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

HOBBS OCD

AUG 13 2014

RECEIVED

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **COG Operating LLC**	Contact **Robert McNeil**
Address **600 West Illinois Avenue, Midland, Texas 79701**	Telephone No. **(432) 230-0077**
Facility Name Goldeneye 18 Federal Com #1	Facility Type **Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-025-39742

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	18	24S	32E					Lea

Latitude N 32 12.626 ° **Longitude** W 103 43.362 °

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 100 **bbls**	Volume Recovered **0 bbls**
Source of Release Victaulic Clamp	Date and Hour of Occurrence 06-23-2013	Date and Hour of Discovery **06-23-2013 8:45 a.m.**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Geoffrey Leking - NMOCD**	
By Whom? Michelle Mullins	Date and Hour 06-24-2013 11:34 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

The nuts and bolts on the victaulic clamp came loose and caused the release. A new victaulic clamp has been placed on the flowline to prevent reoccurrence.

Describe Area Affected and Cleanup Action Taken.*

Initially 100 bbls of produced water was released due to victaulic clamp failure. None of the released fluids were recovered. Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez (Agent for COG)	Approved by ~~District Supervisor~~: Emmanuel Sparks	
Title: Senior Project Manager, P.G.	Approval Date: 8-14-14	Expiration Date: —
E-mail Address: Ike.Tavarez@tetratech.com	Conditions of Approval: —	Attached ☐
Date: 7-23-14 Phone: (432) 687-8110		1RP-3239

* Attach Additional Sheets If Necessary

AUG 14 2014

ogrid 219755
nTO 1422 631220
pTO 1422 631382

APPENDIX C

Summary Report

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

Report Date: September 17, 2013

Work Order: 13090439

Project Location: Lea Co., NM
Project Name: COG/Golden Eye 18 Federal Com. #1
Project Number: 112MC05596

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
340946	AH-1 0-1'	soil	2013-08-28	00:00	2013-09-04
340947	AH-1 1-1.5'	soil	2013-08-28	00:00	2013-09-04
340948	AH-1 2-2.5'	soil	2013-08-28	00:00	2013-09-04
340949	AH-1 3-3.5'	soil	2013-08-28	00:00	2013-09-04
340950	AH-1 4-4.5'	soil	2013-08-28	00:00	2013-09-04
340951	AH-1 5-5.5'	soil	2013-08-28	00:00	2013-09-04
340952	AH-1 6-6.5'	soil	2013-08-28	00:00	2013-09-04
340953	AH-1 7-7.5'	soil	2013-08-28	00:00	2013-09-04
340954	AH-1 8-8.5'	soil	2013-08-28	00:00	2013-09-04
340955	AH-1 9-9.5'	soil	2013-08-28	00:00	2013-09-04
340956	AH-2 0-1'	soil	2013-08-28	00:00	2013-09-04
340957	AH-2 1-1.5	soil	2013-08-28	00:00	2013-09-04
340958	AH-2 2-2.5'	soil	2013-08-28	00:00	2013-09-04
340959	AH-2 3-3.5'	soil	2013-08-28	00:00	2013-09-04
340960	AH-2 4-4.5'	soil	2013-08-28	00:00	2013-09-04
340961	AH-2 5-5.5'	soil	2013-08-28	00:00	2013-09-04
340962	AH-2 6-6.5'	soil	2013-08-28	00:00	2013-09-04
340963	AH-2 7-7.5'	soil	2013-08-28	00:00	2013-09-04
340964	AH-2 8-8.5'	soil	2013-08-28	00:00	2013-09-04
340965	AH-3 0-1'	soil	2013-08-28	00:00	2013-09-04
340966	AH-3 1-1.5'	soil	2013-08-28	00:00	2013-09-04
340967	AH-3 2-2.5'	soil	2013-08-28	00:00	2013-09-04
340968	AH-3 3-3.5'	soil	2013-08-28	00:00	2013-09-04
340969	AH-3 4-4.5'	soil	2013-08-28	00:00	2013-09-04
340970	AH-3 5-5.5'	soil	2013-08-28	00:00	2013-09-04
340971	AH-4 0-1'	soil	2013-08-28	00:00	2013-09-04
340972	AH-4 1-1.5'	soil	2013-08-28	00:00	2013-09-04
340973	AH-4 2-2.5'	soil	2013-08-28	00:00	2013-09-04
340974	AH-4 3-3.5'	soil	2013-08-28	00:00	2013-09-04
340975	AH-4 4-4.5'	soil	2013-08-28	00:00	2013-09-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
340976	AH-4 5-5.5'	soil	2013-08-28	00:00	2013-09-04
340977	AH-4 6-6.5'	soil	2013-08-28	00:00	2013-09-04
340978	AH-4 7-7.5'	soil	2013-08-28	00:00	2013-09-04
340979	AH-4 8-8.5'	soil	2013-08-28	00:00	2013-09-04

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
340946 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	**255**	<4.00 Qs
340956 - AH-2 0-1'	<0.0200	**0.0248**	**0.0665**	**0.172**	**529**	**16.3** Qs
340965 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	**101**	**4.92** Qs
340971 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	**105**	<4.00 Qs

Sample: 340946 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**520**	mg/Kg	4

Sample: 340947 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**381**	mg/Kg	4

Sample: 340948 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**337**	mg/Kg	4

Sample: 340949 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**5880**	mg/Kg	4

Sample: 340950 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**9470**	mg/Kg	4

Sample: 340951 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**24800**	mg/Kg	4

Sample: 340952 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**21700**	mg/Kg	4

Sample: 340953 - AH-1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**12200**	mg/Kg	4

Sample: 340954 - AH-1 8-8.5'

Param	Flag	Result	Units	RL
Chloride		**1720**	mg/Kg	4

Sample: 340955 - AH-1 9-9.5'

Param	Flag	Result	Units	RL
Chloride		**1260**	mg/Kg	4

Sample: 340956 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**1870**	mg/Kg	4

Sample: 340957 - AH-2 1-1.5

Param	Flag	Result	Units	RL
Chloride		**1960**	mg/Kg	4

Sample: 340958 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2880**	mg/Kg	4

Sample: 340959 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**6000**	mg/Kg	4

Sample: 340960 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**12800**	mg/Kg	4

Sample: 340961 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**25100**	mg/Kg	4

Sample: 340962 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**19500**	mg/Kg	4

Sample: 340963 - AH-2 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**14800**	mg/Kg	4

Sample: 340964 - AH-2 8-8.5'

Param	Flag	Result	Units	RL
Chloride		**13700**	mg/Kg	4

Sample: 340965 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**623**	mg/Kg	4

Sample: 340966 - AH-3 1-1.5'

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

Sample: 340967 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**569**	mg/Kg	4

Sample: 340968 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**2260**	mg/Kg	4

Sample: 340969 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**550**	mg/Kg	4

Sample: 340970 - AH-3 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**272**	mg/Kg	4

Sample: 340971 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**1070**	mg/Kg	4

Sample: 340972 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**379**	mg/Kg	4

Sample: 340973 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**1580**	mg/Kg	4

Sample: 340974 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**11700**	mg/Kg	4

Sample: 340975 - AH-4 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**9690**	mg/Kg	4

Sample: 340976 - AH-4 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**27400**	mg/Kg	4

Sample: 340977 - AH-4 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**14500**	mg/Kg	4

Sample: 340978 - AH-4 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**17500**	mg/Kg	4

Sample: 340979 - AH-4 8-8.5'

Param	Flag	Result	Units	RL
Chloride		**6310**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: September 17, 2013

Work Order: 13090439

Project Location: Lea Co., NM
Project Name: COG/Golden Eye 18 Federal Com. #1
Project Number: 112MC05596

