SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	Diamondback State Tank Battery					
Company:	COG Operating LLC					
Section, Township and Range	Unit G	Sec. 28	T-17-S	R-29-E		
Lease Number:	API-30-015-33203 Diamondback StateWell #001					
County:	Eddy County					
GPS:	32.80691° N			104.07777° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	From Hwy 82 and CR-212 (West of Loco Hills 5.3 miles) travel south on CR-212 0.3 mi, turn right 0.1 mi, turn left 0.4 miles to location					

Release Data:	
Date Released:	4/25/2012
Type Release:	Oil
Source of Contamination:	Load line over pressured and ruptured
Fluid Released:	39 bbls
Fluids Recovered:	35 bbls

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

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

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

RECEIVED
OCT 22 2012
NMOCD ARTESIA

TETRA TECH

October 8, 2012

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., Diamondback State Tank Battery, Section 28, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from Diamondback State Tank Battery, Section 28, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83314°, W 103.88694°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico Oil Conservation Division (NMOCD) Form C-141 Initial Report, the leak was discovered on April 25, 2012 and released approximately thirty-nine (39) barrels (bbls) of oil due to an over pressured load line rupturing. COG was able to recover approximately 35 bbls of oil with a vacuum truck. To alleviate the problem, COG repaired the line and installed a pressure vent.

The spill initiated from the load line and impacted an area approximately 15'x80'. The entire spill remained within the facilities berm. The spill areas are shown on Figures 3. The initial Form C-141 is enclosed in Appendix A.

Groundwater

The USGS did not report any water wells in Section 28. According to the NMOCD groundwater map, the average depth to groundwater is approximately 175' below surface. The groundwater data is shown in Appendix B.

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

Regulatory

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

Soil Assessment

On May 30, 2012, Tetra Tech personnel inspected and sampled the spill area. A total of three (3) auger holes (AH-1 through AH-3) were installed using a stainless steel hand auger to assess the impacted area. 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 locations are shown on Figure 3.

Analytical Results

Referring to Table 1, all of the auger holes showed a shallow impact above the RRAL for TPH and BTEX. Deeper samples at 2-2.5' bgs for each auger hole delineated the impact below the RRAL for TPH and BTEX.

A shallow chloride impact was detected in AH-1 and AH-2 with concentrations of 2,600 mg/kg and 1,880 mg/kg, respectively at 0-1' bgs. Bottom hole samples at 2-2.5' showed chloride concentrations less than 194 mg/kg.

Remediation and Conclusion

On August 13, 2012, Tetra Tech personnel supervised the excavation as stated in the approved work plan. In order to remove the hydrocarbon and elevated chloride concentrations, the excavation depths ranged from 1.0' to 2.0' below surface. Approximately 60 cubic yards of soil were removed and disposed of at R360 facility. The excavated areas were backfilled with clean material to grade then gravel was spread across the backfill area.

TETRA TECH

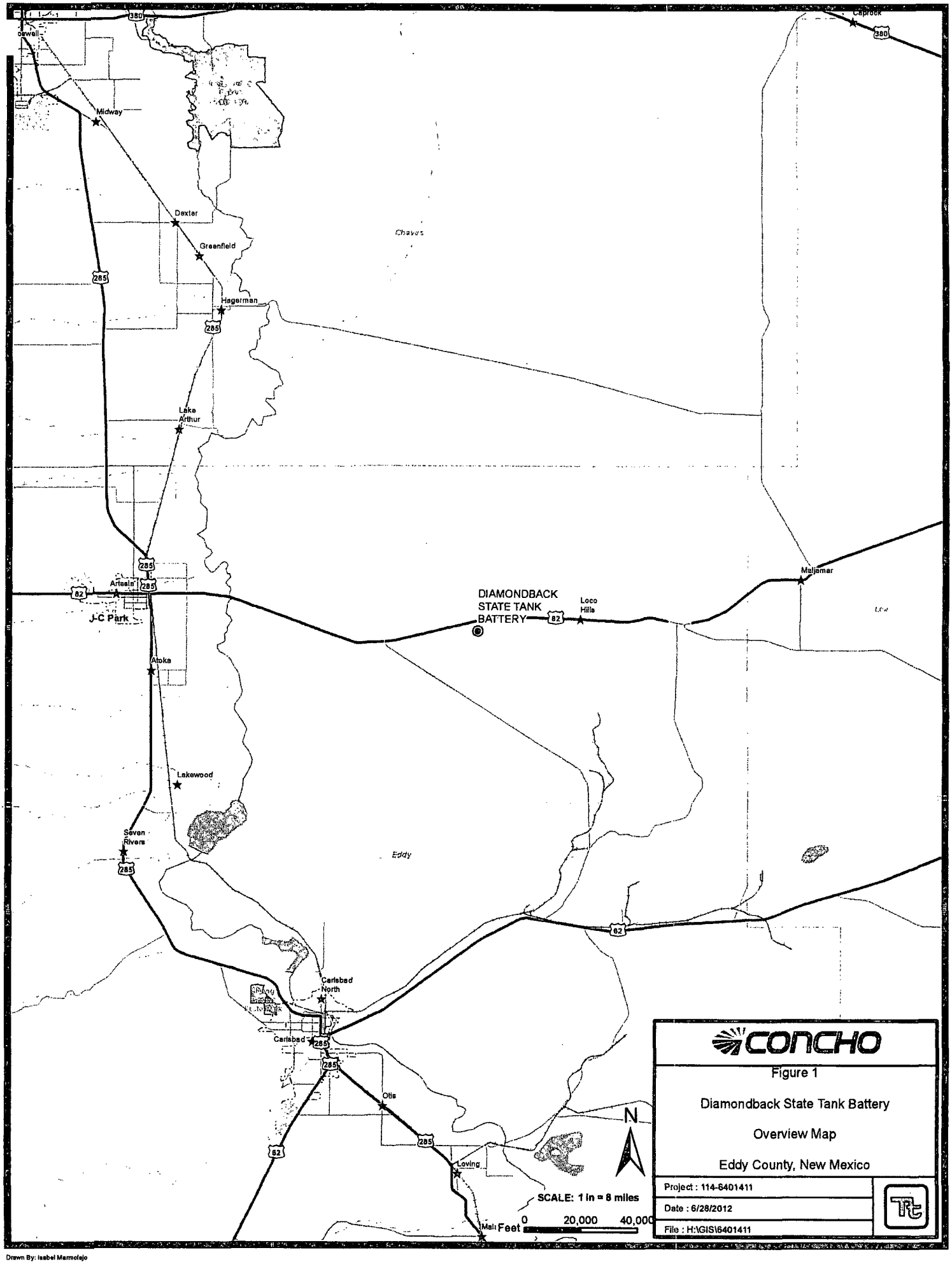
Based on the remediation activities performed at this location, COG requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez
Senior Project Manager

cc: Pat Ellis – COG
cc:

Figures



CONCHO

Figure 1

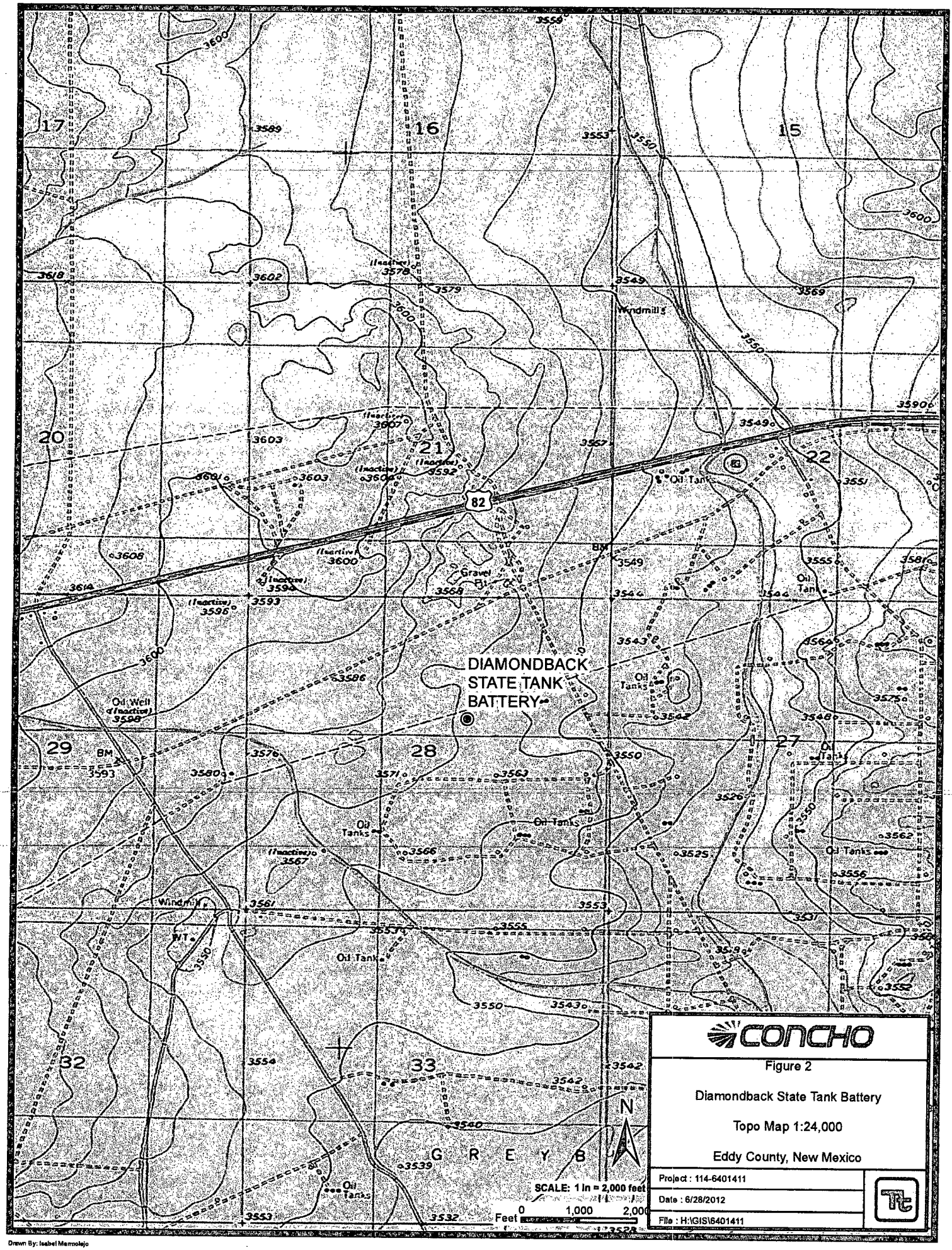
Diamondback State Tank Battery

Overview Map

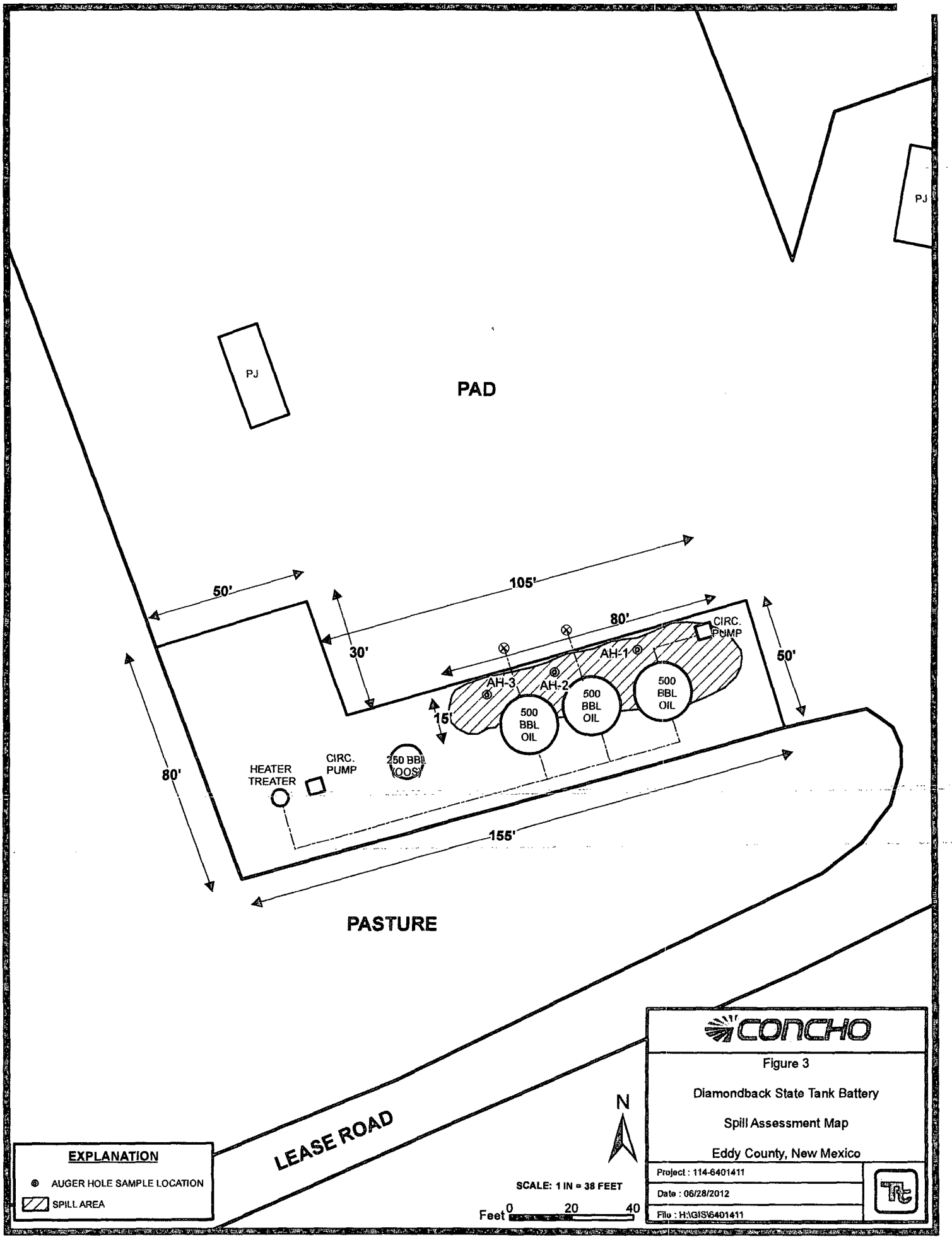
Eddy County, New Mexico

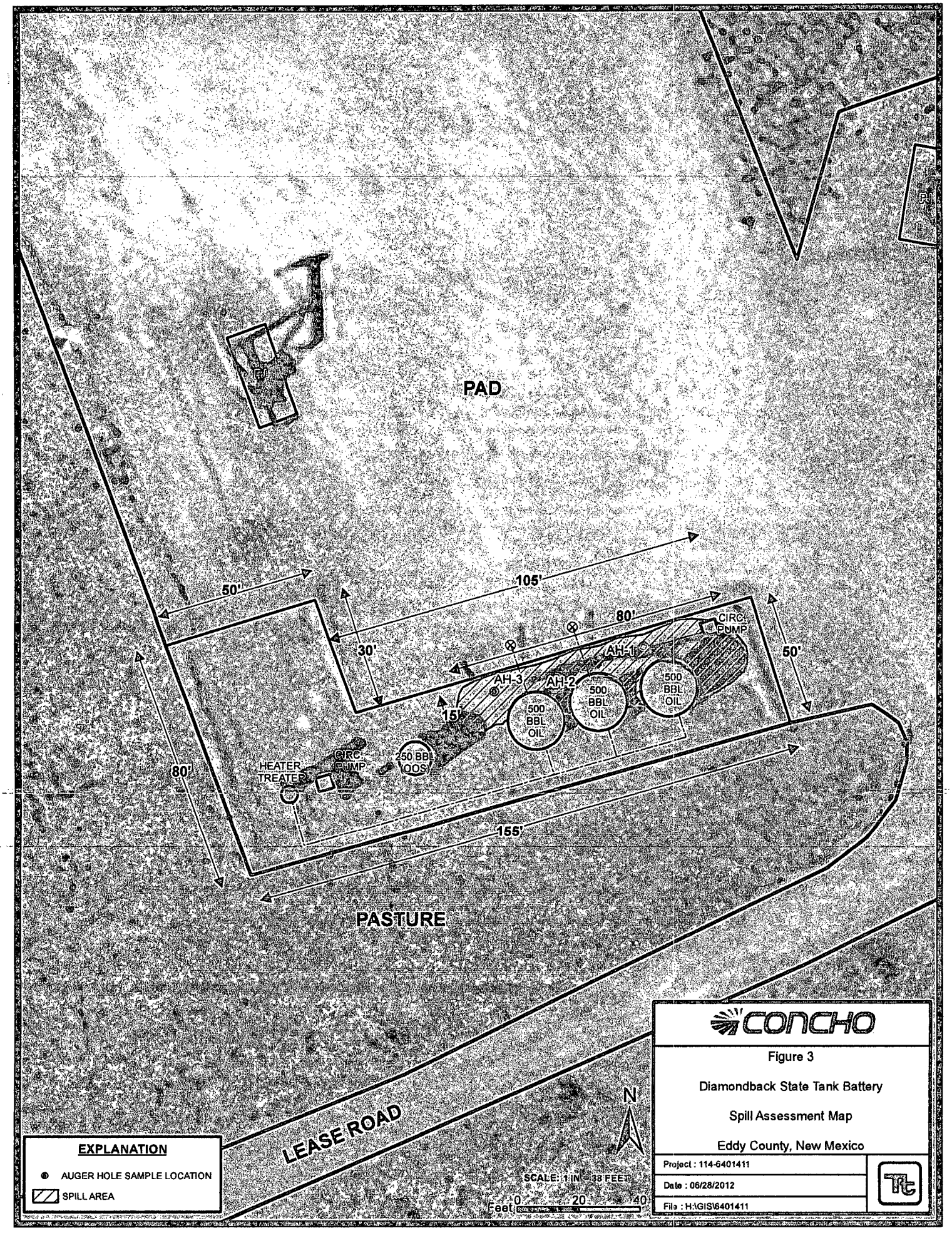
Project : 114-6401411	
Date : 6/28/2012	
File : H:\GIS\6401411	

