AE Order Number Banner

Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.

App Number: pPAC0719237372

1RP - 1483

CHEVRON U S A INC

2/17/2016

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

Received JUN 2007 Hobbs OCD

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

X Initial Report Final Report

Name of Company Chevron USA	Contact Larry Ridenour
Address HCR 60 Box 423 Lovington, N.M. 88260	Telephone No. 505-396-4414 X 102
Facility Name Lovington San Andres Unit #22	Facility Type Oil well

Surface Owner City of Lovington	Mineral Owner State of NM	Lease No. B1505

LOCATION OF RELEASE API #3002505351

Unit Letter	Section	Township	Range	Feet from the	South Line	Feet from the	West Line	County
N	31	16S	37E	330		1650		Lea

62'

Latitude N 32 deg 52 min 19.59 sec Longitude W 103 deg 17 min 56.75 sec

NATURE OF RELEASE API #3002505351

Type of Release Produced water	Volume of Release 10 BW and very light skim of oil	Volume Recovered 0 bbl fluids.
Source of Release flow line	Date and Hour of Occurrence 06/16/07	Date and Hour of Discovery 06/16/07 2:00 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Gary Wink	
By Whom? Bobby Hill	Date and Hour 6/16/2007 4:30 P.M.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Well is on plug and abandon list. Flow line had been left open to keep pressure off well. Flow line developed leak due to external corrosion. (Spill is actually located just off the location of Lovington San Andres Unit 68) Flow line was disconnected. Emergency clamp was placed on leak.

Chlorides 35,300 Oil Gravity 38

Describe Area Affected and Cleanup Action Taken.*
Fluid soaked in a low spot approximately 30' x 20'. No fluid was picked up because it had soaked in. We will pick up contained soil when the one call clears and haul off to CRI.

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: Larry Ridenour

Printed Name: Larry Ridenour

Title: Operations Representative

E-mail Address LRidenour@chevron.com

Date: 6/20/2007 Phone: 396-4414 X 102

OIL CONSERVATION DIVISION

Approved by District Supervisor: Environ Engr

Approval Date: 6-22-07 Expiration Date: 9-10-07

Conditions of Approval:
SUBMITTAL OF FINAL C-141 BY

Attached ☐

Attach Additional Sheets If Necessary

RPT# 1438

SITE INFORMATION

Report Type: CLOSURE REQUEST **RP #1438**

General Site Information:	
Site:	**Lovington San Andres Unit #22**
Company:	**Chevron USA**
Well Location:	**Section 31,T16S,R37E**
Unit Letter:	**Unit N**
API	**3002505351**
Lease Number:	**B1505**
County:	**Lea**
Spill GPS:	N 32° 52.327' W 103° 17.917'
Surface Owner:	City of Lovington
Mineral Owner:	State of New Mexico
Directions:	North of Hobbs,NM at the intersection of 18 and CR 78 (Stiles RD). Go North on 18 for 1.6 miles,
	Turn left on lease road go aprox 0.4 miles to well location immediately on left side of lease road.

Release Data:	
Date Released:	6/16/2007
Type Release:	Oil and water
Source of Contamination:	Flow line leak
Fluid Released:	10 BW and Very light skim of oil
Fluids Recovered:	None

Official Communication:			
Name:	Steve Gwin		Ike Tavarez
Company:	Chevron USA		Tetra Tech
Address:	15 Smith Road		1910 N. Big Spring
P.O. Box			
City:	Midland Texas, 79705		Midland, Texas
Phone number:	(432) 687-7575		(432) 682- 4559
Fax:	(866) 569-5950		
Email:	gwst@chevron.com		ike.tavarez@tetratech.com

Ranking Criteria

Depth to Groundwater:	*Ranking Score*	*Site Data*
<50 ft	20	
50-99 ft	**10**	
>100 ft.	0	
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	*None*
Water Source >1,000 ft., Private >200 ft.	***0***	
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	*None*
200 ft - 1,000 ft.	10	*None*
>1,000 ft.	**0**	
Total Ranking Score:	**10**	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	**50**	**1,000**

TETRA TECH

RECEIVED
JAN 18 2011
HOBBSOCD

August 2, 2010

Mr. Larry Johnson
Environmental Engineer Specialist
Oil Conservation Division- District I
1625 N. French Drive
Hobbs, New Mexico 88240

RE: Closure Request for the Spill at the Lovington San Andes Unit #22 Well Flow Line, Unit Letter N, Section 31, Township 16 South, Range 37 East, Lea County, New Mexico, Operated by Chevron USA, Lease No. B1505. RP #1438

Dear Mr. Johnson:

Tetra Tech was contacted by Chevron USA (Chevron) to collect samples from an open excavation of a flow line spill that occurred at the Lovington San Andres Unit #22 flow line, located in Unit Letter N, Section 31, Township 16 South, Range 37 East, Lea County, New Mexico. The site coordinates are N 32.87224°, W 103.29891°. The Site location is shown on Figures 1 and 2.

