SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	Burch Keely Unit #632 Well Pad					
Company:	COG Operating LLC					
Section, Township and Range	Unit M	Sec 24	T17S	R29E		
Lease Number:	API-30-015-40327					
County:	Eddy County					
GPS:	32.81425° N			104.03443° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	In Loco Hills, from the intersection of Haggerman Cutoff and 82, travel west on 82 for 3.1 miles, turn left onto lease road and travel 0.4 miles, turn left and travel 0.3 miles to location.					

Release Data:	
Date Released:	8/14/2012
Type Release:	Produced Water
Source of Contamination:	BKU #112 Injection Line
Fluid Released:	134 bbls
Fluids Recovered:	130 bbls

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

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

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

TETRA TECH

October 29, 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., Burch Keely Unit #632 Well Pad, Unit M, Section 24, 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 the Burch Keely Unit #632 Well Pad, Unit M, Section 24, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.81425°, W 104.03443. 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 August 14, 2012, and released approximately one hundred and thirty four (134) barrels of produced water from an injection line, with one hundred and thirty (130) barrels of standing fluids recovered. During the construction of a new well pad, an injection line was hit releasing fluids into the pasture. The spill area measured approximately 30' x 40'. The spill area is shown on Figure 3. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 24. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 175' below surface. The average depth to groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-

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

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.

Remediation and Conclusion

After the release, COG immediately excavated the spill area to complete the new well pad location. The excavation measured approximately 30' x 40' at a depth of 10.0' below surface. Approximately 550 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

On August 16, 2012, Tetra Tech personnel collected confirmation samples from the excavation bottom and side walls. In addition, a backhoe trench was installed in the bottom to define extents. The excavated area and confirmation samples are shown on Figure 4. The sampling results are summarized in Table 1.

Referring to Table 1, all of the samples were below the RRAL for TPH and BTEX. The sidewall samples did not show a significant impact to the soils. The bottom sample showed a chloride of 2,650 mg/kg, but declined with depth to 546 mg/kg at T-1 (12'). Based on the results, the BLM approved the backfilling of the excavation with clean material to grade.

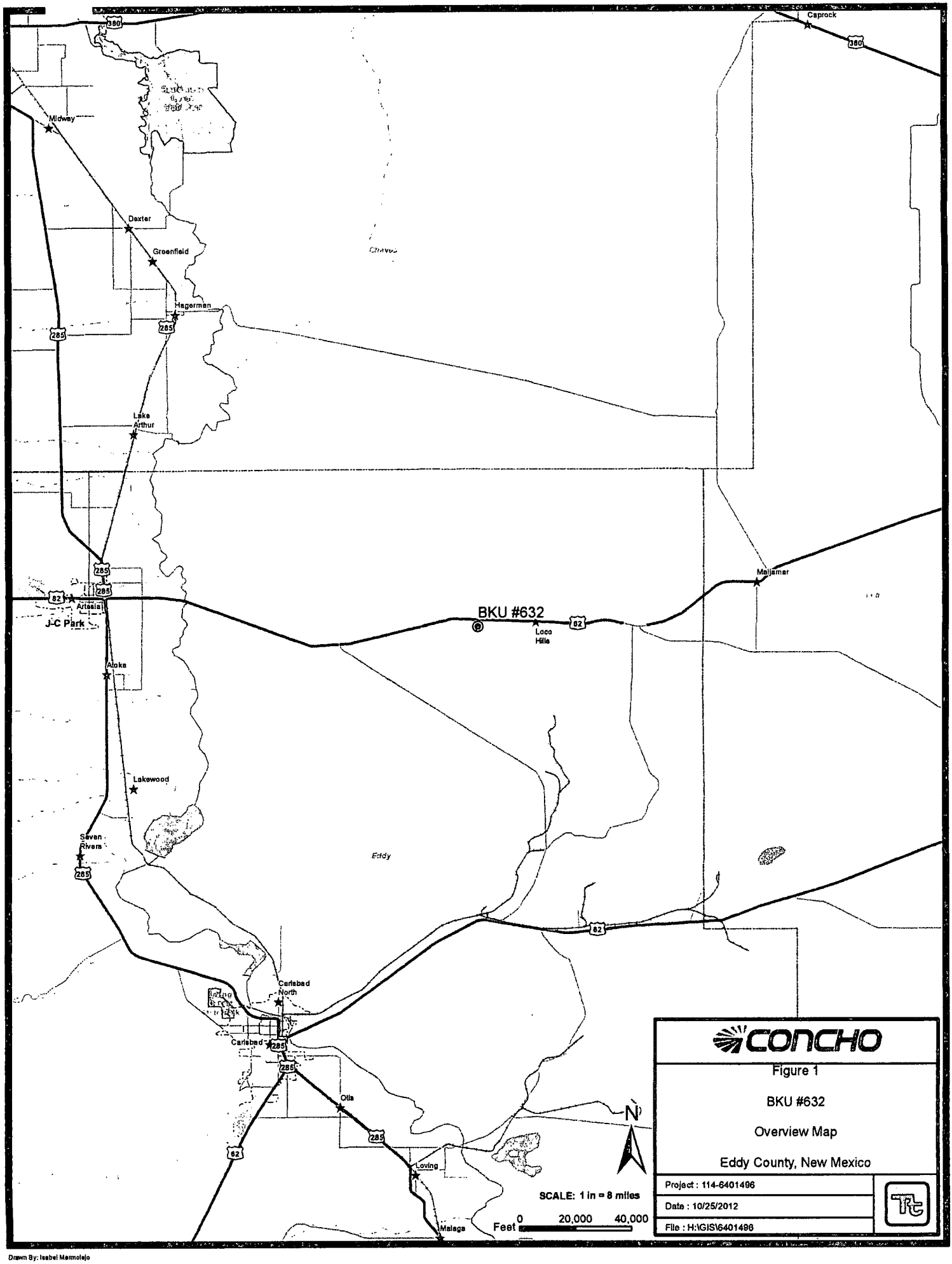
Based on the remediation activities performed at this location, COG requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

