095	AH-1 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316096	AH-2 (0-1')	soil	2012-12-06	00:00	2012-12-07
316097	AH-2 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316098	AH-2 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316099	AH-2 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316100	AH-2 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316101	AH-3 (0-1')	soil	2012-12-06	00:00	2012-12-07
316102	AH-3 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316103	AH-3 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316104	AH-3 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316105	AH-3 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316106	AH-3 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316107	AH-4 (0-1')	soil	2012-12-06	00:00	2012-12-07

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
316108	AH-4 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316109	AH-4 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316110	AH-4 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316111	AH-4 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316112	AH-4 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316113	AH-5 (0-1')	soil	2012-12-06	00:00	2012-12-07
316114	AH-5 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316115	AH-5 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316116	AH-5 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316117	AH-5 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316118	AH-5 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316119	AH-6 (0-1')	soil	2012-12-06	00:00	2012-12-07
316120	AH-6 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316121	AH-6 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316122	AH-6 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316123	AH-6 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316124	AH-6 (5-5.5')	soil	2012-12-06	00:00	2012-12-07
316125	AH-7 (0-1')	soil	2012-12-06	00:00	2012-12-07
316126	AH-7 (1-1.5')	soil	2012-12-06	00:00	2012-12-07
316127	AH-7 (2-2.5')	soil	2012-12-06	00:00	2012-12-07
316128	AH-7 (3-3.5')	soil	2012-12-06	00:00	2012-12-07
316129	AH-7 (4-4.5')	soil	2012-12-06	00:00	2012-12-07
316130	AH-7 (5-5.5')	soil	2012-12-06	00:00	2012-12-07

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.

Michael Abel

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

Report Contents

Case Narrative

Samples for project COG/Myox 29 State Com. #3H were received by TraceAnalysis, Inc. on 2012-12-07 and assigned to work order 12120719. Samples for work order 12120719 were received intact at a temperature of 8.7 C. Samples were received on ice.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	82439	2012-12-10 at 09:59	97270	2012-12-10 at 09:59
Chloride (Titration)	SM 4500-Cl B	82664	2012-12-17 at 10:04	97562	2012-12-18 at 11:59
Chloride (Titration)	SM 4500-Cl B	82664	2012-12-17 at 10:04	97581	2012-12-18 at 16:11
Chloride (Titration)	SM 4500-Cl B	82664	2012-12-17 at 10:04	97582	2012-12-18 at 16:15
Chloride (Titration)	SM 4500-Cl B	82664	2012-12-17 at 10:04	97583	2012-12-18 at 16:24
Chloride (Titration)	SM 4500-Cl B	82664	2012-12-17 at 10:04	97584	2012-12-18 at 16:33
TPH DRO - NEW	S 8015 D	82442	2012-12-10 at 11:00	97274	2012-12-11 at 09:50
TPH GRO	S 8015 D	82441	2012-12-10 at 09:59	97272	2012-12-10 at 09:59

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 12120719 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: 316090 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	97270	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82439	Sample Preparation:	2012-12-10	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	79.5 - 108
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	71.4 - 108

Sample: 316090 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1660**	mg/Kg	10	4.00

Sample: 316090 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	97274	Date Analyzed:	2012-12-11	Analyzed By:	CW
Prep Batch:	82442	Sample Preparation:	2012-12-10	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	70 - 130

Sample: 316090 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	97272	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82441	Sample Preparation:	2012-12-10	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.22	mg/Kg	1	2.00	111	70 - 130
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	70 - 130

Sample: 316091 - AH-1 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**320**	mg/Kg	5	4.00

Sample: 316092 - AH-1 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

continued ...

sample 316092 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**305**	mg/Kg	5	4.00

Sample: 316093 - AH-1 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1410**	mg/Kg	10	4.00

Sample: 316094 - AH-1 (4-4.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**635**	mg/Kg	5	4.00

Sample: 316095 - AH-1 (5-5.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**769**	mg/Kg	5	4.00