Background

As reported in the C-141 (Initial), the spill was discovered on June 16, 2007, due to a hole in the Well #22 flow line. Well #22 is located east of the area and has been plugged. The spill location is actually adjacent east of the Chevron LPU Unit #98 well. The fluids from the release ran to a low spot east of the well. A total of 10 barrels of produced water were released and none was recovered. The initial C-141 is shown in Appendix C.

In 2007, Chevron excavated the spill area and found the fluids from the release had migrated on top of a closed reserve pit. The excavated area measured approximately 100' x 160', with depth ranging from 5.0' to 8.0' below surface. The excavated soil was hauled to proper disposal.

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Groundwater and Regulatory

The Site is located in Section 31, Township 16 South, Range 37 East. There are numerous water wells in the vicinity of this site. Both the USGS database and the State of New Mexico Well Reports show water wells throughout Township 16 South, Range 37 East. The average depth to water is shown in Appendix A. Based upon the well information acquired, the depth to groundwater at the site was determined greater than 50' below surface.

A risk-based evaluation was performed for the Site in accordance with the NMOCD Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene and xylene). Based on the regional groundwater data, the proposed RRAL for TPH is 1,000 mg/kg.

Site Inspection and Sampling

On July 15, 2010, Tetra Tech personnel inspected the excavated spill area. A total of four (4) auger holes were installed in the bottom of the excavation. Deeper samples were not collected due to the dense formation on the bottom. Soil samples were collected from 0-0.5' below excavation bottom (BEB) for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling are summarized in Table 1.

Referring to Table 1, all of the samples were below the RRAL for TPH and BTEX. The chloride concentrations were all below reporting limit (<200 mg/kg).

Conclusion and Closure Request /Soil Capping

The release from the spill had migrated onto a closed reserve pit located east of the Chevron LSAU #98 and Chevron had excavated the soils not knowing about the closed reserve pit. Based on the findings, Chevron proposes to cap the excavated area with a 20 mil liner. The cap will prevent any leaching of any chloride residue that may be present from the closed reserve pit. The cap will be installed approximately 4.0' below surface and backfilled with clean soil. If

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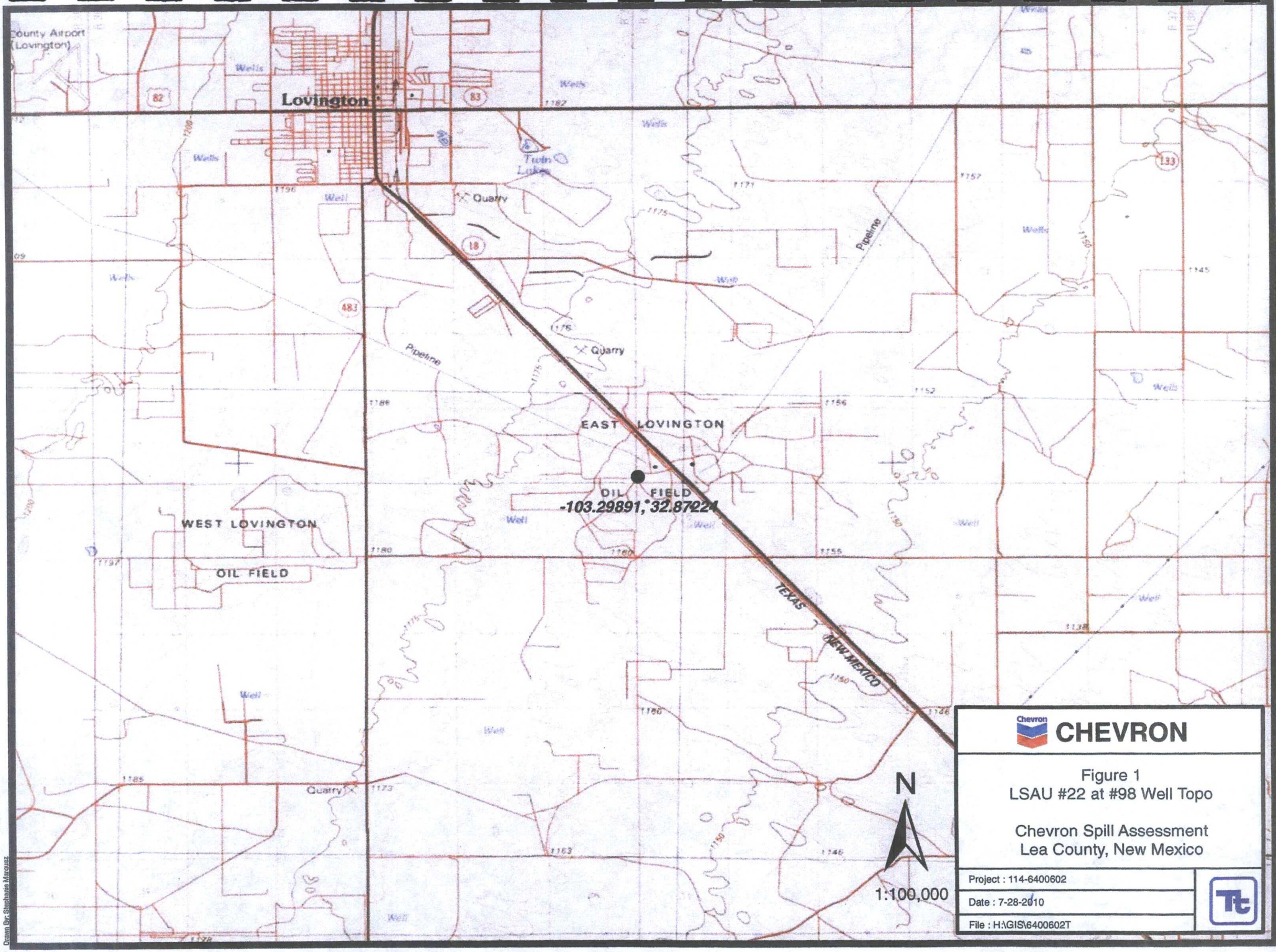
approved, Chevron will submit a final C-141 after the cap and backfilling is completed at the site.