Drawn By: Isabel Marmolejo



Drawn By: Isabel Mamolejo


PJ
PJ
PAD
50'
105'
80'
30'
CIRC. PUMP
50'
AH-1
AH-3
AH-2
500 BBL OIL
500 BBL OIL
500 BBL OIL
15'
80'
HEATER TREATER
CIRC. PUMP
250 BBL (OOS)
155'
PASTURE
LEASE ROAD
N
SCALE: 1 IN = 38 FEET
Feet 0 20 40
EXPLANATION
AUGER HOLE SAMPLE LOCATION
SPILL AREA
CONCHO
Figure 3
Diamondback State Tank Battery
Spill Assessment Map
Eddy County, New Mexico
Project : 114-6401411
Date : 06/28/2012
File : H:\GIS\6401411
Drawn By: Isabel Marmolejo



CONCHO

Figure 3

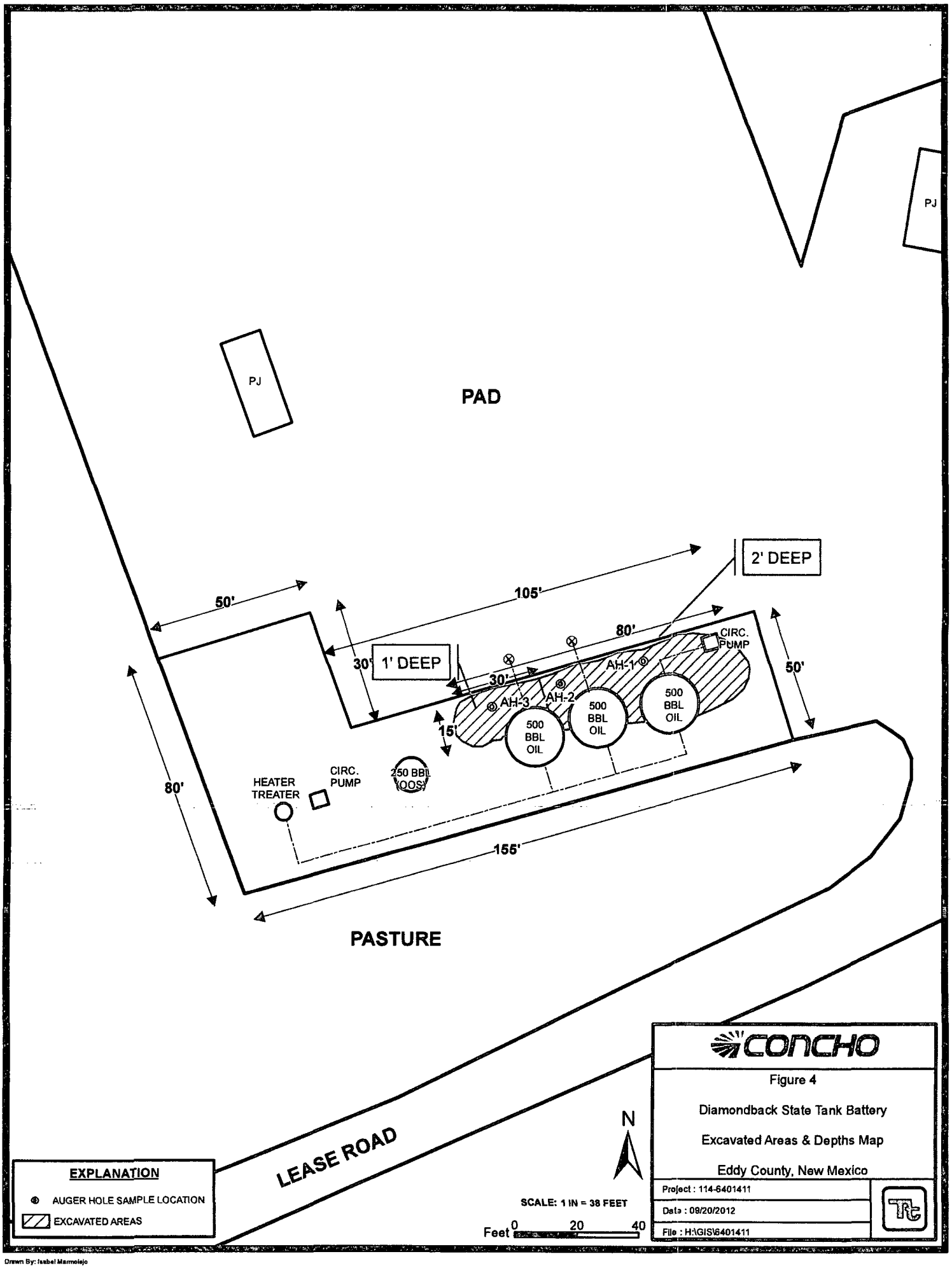
Diamondback State Tank Battery

Spill Assessment Map

Eddy County, New Mexico

Project : 114-6401411	
Date : 06/28/2012	
File : H:\GIS\6401411	

Drawn By: Isabel Marmolejo


PJ
PJ
PAD
2' DEEP
105'
50'
80'
30'
1' DEEP
30'
CIRC. PUMP
AH-1
AH-2
AH-3
500 BBL OIL
500 BBL OIL
500 BBL OIL
50'
15'
80'
HEATER TREATER
CIRC. PUMP
250 BBL (OOS)
155'
PASTURE
LEASE ROAD
N
SCALE: 1 IN = 38 FEET
Feet 0 20 40
EXPLANATION
AUGER HOLE SAMPLE LOCATION
EXCAVATED AREAS
CONCHO
Figure 4
Diamondback State Tank Battery
Excavated Areas & Depths Map
Eddy County, New Mexico
Project : 114-6401411
Data : 09/20/2012
File : H:\GIS\6401411
Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Diamondback State Tank Battery
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	5/30/2012	0-1		X	8,990	9,650	18,640	139	515	165	798	1,617	2,600
	"	1-1.5		X	5,070	6,240	11,310	23.1	131	40.4	184	379	457
	"	2-2.5	X		<100	<50.0	<100	<1.00	<1.00	<1.00	<1.00	<1.00	194
AH-2	5/30/2012	0-1		X	10,100	8,960	19,060	37.8	187	62.9	301	589	1,880
	"	1-1.5		X	5,360	4,780	10,140	13.8	99.8	43.7	193	350	311
	"	2-2.5	X		<100	<50.0	<100	<1.00	<1.00	<1.00	<1.00	<1.00	151
AH-3	5/30/2012	0-1		X	4,030	7,090	11,120	16.3	110	47.2	229	403	72.9
	"	1-1.5	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	141
	"	2-2.5	X		-	-	-	-	-	-	-	-	77.7