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
340946	AH-1 0-1'	soil	2013-08-28	00:00	2013-09-04
340947	AH-1 1-1.5'	soil	2013-08-28	00:00	2013-09-04
340948	AH-1 2-2.5'	soil	2013-08-28	00:00	2013-09-04
340949	AH-1 3-3.5'	soil	2013-08-28	00:00	2013-09-04
340950	AH-1 4-4.5'	soil	2013-08-28	00:00	2013-09-04
340951	AH-1 5-5.5'	soil	2013-08-28	00:00	2013-09-04
340952	AH-1 6-6.5'	soil	2013-08-28	00:00	2013-09-04
340953	AH-1 7-7.5'	soil	2013-08-28	00:00	2013-09-04
340954	AH-1 8-8.5'	soil	2013-08-28	00:00	2013-09-04
340955	AH-1 9-9.5'	soil	2013-08-28	00:00	2013-09-04
340956	AH-2 0-1'	soil	2013-08-28	00:00	2013-09-04
340957	AH-2 1-1.5	soil	2013-08-28	00:00	2013-09-04
340958	AH-2 2-2.5'	soil	2013-08-28	00:00	2013-09-04
340959	AH-2 3-3.5'	soil	2013-08-28	00:00	2013-09-04
340960	AH-2 4-4.5'	soil	2013-08-28	00:00	2013-09-04
340961	AH-2 5-5.5'	soil	2013-08-28	00:00	2013-09-04
340962	AH-2 6-6.5'	soil	2013-08-28	00:00	2013-09-04
340963	AH-2 7-7.5'	soil	2013-08-28	00:00	2013-09-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
340964	AH-2 8-8.5'	soil	2013-08-28	00:00	2013-09-04
340965	AH-3 0-1'	soil	2013-08-28	00:00	2013-09-04
340966	AH-3 1-1.5'	soil	2013-08-28	00:00	2013-09-04
340967	AH-3 2-2.5'	soil	2013-08-28	00:00	2013-09-04
340968	AH-3 3-3.5'	soil	2013-08-28	00:00	2013-09-04
340969	AH-3 4-4.5'	soil	2013-08-28	00:00	2013-09-04
340970	AH-3 5-5.5'	soil	2013-08-28	00:00	2013-09-04
340971	AH-4 0-1'	soil	2013-08-28	00:00	2013-09-04
340972	AH-4 1-1.5'	soil	2013-08-28	00:00	2013-09-04
340973	AH-4 2-2.5'	soil	2013-08-28	00:00	2013-09-04
340974	AH-4 3-3.5'	soil	2013-08-28	00:00	2013-09-04
340975	AH-4 4-4.5'	soil	2013-08-28	00:00	2013-09-04
340976	AH-4 5-5.5'	soil	2013-08-28	00:00	2013-09-04
340977	AH-4 6-6.5'	soil	2013-08-28	00:00	2013-09-04
340978	AH-4 7-7.5'	soil	2013-08-28	00:00	2013-09-04
340979	AH-4 8-8.5'	soil	2013-08-28	00:00	2013-09-04

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 37 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 COG/Golden Eye 18 Federal Com. #1 were received by TraceAnalysis, Inc. on 2013-09-04 and assigned to work order 13090439. Samples for work order 13090439 were received intact at a temperature of 5.4 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	88810	2013-09-08 at 14:54	104860	2013-09-10 at 07:37
Chloride (Titration)	SM 4500-Cl B	88902	2013-09-10 at 10:51	104926	2013-09-11 at 10:52
Chloride (Titration)	SM 4500-Cl B	88902	2013-09-10 at 10:51	105058	2013-09-13 at 16:37
Chloride (Titration)	SM 4500-Cl B	88902	2013-09-10 at 10:51	105059	2013-09-13 at 16:39
Chloride (Titration)	SM 4500-Cl B	88902	2013-09-10 at 10:51	105060	2013-09-13 at 16:40
TPH DRO - NEW	S 8015 D	88863	2013-09-09 at 10:00	104876	2013-09-10 at 10:19
TPH GRO	S 8015 D	88810	2013-09-08 at 14:54	104861	2013-09-10 at 07:47

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 13090439 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: 340946 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104860	Date Analyzed:	2013-09-10	Analyzed By:	AK
Prep Batch:	88810	Sample Preparation:	2013-09-08	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.04	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	1	2.00	93	70 - 130

Sample: 340946 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**520**	mg/Kg	5	4.00

Sample: 340946 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104876	Date Analyzed:	2013-09-10	Analyzed By:	CW
Prep Batch:	88863	Sample Preparation:	2013-09-09	Prepared By:	CW

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**255**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			120	mg/Kg	1	100	120	76.3 - 192.6

Sample: 340946 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104861	Date Analyzed:	2013-09-10	Analyzed By:	AK
Prep Batch:	88810	Sample Preparation:	2013-09-08	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.36	mg/Kg	1	2.00	118	70 - 130
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	1	2.00	114	70 - 130

Sample: 340947 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**381**	mg/Kg	5	4.00

Sample: 340948 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

continued ...

sample 340948 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**337**	mg/Kg	5	4.00

Sample: 340949 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**5880**	mg/Kg	10	4.00

Sample: 340950 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**9470**	mg/Kg	10	4.00

Sample: 340951 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**24800**	mg/Kg	10	4.00

Sample: 340952 - AH-1 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**21700**	mg/Kg	10	4.00

Sample: 340953 - AH-1 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**12200**	mg/Kg	10	4.00

Sample: 340954 - AH-1 8-8.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1720**	mg/Kg	10	4.00

Sample: 340955 - AH-1 9-9.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**1260**		mg/Kg	10	4.00

Sample: 340956 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104860	Date Analyzed:	2013-09-10	Analyzed By:	AK
Prep Batch:	88810	Sample Preparation:	2013-09-08	Prepared By:	AK

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene	U	1	<0.0200		mg/Kg	1	0.0200
Toluene		1	**0.0248**		mg/Kg	1	0.0200
Ethylbenzene		1	**0.0665**		mg/Kg	1	0.0200
Xylene		1	**0.172**		mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Sample: 340956 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**1870**		mg/Kg	10	4.00

Sample: 340956 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104876	Date Analyzed:	2013-09-10	Analyzed By:	CW
Prep Batch:	88863	Sample Preparation:	2013-09-09	Prepared By:	CW

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
DRO		1	**529**		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			153	mg/Kg	1	100	153	76.3 - 192.6

Sample: 340956 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104861	Date Analyzed:	2013-09-10	Analyzed By:	AK
Prep Batch:	88810	Sample Preparation:	2013-09-08	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO	Qs	1	**16.3**		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.03	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			2.21	mg/Kg	1	2.00	110	70 - 130

Sample: 340957 - AH-2 1-1.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Chloride			**1960**		mg/Kg	10	4.00

Sample: 340958 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2880**	mg/Kg	10	4.00

Sample: 340959 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6000**	mg/Kg	10	4.00

Sample: 340960 - AH-2 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**12800**	mg/Kg	10	4.00

Sample: 340961 - AH-2 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**25100**	mg/Kg	10	4.00

Sample: 340962 - AH-2 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**19500**	mg/Kg	10	4.00

Sample: 340963 - AH-2 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**14800**	mg/Kg	10	4.00

Sample: 340964 - AH-2 8-8.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**13700**	mg/Kg	10	4.00

Sample: 340965 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104860	Date Analyzed:	2013-09-10	Analyzed By:	AK
Prep Batch:	88810	Sample Preparation:	2013-09-08	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.73	mg/Kg	1	2.00	86	70 - 130

Sample: 340965 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			**623**	mg/Kg	5	4.00

Sample: 340965 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104876	Date Analyzed:	2013-09-10	Analyzed By:	CW
Prep Batch:	88863	Sample Preparation:	2013-09-09	Prepared By:	CW

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	B	1	**101**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			138	mg/Kg	1	100	138	76.3 - 192.6

Sample: 340965 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104861	Date Analyzed:	2013-09-10	Analyzed By:	AK
Prep Batch:	88810	Sample Preparation:	2013-09-08	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Qs	1	**4.92**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.23	mg/Kg	1	2.00	112	70 - 130
4-Bromofluorobenzene (4-BFB)			2.57	mg/Kg	1	2.00	128	70 - 130

Sample: 340966 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

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

Sample: 340967 - AH-3 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**569**	mg/Kg	5	4.00

Sample: 340968 - AH-3 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2260**	mg/Kg	10	4.00

Sample: 340969 - AH-3 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**550**	mg/Kg	5	4.00

Sample: 340970 - AH-3 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**272**	mg/Kg	5	4.00

Sample: 340971 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104860	Date Analyzed:	2013-09-10	Analyzed By:	AK
Prep Batch:	88810	Sample Preparation:	2013-09-08	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.74	mg/Kg	1	2.00	87	70 - 130

Sample: 340971 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1070**	mg/Kg	5	4.00

Sample: 340971 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104876	Date Analyzed:	2013-09-10	Analyzed By:	CW
Prep Batch:	88863	Sample Preparation:	2013-09-09	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B	1	**105**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			136	mg/Kg	1	100	136	76.3 - 192.6

Sample: 340971 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104861	Date Analyzed:	2013-09-10	Analyzed By:	AK
Prep Batch:	88810	Sample Preparation:	2013-09-08	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.30	mg/Kg	1	2.00	115	70 - 130
4-Bromofluorobenzene (4-BFB)			2.51	mg/Kg	1	2.00	126	70 - 130

