SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	**White Oak State Tank Battery**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit P**	**Sec 23**	**T17S**	**R28E**		
Lease Number:	**API-30-015-29749**					
County:	**Eddy County**					
GPS:	**32.81503° N**			**104.13927° W**		
Surface Owner:	**State**					
Mineral Owner:						
Directions:	In Loco Hills, from the intersection of Haggerman Cutoff and 82, travel west on Hwy 82 for 9.7 miles, turn right onto CR 209 and travel for 1.1 miles, turn right and travel for 0.5 miles, turn right and travel for 0.1 miles, turn right to site.					

Release Data:

Date Released:	3/25/2012
Type Release:	Produced Water
Source of Contamination:	Water Tank
Fluid Released:	20 bbls
Fluids Recovered:	20 bbls

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Official Communication:

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

Ranking Criteria

Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	0	0

WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	0	0

Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0

Total Ranking Score:	**0**

Acceptable Soil RRAL (mg/kg)

Benzene	***Total BTEX***	***TPH***
10	50	5,000

TETRA TECH

October 19, 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., White Oak State Tank Battery, Unit P, Section 23, Township 17 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 White Oak State Tank Battery located in Unit P, Section 23, Township 17 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.81503°, W 104.13927°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on March 25, 2012, and released approximately twenty (20) barrels of produced water from the water tank. To alleviate the problem, COG personnel returned power to the CVE. Eighteen (18) barrels of standing fluids were recovered from the release. The spill remained inside the firewalls of the facility and measured approximately 5' X 30'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 23. According to the USGS, a well located in Section 22 reported a depth to groundwater at 79' below surface. In addition, the NMOCD groundwater map showed the groundwater depth in this area of approximately at 100' below surface. The groundwater data is shown on Figure B.

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

Regulatory

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

Soil Assessment and Analytical Results

On April 18, 2012, Tetra Tech personnel inspected and sampled the second release. One (1) auger hole (AH-1) was 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 reports and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole location is shown on Figure 3.

The area of AH-1 showed TPH and BTEX concentrations above the RRAL, but declined at a depth of 5.5' below surface. Elevated chloride concentrations were present and were not vertically defined.

Remediation and Conclusions

On May 17, 2012, Tetra Tech personnel supervised the excavation of the site. The excavation depths are highlighted in Table 1 and shown on Figure 4. Approximately 20 yards of impacted material was removed and disposed of properly at the R360 facility. The excavated area measured approximately 5' x 30' and a depth 5.0' below surface. Tetra Tech collected a bottom hole samples (5.0') and installed a backhoe trench to define the chloride extents. Referring to Table 1, the bottom hole samples did not show TPH or BTEX concentrations exceeding the RRAL. The trench (T-1) samples did not show a significant impact to the soils.

TETRA TECH

Once excavated, a clay material was installed in the excavation bottom and backfilled with clean material to surface grade.

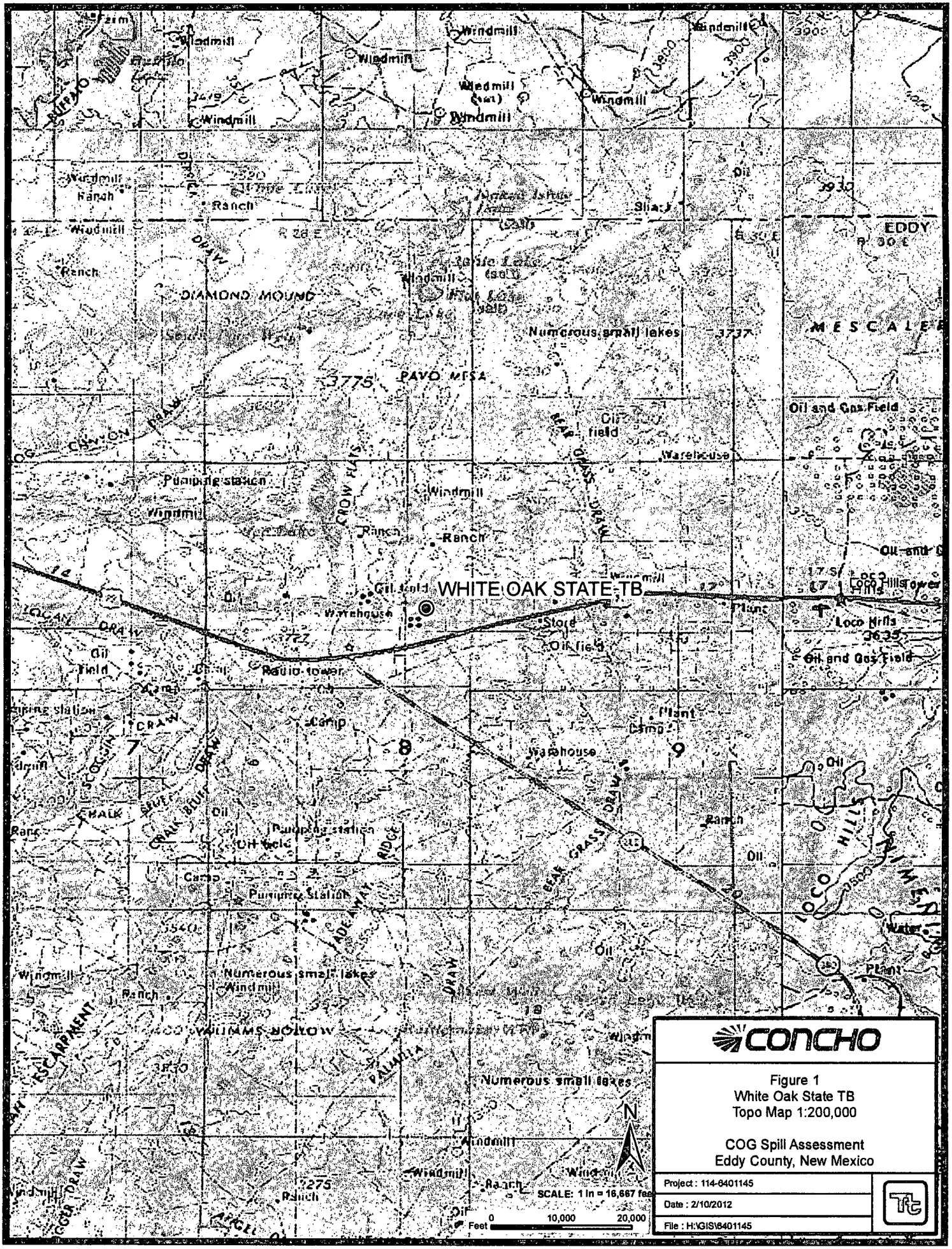
Based on the remediation activities performed at this location, COG request closure for site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

