

SITE INFORMATION

Report Type: Work Plan 2RP-1069 8,2RP-834

General Site Information:

Site:	State 32 Tank Battery					
Company:	Alamo Permian Resources, LLC.					
Section, Township and Range	Section 32	T17S	R28E	Unit J		
Lease Number:	API-30-015-00169					
County:	Eddy County					
GPS:	32.79022° N 104.19531° W					
Surface Owner:	State					
Mineral Owner:						
Directions:	From intersection of Highway 82 and Illinios Camp Road, go south 0.3 miles on Illinios Camp Road (CR 206), turn left (east) into lease road and go 0.1 miles and turn right (south), go 0.1 miles to tank battery					

Release Data:

Date Released:	6/26/2011	3/15/2012	RECEIVED JUN 24 2013
Type Release:	crude oil	crude oil	
Source of Contamination:	hole in tank	hole in tank	
Fluid Released:	53 barrels	130 barrels	
Fluids Recovered:	3 barrels	52.5 barrels	

Official Communication:

Name:	Steven Mastin	James F. Kennedy
Company:	Alamo Permian Resources, LLC.	Tetra Tech
Address:	415 W. Wall St. Suite 500	1910 N. Big Spring
P.O. Box		
City:	Midland Texas	Midland, Texas
Phone number:	(432) 557-5847	(432) 682-4559
Fax:		
Email:	smastin@alamoresources.com	james.kennedy@tetrattech.com

Ranking Criteria

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

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
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Acceptable Soil RRAL (mg/kg)

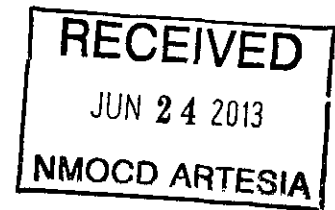
Benzene	Total BTEX	TPH
10	50	5,000

100



TETRA TECH

May 5, 2013



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

Re: Work Plan for the Alamo Permian Resources, LLC., State 32 Tank Battery, Unit J, Section 32, Township 17 South, Range 28 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Alamo Permian Resources, LLC., (Alamo) to assess spills from the State 32 Tank Battery, Unit J, Section 32, Township 17 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.79022°, W 104.19531°. 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 June 27, 2011, and released approximately fifty-three (53) barrels of crude oil due to a failure in the nipple on the rear drain line of the tank. The spill was contained inside the facility berms and approximately 3 barrels of oil was recovered. Before the release could be evaluated, another release occurred on March 15, 2012, and released approximately one hundred and thirty (130) barrels of crude oil due to a hole in the oil tank. The spill was contained inside the facility berms and overlapped the previous spill. Approximately 52.5 barrels of oil was recovered. The C-141 forms are enclosed in Appendix A.

Groundwater

According to the USGS data, one well is located in Section 22, Township 17 South, Range 28 East, with a reported groundwater depth of 79' below surface. According to the NMOCD groundwater map and data,

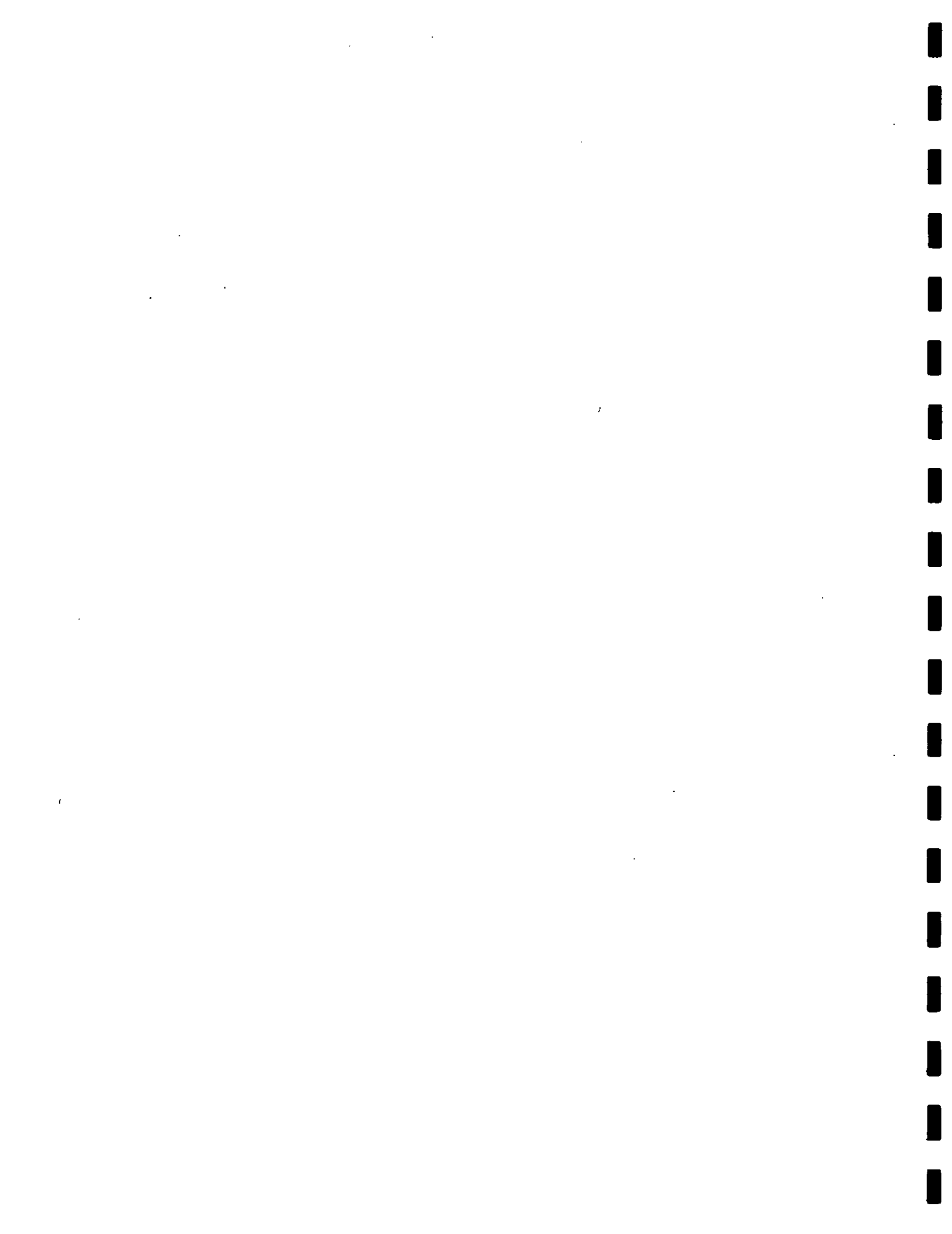
Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559

Fax 432.682.3946

www.tetrattech.com





the groundwater depth in the area is approximately 125' below surface. The closest wells are located in Section 19, Township 17 South, Range 28 East and Section 4, Township 18 South, Range 28 East, with reported depths of 191' and 108', respectively. The 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-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. Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Assessment Work Plan

On August 16, 2012, Tetra Tech personnel inspected and sampled the spill area. Two (2) trenches (T-1 and T-2) were installed using a backhoe to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. The sampling results are summarized in Table 1. The trench locations are shown on Figure 3. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C.

Referring to Table 1, the trench samples showed TPH and BTEX samples above the RRAL. In the area of T-1, the TPH and Total BTEX concentrations declined below the RRAL at 4.0' and 6.0', respectively. Trench (T-2) showed a shallow hydrocarbon impact declining below the RRAL at 2.0' below surface.

Elevated chloride concentrations were detected in T-1 and T-2 from surface to a depth of 10.0' below surface. Deeper samples were not collected due to the dense caliche formation. The chloride impact was not vertically defined.



On February 20, 2013, Tetra Tech personnel supervised the installation of boreholes (BH-1 and BH-2) utilizing an air rotary drilling rig to define the vertical extents. The soil borings were installed to a total depth of 25.0' for BH-1 (T-1) and 40.0' for BH-2 (T-2). The sampling results are summarized in Table 1. Referring to Table 1, chloride concentrations decreased with depth and were vertically defined. Borehole (BH-1) did not show a significant chloride impact to the subsurface soils and appears to have concentrations confined to the area of T-1. Borehole (BH-2) did show a deeper impact to the subsurface soils to a depth of approximately 30.0' below surface, but declined with depth at 35.0' below surface to 234 mg/kg.

Proposed Work Plan

Alamo proposes to excavate the soils exceeding the RRAL and the elevated chloride concentrations. The proposed areas are highlighted (green) in Table 1 and shown on Figure 4. To eliminate safety risk to the tanks and equipment at the facility, the areas of T-1 and T-2 will be excavated to a maximum depth of approximately 3.0' to 4.0' below surface. Once excavated to the appropriate depth, a 40 mil plastic liner, or clay liner will be placed in the excavation bottom (3.0' to 4.0') in the area of T-2 to cap the area the remaining impact soils. Once excavated to the appropriate depth, the excavation will be backfilled with clean soil.

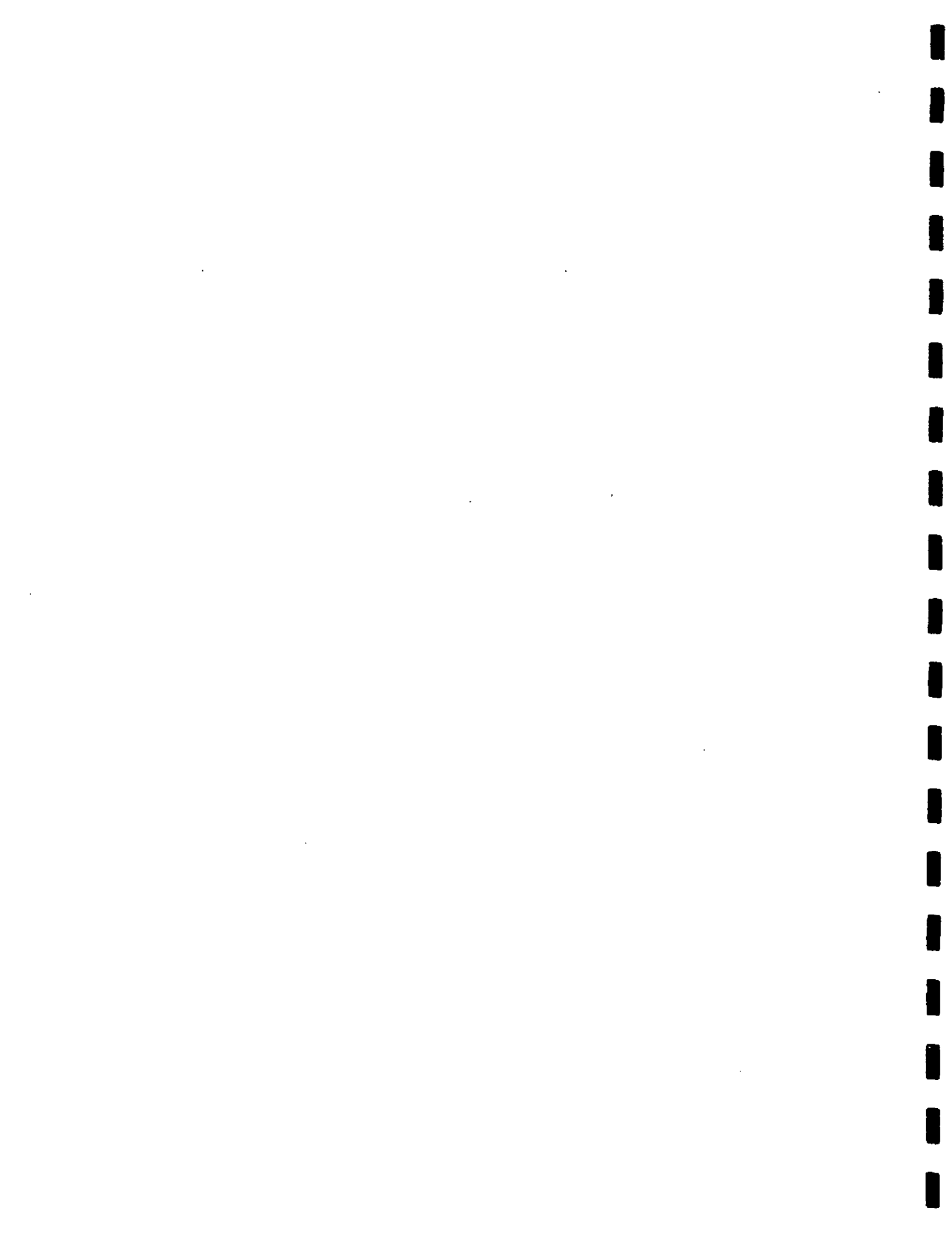
Based on site formation, the excavation depths may not be reached due to dense formations, wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable. The impacted soils that cannot be removed will be deferred until final abandonment.

Upon completion, a final closure report will be submitted to the NMOCD. If you have any questions or comments concerning the proposed remediation activities for this site, please call me at (432) 682-4559.