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

Figures



CONCHO

Figure 1

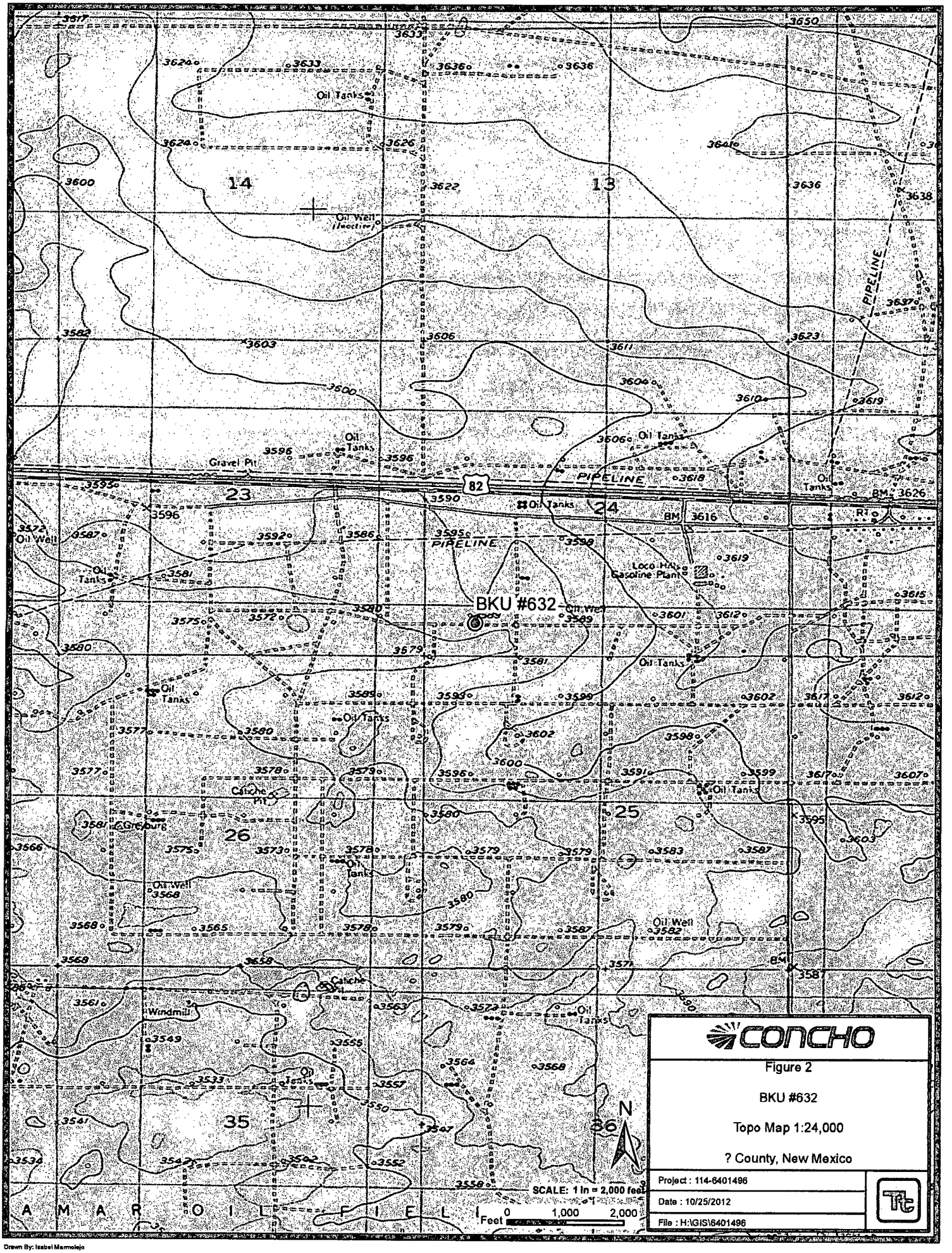
BKU #632

Overview Map

Eddy County, New Mexico

Project : 114-6401496	
Date : 10/25/2012	
File : H:\GIS\6401496	

Drawn By: Isabel Marmolejo



CONCHO

Figure 2

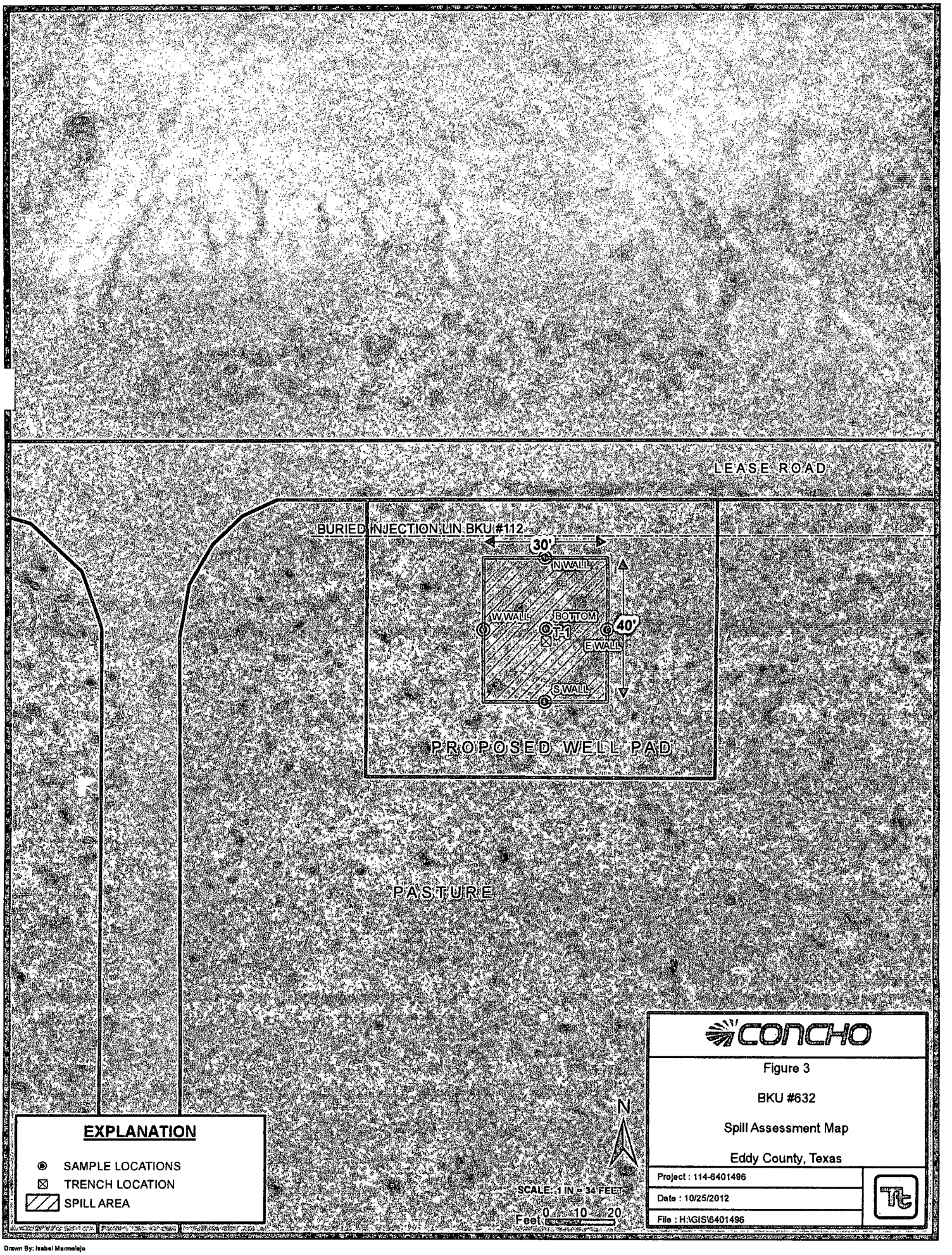
BKU #632

Topo Map 1:24,000

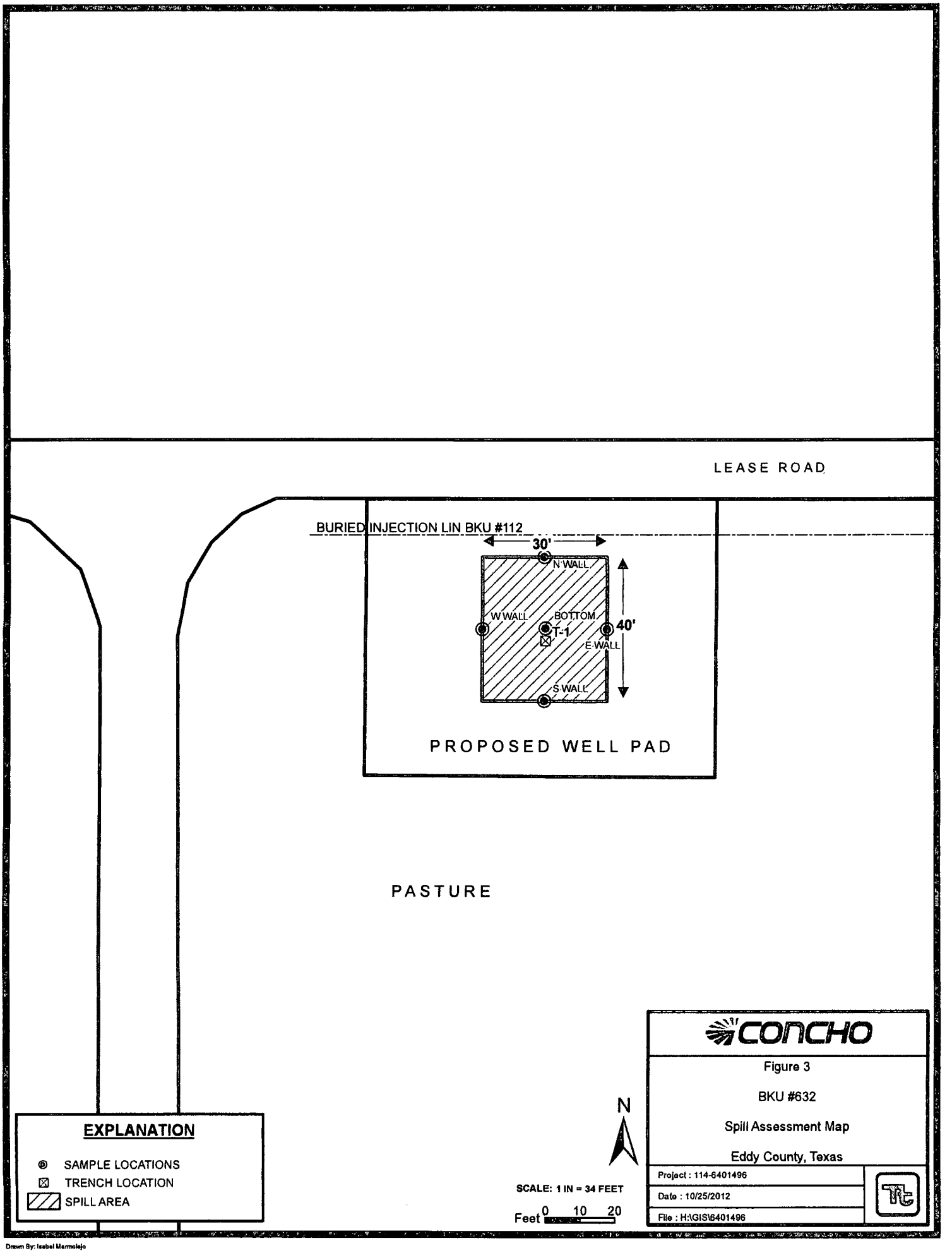
? County, New Mexico

Project : 114-6401496	
Date : 10/25/2012	
File : H:\GIS\6401496	

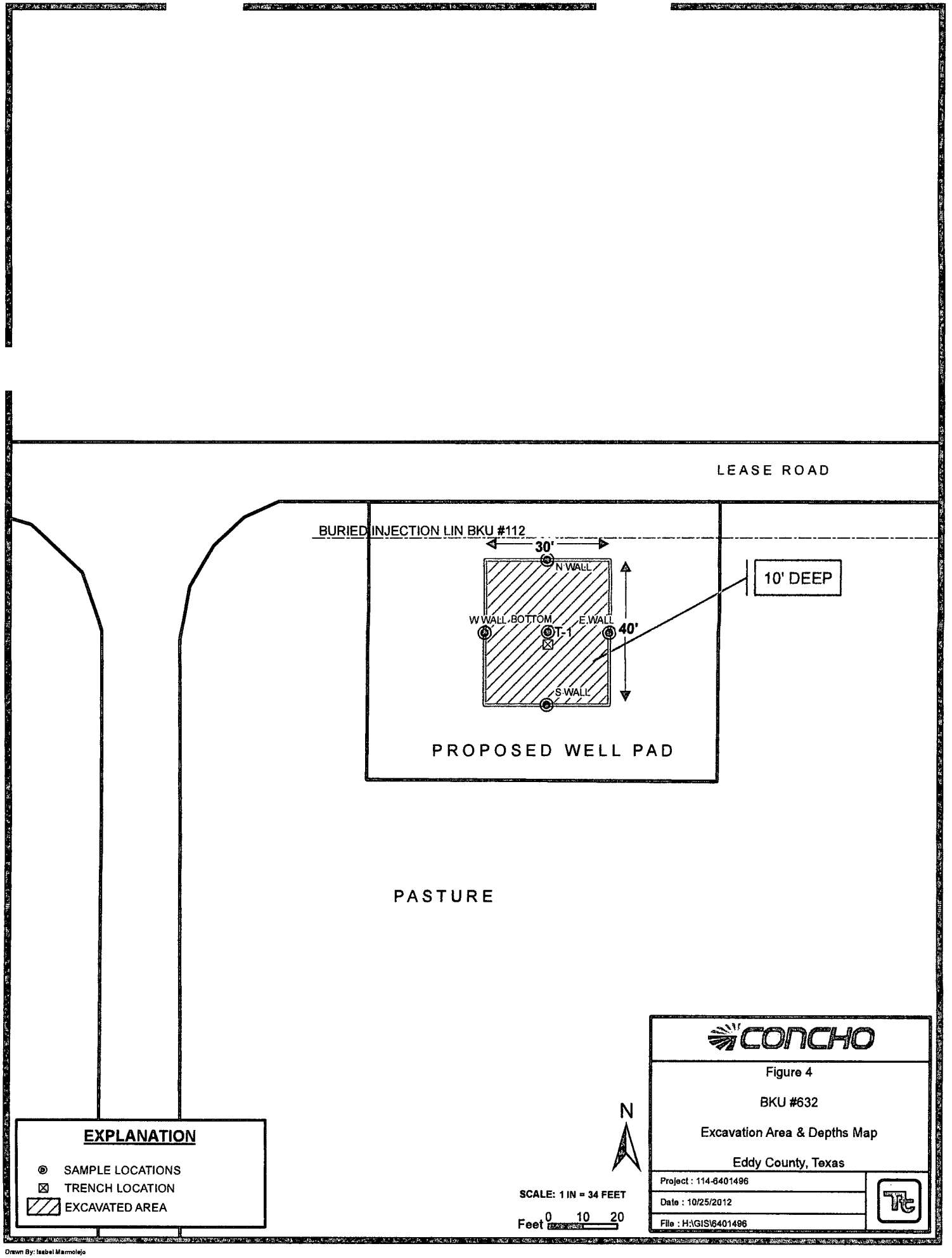
Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo


LEASE ROAD
BURIED INJECTION LIN BKU #112
30'
N WALL
W WALL
BOTTOM
E WALL
T-1
40'
S WALL
10' DEEP
PROPOSED WELL PAD
PASTURE
EXPLANATION
SAMPLE LOCATIONS
TRENCH LOCATION
EXCAVATED AREA
N
SCALE: 1 IN = 34 FEET
Feet 0 10 20
CONCHO
Figure 4
BKU #632
Excavation Area & Depths Map
Eddy County, Texas
Project : 114-6401496
Date : 10/25/2012
File : H:\GIS\6401496
Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Birch Kelly Unit #632
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						
North Wall	8/16/2012	-	X		23.4	<50.0	23.4	<0.100	<0.100	<0.100	<0.100	<0.100	146
East Wall	"	-	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	151
South Wall	"	-	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	161
West Wall	"	-	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	184
Bottom	"	10	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,650
T-1	8/16/2012	12	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	548
	"	14	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	968
	"	16	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	699