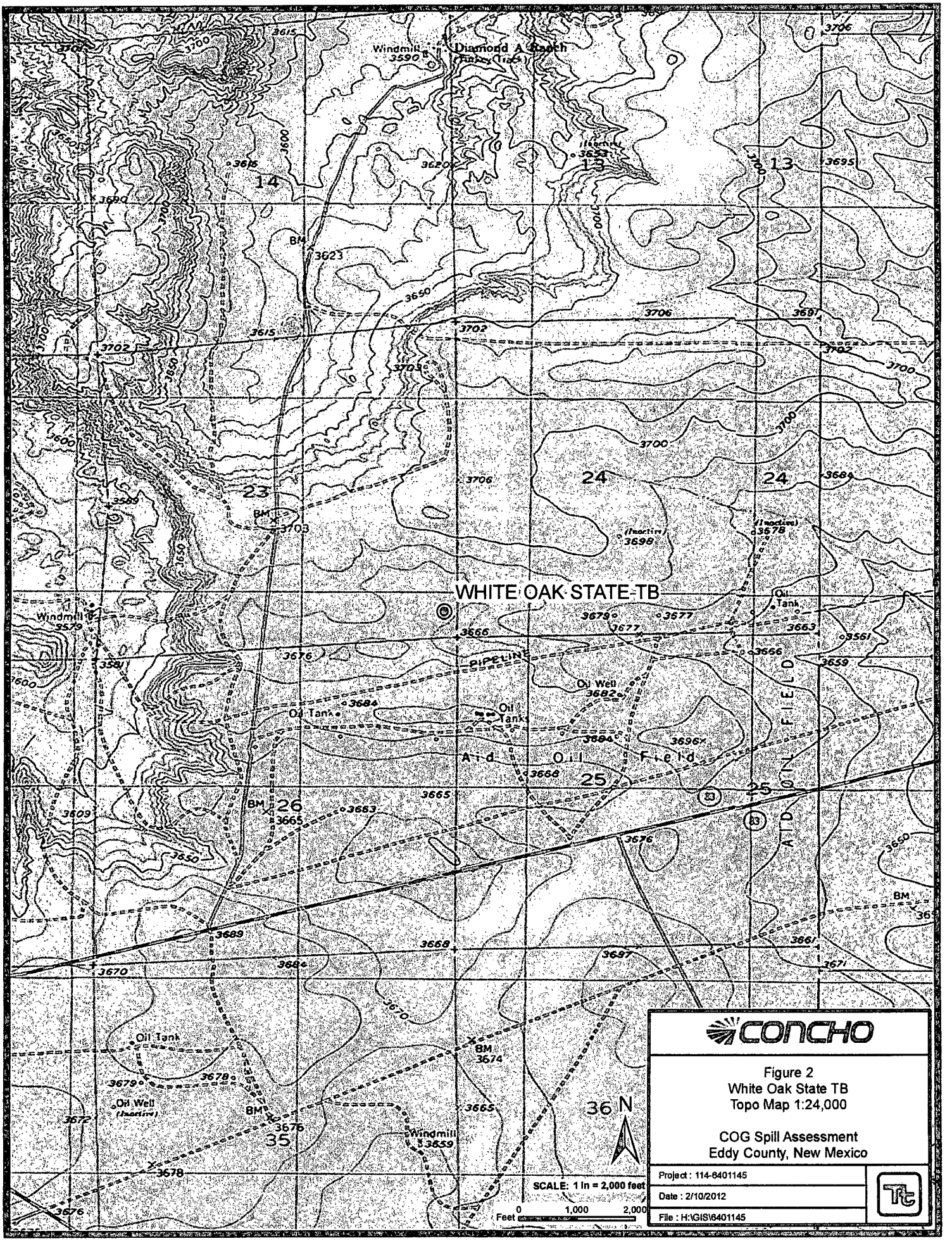
Ike Tavarez, PG
Senior Project Manager

cc: Pat Ellis – COG

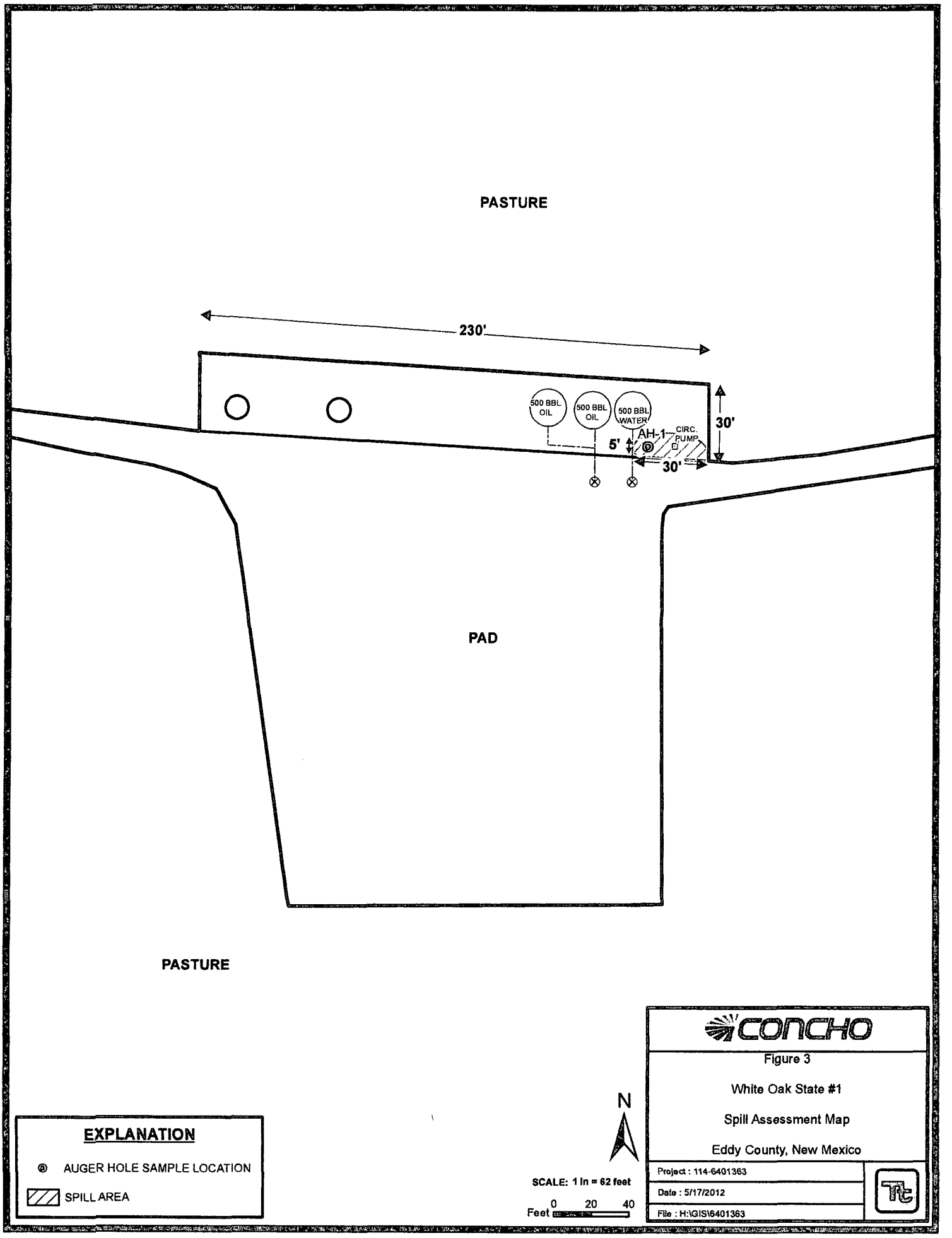
Figures

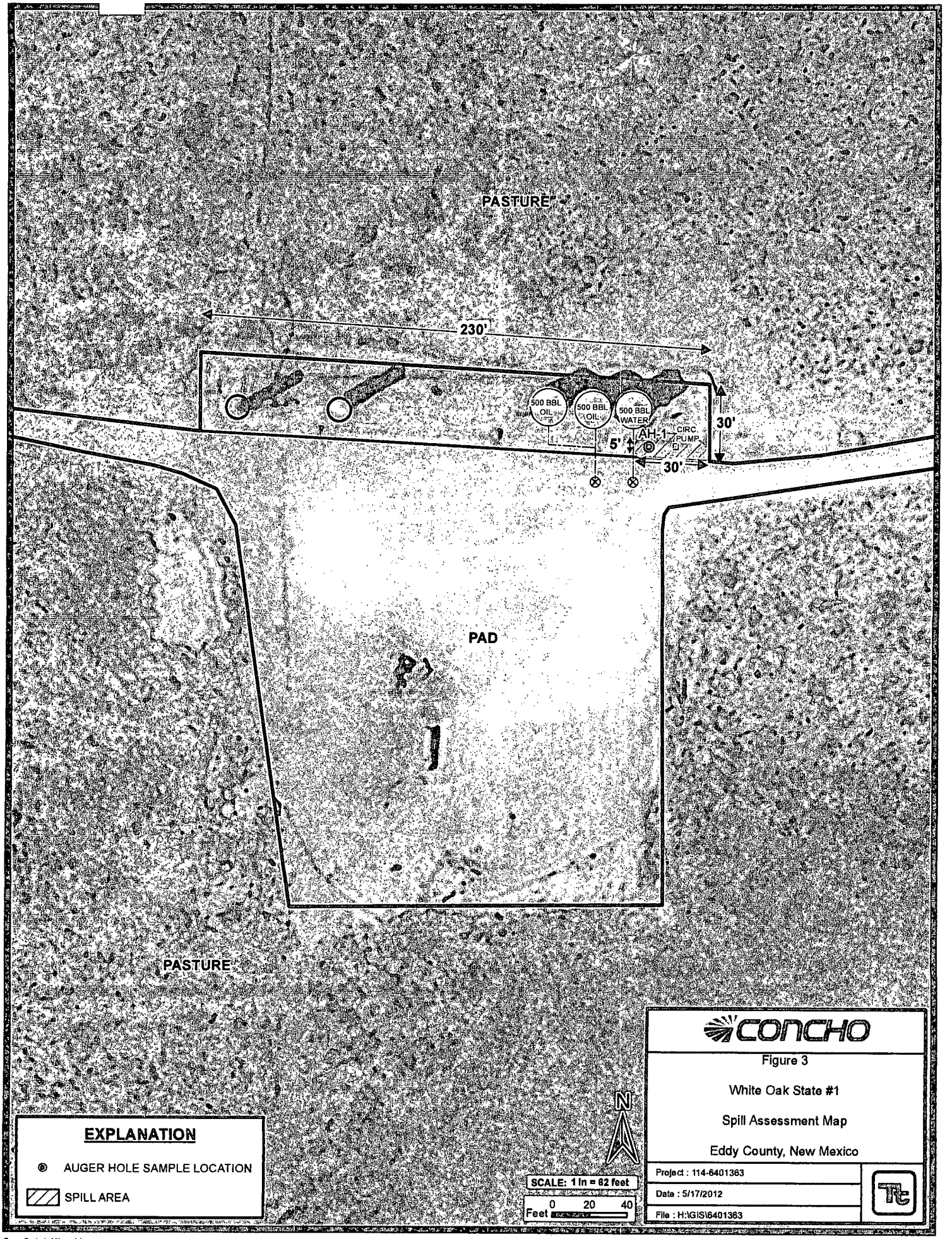


Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo


PASTURE
230'
500 BBL OIL
500 BBL OIL
500 BBL WATER
AH-1
CIRC. PUMP
5'
30'
30'
PAD
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATION
SPILL AREA
N
SCALE: 1 In = 62 feet
Feet 0 20 40
CONCHO
Figure 3
White Oak State #1
Spill Assessment Map
Eddy County, New Mexico
Project : 114-6401363
Date : 5/17/2012
File : H:\GIS\6401363
Drawn By: Isabel Marmolejo



