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

30-015-26743

Release Notification and Corrective Action

nMLB0923357241

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company COG OPERATING LLC	Contact Kanicia Carrillo
Address 550 W. Texas, Suite 1300, Midland, TX 79701	Telephone No. 432-685-4332
Facility Name GJ West Coop Unit #79	Facility Type North Battery

Surface Owner	Mineral Owner	Lease No. 30-015-26743

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	21	17S	29E	2310	North	1460	East	Eddy

Latitude_____ Longitude_____

NATURE OF RELEASE

Type of Release - Oil	Volume of Release - 15 bbls.	Volume Recovered - 12 bbls.
Source of Release – LACT Unit Back Pressure Valve	Date and Hour of Occurrence- 5/28/09 / 12:00 PM	Date and Hour of Discovery – 5/28/09 / 12:00 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher, NMOCD District 2	
By Whom? Kent Greenway	Date and Hour 5/29/09 / 9:00 AM	
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.*

¼ inch line on LACT unit back pressure valve broke. Replaced back pressure valve and put LACT back in service.

Describe Area Affected and Cleanup Action Taken.*

Approximately 10' x 25' area was sprayed and affected. All spray was contained on the location pad. Approx. 12 bbls. oil liquid was recovered. The affected area was excavated to below RRAL and transported to proper disposal. Tetra Tech prepared a final closure report summarizing the remedial activities.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez (agent for COG)	Approved by District Supervisor: Signed By Mike Bratcher
Title: Project Manager	Approval Date: OCT 01 2009 Expiration Date: N/A
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval: N/A Attached ☐
Date: 8/6/2009 Phone: 432-682-4559	

* Attach Additional Sheets If Necessary

2RP-346

AUG 21 2009

TETRA TECH

August 5, 2009

Mr. Mike Bratcher
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1301 W. Grand Ave.
Artesia, New Mexico 88210

Re: Assessment and Closure Report for the COG Operating LLC, GJ West COOP Unit Well #79, Located in Unit Letter G, Section 21, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. was contacted by COG Operating, LLC to investigate a spill that occurred at the GJ West COOP Unit #79 Well. The well is located in Unit Letter G, Section 21, Township 17 South, Range 29 East, Eddy County, New Mexico. The site coordinates are N 32.82028°, W 104.07660°. The Site is shown on Figures 1 and 2.

Background

The spill was discovered on May 28, 2009. According to the C-141 (Initial) included in Appendix A, the spill was caused when a ¼ inch line on the LACT Unit back pressure valve broke, spraying an approximately 1000 $ft.^2$ area. Approximately 15 barrels of oil was spilled and 12 barrels of oil was recovered. The spill area was excavated to a depth of 2.0'. The spill location is shown on Figure 3.

Groundwater and Regulatory

A water well located in Section 22, Township 18 South, Range 29 East, was measured using a steel tape to gauge the depth to water. The water well was not in use at the time and the static depth to water was measured at approximately 82.0' below ground surface (bgs).

A risk-based evaluation was performed for the Site in accordance with the NMOCD Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene

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

and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene and xylene). Based on the regional groundwater data, the proposed RRAL for TPH is 1,000 mg/kg.

Assessment and Corrective Action

On June 4, 2009, Tetra Tech personnel inspected the site and collected samples. Two (2) auger holes were placed in the impacted area. Samples were collected to depths of 3.5' below excavation bottom (BEB) in AH-1 and 0.5' BEB in AH-2. The laboratory reports and chain of custody are enclosed in Appendix C. The analytical results are summarized in Table 1.

Referring to Table 1, AH-1 exceeded the RRAL for TPH in the 0-1.0' BEB sample, but was below the RRAL in AH-2. Chloride concentrations were elevated in AH-1 only and were not defined at 3.0'-3.5' BEB (1730 mg/kg).

A backhoe test trench (T-1) was installed with a backhoe on June 30, 2009. Samples were collected to a depth of 6.0 BEB, and showed chloride concentrations declining to 539 mg/kg at 2.0' BEB and <200 mg/kg at 6.0' BEB. Based on the results, COG supervised the removal of 2.0' of impacted soil from the area around AH-1 and the soils were hauled offsite for proper disposal.

Conclusions

The impacted area was defined and the impacted soils above the RRAL were excavated and hauled offsite for disposal. No TPH concentrations exceed the RRAL, and chloride concentrations were shallow and defined. Based upon the results of the assessment work and remediation performed at this site, COG requests closure of this site. The final C-141 is enclosed in Appendix B. If you have any question or comments concerning the assessment or the activities performed at the Site, please call me at (432) 682-4559.

Respectfully submitted,
Tetra Tech Inc.