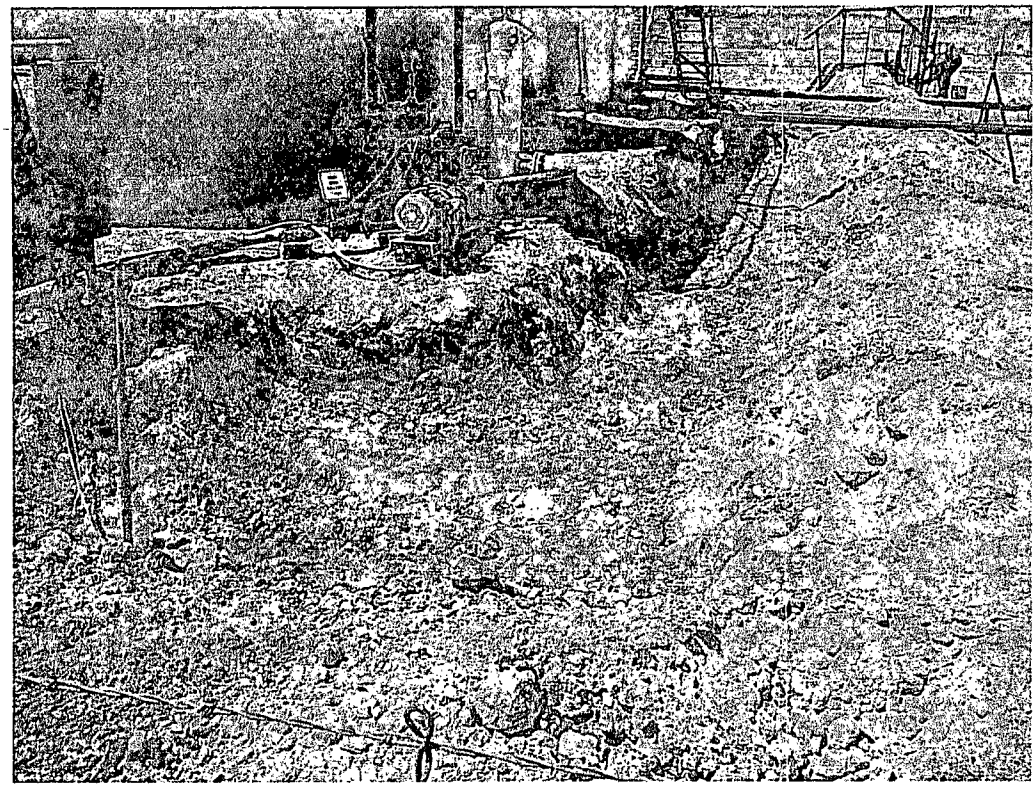
(--) Not Analyzed

Excavated Depths

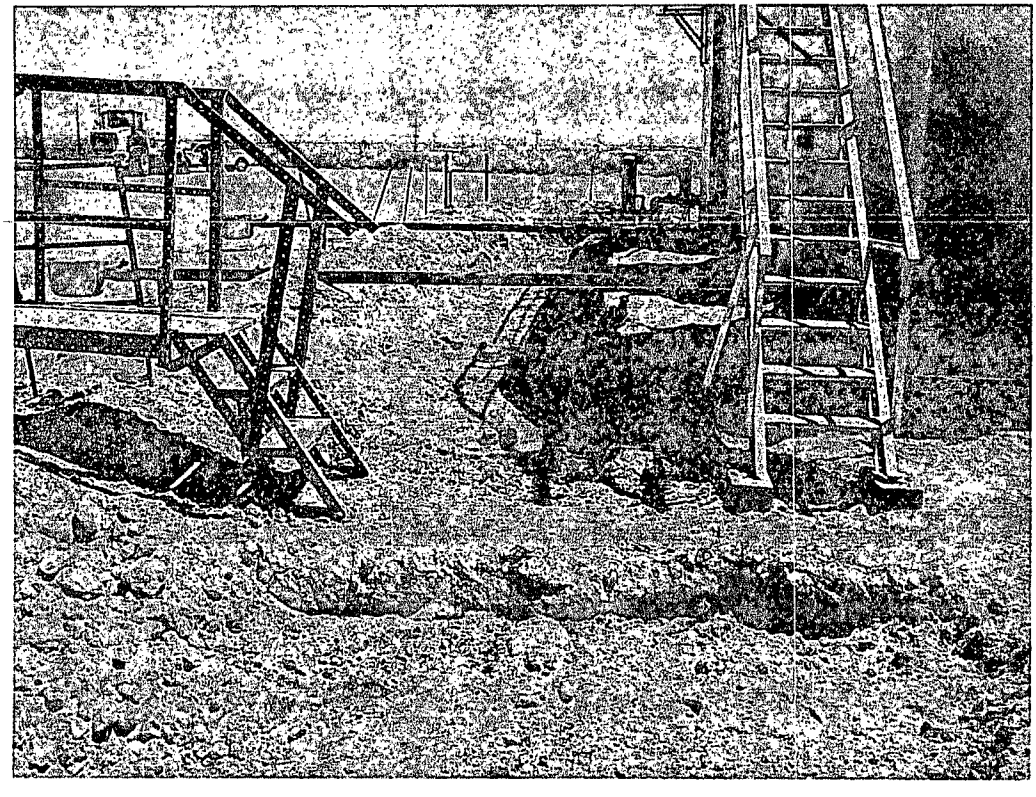
Photos

COG Operating LLC
Diamondback State Tank Battery
Eddy County, New Mexico

TETRA TECH



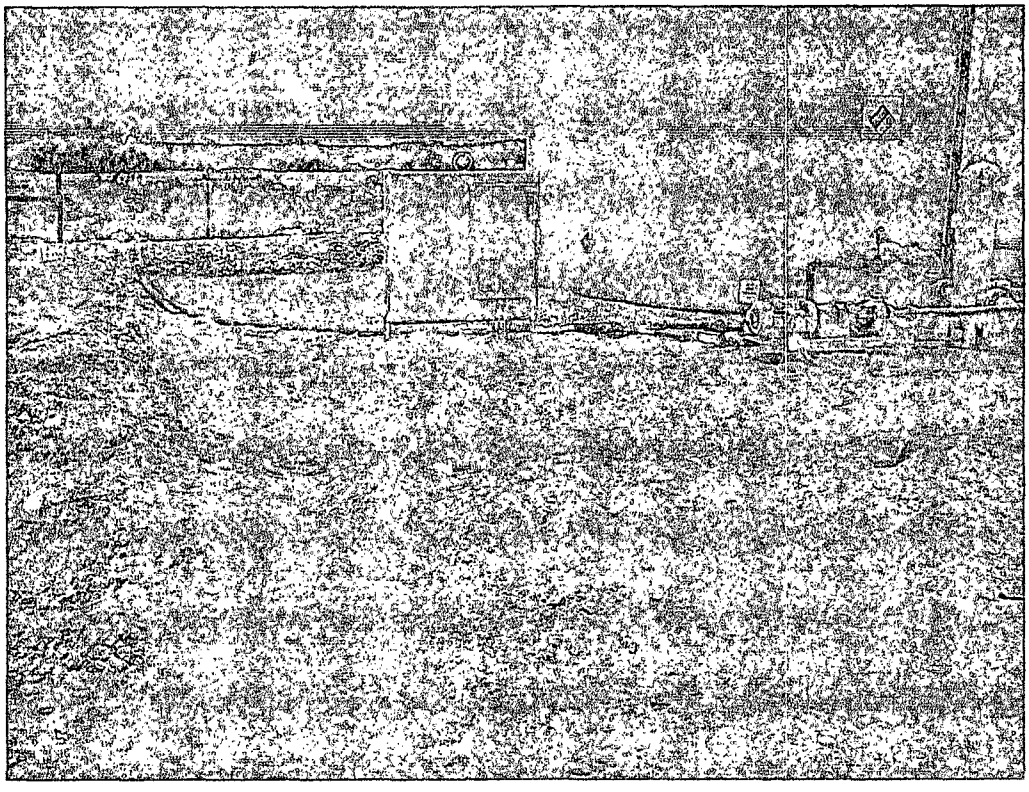
Excavation View West – Area of AH-1 and 2