CONCHO

Figure 3

White Oak State #1

Spill Assessment Map

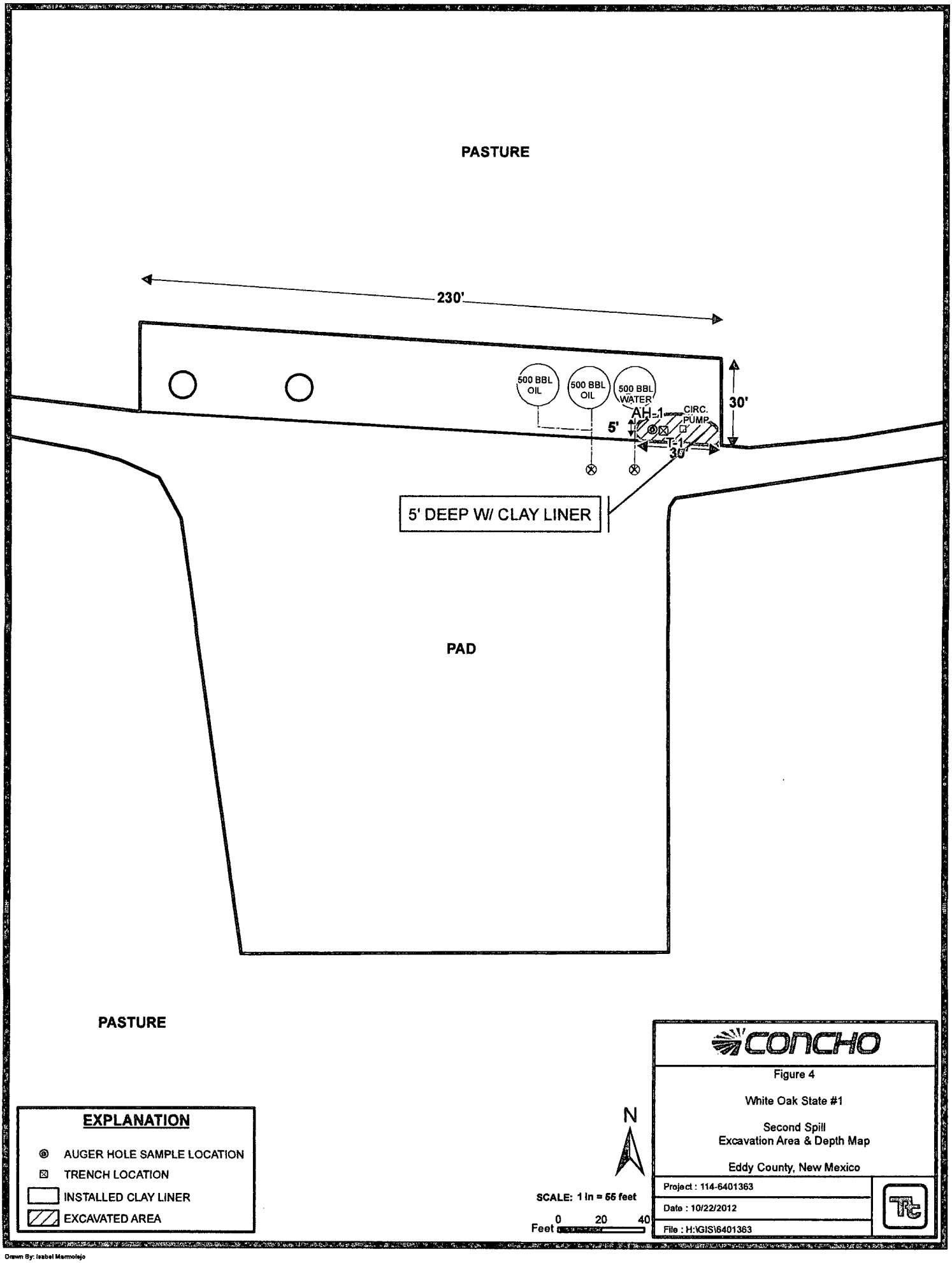
Eddy County, New Mexico

Project : 114-6401363

Date : 5/17/2012

File : H:\GIS\6401363

Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
White Oak State #1
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	4/18/2012	3-3.5		X	5,490	1,110	6,600	3.92	45.9	50.3	93.2	193	7,780
	"	4-4.5		X	5,920	2,050	7,970	6.43	65.2	71.2	127	270	2,690
	"	5-5.5		X	<2.00	<50.0	<50.0	<0.200	<0.200	<0.200	<0.200	<0.200	4,870
	"	6-6.5	X		<2.00	<50.0	<50.0	<0.200	<0.200	<0.200	<0.200	<0.200	3,250
Trench-1	5/17/2012	6	X		-	-	-	-	-	-	-	-	24.9
	"	8	X		-	-	-	-	-	-	-	-	<20.0
	"	10	X		-	-	-	-	-	-	-	-	<20.0
Bottom Hole	5/17/2012	5	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-