Tim Reed

Tim Reed, P.G.
Senior Project Manager

cc: Pat Ellis – COG

FIGURES

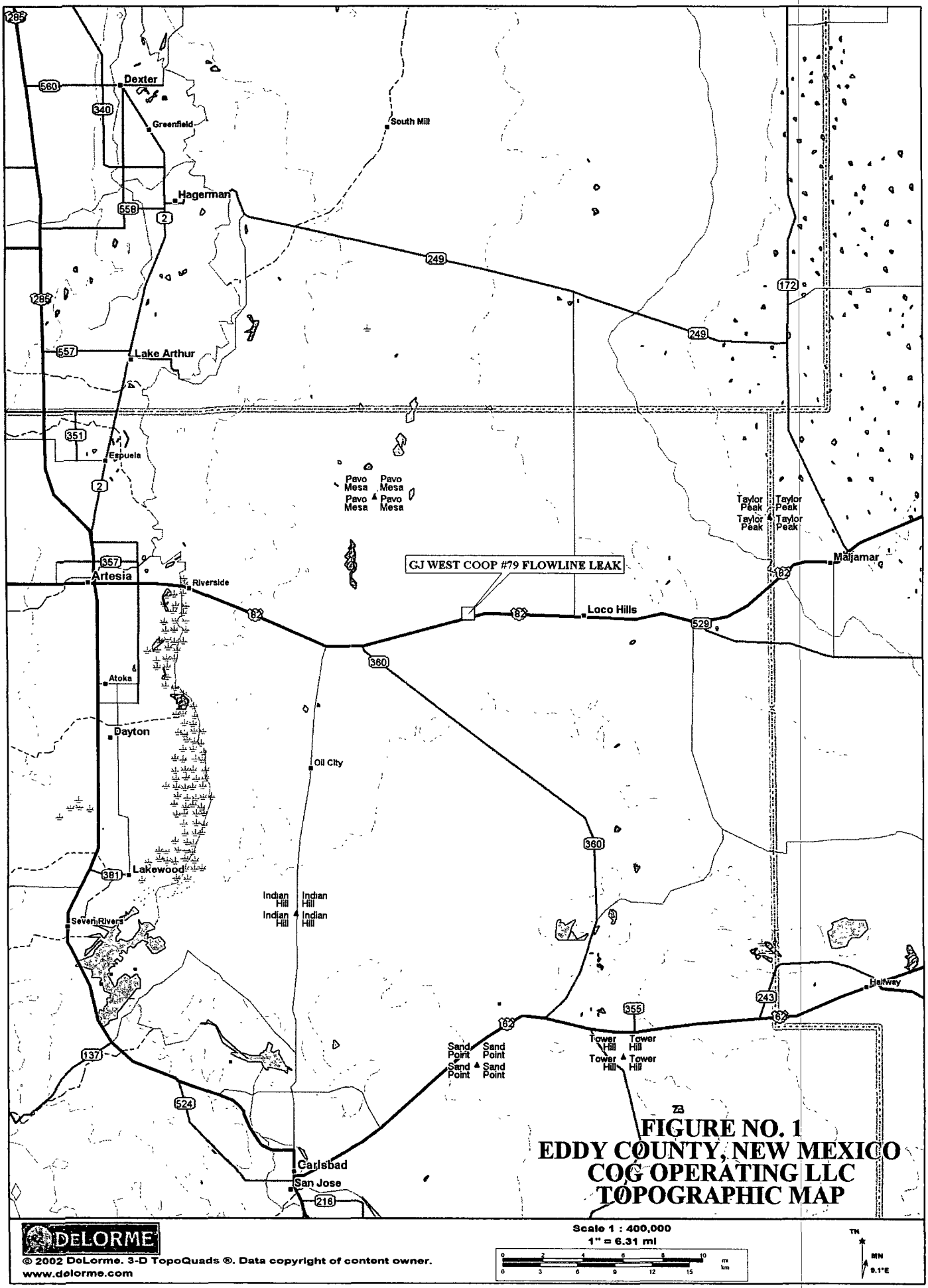


FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

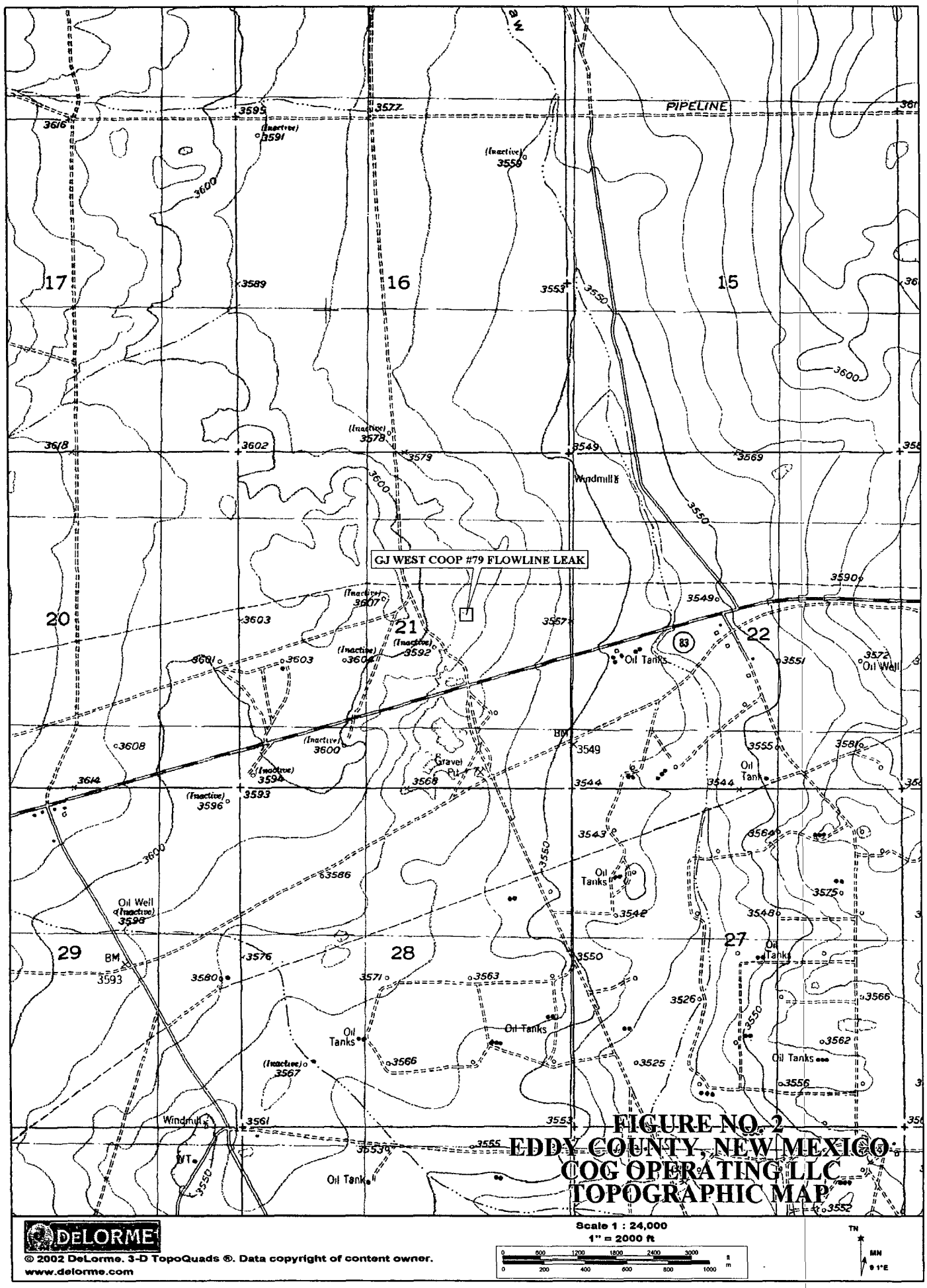
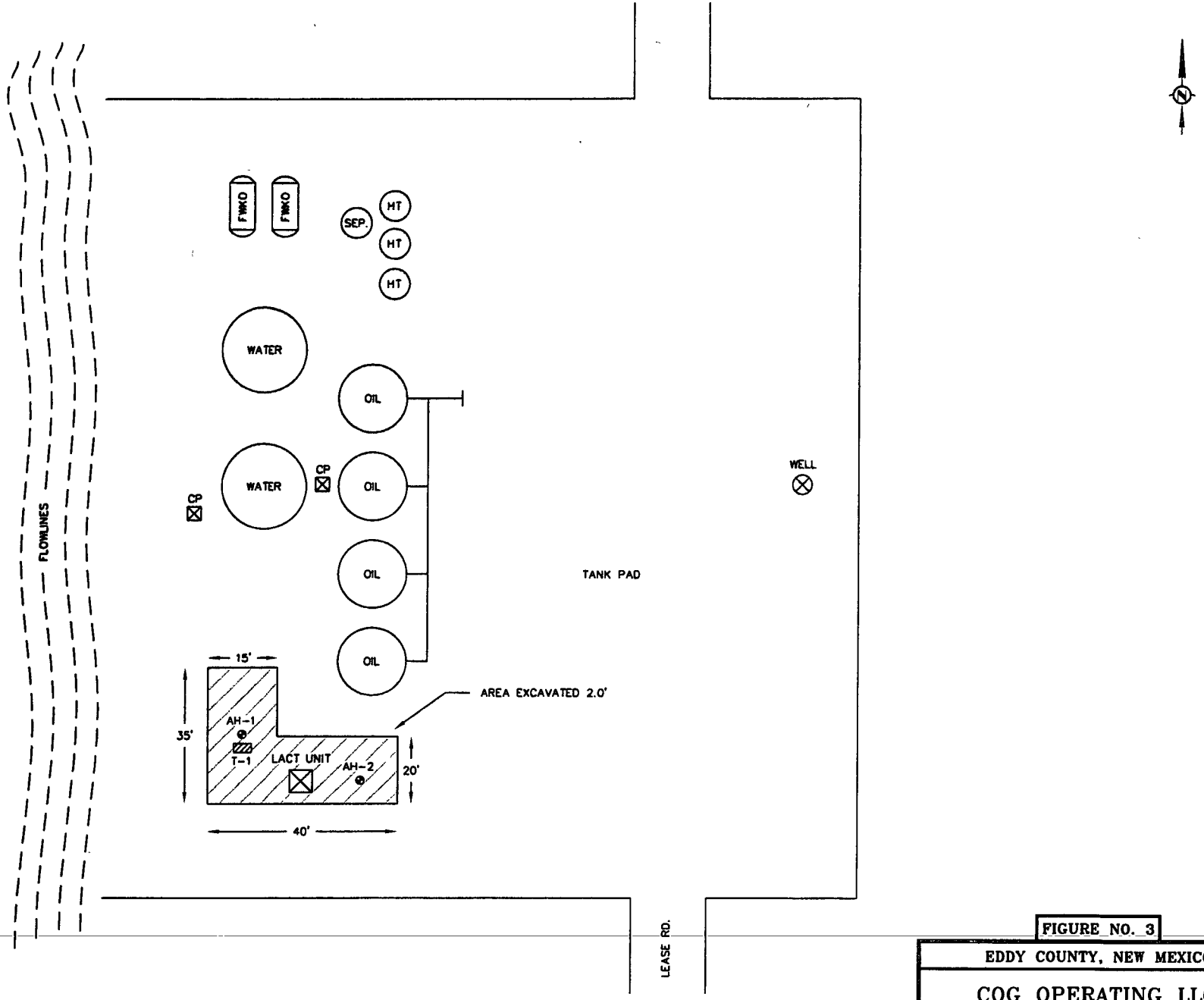


FIGURE NO. 2
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP



SPILL AREA
SAMPLE LOCATIONS
SAMPLE TRENCH

NOT TO SCALE

FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

GJ WEST COOP #79 FLOWLINE LEAK

DATE: 6/12/09
DWN. BY: JJ
FILE: H:\COG\64000213 GJ WEST COOP #79

TETRA TECH, INC.
MIDLAND, TEXAS

TABLES

Table 1
COG Operating LLC
GJ Co-op N. Well #79
Eddy County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Excavation Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
AH-1	6/4/2009	0-1	2		X	5150	398	**5548**	<0.0100	<0.0100	<0.0100	<0.0100	1,380
	6/4/2009	1-1.5			X	<50.0	<1.00	<50.00	-	-	-	-	1,480
	6/4/2009	2-2.5			X	<50.0	8.16	8.16	-	-	-	-	1,440
	6/4/2009	3-3.5		X		<50.0	6.81	6.81	-	-	-	-	1,730
T-1	6/30/2009	(2.0') BEB		X		-	-	-	-	-	-	-	539
T-1	6/30/2009	(4.0') BEB		X		-	-	-	-	-	-	-	389
T-1	6/30/2009	(6.0') BEB		X		-	-	-	-	-	-	-	<200
AH-2	6/4/2009	0-0.5	2'	X		<50.0	5.88	5.88	-	-	-	-	<200