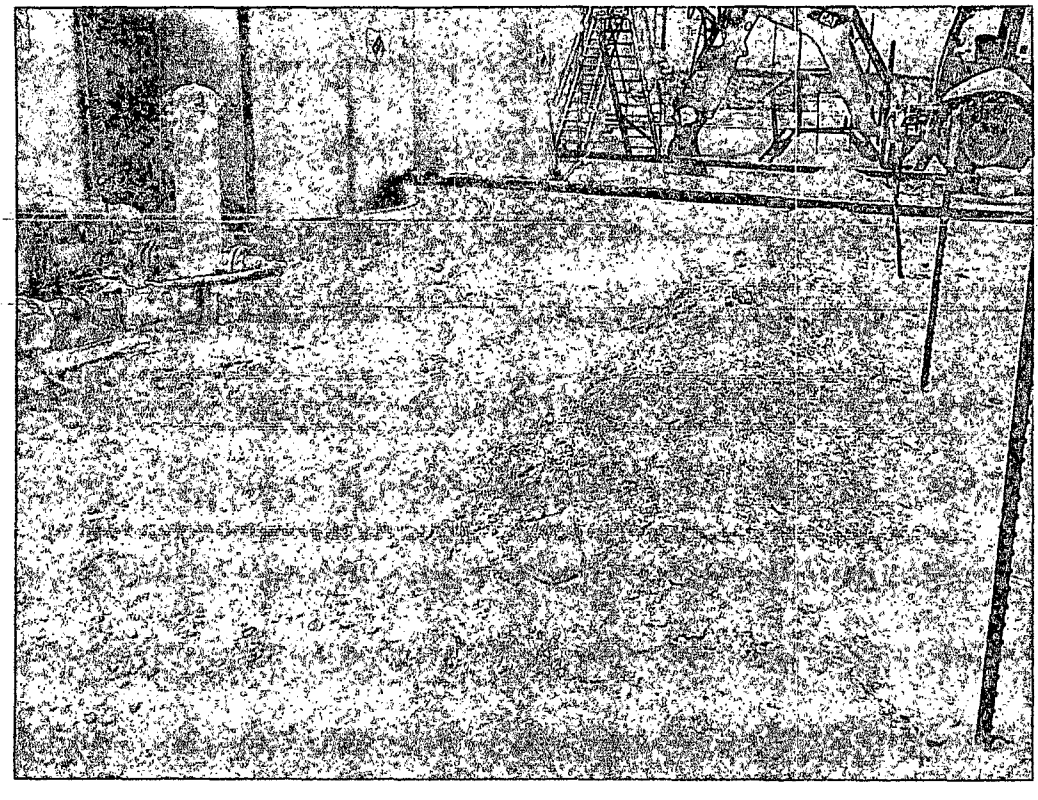
Excavation View East – Area of AH-3

COG Operating LLC
Diamondback State Tank Battery
Eddy County, New Mexico

TETRA TECH



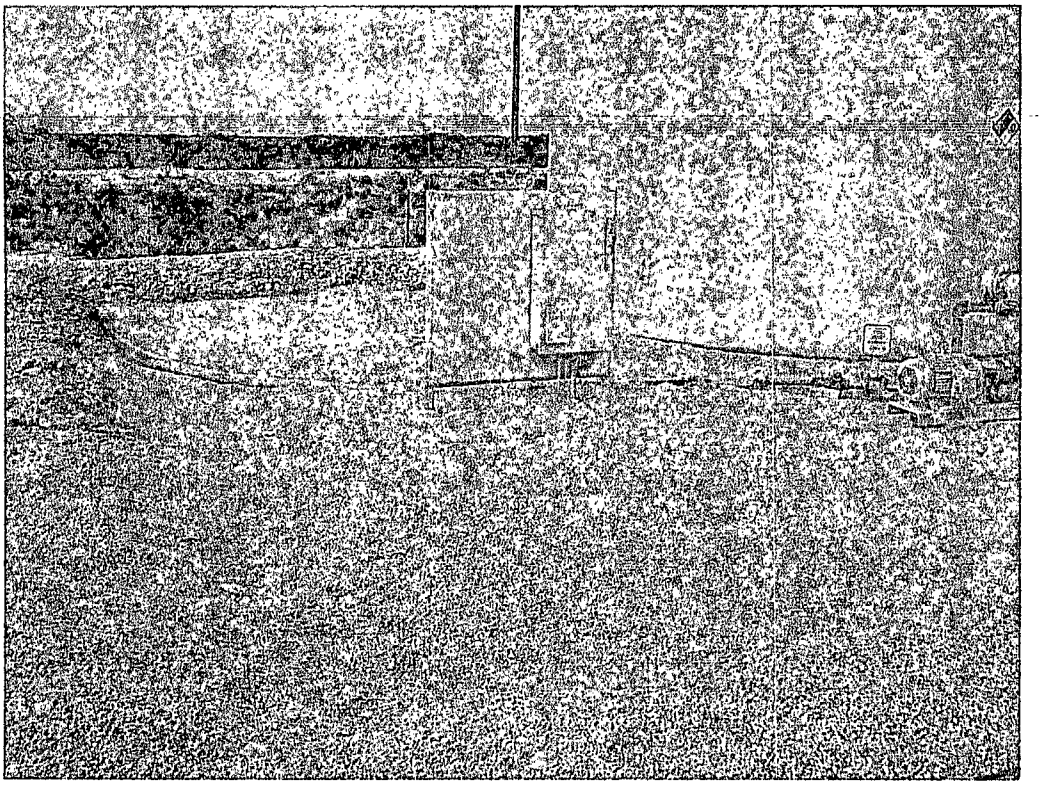
Backfill View South



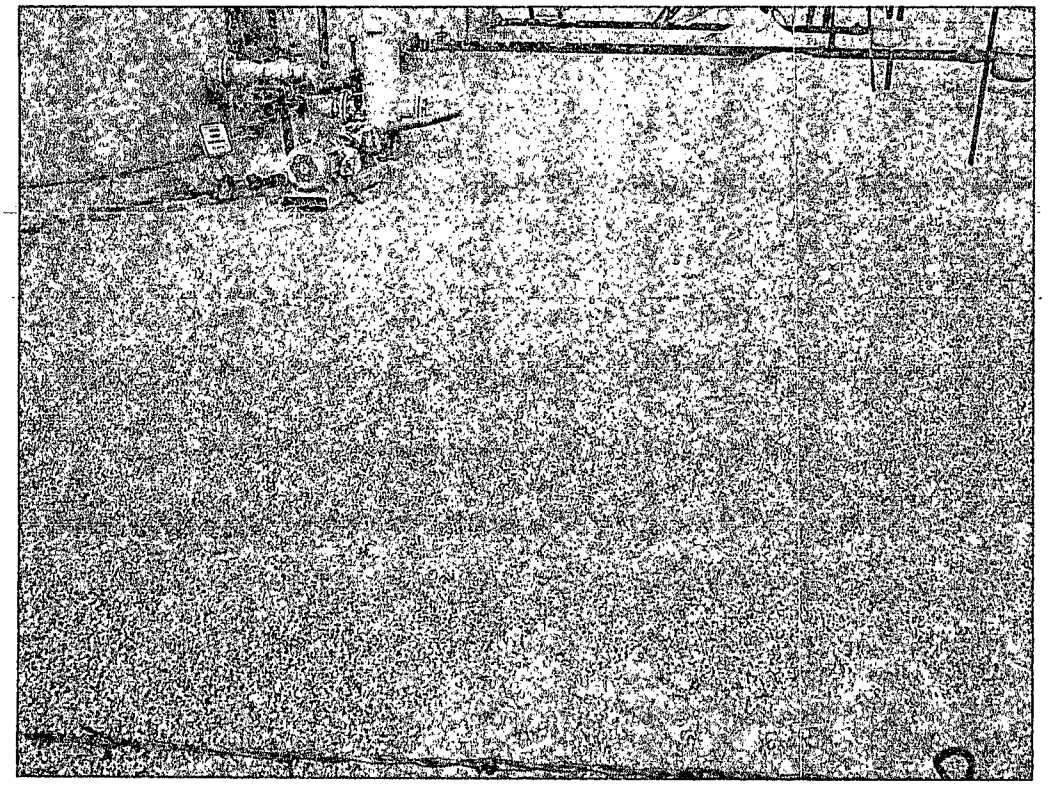
Backfill View West

COG Operating LLC
Diamondback State Tank Battery
Eddy County, New Mexico

TETRA TECH



Gravel



Gravel

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	**COG Operating LLC**	Contact	**Pat Ellis**
Address	**550 W. Texas, Suite 1300 Midland, Texas 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**Diamondback State Tank Battery**	Facility Type	**Tank Battery**

Surface Owner: **State**	Mineral Owner	Lease No. (API#) 30-015-33203 Diamondback State #001 well

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	28	17S	29E					Eddy

Latitude N 32.853001° **Longitude** W 103.959150°

NATURE OF RELEASE

Type of Release: Oil	Volume of Release 39 bbls	Volume Recovered 35 bbls
Source of Release: Load Line	Date and Hour of Occurrence 04/25/2012	Date and Hour of Discovery 04/25/2012 10:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher--OCD	
By Whom? Michelle Mullins	Date and Hour 04/26/2012 6:29a.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.*

An increase in pressure inside the load line caused the line to split releasing fluid onto the ground inside the bermed tank battery. A pressure vent has been added to the load line to prevent the buildup of pressure inside the load line in the future.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected and assessed the spill area to define the extents. Soil that exceeded the RRAL was removed and transported to 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: 6-8-12 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
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1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

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

Surface Owner State	Mineral Owner	Lease No. (API#) 30-015-33203 Diamondback State #001 well

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	28	17S	29E					Eddy

Latitude 32 48.699 **Longitude** 104 04.646

NATURE OF RELEASE

Type of Release Oil	Volume of Release 39bbls	Volume Recovered 35bbls
Source of Release Load line	Date and Hour of Occurrence 04/25/2012	Date and Hour of Discovery 04/25/2012 10:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-OCD	
By Whom? Michelle Mullins	Date and Hour 04/26/2012 6:29 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

An increase in pressure inside the load line caused the line to split releasing fluid onto the ground inside the bermed tank battery. A pressure vent has been added to the load line to prevent the buildup of pressure inside the load line in the future.

Describe Area Affected and Cleanup Action Taken.*

Initially 39bbls of oil was released from the split load line inside the Diamondback State Tank Battery. We were able to recover 35bbls with a vacuum truck. The entire release was contained inside the bermed walls of the facility. The defective load line has been repaired. All released free fluids have been removed from the facility. 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: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 05/03/2012 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Diamondback State Tank Battery
Eddy County, New Mexico

16 South 28 East

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

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19 **110**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 30 East

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

17 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **79**	23	24
30	29	28	27	26	25
31	32	33	34 **53**	35	36

17 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	23	24
30	29	28 SITE	27	26	25
31	32	33	34	35	36

17 South 30 East

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

18 South 28 East

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

18 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	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South 30 East

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

New Mexico State Engineers Well Reports
USGS Well Reports
Site Location - Diamondback State Tank Battery

Appendix C

Summary Report

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

Report Date: June 11, 2012

Work Order: 12060446

Project Location: Eddy Co., NM
Project Name: COG/Diamondback State Tank Battery
Project Number: 114-6401411

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
299873	AH-1 0-1'	soil	2012-05-30	00:00	2012-06-04
299874	AH-1 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299875	AH-1 2-2.5'	soil	2012-05-30	00:00	2012-06-04
299876	AH-2 0-1'	soil	2012-05-30	00:00	2012-06-04
299877	AH-2 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299878	AH-2 2-2.5'	soil	2012-05-30	00:00	2012-06-04
299879	AH-3 0-1'	soil	2012-05-30	00:00	2012-06-04
299880	AH-3 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299881	AH-3 2-2.5'	soil	2012-05-30	00:00	2012-06-04

	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)
299873 - AH-1 0-1'	**139**	**515** Je	**165**	**798** Je	**9650**	**8990**
299874 - AH-1 1-1.5'	**23.1**	**131**	**40.4**	**184**	**6240**	**5070**
299875 - AH-1 2-2.5'	<1.00	<1.00	<1.00	<1.00	<50.0	<100
299876 - AH-2 0-1'	**37.8**	**187**	**62.9**	**301**	**8960**	**10100**
299877 - AH-2 1-1.5'	**13.8**	**99.8**	**43.7**	**193**	**4780**	**5360**
299878 - AH-2 2-2.5'	<1.00	<1.00	<1.00	<1.00	<50.0	<100
299879 - AH-3 0-1'	**16.3**	**110**	**47.2**	**229**	**7090**	**4030**
299880 - AH-3 1-1.5'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 299873 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**2600**	mg/Kg	4

Sample: 299874 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**457**	mg/Kg	4

Sample: 299875 - AH-1 2-2.5'

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

Sample: 299876 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**1880**	mg/Kg	4

Sample: 299877 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**311**	mg/Kg	4

Sample: 299878 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**151**	mg/Kg	4

Sample: 299879 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**72.9**	mg/Kg	4