(-) Not Analyzed

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	Burch Keely Unit #632	Facility Type	Tank Battery

Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-015-40327

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	24	17S	29E					Eddy

Latitude N 32.81425° **Longitude** W 104.03443°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 134 bbls	Volume Recovered 130 bbls
Source of Release: BKU #112 Injection Line	Date and Hour of Occurrence 08/14/2012	Date and Hour of Discovery 08/14/2012 12:30 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-OCD, Jim Amos-BLM, Terry Gregston-BLM	
By Whom? Josh Russo	Date and Hour 08/15/2012 8:50 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

RECEIVED
NOV 02 2012
NMOCD ARTESIA

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

While preparing a new well pad a dozer accidently hit a buried injection line from the BKU #112 causing the release of fluid onto the site. The line has been repaired and returned to service.

Describe Area Affected and Cleanup Action Taken.*

COG conducted an emergency cleanup of the spill. Soil exceeding the RRAL for TPH and BTEX were removed and transported to proper disposal. Once excavated, Tetra Tech collected confirmation samples from the open excavation. Based on the results, the excavation was backfilled with clean soil and then brought up to surface grade. 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: 10-25-12 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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1000 Rio Brazos Road, Aztec, NM 87410
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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	Burch Keely Unit #632	Facility Type	Well pad

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-015-40327

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	24	17S	29E					Eddy

Latitude 32 48.855 **Longitude** 104 02.066

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 134bbls	Volume Recovered 130bbls
Source of Release BKU #112 injection line	Date and Hour of Occurrence 08/14/2012	Date and Hour of Discovery 08/14/2012 12:30 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-OCD, Jim Amos-BLM, Terry Gregston-BLM	
By Whom? Josh Russo	Date and Hour 08/15/2012 8:50 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

RECEIVED
NOV 02 2012
NMOCD ARTESIA

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

While preparing a new well pad a dozer accidently hit a buried injection line from the BKU #112 causing the release of fluid onto the site. The line has been repaired and returned to service.

Describe Area Affected and Cleanup Action Taken.*

Initially 134bbls were released from the injection line and we were able to recover 130bbls with a vacuum truck. The released fluid was contained in a 10' x 30' area adjacent to the release point. All free fluids were removed and the contaminated soil was immediately excavated and hauled to a disposal. Tetra Tech sampled the spill area and we have backfilled the site in preparation of the drilling rig.

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: 08/21/2012 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Burch Keely Unit #632
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 **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	1
7	8	9	10	11	12
18	17	16	15	14 220 dry	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 **SITE**	33	34	35 **258**	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 **80**	23	24 **SITE**
30	29 **210**	28	27	26	25
31	32	33	34	35 153	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 **108**	3	2	1
7 **49**	8 **69**	9	10	11	12
18	17	16	15	14	13
19	20	21 **226**	22	23	24
49	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 **95**	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
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System

Appendix C

Summary Report

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

Report Date: August 28, 2012

Work Order: 12081901

Project Name: COG/BKU #632
Project Number: 114-6401496

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
307091	North Wall	soil	2012-08-16	00:00	2012-08-17
307092	East Wall	soil	2012-08-16	00:00	2012-08-17
307093	South Wall	soil	2012-08-16	00:00	2012-08-17
307094	West Wall	soil	2012-08-16	00:00	2012-08-17
307095	10' Bottom	soil	2012-08-16	00:00	2012-08-17
307096	T-1 (12')	soil	2012-08-16	00:00	2012-08-17
307097	T-1 (14')	soil	2012-08-16	00:00	2012-08-17
307098	T-1 (16')	soil	2012-08-16	00:00	2012-08-17

Sample - Field Code	BTEX Benzene (mg/Kg)	BTEX Toluene (mg/Kg)	BTEX Ethylbenzene (mg/Kg)	BTEX Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
307091 - North Wall	<0.100 [1]	<0.100	<0.100	<0.100	<50.0 Qr	**23.4**
307092 - East Wall	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qr	<4.00
307093 - South Wall	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qr	<4.00
307094 - West Wall	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
307095 - 10' Bottom	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
307096 - T-1 (12')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
307097 - T-1 (14')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
307098 - T-1 (16')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00

Sample: 307091 - North Wall

Param	Flag	Result	Units	RL
Chloride		**146**	mg/Kg	4

Sample: 307092 - East Wall

[1] Sample dilution due to hydrocarbons.

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

Sample: 307093 - South Wall

Param	Flag	Result	Units	RL
Chloride		**161**	mg/Kg	4

Sample: 307094 - West Wall

Param	Flag	Result	Units	RL
Chloride		**184**	mg/Kg	4

Sample: 307095 - 10' Bottom

Param	Flag	Result	Units	RL
Chloride		**2650**	mg/Kg	4

Sample: 307096 - T-1 (12')

Param	Flag	Result	Units	RL
Chloride		**548**	mg/Kg	4

Sample: 307097 - T-1 (14')

Param	Flag	Result	Units	RL
Chloride		**968**	mg/Kg	4

Sample: 307098 - T-1 (16')

Param	Flag	Result	Units	RL
Chloride		**699**	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: August 28, 2012

Work Order: 12081901

Project Name: COG/BKU #632
Project Number: 114-6401496

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
307091	North Wall	soil	2012-08-16	00:00	2012-08-17
307092	East Wall	soil	2012-08-16	00:00	2012-08-17
307093	South Wall	soil	2012-08-16	00:00	2012-08-17
307094	West Wall	soil	2012-08-16	00:00	2012-08-17
307095	10' Bottom	soil	2012-08-16	00:00	2012-08-17
307096	T-1 (12')	soil	2012-08-16	00:00	2012-08-17
307097	T-1 (14')	soil	2012-08-16	00:00	2012-08-17
307098	T-1 (16')	soil	2012-08-16	00:00	2012-08-17