Sample: 316096 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	97270	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82439	Sample Preparation:	2012-12-10	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.98	mg/Kg	1	2.00	99	79.5 - 108
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	71.4 - 108

Sample: 316096 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**821**	mg/Kg	5	4.00

Sample: 316096 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	97274	Date Analyzed:	2012-12-11	Analyzed By:	CW
Prep Batch:	82442	Sample Preparation:	2012-12-10	Prepared By:	CW

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

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

Sample: 316096 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	97272	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82441	Sample Preparation:	2012-12-10	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.33	mg/Kg	1	2.00	116	70 - 130
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 316097 - AH-2 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**138**	mg/Kg	5	4.00

Sample: 316098 - AH-2 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1120**	mg/Kg	5	4.00

Sample: 316099 - AH-2 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1020**	mg/Kg	5	4.00

Sample: 316100 - AH-2 (4-4.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1030**	mg/Kg	5	4.00

Sample: 316101 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	97270	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82439	Sample Preparation:	2012-12-10	Prepared By:	YG

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

continued ...

sample 316101 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	79.5 - 108
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	71.4 - 108

Sample: 316101 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1800**	mg/Kg	10	4.00

Sample: 316101 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	97274	Date Analyzed:	2012-12-11	Analyzed By:	CW
Prep Batch:	82442	Sample Preparation:	2012-12-10	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			116	mg/Kg	1	100	116	70 - 130

Sample: 316101 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	97272	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82441	Sample Preparation:	2012-12-10	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Sample: 316102 - AH-3 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**306**	mg/Kg	5	4.00

Sample: 316103 - AH-3 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**38.9**	mg/Kg	5	4.00

Sample: 316104 - AH-3 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**126**	mg/Kg	5	4.00

Sample: 316105 - AH-3 (4-4.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**122**	mg/Kg	5	4.00

Sample: 316106 - AH-3 (5-5.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**112**	mg/Kg	5	4.00

Sample: 316107 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	97270	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82439	Sample Preparation:	2012-12-10	Prepared By:	YG

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

continued ...

sample 316107 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	79.5 - 108
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	1	2.00	98	71.4 - 108

Sample: 316107 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**948**	mg/Kg	5	4.00

Sample: 316107 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	97274	Date Analyzed:	2012-12-11	Analyzed By:	CW
Prep Batch:	82442	Sample Preparation:	2012-12-10	Prepared By:	CW

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

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

Sample: 316107 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	97272	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82441	Sample Preparation:	2012-12-10	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.32	mg/Kg	1	2.00	116	70 - 130
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	70 - 130

Sample: 316108 - AH-4 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**486**	mg/Kg	5	4.00

Sample: 316109 - AH-4 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**141**	mg/Kg	5	4.00

Sample: 316110 - AH-4 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**108**	mg/Kg	5	4.00

Sample: 316111 - AH-4 (4-4.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**537**	mg/Kg	5	4.00

Sample: 316112 - AH-4 (5-5.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2110**	mg/Kg	10	4.00

Sample: 316113 - AH-5 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	97270	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82439	Sample Preparation:	2012-12-10	Prepared By:	YG

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

continued ...

sample 316113 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.98	mg/Kg	1	2.00	99	79.5 - 108
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	71.4 - 108

Sample: 316113 - AH-5 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**734**	mg/Kg	5	4.00

Sample: 316113 - AH-5 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	97274	Date Analyzed:	2012-12-11	Analyzed By:	CW
Prep Batch:	82442	Sample Preparation:	2012-12-10	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	70 - 130

Sample: 316113 - AH-5 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	97272	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82441	Sample Preparation:	2012-12-10	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.38	mg/Kg	1	2.00	119	70 - 130
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	1	2.00	94	70 - 130

Sample: 316114 - AH-5 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**251**	mg/Kg	5	4.00

Sample: 316115 - AH-5 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**320**	mg/Kg	5	4.00

Sample: 316116 - AH-5 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**463**	mg/Kg	5	4.00

Sample: 316117 - AH-5 (4-4.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**389**	mg/Kg	5	4.00