(-) Not Analyzed

T (Backhoe Test Trench)

BEB (Below Excavation Bottom)

APPENDIX A

District I
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State of New Mexico
Energy Minerals and Natural Resources

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

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Revised October 10, 20(

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side of for

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Rep

Name of Company COG OPERATING LLC	Contact Kanicia Carrillo
Address 550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No. 432-685-4332
Facility Name – GJ West Coop Unit #79	Facility Type- North Battery

Surface Owner	Mineral Owner	Lease No. 30-015-26743

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	21	17S	29E	2310	North	1460	East	Eddy

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release-OIL	Volume of Release-15bbls	Volume Recovered- 12bbls
Source of Release-LACT UNIT BACK PRESSURE VALVE	Date and Hour of Occurrence- 5/28/09- 12:00 pm	Date and Hour of Discovery 5/28/09-12:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher NMOCD District 2	
By Whom? Kent Greenway	Date and Hour 5/29/09- 9:00 am	
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.*
1/4 inch line on lact unit back pressure valve broke. Replaced back pressure valve and put lact back in service.

Describe Area Affected and Cleanup Action Taken.*
Approximately 10' X 25' area was sprayed and affected. All spray was contained on the location pad. 12bbls oil liquid was recovered. The affected area i being dug out to a 1' depth and removed. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for your approval prior to any significant remediation work.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: K. C.	OIL CONSERVATION DIVISION
Printed Name: Kanicia Carrillo	Approved by District Supervisor:
Title: Regulatory Analyst	Approval Date: / Expiration Date:
E-mail Address: kcarrillo@conchoresources.com	Conditions of Approval: / Attached ☐
Date: 6/01/09 Phone: 432-685-4332	

* Attach Additional Sheets If Necessary

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Energy Minerals and Natural Resources

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1220 South St. Francis Dr.
Santa Fe, NM 87505

JUN – 3 2009

Form C-141
Revised October 10, 2003

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30-015-26743

Release Notification and Corrective Action

nMKB0927357241

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company COG OPERATING LLC 229137	Contact Kanicia Carrillo
Address 550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No. 432-685-4332
Facility Name – GJ West Coop Unit #79	Facility Type- North Battery

Surface Owner	Mineral Owner	Lease No. 30-015-26743

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	21	17S	29E	2310	North	1460	East	Eddy

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release-OIL	Volume of Release-15bbls	Volume Recovered- 12bbls
Source of Release-LACT UNIT BACK PRESSURE VALVE	Date and Hour of Occurrence- 5/28/09- 12:00 pm	Date and Hour of Discovery 5/28/09-12 00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher NMOCD District 2	
By Whom? Kent Greenway	Date and Hour 5/29/09- 9:00 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

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1/4 inch line on lact unit back pressure valve broke. Replaced back pressure valve and put lact back in service.

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Signature: K C	OIL CONSERVATION DIVISION
Printed Name: Kanicia Carrillo	Approved by District Supervisor: Signed By Mike Bratcher
Title: Regulatory Analyst	Approval Date: SEP 30 2009 Expiration Date: N/A
E-mail Address: kcarrillo@conchoresources.com	Conditions of Approval: Remediation Completed. Attached ☐
Date: 6/01/09 Phone: 432-685-4332	

* Attach Additional Sheets If Necessary

pMKB0927357588

2RP-346

APPENDIX B

Summary Report

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

Report Date: June 12, 2009

Work Order: 9060526

Project Location: Eddy Co., NM
Project Name: COG/GJ Co-op N. Well #79
Project Number: 114-6400213

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
198004	AH-1 0-1' (2' BEB)	soil	2009-06-04	00:00	2009-06-05
198005	AH-1 1-1.5' (2' BEB)	soil	2009-06-04	00:00	2009-06-05
198006	AH-1 2-2.5' (2' BEB)	soil	2009-06-04	00:00	2009-06-05
198007	AH-1 3-3.5' (2' BEB)	soil	2009-06-04	00:00	2009-06-05
198008	AH-2 0-0.5' (2' BEB)	soil	2009-06-04	00:00	2009-06-05

	BTEX				TPH DRO	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
198004 - AH-1 0-1' (2' BEB)	<0.0500	**5.94**	**9.40**	**18.6**	**5150**	**398**
198005 - AH-1 1-1.5' (2' BEB)					<50.0	<1.00
198006 - AH-1 2-2.5' (2' BEB)					<50.0	**8.16**
198007 - AH-1 3-3.5' (2' BEB)					<50.0	**6.81**
198008 - AH-2 0-0.5' (2' BEB)					<50.0	**5.88**

Sample: 198004 - AH-1 0-1' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		**1380**	mg/Kg	4.00

Sample: 198005 - AH-1 1-1.5' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		**1480**	mg/Kg	4.00

Sample: 198006 - AH-1 2-2.5' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		**1440**	mg/Kg	4.00

Sample: 198007 - AH-1 3-3.5' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		**1730**	mg/Kg	4.00

Sample: 198008 - AH-2 0-0.5' (2' BEB)

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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft Worth, Texas 76132 817•201•5260
E-Mail lab@traceanalysis.com

Certifications

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

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: June 12, 2009

Work Order: 9060526

Project Location: Eddy Co., NM
Project Name: COG/GJ Co-op N. Well #79
Project Number: 114-6400213

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
198004	AH-1 0-1' (2' BEB)	soil	2009-06-04	00:00	2009-06-05
198005	AH-1 1-1.5' (2' BEB)	soil	2009-06-04	00:00	2009-06-05
198006	AH-1 2-2.5' (2' BEB)	soil	2009-06-04	00:00	2009-06-05
198007	AH-1 3-3.5' (2' BEB)	soil	2009-06-04	00:00	2009-06-05
198008	AH-2 0-0.5' (2' BEB)	soil	2009-06-04	00:00	2009-06-05

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.

TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Standard Flags

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

Case Narrative

Samples for project COG/GJ Co-op N. Well #79 were received by TraceAnalysis, Inc. on 2009-06-05 and assigned to work order 9060526. Samples for work order 9060526 were received intact without headspace and at a temperature of 13.1 deg. C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	51377	2009-06-08 at 10:09	60203	2009-06-08 at 10:09
Chloride (Titration)	SM 4500-Cl B	51363	2009-06-08 at 09:31	60187	2009-06-08 at 15:11
TPH DRO	Mod. 8015B	51381	2009-06-08 at 16:00	60209	2009-06-08 at 22:22
TPH DRO	Mod. 8015B	51453	2009-06-10 at 15:00	60297	2009-06-10 at 12:21
TPH GRO	S 8015B	51377	2009-06-08 at 10:09	60204	2009-06-08 at 10:09
TPH GRO	S 8015B	51454	2009-06-10 at 09:21	60300	2009-06-10 at 09:21

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 9060526 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 198004 - AH-1 0-1' (2' BEB)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	60203	Date Analyzed:	2009-06-08	Analyzed By:	ME
Prep Batch:	51377	Sample Preparation:	2009-06-08	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0500	mg/Kg	5	0.0100
Toluene		**5.94**	mg/Kg	5	0.0100
Ethylbenzene		**9.40**	mg/Kg	5	0.0100
Xylene		**18.6**	mg/Kg	5	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		10.2	mg/Kg	5	10.0	102	49 - 129.7
4-Bromofluorobenzene (4-BFB)		13.9	mg/Kg	5	10.0	139	45.2 - 144.3

Sample: 198004 - AH-1 0-1' (2' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	60187	Date Analyzed:	2009-06-08	Analyzed By:	AR
Prep Batch:	51363	Sample Preparation:	2009-06-08	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1380**	mg/Kg	50	4.00

Sample: 198004 - AH-1 0-1' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	60209	Date Analyzed:	2009-06-08	Analyzed By:	AG
Prep Batch:	51381	Sample Preparation:	2009-06-08	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**5150**	mg/Kg	5	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	[1]	472	mg/Kg	5	100	472	13.2 - 219.3

Sample: 198004 - AH-1 0-1' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	60204	Date Analyzed:	2009-06-08	Analyzed By:	ME
Prep Batch:	51377	Sample Preparation:	2009-06-08	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**398**	mg/Kg	5	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		10.2	mg/Kg	5	10.0	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)	[2]	14.1	mg/Kg	5	10.0	141	52 - 117

Sample: 198005 - AH-1 1-1.5' (2' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	60187	Date Analyzed:	2009-06-08	Analyzed By:	AR
Prep Batch:	51363	Sample Preparation:	2009-06-08	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1480**	mg/Kg	50	4.00

Sample: 198005 - AH-1 1-1.5' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	60297	Date Analyzed:	2009-06-10	Analyzed By:	AG
Prep Batch:	51453	Sample Preparation:	2009-06-10	Prepared By:	AG

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

[1]High surrogate recovery due to peak interference.
[2]High surrogate recovery due to peak interference.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		96.8	mg/Kg	1	100	97	13.2 - 219.3

Sample: 198005 - AH-1 1-1.5' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	60300	Date Analyzed:	2009-06-10	Analyzed By:	ME
Prep Batch:	51454	Sample Preparation:	2009-06-10	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.09	mg/Kg	1	2.00	104	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.54	mg/Kg	1	2.00	77	52 - 117

Sample: 198006 - AH-1 2-2.5' (2' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	60187	Date Analyzed:	2009-06-08	Analyzed By:	AR
Prep Batch:	51363	Sample Preparation:	2009-06-08	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1440**	mg/Kg	50	4.00

Sample: 198006 - AH-1 2-2.5' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	60297	Date Analyzed:	2009-06-10	Analyzed By:	AG
Prep Batch:	51453	Sample Preparation:	2009-06-10	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		83.6	mg/Kg	1	100	84	13.2 - 219.3

Sample: 198006 - AH-1 2-2.5' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	60300	Date Analyzed:	2009-06-10	Analyzed By:	ME
Prep Batch:	51454	Sample Preparation:	2009-06-10	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**8.16**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.03	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.40	mg/Kg	1	2.00	70	52 - 117

Sample: 198007 - AH-1 3-3.5' (2' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	60187	Date Analyzed:	2009-06-08	Analyzed By:	AR
Prep Batch:	51363	Sample Preparation:	2009-06-08	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1730**	mg/Kg	50	4.00

Sample: 198007 - AH-1 3-3.5' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	60297	Date Analyzed:	2009-06-10	Analyzed By:	AG
Prep Batch:	51453	Sample Preparation:	2009-06-10	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		117	mg/Kg	1	100	117	13.2 - 219.3

Sample: 198007 - AH-1 3-3.5' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	60300	Date Analyzed:	2009-06-10	Analyzed By:	ME
Prep Batch:	51454	Sample Preparation:	2009-06-10	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**6.81**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.36	mg/Kg	1	2.00	68	52 - 117

Sample: 198008 - AH-2 0-0.5' (2' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	60187	Date Analyzed:	2009-06-08	Analyzed By:	AR
Prep Batch:	51363	Sample Preparation:	2009-06-08	Prepared By:	AR

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

Sample: 198008 - AH-2 0-0.5' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	60209	Date Analyzed:	2009-06-08	Analyzed By:	AG
Prep Batch:	51381	Sample Preparation:	2009-06-08	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		102	mg/Kg	1	100	102	13.2 - 219.3