Sample: 340972 - AH-4 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**379**	mg/Kg	5	4.00

Sample: 340973 - AH-4 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1580**	mg/Kg	10	4.00

Sample: 340974 - AH-4 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**11700**	mg/Kg	10	4.00

Sample: 340975 - AH-4 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105060	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**9690**	mg/Kg	10	4.00

Sample: 340976 - AH-4 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105060	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**27400**	mg/Kg	10	4.00

Sample: 340977 - AH-4 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105060	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**14500**	mg/Kg	10	4.00

Sample: 340978 - AH-4 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105060	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**17500**	mg/Kg	10	4.00

Sample: 340979 - AH-4 8-8.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105060	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	Sample Preparation:	2013-09-11	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**6310**	mg/Kg	10	4.00

Method Blanks

Method Blank (1) QC Batch: 104860

QC Batch: 104860 | Date Analyzed: 2013-09-10 | Analyzed By: AK
Prep Batch: 88810 | QC Preparation: 2013-09-08 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00810	mg/Kg	0.02
Toluene		1	<0.00750	mg/Kg	0.02
Ethylbenzene		1	<0.00730	mg/Kg	0.02
Xylene		1	<0.00700	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.07	mg/Kg	1	2.00	104	70 - 130
4-Bromofluorobenzene (4-BFB)			1.63	mg/Kg	1	2.00	82	70 - 130

Method Blank (1) QC Batch: 104861

QC Batch: 104861 | Date Analyzed: 2013-09-10 | Analyzed By: AK
Prep Batch: 88810 | QC Preparation: 2013-09-08 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.34	mg/Kg	1	2.00	117	70 - 130
4-Bromofluorobenzene (4-BFB)			2.17	mg/Kg	1	2.00	108	70 - 130

Method Blank (1) QC Batch: 104876

QC Batch: 104876 | Date Analyzed: 2013-09-10 | Analyzed By: CW
Prep Batch: 88863 | QC Preparation: 2013-09-09 | Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	17.8	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	64.1 - 164.4

Method Blank (1) QC Batch: 104926

QC Batch:	104926	Date Analyzed:	2013-09-11	Analyzed By:	AR
Prep Batch:	88902	QC Preparation:	2013-09-10	Prepared By:	AR

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

Method Blank (1) QC Batch: 105058

QC Batch:	105058	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	QC Preparation:	2013-09-10	Prepared By:	AR

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

Method Blank (1) QC Batch: 105059

QC Batch:	105059	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	QC Preparation:	2013-09-10	Prepared By:	AR

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

Method Blank (1) QC Batch: 105060

QC Batch:	105060	Date Analyzed:	2013-09-13	Analyzed By:	AR
Prep Batch:	88902	QC Preparation:	2013-09-10	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 104860 | Date Analyzed: 2013-09-10 | Analyzed By: AK
Prep Batch: 88810 | QC Preparation: 2013-09-08 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.70	mg/Kg	1	2.00	<0.00810	85	70 - 130
Toluene		1	1.76	mg/Kg	1	2.00	<0.00750	88	70 - 130
Ethylbenzene		1	1.73	mg/Kg	1	2.00	<0.00730	86	70 - 130
Xylene		1	5.29	mg/Kg	1	6.00	<0.00700	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
Benzene		1	1.74	mg/Kg	1	2.00	<0.00810	87	70 - 130	2	20
Toluene		1	1.77	mg/Kg	1	2.00	<0.00750	88	70 - 130	1	20
Ethylbenzene		1	1.74	mg/Kg	1	2.00	<0.00730	87	70 - 130	1	20
Xylene		1	5.32	mg/Kg	1	6.00	<0.00700	89	70 - 130	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	2.06	mg/Kg	1	2.00	101	103	70 - 130
4-Bromofluorobenzene (4-BFB)	1.74	1.64	mg/Kg	1	2.00	87	82	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 104861 | Date Analyzed: 2013-09-10 | Analyzed By: AK
Prep Batch: 88810 | QC Preparation: 2013-09-08 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.4	mg/Kg	1	20.0	<2.32	87	70 - 130

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.0	mg/Kg	1	20.0	<2.32	85	70 - 130	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.28	2.13	mg/Kg	1	2.00	114	106	70 - 130
4-Bromofluorobenzene (4-BFB)	2.36	2.42	mg/Kg	1	2.00	118	121	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 104876 | Date Analyzed: 2013-09-10 | Analyzed By: CW
Prep Batch: 88863 | QC Preparation: 2013-09-09 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	283	mg/Kg	1	250	17.8	106	53.8 - 129

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	283	mg/Kg	1	250	17.8	106	53.8 - 129	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
n-Tricosane	113	103	mg/Kg	1	100	113	103	61.3 - 170.4

Laboratory Control Spike (LCS-1)

QC Batch: 104926 | Date Analyzed: 2013-09-11 | Analyzed By: AR
Prep Batch: 88902 | QC Preparation: 2013-09-10 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2310	mg/Kg	1	2500	<3.85	92	89.7 - 115.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2420	mg/Kg	1	2500	<3.85	97	89.7 - 115.9	5	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: 105058 | Date Analyzed: 2013-09-13 | Analyzed By: AR
Prep Batch: 88902 | QC Preparation: 2013-09-10 | 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	89.7 - 115.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2590	mg/Kg	1	2500	<3.85	104	89.7 - 115.9	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: 105059 | Date Analyzed: 2013-09-13 | Analyzed By: AR
Prep Batch: 88902 | QC Preparation: 2013-09-10 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2470	mg/Kg	1	2500	<3.85	99	89.7 - 115.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2570	mg/Kg	1	2500	<3.85	103	89.7 - 115.9	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 105060 | Date Analyzed: 2013-09-13 | Analyzed By: AR
Prep Batch: 88902 | QC Preparation: 2013-09-10 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2540	mg/Kg	1	2500	<3.85	102	89.7 - 115.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2390	mg/Kg	1	2500	<3.85	96	89.7 - 115.9	6	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: 340946

QC Batch: 104860 | Date Analyzed: 2013-09-10 | Analyzed By: AK
Prep Batch: 88810 | QC Preparation: 2013-09-08 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.74	mg/Kg	1	2.00	<0.00810	87	70 - 130
Toluene		1	1.78	mg/Kg	1	2.00	<0.00750	89	70 - 130
Ethylbenzene		1	1.77	mg/Kg	1	2.00	<0.00730	88	70 - 130
Xylene		1	5.40	mg/Kg	1	6.00	<0.00700	90	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
Benzene		1	1.61	mg/Kg	1	2.00	<0.00810	80	70 - 130	8	20
Toluene		1	1.65	mg/Kg	1	2.00	<0.00750	82	70 - 130	8	20
Ethylbenzene		1	1.65	mg/Kg	1	2.00	<0.00730	82	70 - 130	7	20
Xylene		1	5.08	mg/Kg	1	6.00	<0.00700	85	70 - 130	6	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	1.88	mg/Kg	1	2	97	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.82	1.81	mg/Kg	1	2	91	90	70 - 130

Matrix Spike (MS-1) Spiked Sample: 340946

QC Batch: 104861 | Date Analyzed: 2013-09-10 | Analyzed By: AK
Prep Batch: 88810 | QC Preparation: 2013-09-08 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	13.2	mg/Kg	1	20.0	<2.32	66	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
GRO		1	14.7	mg/Kg	1	20.0	<2.32	74	70 - 130	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)	2.15	2.40	mg/Kg	1	2	108	120	70 - 130
4-Bromofluorobenzene (4-BFB)	2.32	2.53	mg/Kg	1	2	116	126	70 - 130

Matrix Spike (MS-1) Spiked Sample: 340909

QC Batch: 104876 | Date Analyzed: 2013-09-10 | Analyzed By: CW
Prep Batch: 88863 | QC Preparation: 2013-09-09 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	323	mg/Kg	1	250	34.8	115	29 - 168.5

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	321	mg/Kg	1	250	34.8	114	29 - 168.5	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
n-Tricosane	119	120	mg/Kg	1	100	119	120	59.5 - 168.9

Matrix Spike (MS-1) Spiked Sample:

QC Batch: 104926 | Date Analyzed: 2013-09-11 | Analyzed By: AR
Prep Batch: 88902 | QC Preparation: 2013-09-10 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4090	mg/Kg	10	2500	1720	95	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			4330	mg/Kg	10	2500	1720	104	78.9 - 121	6	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: 340964