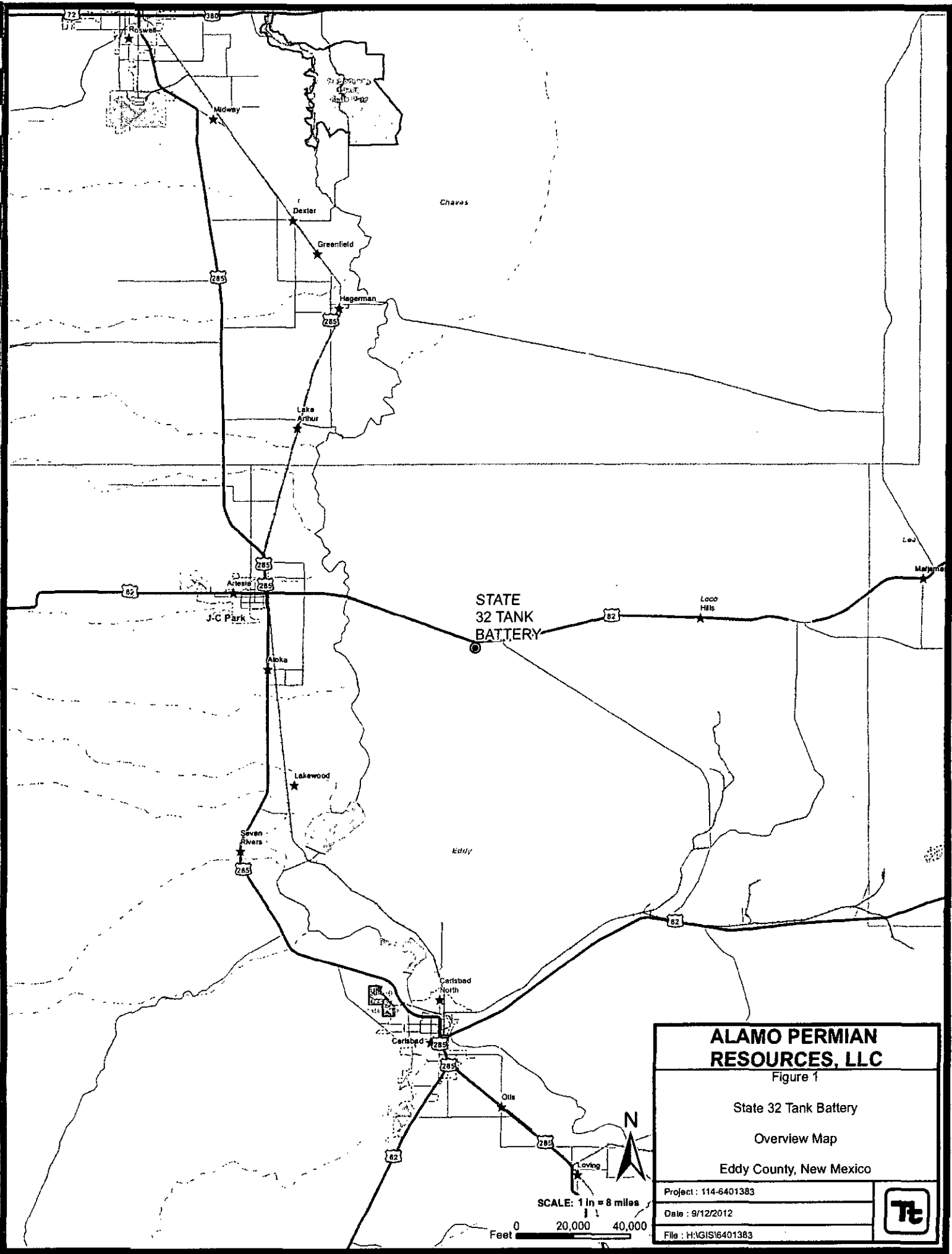
Respectfully submitted,
TETRA TECH

James F. Kennedy
Sr. Staff Professional

cc: Helms Oil – Hollie Lamb



Figures



**ALAMO PERMIAN
RESOURCES, LLC**

Figure 1

State 32 Tank Battery

Overview Map

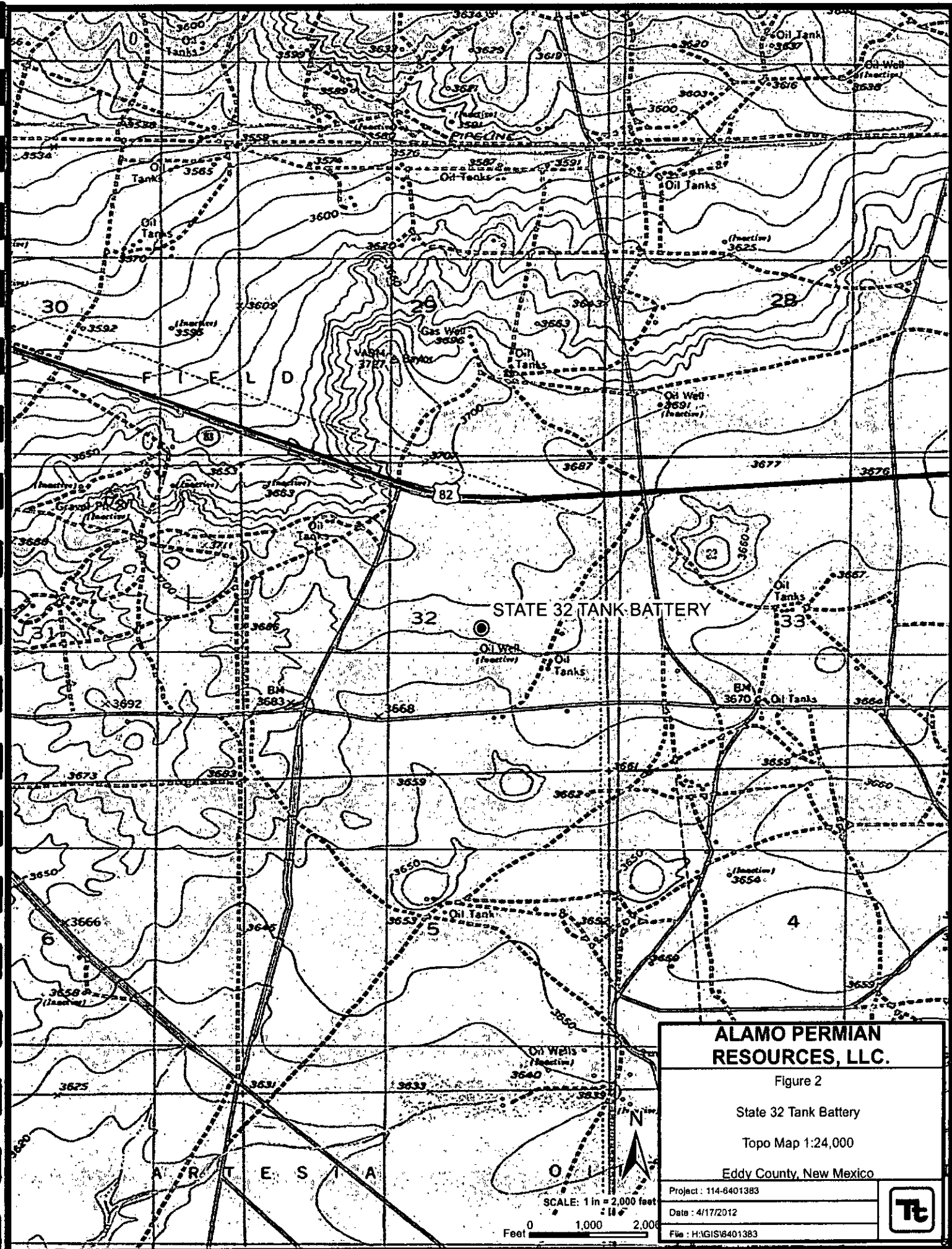
Eddy County, New Mexico

Project : 114-6401383

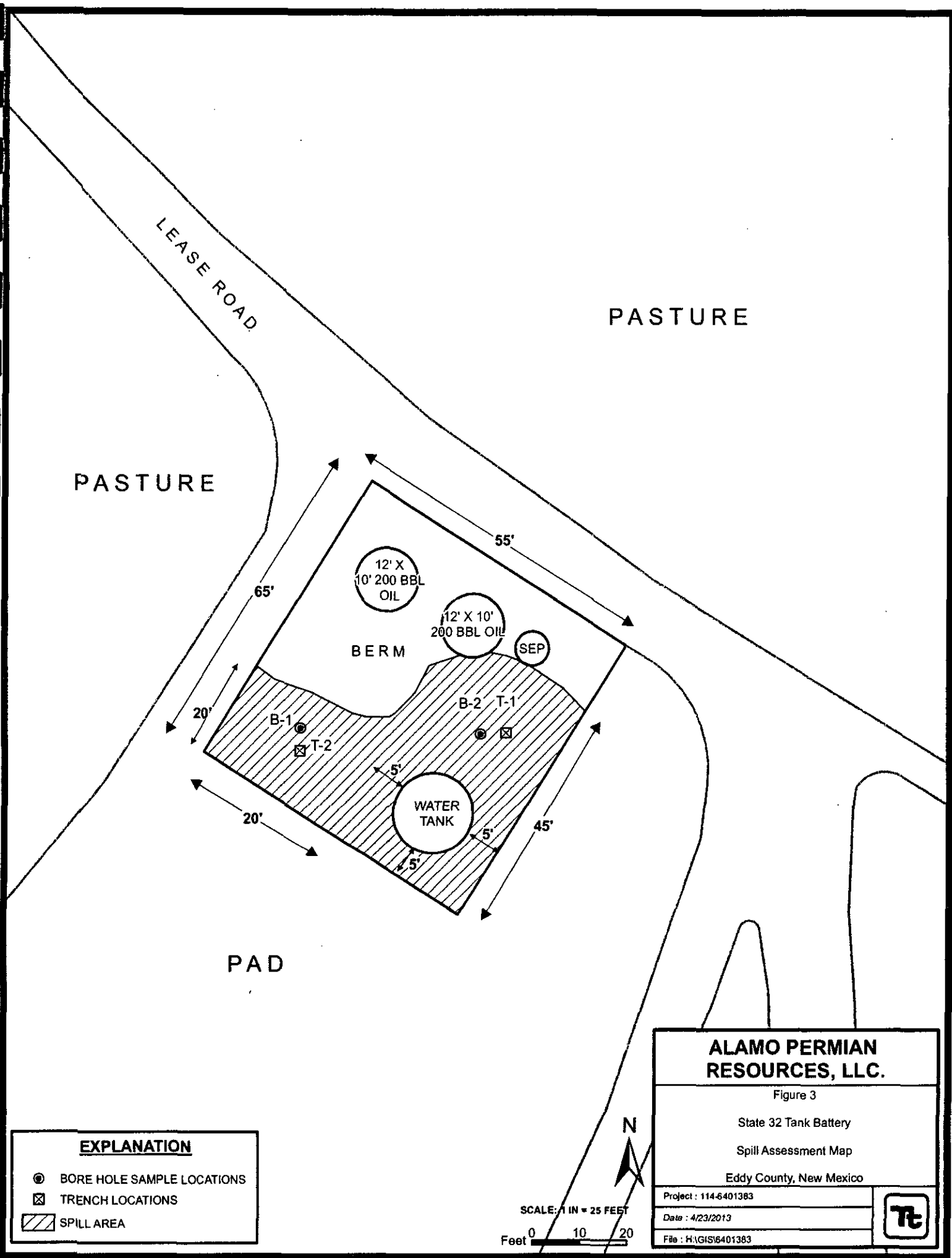
Date : 9/12/2012

File : H:\GIS\6401383









PASTURE

PASTURE

LEASE ROAD

12' X 10' 200 BBL OIL

12' X 10' 200 BBL OIL

SEP

BERM

B-1

T-2

B-2

T-1

WATER TANK

PAD

EXPLANATION

- BORE HOLE SAMPLE LOCATIONS
- ⊠ TRENCH LOCATIONS
- ▨ SPILL AREA

SCALE: 1 IN = 25 FEET

Feet 0 10 20



**ALAMO PERMIAN
RESOURCES, LLC.**

Figure 3

State 32 Tank Battery

Spill Assessment Map

Eddy County, New Mexico

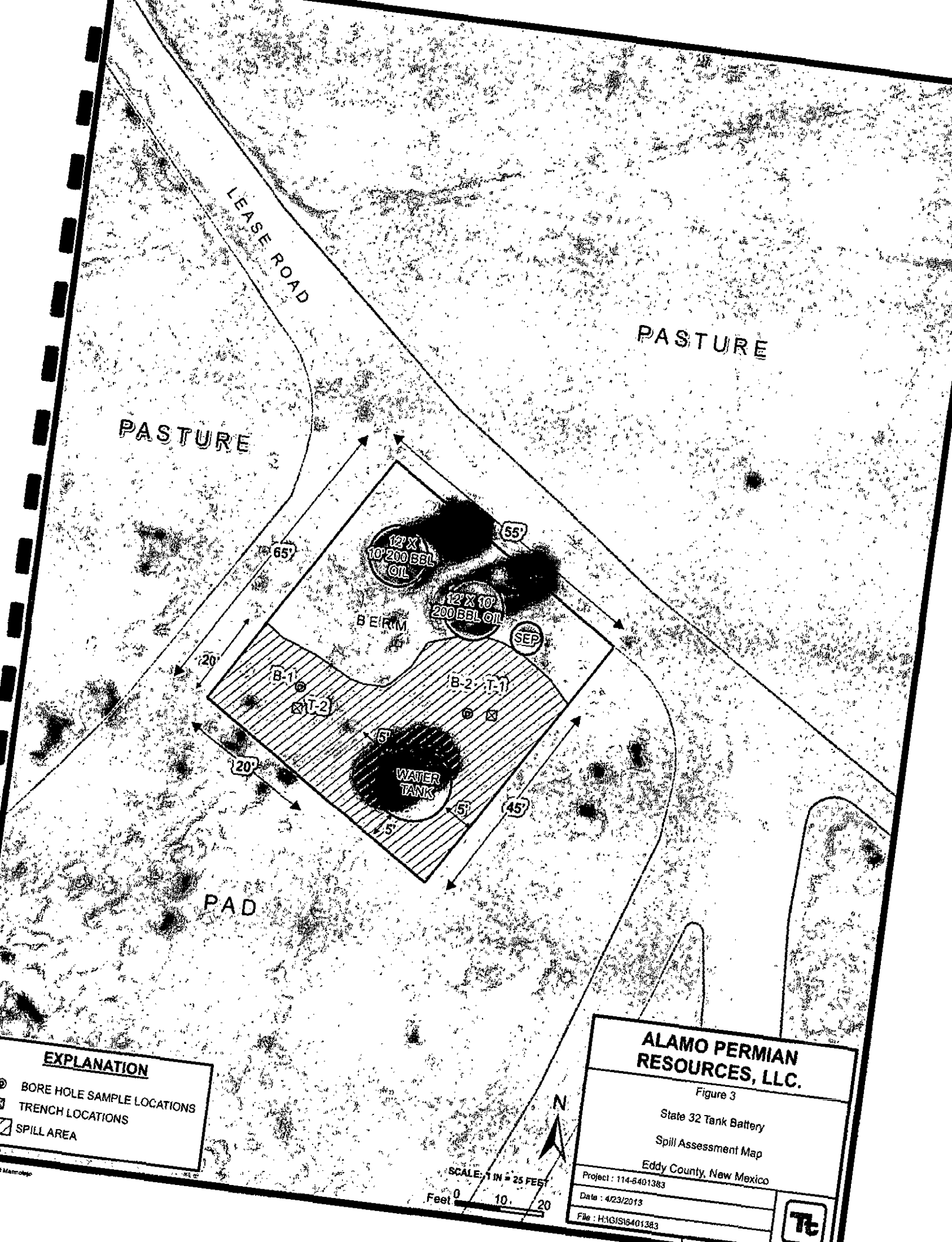
Project : 114-6401383

Date : 4/23/2013

File : H:\GIS\6401383







EXPLANATION

- ⊙ BORE HOLE SAMPLE LOCATIONS
- ▣ TRENCH LOCATIONS
- ▨ SPILL AREA

SCALE: 1 IN = 25 FEET

Feet 0 10 20



**ALAMO PERMIAN
RESOURCES, LLC.**

Figure 3

State 32 Tank Battery

Spill Assessment Map

Eddy County, New Mexico

Project : 114-6401383

Date : 4/23/2013

File : H:\GIS\16401383





LEASE ROAD

PASTURE

PASTURE

3' - 4' DEEP W/ LINER

12' X 10' 200 BBL OIL

BERM

12' X 10' 200 BBL OIL

SEP

B-1

T-2

B-2

T-1

WATER TANK

3' - 4' DEEP

PAD

EXPLANATION

- BORE HOLE SAMPLE LOCATIONS
- ⊠ TRENCH LOCATIONS
- INSTALLED LINER/ CLAY
- ▨ PROPOSED EXCAVATED AREAS



SCALE: 1 IN = 21 FEET
Feet 0 10 20

**ALAMO PERMIAN
RESOURCES, LLC.**

Figure 4

State 32 Tank Battery

Proposed Excavation Areas & Depths Map

Eddy County, New Mexico

Project : 114-8401383

Date : 4/23/2013

File : HAGIS6401383





Tables



Eddy County, New Mexico

[illegible]

Table 1
Alamo Permian
State 32 Tank Battery
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
T-2	8/16/2012	0-1	X		1,840	11,700	13,540	13.0	80.9	44.2	86.3	224	2,170
	"	2	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	551
	"	4	X		62.2	1,580	1,642	<0.0400	0.556	0.190	3.26	4.01	966
	"	6	X		-	-	-	-	-	-	-	-	1,310
	"	8	X		-	-	-	-	-	-	-	-	1,920
	"	10	X		-	-	-	-	-	-	-	-	2,200
BH-2	2/20/2013	0-1	X		-	-	-	-	-	-	-	-	<20.0
	"	4-5	X		-	-	-	-	-	-	-	-	1,030
	"	9-10	X		-	-	-	-	-	-	-	-	1,850
	"	14-15	X		-	-	-	-	-	-	-	-	1,520
	"	19-20	X		-	-	-	-	-	-	-	-	2,210
	"	24-25	X		-	-	-	-	-	-	-	-	4,100
	"	29-30	X		-	-	-	-	-	-	-	-	1,300
	"	34-35	X		-	-	-	-	-	-	-	-	234
	"	39-40	X		-	-	-	-	-	-	-	-	91.5

Proposed Liner
 (-) Not Analyzed
 T-1 Backhoe Trenches
 Proposed Excavation Depths



Photos

PHOTOGRAPHIC DOCUMENTATION

Alamo Permian Resources, LLC

State 32 Tank Battery

Eddy County, New Mexico

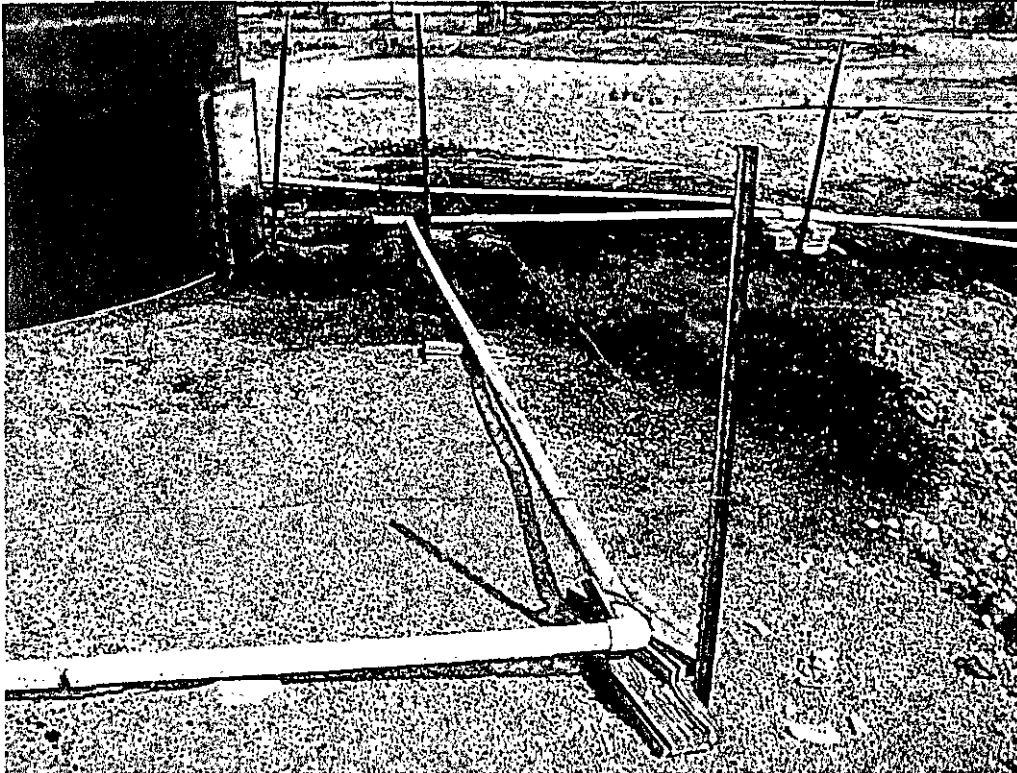
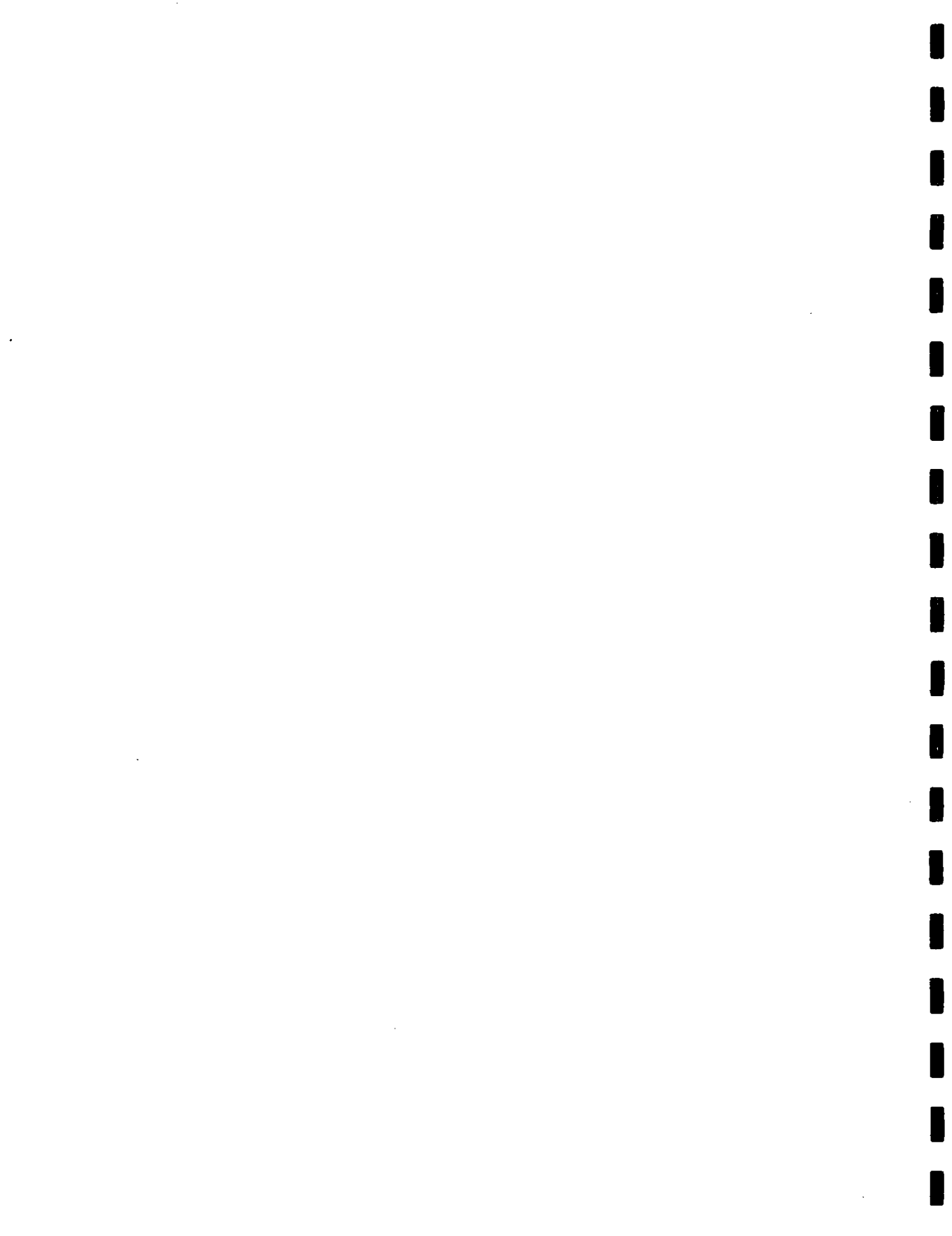


Photo 1. View of the release area inside tank battery.