If you require any additional information or have any questions or comments, please call.

Tetra Tech

Ike Tavarez, P.G.
Project Manager

cc: Chevron USA – Steve Gwinn



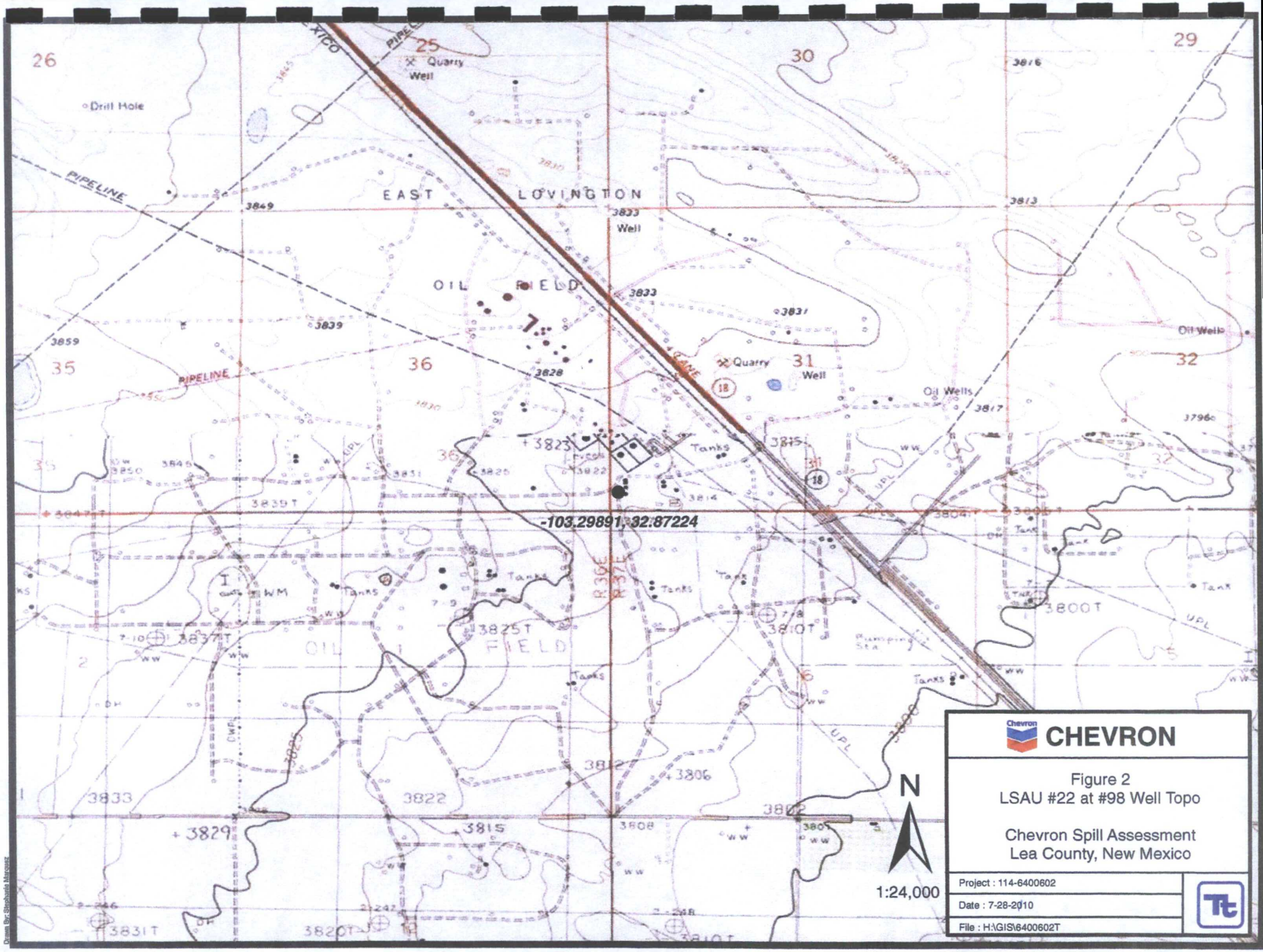
CHEVRON

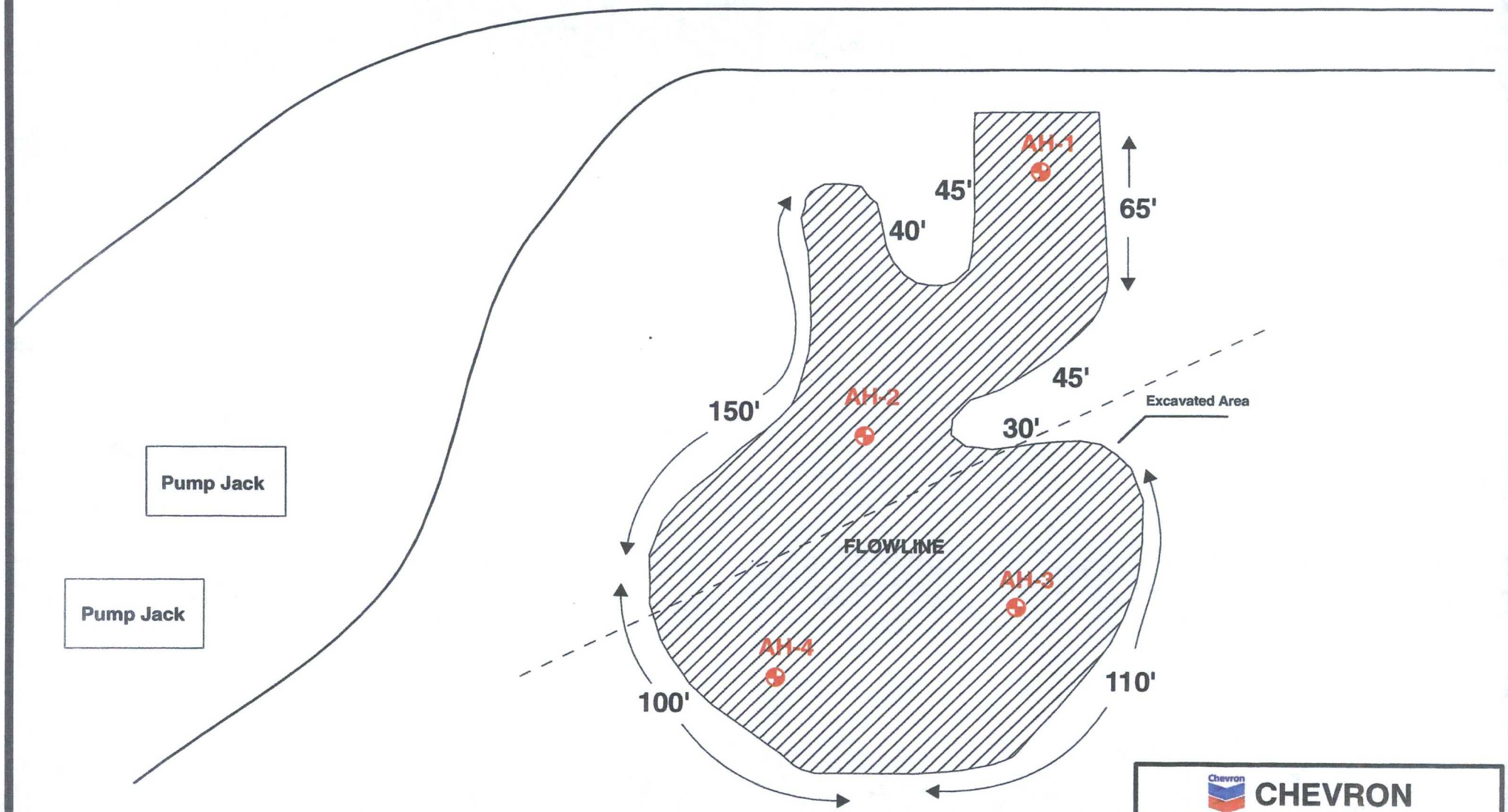
Figure 1
LSAU #22 at #98 Well Topo

Chevron Spill Assessment
Lea County, New Mexico

Project : 114-6400602	
Date : 7-28-2010	
File : H:\GIS\6400602T	

Drawn By: Stephanie Marquez


EAST LOVINGTON
OIL FIELD
Drill Hole
Quarry
Well
PIPELINE
Oil Wells
Tanks
-103.29891, 32.87224
N
1:24,000
CHEVRON
Figure 2
LSAU #22 at #98 Well Topo
Chevron Spill Assessment
Lea County, New Mexico
Project : 114-6400602
Date : 7-28-2010
File : H:\GIS\6400602T



CHEVRON

Figure 3
LSAU #22 Flowline near Well #98

Chevron Spill Assessment
Lea County, New Mexico

Project : 114-6400602
Date : 7-28-2010
File : H:\GIS\6400602DWG

Drawn By: Stephanie Marquez

Table 1
Chevron USA
LSAU #22
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Sample Location	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	7/15/2010	0-0.5'	bottom	X		<2.0	<50.0	<50.0	<0.020	<0.020	<0.020	<0.020	<200
AH-2	7/15/2010	0-0.5'	bottom	X		<2.0	<50.0	<50.0	<0.020	<0.020	<0.020	<0.020	<200