QC Batch: 105058 | Date Analyzed: 2013-09-13 | Analyzed By: AR
Prep Batch: 88902 | QC Preparation: 2013-09-10 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			16200	mg/Kg	10	2500	13700	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			15900	mg/Kg	10	2500	13700	88	78.9 - 121	2	20

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

Matrix Spike (MS-1) Spiked Sample: 340974

QC Batch: 105059 | Date Analyzed: 2013-09-13 | Analyzed By: AR
Prep Batch: 88902 | QC Preparation: 2013-09-10 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			14200	mg/Kg	10	2500	11700	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			13900	mg/Kg	10	2500	11700	88	78.9 - 121	2	20

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

Matrix Spike (MS-1) Spiked Sample: 340984

QC Batch: 105060 | Date Analyzed: 2013-09-13 | Analyzed By: AR
Prep Batch: 88902 | QC Preparation: 2013-09-10 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3310	mg/Kg	5	2500	801	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			3170	mg/Kg	5	2500	801	95	78.9 - 121	4	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 104860 | Date Analyzed: 2013-09-10 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0935	94	80 - 120	2013-09-10
Toluene		1	mg/kg	0.100	0.0937	94	80 - 120	2013-09-10
Ethylbenzene		1	mg/kg	0.100	0.0889	89	80 - 120	2013-09-10
Xylene		1	mg/kg	0.300	0.271	90	80 - 120	2013-09-10

Standard (CCV-2)

QC Batch: 104860 | Date Analyzed: 2013-09-10 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0904	90	80 - 120	2013-09-10
Toluene		1	mg/kg	0.100	0.0904	90	80 - 120	2013-09-10
Ethylbenzene		1	mg/kg	0.100	0.0853	85	80 - 120	2013-09-10
Xylene		1	mg/kg	0.300	0.259	86	80 - 120	2013-09-10

Standard (CCV-3)

QC Batch: 104860 | Date Analyzed: 2013-09-10 | Analyzed By: AK

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	2013-09-10
Toluene		1	mg/kg	0.100	0.0938	94	80 - 120	2013-09-10
Ethylbenzene		1	mg/kg	0.100	0.0888	89	80 - 120	2013-09-10
Xylene		1	mg/kg	0.300	0.272	91	80 - 120	2013-09-10

Standard (CCV-1)

QC Batch: 104861 Date Analyzed: 2013-09-10 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.04	104	80 - 120	2013-09-10

Standard (CCV-2)

QC Batch: 104861 Date Analyzed: 2013-09-10 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.909	91	80 - 120	2013-09-10

Standard (CCV-3)

QC Batch: 104861 Date Analyzed: 2013-09-10 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.996	100	80 - 120	2013-09-10

Standard (CCV-1)

QC Batch: 104876 Date Analyzed: 2013-09-10 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	268	107	80 - 120	2013-09-10

Standard (CCV-2)

QC Batch: 104876 Date Analyzed: 2013-09-10 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	270	108	80 - 120	2013-09-10

Standard (CCV-3)

QC Batch: 104876 Date Analyzed: 2013-09-10 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	275	110	80 - 120	2013-09-10

Standard (CCV-1)

QC Batch: 104926 Date Analyzed: 2013-09-11 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	102	102	85 - 115	2013-09-11

Standard (CCV-2)

QC Batch: 104926 Date Analyzed: 2013-09-11 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.3	98	85 - 115	2013-09-11

Standard (CCV-1)

QC Batch: 105058 Date Analyzed: 2013-09-13 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	2013-09-13

Standard (CCV-2)

QC Batch: 105058 Date Analyzed: 2013-09-13 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	2013-09-13

Standard (CCV-1)

QC Batch: 105059 Date Analyzed: 2013-09-13 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	2013-09-13

Standard (CCV-2)

QC Batch: 105059 Date Analyzed: 2013-09-13 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	2013-09-13

Standard (CCV-1)

QC Batch: 105060 Date Analyzed: 2013-09-13 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	99.5	100	85 - 115	2013-09-13

Standard (CCV-2)

QC Batch: 105060 Date Analyzed: 2013-09-13 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	2013-09-13

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
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

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

13090439

Analysis Request of Chain of Custody Record

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

PAGE: 2 OF: 4

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC055946

PROJECT NAME: Golden Eye 18 Fed. Com #1

Lea Co. NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD / TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC:MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
956	8.28		S		X	AH-2 0-1					X		X	X										X				
957			S		X	1- 1-1.5					X													X				
958			S		X	" 2-2.5					X													X				
959			S		X	" 3-3.5					X													X				
960			S		X	" 4-4.5					X													X				
961			S		X	" 5-5.5					X													X				
962			S		X	" 6-6.5					X													X				
963			S		X	" 7-7.5					X													X				
964			S		X	" 8-8.5					X													X				
965	dr		S		X	AH-3 0-1					X		X	X										X				

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: 9/4/13 Time: 1400

SAMPLED BY: (Print & Initial) MK J CG Date: 8-28-13 Time:

RELINQUISHED BY: (Signature) Adrian Daca Date: 9/4/13 Time: 1435

RECEIVED BY: (Signature) Date: 9/4/13 Time: 14:33

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:

Results by:

RECEIVING LABORATORY:

ADDRESS:

CITY: STATE: ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.4C KC

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.

13090439

Analysis Request of Chain of Custody Record

PAGE: 3 OF: 4

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.: 112MC055 96

PROJECT NAME: Golden Eye 18 Fed Com #1

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 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
966	8-28-13		S		X	AH-3 1-1.5					X													X				
967			S		X	" 2-2.5					X													X				
968			S		X	" 3-3.5					X													X				
969			S		X	" 4-4.5					X													X				
970			S		X	" 5-5.5					X													X				
971			S		X	AH-4 0-1					X		X	X										X				
972			S		X	" 1-1.5					X													X				
973			S		X	" 2-2.5					X													X				
974			S		X	" 3-3.5					X													X				
975	↓		S		X	" 4-4.5					X													X				

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: 9/4/13 Time: 1400

SAMPLED BY: (Print & Initial) MK & CG Date: 8-28-13 Time:

RELINQUISHED BY: (Signature) Adrian Vela Date: 9/4/13 Time: 1435

RECEIVED BY: (Signature) Date: 9/4/13 Time: 1435

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:

Results by:

RECEIVING LABORATORY:

ADDRESS:

CITY: STATE: ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5 4 0 IC

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.

1309 0439

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 4

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC05596

PROJECT NAME: GoldenEye 18 Fed. Com #1 Lea Co NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
976	8.28		S		X	All - 4 5-5.5					X	
977978			S		X	" 6-6.5					X	
978979			S		X	" 7-7.5					X	
979980			S		X	" 8-8.5					X	

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
												X				
												X				
												X				
												X				

RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: 9/14/13 Time: 1435
RELINQUISHED BY: (Signature) Adria Baca	Date: 9/14/13 Time: 1435	RECEIVED BY: (Signature)	Date: 9/14/13 Time: 14:35
RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: / Time:

SAMPLED BY: (Print & Initial) MC3 CG — Date: 8.28.13 Time:

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

TETRA TECH CONTACT PERSON: — Results by:

RUSH Charges Authorized: Yes No

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

SAMPLE CONDITION WHEN RECEIVED: 5.4° KC

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.

Summary Report

(Corrected Report)

Ike Tavarez
Tetra Tech
1901 N. Big Spring St.
Midland, TX 79705

Report Date: June 2, 2014

Work Order: 14052333

Project Location: Lea Co, NM
Project Name: COG/Golden Eye Federal Com #1
Project Number: 112MC05887

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
363964	AH-1 North Sidewall	soil	2014-05-20	00:00	2014-05-23
363965	AH-1 South Sidewall	soil	2014-05-20	00:00	2014-05-23
363966	AH-1 East Sidewall	soil	2014-05-20	00:00	2014-05-23
363967	AH-1 West Sidewall	soil	2014-05-20	00:00	2014-05-23
363968	AH-1 Bottom Hole @ 10'	soil	2014-05-20	00:00	2014-05-23
363969	AH-2 West Sidewall	soil	2014-05-20	00:00	2014-05-23
363970	AH-2 South Sidewall	soil	2014-05-20	00:00	2014-05-23
363971	AH-2 East Sidewall	soil	2014-05-20	00:00	2014-05-23
363972	AH-2 Bottom Hole @ 10'	soil	2014-05-20	00:00	2014-05-23
363973	AH-4 North Sidewall	soil	2014-05-20	00:00	2014-05-23
363974	AH-4 East Sidewall	soil	2014-05-20	00:00	2014-05-23
363975	AH-4 West Sidewall	soil	2014-05-20	00:00	2014-05-23
363976	AH-4 Bottom Hole @ 11'	soil	2014-05-20	00:00	2014-05-23