Photo 2. View of the release area behind tanks.



PHOTOGRAPHIC DOCUMENTATION

Alamo Permian Resources, LLC

Artesia State #901

Eddy County, New Mexico

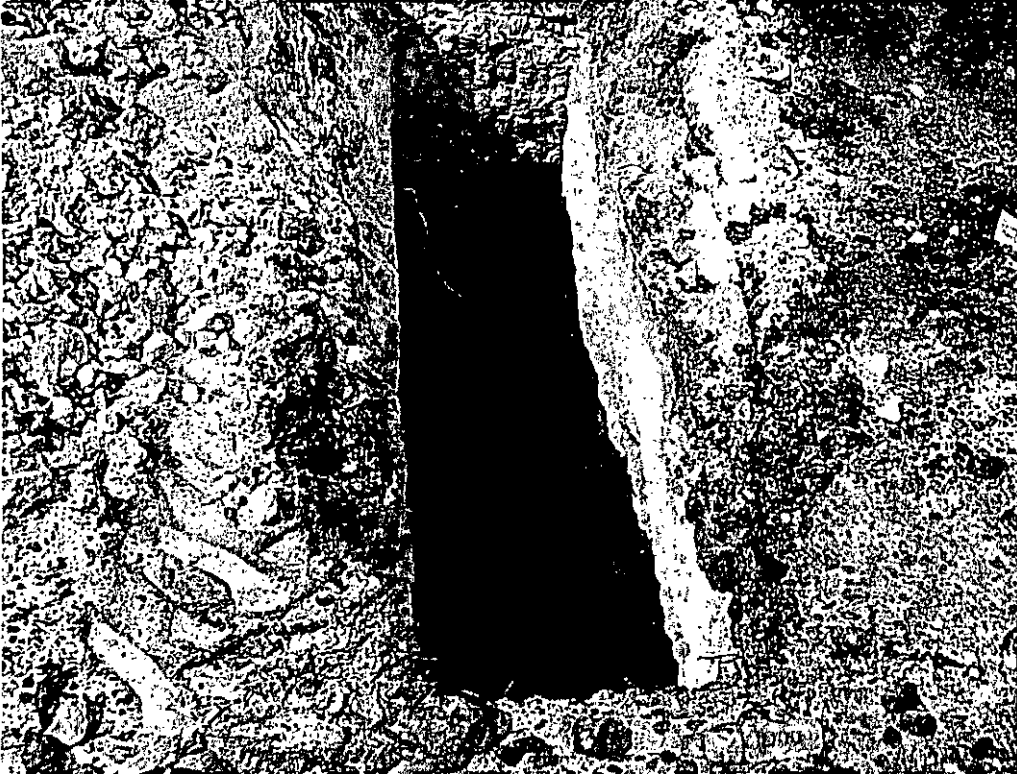


Photo 3. View of the backhoe trench #1.

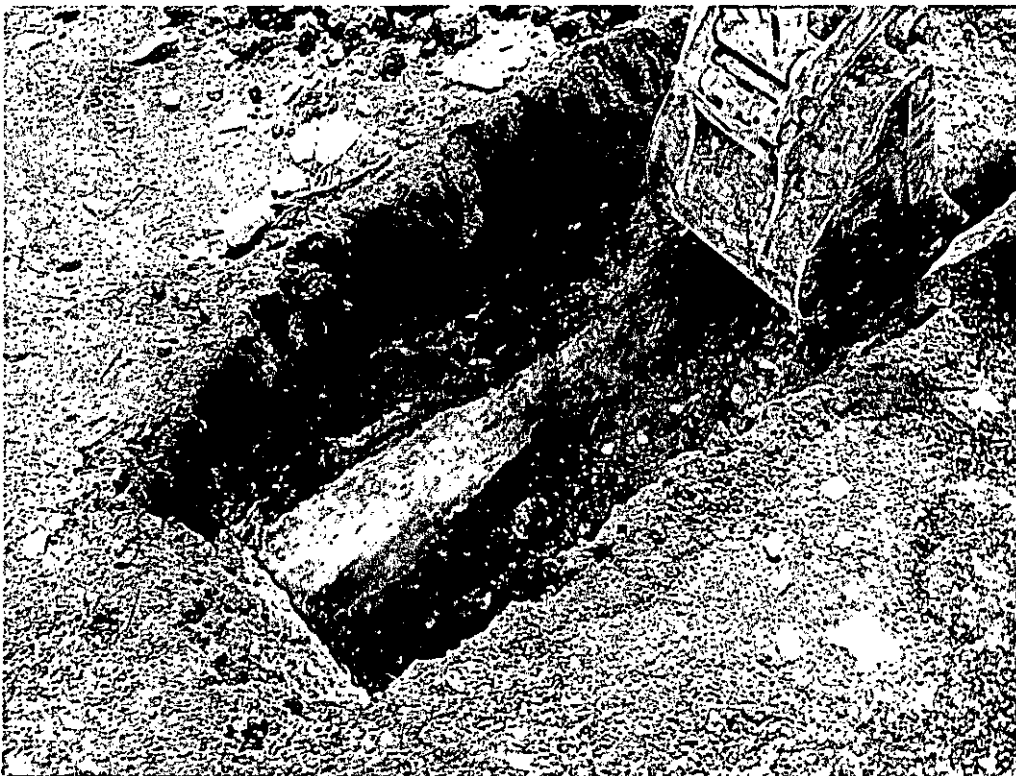


Photo 4. View of the backhoe trench#2.



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

30-015-01655

Release Notification and Corrective Action

Name of Company Alamo Permian Resources, LLC		Contact Al Perry or Joanne Keating	
Address 415 W. Wall St, Suite 500 Midland, TX 79701		Telephone No. (432)897-0673	
Facility Name State 32		Facility Type Tank Battery	
Surface Owner		Mineral Owner	Lease No. B-1717

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	32	17S	28E	---	---	---	---	Eddy County, NM

Latitude **32° 47' 25" N** Longitude **104° 11' 43" W**

NATURE OF RELEASE

Type of Release Oil	Volume of Release 53 bbls	Volume Recovered 3 bbls
Source of Release Tank Battery - Oil tank	Date and Hour of Occurrence 06/26-27/2011 9:00 AM - 24 hrs	Date and Hour of Discovery 06/27/2011 @ 9:00 AM
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom? Notice to Mike Bratcher at OCD-Artesia Office	
By Whom? C. M. Bloodworth	Date and Hour 06/28/2011 @ 9:30 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. ---	

If a Watercourse was Impacted, Describe Fully.*
None

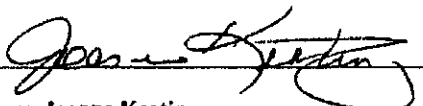
Describe Cause of Problem and Remedial Action Taken.*

State 32 Tank Battery oil tank experienced a leak due to the failure of a nipple on the bottom of the tank at the battery. The tank was isolated and the nipple clamped prior to replacement. Mike Bratcher with NMOCD-Artesia Field Office was contacted and an action plan was discussed. Samples will be taken and submitted to the NMOCD-Artesia Field Office.

Describe Area Affected and Cleanup Action Taken.*

The oil flowed South from the tank on primary caliche soil. The affected soil was excavated and moved to a central collection point in the battery, prior to sending it to Lea Land Co. Mike Bratcher with NMOCD-Artesia Field Office was contacted and an action plan was discussed. Samples will be taken and submitted to the NMOCD-Artesia Field Office. A formal remediation plan will be prepared and submitted to the NMOCD-Artesia Field Office.

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: Joanne Keating		Signed By  Approved by District Supervisor:	
Title: Regulatory Affairs Coordinator		Approval Date: AUG 11 2011	Expiration Date:
E-mail Address: jkeating@alamoresources.com		Conditions of Approval: Remediation per OCD Rules & Guidelines. SUBMIT REMEDIATION PROPOSAL NOT LATER THAN: 9/11/2011	Attached ☐
Date: 07/08/2011	Phone: (432) 897-0673		

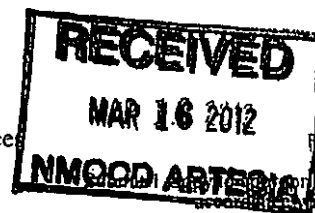
* Attach Additional Sheets If Necessary

2RP-834



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1625 N. French Dr., Hobbs, NM 88240
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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 August 8, 2011
District Office in
with 19.15.29 NMOC.

Release Notification and Corrective Action

NMLB/208654631 **274841** **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company	ALAMO PERMIAN RESOURCES, LLC	Contact	STEVEN MASTIN
Address	415 W. WALL ST. SUITE 500	Telephone No.	432 557 5847
Facility Name	STATE 32 BATTERY	Facility Type	BATTERY

Surface Owner	STATE	Mineral Owner	STATE	API No.	30-015-01655; 30-015-01656
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LOCATION OF RELEASE

St 32*2 015-01656

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	32	17S	28E	1980	S	1980	E	EDDY

Latitude 32.7789400 Longitude -104.1792300

NATURE OF RELEASE

Type of Release: OIL	Volume of Release: EST 124 bbls OIL	Volume Recovered: 52 bbls
Source of Release: TANK	Date and Hour of Occurrence: 3/15/12	Date and Hour of Discovery 3/15/12
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOC NOTIFIED 3/15/12 @ 2:19 PM STEVEN MASTIN	
By Whom? RICKY RODRIGUEZ	Date and Hour 3/15/12 1:00 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.* Cause of problem: HOLE IN TANK 66012 Remedial Action Taken: VAC TRUCK DISPATCHED TO LOCATION TO RECOVER AS MUCH OF THE SPILL AS POSSIBLE		
Describe Area Affected and Cleanup Action Taken.* THE SPILL WAS CONTAINED WITHIN THE BERM; 52 BBLs OF OIL WAS RECOVERED		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC 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 NMOC 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, NMOC 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: <u>CARIE STOKER</u>	OIL CONSERVATION DIVISION	
Printed Name: CARIE STOKER	Signed By: <u>M. L. Berman</u>	
Title: REGULATORY COORDINATOR	Approved by Environmental Specialist:	
E-mail Address: cstoker@alamoresources.com	Approval Date: MAR 26 2012	Expiration Date:
Date: 03/16/2012 Phone: 432 664 7659	Conditions of Approval: Remediation per OCD Rules & Guidelines. SUBMIT REMEDIATION PROPOSAL NOT LATER THAN: 4/26/2012	Attached ☐

* Attach Additional Sheets If Necessary

2RP-1069



Appendix B

Water Well Data
Average Depth to Groundwater (ft)
State 32 Tank Battery
Eddy County, New Mexico

16 South 27 East

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

16 South 28 East

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

17 South 27 East

6	5	4	3	2	1
7	30	9	10	11 54	12
14	8	16	15	50	13
18	17	16	15	14	13
11	90	175	22	23	24
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
	140				

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	23	24
191	29	28	27	26	25
30	32	33	34	35	36
31	SITE				

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29 210	28	27	26	25
31	208'	33	34	35	36
				153	

18 South 27 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
1	65	32	33	34	35
		100			

18 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
49	69	108	15	14	13
18	17	16	15	14	13
19	20	21	22	23	24
49	29	28	27	26	25
31	32	33	34	35	36
				65	

18 South 29 East

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

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

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

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location



Appendix C



Summary Report

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

Report Date: September 5, 2012

Work Order: 12081903

Project Location: Eddy Co., NM
Project Name: Alamo/State 32 Tank Battery
Project Number: 114-6401383

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
307127	T-1 (0-1')	soil	2012-08-16	00:00	2012-08-17
307128	T-1 (2')	soil	2012-08-16	00:00	2012-08-17
307129	T-1 (4')	soil	2012-08-16	00:00	2012-08-17
307130	T-1 (6')	soil	2012-08-16	00:00	2012-08-17
307131	T-1 (8')	soil	2012-08-16	00:00	2012-08-17
307132	T-1 (10')	soil	2012-08-16	00:00	2012-08-17
307133	T-2 (0-1')	soil	2012-08-16	00:00	2012-08-17
307134	T-2 (2')	soil	2012-08-16	00:00	2012-08-17
307135	T-2 (4')	soil	2012-08-16	00:00	2012-08-17
307136	T-2 (6')	soil	2012-08-16	00:00	2012-08-17
307137	T-2 (8')	soil	2012-08-16	00:00	2012-08-17
307138	T-2 (10')	soil	2012-08-16	00:00	2012-08-17

Sample - Field Code	BTEX				TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)		
307127 - T-1 (0-1')	4.63	37.6	18.1	50.7	20400	1660
307128 - T-1 (2')	1.80	41.9 _{je}	36.4	67.3	3760	1290 _{qs}
307129 - T-1 (4')	0.395	23.7	26.9	48.5	1440	726 _{qs}
307130 - T-1 (6')	<0.0200 _n	<0.0200	0.347	1.82		
307131 - T-1 (8')	<0.0200 _n	<0.0200	<0.0200	<0.0200		
307133 - T-2 (0-1')	13.0	80.9 _{je}	44.2	86.3 _{je}	11700	1840
307134 - T-2 (2')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 _{qs}
307135 - T-2 (4')	<0.0400 ¹	0.556	0.190	3.26	1580	62.2 _{qs}

Sample: 307127 - T-1 (0-1')

¹ Dilution due to excessive hydrocarbons.



Report Date: September 5, 2012

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Param	Flag	Result	Units	RL
Chloride		751	mg/Kg	4

Sample: 307128 - T-1 (2')

Param	Flag	Result	Units	RL
Chloride		2830	mg/Kg	4

Sample: 307129 - T-1 (4')

Param	Flag	Result	Units	RL
Chloride		1300	mg/Kg	4

Sample: 307130 - T-1 (6')

Param	Flag	Result	Units	RL
Chloride		1510	mg/Kg	4

Sample: 307131 - T-1 (8')

Param	Flag	Result	Units	RL
Chloride		1290	mg/Kg	4

Sample: 307132 - T-1 (10')

Param	Flag	Result	Units	RL
Chloride		1310	mg/Kg	4

Sample: 307133 - T-2 (0-1')

Param	Flag	Result	Units	RL
Chloride		2170	mg/Kg	4

Sample: 307134 - T-2 (2')

Param	Flag	Result	Units	RL
Chloride		551	mg/Kg	4



Report Date: September 5, 2012

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Sample: 307135 - T-2 (4')

Param	Flag	Result	Units	RL
Chloride		966	mg/Kg	4

Sample: 307136 - T-2 (6')

Param	Flag	Result	Units	RL
Chloride		1310	mg/Kg	4

Sample: 307137 - T-2 (8')

Param	Flag	Result	Units	RL
Chloride		1920	mg/Kg	4

Sample: 307138 - T-2 (10')

Param	Flag	Result	Units	RL
Chloride		2200	mg/Kg	4





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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report (Corrected Report)

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

Report Date: September 5, 2012

Work Order: 12081903

Project Location: Eddy Co., NM
Project Name: Alamo/State 32 Tank Battery
Project Number: 114-6401383

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
307127	T-1 (0-1')	soil	2012-08-16	00:00	2012-08-17
307128	T-1 (2')	soil	2012-08-16	00:00	2012-08-17
307129	T-1 (4')	soil	2012-08-16	00:00	2012-08-17
307130	T-1 (6')	soil	2012-08-16	00:00	2012-08-17
307131	T-1 (8')	soil	2012-08-16	00:00	2012-08-17
307132	T-1 (10')	soil	2012-08-16	00:00	2012-08-17
307133	T-2 (0-1')	soil	2012-08-16	00:00	2012-08-17
307134	T-2 (2')	soil	2012-08-16	00:00	2012-08-17
307135	T-2 (4')	soil	2012-08-16	00:00	2012-08-17
307136	T-2 (6')	soil	2012-08-16	00:00	2012-08-17
307137	T-2 (8')	soil	2012-08-16	00:00	2012-08-17
307138	T-2 (10')	soil	2012-08-16	00:00	2012-08-17

Report Corrections (Work Order 12081903)

- Added BTEX on samples 309128, 309129, 309130, 309131, 309134, and 309135. (9-5-12)



- Added DRO and GRO on samples 309128, 309129, 309134, and 309135. (9-5-12)

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

This report consists of a total of 40 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



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



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Case Narrative

Samples for project Alamo/State 32 Tank Battery were received by TraceAnalysis, Inc. on 2012-08-17 and assigned to work order 12081903. Samples for work order 12081903 were received intact at a temperature of 8.8 C. Samples were received on ice.

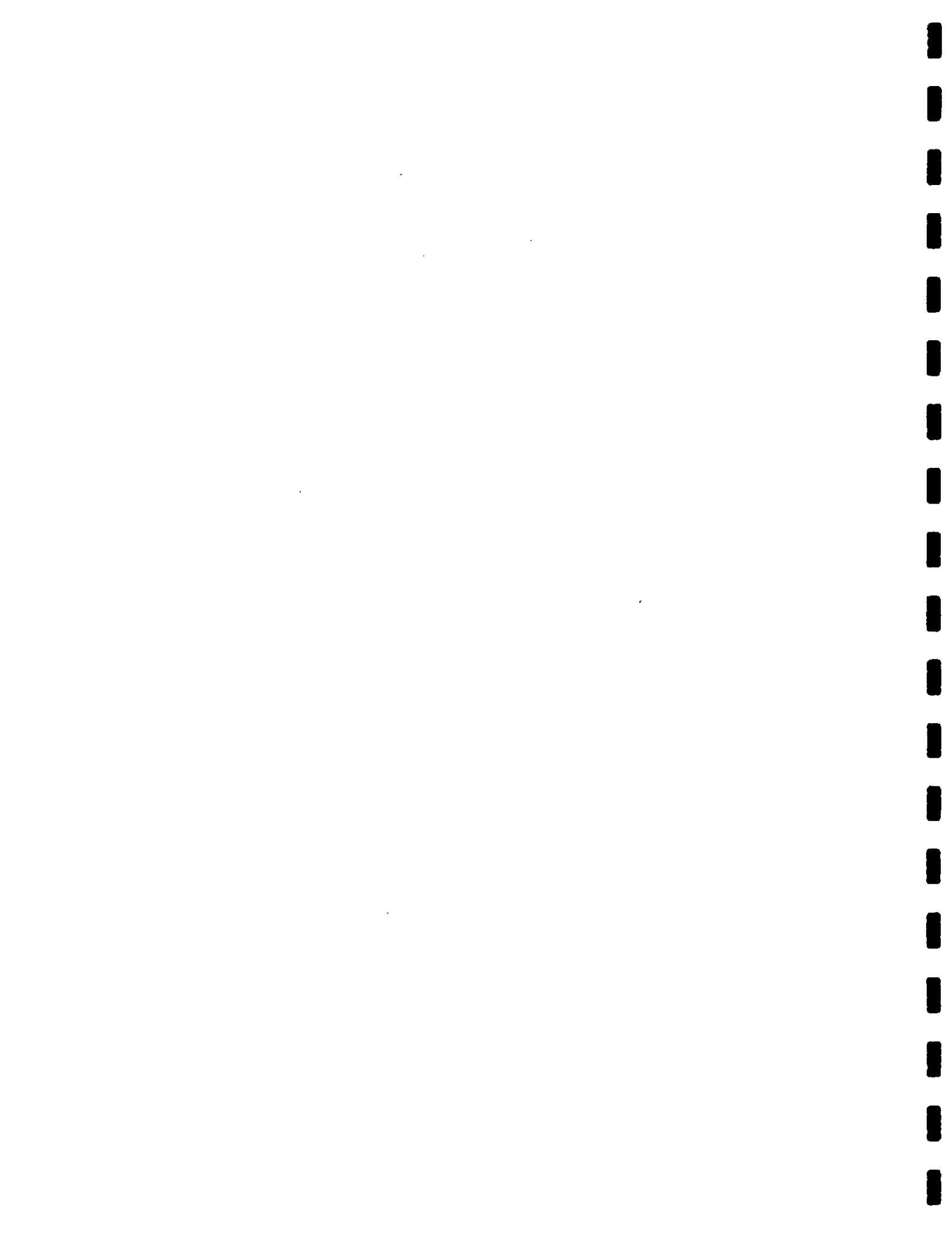
Samples were analyzed for the following tests using their respective methods.