(--) Not Analyzed

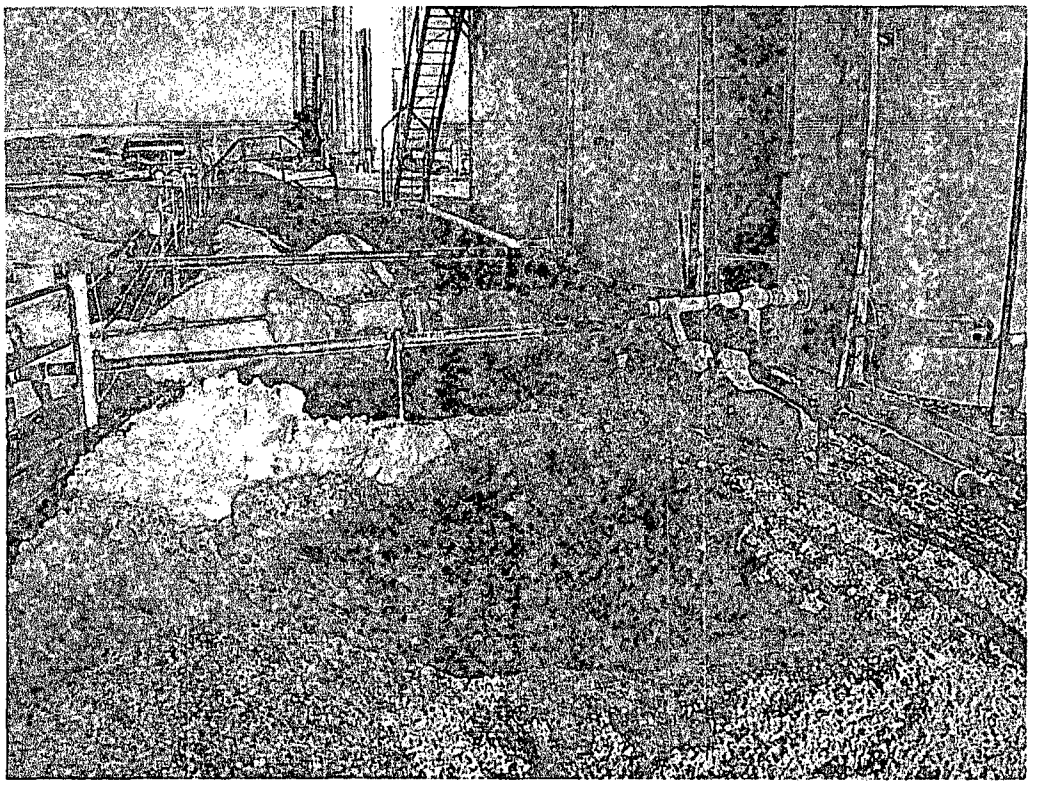
Excavated Depths

Clay Liner

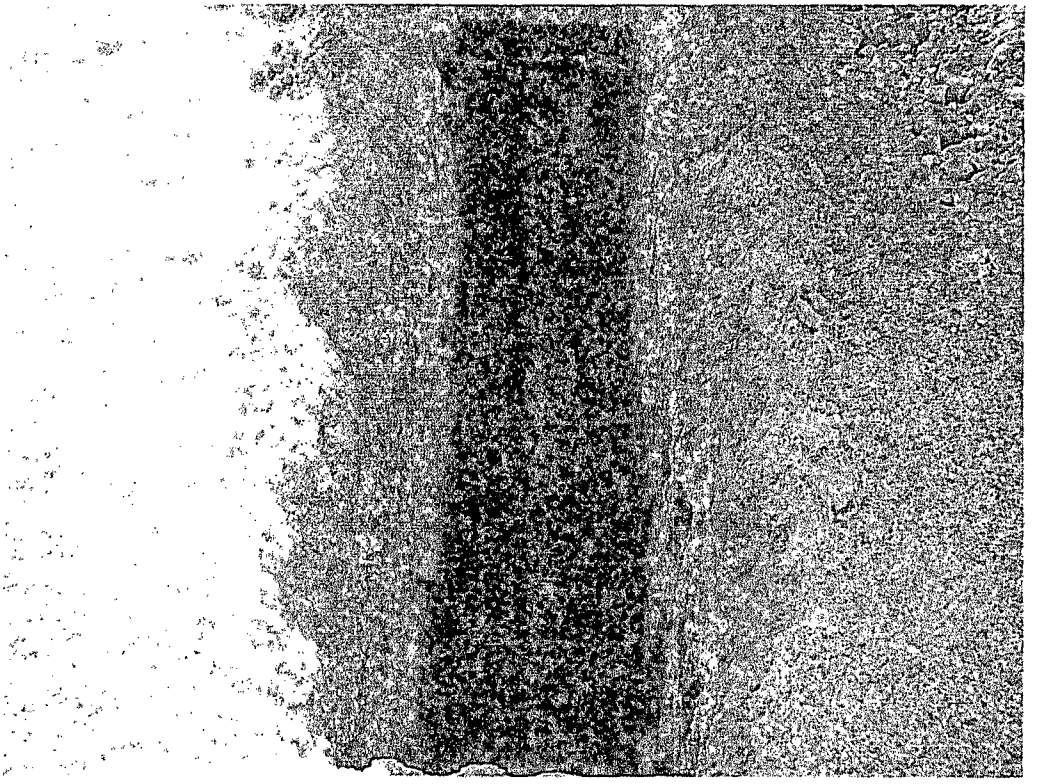
Photos

COG Operating LLC
White Oak State Tank Battery
Eddy County, New Mexico

TETRA TECH



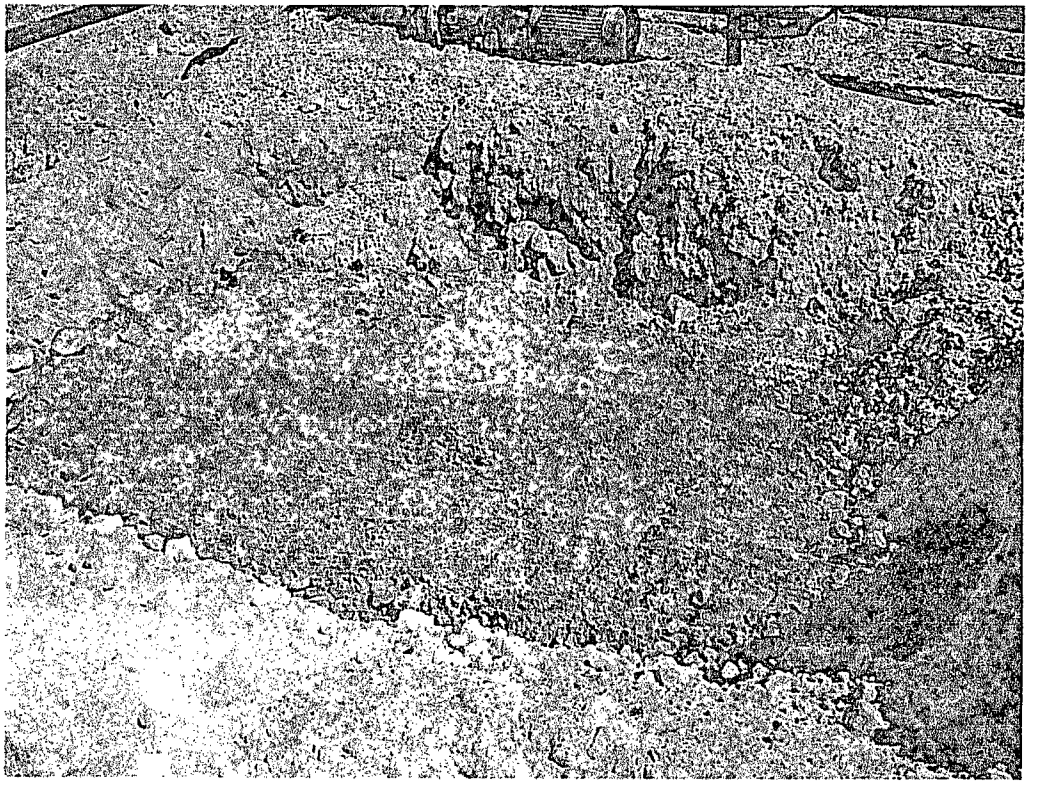
View West – Area of AH-1



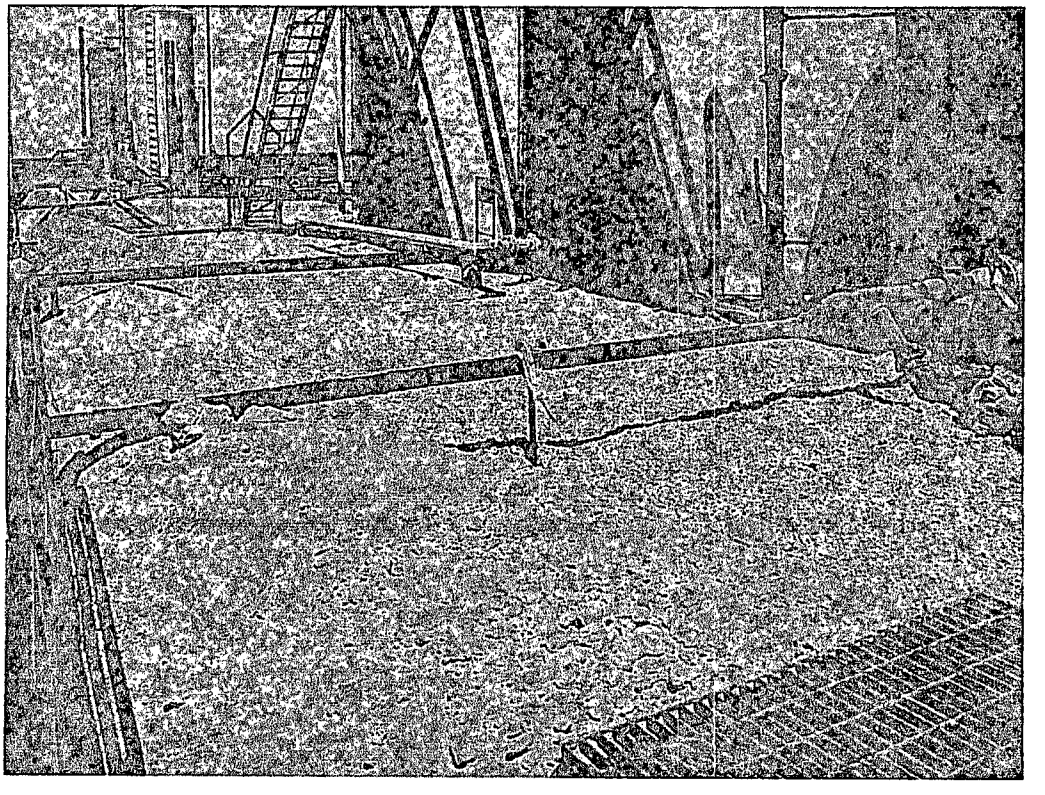
View of T-1

COG Operating LLC
White Oak State Tank Battery
Eddy County, New Mexico

TETRA TECH



Installation of clay material



View West - 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

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	**White Oak State #1**	Facility Type	**Tank Battery**

Surface Owner: State	Mineral Owner	Lease No. (API#) 30-015-29749

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	23	17S	28E					Eddy

Latitude N 32.81503° **Longitude** W 104.13927°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 20 bbls	Volume Recovered 18 bbls
Source of Release: Water Tank	Date and Hour of Occurrence 03/25/2012	Date and Hour of Discovery 03/25/2012 4:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

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Describe Cause of Problem and Remedial Action Taken.*

Water tank ran over due to loss of power at the facility. CVE returned power.

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 to R360 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 (Agent for COG)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 10-15-12 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
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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	White Oak State #1	Facility Type	Tank Battery

Surface Owner State	Mineral Owner	Lease No. (API#) 30-015-29749

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	23	17S	28E					Eddy

Latitude 32.8150 Longitude 104.1392

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 20bbls	Volume Recovered 18bbls
Source of Release Water tank	Date and Hour of Occurrence 03/25/2012	Date and Hour of Discovery 03/25/2012 4:00 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.*

Water tank ran over due to loss of power at the facility. CVE returned power.