Sample: 316118 - AH-5 (5-5.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**54.2**	mg/Kg	5	4.00

Sample: 316119 - AH-6 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	97270	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82439	Sample Preparation:	2012-12-10	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [1]	U	1	<0.0400	mg/Kg	2	0.0200
Toluene	U	1	<0.0400	mg/Kg	2	0.0200
Ethylbenzene	U	1	<0.0400	mg/Kg	2	0.0200

continued ...

sample 316119 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Xylene	U	1	<0.0400	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.92	mg/Kg	2	4.00	98	79.5 - 108
4-Bromofluorobenzene (4-BFB)			3.93	mg/Kg	2	4.00	98	71.4 - 108

Sample: 316119 - AH-6 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2960**	mg/Kg	10	4.00

Sample: 316119 - AH-6 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	97274	Date Analyzed:	2012-12-11	Analyzed By:	CW
Prep Batch:	82442	Sample Preparation:	2012-12-10	Prepared By:	CW

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

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

Sample: 316119 - AH-6 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	97272	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82441	Sample Preparation:	2012-12-10	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO [2]	U	1	<8.00	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.56	mg/Kg	2	4.00	89	70 - 130
4-Bromofluorobenzene (4-BFB)			3.79	mg/Kg	2	4.00	95	70 - 130

Sample: 316120 - AH-6 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2880**	mg/Kg	10	4.00

Sample: 316121 - AH-6 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

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

Sample: 316122 - AH-6 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**284**	mg/Kg	5	4.00

Sample: 316123 - AH-6 (4-4.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**660**	mg/Kg	5	4.00

Sample: 316124 - AH-6 (5-5.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1130**	mg/Kg	10	4.00

Sample: 316125 - AH-7 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	97270	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82439	Sample Preparation:	2012-12-10	Prepared By:	YG

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

continued ...

sample 316125 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	79.5 - 108
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	71.4 - 108

Sample: 316125 - AH-7 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1630**	mg/Kg	10	4.00

Sample: 316125 - AH-7 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	97274	Date Analyzed:	2012-12-11	Analyzed By:	CW
Prep Batch:	82442	Sample Preparation:	2012-12-10	Prepared By:	CW

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

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		137	mg/Kg	1	100	137	70 - 130

Sample: 316125 - AH-7 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	97272	Date Analyzed:	2012-12-10	Analyzed By:	YG
Prep Batch:	82441	Sample Preparation:	2012-12-10	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Sample: 316126 - AH-7 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2420**	mg/Kg	10	4.00

Sample: 316127 - AH-7 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**812**	mg/Kg	5	4.00

Sample: 316128 - AH-7 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1380**	mg/Kg	10	4.00

Sample: 316129 - AH-7 (4-4.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1790**	mg/Kg	10	4.00

Sample: 316130 - AH-7 (5-5.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97562	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	Sample Preparation:	2012-12-17	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1370**	mg/Kg	10	4.00

Method Blanks

Method Blank (1) QC Batch: 97270

QC Batch: 97270 | Date Analyzed: 2012-12-10 | Analyzed By: YG
Prep Batch: 82439 | QC Preparation: 2012-12-10 | Prepared By: YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.98	mg/Kg	1	2.00	99	70 - 130
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	70 - 130

Method Blank (1) QC Batch: 97272

QC Batch: 97272 | Date Analyzed: 2012-12-10 | Analyzed By: YG
Prep Batch: 82441 | QC Preparation: 2012-12-10 | Prepared By: YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	70 - 130
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	70 - 130

Method Blank (1) QC Batch: 97274

QC Batch: 97274 | Date Analyzed: 2012-12-11 | Analyzed By: CW
Prep Batch: 82442 | QC Preparation: 2012-12-10 | Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<9.09	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Method Blank (1) QC Batch: 97562

QC Batch:	97562	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	QC Preparation:	2012-12-17	Prepared By:	AR