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
BTEX	S 8021B	79947	2012-08-29 at 12:20	94344	2012-08-29 at 14:30
BTEX	S 8021B	80050	2012-09-04 at 07:02	94466	2012-09-04 at 07:02
Chloride (Titration)	SM 4500-Cl B	79857	2012-08-23 at 13:15	94226	2012-08-24 at 13:19
Chloride (Titration)	SM 4500-Cl B	79857	2012-08-23 at 13:15	94227	2012-08-24 at 13:20
TPH DRO - NEW	S 8015 D	79749	2012-08-20 at 08:00	94083	2012-08-21 at 08:25
TPH DRO - NEW	S 8015 D	79963	2012-08-29 at 10:30	94362	2012-08-29 at 10:51
TPH GRO	S 8015 D	79847	2012-08-23 at 16:25	94204	2012-08-23 at 16:25
TPH GRO	S 8015 D	79947	2012-08-29 at 12:20	94345	2012-08-28 at 14:20

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 12081903 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.



Report Date: September 5, 2012
114-6401383

Work Order: 12081903
Alamo/State 32 Tank Battery

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Eddy Co., NM

Analytical Report

Sample: 307127 - T-1 (0-1')

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 94203

Prep Batch: 79847

Analytical Method: S 8021B

Date Analyzed: 2012-08-23

Sample Preparation: 2012-08-23

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	4.63	mg/Kg	10	0.0200
Toluene		1	37.6	mg/Kg	10	0.0200
Ethylbenzene		1	18.1	mg/Kg	10	0.0200
Xylene		1	50.7	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{sr}	Q _{sr}	1.26	mg/Kg	10	2.00	63	70 - 130
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	17.6	mg/Kg	10	2.00	880	70 - 130

Sample: 307127 - T-1 (0-1')

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 94226

Prep Batch: 79857

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-08-24

Sample Preparation: 2012-08-24

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			751	mg/Kg	5	4.00

Sample: 307127 - T-1 (0-1')

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 94083

Prep Batch: 79749

Analytical Method: S 8015 D

Date Analyzed: 2012-08-21

Sample Preparation: 2012-08-20

Prep Method: N/A

Analyzed By: CW

Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		2	20400	mg/Kg	20	50.0



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114-6401383

Work Order: 12081903
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Eddy Co., NM

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	798	mg/Kg	20	100	798	70 - 130

Sample: 307127 - T-1 (0-1')

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 94204
Prep Batch: 79847

Analytical Method: S 8015 D
Date Analyzed: 2012-08-23
Sample Preparation: 2012-08-23

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	1660	mg/Kg	10	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	19.6	mg/Kg	10	2.00	980	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	35.6	mg/Kg	10	2.00	1780	70 - 130

Sample: 307128 - T-1 (2')

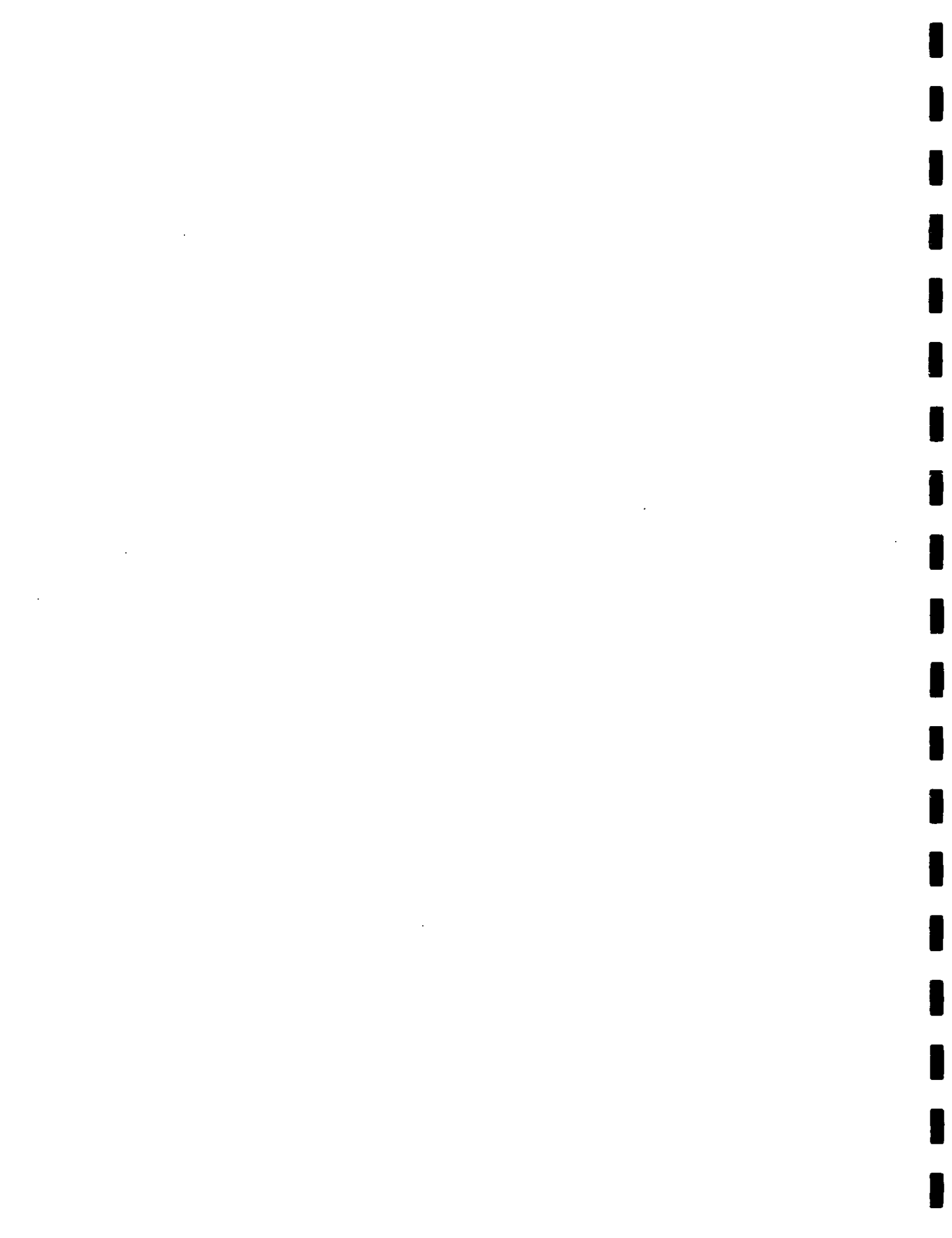
Laboratory: Lubbock
Analysis: BTEX
QC Batch: 94344
Prep Batch: 79947

Analytical Method: S 8021B
Date Analyzed: 2012-08-29
Sample Preparation: 2012-08-29

Prep Method: S 5035
Analyzed By: JS
Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	1.80	mg/Kg	5	0.0200
Toluene	1e	1	41.9	mg/Kg	5	0.0200
Ethylbenzene		1	36.4	mg/Kg	5	0.0200
Xylene		1	67.3	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	1.24	mg/Kg	5	2.00	62	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	5.43	mg/Kg	5	2.00	272	70 - 130



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114-6401383

Work Order: 12081903
Alamo/State 32 Tank Battery

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Eddy Co., NM

Sample: 307128 - T-1 (2')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-24	Analyzed By:	AR
QC Batch:	94226	Sample Preparation:	2012-08-24	Prepared By:	AR
Prep Batch:	79857				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2830	mg/Kg	10	4.00

Sample: 307128 - T-1 (2')

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2012-08-29	Analyzed By:	DS
QC Batch:	94362	Sample Preparation:	2012-08-29	Prepared By:	DS
Prep Batch:	79963				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO			3760	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	186	mg/Kg	10	100	186	70 - 130

Sample: 307128 - T-1 (2')

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2012-08-28	Analyzed By:	JS
QC Batch:	94345	Sample Preparation:	2012-08-29	Prepared By:	JS
Prep Batch:	79947				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qsr		1290	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	0.0217	mg/Kg	5	2.00	1	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	23.0	mg/Kg	5	2.00	1150	70 - 130



Report Date: September 5, 2012
114-6401383

Work Order: 12081903
Alamo/State 32 Tank Battery

Page Number: 9 of 40
Eddy Co., NM

Sample: 307129 - T-1 (4')

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 94344
Prep Batch: 79947

Analytical Method: S 8021B
Date Analyzed: 2012-08-29
Sample Preparation: 2012-08-29

Prep Method: S 5035
Analyzed By: JS
Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.395	mg/Kg	5	0.0200
Toluene		1	23.7	mg/Kg	5	0.0200
Ethylbenzene		1	26.9	mg/Kg	5	0.0200
Xylene		1	48.5	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{sr}	Q _{sr}	1.28	mg/Kg	5	2.00	64	70 - 130
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	8.92	mg/Kg	5	2.00	446	70 - 130

Sample: 307129 - T-1 (4')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 94226
Prep Batch: 79857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-24
Sample Preparation: 2012-08-24

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1300	mg/Kg	10	4.00

Sample: 307129 - T-1 (4')

Laboratory: Lubbock
Analysis: TPH DRO - NEW
QC Batch: 94362
Prep Batch: 79963

Analytical Method: S 8015 D
Date Analyzed: 2012-08-29
Sample Preparation: 2012-08-29

Prep Method: N/A
Analyzed By: DS
Prepared By: DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	1440	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q _{sr}	Q _{sr}	147	mg/Kg	5	100	147	70 - 130



Report Date: September 5, 2012
114-6401383

Work Order: 12081903
Alamo/State 32 Tank Battery

Page Number: 10 of 40
Eddy Co., NM

Sample: 307129 - T-1 (4')

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 94345
Prep Batch: 79947

Analytical Method: S 8015 D
Date Analyzed: 2012-08-28
Sample Preparation: 2012-08-29

Prep Method: S 5035
Analyzed By: JS
Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q _{st}	1	726	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{st}	Q _{st}	0.572	mg/Kg	5	2.00	29	70 - 130
4-Bromofluorobenzene (4-BFB)	Q _{st}	Q _{st}	29.6	mg/Kg	5	2.00	1480	70 - 130

Sample: 307130 - T-1 (6')

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 94466
Prep Batch: 80050

Analytical Method: S 8021B
Date Analyzed: 2012-09-04
Sample Preparation: 2012-09-04

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U, U	1	<0.0200	mg/Kg	1	0.0200
Toluene		1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		1	0.347	mg/Kg	1	0.0200
Xylene		1	1.82	mg/Kg	1	0.0200

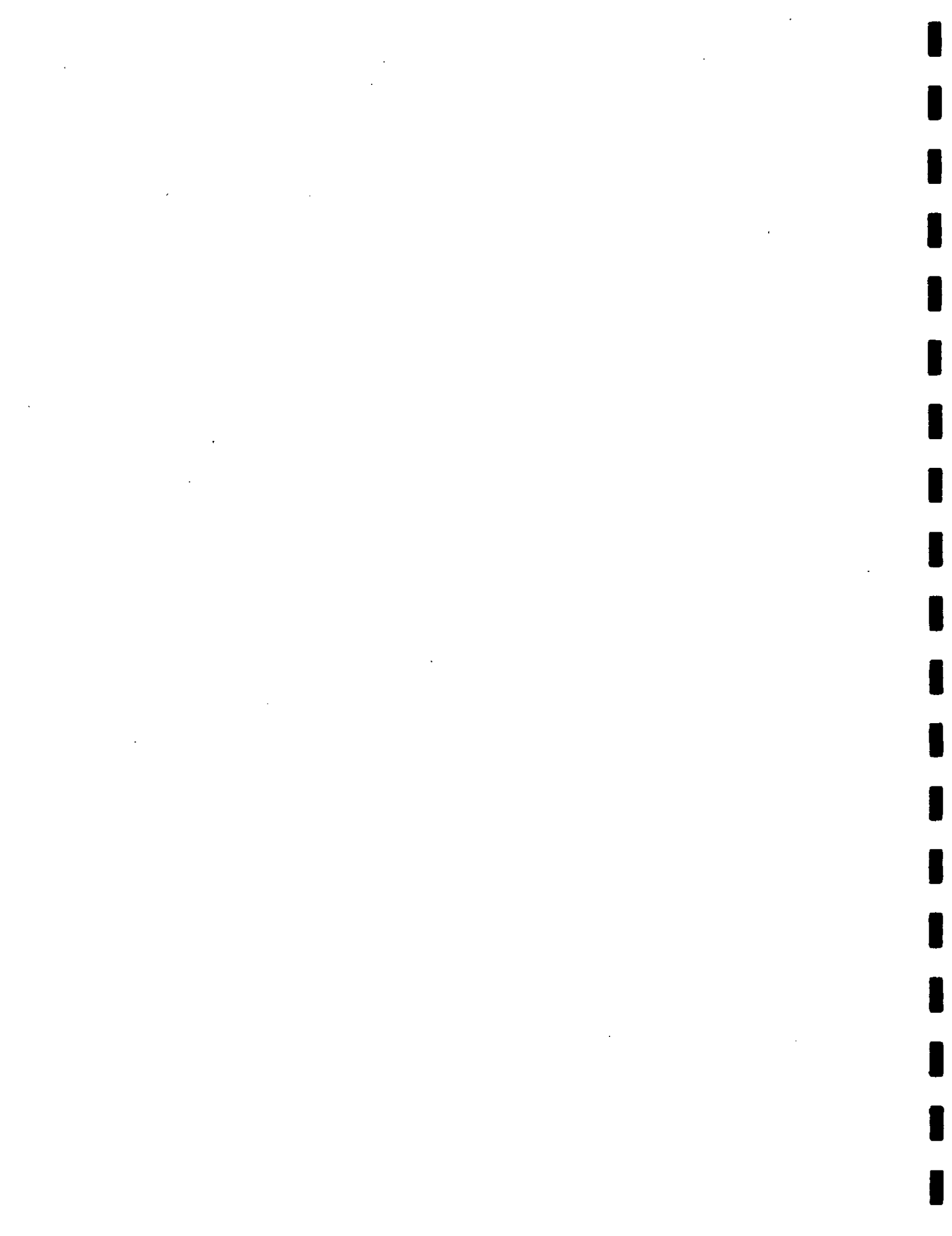
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			2.42	mg/Kg	1	2.00	121	70 - 130

Sample: 307130 - T-1 (6')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 94227
Prep Batch: 79857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-24
Sample Preparation: 2012-08-24

Prep Method: N/A
Analyzed By: AR
Prepared By: AR



Report Date: September 5, 2012
114-6401383

Work Order: 12081903
Alamo/State 32 Tank Battery

Page Number: 11 of 40
Eddy Co., NM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1510	mg/Kg	10	4.00

Sample: 307131 - T-1 (8')

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 94466

Prep Batch: 80050

Analytical Method: S 8021B

Date Analyzed: 2012-09-04

Sample Preparation: 2012-09-04

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	H,U	1	<0.0200	mg/Kg	1	0.0200
Toluene		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)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 307131 - T-1 (8')

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 94227

Prep Batch: 79857

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-08-24

Sample Preparation: 2012-08-24

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1290	mg/Kg	10	4.00

Sample: 307132 - T-1 (10')

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 94227

Prep Batch: 79857

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-08-24

Sample Preparation: 2012-08-24

Prep Method: N/A

Analyzed By: AR

Prepared By: AR



Report Date: September 5, 2012
114-6401383

Work Order: 12081903
Alamo/State 32 Tank Battery

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Eddy Co., NM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1310	mg/Kg	10	4.00

Sample: 307133 - T-2 (0-1')

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 94203
Prep Batch: 79847

Analytical Method: S 8021B
Date Analyzed: 2012-08-23
Sample Preparation: 2012-08-23

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene			13.0	mg/Kg	10	0.0200
Toluene	Je		80.9	mg/Kg	10	0.0200
Ethylbenzene			44.2	mg/Kg	10	0.0200
Xylene	Je		86.3	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	35.7	mg/Kg	10	2.00	1785	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	15.8	mg/Kg	10	2.00	790	70 - 130

Sample: 307133 - T-2 (0-1')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 94227
Prep Batch: 79857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-24
Sample Preparation: 2012-08-24

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2170	mg/Kg	10	4.00

Sample: 307133 - T-2 (0-1')

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 94083
Prep Batch: 79749

Analytical Method: S 8015 D
Date Analyzed: 2012-08-21
Sample Preparation: 2012-08-20

Prep Method: N/A
Analyzed By: CW
Prepared By: CW



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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		2	11700	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	543	mg/Kg	10	100	543	70 - 130

Sample: 307133 - T-2 (0-1')

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 94204
Prep Batch: 79847

Analytical Method: S 8015 D
Date Analyzed: 2012-08-23
Sample Preparation: 2012-08-23

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	1840	mg/Kg	10	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	42.9	mg/Kg	10	2.00	2145	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	26.6	mg/Kg	10	2.00	1330	70 - 130

Sample: 307134 - T-2 (2')

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 94344
Prep Batch: 79947

Analytical Method: S 8021B
Date Analyzed: 2012-08-29
Sample Preparation: 2012-08-29

Prep Method: S 5035
Analyzed By: JS
Prepared By: JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.58	mg/Kg	1	2.00	79	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	70 - 130

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Sample: 307134 - T-2 (2')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-24	Analyzed By:	AR
QC Batch:	94227	Sample Preparation:	2012-08-24	Prepared By:	AR
Prep Batch:	79857				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			551	mg/Kg	5	4.00

Sample: 307134 - T-2 (2')

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2012-08-29	Analyzed By:	DS
QC Batch:	94362	Sample Preparation:	2012-08-29	Prepared By:	DS
Prep Batch:	79963				

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

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

Sample: 307134 - T-2 (2')

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2012-08-28	Analyzed By:	JS
QC Batch:	94345	Sample Preparation:	2012-08-29	Prepared By:	JS
Prep Batch:	79947				