Sample: 363964 - AH-1 North Sidewall

Param	Flag	Result	Units	RL
Chloride		**202**	mg/Kg	4

Sample: 363965 - AH-1 South Sidewall

Param	Flag	Result	Units	RL
Chloride		**4700**	mg/Kg	4

Sample: 363966 - AH-1 East Sidewall

Param	Flag	Result	Units	RL
Chloride		**11400**	mg/Kg	4

Sample: 363967 - AH-1 West Sidewall

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

Sample: 363968 - AH-1 Bottom Hole @ 10'

Param	Flag	Result	Units	RL
Chloride		**1160**	mg/Kg	4

Sample: 363969 - AH-2 West Sidewall

Param	Flag	Result	Units	RL
Chloride		**1410**	mg/Kg	4

Sample: 363970 - AH-2 South Sidewall

Param	Flag	Result	Units	RL
Chloride		**6770**	mg/Kg	4

Sample: 363971 - AH-2 East Sidewall

Param	Flag	Result	Units	RL
Chloride		**4950**	mg/Kg	4

Sample: 363972 - AH-2 Bottom Hole @ 10'

Param	Flag	Result	Units	RL
Chloride		**2220**	mg/Kg	4

Sample: 363973 - AH-4 North Sidewall

Param	Flag	Result	Units	RL
Chloride		**1770**	mg/Kg	4

Sample: 363974 - AH-4 East Sidewall

Param	Flag	Result	Units	RL
Chloride		**990**	mg/Kg	4

Sample: 363975 - AH-4 West Sidewall

Param	Flag	Result	Units	RL
Chloride		**5300**	mg/Kg	4

Sample: 363976 - AH-4 Bottom Hole @ 11'

Param	Flag	Result	Units	RL
Chloride		**10400**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

(Corrected Report)

Ike Tavarez
Tetra Tech
1901 N. Big Spring St.
Midland, TX, 79705

Report Date: June 2, 2014

Work Order: 14052333

Project Location: Lea Co, NM
Project Name: COG/Golden Eye Federal Com #1
Project Number: 112MC05887

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
363964	AH-1 North Sidewall	soil	2014-05-20	00:00	2014-05-23
363965	AH-1 South Sidewall	soil	2014-05-20	00:00	2014-05-23
363966	AH-1 East Sidewall	soil	2014-05-20	00:00	2014-05-23
363967	AH-1 West Sidewall	soil	2014-05-20	00:00	2014-05-23
363968	AH-1 Bottom Hole @ 10'	soil	2014-05-20	00:00	2014-05-23
363969	AH-2 West Sidewall	soil	2014-05-20	00:00	2014-05-23
363970	AH-2 South Sidewall	soil	2014-05-20	00:00	2014-05-23
363971	AH-2 East Sidewall	soil	2014-05-20	00:00	2014-05-23
363972	AH-2 Bottom Hole @ 10'	soil	2014-05-20	00:00	2014-05-23
363973	AH-4 North Sidewall	soil	2014-05-20	00:00	2014-05-23
363974	AH-4 East Sidewall	soil	2014-05-20	00:00	2014-05-23
363975	AH-4 West Sidewall	soil	2014-05-20	00:00	2014-05-23
363976	AH-4 Bottom Hole @ 11'	soil	2014-05-20	00:00	2014-05-23

Report Corrections (Work Order 14052333)

- 6/2/14: Corrected sample dates and reissued report.

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 14 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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- Sample 363970 (AH-2 South Sidewall) . . . 6
- Sample 363971 (AH-2 East Sidewall) . . . 7
- Sample 363972 (AH-2 Bottom Hole @10') . . . 7
- Sample 363973 (AH-4 North Sidewall) . . . 7
- Sample 363974 (AH-4 East Sidewall) . . . 7
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Case Narrative

Samples for project COG/Golden Eye Federal Com #1 were received by TraceAnalysis, Inc. on 2014-05-23 and assigned to work order 14052333. Samples for work order 14052333 were received intact at a temperature of 17.9 C. Samples not on ice.

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	95027	2014-05-29 at 08:38	112404	2014-05-29 at 10:45
Chloride (Titration)	SM 4500-Cl B	95027	2014-05-29 at 08:38	112405	2014-05-29 at 11:30

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 14052333 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: 363964 - AH-1 North Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**202**	mg/Kg	5	4.00

Sample: 363965 - AH-1 South Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4700**	mg/Kg	5	4.00

Sample: 363966 - AH-1 East Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**11400**	mg/Kg	5	4.00

Sample: 363967 - AH-1 West Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

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

Sample: 363968 - AH-1 Bottom Hole @ 10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1160**	mg/Kg	5	4.00

Sample: 363969 - AH-2 West Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1410**	mg/Kg	5	4.00

Sample: 363970 - AH-2 South Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6770**	mg/Kg	5	4.00

Sample: 363971 - AH-2 East Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4950**	mg/Kg	5	4.00

Sample: 363972 - AH-2 Bottom Hole @ 10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2220**	mg/Kg	5	4.00

Sample: 363973 - AH-4 North Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1770**	mg/Kg	5	4.00

Sample: 363974 - AH-4 East Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112405	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**990**		mg/Kg	5	4.00

Sample: 363975 - AH-4 West Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112405	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**5300**		mg/Kg	5	4.00

Sample: 363976 - AH-4 Bottom Hole @ 11'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112405	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	Sample Preparation:	2014-05-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**10400**		mg/Kg	10	4.00

Method Blanks

Method Blank (1) QC Batch: 112404

QC Batch:	112404	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	QC Preparation:	2014-05-29	Prepared By:	SS

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

Method Blank (1) QC Batch: 112405

QC Batch:	112405	Date Analyzed:	2014-05-29	Analyzed By:	AK
Prep Batch:	95027	QC Preparation:	2014-05-29	Prepared By:	SS

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 112404 | Date Analyzed: 2014-05-29 | Analyzed By: AK
Prep Batch: 95027 | QC Preparation: 2014-05-29 | Prepared By: SS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2370	mg/Kg	5	2500	<19.2	95	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			2480	mg/Kg	5	2500	<19.2	99	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 112405 | Date Analyzed: 2014-05-29 | Analyzed By: AK
Prep Batch: 95027 | QC Preparation: 2014-05-29 | Prepared By: SS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2520	mg/Kg	5	2500	<19.2	101	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			2480	mg/Kg	5	2500	<19.2	99	85 - 115	2	20

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

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 363973

QC Batch: 112404 | Date Analyzed: 2014-05-29 | Analyzed By: AK
Prep Batch: 95027 | QC Preparation: 2014-05-29 | Prepared By: SS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4600	mg/Kg	5	2500	1770	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			4440	mg/Kg	5	2500	1770	107	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: 364194

QC Batch: 112405 | Date Analyzed: 2014-05-29 | Analyzed By: AK
Prep Batch: 95027 | QC Preparation: 2014-05-29 | Prepared By: SS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3710	mg/Kg	5	2500	990	109	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			3520	mg/Kg	5	2500	990	101	78.9 - 121	5	20

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

Calibration Standards

Standard (ICV-1)

QC Batch: 112404 | Date Analyzed: 2014-05-29 | Analyzed By: AK

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2014-05-29

Standard (CCV-1)

QC Batch: 112404 | Date Analyzed: 2014-05-29 | Analyzed By: AK

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	2014-05-29

Standard (ICV-1)

QC Batch: 112405 | Date Analyzed: 2014-05-29 | Analyzed By: AK

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2014-05-29

Standard (CCV-1)

QC Batch: 112405 | Date Analyzed: 2014-05-29 | Analyzed By: AK

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	2014-05-29

Appendix

Report Definitions

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

Laboratory Certifications

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

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

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

1405235

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 2

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC05887

PROJECT NAME: COG · Golden Eye Fed Com #007 Lea Co. NM

LAB I.D. NUMBER	DATE 2014	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
363964	5/2		S		X	AH 1 North Sidewall	1	N				X
965						South Sidewall						
966						East Sidewall						
967						West Sidewall						
968						Bottom hole @ 10'						
969						AH 2 West Sidewall						
970						South Sidewall						
971						East Sidewall						
972						Bottom hole @ 10'						
973						AH 4 North Sidewall						