AH-3	7/15/2010	0-0.5'	bottom	X		<2.0	<50.0	<50.0	<0.020	<0.020	<0.020	<0.020	<200
AH-4	7/15/2010	0-0.5'	bottom	X		<2.0	<50.0	<50.0	<0.020	<0.020	<0.020	<0.020	<200

Soil samples collected from bottom of excavation

(--) Not Analyzed

Water Well Data
Average Depth to Groundwater (ft)
Chevron USA
Lovington San Andres Unit #22

16 South 36 East

6	5	4	3	2	1
7	8	9 Lovington	10	11	12
18 54	17	16	15	14	13
19	20 70	21 70	22 63 63	23 70 61	24 55
30 82	29	28	27	26 63	25 68 52
31 74	32 65	33	34	35 41	36 65 70

16 South 37 East

6	5	4	3	2	1
7 66	8	9	10	11 80	12
18	17	16	15	14	13
19 55 82	20 44	21 50	22	23	24
30 52 60	29 44	28 34	27 73	26	25 70
31 Site 72 55	32 38	33 60	34 60	35	36

16 South 38 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 36 East

6 50	5	4 65	3 60	2 60 69	1 83 74
7	8	9	10 43	11	12 44 46
18	17	16	15	14 48	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South 37 East

6 75	5 57 50	4 40	3 60 55	2 67	1 51
7 65	8 50 68	9 42	10 70 64	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 38 East

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

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

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

34 NMOCD - Groundwater Data

Summary Report

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

Report Date: July 21, 2010

Work Order: 10071919

Project Location: Lea County, NM
Project Name: LSAU #22 @ #98 Well
Project Number: 114-6400602

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
238020	AH-1 0-6in.	soil	2010-07-15	00:00	2010-07-19
238021	AH-2 0-6in.	soil	2010-07-15	00:00	2010-07-19
238022	AH-3 0-6in.	soil	2010-07-15	00:00	2010-07-19
238023	AH-4 0-6in.	soil	2010-07-15	00:00	2010-07-19

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
238020 - AH-1 0-6in.	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238021 - AH-2 0-6in.	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238022 - AH-3 0-6in.	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
238023 - AH-4 0-6in.	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 238020 - AH-1 0-6in.

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

Sample: 238021 - AH-2 0-6in.

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

Sample: 238022 - AH-3 0-6in.

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

Sample: 238023 - AH-4 0-6in.