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/BKU #632 were received by TraceAnalysis, Inc. on 2012-08-17 and assigned to work order 12081901. Samples for work order 12081901 were received intact at a temperature of 8.8 C. Samples were received on ice.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	79847	2012-08-23 at 16:25	94203	2012-08-23 at 16:25
Chloride (Titration)	SM 4500-Cl B	79857	2012-08-23 at 13:15	94232	2012-08-24 at 13:25
TPH DRO - NEW	S 8015 D	79748	2012-08-20 at 08:00	94082	2012-08-21 at 08:20
TPH DRO - NEW	S 8015 D	79749	2012-08-20 at 08:00	94083	2012-08-21 at 08:25
TPH GRO	S 8015 D	79847	2012-08-23 at 16:25	94204	2012-08-23 at 16:25

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 12081901 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: 307091 - North Wall

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94203	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.100	mg/Kg	5	0.0200
Toluene	U	1	<0.100	mg/Kg	5	0.0200
Ethylbenzene		1	<0.100	mg/Kg	5	0.0200
Xylene	U	1	<0.100	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	5	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	5	2.00	98	70 - 130

Sample: 307091 - North Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94232	Date Analyzed:	2012-08-24	Analyzed By:	AR
Prep Batch:	79857	Sample Preparation:	2012-08-24	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**146**	mg/Kg	5	4.00

Sample: 307091 - North Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94082	Date Analyzed:	2012-08-21	Analyzed By:	CW
Prep Batch:	79748	Sample Preparation:	2012-08-20	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr,U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 307091 - North Wall

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94204	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO		1		**23.4**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.60	mg/Kg	5	2.00	80	70 - 130
4-Bromofluorobenzene (4-BFB)			2.47	mg/Kg	5	2.00	124	70 - 130

Sample: 307092 - East Wall

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94203	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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	Jb	1		<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	70 - 130

Sample: 307092 - East Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94232	Date Analyzed:	2012-08-24	Analyzed By:	AR
Prep Batch:	79857	Sample Preparation:	2012-08-24	Prepared By:	AR

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

Sample: 307092 - East Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94082	Date Analyzed:	2012-08-21	Analyzed By:	CW
Prep Batch:	79748	Sample Preparation:	2012-08-20	Prepared By:	CW

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qr,U	2	<50.0	mg/Kg	1	50.0

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

Sample: 307092 - East Wall

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94204	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 307093 - South Wall

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94203	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Sample: 307093 - South Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94232	Date Analyzed:	2012-08-24	Analyzed By:	AR
Prep Batch:	79857	Sample Preparation:	2012-08-24	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**161**	mg/Kg	5	4.00

Sample: 307093 - South Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94082	Date Analyzed:	2012-08-21	Analyzed By:	CW
Prep Batch:	79748	Sample Preparation:	2012-08-20	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr,U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

Sample: 307093 - South Wall

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94204	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 307094 - West Wall

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94203	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.80	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 307094 - West Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94232	Date Analyzed:	2012-08-24	Analyzed By:	AR
Prep Batch:	79857	Sample Preparation:	2012-08-24	Prepared By:	AR

continued ...

sample 307094 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**184**	mg/Kg	5	4.00

Sample: 307094 - West Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94083	Date Analyzed:	2012-08-21	Analyzed By:	CW
Prep Batch:	79749	Sample Preparation:	2012-08-20	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			120	mg/Kg	1	100	120	70 - 130

Sample: 307094 - West Wall

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94204	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	1	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			2.03	mg/Kg	1	2.00	102	70 - 130

Sample: 307095 - 10' Bottom

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94203	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	1	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	70 - 130

Sample: 307095 - 10' Bottom

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94232	Date Analyzed:	2012-08-24	Analyzed By:	AR
Prep Batch:	79857	Sample Preparation:	2012-08-24	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2650**	mg/Kg	10	4.00

Sample: 307095 - 10' Bottom

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94083	Date Analyzed:	2012-08-21	Analyzed By:	CW
Prep Batch:	79749	Sample Preparation:	2012-08-20	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			123	mg/Kg	1	100	123	70 - 130

Sample: 307095 - 10' Bottom

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94204	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 307096 - T-1 (12')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94203	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	91	70 - 130

Sample: 307096 - T-1 (12')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94232	Date Analyzed:	2012-08-24	Analyzed By:	AR
Prep Batch:	79857	Sample Preparation:	2012-08-24	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**548**	mg/Kg	5	4.00

Sample: 307096 - T-1 (12')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94083	Date Analyzed:	2012-08-21	Analyzed By:	CW
Prep Batch:	79749	Sample Preparation:	2012-08-20	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			110	mg/Kg	1	100	110	70 - 130

Sample: 307096 - T-1 (12')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94204	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Sample: 307097 - T-1 (14')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94203	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Sample: 307097 - T-1 (14')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94232	Date Analyzed:	2012-08-24	Analyzed By:	AR
Prep Batch:	79857	Sample Preparation:	2012-08-24	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**968**	mg/Kg	5	4.00

Sample: 307097 - T-1 (14')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94083	Date Analyzed:	2012-08-21	Analyzed By:	CW
Prep Batch:	79749	Sample Preparation:	2012-08-20	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	70 - 130

Sample: 307097 - T-1 (14')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94204	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	70 - 130

Sample: 307098 - T-1 (16')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94203	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	70 - 130