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) Adrian Garcia	Date: 5/23/14 Time: 1300	RECEIVED BY: (Signature)	Date: 5/23/14 Time: 15:06
SAMPLED BY: (Print & Initial) Adrian Garcia/AG	Date: 5/23/14 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: RUSH Charges Authorized: Yes No		
RECEIVING LABORATORY: Trace ADDRESS: CITY: Midland STATE: TX ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		
SAMPLE CONDITION WHEN RECEIVED: 17.9°	REMARKS: Midland - all		SMC

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

1405233 3

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

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.: 112MC05887

PROJECT NAME: COG - Golden Eye 18 Fed Com # 001 Lea Co. NM

LAB I.D. NUMBER	DATE 2014	TIME 20'	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
974	5/20		S		X	AH 4 East Sidewall	1	N				X												X				
975	↓		↓		↓	AH 4 West Sidewall	↓	↓				↓												↓				
976			↓		↓	AH 4 Bottom hole @ 11'	↓	↓				↓												↓				

RELINQUISHED BY: (Signature) Adrian Parra — Date: 5/23/14 Time: 1500

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

SAMPLED BY: (Print & Initial) Adrian Parra — Date: 5/23/14 Time:

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

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

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

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

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

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE: DATE: TIME:

RECEIVED BY: (Signature)

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 17.9°

REMARKS: Smc

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

Summary Report

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

Report Date: November 15, 2013

Work Order: 13110804

Project Location: NM
Project Name: COG/Golden Eye Federal Com #1
Project Number: 112MC05887

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
346083	BH-1 0-1'	soil	2013-11-05	00:00	2013-11-08
346084	BH-1 2-3'	soil	2013-11-05	00:00	2013-11-08
346085	BH-1 4-5'	soil	2013-11-05	00:00	2013-11-08
346086	BH-1 6-7'	soil	2013-11-05	00:00	2013-11-08
346087	BH-1 9-10'	soil	2013-11-05	00:00	2013-11-08
346088	BH-1 14-15'	soil	2013-11-05	00:00	2013-11-08
346089	BH-1 19-20'	soil	2013-11-05	00:00	2013-11-08
346090	BH-1 24-25'	soil	2013-11-05	00:00	2013-11-08
346091	BH-2 0-1'	soil	2013-11-05	00:00	2013-11-08
346092	BH-2 2-3'	soil	2013-11-05	00:00	2013-11-08
346093	BH-2 4-5'	soil	2013-11-05	00:00	2013-11-08
346094	BH-2 6-7'	soil	2013-11-05	00:00	2013-11-08
346095	BH-2 9-10'	soil	2013-11-05	00:00	2013-11-08
346096	BH-2 14-15'	soil	2013-11-05	00:00	2013-11-08
346097	BH-2 19-20'	soil	2013-11-05	00:00	2013-11-08
346098	BH-2 27-28'	soil	2013-11-05	00:00	2013-11-08
346099	BH-2 34-35'	soil	2013-11-05	00:00	2013-11-08
346100	BH-3 0-1'	soil	2013-11-05	00:00	2013-11-08
346101	BH-3 2-3'	soil	2013-11-05	00:00	2013-11-08
346102	BH-3 4-5'	soil	2013-11-05	00:00	2013-11-08
346103	BH-3 6-7'	soil	2013-11-05	00:00	2013-11-08
346104	BH-3 9-10'	soil	2013-11-05	00:00	2013-11-08
346105	BH-3 14-15'	soil	2013-11-05	00:00	2013-11-08
346106	BH-3 19-20'	soil	2013-11-05	00:00	2013-11-08
346107	BH-3 24-25'	soil	2013-11-05	00:00	2013-11-08

Sample: 346083 - BH-1 0-1'

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

Sample: 346084 - BH-1 2-3'

Param	Flag	Result	Units	RL
Chloride		**29.4**	mg/Kg	4

Sample: 346085 - BH-1 4-5'

Param	Flag	Result	Units	RL
Chloride		**1340**	mg/Kg	4

Sample: 346086 - BH-1 6-7'

Param	Flag	Result	Units	RL
Chloride		**21000**	mg/Kg	4

Sample: 346087 - BH-1 9-10'

Param	Flag	Result	Units	RL
Chloride		**7410**	mg/Kg	4

Sample: 346088 - BH-1 14-15'

Param	Flag	Result	Units	RL
Chloride		**235**	mg/Kg	4

Sample: 346089 - BH-1 19-20'

Param	Flag	Result	Units	RL
Chloride		**63.7**	mg/Kg	4

Sample: 346090 - BH-1 24-25'

Param	Flag	Result	Units	RL
Chloride		**24.5**	mg/Kg	4

Sample: 346091 - BH-2 0-1'

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

Sample: 346092 - BH-2 2-3'

Param	Flag	Result	Units	RL
Chloride		**58.7**	mg/Kg	4

Sample: 346093 - BH-2 4-5'

Param	Flag	Result	Units	RL
Chloride		**10600**	mg/Kg	4

Sample: 346094 - BH-2 6-7'

Param	Flag	Result	Units	RL
Chloride		**18400**	mg/Kg	4

Sample: 346095 - BH-2 9-10'

Param	Flag	Result	Units	RL
Chloride		**15000**	mg/Kg	4

Sample: 346096 - BH-2 14-15'

Param	Flag	Result	Units	RL
Chloride		**1070**	mg/Kg	4

Sample: 346097 - BH-2 19-20'

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

Sample: 346098 - BH-2 27-28'

Param	Flag	Result	Units	RL
Chloride		**39.2**	mg/Kg	4

Sample: 346099 - BH-2 34-35'

Param	Flag	Result	Units	RL
Chloride		**240**	mg/Kg	4

Sample: 346100 - BH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**309**	mg/Kg	4

Sample: 346101 - BH-3 2-3'

Param	Flag	Result	Units	RL
Chloride		**250**	mg/Kg	4

Sample: 346102 - BH-3 4-5'

Param	Flag	Result	Units	RL
Chloride		**14300**	mg/Kg	4

Sample: 346103 - BH-3 6-7'

Param	Flag	Result	Units	RL
Chloride		**19500**	mg/Kg	4

Sample: 346104 - BH-3 9-10'

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

Sample: 346105 - BH-3 14-15'

Param	Flag	Result	Units	RL
Chloride		**255**	mg/Kg	4

Sample: 346106 - BH-3 19-20'

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

Sample: 346107 - BH-3 24-25'

Param	Flag	Result	Units	RL
Chloride		**54.0**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

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: November 15, 2013

Work Order: 13110804

Project Location: NM
Project Name: COG/Golden Eye Federal Com #1
Project Number: 112MC05887

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
346083	BH-1 0-1'	soil	2013-11-05	00:00	2013-11-08
346084	BH-1 2-3'	soil	2013-11-05	00:00	2013-11-08
346085	BH-1 4-5'	soil	2013-11-05	00:00	2013-11-08
346086	BH-1 6-7'	soil	2013-11-05	00:00	2013-11-08
346087	BH-1 9-10'	soil	2013-11-05	00:00	2013-11-08
346088	BH-1 14-15'	soil	2013-11-05	00:00	2013-11-08
346089	BH-1 19-20'	soil	2013-11-05	00:00	2013-11-08
346090	BH-1 24-25'	soil	2013-11-05	00:00	2013-11-08
346091	BH-2 0-1'	soil	2013-11-05	00:00	2013-11-08
346092	BH-2 2-3'	soil	2013-11-05	00:00	2013-11-08
346093	BH-2 4-5'	soil	2013-11-05	00:00	2013-11-08

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
346094	BH-2 6-7'	soil	2013-11-05	00:00	2013-11-08
346095	BH-2 9-10'	soil	2013-11-05	00:00	2013-11-08
346096	BH-2 14-15'	soil	2013-11-05	00:00	2013-11-08
346097	BH-2 19-20'	soil	2013-11-05	00:00	2013-11-08
346098	BH-2 27-28'	soil	2013-11-05	00:00	2013-11-08
346099	BH-2 34-35'	soil	2013-11-05	00:00	2013-11-08
346100	BH-3 0-1'	soil	2013-11-05	00:00	2013-11-08
346101	BH-3 2-3'	soil	2013-11-05	00:00	2013-11-08
346102	BH-3 4-5'	soil	2013-11-05	00:00	2013-11-08
346103	BH-3 6-7'	soil	2013-11-05	00:00	2013-11-08
346104	BH-3 9-10'	soil	2013-11-05	00:00	2013-11-08
346105	BH-3 14-15'	soil	2013-11-05	00:00	2013-11-08
346106	BH-3 19-20'	soil	2013-11-05	00:00	2013-11-08
346107	BH-3 24-25'	soil	2013-11-05	00:00	2013-11-08

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 14 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

Standard Flags

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

Case Narrative

Samples for project COG/Golden Eye Federal Com #1 were received by TraceAnalysis, Inc. on 2013-11-08 and assigned to work order 13110804. Samples for work order 13110804 were received intact at a temperature of 9.9 C. Samples not on ice.