Describe Area Affected and Cleanup Action Taken.*

Initially 20bbls were released from the water tank and we were able to recover 18bbls with a vacuum truck. The fluids released inside the dike area and measured and area of roughly 5' x 30'. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will submit a work plan 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: 04/05/2012 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

Appendix B

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

---

16 South 27 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 70	26	25
31	32	33	34	35	36

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 61	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 29 East

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

17 South 27 East

6	5 30	4	3	2	1
7	8	9	10	11 54 50	12
18 86	17 283	16 194	15	14	13
19	20	21	22	23 40	24
30	29	28	27	26	25
31	32 120	33	34	35	36

Artesia

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 SITE	24
30	29	28	27	26	25
31	32	33	34 53	35	36

17 South 29 East

6	5	4	3	2	
7	8	9	10	11	
18	17	16	15	14	
19	20	21	22	80	23
30	29 210 208'	28	27		26
31	32	33	34		35 153

18 South 27 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
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Field water level
- New Mexico Water and Infrastructure Data System
- SITE

Appendix C

Summary Report

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

Report Date: May 4, 2012

Work Order: 12042422

Project Location: Eddy Co., NM
Project Name: COG/White Oak State #1
Project Number: 114-6401363

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
295157	AH-1 3-3.5'	soil	2012-04-18	00:00	2012-04-24
295158	AH-1 4-4.5'	soil	2012-04-18	00:00	2012-04-24
295159	AH-1 5-5.5'	soil	2012-04-18	00:00	2012-04-24
295160	AH-1 6-6.5'	soil	2012-04-18	00:00	2012-04-24

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
295157 - AH-1 3-3.5'	**3.92**	**45.9**	**50.3**	**93.2**	**1110** Q_S	**5490** Q_R,Q_S
295158 - AH-1 4-4.5'	**6.43**	**65.2**	**71.2**	**127**	**2050**	**5920** Q_R,Q_S
295159 - AH-1 5-5.5'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00 Q_R,Q_S
295160 - AH-1 6-6.5'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00 Q_R,Q_S

Sample: 295157 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**7780**	mg/Kg	4

Sample: 295158 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**2690**	mg/Kg	4

Sample: 295159 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**4870**	mg/Kg	4

Sample: 295160 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**3250**	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: May 4, 2012

Work Order: 12042422

Project Location: Eddy Co., NM
Project Name: COG/White Oak State #1
Project Number: 114-6401363

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
295157	AH-1 3-3.5'	soil	2012-04-18	00:00	2012-04-24
295158	AH-1 4-4.5'	soil	2012-04-18	00:00	2012-04-24
295159	AH-1 5-5.5'	soil	2012-04-18	00:00	2012-04-24
295160	AH-1 6-6.5'	soil	2012-04-18	00:00	2012-04-24

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

This report consists of a total of 27 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Report Contents

Case Narrative

Samples for project COG/White Oak State #1 were received by TraceAnalysis, Inc. on 2012-04-24 and assigned to work order 12042422. Samples for work order 12042422 were received intact at a temperature of 1.4 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	76879	2012-04-25 at 10:55	90611	2012-04-25 at 11:11
BTEX	S 8021B	76942	2012-04-27 at 09:13	90687	2012-04-27 at 09:28
Chloride (Titration)	SM 4500-Cl B	77061	2012-05-01 at 08:50	90866	2012-05-03 at 15:13
TPH DRO - NEW	S 8015 D	76815	2012-04-24 at 13:11	90553	2012-04-24 at 14:58
TPH DRO - NEW	S 8015 D	76854	2012-04-25 at 13:34	90586	2012-04-25 at 13:36
TPH DRO - NEW	S 8015 D	76960	2012-04-30 at 14:38	90712	2012-04-30 at 14:40
TPH GRO	S 8015 D	76879	2012-04-25 at 10:55	90612	2012-04-25 at 11:39
TPH GRO	S 8015 D	76942	2012-04-27 at 09:13	90689	2012-04-30 at 09:56

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 12042422 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: 295157 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90611	Date Analyzed:	2012-04-25	Analyzed By:	tc
Prep Batch:	76879	Sample Preparation:	2012-04-25	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**3.92**	mg/Kg	50	0.0200
Toluene		1	**45.9**	mg/Kg	50	0.0200
Ethylbenzene		1	**50.3**	mg/Kg	50	0.0200
Xylene		1	**93.2**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			44.1	mg/Kg	50	50.0	88	75 - 135.4
4-Bromofluorobenzene (4-BFB)			58.8	mg/Kg	50	50.0	118	63.6 - 158.9

Sample: 295157 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90866	Date Analyzed:	2012-05-03	Analyzed By:	AR
Prep Batch:	77061	Sample Preparation:	2012-05-01	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7780**	mg/Kg	10	4.00

Sample: 295157 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90553	Date Analyzed:	2012-04-24	Analyzed By:	DA
Prep Batch:	76815	Sample Preparation:	2012-04-24	Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1110**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		186	mg/Kg	5	100	186	49.3 - 157.5

Sample: 295157 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90612	Date Analyzed:	2012-04-25	Analyzed By:	tc
Prep Batch:	76879	Sample Preparation:	2012-04-25	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,Qs	1	**5490**	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			47.1	mg/Kg	50	50.0	94	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			61.9	mg/Kg	50	50.0	124	45.1 - 162.2

Sample: 295158 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90611	Date Analyzed:	2012-04-25	Analyzed By:	tc
Prep Batch:	76879	Sample Preparation:	2012-04-25	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**6.43**	mg/Kg	50	0.0200
Toluene		1	**65.2**	mg/Kg	50	0.0200
Ethylbenzene		1	**71.2**	mg/Kg	50	0.0200
Xylene		1	**127**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			51.0	mg/Kg	50	50.0	102	75 - 135.4
4-Bromofluorobenzene (4-BFB)			61.7	mg/Kg	50	50.0	123	63.6 - 158.9

Sample: 295158 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90866	Date Analyzed:	2012-05-03	Analyzed By:	AR
Prep Batch:	77061	Sample Preparation:	2012-05-01	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2690**	mg/Kg	10	4.00

Sample: 295158 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90586	Date Analyzed:	2012-04-25	Analyzed By:	DA
Prep Batch:	76854	Sample Preparation:	2012-04-25	Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**2050**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		248	mg/Kg	5	100	248	49.3 - 157.5

Sample: 295158 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90612	Date Analyzed:	2012-04-25	Analyzed By:	tc
Prep Batch:	76879	Sample Preparation:	2012-04-25	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,Qs	1	**5920**	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			52.3	mg/Kg	50	50.0	105	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			68.7	mg/Kg	50	50.0	137	45.1 - 162.2

Sample: 295159 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90687	Date Analyzed:	2012-04-27	Analyzed By:	tc
Prep Batch:	76942	Sample Preparation:	2012-04-27	Prepared By:	tc

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)			2.00	mg/Kg	1	2.00	100	75 - 135.4
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	63.6 - 158.9

Sample: 295159 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90866	Date Analyzed:	2012-05-03	Analyzed By:	AR
Prep Batch:	77061	Sample Preparation:	2012-05-01	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4870**	mg/Kg	10	4.00

Sample: 295159 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90712	Date Analyzed:	2012-04-30	Analyzed By:	DA
Prep Batch:	76960	Sample Preparation:	2012-04-30	Prepared By:	DA

Parameter	Flag	Cert	Result	RL 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			131	mg/Kg	1	100	131	49.3 - 157.5

Sample: 295159 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90689	Date Analyzed:	2012-04-30	Analyzed By:	tc
Prep Batch:	76942	Sample Preparation:	2012-04-27	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,Qs,U	1	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	1	2.00	93	45.1 - 162.2

Sample: 295160 - AH-1 6-6.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90687	Date Analyzed:	2012-04-27	Analyzed By:	tc
Prep Batch:	76942	Sample Preparation:	2012-04-27	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.17	mg/Kg	1	2.00	108	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.11	mg/Kg	1	2.00	106	63.6 - 158.9

Sample: 295160 - AH-1 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90866	Date Analyzed:	2012-05-03	Analyzed By:	AR
Prep Batch:	77061	Sample Preparation:	2012-05-01	Prepared By:	AR

continued ...

sample 295160 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3250**	mg/Kg	10	4.00

Sample: 295160 - AH-1 6-6.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90712	Date Analyzed:	2012-04-30	Analyzed By:	DA
Prep Batch:	76960	Sample Preparation:	2012-04-30	Prepared By:	DA

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			134	mg/Kg	1	100	134	49.3 - 157.5

Sample: 295160 - AH-1 6-6.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90689	Date Analyzed:	2012-04-30	Analyzed By:	tc
Prep Batch:	76942	Sample Preparation:	2012-04-27	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.30	mg/Kg	1	2.00	115	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.07	mg/Kg	1	2.00	104	45.1 - 162.2

Method Blanks

Method Blank (1) QC Batch: 90553

QC Batch: 90553 | Date Analyzed: 2012-04-24 | Analyzed By: DA
Prep Batch: 76815 | QC Preparation: 2012-04-24 | Prepared By: DA

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			118	mg/Kg	1	100	118	52 - 140.8

Method Blank (1) QC Batch: 90586

QC Batch: 90586 | Date Analyzed: 2012-04-25 | Analyzed By: DA
Prep Batch: 76854 | QC Preparation: 2012-04-25 | Prepared By: DA

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			110	mg/Kg	1	100	110	52 - 140.8

Method Blank (1) QC Batch: 90611

QC Batch: 90611 | Date Analyzed: 2012-04-25 | Analyzed By: tc
Prep Batch: 76879 | QC Preparation: 2012-04-25 | Prepared By: tc

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)			1.61	mg/Kg	1	2.00	80	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.58	mg/Kg	1	2.00	79	55.9 - 112.4

Method Blank (1) QC Batch: 90612

QC Batch: 90612 | Date Analyzed: 2012-04-25 | Analyzed By: tc
Prep Batch: 76879 | QC Preparation: 2012-04-25 | Prepared By: tc

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)			1.70	mg/Kg	1	2.00	85	78.6 - 121
4-Bromofluorobenzene (4-BFB)			1.52	mg/Kg	1	2.00	76	55 - 120

Method Blank (1) QC Batch: 90687

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

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)			1.83	mg/Kg	1	2.00	92	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	55.9 - 112.4

Method Blank (1) QC Batch: 90689

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

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)			1.96	mg/Kg	1	2.00	98	78.6 - 121
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	55 - 120

Method Blank (1) QC Batch: 90712

QC Batch: 90712 | Date Analyzed: 2012-04-30 | Analyzed By: DA
Prep Batch: 76960 | QC Preparation: 2012-04-30 | Prepared By: DA