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

Method Blank (1) QC Batch: 97581

QC Batch:	97581	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	QC Preparation:	2012-12-17	Prepared By:	AR

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

Method Blank (1) QC Batch: 97582

QC Batch:	97582	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	QC Preparation:	2012-12-17	Prepared By:	AR

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

Method Blank (1) QC Batch: 97583

QC Batch:	97583	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	QC Preparation:	2012-12-17	Prepared By:	AR

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

Method Blank (1) QC Batch: 97584

QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	QC Preparation:	2012-12-17	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 97270 | Date Analyzed: 2012-12-10 | Analyzed By: YG
Prep Batch: 82439 | QC Preparation: 2012-12-10 | Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.87	mg/Kg	1	2.00	<0.00810	94	70 - 130
Toluene		1	1.91	mg/Kg	1	2.00	<0.00750	96	70 - 130
Ethylbenzene		1	2.00	mg/Kg	1	2.00	<0.00730	100	70 - 130
Xylene		1	5.92	mg/Kg	1	6.00	<0.00700	99	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.82	mg/Kg	1	2.00	<0.00810	91	70 - 130	3	20
Toluene		1	1.87	mg/Kg	1	2.00	<0.00750	94	70 - 130	2	20
Ethylbenzene		1	1.96	mg/Kg	1	2.00	<0.00730	98	70 - 130	2	20
Xylene		1	5.75	mg/Kg	1	6.00	<0.00700	96	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.05	1.99	mg/Kg	1	2.00	102	100	70 - 130
4-Bromofluorobenzene (4-BFB)	2.07	1.98	mg/Kg	1	2.00	104	99	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 97272 | Date Analyzed: 2012-12-10 | Analyzed By: YG
Prep Batch: 82441 | QC Preparation: 2012-12-10 | Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	21.8	mg/Kg	1	20.0	<2.32	109	70 - 130

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	22.4	mg/Kg	1	20.0	<2.32	112	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.85	1.88	mg/Kg	1	2.00	92	94	70 - 130
4-Bromofluorobenzene (4-BFB)	2.00	1.93	mg/Kg	1	2.00	100	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 97274 | Date Analyzed: 2012-12-11 | Analyzed By: CW
Prep Batch: 82442 | QC Preparation: 2012-12-10 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	277	mg/Kg	1	250	<9.09	111	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	269	mg/Kg	1	250	<9.09	108	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	123	122	mg/Kg	1	100	123	122	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 97562 | Date Analyzed: 2012-12-18 | Analyzed By: AR
Prep Batch: 82664 | QC Preparation: 2012-12-17 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2620	mg/Kg	1	2500	<3.85	105	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2530	mg/Kg	1	2500	<3.85	101	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 97581 | Date Analyzed: 2012-12-18 | Analyzed By: AR
Prep Batch: 82664 | QC Preparation: 2012-12-17 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2740	mg/Kg	1	2500	<3.85	110	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2750	mg/Kg	1	2500	<3.85	110	85 - 115	0	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: 97582 | Date Analyzed: 2012-12-18 | Analyzed By: AR
Prep Batch: 82664 | QC Preparation: 2012-12-17 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2750	mg/Kg	1	2500	<3.85	110	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2610	mg/Kg	1	2500	<3.85	104	85 - 115	5	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 97583 | Date Analyzed: 2012-12-18 | Analyzed By: AR
Prep Batch: 82664 | QC Preparation: 2012-12-17 | Prepared By: AR

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2590	mg/Kg	1	2500	<3.85	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: 97584 | Date Analyzed: 2012-12-18 | Analyzed By: AR
Prep Batch: 82664 | QC Preparation: 2012-12-17 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2510	mg/Kg	1	2500	<3.85	100	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2670	mg/Kg	1	2500	<3.85	107	85 - 115	6	20

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

Matrix Spike (MS-1) Spiked Sample: 316050

QC Batch: 97270 | Date Analyzed: 2012-12-10 | Analyzed By: YG
Prep Batch: 82439 | QC Preparation: 2012-12-10 | Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.79	mg/Kg	1	2.00	<0.00810	90	70 - 130
Toluene		1	1.82	mg/Kg	1	2.00	<0.00750	91	70 - 130
Ethylbenzene		1	1.89	mg/Kg	1	2.00	<0.00730	94	70 - 130