Sample: 307098 - T-1 (16')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94232	Date Analyzed:	2012-08-24	Analyzed By:	AR
Prep Batch:	79857	Sample Preparation:	2012-08-24	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**699**	mg/Kg	5	4.00

Sample: 307098 - T-1 (16')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94083	Date Analyzed:	2012-08-21	Analyzed By:	CW
Prep Batch:	79749	Sample Preparation:	2012-08-20	Prepared By:	CW

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	U	2	<50.0		mg/Kg	1	50.0

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

Sample: 307098 - T-1 (16')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94204	Date Analyzed:	2012-08-23	Analyzed By:	MT
Prep Batch:	79847	Sample Preparation:	2012-08-23	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	1	2.00	98	70 - 130

Method Blanks

Method Blank (1) QC Batch: 94082

QC Batch: 94082 | Date Analyzed: 2012-08-21 | Analyzed By: CW
Prep Batch: 79748 | QC Preparation: 2012-08-20 | Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			105	mg/Kg	1	100	105	70 - 130

Method Blank (1) QC Batch: 94083

QC Batch: 94083 | Date Analyzed: 2012-08-21 | Analyzed By: CW
Prep Batch: 79749 | QC Preparation: 2012-08-20 | Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Method Blank (1) QC Batch: 94203

QC Batch: 94203 | Date Analyzed: 2012-08-23 | Analyzed By: MT
Prep Batch: 79847 | QC Preparation: 2012-08-23 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00365	mg/Kg	0.02
Toluene		1	<0.00816	mg/Kg	0.02
Ethylbenzene		1	<0.00560	mg/Kg	0.02
Xylene		1	0.00770	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Method Blank (1) QC Batch: 94204

QC Batch: 94204 Date Analyzed: 2012-08-23 Analyzed By: MT
Prep Batch: 79847 QC Preparation: 2012-08-23 Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.359	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.14	mg/Kg	1	2.00	107	70 - 130
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	70 - 130

Method Blank (1) QC Batch: 94232

QC Batch: 94232 Date Analyzed: 2012-08-24 Analyzed By: AR
Prep Batch: 79857 QC Preparation: 2012-08-23 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: 94082 | Date Analyzed: 2012-08-21 | Analyzed By: CW
Prep Batch: 79748 | QC Preparation: 2012-08-20 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	220	mg/Kg	1	250	<14.5	88	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qr	Qr	280	mg/Kg	1	250	<14.5	112	70 - 130	24	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	118	136	mg/Kg	1	100	118	136	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94083 | Date Analyzed: 2012-08-21 | Analyzed By: CW
Prep Batch: 79749 | QC Preparation: 2012-08-20 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	220	mg/Kg	1	250	<14.5	88	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	239	mg/Kg	1	250	<14.5	96	70 - 130	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	118	126	mg/Kg	1	100	118	126	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94203 | Date Analyzed: 2012-08-23 | Analyzed By: MT
Prep Batch: 79847 | QC Preparation: 2012-08-23 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.84	mg/Kg	1	2.00	<0.00365	92	75.4 - 120
Toluene		1	1.80	mg/Kg	1	2.00	<0.00816	90	74.9 - 120
Ethylbenzene		1	1.79	mg/Kg	1	2.00	<0.00560	90	78.1 - 120
Xylene		1	5.40	mg/Kg	1	6.00	0.0077	90	77.3 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.96	mg/Kg	1	2.00	<0.00365	98	75.4 - 120	6	20
Toluene		1	1.94	mg/Kg	1	2.00	<0.00816	97	74.9 - 120	8	20
Ethylbenzene		1	1.94	mg/Kg	1	2.00	<0.00560	97	78.1 - 120	8	20
Xylene		1	5.85	mg/Kg	1	6.00	0.0077	97	77.3 - 120	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
Trifluorotoluene (TFT)	1.77	1.81	mg/Kg	1	2.00	88	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.73	1.81	mg/Kg	1	2.00	86	90	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94204 | Date Analyzed: 2012-08-23 | Analyzed By: MT
Prep Batch: 79847 | QC Preparation: 2012-08-23 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.0	mg/Kg	1	20.0	<0.359	85	68.9 - 120

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	16.4	mg/Kg	1	20.0	<0.359	82	68.9 - 120	4	20

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

continued ...

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)	1.95	1.84	mg/Kg	1	2.00	97	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.89	1.77	mg/Kg	1	2.00	95	88	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94232 | Date Analyzed: 2012-08-24 | Analyzed By: AR
Prep Batch: 79857 | QC Preparation: 2012-08-23 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	1	2500	<3.85	105	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2680	mg/Kg	1	2500	<3.85	107	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 306914

QC Batch: 94082 | Date Analyzed: 2012-08-21 | Analyzed By: CW
Prep Batch: 79748 | QC Preparation: 2012-08-20 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	231	mg/Kg	1	250	<14.5	92	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	233	mg/Kg	1	250	<14.5	93	70 - 130	1	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
n-Tricosane	112	113	mg/Kg	1	100	112	113	70 - 130

Matrix Spike (MS-1) Spiked Sample: 307094

QC Batch: 94083 | Date Analyzed: 2012-08-21 | Analyzed By: CW
Prep Batch: 79749 | QC Preparation: 2012-08-20 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	244	mg/Kg	1	250	<14.5	98	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	239	mg/Kg	1	250	<14.5	96	70 - 130	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	115	117	mg/Kg	1	100	115	117	70 - 130

Matrix Spike (MS-1) Spiked Sample: 307092

QC Batch: 94203 | Date Analyzed: 2012-08-23 | Analyzed By: MT
Prep Batch: 79847 | QC Preparation: 2012-08-23 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.74	mg/Kg	1	2.00	<0.00365	87	37.6 - 142
Toluene		1	1.94	mg/Kg	1	2.00	<0.00816	97	38.6 - 153
Ethylbenzene		1	2.00	mg/Kg	1	2.00	<0.00560	100	36.7 - 172
Xylene		1	6.08	mg/Kg	1	6.00	<0.00460	101	36.7 - 173