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.53	mg/Kg	1	2.00	76	70 - 130
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	1	2.00	94	70 - 130

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Sample: 307135 - T-2 (4')

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 94344

Prep Batch: 79947

Analytical Method: S 8021B

Date Analyzed: 2012-08-29

Sample Preparation: 2012-08-29

Prep Method: S 5035

Analyzed By: JS

Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	<0.0400	mg/Kg	2	0.0200
Toluene		1	0.556	mg/Kg	2	0.0200
Ethylbenzene		1	0.190	mg/Kg	2	0.0200
Xylene		1	3.26	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.60	mg/Kg	2	2.00	80	70 - 130
4-Bromofluorobenzene (4-BFB)			2.34	mg/Kg	2	2.00	117	70 - 130

Sample: 307135 - T-2 (4')

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 94227

Prep Batch: 79857

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-08-24

Sample Preparation: 2012-08-24

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			966	mg/Kg	5	4.00

Sample: 307135 - T-2 (4')

Laboratory: Lubbock

Analysis: TPH DRO - NEW

QC Batch: 94362

Prep Batch: 79963

Analytical Method: S 8015 D

Date Analyzed: 2012-08-29

Sample Preparation: 2012-08-29

Prep Method: N/A

Analyzed By: DS

Prepared By: DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	1580	mg/Kg	2	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	161	mg/Kg	2	100	161	70 - 130

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Sample: 307135 - T-2 (4')

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 94345
Prep Batch: 79947

Analytical Method: S 8015 D
Date Analyzed: 2012-08-28
Sample Preparation: 2012-08-29

Prep Method: S 5035
Analyzed By: JS
Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q _{st}	1	62.2	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{st}	Q _{st}	1.36	mg/Kg	2	2.00	68	70 - 130
4-Bromofluorobenzene (4-BFB)	Q _{st}	Q _{st}	3.38	mg/Kg	2	2.00	169	70 - 130

Sample: 307136 - T-2 (6')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 94227
Prep Batch: 79857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-24
Sample Preparation: 2012-08-24

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1310	mg/Kg	10	4.00

Sample: 307137 - T-2 (8')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 94227
Prep Batch: 79857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-24
Sample Preparation: 2012-08-24

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1920	mg/Kg	10	4.00



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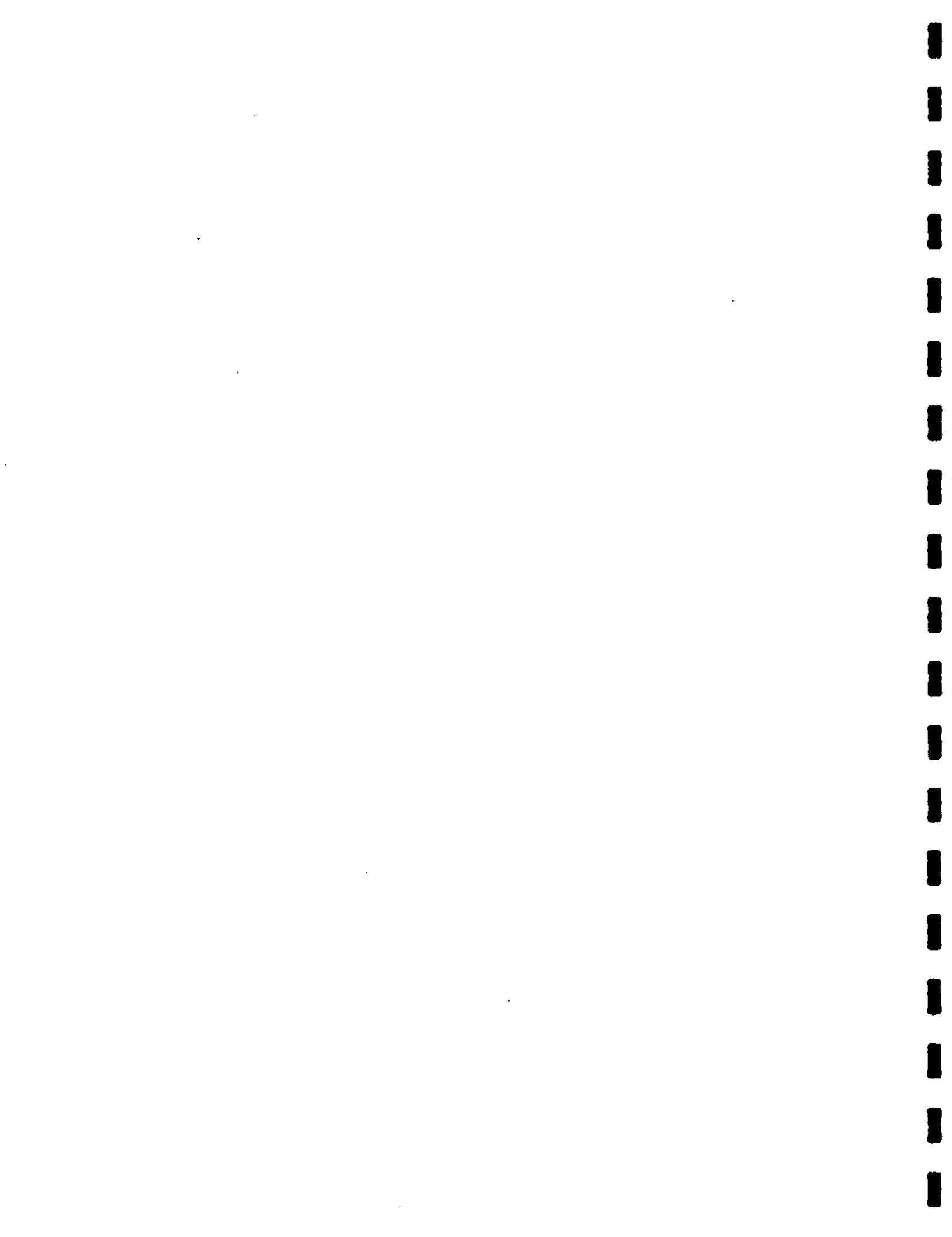
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Sample: 307138 - T-2 (10')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-24	Analyzed By:	AR
QC Batch:	94227	Sample Preparation:	2012-08-24	Prepared By:	AR
Prep Batch:	79857				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2200	mg/Kg	10	4.00



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Method Blanks

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



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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: 94226

QC Batch: 94226 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

Method Blank (1) QC Batch: 94227

QC Batch: 94227 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

Method Blank (1) QC Batch: 94344

QC Batch: 94344 Date Analyzed: 2012-08-29 Analyzed By: JS
Prep Batch: 79947 QC Preparation: 2012-08-29 Prepared By: JS

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	<0.00460	mg/Kg	0.02



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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.66	mg/Kg	1	2.00	83	70 - 130

Method Blank (1) QC Batch: 94345

QC Batch: 94345
Prep Batch: 79947

Date Analyzed: 2012-08-28
QC Preparation: 2012-08-29

Analyzed By: JS
Prepared By: JS

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)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	70 - 130

Method Blank (1) QC Batch: 94362

QC Batch: 94362
Prep Batch: 79963

Date Analyzed: 2012-08-29
QC Preparation: 2012-08-29

Analyzed By: DS
Prepared By: DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.3	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			108	mg/Kg	1	100	108	70 - 130

Method Blank (1) QC Batch: 94466

QC Batch: 94466
Prep Batch: 80050

Date Analyzed: 2012-09-04
QC Preparation: 2012-09-04

Analyzed By: MT
Prepared By: MT

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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	0.0128	mg/Kg	0.02

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)			1.73	mg/Kg	1	2.00	86	70 - 130



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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 94083
Prep Batch: 79749

Date Analyzed: 2012-08-21
QC Preparation: 2012-08-20

Analyzed By: CW
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
Prep Batch: 79847

Date Analyzed: 2012-08-23
QC Preparation: 2012-08-23

Analyzed By: MT
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.



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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
Prep Batch: 79847

Date Analyzed: 2012-08-23
QC Preparation: 2012-08-23

Analyzed By: MT
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.

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: 94226
Prep Batch: 79857

Date Analyzed: 2012-08-24
QC Preparation: 2012-08-23

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2640	mg/Kg	1	2500	<3.85	106	85 - 115

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

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

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



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Laboratory Control Spike (LCS-1)

QC Batch: 94227
Prep Batch: 79857

Date Analyzed: 2012-08-24
QC Preparation: 2012-08-23

Analyzed By: AR
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			2590	mg/Kg	1	2500	<3.85	104	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 94344
Prep Batch: 79947

Date Analyzed: 2012-08-29
QC Preparation: 2012-08-29

Analyzed By: JS
Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene			1.87	mg/Kg	1	2.00	<0.00365	94	75.4 - 120
Toluene			1.84	mg/Kg	1	2.00	<0.00816	92	74.9 - 120
Ethylbenzene			1.82	mg/Kg	1	2.00	<0.00560	91	78.1 - 120
Xylene			5.52	mg/Kg	1	6.00	<0.00460	92	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			1.88	mg/Kg	1	2.00	<0.00365	94	75.4 - 120	0	20
Toluene			1.87	mg/Kg	1	2.00	<0.00816	94	74.9 - 120	2	20
Ethylbenzene			1.86	mg/Kg	1	2.00	<0.00560	93	78.1 - 120	2	20
Xylene			5.64	mg/Kg	1	6.00	<0.00460	94	77.3 - 120	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.72	1.74	mg/Kg	1	2.00	86	87	70 - 130
4-Bromofluorobenzene (4-BFB)	1.71	1.71	mg/Kg	1	2.00	86	86	70 - 130



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Laboratory Control Spike (LCS-1)

QC Batch: 94345
Prep Batch: 79947

Date Analyzed: 2012-08-28
QC Preparation: 2012-08-29

Analyzed By: JS
Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.7	mg/Kg	1	20.0	<0.359	88	68.9 - 120

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.1	mg/Kg	1	20.0	<0.359	86	68.9 - 120	3	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.62	1.49	mg/Kg	1	2.00	81	74	70 - 130
4-Bromofluorobenzene (4-BFB)	1.90	1.75	mg/Kg	1	2.00	95	88	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94362
Prep Batch: 79963

Date Analyzed: 2012-08-29
QC Preparation: 2012-08-29

Analyzed By: DS
Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	270	mg/Kg	1	250	<15.3	108	70 - 130

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	224	mg/Kg	1	250	<15.3	90	70 - 130	19	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
n-Tricosane	120	94.2	mg/Kg	1	100	120	94	70 - 130



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Laboratory Control Spike (LCS-1)

QC Batch: 94466
Prep Batch: 80050

Date Analyzed: 2012-09-04
QC Preparation: 2012-09-04

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.74	mg/Kg	1	2.00	<0.00365	87	75.4 - 120
Toluene		1	1.73	mg/Kg	1	2.00	<0.00816	86	74.9 - 120
Ethylbenzene		1	1.74	mg/Kg	1	2.00	<0.00560	87	78.1 - 120
Xylene		1	5.24	mg/Kg	1	6.00	0.0128	87	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	1.74	mg/Kg	1	2.00	<0.00365	87	75.4 - 120	0	20
Toluene		1	1.72	mg/Kg	1	2.00	<0.00816	86	74.9 - 120	1	20
Ethylbenzene		1	1.74	mg/Kg	1	2.00	<0.00560	87	78.1 - 120	0	20
Xylene		1	5.24	mg/Kg	1	6.00	0.0128	87	77.3 - 120	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.79	1.84	mg/Kg	1	2.00	90	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.76	1.75	mg/Kg	1	2.00	88	88	70 - 130

Matrix Spike (MS-1) Spiked Sample: 307094

QC Batch: 94083
Prep Batch: 79749

Date Analyzed: 2012-08-21
QC Preparation: 2012-08-20

Analyzed By: CW
Prepared By: CW

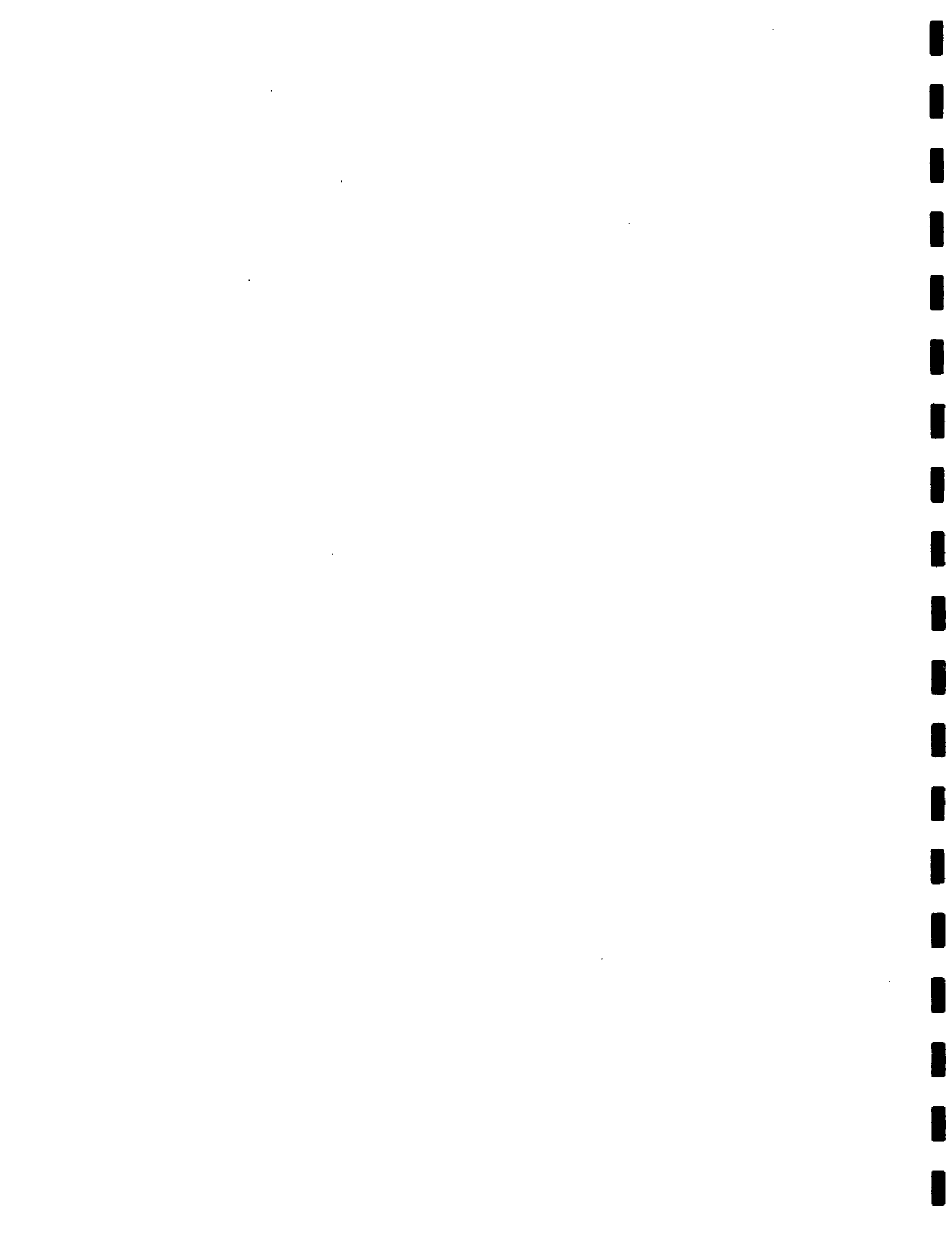
Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	244	mg/Kg	1	250	<14.5	98	70 - 130

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.

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matrix spikes continued ...

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

Matrix Spike (MS-1) Spiked Sample: 307092

QC Batch: 94203
Prep Batch: 79847

Date Analyzed: 2012-08-23
QC Preparation: 2012-08-23

Analyzed By: MT
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
Prep Batch: 79847

Date Analyzed: 2012-08-23
QC Preparation: 2012-08-23

Analyzed By: MT
Prepared By: MT

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matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
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: 307129

QC Batch: 94226
Prep Batch: 79857

Date Analyzed: 2012-08-24
QC Preparation: 2012-08-23

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4120	mg/Kg	10	2500	1300	113	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			4290	mg/Kg	10	2500	1300	120	78.9 - 121	4	20

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

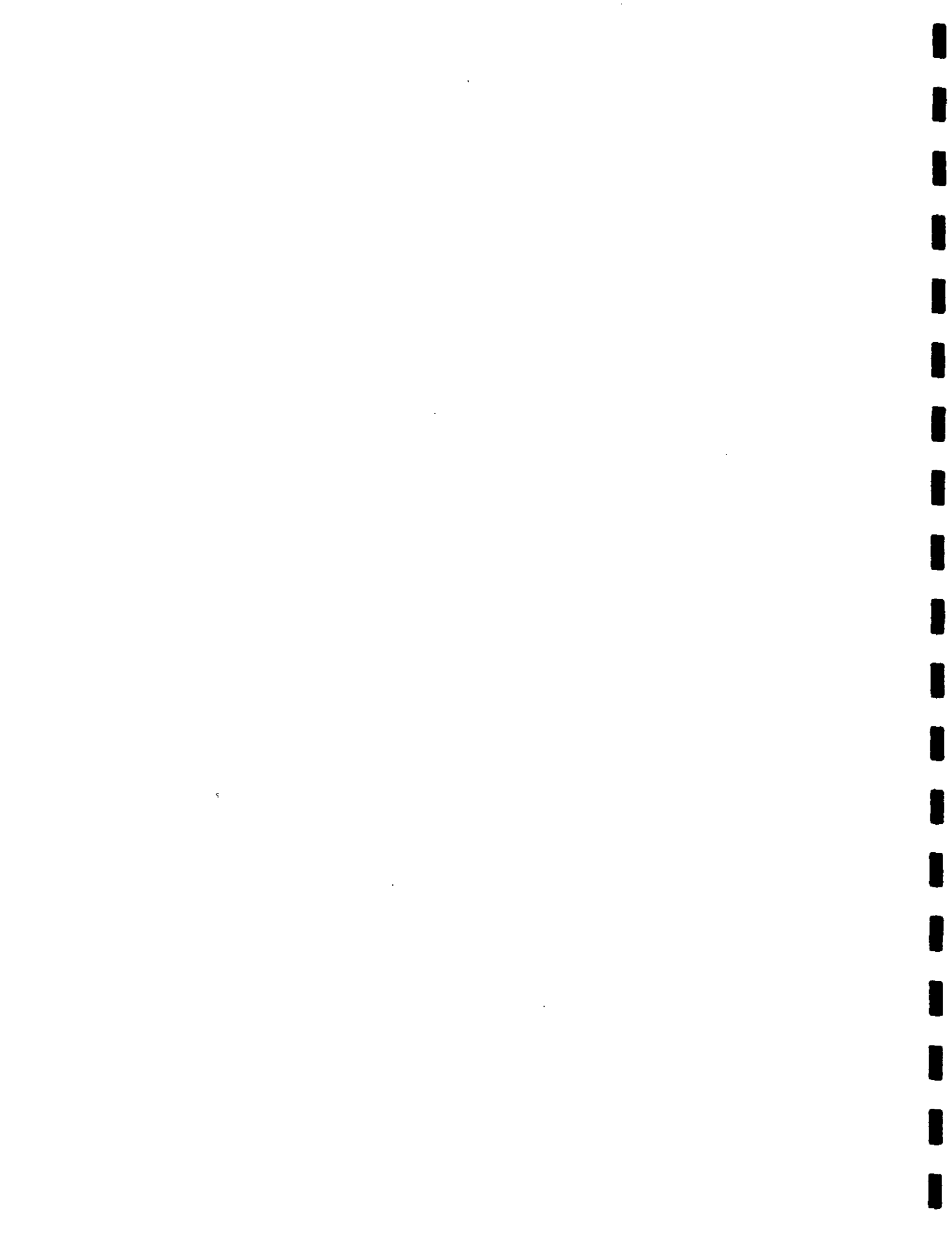
Matrix Spike (MS-1) Spiked Sample: 307130