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Xylene		1	5.57	mg/Kg	1	6.00	<0.00700	93	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.83	mg/Kg	1	2.00	<0.00810	92	70 - 130	2	20
Toluene		1	1.85	mg/Kg	1	2.00	<0.00750	92	70 - 130	2	20
Ethylbenzene		1	1.94	mg/Kg	1	2.00	<0.00730	97	70 - 130	3	20
Xylene		1	5.68	mg/Kg	1	6.00	<0.00700	95	70 - 130	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.03	1.98	mg/Kg	1	2	102	99	70 - 130
4-Bromofluorobenzene (4-BFB)	2.05	1.98	mg/Kg	1	2	102	99	70 - 130

Matrix Spike (MS-1) Spiked Sample: 316050

QC Batch: 97272 | Date Analyzed: 2012-12-10 | Analyzed By: YG
Prep Batch: 82441 | QC Preparation: 2012-12-10 | Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<2.32	88	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.8	mg/Kg	1	20.0	<2.32	99	70 - 130	12	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.89	mg/Kg	1	2	92	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.99	1.99	mg/Kg	1	2	100	100	70 - 130

Matrix Spike (MS-1) Spiked Sample: 316050

QC Batch: 97274 | Date Analyzed: 2012-12-11 | Analyzed By: CW
Prep Batch: 82442 | QC Preparation: 2012-12-10 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	302	mg/Kg	1	250	<9.09	121	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qs	Qs 1	329	mg/Kg	1	250	<9.09	132	70 - 130	9	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	137	141	mg/Kg	1	100	137	141	70 - 130

Matrix Spike (MS-1) Spiked Sample: 316325

QC Batch: 97562 | Date Analyzed: 2012-12-18 | Analyzed By: AR
Prep Batch: 82664 | QC Preparation: 2012-12-17 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			8190	mg/Kg	10	2500	5960	89	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			8570	mg/Kg	10	2500	5960	104	78.9 - 121	4	20

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

Matrix Spike (MS-1) Spiked Sample: 316099

QC Batch: 97581 | Date Analyzed: 2012-12-18 | Analyzed By: AR
Prep Batch: 82664 | QC Preparation: 2012-12-17 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3330	mg/Kg	5	2500	1020	92	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3170	mg/Kg	5	2500	1020	86	78.9 - 121	5	20

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

Matrix Spike (MS-1) Spiked Sample: 316109

QC Batch: 97582 | Date Analyzed: 2012-12-18 | Analyzed By: AR
Prep Batch: 82664 | QC Preparation: 2012-12-17 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2520	mg/Kg	5	2500	141	95	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2640	mg/Kg	5	2500	141	100	78.9 - 121	5	20

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

Matrix Spike (MS-1) Spiked Sample: 316119

QC Batch: 97583 | Date Analyzed: 2012-12-18 | Analyzed By: AR
Prep Batch: 82664 | QC Preparation: 2012-12-17 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			5570	mg/Kg	10	2500	2960	104	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			5440	mg/Kg	10	2500	2960	99	78.9 - 121	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: 316129

QC Batch:	97584	Date Analyzed:	2012-12-18	Analyzed By:	AR
Prep Batch:	82664	QC Preparation:	2012-12-17	Prepared By:	AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4490	mg/Kg	10	2500	1790	108	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			4170	mg/Kg	10	2500	1790	95	78.9 - 121	7	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 97270 | Date Analyzed: 2012-12-10 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.102	102	80 - 120	2012-12-10
Toluene		1	mg/kg	0.100	0.102	102	80 - 120	2012-12-10
Ethylbenzene		1	mg/kg	0.100	0.103	103	80 - 120	2012-12-10
Xylene		1	mg/kg	0.300	0.302	101	80 - 120	2012-12-10