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

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 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 119 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

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

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: July 21, 2010

Work Order: 10071919

Project Location: Lea County, NM
Project Name: LSAU #22 @ #98 Well
Project Number: 114-6400602

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
238020	AH-1 0-6in.	soil	2010-07-15	00:00	2010-07-19
238021	AH-2 0-6in.	soil	2010-07-15	00:00	2010-07-19
238022	AH-3 0-6in.	soil	2010-07-15	00:00	2010-07-19
238023	AH-4 0-6in.	soil	2010-07-15	00:00	2010-07-19

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

Michael Abel

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

Standard Flags

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

Case Narrative

Samples for project LSAU #22 @ #98 Well were received by TraceAnalysis, Inc. on 2010-07-19 and assigned to work order 10071919. Samples for work order 10071919 were received intact at a temperature of 3.3 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	61608	2010-07-19 at 16:00	71924	2010-07-20 at 11:02
Chloride (Titration)	SM 4500-Cl B	61619	2010-07-20 at 08:51	71895	2010-07-20 at 11:56
TPH DRO - NEW	S 8015 D	61592	2010-07-19 at 14:30	71873	2010-07-19 at 14:30
TPH GRO	S 8015 D	61608	2010-07-19 at 16:00	71925	2010-07-20 at 11:29

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 10071919 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: 238020 - AH-1 0-6in.

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	71924	Date Analyzed:	2010-07-20	Analyzed By:	AG
Prep Batch:	61608	Sample Preparation:	2010-07-19	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.24	mg/Kg	1	2.00	62	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.25	mg/Kg	1	2.00	62	38.4 - 157

Sample: 238020 - AH-1 0-6in.

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	71895	Date Analyzed:	2010-07-20	Analyzed By:	AR
Prep Batch:	61619	Sample Preparation:	2010-07-20	Prepared By:	AR

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

Sample: 238020 - AH-1 0-6in.

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	71873	Date Analyzed:	2010-07-19	Analyzed By:	kg
Prep Batch:	61592	Sample Preparation:	2010-07-19	Prepared By:	kg

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

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

Sample: 238020 - AH-1 0-6in.

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	71925	Date Analyzed:	2010-07-20	Analyzed By:	AG
Prep Batch:	61608	Sample Preparation:	2010-07-19	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.44	mg/Kg	1	2.00	72	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.38	mg/Kg	1	2.00	69	42 - 159

Sample: 238021 - AH-2 0-6in.

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	71924	Date Analyzed:	2010-07-20	Analyzed By:	AG
Prep Batch:	61608	Sample Preparation:	2010-07-19	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.53	mg/Kg	1	2.00	76	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.56	mg/Kg	1	2.00	78	38.4 - 157

Sample: 238021 - AH-2 0-6in.

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	71895	Date Analyzed:	2010-07-20	Analyzed By:	AR
Prep Batch:	61619	Sample Preparation:	2010-07-20	Prepared By:	AR

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

Sample: 238021 - AH-2 0-6in.

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	71873	Date Analyzed:	2010-07-19	Analyzed By:	kg
Prep Batch:	61592	Sample Preparation:	2010-07-19	Prepared By:	kg

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

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

Sample: 238021 - AH-2 0-6in.

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	71925	Date Analyzed:	2010-07-20	Analyzed By:	AG
Prep Batch:	61608	Sample Preparation:	2010-07-19	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.78	mg/Kg	1	2.00	89	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.71	mg/Kg	1	2.00	86	42 - 159

Sample: 238022 - AH-3 0-6in.

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	71924	Date Analyzed:	2010-07-20	Analyzed By:	AG
Prep Batch:	61608	Sample Preparation:	2010-07-19	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.67	mg/Kg	1	2.00	84	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.71	mg/Kg	1	2.00	86	38.4 - 157

Sample: 238022 - AH-3 0-6in.

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	71895	Date Analyzed:	2010-07-20	Analyzed By:	AR
Prep Batch:	61619	Sample Preparation:	2010-07-20	Prepared By:	AR

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

Sample: 238022 - AH-3 0-6in.

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	71873	Date Analyzed:	2010-07-19	Analyzed By:	kg
Prep Batch:	61592	Sample Preparation:	2010-07-19	Prepared By:	kg

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

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

Sample: 238022 - AH-3 0-6in.

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	71925	Date Analyzed:	2010-07-20	Analyzed By:	AG
Prep Batch:	61608	Sample Preparation:	2010-07-19	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.94	mg/Kg	1	2.00	97	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	1	2.00	93	42 - 159

Sample: 238023 - AH-4 0-6in.