QC Batch: 94227
Prep Batch: 79857

Date Analyzed: 2012-08-24
QC Preparation: 2012-08-23

Analyzed By: AR
Prepared By: AR

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4000	mg/Kg	10	2500	1510	100	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			4140	mg/Kg	10	2500	1510	105	78.9 - 121	3	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: 307134

QC Batch: 94344
Prep Batch: 79947

Date Analyzed: 2012-08-29
QC Preparation: 2012-08-29

Analyzed By: JS
Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.72	mg/Kg	1	2.00	<0.00365	86	37.6 - 142
Toluene		1	1.84	mg/Kg	1	2.00	0.0178	91	38.6 - 153
Ethylbenzene		1	1.91	mg/Kg	1	2.00	<0.00560	96	36.7 - 172
Xylene		1	5.79	mg/Kg	1	6.00	0.0116	96	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	1.72	mg/Kg	1	2.00	<0.00365	86	37.6 - 142	0	20
Toluene		1	1.87	mg/Kg	1	2.00	0.0178	93	38.6 - 153	2	20
Ethylbenzene		1	1.93	mg/Kg	1	2.00	<0.00560	96	36.7 - 172	1	20
Xylene		1	5.87	mg/Kg	1	6.00	0.0116	98	36.7 - 173	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.69	1.68	mg/Kg	1	2	84	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.71	1.70	mg/Kg	1	2	86	85	70 - 130



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Matrix Spike (MS-1) Spiked Sample: 307134

QC Batch: 94345
Prep Batch: 79947

Date Analyzed: 2012-08-28
QC Preparation: 2012-08-29

Analyzed By: JS
Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Q*	Q*	16.1	mg/Kg	1	20.0	3.02	65	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			19.0	mg/Kg	1	20.0	3.02	80	68.9 - 120	16	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)	1.53	1.61	mg/Kg	1	2	76	80	70 - 130
4-Bromofluorobenzene (4-BFB)	1.86	1.90	mg/Kg	1	2	93	95	70 - 130

Matrix Spike (MS-1) Spiked Sample: 308022

QC Batch: 94362
Prep Batch: 79963

Date Analyzed: 2012-08-29
QC Preparation: 2012-08-29

Analyzed By: DS
Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO			245	mg/Kg	1	250	<15.3	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			238	mg/Kg	1	250	<15.3	95	70 - 130	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	106	mg/Kg	1	100	104	106	70 - 130



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Matrix Spike (MS-1) Spiked Sample: 308327

QC Batch: 94466
Prep Batch: 80050

Date Analyzed: 2012-09-04
QC Preparation: 2012-09-04

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.76	mg/Kg	1	2.00	<0.00365	88	37.6 - 142
Toluene		1	1.79	mg/Kg	1	2.00	<0.00816	90	38.6 - 153
Ethylbenzene		1	1.92	mg/Kg	1	2.00	<0.00560	96	36.7 - 172
Xylene		1	5.77	mg/Kg	1	6.00	0.0093	96	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	1.72	mg/Kg	1	2.00	<0.00365	86	37.6 - 142	2	20
Toluene		1	1.77	mg/Kg	1	2.00	<0.00816	88	38.6 - 153	1	20
Ethylbenzene		1	1.86	mg/Kg	1	2.00	<0.00560	93	36.7 - 172	3	20
Xylene		1	5.61	mg/Kg	1	6.00	0.0093	93	36.7 - 173	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	2.24	mg/Kg	1	2	102	112	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.90	mg/Kg	1	2	97	95	70 - 130



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Calibration Standards

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

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
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



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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: 94226

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

Standard (CCV-2)

QC Batch: 94226

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	99.4	99	85 - 115	2012-08-24

Standard (CCV-1)

QC Batch: 94227

Date Analyzed: 2012-08-24

Analyzed By: AR



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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2012-08-24

Standard (CCV-2)

QC Batch: 94227

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	100	100	85 - 115	2012-08-24

Standard (CCV-1)

QC Batch: 94344

Date Analyzed: 2012-08-29

Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0922	92	80 - 120	2012-08-29
Toluene		1	mg/kg	0.100	0.0914	91	80 - 120	2012-08-29
Ethylbenzene		1	mg/kg	0.100	0.0910	91	80 - 120	2012-08-29
Xylene		1	mg/kg	0.300	0.275	92	80 - 120	2012-08-29

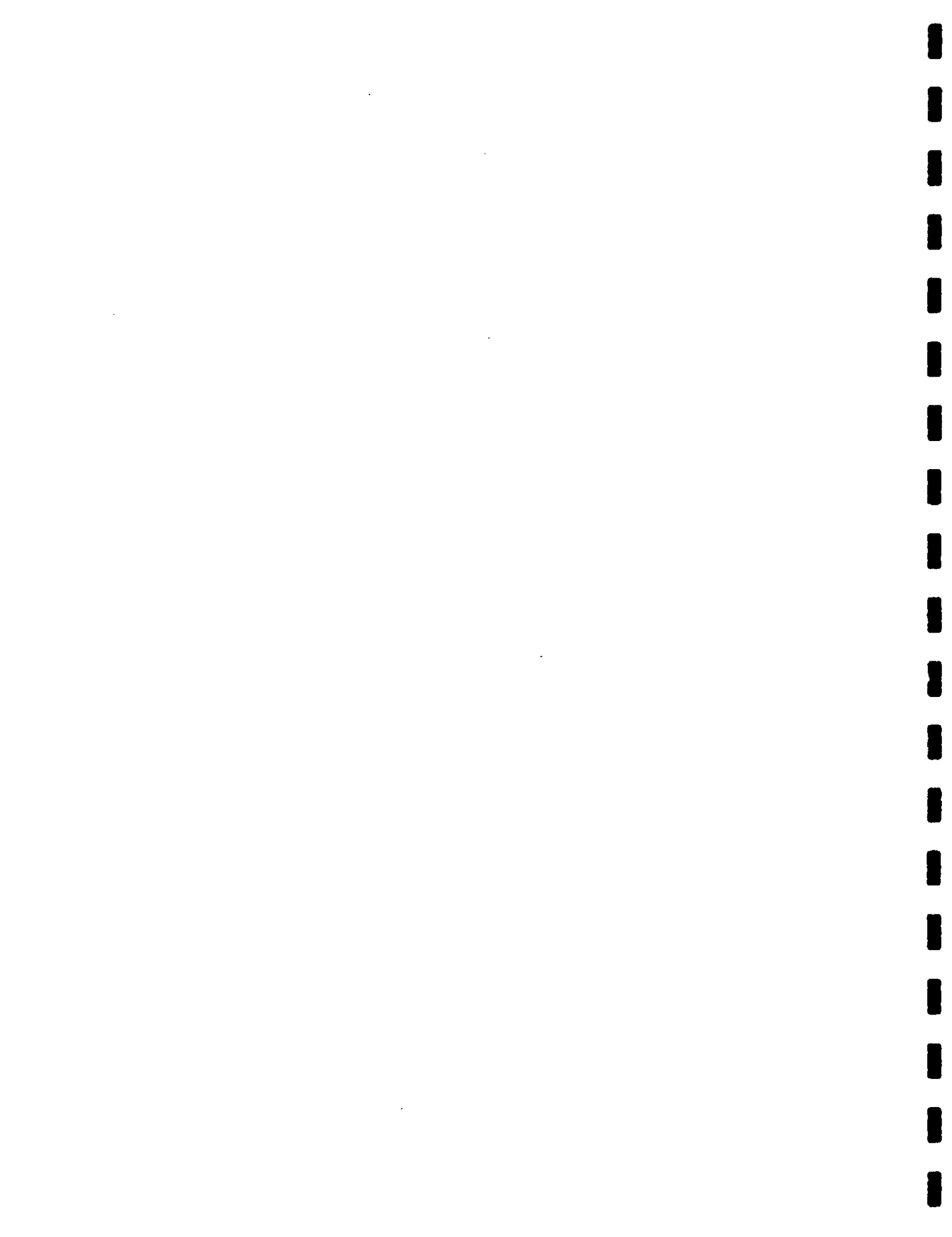
Standard (CCV-2)

QC Batch: 94344

Date Analyzed: 2012-08-29

Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0937	94	80 - 120	2012-08-29
Toluene		1	mg/kg	0.100	0.0915	92	80 - 120	2012-08-29
Ethylbenzene		1	mg/kg	0.100	0.0908	91	80 - 120	2012-08-29
Xylene		1	mg/kg	0.300	0.277	92	80 - 120	2012-08-29



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Standard (CCV-3)

QC Batch: 94344

Date Analyzed: 2012-08-29

Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0850	85	80 - 120	2012-08-29
Toluene		1	mg/kg	0.100	0.0822	82	80 - 120	2012-08-29
Ethylbenzene		1	mg/kg	0.100	0.0811	81	80 - 120	2012-08-29
Xylene		1	mg/kg	0.300	0.248	83	80 - 120	2012-08-29

Standard (CCV-1)

QC Batch: 94345

Date Analyzed: 2012-08-28

Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.891	89	80 - 120	2012-08-28

Standard (CCV-2)

QC Batch: 94345

Date Analyzed: 2012-08-28

Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.956	96	80 - 120	2012-08-28

Standard (CCV-3)

QC Batch: 94345

Date Analyzed: 2012-08-28

Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.924	92	80 - 120	2012-08-28



Report Date: September 5, 2012
114-6401383

Work Order: 12081903
Alamo/State 32 Tank Battery

Page Number: 37 of 40
Eddy Co., NM

Standard (CCV-1)

QC Batch: 94362

Date Analyzed: 2012-08-29

Analyzed By: DS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	219	88	80 - 120	2012-08-29

Standard (CCV-2)

QC Batch: 94362

Date Analyzed: 2012-08-29

Analyzed By: DS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	236	94	80 - 120	2012-08-29

Standard (CCV-3)

QC Batch: 94362

Date Analyzed: 2012-08-29

Analyzed By: DS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	247	99	80 - 120	2012-08-29

Standard (CCV-1)

QC Batch: 94466

Date Analyzed: 2012-09-04

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	0.0882	88	80 - 120	2012-09-04
Toluene		1	mg/kg	0.100	0.0876	88	80 - 120	2012-09-04
Ethylbenzene		1	mg/kg	0.100	0.0869	87	80 - 120	2012-09-04
Xylene		1	mg/kg	0.300	0.262	87	80 - 120	2012-09-04

Report Date: September 5, 2012
114-6401383

Work Order: 12081903
Alamo/State 32 Tank Battery

Page Number: 38 of 40
Eddy Co., NM

Standard (CCV-2)

QC Batch: 94466

Date Analyzed: 2012-09-04

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	0.0863	86	80 - 120	2012-09-04
Toluene		1	mg/kg	0.100	0.0864	86	80 - 120	2012-09-04
Ethylbenzene		1	mg/kg	0.100	0.0868	87	80 - 120	2012-09-04
Xylene		1	mg/kg	0.300	0.261	87	80 - 120	2012-09-04



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 than 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 Dilution due to excessive hydrocarbons.

Attachments

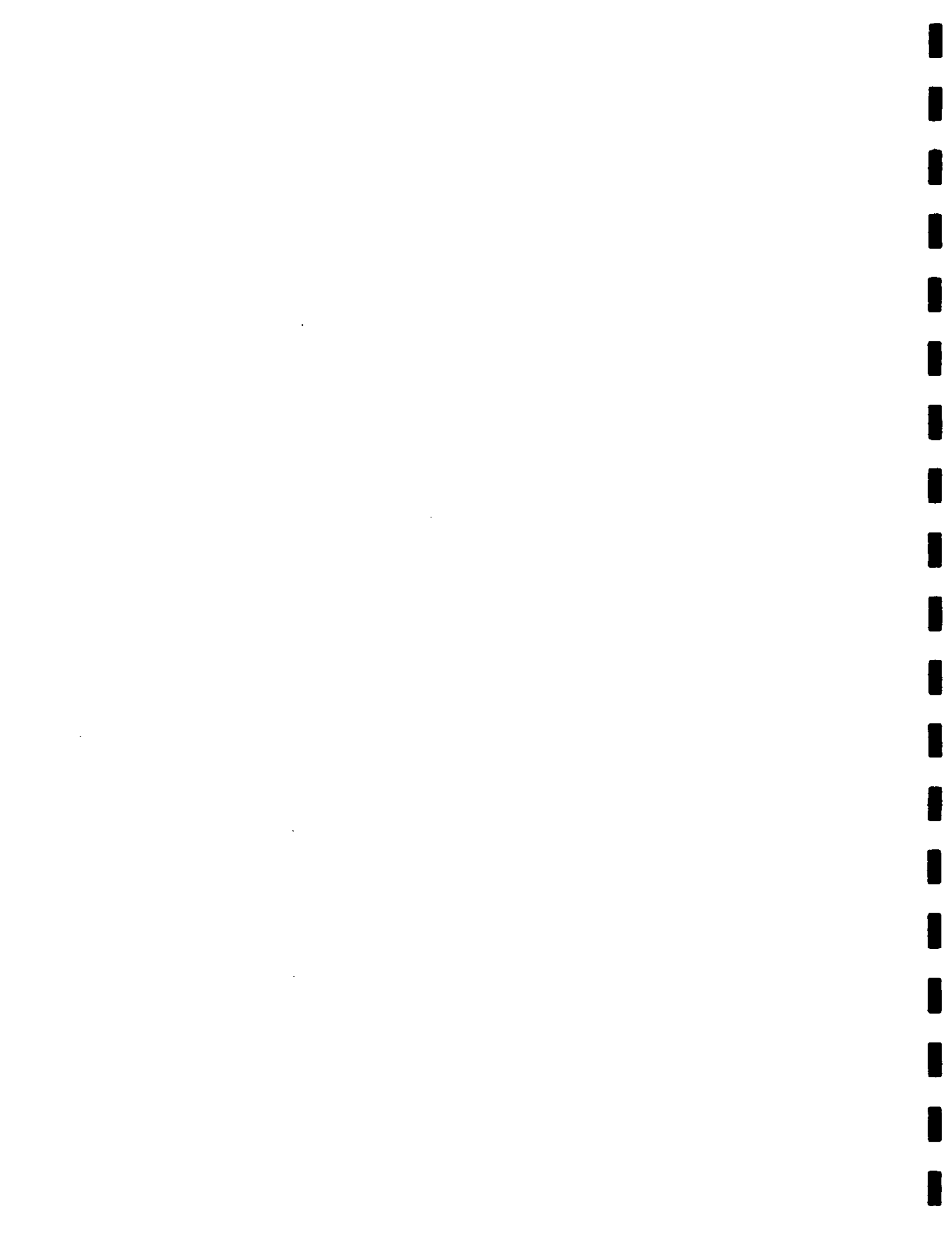
Report Date: September 5, 2012
114-6401383

Work Order: 12081903
Alamo/State 32 Tank Battery

Page Number: 40 of 40
Eddy Co., NM

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.



Analysis Request of Chain of Custody Record

PAGE: 1 OF 2

ANALYSIS REQUEST
(Circle or Specify Method No.)



TETRA TECH

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

CLIENT NAME: Alamo Permian SITE MANAGER: Ike Tavariz

PROJECT NO.: 114-6401383 PROJECT NAME: State 32 Tank Battery Eddy Co NM

LAB I.D. NUMBER: 207127 DATE: 8-16 TIME: 2012

GRAB: S COMP: X MATRIX: X

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS: 1

PRELIMINARY METHOD

HCL: X HNO3: X ICE: X NONE: X

PAH 8270	TCRP Metals Ag As Ba Cd Cr Pb Hg Se	TCRP Volatiles	TCRP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chlordane	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>

RELINQUISHED BY: (Signature) [Signature] Date: 8-16-12 Time: 12:15

RECEIVED BY: (Signature) [Signature] Date: 8-16-12 Time: 12:15

RELINQUISHED BY: (Signature) [Signature] Date: 8-16-12 Time: 12:15

RECEIVED BY: (Signature) [Signature] Date: 8-16-12 Time: 12:15

RELINQUISHED BY: (Signature) [Signature] Date: 8-16-12 Time: 12:15

RECEIVED BY: (Signature) [Signature] Date: 8-16-12 Time: 12:15

RECEIVING LABORATORY: Midland Trace CITY: Midland STATE: TX ZIP: 79701

CONTACT: Trace PHONE: 682-4559 DATE: 8-16-12

REMARKS: May deeper samples if TPT exceeds 5.00 mg/kg

SAMPLE CONDITION WHEN RECEIVED: D.8

Results by: Ike Tavariz

RUSH Charges Authorized: Yes No

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

Run deeper samples if benzene exceeds 10 mg/kg - told BTEX exceeds 5.00 mg/kg

Analysis Request of Chain of Custody Record

PAGE: 2 OF 2

ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

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

CLIENT NAME: Alamo Permian SITE MANAGER: Ike Tavaroz

PROJECT NO.: 114-6401383

LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION				PRESERVATIVE METHOD
			MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	
137	8-16	2012	S	X	T-2 (8')	NONE	
138	8-16		S	X	T-2 (10')	NONE	

NUMBER OF CONTAINERS: 1 FILTERED (Y/N): N

TPM 8015 MOD. TX1005 (Ext. to C35) BTEX 8021B

PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8240/8260/624

GC/MS Semi. Vol. 8270/625

PCBs 8080/608

Pest. 808/608

Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

Major Anions/Cations, pH, TDS

RELINQUISHED BY: (Signature) [Signature] Date: 8-16-12 Time: 10:30

RELINQUISHED BY: (Signature) [Signature] Date: 8-16-12 Time: 10:30

RELINQUISHED BY: (Signature) [Signature] Date: 8-16-12 Time: 10:30

RECEIVING LABORATORY: Trace ADDRESS: Midland CITY: Midland STATE: TX ZIP: 79705 PHONE: (432) 682-4559

RECEIVED BY: (Signature) [Signature] Date: 8-16-12 Time: 10:30

RECEIVED BY: (Signature) [Signature] Date: 8-16-12 Time: 10:30

RECEIVED BY: (Signature) [Signature] Date: 8-16-12 Time: 10:30

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RECEIVED BY: (Signature) [Signature] Date: 8-16-12 Time: 10:30

REMARKS: See Notes on CAC #1

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



PAGE: 1 OF: 2

ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH

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

CLIENT NAME:		PROJECT NAME:		SITING MANAGER:	
Alamo Permlan		State 32 Tank Battery Eddy Co Nm		Ike Tavaraz	
PROJECT NO.:		TIME		PRESERVATIVE METHOD	
114-6401383		2012		HCL	
LAB. I.D. NUMBER		DATE		HNO3	
20127		8-16		ICE	
128				NONE	
129					
130					
131					
132					
133					
134					
135					
136		8-16			
20127		S	T-1 (0-1')	1	1
128		X	T-1 (2')	1	1
129		X	T-1 (4')	1	1
130		X	T-1 (6')	1	1
131		X	T-1 (8')	1	1
132		X	T-1 (10')	1	1
133		X	T-2 (0-1')	1	1
134		X	T-2 (2')	1	1
135		X	T-2 (4')	1	1
136		S	T-2 (6')	1	1

RELINQUISHED BY: (Signature) *[Signature]* Date: 8-16-12

RELINQUISHED BY: (Signature) *[Signature]* Date: 8-16-12

RELINQUISHED BY: (Signature) *[Signature]* Date: 8-16-12

RECEIVED BY: (Signature) *[Signature]* Date: 8-16-12

RECEIVED BY: (Signature) *[Signature]* Date: 8-16-12

RECEIVED BY: (Signature) *[Signature]* Date: 8-16-12

RECEIVING LABORATORY: *Midland Trace*

CITY: *Midland* STATE: *TX*

CONTACT: *[Blank]* PHONE: *[Blank]* ZIP: *[Blank]*

REMARKS: *Very clean Dan-6's it still exceeds 5-aw malia*

DATE: 8-16-12

TIME: 10:15

AIRBILL #:

OTHER:

RESULTS BY: *Ike Tavaraz*

RUSH CHARGES AUTHORIZED: *[Blank]*

YES ☐ NO ☐

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:	YES	NO
D. 8	4.9 Was deeper Damplos it ppt exceeds 5:00 mally sent to Laback		
	Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy		8/21.
	Was deeper Damplos it benzene forced 10 mally sent to 1 room -		8/21.