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	1.92	mg/Kg	1	2.00	<0.00365	96	37.6 - 142	10	20
Toluene		1	2.19	mg/Kg	1	2.00	<0.00816	110	38.6 - 153	12	20
Ethylbenzene		1	2.27	mg/Kg	1	2.00	<0.00560	114	36.7 - 172	13	20
Xylene		1	6.93	mg/Kg	1	6.00	<0.00460	116	36.7 - 173	13	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.54	1.88	mg/Kg	1	2	77	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.62	1.97	mg/Kg	1	2	81	98	70 - 130

Matrix Spike (MS-1) Spiked Sample: 307092

QC Batch: 94204 Date Analyzed: 2012-08-23 Analyzed By: MT
Prep Batch: 79847 QC Preparation: 2012-08-23 Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.0	mg/Kg	1	20.0	<0.359	90	68.9 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	16.1	mg/Kg	1	20.0	<0.359	80	68.9 - 120	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)	2.00	1.43	mg/Kg	1	2	100	72	70 - 130
4-Bromofluorobenzene (4-BFB)	2.17	1.99	mg/Kg	1	2	108	100	70 - 130

Matrix Spike (MS-1) Spiked Sample: 307099

QC Batch: 94232 Date Analyzed: 2012-08-24 Analyzed By: AR
Prep Batch: 79857 QC Preparation: 2012-08-23 Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2860	mg/Kg	5	2500	274	103	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2940	mg/Kg	5	2500	274	107	78.9 - 121	3	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: 94082 | Date Analyzed: 2012-08-21 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	230	92	80 - 120	2012-08-21

Standard (CCV-2)

QC Batch: 94082 | Date Analyzed: 2012-08-21 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	224	90	80 - 120	2012-08-21

Standard (CCV-3)

QC Batch: 94082 | Date Analyzed: 2012-08-21 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	240	96	80 - 120	2012-08-21

Standard (CCV-1)

QC Batch: 94083 | Date Analyzed: 2012-08-21 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	244	98	80 - 120	2012-08-21

Standard (CCV-2)

QC Batch: 94083 Date Analyzed: 2012-08-21 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	240	96	80 - 120	2012-08-21

Standard (CCV-3)

QC Batch: 94083 Date Analyzed: 2012-08-21 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	233	93	80 - 120	2012-08-21

Standard (CCV-1)

QC Batch: 94203 Date Analyzed: 2012-08-23 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0854	85	80 - 120	2012-08-23
Toluene		1	mg/kg	0.100	0.0918	92	80 - 120	2012-08-23
Ethylbenzene		1	mg/kg	0.100	0.0886	89	80 - 120	2012-08-23
Xylene		1	mg/kg	0.300	0.269	90	80 - 120	2012-08-23

Standard (CCV-2)

QC Batch: 94203 Date Analyzed: 2012-08-23 Analyzed By: MT

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	2012-08-23
Toluene		1	mg/kg	0.100	0.0989	99	80 - 120	2012-08-23
Ethylbenzene		1	mg/kg	0.100	0.0965	96	80 - 120	2012-08-23
Xylene		1	mg/kg	0.300	0.291	97	80 - 120	2012-08-23

Standard (CCV-3)

QC Batch: 94203 | Date Analyzed: 2012-08-23 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0994	99	80 - 120	2012-08-23
Toluene		1	mg/kg	0.100	0.0977	98	80 - 120	2012-08-23
Ethylbenzene		1	mg/kg	0.100	0.0985	98	80 - 120	2012-08-23
Xylene		1	mg/kg	0.300	0.300	100	80 - 120	2012-08-23

Standard (CCV-1)

QC Batch: 94204 | Date Analyzed: 2012-08-23 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.864	86	80 - 120	2012-08-23

Standard (CCV-2)

QC Batch: 94204 | Date Analyzed: 2012-08-23 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.840	84	80 - 120	2012-08-23

Standard (CCV-3)

QC Batch: 94204 | Date Analyzed: 2012-08-23 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.904	90	80 - 120	2012-08-23

Standard (CCV-1)

QC Batch: 94232 | Date Analyzed: 2012-08-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.9	99	85 - 115	2012-08-24

Standard (CCV-2)

QC Batch: 94232 | Date Analyzed: 2012-08-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-08-24

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	T104704219-12-8	Lubbock
2	NELAP	T104704392-12-4	Midland

Standard Flags

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

Result Comments

1 Sample dilution due to hydrocarbons.

Attachments

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

12US1901

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG
SITE MANAGER: Ike Tavarez
PROJECT NO.: 1496
PROJECT NAME: BKU #632

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	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
301091	8/1/6		S		X	North Wall	1						X	X											X				
092			S		X	East Wall	1						X	X											X				
093			S		X	South Wall	1						X	X											X				
094			S		X	West Wall	1						X	X											X				
095			S		X	10' Bottom	1						X	X											X				
096			S		X	T-1 (12')	1						X	X											X				
097			S		X	~~T-1~~ T-1 (14')	1						X	X											X				
098			S		X	T-1 (16')	1						X	X											X				

RELINQUISHED BY: (Signature) — Date: 8/7/12 Time: 1205 — RECEIVED BY: (Signature) — Date: 8/7/12 Time: 12:05
SAMPLED BY: (Print & Initial) — Date: Time:

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

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

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

SAMPLE CONDITION WHEN RECEIVED: 8.8 Intact
REMARKS: Midland acc

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