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			109	mg/Kg	1	100	109	52 - 140.8

Method Blank (1) QC Batch: 90866

QC Batch: 90866 | Date Analyzed: 2012-05-03 | Analyzed By: AR
Prep Batch: 77061 | QC Preparation: 2012-05-01 | 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: 90553 | Date Analyzed: 2012-04-24 | Analyzed By: DA
Prep Batch: 76815 | QC Preparation: 2012-04-24 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	242	mg/Kg	1	250	<14.5	97	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	262	mg/Kg	1	250	<14.5	105	62 - 128.3	8	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	117	125	mg/Kg	1	100	117	125	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 90586 | Date Analyzed: 2012-04-25 | Analyzed By: DA
Prep Batch: 76854 | QC Preparation: 2012-04-25 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	261	mg/Kg	1	250	<14.5	104	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	271	mg/Kg	1	250	<14.5	108	62 - 128.3	4	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	110	115	mg/Kg	1	100	110	115	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 90611 | Date Analyzed: 2012-04-25 | Analyzed By: tc
Prep Batch: 76879 | QC Preparation: 2012-04-25 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.06	mg/Kg	1	2.00	<0.00470	103	86.5 - 124.9
Toluene		1	2.04	mg/Kg	1	2.00	<0.00980	102	84.7 - 122.5
Ethylbenzene		1	1.99	mg/Kg	1	2.00	<0.00500	100	79.4 - 118.9
Xylene		1	5.95	mg/Kg	1	6.00	<0.0170	99	79.5 - 118.9

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
Benzene		1	2.14	mg/Kg	1	2.00	<0.00470	107	86.5 - 124.9	4	20
Toluene		1	2.10	mg/Kg	1	2.00	<0.00980	105	84.7 - 122.5	3	20
Ethylbenzene		1	2.03	mg/Kg	1	2.00	<0.00500	102	79.4 - 118.9	2	20
Xylene		1	6.06	mg/Kg	1	6.00	<0.0170	101	79.5 - 118.9	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)	1.61	1.88	mg/Kg	1	2.00	80	94	73.9 - 127
4-Bromofluorobenzene (4-BFB)	1.65	1.89	mg/Kg	1	2.00	82	94	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 90612 | Date Analyzed: 2012-04-25 | Analyzed By: tc
Prep Batch: 76879 | QC Preparation: 2012-04-25 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.1	mg/Kg	1	20.0	<1.22	86	68.3 - 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	17.3	mg/Kg	1	20.0	<1.22	86	68.3 - 105.7	1	20

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

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control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.91	1.97	mg/Kg	1	2.00	96	98	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.78	1.83	mg/Kg	1	2.00	89	92	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.09	mg/Kg	1	2.00	<0.00470	104	86.5 - 124.9
Toluene		1	2.04	mg/Kg	1	2.00	<0.00980	102	84.7 - 122.5
Ethylbenzene		1	2.00	mg/Kg	1	2.00	<0.00500	100	79.4 - 118.9
Xylene		1	5.94	mg/Kg	1	6.00	<0.0170	99	79.5 - 118.9

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
Benzene		1	2.11	mg/Kg	1	2.00	<0.00470	106	86.5 - 124.9	1	20
Toluene		1	2.06	mg/Kg	1	2.00	<0.00980	103	84.7 - 122.5	1	20
Ethylbenzene		1	2.02	mg/Kg	1	2.00	<0.00500	101	79.4 - 118.9	1	20
Xylene		1	6.02	mg/Kg	1	6.00	<0.0170	100	79.5 - 118.9	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
Trifluorotoluene (TFT)	1.74	1.76	mg/Kg	1	2.00	87	88	73.9 - 127
4-Bromofluorobenzene (4-BFB)	1.74	1.81	mg/Kg	1	2.00	87	90	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.4	mg/Kg	1	20.0	<1.22	87	68.3 - 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	15.2	mg/Kg	1	20.0	<1.22	76	68.3 - 105.7	14	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)	1.80	1.75	mg/Kg	1	2.00	90	88	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.69	1.64	mg/Kg	1	2.00	84	82	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 90712 | Date Analyzed: 2012-04-30 | Analyzed By: DA
Prep Batch: 76960 | QC Preparation: 2012-04-30 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	278	mg/Kg	1	250	<14.5	111	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	280	mg/Kg	1	250	<14.5	112	62 - 128.3	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	122	118	mg/Kg	1	100	122	118	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 90866 | Date Analyzed: 2012-05-03 | Analyzed By: AR
Prep Batch: 77061 | QC Preparation: 2012-05-01 | Prepared By: AR

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2390	mg/Kg	1	2500	<3.85	96	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			2490	mg/Kg	1	2500	<3.85	100	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 295039

QC Batch: 90553 | Date Analyzed: 2012-04-24 | Analyzed By: DA
Prep Batch: 76815 | QC Preparation: 2012-04-24 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	2340	mg/Kg	5	250	2210	52	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	Qs	Qs 1	2700	mg/Kg	5	250	2210	196	45.5 - 127	14	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	378	411	mg/Kg	5	100	378	411	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 294998

QC Batch: 90586 | Date Analyzed: 2012-04-25 | Analyzed By: DA
Prep Batch: 76854 | QC Preparation: 2012-04-25 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	274	mg/Kg	1	250	120	62	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	288	mg/Kg	1	250	120	67	45.5 - 127	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
n-Tricosane	126	121	mg/Kg	1	100	126	121	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 295157

QC Batch: 90611 | Date Analyzed: 2012-04-25 | Analyzed By: tc
Prep Batch: 76879 | QC Preparation: 2012-04-25 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	56.8	mg/Kg	50	50.0	3.918	106	69.3 - 159.2
Toluene		1	108	mg/Kg	50	50.0	45.884	124	68.7 - 157
Ethylbenzene		1	110	mg/Kg	50	50.0	50.3205	119	71.6 - 158.2
Xylene		1	263	mg/Kg	50	150	93.1734	113	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	56.9	mg/Kg	50	50.0	3.918	106	69.3 - 159.2	0	20
Toluene		1	101	mg/Kg	50	50.0	45.884	110	68.7 - 157	7	20
Ethylbenzene		1	102	mg/Kg	50	50.0	50.3205	103	71.6 - 158.2	8	20
Xylene		1	247	mg/Kg	50	150	93.1734	102	70.8 - 159.8	6	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	40.9	44.3	mg/Kg	50	50	82	89	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	53.2	55.3	mg/Kg	50	50	106	111	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 295158

QC Batch: 90612 | Date Analyzed: 2012-04-25 | Analyzed By: tc
Prep Batch: 76879 | QC Preparation: 2012-04-25 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	6340	mg/Kg	50	500	5925.95	83	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	Qr,Qs	Qr,Qs 1	7790	mg/Kg	50	500	5925.95	373	28.2 - 157.2	20	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			51.2	51.0	mg/Kg	50	50	102	102	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	66.2	65.4	mg/Kg	50	50	132	131	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 295646

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.04	mg/Kg	1	2.00	<0.00470	102	69.3 - 159.2
Toluene		1	2.05	mg/Kg	1	2.00	<0.00980	102	68.7 - 157
Ethylbenzene		1	2.05	mg/Kg	1	2.00	<0.00500	102	71.6 - 158.2
Xylene		1	6.17	mg/Kg	1	6.00	<0.0170	103	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	1.95	mg/Kg	1	2.00	<0.00470	98	69.3 - 159.2	4	20
Toluene		1	1.96	mg/Kg	1	2.00	<0.00980	98	68.7 - 157	4	20
Ethylbenzene		1	2.01	mg/Kg	1	2.00	<0.00500	100	71.6 - 158.2	2	20
Xylene		1	6.03	mg/Kg	1	6.00	<0.0170	100	70.8 - 159.8	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)	Qsr	Qsr	1.30	1.95	mg/Kg	1	2	65	98	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.27	1.86	mg/Kg	1	2	64	93	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 295426

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.5	mg/Kg	1	20.0	<1.22	82	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	Q_{F1},Q_{S1}	Q_{F1},Q_{S1}	1	2.24	mg/Kg	1	20.0	<1.22	11	28.2 - 157.2	152	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)	2.21	2.00	mg/Kg	1	2	110	100	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	1.95	1.79	mg/Kg	1	2	98	90	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 295160

QC Batch: 90712 | Date Analyzed: 2012-04-30 | Analyzed By: DA
Prep Batch: 76960 | QC Preparation: 2012-04-30 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	323	mg/Kg	1	250	28.2	118	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	324	mg/Kg	1	250	28.2	118	45.5 - 127	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	130	130	mg/Kg	1	100	130	130	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 295167

QC Batch: 90866 | Date Analyzed: 2012-05-03 | Analyzed By: AR
Prep Batch: 77061 | QC Preparation: 2012-05-01 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2730	mg/Kg	5	2500	280	98	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			2810	mg/Kg	5	2500	280	101	79.4 - 120.6	3	20

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

Calibration Standards

Standard (CCV-3)

QC Batch: 90553 | Date Analyzed: 2012-04-24 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	253	101	80 - 120	2012-04-24

Standard (CCV-4)

QC Batch: 90553 | Date Analyzed: 2012-04-24 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	257	103	80 - 120	2012-04-24

Standard (CCV-2)