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

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

CLIENT NAME: Alamo Permian		SITE MANAGER: Ike Tavaroz	
PROJECT NO.: 114-6401383		PROJECT NAME:	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
137	8-16	2012	X T-Z (8")
138	8-16		X T-Z (16")

NUMBER OF CONTAINERS	PRESERVATIVE METHOD			
	HCL	ICE	NONE	
1	N	X	X	
1	N	X	X	

MATRIX	COMP	GRAB
S	X	X
S	X	X

TPH 8015 MOD. TX1005 (Ext. to C35)	
PAH 8270	
RCRA Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Volatiles	
TCLP Semi Volatiles	
RCI	
GC/MS Vol. 8240/8260/824	
GC/MS Semi. Vol. 8270/825	
PCB's 8080/608	
Pest. 808/608	
Chloride	X
Gamma Spec.	
Alpha Beta (Air)	
PLM (Asbestos)	
Major Anions/Cations, pH, TDS	

RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: 8-17-12	RECEIVED BY: (Signature) <i>[Signature]</i>	Date: 8-17-12
RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: 8-17-12	RECEIVED BY: (Signature) <i>[Signature]</i>	Date: 8-17-12
RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: 8-17-12	RECEIVED BY: (Signature) <i>[Signature]</i>	Date: 8-17-12
RECEIVING LABORATORY: Trace	STATE: TX	ZIP: 79705	DATE: 8-17-12
CITY: Midland	PHONE: 682-4559	REMARKS: See Notes on COC #1	
SAMPLE CONDITION WHEN RECEIVED: 9:15 4/14/12			

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





PAGE: 2 OF: 2

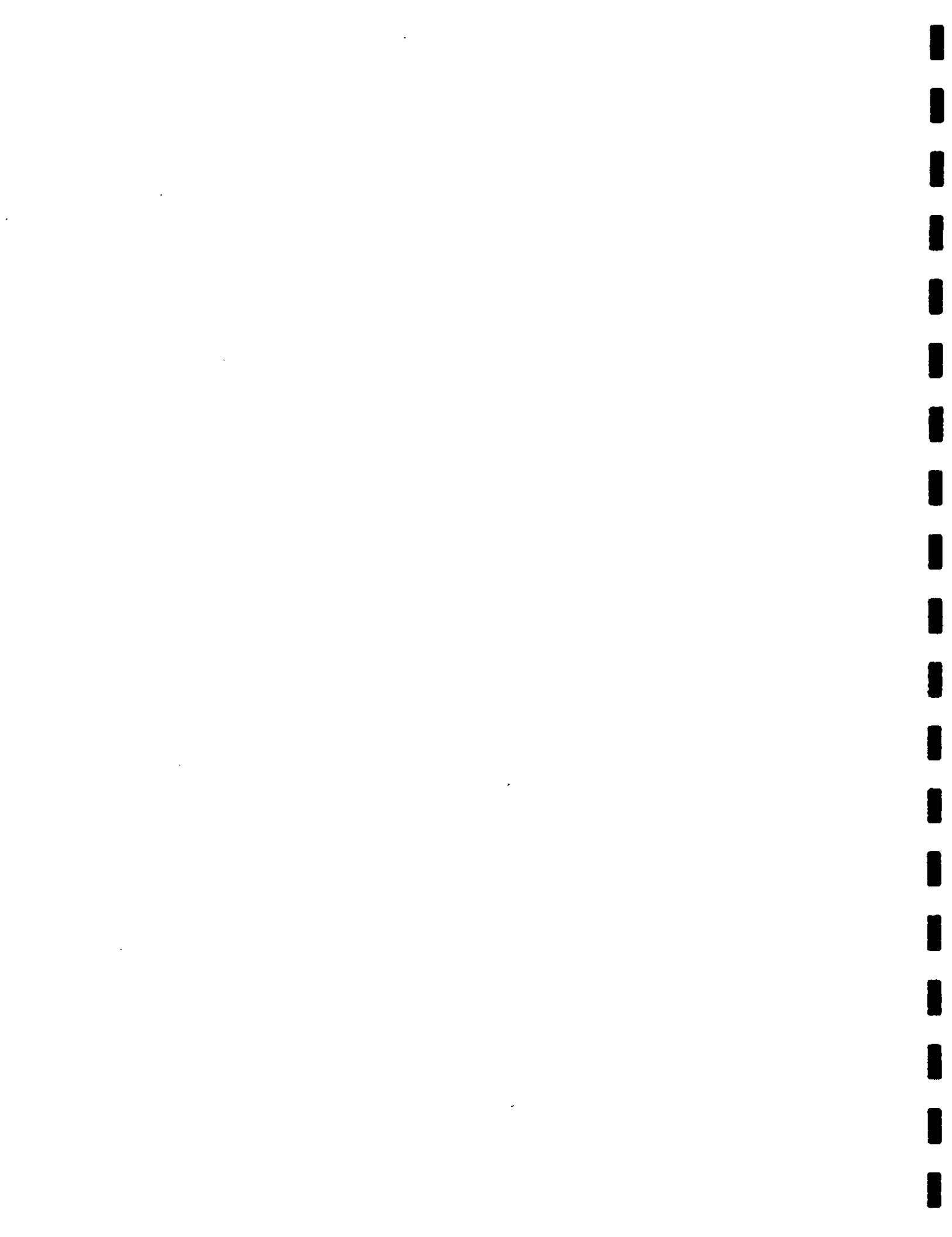
ANALYSIS REQUEST
(Circle or Specify Method)

(432) 682-4559 • Fax (432) 682-3946

[illegible]

See Notes on LOC #1

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



Summary Report

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

Report Date: March 1, 2013

Work Order: 13022212

Project Location: Eddy Co., NM
Project Name: Alamo/State 32 Tank Battery
Project Number: 114-6401383

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
321929	BH-1 (0-1')	soil	2013-02-20	00:00	2013-02-22
321930	BH-1 (4-5')	soil	2013-02-20	00:00	2013-02-22
321931	BH-1 (9-10')	soil	2013-02-20	00:00	2013-02-22
321932	BH-1 (14-15')	soil	2013-02-20	00:00	2013-02-22
321933	BH-1 (19-20')	soil	2013-02-20	00:00	2013-02-22
321934	BH-1 (24-25')	soil	2013-02-20	00:00	2013-02-22
321935	BH-2 (0-1')	soil	2013-02-20	00:00	2013-02-22
321936	BH-2 (4-5')	soil	2013-02-20	00:00	2013-02-22
321937	BH-2 (9-10')	soil	2013-02-20	00:00	2013-02-22
321938	BH-2 (14-15')	soil	2013-02-20	00:00	2013-02-22
321939	BH-2 (19-20')	soil	2013-02-20	00:00	2013-02-22
321940	BH-2 (24-25')	soil	2013-02-20	00:00	2013-02-22
321941	BH-2 (29-30')	soil	2013-02-20	00:00	2013-02-22
321942	BH-2 (34-35')	soil	2013-02-20	00:00	2013-02-22
321943	BH-2 (39-40')	soil	2013-02-20	00:00	2013-02-22

Sample: 321929 - BH-1 (0-1')

Param	Flag	Result	Units	RL
Chloride		102	mg/Kg	4

Sample: 321930 - BH-1 (4-5')*continued ...*



sample 321930 continued ...

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

Sample: 321931 - BH-1 (9-10')

Param	Flag	Result	Units	RL
Chloride		645	mg/Kg	4

Sample: 321932 - BH-1 (14-15')

Param	Flag	Result	Units	RL
Chloride		711	mg/Kg	4

Sample: 321933 - BH-1 (19-20')

Param	Flag	Result	Units	RL
Chloride		497	mg/Kg	4

Sample: 321934 - BH-1 (24-25')

Param	Flag	Result	Units	RL
Chloride		279	mg/Kg	4

Sample: 321935 - BH-2 (0-1')

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

Sample: 321936 - BH-2 (4-5')

Param	Flag	Result	Units	RL
Chloride		1030	mg/Kg	4

Sample: 321937 - BH-2 (9-10')



Report Date: March 1, 2013

Work Order: 13022212

Page Number: 3 of 3

Param	Flag	Result	Units	RL
Chloride		1850	mg/Kg	4

Sample: 321938 - BH-2 (14-15')

Param	Flag	Result	Units	RL
Chloride		1520	mg/Kg	4

Sample: 321939 - BH-2 (19-20')

Param	Flag	Result	Units	RL
Chloride		2210	mg/Kg	4

Sample: 321940 - BH-2 (24-25')

Param	Flag	Result	Units	RL
Chloride		4100	mg/Kg	4

Sample: 321941 - BH-2 (29-30')

Param	Flag	Result	Units	RL
Chloride		1300	mg/Kg	4

Sample: 321942 - BH-2 (34-35')

Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4

Sample: 321943 - BH-2 (39-40')

Param	Flag	Result	Units	RL
Chloride		91.5	mg/Kg	4





5701 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: tab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: March 1, 2013

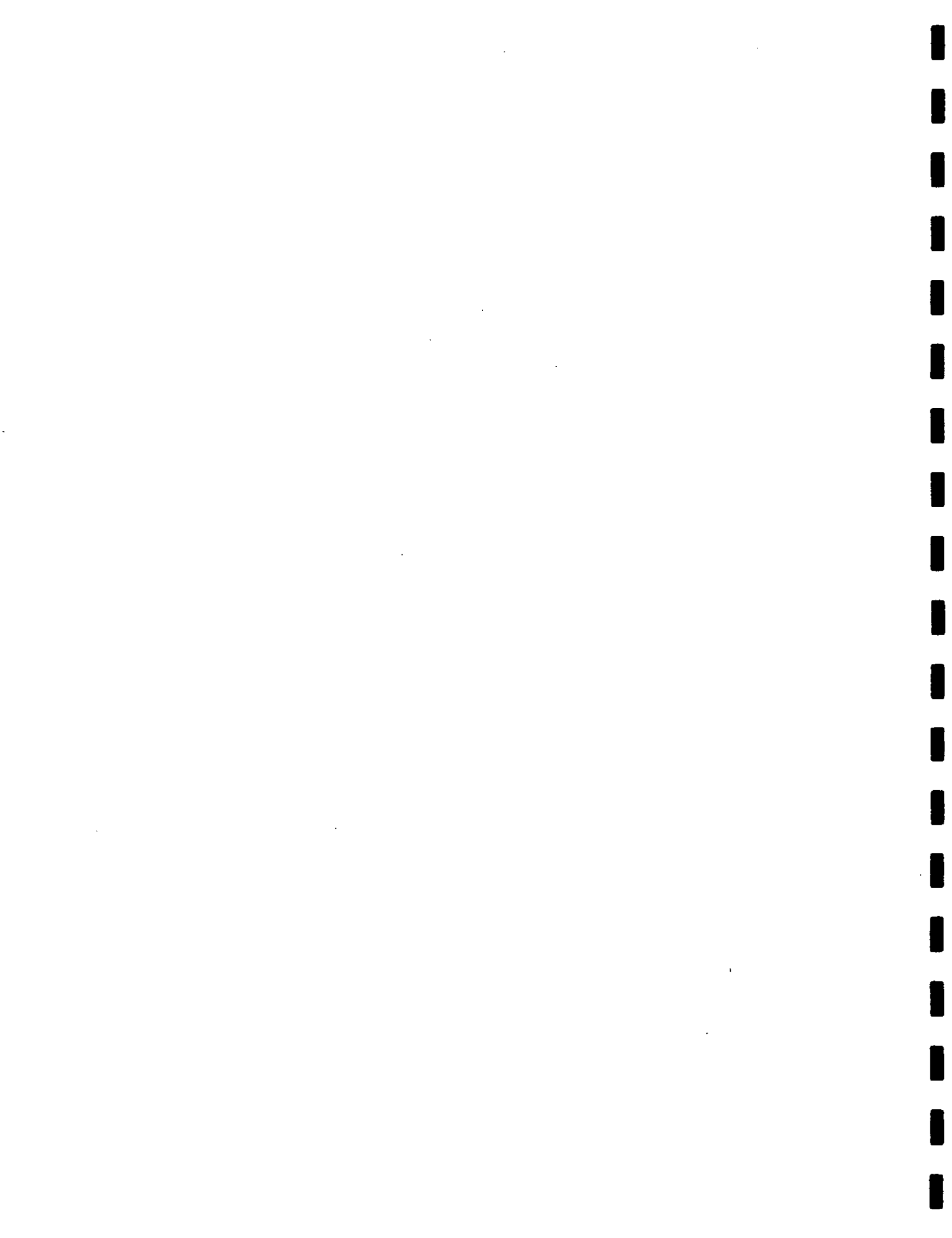
Work Order: 13022212

Project Location: Eddy Co., NM
Project Name: Alamo/State 32 Tank Battery
Project Number: 114-6401383

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
321929	BH-1 (0-1')	soil	2013-02-20	00:00	2013-02-22
321930	BH-1 (4-5')	soil	2013-02-20	00:00	2013-02-22
321931	BH-1 (9-10')	soil	2013-02-20	00:00	2013-02-22
321932	BH-1 (14-15')	soil	2013-02-20	00:00	2013-02-22
321933	BH-1 (19-20')	soil	2013-02-20	00:00	2013-02-22
321934	BH-1 (24-25')	soil	2013-02-20	00:00	2013-02-22
321935	BH-2 (0-1')	soil	2013-02-20	00:00	2013-02-22
321936	BH-2 (4-5')	soil	2013-02-20	00:00	2013-02-22
321937	BH-2 (9-10')	soil	2013-02-20	00:00	2013-02-22
321938	BH-2 (14-15')	soil	2013-02-20	00:00	2013-02-22
321939	BH-2 (19-20')	soil	2013-02-20	00:00	2013-02-22
321940	BH-2 (24-25')	soil	2013-02-20	00:00	2013-02-22
321941	BH-2 (29-30')	soil	2013-02-20	00:00	2013-02-22
321942	BH-2 (34-35')	soil	2013-02-20	00:00	2013-02-22
321943	BH-2 (39-40')	soil	2013-02-20	00:00	2013-02-22

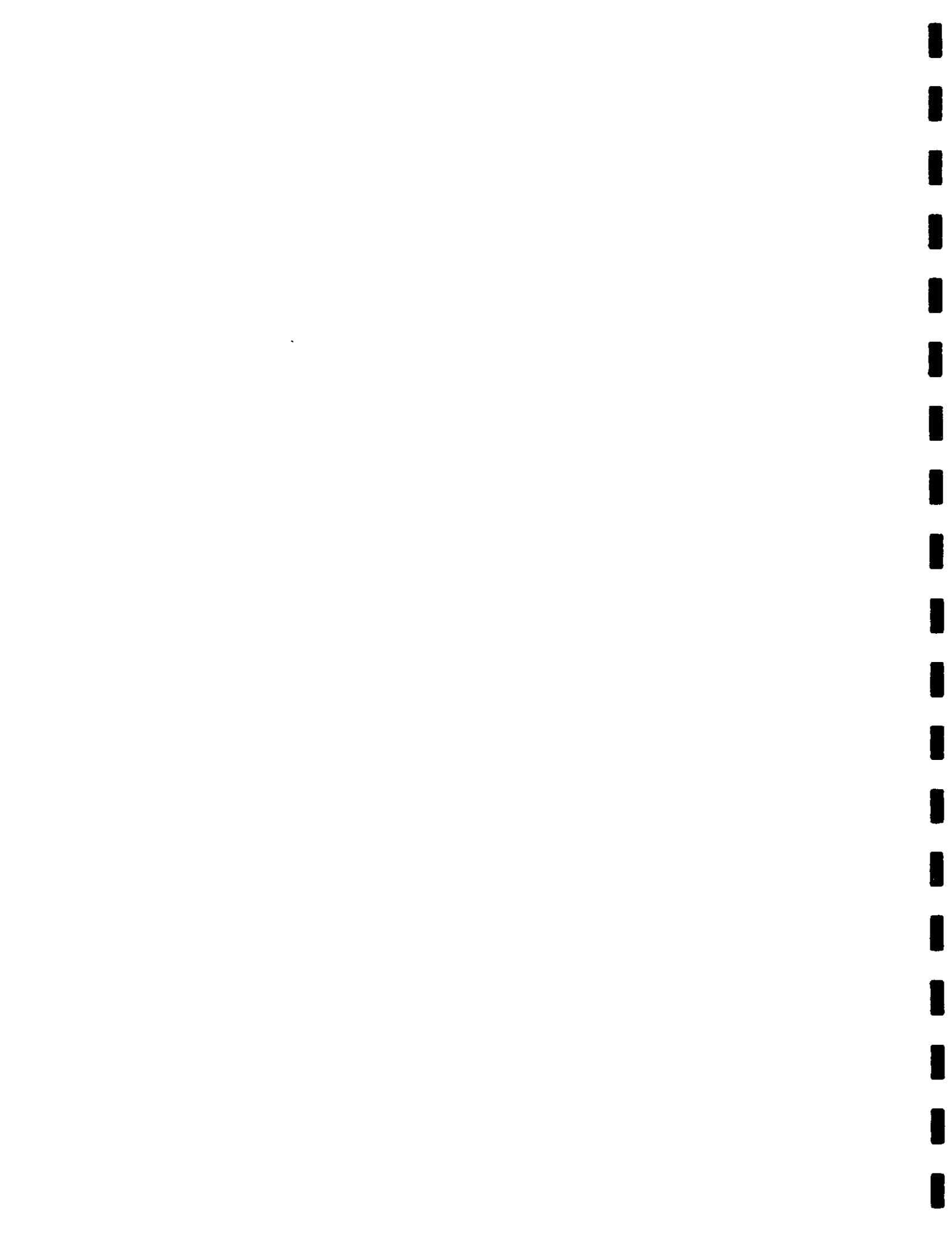
These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.