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	71924	Date Analyzed:	2010-07-20	Analyzed By:	AG
Prep Batch:	61608	Sample Preparation:	2010-07-19	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.16	mg/Kg	1	2.00	108	52.8 - 137
4-Bromofluorobenzene (4-BFB)		2.19	mg/Kg	1	2.00	110	38.4 - 157

Sample: 238023 - AH-4 0-6in.

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	71895	Date Analyzed:	2010-07-20	Analyzed By:	AR
Prep Batch:	61619	Sample Preparation:	2010-07-20	Prepared By:	AR

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

Sample: 238023 - AH-4 0-6in.

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	71873	Date Analyzed:	2010-07-19	Analyzed By:	kg
Prep Batch:	61592	Sample Preparation:	2010-07-19	Prepared By:	kg

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

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

Sample: 238023 - AH-4 0-6in.

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	71925	Date Analyzed:	2010-07-20	Analyzed By:	AG
Prep Batch:	61608	Sample Preparation:	2010-07-19	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.51	mg/Kg	1	2.00	126	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.40	mg/Kg	1	2.00	120	42 - 159

Method Blank (1) QC Batch: 71873

QC Batch:	71873	Date Analyzed:	2010-07-19	Analyzed By:	kg
Prep Batch:	61592	QC Preparation:	2010-07-19	Prepared By:	kg

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

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

Method Blank (1) QC Batch: 71895

QC Batch: 71895 | Date Analyzed: 2010-07-20 | Analyzed By: AR
Prep Batch: 61619 | QC Preparation: 2010-07-20 | Prepared By: AR

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

Method Blank (1) QC Batch: 71924

QC Batch: 71924 | Date Analyzed: 2010-07-20 | Analyzed By: AG
Prep Batch: 61608 | QC Preparation: 2010-07-19 | Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.19	mg/Kg	1	2.00	110	66.6 - 122
4-Bromofluorobenzene (4-BFB)		2.18	mg/Kg	1	2.00	109	55.4 - 132

Method Blank (1) QC Batch: 71925

QC Batch: 71925 | Date Analyzed: 2010-07-20 | Analyzed By: AG
Prep Batch: 61608 | QC Preparation: 2010-07-19 | Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.63	mg/Kg	1	2.00	132	67.6 - 150
4-Bromofluorobenzene (4-BFB)		2.41	mg/Kg	1	2.00	120	52.4 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 71873 | Date Analyzed: 2010-07-19 | Analyzed By: kg
Prep Batch: 61592 | QC Preparation: 2010-07-19 | Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	256	mg/Kg	1	250	<14.5	102	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	251	mg/Kg	1	250	<14.5	100	57.4 - 133.4	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
n-Tricosane	111	114	mg/Kg	1	100	111	114	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 71895 | Date Analyzed: 2010-07-20 | Analyzed By: AR
Prep Batch: 61619 | QC Preparation: 2010-07-20 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.4	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 71924 | Date Analyzed: 2010-07-20 | Analyzed By: AG
Prep Batch: 61608 | QC Preparation: 2010-07-19 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.99	mg/Kg	1	2.00	<0.0150	100	81.9 - 108
Toluene	2.02	mg/Kg	1	2.00	<0.00950	101	81.9 - 107
Ethylbenzene	2.00	mg/Kg	1	2.00	<0.0106	100	78.4 - 107
Xylene	6.06	mg/Kg	1	6.00	<0.00930	101	79.1 - 107

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

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.03	mg/Kg	1	2.00	<0.0150	102	81.9 - 108	2	20
Toluene	2.07	mg/Kg	1	2.00	<0.00950	104	81.9 - 107	2	20
Ethylbenzene	2.04	mg/Kg	1	2.00	<0.0106	102	78.4 - 107	2	20
Xylene	6.21	mg/Kg	1	6.00	<0.00930	104	79.1 - 107	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	2.04	mg/Kg	1	2.00	104	102	70.2 - 114
4-Bromofluorobenzene (4-BFB)	2.15	2.09	mg/Kg	1	2.00	108	104	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 71925 | Date Analyzed: 2010-07-20 | Analyzed By: AG
Prep Batch: 61608 | QC Preparation: 2010-07-19 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.7	mg/Kg	1	20.0	<1.65	78	69.9 - 95.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	16.6	mg/Kg	1	20.0	<1.65	83	69.9 - 95.4	6	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)	2.68	2.68	mg/Kg	1	2.00	134	134	61.9 - 142
4-Bromofluorobenzene (4-BFB)	2.53	2.55	mg/Kg	1	2.00	126	128	68.2 - 132

Matrix Spike (MS-1) Spiked Sample: 238025

QC Batch: 71873 | Date Analyzed: 2010-07-19 | Analyzed By: kg
Prep Batch: 61592 | QC Preparation: 2010-07-19 | Prepared By: kg

continued ...

matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	241	mg/Kg	1	250	<14.5	96	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	242	mg/Kg	1	250	<14.5	97	35.2 - 167.1	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	101	106	mg/Kg	1	100	101	106	70 - 130

Matrix Spike (MS-1) Spiked Sample: 238023

QC Batch: 71895 | Date Analyzed: 2010-07-20 | Analyzed By: AR
Prep Batch: 61619 | QC Preparation: 2010-07-20 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10200	mg/Kg	100	10000	<218	101	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10400	mg/Kg	100	10000	<218	103	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: 238026

QC Batch: 71924 | Date Analyzed: 2010-07-20 | Analyzed By: AG
Prep Batch: 61608 | QC Preparation: 2010-07-19 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.94	mg/Kg	1	2.00	<0.0150	97	80.5 - 112
Toluene	2.01	mg/Kg	1	2.00	<0.00950	100	82.4 - 113
Ethylbenzene	2.06	mg/Kg	1	2.00	<0.0106	103	83.9 - 114
Xylene	6.25	mg/Kg	1	6.00	<0.00930	104	84 - 114

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

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	[1]	2.31	mg/Kg	1	2.00	<0.0150	116	80.5 - 112	17	20
Toluene	[2]	2.37	mg/Kg	1	2.00	<0.00950	118	82.4 - 113	16	20
Ethylbenzene	[3]	2.45	mg/Kg	1	2.00	<0.0106	122	83.9 - 114	17	20
Xylene	[4]	7.38	mg/Kg	1	6.00	<0.00930	123	84 - 114	17	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)	1.61	1.74	mg/Kg	1	2	80	87	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1.67	1.82	mg/Kg	1	2	84	91	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 238037

QC Batch: 71925 | Date Analyzed: 2010-07-20 | Analyzed By: AG
Prep Batch: 61608 | QC Preparation: 2010-07-19 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.2	mg/Kg	1	20.0	<1.65	76	61.8 - 114

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	16.2	mg/Kg	1	20.0	<1.65	81	61.8 - 114	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)	1.55	2.31	mg/Kg	1	2	78	116	50 - 162
4-Bromofluorobenzene (4-BFB)	1.58	2.30	mg/Kg	1	2	79	115	50 - 162

Standard (CCV-1)

QC Batch: 71873 | Date Analyzed: 2010-07-19 | Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	261	104	80 - 120	2010-07-19

[1]MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[2]MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[3]MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[4]MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

Standard (CCV-2)

QC Batch: 71873 Date Analyzed: 2010-07-19 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	268	107	80 - 120	2010-07-19

Standard (ICV-1)

QC Batch: 71895 Date Analyzed: 2010-07-20 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2010-07-20

Standard (CCV-1)

QC Batch: 71895 Date Analyzed: 2010-07-20 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-07-20

Standard (CCV-1)

QC Batch: 71924 Date Analyzed: 2010-07-20 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0959	96	80 - 120	2010-07-20
Toluene		mg/Kg	0.100	0.0981	98	80 - 120	2010-07-20
Ethylbenzene		mg/Kg	0.100	0.0991	99	80 - 120	2010-07-20
Xylene		mg/Kg	0.300	0.300	100	80 - 120	2010-07-20

Standard (CCV-2)

QC Batch: 71924 Date Analyzed: 2010-07-20 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0995	100	80 - 120	2010-07-20
Toluene		mg/Kg	0.100	0.101	101	80 - 120	2010-07-20
Ethylbenzene		mg/Kg	0.100	0.0996	100	80 - 120	2010-07-20
Xylene		mg/Kg	0.300	0.302	101	80 - 120	2010-07-20

Standard (CCV-1)

QC Batch: 71925 Date Analyzed: 2010-07-20 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.02	102	80 - 120	2010-07-20

Standard (CCV-2)

QC Batch: 71925 Date Analyzed: 2010-07-20 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.992	99	80 - 120	2010-07-20

Order #: 100+1914

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: Chevron

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400602

PROJECT NAME: LSAU #22 at #98 Well Lea Co NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
288020	7/15		S		X	AH-1 0-6"	1				X		X	X												X				
021			S		X	AH-2 0-6"	1				X		X	X												X				
022			S		X	AH-3 0-6"	1				X		X	X												X				
023			S		X	AH-4 0-6"	1				X		X	X												X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 7/19/10 Time: 2:05	RECEIVED BY: (Signature) Date: 7/19/10 Time: 14:06
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature) Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) TF JJ Date: 7-15-10 Time:

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.3°c intact

REMARKS: XAll test 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.