QC Batch: 90586 | Date Analyzed: 2012-04-25 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	272	109	80 - 120	2012-04-25

Standard (CCV-3)

QC Batch: 90586 | Date Analyzed: 2012-04-25 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	250	100	80 - 120	2012-04-25

Standard (CCV-1)

QC Batch: 90611 | Date Analyzed: 2012-04-25 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0925	92	80 - 120	2012-04-25
Toluene		1	mg/kg	0.100	0.0912	91	80 - 120	2012-04-25
Ethylbenzene		1	mg/kg	0.100	0.0883	88	80 - 120	2012-04-25
Xylene		1	mg/kg	0.300	0.266	89	80 - 120	2012-04-25

Standard (CCV-2)

QC Batch: 90611 | Date Analyzed: 2012-04-25 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.104	104	80 - 120	2012-04-25
Toluene		1	mg/kg	0.100	0.105	105	80 - 120	2012-04-25
Ethylbenzene		1	mg/kg	0.100	0.0991	99	80 - 120	2012-04-25
Xylene		1	mg/kg	0.300	0.295	98	80 - 120	2012-04-25

Standard (CCV-1)

QC Batch: 90612 | Date Analyzed: 2012-04-25 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.07	107	80 - 120	2012-04-25

Standard (CCV-2)

QC Batch: 90612 | Date Analyzed: 2012-04-25 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.18	118	80 - 120	2012-04-25

Standard (CCV-1)

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.108	108	80 - 120	2012-04-27
Toluene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-27
Ethylbenzene		1	mg/kg	0.100	0.103	103	80 - 120	2012-04-27
Xylene		1	mg/kg	0.300	0.309	103	80 - 120	2012-04-27

Standard (CCV-2)

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.110	110	80 - 120	2012-04-27
Toluene		1	mg/kg	0.100	0.107	107	80 - 120	2012-04-27
Ethylbenzene		1	mg/kg	0.100	0.102	102	80 - 120	2012-04-27
Xylene		1	mg/kg	0.300	0.309	103	80 - 120	2012-04-27

Standard (CCV-1)

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.05	105	80 - 120	2012-04-30

Standard (CCV-2)

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.01	101	80 - 120	2012-04-30

Standard (CCV-2)

QC Batch: 90712 | Date Analyzed: 2012-04-30 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	271	108	80 - 120	2012-04-30

Standard (CCV-3)

QC Batch: 90712 | Date Analyzed: 2012-04-30 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	280	112	80 - 120	2012-04-30

Standard (CCV-1)

QC Batch: 90866 | Date Analyzed: 2012-05-03 | 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	2012-05-03

Standard (CCV-2)

QC Batch: 90866 | Date Analyzed: 2012-05-03 | 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	2012-05-03

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.

1204242

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: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401363

PROJECT NAME: White Oak State #1 Eddy Co NM

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. 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	Chlorides
275157	4/18		S		X	AH-1 3-3.5'	1				X		X	X															X
158	↓		↓		↓	4-4.5'	↓				↓																		X
159						5-5.5'																							X
160						6-6.5'																							X

RELINQUISHED BY: (Signature) — Date: 4/24/12 Time: 10:30am — RECEIVED BY: (Signature) — Date: 4-24-12 Time: 10:30

SAMPLED BY: (Print & Initial) TF IRS — Date: 4-18-12 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: 1.4 intact

REMARKS: Run deeper depths if TPH exceeds 1,000 mg/kg

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

Run deeper depths if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg

Summary Report

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

Report Date: May 29, 2012

Work Order: 12052116

Project Location: Eddy Co., NM
Project Name: COG/White Oak State #1
Project Number: 114-6401363

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
298016	Trench-1 6' (AH-1 Second Spill)	soil	2012-05-17	00:00	2012-05-21
298017	Trench-1 8' (AH-1 Second Spill)	soil	2012-05-17	00:00	2012-05-21
298018	Trench-1 10' (AH-1 Second Spill)	soil	2012-05-17	00:00	2012-05-21
298019	Bottom Hole 5' (AH-1 Second Spill)	soil	2012-05-17	00:00	2012-05-21
298020	Trench-2 4' (AH-4 First Spill)	soil	2012-05-18	00:00	2012-05-21

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
298019 - Bottom Hole 5' (AH-1 Second Spill)	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
298020 - Trench-2 4' (AH-4 First Spill)	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 298016 - Trench-1 6' (AH-1 Second Spill)

Param	Flag	Result	Units	RL
Chloride		**24.9**	mg/Kg	4

Sample: 298017 - Trench-1 8' (AH-1 Second Spill)

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

Sample: 298018 - Trench-1 10' (AH-1 Second Spill)

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

Sample: 298020 - Trench-2 4' (AH-4 First Spill)

Param	Flag	Result	Units	RL
Chloride		**781**	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: May 29, 2012

Work Order: 12052116

Project Location: Eddy Co., NM
Project Name: COG/White Oak State #1
Project Number: 114-6401363

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
298016	Trench-1 6' (AH-1 Second Spill)	soil	2012-05-17	00:00	2012-05-21
298017	Trench-1 8' (AH-1 Second Spill)	soil	2012-05-17	00:00	2012-05-21
298018	Trench-1 10' (AH-1 Second Spill)	soil	2012-05-17	00:00	2012-05-21
298019	Bottom Hole 5' (AH-1 Second Spill)	soil	2012-05-17	00:00	2012-05-21
298020	Trench-2 4' (AH-4 First Spill)	soil	2012-05-18	00:00	2012-05-21

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

Blair Leftwich

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

Report Contents

Case Narrative

Samples for project COG/White Oak State #1 were received by TraceAnalysis, Inc. on 2012-05-21 and assigned to work order 12052116. Samples for work order 12052116 were received intact at a temperature of 3.8 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	77584	2012-05-22 at 08:20	91448	2012-05-22 at 09:19
Chloride (Titration)	SM 4500-Cl B	77707	2012-05-21 at 10:21	91596	2012-05-29 at 10:23
TPH DRO - NEW	S 8015 D	77583	2012-05-22 at 08:20	91445	2012-05-22 at 09:20
TPH GRO	S 8015 D	77584	2012-05-22 at 08:20	91449	2012-05-22 at 09:45

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 12052116 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: 298016 - Trench-1 6' (AH-1 Second Spill)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91596	Date Analyzed:	2012-05-29	Analyzed By:	AR
Prep Batch:	77707	Sample Preparation:	2012-05-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**24.9**	mg/Kg	5	4.00

Sample: 298017 - Trench-1 8' (AH-1 Second Spill)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91596	Date Analyzed:	2012-05-29	Analyzed By:	AR
Prep Batch:	77707	Sample Preparation:	2012-05-21	Prepared By:	AR

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

Sample: 298018 - Trench-1 10' (AH-1 Second Spill)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91596	Date Analyzed:	2012-05-29	Analyzed By:	AR
Prep Batch:	77707	Sample Preparation:	2012-05-21	Prepared By:	AR

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

Sample: 298019 - Bottom Hole 5' (AH-1 Second Spill)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91448	Date Analyzed:	2012-05-22	Analyzed By:	AG
Prep Batch:	77584	Sample Preparation:	2012-05-22	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.29	mg/Kg	1	2.00	114	75 - 135.4
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	63.6 - 158.9

Sample: 298019 - Bottom Hole 5' (AH-1 Second Spill)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91445	Date Analyzed:	2012-05-22	Analyzed By:	AG
Prep Batch:	77583	Sample Preparation:	2012-05-22	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			92.2	mg/Kg	1	100	92	49.3 - 157.5

Sample: 298019 - Bottom Hole 5' (AH-1 Second Spill)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91449	Date Analyzed:	2012-05-22	Analyzed By:	AG
Prep Batch:	77584	Sample Preparation:	2012-05-22	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.12	mg/Kg	1	2.00	106	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	45.1 - 162.2

Sample: 298020 - Trench-2 4' (AH-4 First Spill)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91448	Date Analyzed:	2012-05-22	Analyzed By:	AG
Prep Batch:	77584	Sample Preparation:	2012-05-22	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	75 - 135.4
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	63.6 - 158.9

Sample: 298020 - Trench-2 4' (AH-4 First Spill)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91596	Date Analyzed:	2012-05-29	Analyzed By:	AR
Prep Batch:	77707	Sample Preparation:	2012-05-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**781**	mg/Kg	5	4.00

Sample: 298020 - Trench-2 4' (AH-4 First Spill)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91445	Date Analyzed:	2012-05-22	Analyzed By:	AG
Prep Batch:	77583	Sample Preparation:	2012-05-22	Prepared By:	AG

Parameter	Flag	Cert	Result	RL	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			107	mg/Kg	1	100	107	49.3 - 157.5

Sample: 298020 - Trench-2 4' (AH-4 First Spill)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91449	Date Analyzed:	2012-05-22	Analyzed By:	AG
Prep Batch:	77584	Sample Preparation:	2012-05-22	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	1	2.00	85	45.1 - 162.2

Method Blanks

Method Blank (1) QC Batch: 91445

QC Batch: 91445 | Date Analyzed: 2012-05-22 | Analyzed By: AG
Prep Batch: 77583 | QC Preparation: 2012-05-22 | 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			106	mg/Kg	1	100	106	52 - 140.8