Sample: 299880 - AH-3 1-1.5'

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

Sample: 299881 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**77.7**	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: June 11, 2012

Work Order: 12060446

Project Location: Eddy Co., NM
Project Name: COG/Diamondback State Tank Battery
Project Number: 114-6401411

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
299873	AH-1 0-1'	soil	2012-05-30	00:00	2012-06-04
299874	AH-1 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299875	AH-1 2-2.5'	soil	2012-05-30	00:00	2012-06-04
299876	AH-2 0-1'	soil	2012-05-30	00:00	2012-06-04
299877	AH-2 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299878	AH-2 2-2.5'	soil	2012-05-30	00:00	2012-06-04
299879	AH-3 0-1'	soil	2012-05-30	00:00	2012-06-04
299880	AH-3 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299881	AH-3 2-2.5'	soil	2012-05-30	00:00	2012-06-04

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/Diamondback State Tank Battery were received by TraceAnalysis, Inc. on 2012-06-04 and assigned to work order 12060446. Samples for work order 12060446 were received intact at a temperature of 2.6 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	77967	2012-06-06 at 08:30	91895	2012-06-06 at 09:20
BTEX	S 8021B	78016	2012-06-08 at 14:30	91972	2012-06-08 at 15:06
BTEX	S 8021B	78029	2012-06-09 at 11:00	91974	2012-06-09 at 12:49
Chloride (Titration)	SM 4500-Cl B	78014	2012-06-06 at 10:51	91956	2012-06-06 at 14:53
TPH DRO - NEW	S 8015 D	78010	2012-06-07 at 15:30	91950	2012-06-07 at 15:00
TPH DRO - NEW	S 8015 D	78010	2012-06-07 at 15:30	91952	2012-06-07 at 15:00
TPH DRO - NEW	S 8015 D	78030	2012-06-09 at 11:00	91976	2012-06-09 at 14:05
TPH GRO	S 8015 D	78016	2012-06-08 at 14:30	91973	2012-06-08 at 15:32
TPH GRO	S 8015 D	78029	2012-06-09 at 11:00	91975	2012-06-09 at 13:15

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 12060446 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: 299873 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91895	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	Sample Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**139**	mg/Kg	50	0.0200
Toluene	Je	1	**515**	mg/Kg	50	0.0200
Ethylbenzene		1	**165**	mg/Kg	50	0.0200
Xylene	Je	1	**798**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			52.0	mg/Kg	50	50.0	104	70 - 135.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	129	mg/Kg	50	50.0	258	53.6 - 158.9

Sample: 299873 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**2600**	mg/Kg	10	4.00

Sample: 299873 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91952	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	Sample Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**9650**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	535	mg/Kg	5	100	535	49.3 - 157.5

Sample: 299873 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91973	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**8990**	mg/Kg	500	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			403	mg/Kg	500	500	81	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			428	mg/Kg	500	500	86	45.1 - 162.2

Sample: 299874 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91972	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**23.1**	mg/Kg	500	0.0200
Toluene		1	**131**	mg/Kg	500	0.0200
Ethylbenzene		1	**40.4**	mg/Kg	500	0.0200
Xylene		1	**184**	mg/Kg	500	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			489	mg/Kg	500	500	98	70 - 135.4
4-Bromofluorobenzene (4-BFB)			418	mg/Kg	500	500	84	53.6 - 158.9

Sample: 299874 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**457**	mg/Kg	5	4.00

Sample: 299874 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91952	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	Sample Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**6240**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	387	mg/Kg	5	100	387	49.3 - 157.5

Sample: 299874 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91973	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**5070**	mg/Kg	500	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			418	mg/Kg	500	500	84	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			382	mg/Kg	500	500	76	45.1 - 162.2

Sample: 299875 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91974	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78029	Sample Preparation:	2012-06-09	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<1.00	mg/Kg	50	0.0200
Toluene	U	1	<1.00	mg/Kg	50	0.0200
Ethylbenzene	U	1	<1.00	mg/Kg	50	0.0200
Xylene	U	1	<1.00	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			53.8	mg/Kg	50	50.0	108	70 - 135.4
4-Bromofluorobenzene (4-BFB)			46.4	mg/Kg	50	50.0	93	53.6 - 158.9

Sample: 299875 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

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

Sample: 299875 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91976	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78030	Sample Preparation:	2012-06-09	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			97.5	mg/Kg	1	100	98	55.1 - 135.7

Sample: 299875 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91975	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78029	Sample Preparation:	2012-06-09	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<100	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			46.6	mg/Kg	50	50.0	93	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			36.8	mg/Kg	50	50.0	74	45.1 - 162.2

Sample: 299876 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91895	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	Sample Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**37.8**	mg/Kg	50	0.0200
Toluene		1	**187**	mg/Kg	50	0.0200
Ethylbenzene		1	**62.9**	mg/Kg	50	0.0200
Xylene		1	**301**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			52.0	mg/Kg	50	50.0	104	70 - 135.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	104	mg/Kg	50	50.0	208	53.6 - 158.9

Sample: 299876 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

continued ...

sample 299876 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1880**	mg/Kg	10	4.00

Sample: 299876 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91952	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	Sample Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**8960**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	506	mg/Kg	5	100	506	49.3 - 157.5

Sample: 299876 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91973	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**10100**	mg/Kg	200	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			168	mg/Kg	200	200	84	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			199	mg/Kg	200	200	100	45.1 - 162.2

Sample: 299877 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91972	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**13.8**	mg/Kg	200	0.0200
Toluene		1	**99.8**	mg/Kg	200	0.0200
Ethylbenzene		1	**43.7**	mg/Kg	200	0.0200
Xylene		1	**193**	mg/Kg	200	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			192	mg/Kg	200	200	96	70 - 135.4
4-Bromofluorobenzene (4-BFB)			213	mg/Kg	200	200	106	53.6 - 158.9

Sample: 299877 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**311**	mg/Kg	5	4.00

Sample: 299877 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91952	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	Sample Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**4780**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	317	mg/Kg	5	100	317	49.3 - 157.5

Sample: 299877 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91973	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**5360**	mg/Kg	200	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			171	mg/Kg	200	200	86	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			179	mg/Kg	200	200	90	45.1 - 162.2

Sample: 299878 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91974	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78029	Sample Preparation:	2012-06-09	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<1.00	mg/Kg	50	0.0200
Toluene	U	1	<1.00	mg/Kg	50	0.0200
Ethylbenzene	U	1	<1.00	mg/Kg	50	0.0200
Xylene	U	1	<1.00	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			46.3	mg/Kg	50	50.0	93	70 - 135.4
4-Bromofluorobenzene (4-BFB)			35.6	mg/Kg	50	50.0	71	53.6 - 158.9

Sample: 299878 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

continued ...

sample 299878 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**151**	mg/Kg	5	4.00

Sample: 299878 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91976	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78030	Sample Preparation:	2012-06-09	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	55.1 - 135.7

Sample: 299878 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91975	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78029	Sample Preparation:	2012-06-09	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<100	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			40.8	mg/Kg	50	50.0	82	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			26.9	mg/Kg	50	50.0	54	45.1 - 162.2

Sample: 299879 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91895	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	Sample Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**16.3**	mg/Kg	50	0.0200
Toluene		1	**110**	mg/Kg	50	0.0200
Ethylbenzene		1	**47.2**	mg/Kg	50	0.0200
Xylene		1	**229**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			52.0	mg/Kg	50	50.0	104	70 - 135.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	99.7	mg/Kg	50	50.0	199	53.6 - 158.9

Sample: 299879 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**72.9**	mg/Kg	5	4.00

Sample: 299879 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91952	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	Sample Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**7090**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	434	mg/Kg	5	100	434	49.3 - 157.5

Sample: 299879 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91973	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO		1		**4030**	mg/Kg	200	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			163	mg/Kg	200	200	82	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			145	mg/Kg	200	200	72	45.1 - 162.2

Sample: 299880 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91972	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.54	mg/Kg	1	2.00	127	70 - 135.4
4-Bromofluorobenzene (4-BFB)			2.78	mg/Kg	1	2.00	139	53.6 - 158.9

Sample: 299880 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

continued ...

sample 299880 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

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

Sample: 299880 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91950	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	Sample Preparation:	2012-06-07	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			98.2	mg/Kg	1	100	98	55.1 - 135.7

Sample: 299880 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91973	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.19	mg/Kg	1	2.00	110	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	45.1 - 162.2

Sample: 299881 - AH-3 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**77.7**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 91895

QC Batch:	91895	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	QC Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.61	mg/Kg	1	2.00	80	51.3 - 122.4

Method Blank (1) QC Batch: 91950

QC Batch:	91950	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	QC Preparation:	2012-06-07	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	61.6 - 141.2

Method Blank (1) QC Batch: 91952

QC Batch:	91952	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	QC Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			122	mg/Kg	1	100	122	52 - 140.8

Method Blank (1) QC Batch: 91956

QC Batch: 91956 Date Analyzed: 2012-06-06 Analyzed By: AR
Prep Batch: 78014 QC Preparation: 2012-06-06 Prepared By: AR

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

Method Blank (1) QC Batch: 91972

QC Batch: 91972 Date Analyzed: 2012-06-08 Analyzed By: AG
Prep Batch: 78016 QC Preparation: 2012-06-08 Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.86	mg/Kg	1	2.00	93	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.52	mg/Kg	1	2.00	76	51.3 - 122.4