Sample: 198008 - AH-2 0-0.5' (2' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	60204	Date Analyzed:	2009-06-08	Analyzed By:	ME
Prep Batch:	51377	Sample Preparation:	2009-06-08	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**5.88**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.33	mg/Kg	1	2.00	66	52 - 117

Method Blank (1) QC Batch: 60187

QC Batch:	60187	Date Analyzed:	2009-06-08	Analyzed By:	AR
Prep Batch:	51363	QC Preparation:	2009-06-08	Prepared By:	AR

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

Method Blank (1) QC Batch: 60203

QC Batch:	60203	Date Analyzed:	2009-06-08	Analyzed By:	ME
Prep Batch:	51377	QC Preparation:	2009-06-08	Prepared By:	ME

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00100	mg/Kg	0.01
Toluene		<0.00100	mg/Kg	0.01
Ethylbenzene		<0.00110	mg/Kg	0.01
Xylene		<0.00360	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.87	mg/Kg	1	2.00	94	65.6 - 130.6
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	51.9 - 128.1

Method Blank (1) QC Batch: 60204

QC Batch: 60204 | Date Analyzed: 2009-06-08 | Analyzed By: ME
Prep Batch: 51377 | QC Preparation: 2009-06-08 | Prepared By: ME

Parameter	Flag	MDL Result	Units	RL
GRO		<0.482	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.93	mg/Kg	1	2.00	96	71.9 - 115
4-Bromofluorobenzene (4-BFB)		1.27	mg/Kg	1	2.00	64	45.7 - 118.9

Method Blank (1) QC Batch: 60209

QC Batch: 60209 | Date Analyzed: 2009-06-08 | Analyzed By: AG
Prep Batch: 51381 | QC Preparation: 2009-06-08 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		176	mg/Kg	1	100	176	13 - 178.5

Method Blank (1) QC Batch: 60297

QC Batch: 60297 | Date Analyzed: 2009-06-10 | Analyzed By: AG
Prep Batch: 51453 | QC Preparation: 2009-06-10 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
DRO		7.14	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		116	mg/Kg	1	100	116	13 - 178.5

Method Blank (1) QC Batch: 60300

QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME
Prep Batch: 51454 QC Preparation: 2009-06-10 Prepared By: ME

Parameter	Flag	MDL Result	Units	RL
GRO		<0.482	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	71.9 - 115
4-Bromofluorobenzene (4-BFB)		1.43	mg/Kg	1	2.00	72	45.7 - 118.9

Laboratory Control Spike (LCS-1)

QC Batch: 60187 Date Analyzed: 2009-06-08 Analyzed By: AR
Prep Batch: 51363 QC Preparation: 2009-06-08 Prepared By: AR

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

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	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: 60203 Date Analyzed: 2009-06-08 Analyzed By: ME
Prep Batch: 51377 QC Preparation: 2009-06-08 Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.79	mg/Kg	1	2.00	<0.00100	90	72.7 - 129.8
Toluene	1.82	mg/Kg	1	2.00	<0.00100	91	71.6 - 129.6

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Ethylbenzene	1.79	mg/Kg	1	2.00	<0.00110	90	70.8 - 129.7
Xylene	5.38	mg/Kg	1	6.00	<0.00360	90	70.9 - 129.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.86	mg/Kg	1	2.00	<0.00100	93	72.7 - 129.8	4	20
Toluene	1.90	mg/Kg	1	2.00	<0.00100	95	71.6 - 129.6	4	20
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.00110	97	70.8 - 129.7	8	20
Xylene	5.96	mg/Kg	1	6.00	<0.00360	99	70.9 - 129.4	10	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.88	1.88	mg/Kg	1	2.00	94	94	65.9 - 132
4-Bromofluorobenzene (4-BFB)	1.62	1.75	mg/Kg	1	2.00	81	88	55.2 - 128.9

Laboratory Control Spike (LCS-1)

QC Batch: 60204 | Date Analyzed: 2009-06-08 | Analyzed By: ME
Prep Batch: 51377 | QC Preparation: 2009-06-08 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	12.7	mg/Kg	1	20.0	<0.482	64	60.5 - 100.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.2	mg/Kg	1	20.0	<0.482	76	60.5 - 100.1	18	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	2.07	mg/Kg	1	2.00	101	104	78.8 - 104.7
4-Bromofluorobenzene (4-BFB)	1.38	1.50	mg/Kg	1	2.00	69	75	66.1 - 107.3

Laboratory Control Spike (LCS-1)

QC Batch: 60209 | Date Analyzed: 2009-06-08 | Analyzed By: AG
Prep Batch: 51381 | QC Preparation: 2009-06-08 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	227	mg/Kg	1	250	<5.86	91	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	277	mg/Kg	1	250	<5.86	111	57.4 - 133.4	20	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-Triacontane	112	121	mg/Kg	1	100	112	121	48.5 - 146.7

Laboratory Control Spike (LCS-1)

QC Batch: 60297 | Date Analyzed: 2009-06-10 | Analyzed By: AG
Prep Batch: 51453 | QC Preparation: 2009-06-10 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	271	mg/Kg	1	250	<5.86	108	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	265	mg/Kg	1	250	<5.86	106	57.4 - 133.4	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	115	109	mg/Kg	1	100	115	109	48.5 - 146.7

Laboratory Control Spike (LCS-1)

QC Batch: 60300 | Date Analyzed: 2009-06-10 | Analyzed By: ME
Prep Batch: 51454 | QC Preparation: 2009-06-10 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	13.1	mg/Kg	1	20.0	<0.482	66	60.5 - 100.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.5	mg/Kg	1	20.0	<0.482	78	60.5 - 100.1	17	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.03	2.08	mg/Kg	1	2.00	102	104	78.8 - 104.7
4-Bromofluorobenzene (4-BFB)	1.58	1.70	mg/Kg	1	2.00	79	85	66.1 - 107.3