Method Blank (1) QC Batch: 91448

QC Batch: 91448 | Date Analyzed: 2012-05-22 | Analyzed By: AG
Prep Batch: 77584 | QC Preparation: 2012-05-22 | 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)			2.25	mg/Kg	1	2.00	112	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.65	mg/Kg	1	2.00	82	51.9 - 112.4

Method Blank (1) QC Batch: 91449

QC Batch: 91449 | Date Analyzed: 2012-05-22 | Analyzed By: AG
Prep Batch: 77584 | QC Preparation: 2012-05-22 | 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)			2.04	mg/Kg	1	2.00	102	78.6 - 121
4-Bromofluorobenzene (4-BFB)			1.58	mg/Kg	1	2.00	79	51 - 120

Method Blank (1) QC Batch: 91596

QC Batch:	91596	Date Analyzed:	2012-05-29	Analyzed By:	AR
Prep Batch:	77707	QC Preparation:	2012-05-21	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: 91445 | Date Analyzed: 2012-05-22 | Analyzed By: AG
Prep Batch: 77583 | QC Preparation: 2012-05-22 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	232	mg/Kg	1	250	<14.5	93	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	249	mg/Kg	1	250	<14.5	100	62 - 128.3	7	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	107	109	mg/Kg	1	100	107	109	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 91448 | Date Analyzed: 2012-05-22 | Analyzed By: AG
Prep Batch: 77584 | QC Preparation: 2012-05-22 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.03	mg/Kg	1	2.00	<0.00470	102	86.5 - 124.9
Toluene		1	2.07	mg/Kg	1	2.00	<0.00980	104	84.7 - 122.5
Ethylbenzene		1	2.08	mg/Kg	1	2.00	<0.00500	104	79.4 - 118.9
Xylene		1	6.26	mg/Kg	1	6.00	<0.0170	104	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	2.06	mg/Kg	1	2.00	<0.00470	103	86.5 - 124.9	2	20
Toluene		1	2.08	mg/Kg	1	2.00	<0.00980	104	84.7 - 122.5	0	20
Ethylbenzene		1	2.14	mg/Kg	1	2.00	<0.00500	107	79.4 - 118.9	3	20
Xylene		1	6.36	mg/Kg	1	6.00	<0.0170	106	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)	2.09	2.05	mg/Kg	1	2.00	104	102	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.09	1.96	mg/Kg	1	2.00	104	98	65.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 91449 | Date Analyzed: 2012-05-22 | Analyzed By: AG
Prep Batch: 77584 | QC Preparation: 2012-05-22 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.6	mg/Kg	1	20.0	<1.22	83	67.3 - 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	18.3	mg/Kg	1	20.0	<1.22	92	67.3 - 105.7	10	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.80	2.01	mg/Kg	1	2.00	90	100	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.64	1.86	mg/Kg	1	2.00	82	93	56.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 91596 | Date Analyzed: 2012-05-29 | Analyzed By: AR
Prep Batch: 77707 | QC Preparation: 2012-05-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	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			2710	mg/Kg	1	2500	<3.85	108	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 298020

QC Batch: 91445 | Date Analyzed: 2012-05-22 | Analyzed By: AG
Prep Batch: 77583 | QC Preparation: 2012-05-22 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	237	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	228	mg/Kg	1	250	<14.5	91	45.5 - 127	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	108	107	mg/Kg	1	100	108	107	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 298020

QC Batch: 91448 | Date Analyzed: 2012-05-22 | Analyzed By: AG
Prep Batch: 77584 | QC Preparation: 2012-05-22 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.43	mg/Kg	1	2.00	<0.00470	122	69.3 - 159.2
Toluene		1	2.58	mg/Kg	1	2.00	<0.00980	129	68.7 - 157
Ethylbenzene		1	2.87	mg/Kg	1	2.00	<0.00500	144	71.6 - 158.2
Xylene		1	8.55	mg/Kg	1	6.00	<0.0170	142	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	2.34	mg/Kg	1	2.00	<0.00470	117	69.3 - 159.2	4	20
Toluene		1	2.48	mg/Kg	1	2.00	<0.00980	124	68.7 - 157	4	20
Ethylbenzene		1	2.77	mg/Kg	1	2.00	<0.00500	138	71.6 - 158.2	4	20
Xylene		1	8.22	mg/Kg	1	6.00	<0.0170	137	70.8 - 159.8	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.27	2.69	mg/Kg	1	2	114	134	71.4 - 133.9

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	2.24	2.56	mg/Kg	1	2	112	128	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 298020

QC Batch: 91449 | Date Analyzed: 2012-05-22 | Analyzed By: AG
Prep Batch: 77584 | QC Preparation: 2012-05-22 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	24.4	mg/Kg	1	20.0	<1.22	122	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	24.2	mg/Kg	1	20.0	<1.22	121	28.2 - 157.2	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
Trifluorotoluene (TFT)	2.22	2.39	mg/Kg	1	2	111	120	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	2.25	2.29	mg/Kg	1	2	112	114	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 298020

QC Batch: 91596 | Date Analyzed: 2012-05-29 | Analyzed By: AR
Prep Batch: 77707 | QC Preparation: 2012-05-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2850	mg/Kg	5	2500	781	83	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			2800	mg/Kg	5	2500	781	81	79.4 - 120.6	2	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: 91445 | Date Analyzed: 2012-05-22 | 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	2012-05-22

Standard (CCV-2)

QC Batch: 91445 | Date Analyzed: 2012-05-22 | 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	259	104	80 - 120	2012-05-22

Standard (CCV-1)

QC Batch: 91448 | Date Analyzed: 2012-05-22 | 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	0.103	103	80 - 120	2012-05-22
Toluene		1	mg/kg	0.100	0.106	106	80 - 120	2012-05-22
Ethylbenzene		1	mg/kg	0.100	0.112	112	80 - 120	2012-05-22
Xylene		1	mg/kg	0.300	0.343	114	80 - 120	2012-05-22

Standard (CCV-2)

QC Batch: 91448 | Date Analyzed: 2012-05-22 | 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	0.0963	96	80 - 120	2012-05-22
Toluene		1	mg/kg	0.100	0.0956	96	80 - 120	2012-05-22
Ethylbenzene		1	mg/kg	0.100	0.0940	94	80 - 120	2012-05-22
Xylene		1	mg/kg	0.300	0.281	94	80 - 120	2012-05-22

Standard (CCV-1)

QC Batch: 91449 Date Analyzed: 2012-05-22 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	1.07	107	80 - 120	2012-05-22

Standard (CCV-2)

QC Batch: 91449 Date Analyzed: 2012-05-22 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	0.946	95	80 - 120	2012-05-22

Standard (CCV-1)

QC Batch: 91596 Date Analyzed: 2012-05-29 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	2012-05-29

Standard (CCV-2)

QC Batch: 91596 Date Analyzed: 2012-05-29 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	2012-05-29

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.

12052116

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.: 114-6401363

PROJECT NAME: COG / White Oak St TB Eddy Co, NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
298016	5/17		S		X	Trench-1 6' (AH-1 Second Sp. 11)	1				X	
017						Trench-1 8' (AH-1 Second Sp. 11)						
018						Trench-1 10' (AH-1 Second Sp. 11)						
019						Bottom Hole 5' (Second Sp. 11) (AH-1)						
020	5/18					Trench-2 4' (AH-4 First Sp. 11)						
021						Trench-2 6' (AH-4 First Sp. 11)						
022						Trench-2 8' (AH-4 First Sp. 11)						

ANALYSIS REQUEST (Circle or Specify Method No.)

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

RELINQUISHED BY: (Signature) — Date: 5/21/12 Time: 1112
RECEIVED BY: (Signature) — Date: 5/21/12 Time: 0806

RELINQUISHED BY: (Signature) Joanne Fitch — Date: 5-21-12 Time: 1112
RECEIVED BY: (Signature) — Date: 5/21/12 Time: 11:12

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

SAMPLED BY: (Print & Initial) Robert Gubbels Jr. — Date: 5-18-12 Time: 1120

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 38° Intact

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.

120521116

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:	SITE MANAGER:
COG	Ike Tavarez

PROJECT NO.:	PROJECT NAME:
114-64013163	COG / White Oak St TB Eddy Co, NM

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	PAR 8015	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	Hold
298016	5/17		S		X	Trench-1 6' (AH-1 Second Sp. II)	1				X														X				
017						Trench-1 8' (AH-1 Second Sp. II)																			X				
018						Trench-1 10' (AH-1 Second Sp. II)																			X				
019						Bottom Hole 5' (Second Sp. II) (AH-1)							X	X																
020	5/18					Trench-2 4' (AH-4 First Sp. II)							X	X											X				
021						Trench-2 6' (AH-4 First Sp. II)																			X				X
022			↓		↓	Trench-2 8' (AH-4 First Sp. II)	↓				↓														X				X

RELINQUISHED BY: (Signature)	Date: 5/21/12 Time:	RECEIVED BY: (Signature)	Date: 5/21/12 Time: 0800
RELINQUISHED BY: (Signature) Joanne Fitch	Date: 5-21-12 Time: 1112	RECEIVED BY: (Signature)	Date: 5/21/12 Time: 1112
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) Robert Gubbs Jr. Date: 5-18-12 Time: 1100

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

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

SAMPLE CONDITION WHEN RECEIVED: 38° Intact

REMARKS: all to Trace Midland

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