Method Blank (1) QC Batch: 91973

QC Batch: 91973 Date Analyzed: 2012-06-08 Analyzed By: AG
Prep Batch: 78016 QC Preparation: 2012-06-08 Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	78.6 - 131
4-Bromofluorobenzene (4-BFB)			1.11	mg/Kg	1	2.00	56	51 - 130

Method Blank (1) QC Batch: 91974

QC Batch: 91974 Date Analyzed: 2012-06-09 Analyzed By: AG
Prep Batch: 78029 QC Preparation: 2012-06-09 Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.44	mg/Kg	1	2.00	72	51.3 - 122.4

Method Blank (1) QC Batch: 91975

QC Batch: 91975 Date Analyzed: 2012-06-09 Analyzed By: AG
Prep Batch: 78029 QC Preparation: 2012-06-09 Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.62	mg/Kg	1	2.00	81	78.6 - 131
4-Bromofluorobenzene (4-BFB)			1.11	mg/Kg	1	2.00	56	51 - 130

Method Blank (1) QC Batch: 91976

QC Batch:	91976	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78030	QC Preparation:	2012-06-09	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			137	mg/Kg	1	100	137	61.6 - 141.2

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 91895 | Date Analyzed: 2012-06-06 | Analyzed By: AG
Prep Batch: 77967 | QC Preparation: 2012-06-06 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.12	mg/Kg	1	2.00	<0.00470	106	86.5 - 124.9
Toluene		1	2.04	mg/Kg	1	2.00	<0.00980	102	84.7 - 122.5
Ethylbenzene		1	1.85	mg/Kg	1	2.00	<0.00500	92	79.4 - 118.9
Xylene		1	5.37	mg/Kg	1	6.00	<0.0170	90	77.5 - 119

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.18	mg/Kg	1	2.00	<0.00470	109	86.5 - 124.9	3	20
Toluene		1	2.09	mg/Kg	1	2.00	<0.00980	104	84.7 - 122.5	2	20
Ethylbenzene		1	1.89	mg/Kg	1	2.00	<0.00500	94	79.4 - 118.9	2	20
Xylene		1	5.50	mg/Kg	1	6.00	<0.0170	92	77.5 - 119	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.86	mg/Kg	1	2.00	96	93	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.24	2.02	mg/Kg	1	2.00	112	101	65.4 - 149.9

Laboratory Control Spike (LCS-1)

QC Batch: 91950 | Date Analyzed: 2012-06-07 | Analyzed By: AG
Prep Batch: 78010 | QC Preparation: 2012-06-07 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	246	mg/Kg	1	250	<15.7	98	66.9 - 119.9

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
DRO		1	249	mg/Kg	1	250	<15.7	100	66.9 - 119.9	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	94.0	94.4	mg/Kg	1	100	94	94	76.8 - 140.2

Laboratory Control Spike (LCS-1)

QC Batch: 91952 | Date Analyzed: 2012-06-07 | Analyzed By: AG
Prep Batch: 78010 | QC Preparation: 2012-06-07 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	246	mg/Kg	1	250	<14.5	98	62 - 128.3

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	246	mg/Kg	1	250	<14.5	98	62 - 128.3	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	90.7	92.2	mg/Kg	1	100	91	92	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 91956 | Date Analyzed: 2012-06-06 | Analyzed By: AR
Prep Batch: 78014 | QC Preparation: 2012-06-06 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2430	mg/Kg	1	2500	<3.85	97	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	85 - 115	7	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 91972 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.00	mg/Kg	1	2.00	<0.00470	100	86.5 - 124.9
Toluene		1	1.95	mg/Kg	1	2.00	<0.00980	98	84.7 - 122.5
Ethylbenzene		1	1.97	mg/Kg	1	2.00	<0.00500	98	79.4 - 118.9
Xylene		1	5.80	mg/Kg	1	6.00	<0.0170	97	77.5 - 119

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.02	mg/Kg	1	2.00	<0.00470	101	86.5 - 124.9	1	20
Toluene		1	2.02	mg/Kg	1	2.00	<0.00980	101	84.7 - 122.5	4	20
Ethylbenzene		1	2.03	mg/Kg	1	2.00	<0.00500	102	79.4 - 118.9	3	20
Xylene		1	5.97	mg/Kg	1	6.00	<0.0170	100	77.5 - 119	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)	2.02	2.08	mg/Kg	1	2.00	101	104	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.23	2.34	mg/Kg	1	2.00	112	117	65.4 - 149.9

Laboratory Control Spike (LCS-1)

QC Batch: 91973 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.7	mg/Kg	1	20.0	<1.22	74	65.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.3	mg/Kg	1	20.0	<1.22	72	65.3 - 105.7	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	1.81	mg/Kg	1	2.00	92	90	79 - 131.2
4-Bromofluorobenzene (4-BFB)	1.65	1.54	mg/Kg	1	2.00	82	77	56.4 - 136.6

Laboratory Control Spike (LCS-1)

QC Batch: 91974 | Date Analyzed: 2012-06-09 | Analyzed By: AG
Prep Batch: 78029 | QC Preparation: 2012-06-09 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.89	mg/Kg	1	2.00	<0.00470	94	86.5 - 124.9
Toluene		1	1.88	mg/Kg	1	2.00	<0.00980	94	84.7 - 122.5
Ethylbenzene		1	1.82	mg/Kg	1	2.00	<0.00500	91	79.4 - 118.9
Xylene		1	5.41	mg/Kg	1	6.00	<0.0170	90	77.5 - 119

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.03	mg/Kg	1	2.00	<0.00470	102	86.5 - 124.9	7	20
Toluene		1	2.07	mg/Kg	1	2.00	<0.00980	104	84.7 - 122.5	10	20
Ethylbenzene		1	2.07	mg/Kg	1	2.00	<0.00500	104	79.4 - 118.9	13	20
Xylene		1	6.30	mg/Kg	1	6.00	<0.0170	105	77.5 - 119	15	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)	1.99	2.13	mg/Kg	1	2.00	100	106	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.14	2.53	mg/Kg	1	2.00	107	126	65.4 - 149.9

Laboratory Control Spike (LCS-1)

QC Batch: 91975 | Date Analyzed: 2012-06-09 | Analyzed By: AG
Prep Batch: 78029 | QC Preparation: 2012-06-09 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<1.22	88	65.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.2	mg/Kg	1	20.0	<1.22	91	65.3 - 105.7	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)	1.88	1.87	mg/Kg	1	2.00	94	94	79 - 131.2
4-Bromofluorobenzene (4-BFB)	1.67	1.70	mg/Kg	1	2.00	84	85	56.4 - 136.6

Laboratory Control Spike (LCS-1)

QC Batch: 91976 | Date Analyzed: 2012-06-09 | Analyzed By: AG
Prep Batch: 78030 | QC Preparation: 2012-06-09 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	256	mg/Kg	1	250	<15.7	102	66.9 - 119.9

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	264	mg/Kg	1	250	<15.7	106	66.9 - 119.9	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	104	103	mg/Kg	1	100	104	103	76.8 - 140.2

Matrix Spike (MS-1) Spiked Sample: 299882

QC Batch: 91895 | Date Analyzed: 2012-06-06 | Analyzed By: AG
Prep Batch: 77967 | QC Preparation: 2012-06-06 | Prepared By: AG

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.95	mg/Kg	1	2.00	0.0175	97	69.3 - 159.2
Toluene		1	1.94	mg/Kg	1	2.00	0.0538	94	68.7 - 157
Ethylbenzene		1	1.90	mg/Kg	1	2.00	<0.00500	95	71.6 - 158.2
Xylene		1	5.36	mg/Kg	1	6.00	0.02	89	70.8 - 159.8

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.08	mg/Kg	1	2.00	0.0175	103	69.3 - 159.2	6	20
Toluene		1	2.07	mg/Kg	1	2.00	0.0538	101	68.7 - 157	6	20
Ethylbenzene		1	2.01	mg/Kg	1	2.00	<0.00500	100	71.6 - 158.2	6	20
Xylene		1	5.66	mg/Kg	1	6.00	0.02	94	70.8 - 159.8	5	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.29	2.18	mg/Kg	1	2	114	109	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.39	2.18	mg/Kg	1	2	120	109	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 299890

QC Batch: 91950 | Date Analyzed: 2012-06-07 | Analyzed By: AG
Prep Batch: 78010 | QC Preparation: 2012-06-07 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	246	mg/Kg	1	250	<15.7	98	36.1 - 147.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	219	mg/Kg	1	250	<15.7	88	36.1 - 147.2	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
n-Tricosane	91.3	88.0	mg/Kg	1	100	91	88	78.3 - 131.6

Matrix Spike (MS-1) Spiked Sample: 299940

QC Batch: 91952 | Date Analyzed: 2012-06-07 | Analyzed By: AG
Prep Batch: 78010 | QC Preparation: 2012-06-07 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	238	mg/Kg	1	250	<14.5	95	45.5 - 127

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	231	mg/Kg	1	250	<14.5	92	45.5 - 127	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	94.8	94.9	mg/Kg	1	100	95	95	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 299882