Matrix Spike (MS-1) Spiked Sample: 198009

QC Batch: 60187 | Date Analyzed: 2009-06-08 | Analyzed By: AR
Prep Batch: 51363 | QC Preparation: 2009-06-08 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5000	mg/Kg	50	5000	<109	100	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5040	mg/Kg	50	5000	<109	101	85 - 115	1	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: 198073

QC Batch: 60203 | Date Analyzed: 2009-06-08 | Analyzed By: ME
Prep Batch: 51377 | QC Preparation: 2009-06-08 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.07	mg/Kg	1	2.00	<0.00100	104	58.6 - 165.2
Toluene	2.04	mg/Kg	1	2.00	0.0585	99	64.2 - 153.8
Ethylbenzene	2.08	mg/Kg	1	2.00	0.0901	99	61.6 - 159.4
Xylene	6.28	mg/Kg	1	6.00	0.1727	102	64.4 - 155.3

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

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	[3]	<0.00100	mg/Kg	1	2.00	<0.00100	0	58.6 - 165.2	200	20
Toluene	[4]	<0.00100	mg/Kg	1	2.00	0.0585	0	64.2 - 153.8	200	20

continued ...

[3]SPECIAL - MSD was not spiked •
[4]SPECIAL - MSD was not spiked •

matrix spikes continued ...

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene	[5]	0.129	mg/Kg	1	2.00	0.0901	2	61.6 - 159.4	177	20
Xylene	[6]	0.287	mg/Kg	1	6.00	0.1727	2	64.4 - 155.3	182	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)	1.87	1.94	mg/Kg	1	2	94	97	76 - 127.9
4-Bromofluorobenzene (4-BFB)	1.76	1.66	mg/Kg	1	2	88	83	72 - 127.8

Matrix Spike (MS-1) Spiked Sample: 198064

QC Batch: 60204 | Date Analyzed: 2009-06-08 | Analyzed By: ME
Prep Batch: 51377 | QC Preparation: 2009-06-08 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	23.8	mg/Kg	1	20.0	<0.482	119	12.8 - 175.2

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	28.2	mg/Kg	1	20.0	<0.482	141	12.8 - 175.2	17	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	2.16	mg/Kg	1	2	102	108	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	1.37	1.38	mg/Kg	1	2	68	69	31.3 - 161.7

Matrix Spike (MS-1) Spiked Sample: 198026

QC Batch: 60209 | Date Analyzed: 2009-06-08 | Analyzed By: AG
Prep Batch: 51381 | QC Preparation: 2009-06-08 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	203	mg/Kg	1	250	<5.86	81	35.2 - 167.1

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

[5]SPECIAL - MSD was not spiked •
[6]SPECIAL - MSD was not spiked •

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	197	mg/Kg	1	250	<5.86	79	35.2 - 167.1	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-Triacontane	93.5	95.6	mg/Kg	1	100	94	96	34.5 - 178.4

Matrix Spike (MS-1) Spiked Sample: 198007

QC Batch: 60297 | Date Analyzed: 2009-06-10 | Analyzed By: AG
Prep Batch: 51453 | QC Preparation: 2009-06-10 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	201	mg/Kg	1	250	<5.86	80	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	210	mg/Kg	1	250	<5.86	84	35.2 - 167.1	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	86.9	89.1	mg/Kg	1	100	87	89	34.5 - 178.4

Matrix Spike (MS-1) Spiked Sample: 198314

QC Batch: 60300 | Date Analyzed: 2009-06-10 | Analyzed By: ME
Prep Batch: 51454 | QC Preparation: 2009-06-10 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	20.4	mg/Kg	1	20.0	0.9449	97	12.8 - 175.2

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO [7]	31.2	mg/Kg	1	20.0	0.9449	151	12.8 - 175.2	42	20

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

[7]MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.00	2.22	mg/Kg	1	2	100	111	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	1.43	1.50	mg/Kg	1	2	72	75	31.3 - 161.7

Standard (ICV-1)

QC Batch: 60187 Date Analyzed: 2009-06-08 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-06-08

Standard (CCV-1)

QC Batch: 60187 Date Analyzed: 2009-06-08 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2009-06-08

Standard (CCV-1)

QC Batch: 60203 Date Analyzed: 2009-06-08 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0982	98	80 - 120	2009-06-08
Toluene		mg/Kg	0.100	0.0999	100	80 - 120	2009-06-08
Ethylbenzene		mg/Kg	0.100	0.102	102	80 - 120	2009-06-08
Xylene		mg/Kg	0.300	0.312	104	80 - 120	2009-06-08

Standard (CCV-2)

QC Batch: 60203 Date Analyzed: 2009-06-08 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.106	106	80 - 120	2009-06-08
Toluene		mg/Kg	0.100	0.106	106	80 - 120	2009-06-08
Ethylbenzene		mg/Kg	0.100	0.102	102	80 - 120	2009-06-08

continued ...

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Xylene		mg/Kg	0.300	0.311	104	80 - 120	2009-06-08

Standard (CCV-1)

QC Batch: 60204 Date Analyzed: 2009-06-08 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.870	87	80 - 120	2009-06-08

Standard (CCV-2)

QC Batch: 60204 Date Analyzed: 2009-06-08 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.05	105	80 - 120	2009-06-08

Standard (CCV-1)

QC Batch: 60209 Date Analyzed: 2009-06-08 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	276	110	80 - 120	2009-06-08

Standard (CCV-2)

QC Batch: 60209 Date Analyzed: 2009-06-08 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	270	108	80 - 120	2009-06-08

Standard (CCV-3)

QC Batch: 60209 Date Analyzed: 2009-06-08 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	265	106	80 - 120	2009-06-08

Standard (CCV-1)

QC Batch: 60297 Date Analyzed: 2009-06-10 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	256	102	80 - 120	2009-06-10

Standard (CCV-2)

QC Batch: 60297 Date Analyzed: 2009-06-10 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	262	105	80 - 120	2009-06-10

Standard (CCV-1)

QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.940	94	80 - 120	2009-06-10

Standard (CCV-2)

QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.930	93	80 - 120	2009-06-10

Work Order # 409005216

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114/6400213

PROJECT NAME: COG / GJ Coop N Well #79 Eddy Co.