Standard (CCV-2)

QC Batch: 97270 | Date Analyzed: 2012-12-10 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0966	97	80 - 120	2012-12-10
Toluene		1	mg/kg	0.100	0.0963	96	80 - 120	2012-12-10
Ethylbenzene		1	mg/kg	0.100	0.0965	96	80 - 120	2012-12-10
Xylene		1	mg/kg	0.300	0.284	95	80 - 120	2012-12-10

Standard (CCV-3)

QC Batch: 97270 | Date Analyzed: 2012-12-10 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0986	99	80 - 120	2012-12-10
Toluene		1	mg/kg	0.100	0.0978	98	80 - 120	2012-12-10
Ethylbenzene		1	mg/kg	0.100	0.0981	98	80 - 120	2012-12-10
Xylene		1	mg/kg	0.300	0.287	96	80 - 120	2012-12-10

Standard (CCV-1)

QC Batch: 97272 | Date Analyzed: 2012-12-10 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.15	115	80 - 120	2012-12-10

Standard (CCV-2)

QC Batch: 97272 | Date Analyzed: 2012-12-10 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.948	95	80 - 120	2012-12-10

Standard (CCV-3)

QC Batch: 97272 | Date Analyzed: 2012-12-10 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.19	119	80 - 120	2012-12-10

Standard (CCV-1)

QC Batch: 97274 | Date Analyzed: 2012-12-11 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	278	111	80 - 120	2012-12-11

Standard (CCV-2)

QC Batch: 97274 | Date Analyzed: 2012-12-11 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	262	105	80 - 120	2012-12-11

Standard (CCV-3)

QC Batch: 97274 Date Analyzed: 2012-12-11 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	266	106	80 - 120	2012-12-11

Standard (CCV-1)

QC Batch: 97562 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	97.1	97	85 - 115	2012-12-18

Standard (CCV-2)

QC Batch: 97562 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	103	103	85 - 115	2012-12-18

Standard (CCV-1)

QC Batch: 97581 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-12-18

Standard (CCV-2)

QC Batch: 97581 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2012-12-18

Standard (CCV-1)

QC Batch: 97582 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-12-18

Standard (CCV-2)

QC Batch: 97582 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.8	99	85 - 115	2012-12-18

Standard (CCV-1)

QC Batch: 97583 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.1	99	85 - 115	2012-12-18

Standard (CCV-2)

QC Batch: 97583 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-12-18

Standard (CCV-1)

QC Batch: 97584 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-12-18

Standard (CCV-2)

QC Batch: 97584 Date Analyzed: 2012-12-18 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2012-12-18

Appendix

Report Definitions

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

Laboratory Certifications

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

Standard Flags

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

Result Comments

1 Dilution due to surfactants.
2 Dilution due to surfactants.

Attachments

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

12120719

Analysis Request of Chain of Custody Record

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-6421608
PROJECT NAME: COG - Myox 29 State Com #3H Eddy CO, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
316090	12/6		S		X	AH1 (0-1')	1				X		X	X												X				
091			S		X	AH1 (1-1.5')	1				X															X				
092			S		X	AH1 (2-2.5')	1				X															X				
093			S		X	AH1 (3-3.5')	1				X															X				
094			S		X	AH1 (4-4.5')	1				X															X				
095			S		X	AH1 (5-5.5')	1				X															X				
096			S		X	AH2 (0-1')	1				X		X	X												X				
097			S		X	AH2 (1-1.5')	1				X															X				
098			S		X	AH2 (2-2.5')	1				X															X				
099			S		X	AH2 (3-3.5')	1				X															X				

RELINQUISHED BY: (Signature) Date: 12/7/12 Time: 1532
RECEIVED BY: (Signature) Date: 12/7/12 Time: 15:30
SAMPLED BY: (Print & Initial) Ryan Reich Date: 12/7/12 Time: 1532

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

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

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

SAMPLE CONDITION WHEN RECEIVED: 8.7°
REMARKS: Need deeper depths of benzene over 10 mg/kg TPH AH Midland Lab

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

Need deeper depths of benzene over 10 mg/kg total BTEX exceeds 50 mg/kg.