QC Batch: 91956 | Date Analyzed: 2012-06-06 | Analyzed By: AR
Prep Batch: 78014 | QC Preparation: 2012-06-06 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10500	mg/Kg	10	2500	8380	85	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			10900	mg/Kg	10	2500	8380	101	79.4 - 120.6	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: 299940

QC Batch: 91972 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.94	mg/Kg	1	2.00	<0.00470	97	69.3 - 159.2
Toluene		1	1.98	mg/Kg	1	2.00	<0.00980	99	68.7 - 157
Ethylbenzene		1	2.17	mg/Kg	1	2.00	<0.00500	108	71.6 - 158.2
Xylene		1	6.34	mg/Kg	1	6.00	<0.0170	106	70.8 - 159.8

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	1.82	mg/Kg	1	2.00	<0.00470	91	69.3 - 159.2	6	20
Toluene		1	1.84	mg/Kg	1	2.00	<0.00980	92	68.7 - 157	7	20
Ethylbenzene		1	1.96	mg/Kg	1	2.00	<0.00500	98	71.6 - 158.2	10	20
Xylene		1	5.68	mg/Kg	1	6.00	<0.0170	95	70.8 - 159.8	11	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)	2.11	2.36	mg/Kg	1	2	106	118	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.25	2.31	mg/Kg	1	2	112	116	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 299880

QC Batch: 91973 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	29.1	mg/Kg	1	20.0	1.87	136	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	29.2	mg/Kg	1	20.0	1.87	146	28.2 - 157.2	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.15	2.12	mg/Kg	1	2	108	106	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	2.25	2.42	mg/Kg	1	2	112	121	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 299963

QC Batch: 91974 | Date Analyzed: 2012-06-09 | Analyzed By: AG
Prep Batch: 78029 | QC Preparation: 2012-06-09 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.97	mg/Kg	1	2.00	<0.00470	98	69.3 - 159.2
Toluene		1	2.00	mg/Kg	1	2.00	<0.00980	100	68.7 - 157
Ethylbenzene		1	2.17	mg/Kg	1	2.00	<0.00500	108	71.6 - 158.2
Xylene		1	6.40	mg/Kg	1	6.00	<0.0170	107	70.8 - 159.8

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.05	mg/Kg	1	2.00	<0.00470	102	69.3 - 159.2	4	20
Toluene		1	2.13	mg/Kg	1	2.00	<0.00980	106	68.7 - 157	6	20
Ethylbenzene		1	2.38	mg/Kg	1	2.00	<0.00500	119	71.6 - 158.2	9	20
Xylene		1	7.03	mg/Kg	1	6.00	<0.0170	117	70.8 - 159.8	9	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.90	2.38	mg/Kg	1	2	95	119	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.24	2.86	mg/Kg	1	2	112	143	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 299963

QC Batch: 91975 | Date Analyzed: 2012-06-09 | Analyzed By: AG
Prep Batch: 78029 | QC Preparation: 2012-06-09 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	24.9	mg/Kg	1	20.0	<1.22	124	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	26.3	mg/Kg	1	20.0	<1.22	132	28.2 - 157.2	6	20

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

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.05	2.09	mg/Kg	1	2	102	104	75.5 - 122.3
4-Bromofluorobenzene (4-BFB) Qsr Qsr	2.52	2.05	mg/Kg	1	2	126	102	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 299946

QC Batch: 91976 | Date Analyzed: 2012-06-09 | Analyzed By: AG
Prep Batch: 78030 | QC Preparation: 2012-06-09 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	243	mg/Kg	1	250	16.8	90	36.1 - 147.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	240	mg/Kg	1	250	16.8	89	36.1 - 147.2	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	98.4	99.1	mg/Kg	1	100	98	99	78.3 - 131.6

Calibration Standards

Standard (CCV-2)

QC Batch: 91895 | Date Analyzed: 2012-06-06 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0987	99	80 - 120	2012-06-06
Toluene		1	mg/kg	0.100	0.0937	94	80 - 120	2012-06-06
Ethylbenzene		1	mg/kg	0.100	0.0851	85	80 - 120	2012-06-06
Xylene		1	mg/kg	0.300	0.243	81	80 - 120	2012-06-06

Standard (CCV-3)

QC Batch: 91895 | Date Analyzed: 2012-06-06 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.102	102	80 - 120	2012-06-06
Toluene		1	mg/kg	0.100	0.103	103	80 - 120	2012-06-06
Ethylbenzene		1	mg/kg	0.100	0.104	104	80 - 120	2012-06-06
Xylene		1	mg/kg	0.300	0.322	107	80 - 120	2012-06-06

Standard (CCV-2)

QC Batch: 91950 | Date Analyzed: 2012-06-07 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	242	97	80 - 120	2012-06-07

Standard (CCV-3)

QC Batch: 91950 | Date Analyzed: 2012-06-07 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	223	89	80 - 120	2012-06-07

Standard (CCV-2)

QC Batch: 91952 Date Analyzed: 2012-06-07 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	249	100	80 - 120	2012-06-07

Standard (CCV-3)

QC Batch: 91952 Date Analyzed: 2012-06-07 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	244	98	80 - 120	2012-06-07

Standard (CCV-1)

QC Batch: 91956 Date Analyzed: 2012-06-06 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	99.9	100	85 - 115	2012-06-06

Standard (CCV-2)

QC Batch: 91956 Date Analyzed: 2012-06-06 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	2012-06-06

Standard (CCV-1)

QC Batch: 91972 Date Analyzed: 2012-06-08 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.100	100	80 - 120	2012-06-08
Toluene		1	mg/kg	0.100	0.100	100	80 - 120	2012-06-08
Ethylbenzene		1	mg/kg	0.100	0.100	100	80 - 120	2012-06-08
Xylene		1	mg/kg	0.300	0.306	102	80 - 120	2012-06-08

Standard (CCV-2)

QC Batch: 91972 Date Analyzed: 2012-06-08 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0959	96	80 - 120	2012-06-08
Toluene		1	mg/kg	0.100	0.0925	92	80 - 120	2012-06-08
Ethylbenzene		1	mg/kg	0.100	0.0911	91	80 - 120	2012-06-08
Xylene		1	mg/kg	0.300	0.270	90	80 - 120	2012-06-08

Standard (CCV-3)

QC Batch: 91972 Date Analyzed: 2012-06-08 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0906	91	80 - 120	2012-06-08
Toluene		1	mg/kg	0.100	0.0882	88	80 - 120	2012-06-08
Ethylbenzene		1	mg/kg	0.100	0.0854	85	80 - 120	2012-06-08
Xylene		1	mg/kg	0.300	0.253	84	80 - 120	2012-06-08

Standard (CCV-1)

QC Batch: 91973 | Date Analyzed: 2012-06-08 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.824	82	80 - 120	2012-06-08

Standard (CCV-2)

QC Batch: 91973 | Date Analyzed: 2012-06-08 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.813	81	80 - 120	2012-06-08

Standard (CCV-3)

QC Batch: 91973 | Date Analyzed: 2012-06-08 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.813	81	80 - 120	2012-06-08

Standard (CCV-1)

QC Batch: 91974 | Date Analyzed: 2012-06-09 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0916	92	80 - 120	2012-06-09
Toluene		1	mg/kg	0.100	0.0904	90	80 - 120	2012-06-09
Ethylbenzene		1	mg/kg	0.100	0.0905	90	80 - 120	2012-06-09
Xylene		1	mg/kg	0.300	0.272	91	80 - 120	2012-06-09

Standard (CCV-2)

QC Batch: 91974 Date Analyzed: 2012-06-09 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0971	97	80 - 120	2012-06-09
Toluene		1	mg/kg	0.100	0.0948	95	80 - 120	2012-06-09
Ethylbenzene		1	mg/kg	0.100	0.0918	92	80 - 120	2012-06-09
Xylene		1	mg/kg	0.300	0.268	89	80 - 120	2012-06-09

Standard (CCV-1)

QC Batch: 91975 Date Analyzed: 2012-06-09 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.962	96	80 - 120	2012-06-09

Standard (CCV-2)

QC Batch: 91975 Date Analyzed: 2012-06-09 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.951	95	80 - 120	2012-06-09

Standard (CCV-1)

QC Batch: 91976 Date Analyzed: 2012-06-09 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	263	105	80 - 120	2012-06-09

Standard (CCV-2)

QC Batch: 91976 | Date Analyzed: 2012-06-09 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	256	102	80 - 120	2012-06-09

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	T104704392-11-3	Midland

Standard Flags

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

Attachments

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

1206044

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6410 1411

PROJECT NAME: Diamondback State Tank Battery
Eddy Co., NM

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD (Ext. to C35) TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
AA 873	5/30		S		X	AH-1 0-1'	1				X		X	X											X				
874						1-1.5'	1				X														X				
875						2-2.5'	1				X														X				
876						AH-2 0-1'	1				X		X	X											X				
877						1-1.5'	1				X														X				
878						2-2.5'	1				X														X				
879						AH-3 0-1'	1				X		X	X											X				
880						1-1.5'	1				X														X				
881						2-2.5'	1				X														X				

RELINQUISHED BY: (Signature)	Date: 6/4/12 Time: 3:30 PM	RECEIVED BY: (Signature)	Date: 6/4/12 Time: 15:30
SAMPLED BY: (Print & Initial) Kim	Date: 6/4/12 Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS 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: TX ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: 26°	REMARKS:		

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