This report consists of a total of 15 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive style with a large, stylized 'M' and 'A'.

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



Report Contents

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Sample 321932 (BH-1 (14-15'))	5
Sample 321933 (BH-1 (19-20'))	6
Sample 321934 (BH-1 (24-25'))	6
Sample 321935 (BH-2 (0-1'))	6
Sample 321936 (BH-2 (4-5'))	7
Sample 321937 (BH-2 (9-10'))	7
Sample 321938 (BH-2 (14-15'))	7
Sample 321939 (BH-2 (19-20'))	7
Sample 321940 (BH-2 (24-25'))	8
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QC Batch 99355 - Method Blank (1)	10
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Case Narrative

Samples for project Alamo/State 32 Tank Battery were received by TraceAnalysis, Inc. on 2013-02-22 and assigned to work order 13022212. Samples for work order 13022212 were received intact at a temperature of 3.8 C.

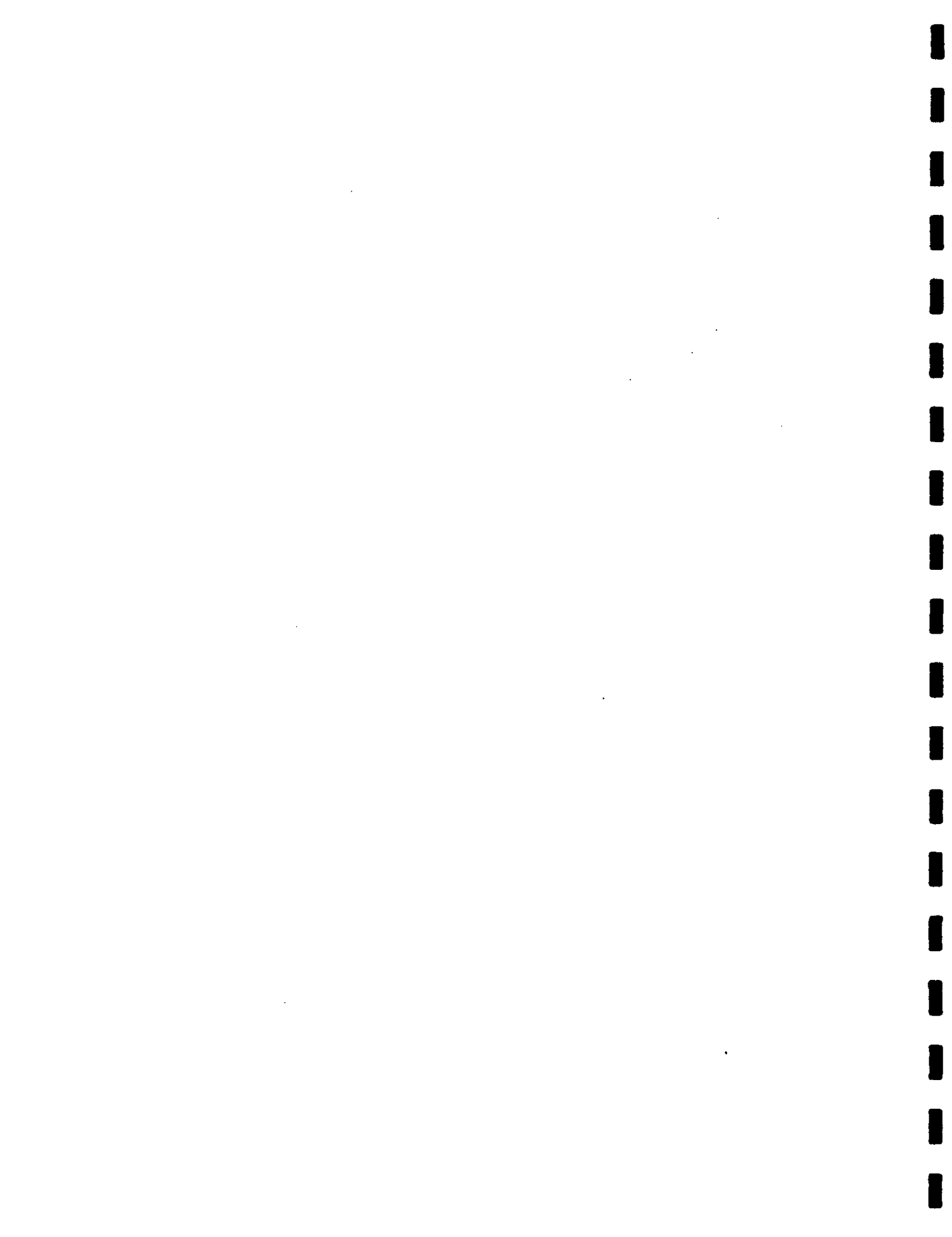
Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	84163	2013-02-27 at 12:54	99354	2013-02-28 at 19:09
Chloride (Titration)	SM 4500-Cl B	84163	2013-02-27 at 12:54	99355	2013-02-28 at 19:10

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 13022212 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.



Report Date: March 1, 2013
114-6401383

Work Order: 13022212
Alamo/State 32 Tank Battery

Page Number: 5 of 15
Eddy Co., NM

Analytical Report

Sample: 321929 - BH-1 (0-1')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2013-02-28	Analyzed By:	AR
QC Batch:	99354	Sample Preparation:	2013-02-27	Prepared By:	AR
Prep Batch:	84163				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			102	mg/Kg	5	4.00

Sample: 321930 - BH-1 (4-5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2013-02-28	Analyzed By:	AR
QC Batch:	99354	Sample Preparation:	2013-02-27	Prepared By:	AR
Prep Batch:	84163				

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

Sample: 321931 - BH-1 (9-10')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2013-02-28	Analyzed By:	AR
QC Batch:	99354	Sample Preparation:	2013-02-27	Prepared By:	AR
Prep Batch:	84163				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			645	mg/Kg	5	4.00



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Alamo/State 32 Tank Battery

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Sample: 321932 - BH-1 (14-15')

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	99354	Date Analyzed:	2013-02-28
Prep Batch:	84163	Sample Preparation:	2013-02-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			711	mg/Kg	5	4.00

Sample: 321933 - BH-1 (19-20')

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	99354	Date Analyzed:	2013-02-28
Prep Batch:	84163	Sample Preparation:	2013-02-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			497	mg/Kg	5	4.00

Sample: 321934 - BH-1 (24-25')

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	99354	Date Analyzed:	2013-02-28
Prep Batch:	84163	Sample Preparation:	2013-02-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			279	mg/Kg	5	4.00

Sample: 321935 - BH-2 (0-1')

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	99354	Date Analyzed:	2013-02-28
Prep Batch:	84163	Sample Preparation:	2013-02-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR



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114-6401383

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

Sample: 321936 - BH-2 (4-5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99355	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84163	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1030	mg/Kg	10	4.00

Sample: 321937 - BH-2 (9-10')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99355	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84163	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1850	mg/Kg	10	4.00

Sample: 321938 - BH-2 (14-15')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99355	Date Analyzed:	2013-02-28	Analyzed By:	AR
Prep Batch:	84163	Sample Preparation:	2013-02-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1520	mg/Kg	10	4.00



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Sample: 321939 - BH-2 (19-20')

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	99355	Date Analyzed:	2013-02-28
Prep Batch:	84163	Sample Preparation:	2013-02-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2210	mg/Kg	10	4.00

Sample: 321940 - BH-2 (24-25')

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	99355	Date Analyzed:	2013-02-28
Prep Batch:	84163	Sample Preparation:	2013-02-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			4100	mg/Kg	10	4.00

Sample: 321941 - BH-2 (29-30')

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	99355	Date Analyzed:	2013-02-28
Prep Batch:	84163	Sample Preparation:	2013-02-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1300	mg/Kg	10	4.00

Sample: 321942 - BH-2 (34-35')

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	99355	Date Analyzed:	2013-02-28
Prep Batch:	84163	Sample Preparation:	2013-02-27
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR



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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			234	mg/Kg	5	4.00

Sample: 321943 - BH-2 (39-40')

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 99355

Prep Batch: 84163

Analytical Method: SM 4500-Cl B

Date Analyzed: 2013-02-28

Sample Preparation: 2013-02-27

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			91.5	mg/Kg	5	4.00



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Method Blanks

Method Blank (1) QC Batch: 99354

QC Batch: 99354
Prep Batch: 84163

Date Analyzed: 2013-02-28
QC Preparation: 2013-02-27

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 99355

QC Batch: 99355
Prep Batch: 84163

Date Analyzed: 2013-02-28
QC Preparation: 2013-02-27

Analyzed By: AR
Prepared By: AR

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



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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 99354
Prep Batch: 84163

Date Analyzed: 2013-02-28
QC Preparation: 2013-02-27

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2300	mg/Kg	1	2500	<3.85	92	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			2520	mg/Kg	1	2500	<3.85	101	85 - 115	9	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: 99355
Prep Batch: 84163

Date Analyzed: 2013-02-28
QC Preparation: 2013-02-27

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2650	mg/Kg	1	2500	<3.85	106	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			2430	mg/Kg	1	2500	<3.85	97	85 - 115	9	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: 321935

QC Batch: 99354
Prep Batch: 84163

Date Analyzed: 2013-02-28
QC Preparation: 2013-02-27

Analyzed By: AR
Prepared By: AR



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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2570	mg/Kg	5	2500	<19.2	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			2350	mg/Kg	5	2500	<19.2	94	78.9 - 121	9	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: 321945

QC Batch: 99355
Prep Batch: 84163

Date Analyzed: 2013-02-28
QC Preparation: 2013-02-27

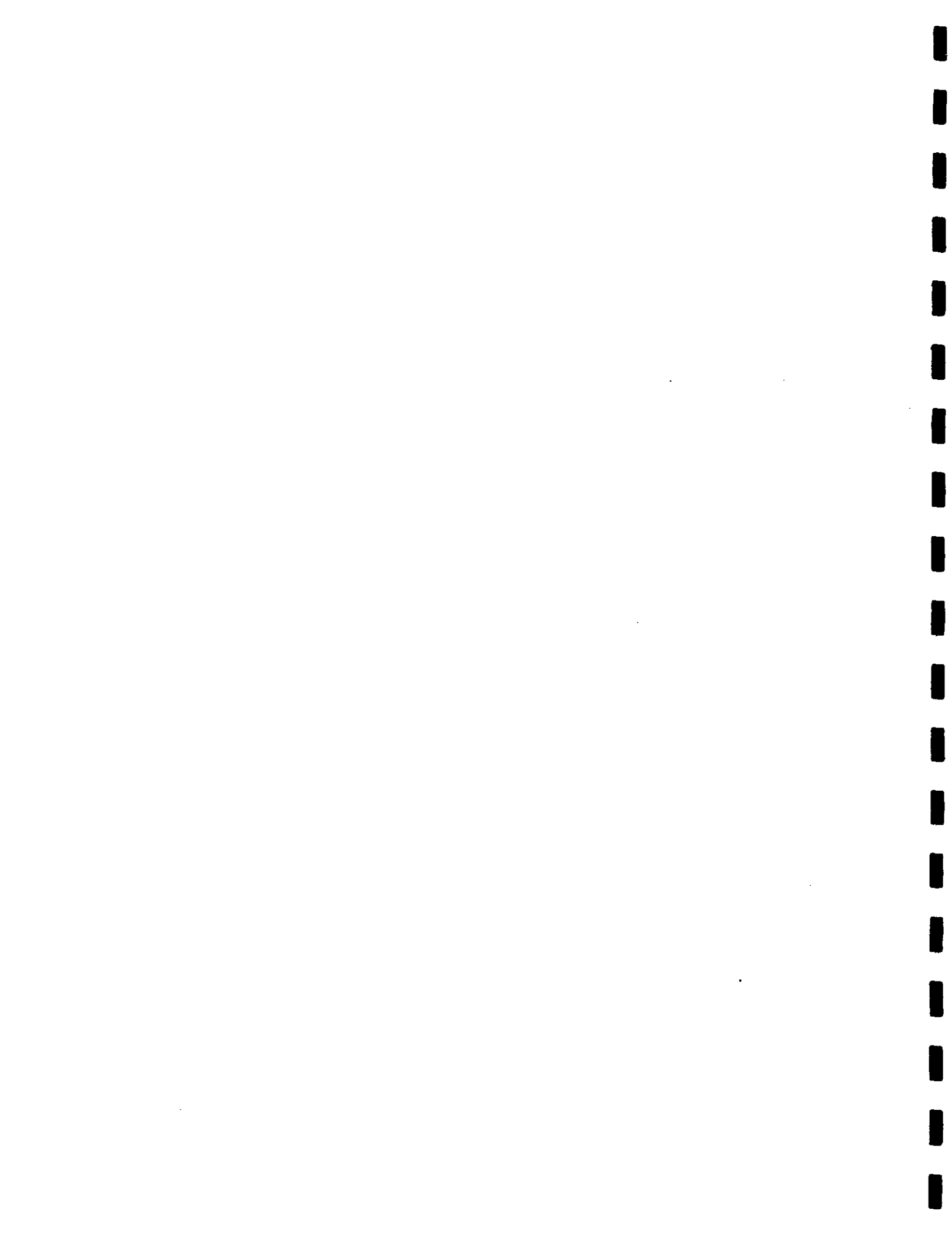
Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3080	mg/Kg	5	2500	407	107	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			2820	mg/Kg	5	2500	407	96	78.9 - 121	9	20

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



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Calibration Standards

Standard (CCV-1)

QC Batch: 99354

Date Analyzed: 2013-02-28

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2013-02-28

Standard (CCV-2)

QC Batch: 99354

Date Analyzed: 2013-02-28

Analyzed By: AR

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

Standard (CCV-1)

QC Batch: 99355

Date Analyzed: 2013-02-28

Analyzed By: AR

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

Standard (CCV-2)

QC Batch: 99355

Date Analyzed: 2013-02-28

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.6	100	85 - 115	2013-02-28



Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

Standard Flags

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

Attachments



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



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ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-4560**

(432) 682-4559 • Fax (432) 682-3946

[illegible]

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

10

1

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



Analysis Request of Chain of Custody Record

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ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705**

(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME:		SITE MANAGER:		PROJECT NAME:		SAMPLE IDENTIFICATION		PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	
114-6401383	2013																				
939	2-20		S	X			BH-2 (19-20)		X		1	N									
940			S				BH-2 (24-25)														
941			S				BH-2 (29-30)														
942			S				BH-2 (34-35)														
943	2-20		S	X			BH-2 (39-40)		X		1	N									

CLIENT NAME: **Alamo Permian**

PROJECT NO.: **114-6401383**

SITE MANAGER: **IKE TAVAREZ**

PROJECT NAME: **State 32 Tank Battery Eddy Comm**

LAB I.D. NUMBER: **939**

DATE: **2-20**

TIME:

MATRIX: **S**

COMP: **X**

GRAB:

TIME:

SAMPLE IDENTIFICATION: **BH-2 (19-20)**

LAB I.D. NUMBER: **940**

DATE:

TIME:

MATRIX: **S**

COMP:

GRAB:

TIME:

SAMPLE IDENTIFICATION: **BH-2 (24-25)**

LAB I.D. NUMBER: **941**

DATE:

TIME:

MATRIX: **S**

COMP:

GRAB:

TIME:

SAMPLE IDENTIFICATION: **BH-2 (29-30)**

LAB I.D. NUMBER: **942**

DATE:

TIME:

MATRIX: **S**

COMP:

GRAB:

TIME:

SAMPLE IDENTIFICATION: **BH-2 (34-35)**

LAB I.D. NUMBER: **943**

DATE: **2-20**

TIME:

MATRIX: **S**

COMP: **X**

GRAB:

TIME:

SAMPLE IDENTIFICATION: **BH-2 (39-40)**

RELINQUISHED BY: (Signature) **[Signature]**

DATE: **0900**

TIME: **2:22-13**

RECEIVED BY: (Signature) **[Signature]**

DATE: **0900**

TIME: **2:22-13**

RELINQUISHED BY: (Signature) **[Signature]**

DATE: **02-27-13**

TIME: **1100**

RECEIVED BY: (Signature) **[Signature]**

DATE: **02-27-13**

TIME: **1100**

RELINQUISHED BY: (Signature) **[Signature]**

DATE:

TIME:

RECEIVED BY: (Signature) **[Signature]**

DATE:

TIME:

RECEIVING LABORATORY: **Trace**

ADDRESS: **Midland**

CITY: **Midland**

STATE:

ZIP:

RECEIVED BY: (Signature) **[Signature]**

DATE:

TIME:

REMARKS: **386**

SAMPLE CONDITION WHEN RECEIVED: **386**

DATE: **02-20-13**

TIME:

DATE: **02-20-13**

TIME:

SAMPLE SHIPPED BY: (Circle) **James**

FEDEX

HAND DELIVERED

UPS

TETRA TECH CONTACT PERSON: **IKE TAVAREZ**

RESULTS BY:

MAJOR ANIONS/CATIONS, PH, T

PLM (Asbestos)

Alpha Beta (Air)

Gamma Spec.

Chloride

Pest. 808/608

PCB's 8080/608

GC/MS Semi. Vol. 8270/625

GC/MS Vol. 8240/8260/624

RCI

TCLP Semi Volatiles

TCLP Volatiles

TCLP Metals Ag As Ba Cd

RCRA Metals Ag As Ba Cd

PAH 8270

TPH 8015 MOD. TX1000

BTEX 8021B

DATE: **02-20-13**

TIME:

MAJOR ANIONS/CATIONS, PH, T

PLM (Asbestos)

Alpha Beta (Air)

Gamma Spec.

Chloride

Pest. 808/608

PCB's 8080/608

GC/MS Semi. Vol. 8270/625

GC/MS Vol. 8240/8260/624

RCI

TCLP Semi Volatiles

TCLP Volatiles

TCLP Metals Ag As Ba Cd

RCRA Metals Ag As Ba Cd

PAH 8270

TPH 8015 MOD. TX1000

BTEX 8021B

DATE: **02-20-13**

TIME:

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