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	90362	2013-11-12 at 08:25	106789	2013-11-14 at 14:47
Chloride (Titration)	SM 4500-Cl B	90362	2013-11-12 at 08:25	106791	2013-11-14 at 14:59
Chloride (Titration)	SM 4500-Cl B	90362	2013-11-12 at 08:25	106792	2013-11-14 at 15:07

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 13110804 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: 346083 - BH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106789	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

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

Sample: 346084 - BH-1 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106789	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**29.4**	mg/Kg	5	4.00

Sample: 346085 - BH-1 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106789	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1340**	mg/Kg	5	4.00

Sample: 346086 - BH-1 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106789	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

continued ...

sample 346086 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**21000**	mg/Kg	10	4.00

Sample: 346087 - BH-1 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106789	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**7410**	mg/Kg	10	4.00

Sample: 346088 - BH-1 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106789	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**235**	mg/Kg	5	4.00

Sample: 346089 - BH-1 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106789	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**63.7**	mg/Kg	5	4.00

Sample: 346090 - BH-1 24-25'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**24.5**	mg/Kg	5	4.00

Sample: 346091 - BH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

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

Sample: 346092 - BH-2 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**58.7**	mg/Kg	5	4.00

Sample: 346093 - BH-2 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**10600**	mg/Kg	10	4.00

Sample: 346094 - BH-2 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**18400**	mg/Kg	10	4.00

Sample: 346095 - BH-2 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**15000**	mg/Kg	10	4.00

Sample: 346096 - BH-2 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1070**	mg/Kg	5	4.00

Sample: 346097 - BH-2 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

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

Sample: 346098 - BH-2 27-28'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**39.2**		mg/Kg	5	4.00

Sample: 346099 - BH-2 34-35'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**240**		mg/Kg	5	4.00

Sample: 346100 - BH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106792	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**309**		mg/Kg	5	4.00

Sample: 346101 - BH-3 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106792	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**250**		mg/Kg	5	4.00

Sample: 346102 - BH-3 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106792	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**14300**	mg/Kg	10	4.00

Sample: 346103 - BH-3 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106792	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**19500**	mg/Kg	10	4.00

Sample: 346104 - BH-3 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106792	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

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

Sample: 346105 - BH-3 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106792	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**255**	mg/Kg	5	4.00

Sample: 346106 - BH-3 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106792	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

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

Sample: 346107 - BH-3 24-25'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	106792	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	Sample Preparation:	2013-11-12	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**54.0**	mg/Kg	5	4.00

Method Blank (1) QC Batch: 106789

QC Batch:	106789	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	QC Preparation:	2013-11-12	Prepared By:	AR

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

Method Blank (1) QC Batch: 106791

QC Batch:	106791	Date Analyzed:	2013-11-14	Analyzed By:	AR
Prep Batch:	90362	QC Preparation:	2013-11-12	Prepared By:	AR

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

Method Blank (1) QC Batch: 106792

QC Batch: 106792 | Date Analyzed: 2013-11-14 | Analyzed By: AR
Prep Batch: 90362 | QC Preparation: 2013-11-12 | Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 106789 | Date Analyzed: 2013-11-14 | Analyzed By: AR
Prep Batch: 90362 | QC Preparation: 2013-11-12 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	2370	mg/Kg	1	2500	<3.85	95	89.7 - 115.9

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	2500	mg/Kg	1	2500	<3.85	100	89.7 - 115.9	5	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: 106791 | Date Analyzed: 2013-11-14 | Analyzed By: AR
Prep Batch: 90362 | QC Preparation: 2013-11-12 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	2660	mg/Kg	1	2500	<3.85	106	89.7 - 115.9

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	2480	mg/Kg	1	2500	<3.85	99	89.7 - 115.9	7	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: 106792 | Date Analyzed: 2013-11-14 | Analyzed By: AR
Prep Batch: 90362 | QC Preparation: 2013-11-12 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	2400	mg/Kg	1	2500	<3.85	96	89.7 - 115.9

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	2570	mg/Kg	1	2500	<3.85	103	89.7 - 115.9	7	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: 346089

QC Batch: 106789 | Date Analyzed: 2013-11-14 | Analyzed By: AR
Prep Batch: 90362 | QC Preparation: 2013-11-12 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	2680	mg/Kg	5	2500	63.7	105	78.9 - 121

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	2580	mg/Kg	5	2500	63.7	101	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: 346099

QC Batch: 106791 | Date Analyzed: 2013-11-14 | Analyzed By: AR
Prep Batch: 90362 | QC Preparation: 2013-11-12 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	2810	mg/Kg	5	2500	240	103	78.9 - 121

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	2640	mg/Kg	5	2500	240	96	78.9 - 121	6	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: 346109

QC Batch: 106792 | Date Analyzed: 2013-11-14 | Analyzed By: AR
Prep Batch: 90362 | QC Preparation: 2013-11-12 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11600	mg/Kg	10	2500	8920	107	78.9 - 121

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	11400	mg/Kg	10	2500	8920	99	78.9 - 121	2	20

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

Standard (CCV-1)

QC Batch: 106789 Date Analyzed: 2013-11-14 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.1	99	85 - 115	2013-11-14

Standard (CCV-2)

QC Batch: 106789 Date Analyzed: 2013-11-14 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2013-11-14

Standard (CCV-1)

QC Batch: 106791 Date Analyzed: 2013-11-14 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2013-11-14

Standard (CCV-2)

QC Batch: 106791 Date Analyzed: 2013-11-14 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.3	99	85 - 115	2013-11-14

Standard (CCV-1)

QC Batch: 106792 | Date Analyzed: 2013-11-14 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.8	99	85 - 115	2013-11-14

Standard (CCV-2)

QC Batch: 106792 | Date Analyzed: 2013-11-14 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2013-11-14

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Analysis Request of Chain of Custody Record

PAGE: 1 OF: 3

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC05887

PROJECT NAME: GoldenEye Federal Com #1

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
346083	11/5		S		X	BH-1 0-1																			X				
084						2-3																			X				
085						4-5																			X				
086						6-7																			X				
087						9-10																			X				
088						14-15																			X				
089						19-20																			X				
090						24-25																			X				
091						BH 2 0-1																			X				
092						2-3																			X				

RELINQUISHED BY: (Signature) [signature] Date: 8:09 Time: 11/8/13
RECEIVED BY: (Signature) [signature] Date: 8:09 Time: 11/8/13
SAMPLED BY: (Print & Initial) [signature] Date: Time: 11/5/13

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:
Results by:
RUSH Charges Authorized: Yes No

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

SAMPLE CONDITION WHEN RECEIVED: 9.9°

REMARKS: Midland all

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

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 3

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC05881

PROJECT NAME: GoldenEye Federal Com #1

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
093	11/5		S		X	BH-2 4-5																		X				
094	"		"		"	6-7																		X				
095						9-10																		X				
096						14-15																		X				
097						19-20																		X				
098						27-28																		X				
099						34-35																		X				
100						BH-3 0-1																		X				
101						2-3																		X				
102	"		"		"	4-5																		X				

RELINQUISHED BY: (Signature)	Date: 11/8/13 Time: 8:07	RECEIVED BY: (Signature)	Date: 11/8/13 Time: 8:07
SAMPLED BY: (Print & Initial)	Date: 11/5/13 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:	Results by:		
RECEIVING LABORATORY: ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: Q Q O	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.

11/05/13

Analysis Request of Chain of Custody Record

PAGE: 3 OF: 3

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112M05887

PROJECT NAME: Golden Eye Federal Com #1

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
103	11/5		S		X	BH-3 6-7																		X				
104						9-10																		X				
105						14-15																		X				
106						19-20																		X				
107	↓		↓		↓	24-25																		X				

RELINQUISHED BY: (Signature)	Date: 11/8/13 Time: 8:07	RECEIVED BY: (Signature)	Date: 11/8/13 Time: 8:07
SAMPLED BY: (Print & Initial)	Date: 11/5/13 Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

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

AIRBILL #:

OTHER:

TETRA TECH CONTACT PERSON:

Results by:

RUSH Charges Authorized: Yes No

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

SAMPLE CONDITION WHEN RECEIVED: 9 90

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.