12/20-114

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 5

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640160B

PROJECT NAME: COG - Myox 29 State Com # 3H Eddy Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
100	12/6		S		X	AH 2 (4-4.5')	1				X														X			
101			S		X	AH 3 (0-1')	1				X		X	X											X			
102			S		X	AH 3 (1-1.5')	1				X														X			
103			S		X	AH 3 (2-2.5')	1				X														X			
104			S		X	AH 3 (3-3.5')	1				X														X			
105			S		X	AH 3 (4-4.5')	1				X														X			
106			S		X	AH 3 (5-5.5')	1				X														X			
107			S		X	AH 4 (0-1')	1				X		X	X											X			
108			S		X	AH 4 (1-1.5')	1				X														X			
109			S		X	AH 4 (2-2.5')	1				X														X			

RELINQUISHED BY: (Signature) — Date: 12/7/12 Time: 1530 — RECEIVED BY: (Signature) — Date: 12/7/12 Time: 15 30

SAMPLED BY: (Print & Initial) Ryan Leach — Date: 12/7/12 Time: 15 30

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 8°C

REMARKS: AH

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

12120719

Analysis Request of Chain of Custody Record

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6480 1603

PROJECT NAME: COG - Myox 29 State Com #3H Eddy Co. NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
110	12/6		S		X	AH 4 (3-3.5')	1				X														X				
111			S		X	AH4 (4-4.5')	1				X														X				
112			S		X	AH 4 (5-5.5')	1				X														X				
113			S		X	AH5 (0-1')	1				X		X	X											X				
114			S		X	AH 5 (1-1.5)	1				X														X				
115			S		X	AH5 (2-2.5')	1				X														X				
116			S		X	AH5 (3-3.5')	1				X														X				
117			S		X	AH5 (4-4.5')	1				X														X				
118			S		X	AH5 (5-5.5')	1				X														X				
119			S		X	AH6 (0-1')	1				X		X	X											X				

RELINQUISHED BY: (Signature) — Date: 12/7/12 Time: 1530 — RECEIVED BY: (Signature) — Date: 12/7/12 Time: 1530

SAMPLED BY: (Print & Initial) Ryan Reid — Date: 12/7/12 Time: 1530

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

ADDRESS: CITY: Midland STATE: ZIP:

CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 8.7°

REMARKS: AH

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

12/20/17

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 5

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401608

PROJECT NAME: COG - Myox 29 State Com #34 Eddy Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
120	12/6		S		G	AH6 (1-1.5')	1				X														X				
121			S		G	AH6 (2-2.5')	1				X														X				
122			S		G	AH6 (3-3.5')	1				X														X				
123			S		G	AH6 (4-4.5')	1				X														X				
124			S		G	AH6 (5-5.5')	1				X														X				
125			S		G	AH7 10-1')	1				X		X	X											X				
126			S		G	AH7 (1-1.5')	1				X														X				
127			S		G	AH7 (2-2.5')	1				X														X				
128			S		G	AH7 (3-7.5')	1				X														X				
129			S		G	AH7 (4-4.5')	1				X														X				

RELINQUISHED BY: (Signature) — Date: 12/7/12 Time: 1533 — RECEIVED BY: (Signature) — Date: 12/7/12 Time: 15:30

SAMPLED BY: (Print & Initial) Ryan Reid — Date: 12/7/12 Time: 1530

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 8.7°

REMARKS: AH

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

Analysis Request of Chain of Custody Record

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

PAGE: 5 OF: 5

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640160B

PROJECT NAME: COG - Myox 29 State Com #3H

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
130	12/7		S		X	AH 7 (5.5.5')	1				X														X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 12/7/12 Time: 1932	RECEIVED BY: (Signature)	Date: 12/7/12 Time: 15:30
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) Ryan Reich — Date: 12/7/12 Time: 1532

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 8.7°

REMARKS: AH

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