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
198004	6/4		S		X	AH-1 0-1' 2' BEB	1				X			X	X											X				
005						AH-1 1'-1.5' 2' BEB																				X				
006						AH-1 2'-2.5' 2' BEB																				X				
007						AH-1 3'-3.5' 2' BEB																				X				
008	↓		↓		↓	AH-2 0-0.5' 2' BEB	↓				↓			X												X				

RELINQUISHED BY: (Signature) — Date: 6/5/09 Time: 1440
RECEIVED BY: (Signature) — Date: — Time:
SAMPLED BY: (Print & Initial) JT / RG — Date: 6/4/09 Time:

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

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

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) Melanie Bolton
DATE: 6-5-09 TIME: 14:40
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 13.1°C

REMARKS: RUN (1) BTEX w/ Highest TPH

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

Run deeper samples of TPH exceed 1,000 mg/kg.

AR

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]

T (Backhoe Test Trench)
BEB (Below Excavation Bottom)

Summary Report

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

Report Date: July 8, 2009

Work Order: 9070239

Project Location: Eddy Co., NM
Project Name: COG/GJ Co-op N. Well #79
Project Number: 114-6400213

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201031	T-1 2.0' (BEB)	soil	2009-06-30	00:00	2009-07-02
201032	T-1 4.0' (BEB)	soil	2009-06-30	00:00	2009-07-02
201033	T-1 6.0' (BEB)	soil	2009-06-30	00:00	2009-07-02

Sample: 201031 - T-1 2.0' (BEB)

Param	Flag	Result	Units	RL
Chloride		**539**	mg/Kg	4.00

Sample: 201032 - T-1 4.0' (BEB)

Param	Flag	Result	Units	RL
Chloride		**389**	mg/Kg	4.00

Sample: 201033 - T-1 6.0' (BEB)

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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft Worth, Texas 76132 817•201•5260
E-Mail lab@traceanalysis.com

Certifications

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

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: July 8, 2009

Work Order: 9070239

Project Location: Eddy Co., NM
Project Name: COG/GJ Co-op N. Well #79
Project Number: 114-6400213

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
201031	T-1 2.0' (BEB)	soil	2009-06-30	00:00	2009-07-02
201032	T-1 4.0' (BEB)	soil	2009-06-30	00:00	2009-07-02
201033	T-1 6.0' (BEB)	soil	2009-06-30	00:00	2009-07-02

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

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

Standard Flags

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

Case Narrative

Samples for project COG/GJ Co-op N. Well #79 were received by TraceAnalysis, Inc. on 2009-07-02 and assigned to work order 9070239. Samples for work order 9070239 were received intact at a temperature of 15.9 deg. 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	52177	2009-07-06 at 08:45	61199	2009-07-07 at 11:44

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 9070239 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 201031 - T-1 2.0' (BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	61199	Date Analyzed:	2009-07-07	Analyzed By:	AR
Prep Batch:	52177	Sample Preparation:	2009-07-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**539**	mg/Kg	50	4.00

Sample: 201032 - T-1 4.0' (BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	61199	Date Analyzed:	2009-07-07	Analyzed By:	AR
Prep Batch:	52177	Sample Preparation:	2009-07-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**389**	mg/Kg	50	4.00

Sample: 201033 - T-1 6.0' (BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	61199	Date Analyzed:	2009-07-07	Analyzed By:	AR
Prep Batch:	52177	Sample Preparation:	2009-07-06	Prepared By:	AR

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

Method Blank (1) QC Batch: 61199

QC Batch:	61199	Date Analyzed:	2009-07-07	Analyzed By:	AR
Prep Batch:	52177	QC Preparation:	2009-07-06	Prepared By:	AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 61199 | Date Analyzed: 2009-07-07 | Analyzed By: AR
Prep Batch: 52177 | QC Preparation: 2009-07-06 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.8	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.7	mg/Kg	1	100	<2.18	100	85 - 115	1	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: 201071

QC Batch: 61199 | Date Analyzed: 2009-07-07 | Analyzed By: AR
Prep Batch: 52177 | QC Preparation: 2009-07-06 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5530	mg/Kg	50	5000	584	99	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5580	mg/Kg	50	5000	584	100	85 - 115	1	20

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

Standard (ICV-1)

QC Batch: 61199 | Date Analyzed: 2009-07-07 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2009-07-07

Standard (CCV-1)

QC Batch: 61199 | Date Analyzed: 2009-07-07 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-07-07

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

CLIENT NAME: COG | SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640 0213 | PROJECT NAME: COG / GJ Coop well #79 Eddy co. NM.

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	Chloride
201031	6-30-09		S		/	T-1 2.0' (BEB)	1				/		X
201032	6-30-09		S		/	T-1 4.0' (BEB)	1				/		X
033	6-30-09		S		/	T-1 6.0' (BEB)	1				/		X

ANALYSIS REQUEST (Circle or Specify Method No.)

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

RELINQUISHED BY: (Signature) Date: 7/1/09 Time: 1410 | RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Ike Tavarez Date: Time:

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez Results by:

RECEIVING LABORATORY: Trace | RECEIVED BY: (Signature) Melanie Batten

ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE: DATE: 7/2/09 TIME: 1410

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 15.9 °C | REMARKS:

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