SITE INFORMATION

HOBBS OCD

Report Type: Closure Report

AUG 13 2014

RECEIVED

General Site Information:						
Site:	GoldenEye 18 Federal Com #1					
Company:	COG Operating LLC					
Section, Township and Range	Unit M	Sec 18	T24S	R32E		
Lease Number:	API-30-025-39742					
County:	Lea County					
GPS:	32 12.626° N			103 43.362° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From intersection of HWY 31 and Jal Hwy (128), go east for approximagtelly 19.6 miles, turn SOUTH onto Buck Johnson Rd., go south for 0.4 miles, turn South onto lease road - continue south for 1.4 miles to location. - Pasture on west side of lease road.					

Release Data:	
Date Released:	6/23/2013
Type Release:	Produced Water
Source of Contamination:	Victaulic Clamp
Fluid Released:	100 bbls
Fluids Recovered:	0 bbls

Official Communication:			
Name:	Robert McNeil		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N. Big Spring
	600 W. Illinois Ave.		Suite 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	rmcneil@conchoresources.com		ike.tavarez@tetratech.com

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

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

TETRA TECH

July 17, 2014

Mr. Geoffrey Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Closure Report for the COG Operating LLC., GoldenEye 18 Federal Com #001 Tank Battery, Unit M, Section 18, Township 24 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the GoldenEye 18 Federal Com #001, Unit M, Section 18, Township 24 South, Range 32 East, Lea County, New Mexico. (Site). The spill site coordinates are 32 12.626°, W 103 43.362°. 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 23, 2013, and released approximately one hundred (100) barrels of produced fluid from a victaulic clamp. To alleviate the problem, COG personnel replaced the clamp. None of standing fluids was recovered. The spill initiated west of the lease road affecting an area approximately 25' X 95' in the pasture. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 18. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 225' below surface. 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-

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4000 North Big Spring, Ste 401 Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On August 28, 2013, Tetra Tech personnel were onsite to assess the spill. Four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples were above the RRAL for TPH or BTEX. The area of AH-3 did not show a significant chloride impact to the soils, but detected a spike of 2,260 mg/kg at 3.0' below surface. The remaining areas showed elevated chloride concentrations and were not vertically defined. The areas of AH-1, AH-2 and AH-4 showed bottom auger samples of 1,260 mg/kg at 9.0', 13,700 mg/kg at 8.0' and 6,310 mg/kg at 8.0', respectively. Deeper samples could be collected due to the dense formation.

Based on the results, Tetra Tech personnel supervised the installation of boreholes using a drilling rig. On November 5, 2013, three (3) boreholes (BH-1 through BH-3) were installed in the areas to vertically define the extent of the chloride impact. The drilling results are summarized in Table 1. The borehole 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 areas of AH-1 (BH-1), AH-2 (BH-2) and AH-4 (BH-3) declined with depth and were vertically defined at 14-15' of 235 mg/kg, 19-20' of <20.0 mg/kg and 14-15' of 255 mg/kg, respectively.

Remedial Activities

On May 15, 2014, Tetra Tech began supervising the excavation of impacted materials as highlighted (green) on Table 1 and shown on Figure 4. As proposed in the work plan, the area of AH-2 was excavated to a depth of approximately 10.0' below surface, and the area of AH-4 was excavated to a depth of approximately 11.0' below surface. The west area of AH-1 was excavated to a depth of 10.0' below surface, and the east area was excavated to approximately 3.0' below surface due to the flow lines in the area and safety concerns.

Confirmation samples were taken at the bottom holes and sidewalls of the excavations. The AH-1 Bottom Hole sample showed a chloride concentration of 1,160 mg/kg. Some of the sidewalls were over-excavated to remove the elevated chlorides. In the area of AH-1 North, South, East and West sidewalls were taken, which showed chloride concentrations of 202 mg/kg, 4,700 mg/kg, 11,400 mg/kg, and <20.0 mg/kg, respectively. In the area of AH-2 the West, South, and East sidewalls were taken, as well as a Bottom Hole, which showed chloride concentrations of 1,410 mg/kg, 6,770 mg/kg, 4,950 mg/kg, and 2,220 mg/kg, respectively. In the area of AH-4, North, East, and West sidewall samples were taken, as well as a Bottom Hole sample, which showed chloride concentrations of 1,770 mg/kg, 990 mg/kg, 5,300 mg/kg, and 10,400 mg/kg, respectively. The elevated concentrations found in the side walls of AH-1, AH-2, and AH-4 were left in place due to the flow lines, power lines or safety concerns in the area.

The areas of AH-1, AH-2, and AH-4 were backfilled with caliche material and lined with a 40 mil liner at 4.0' below surface in order to prevent vertical migration of the impacted soil left in place. The area was then backfilled to surface grade. Approximately 540 yards of excavated soil was transported offsite for proper disposal and the areas will be backfilled with clean material to surface grade.

Conclusion

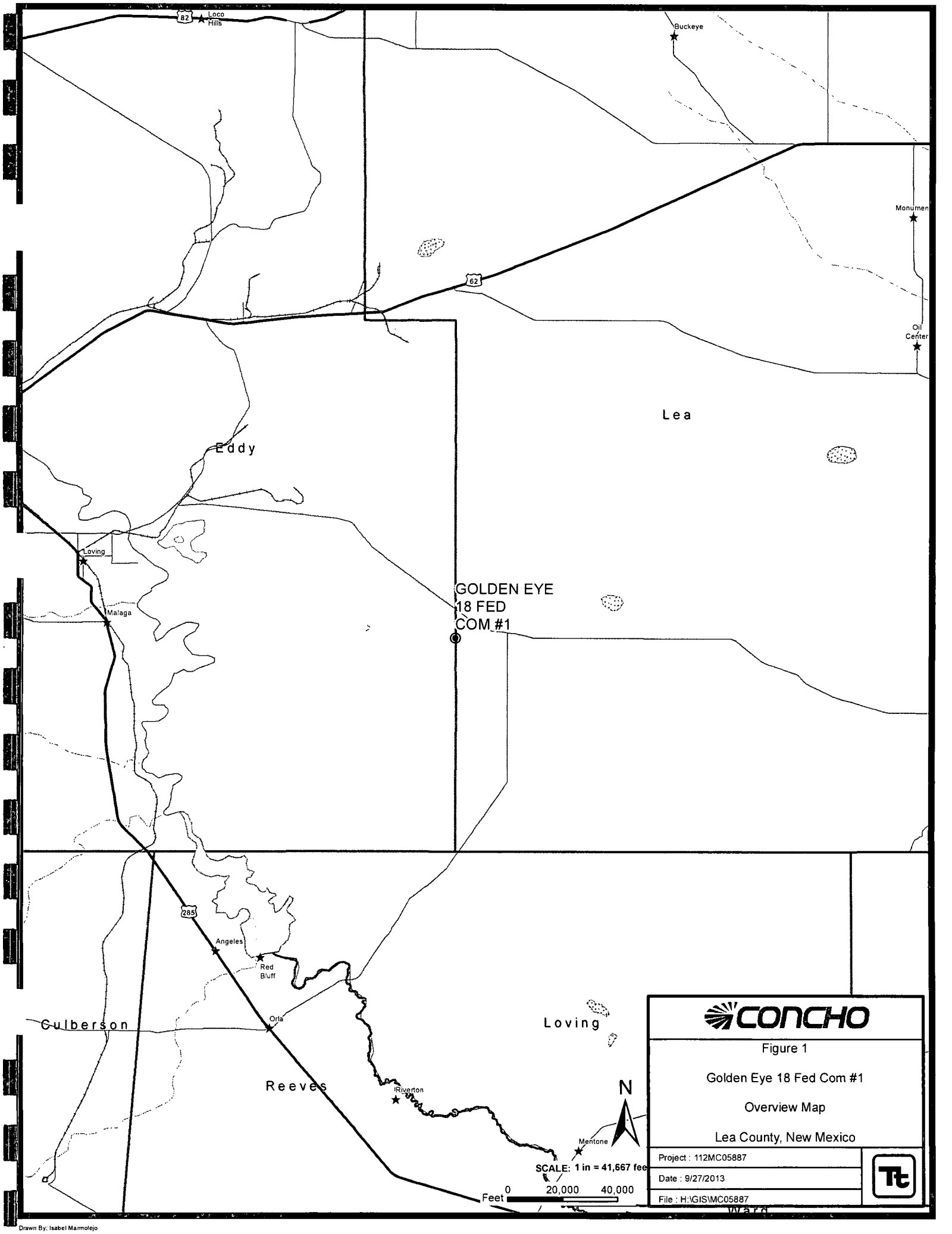
Based on the remedial actions taken, COG requests closure of the site. The Final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

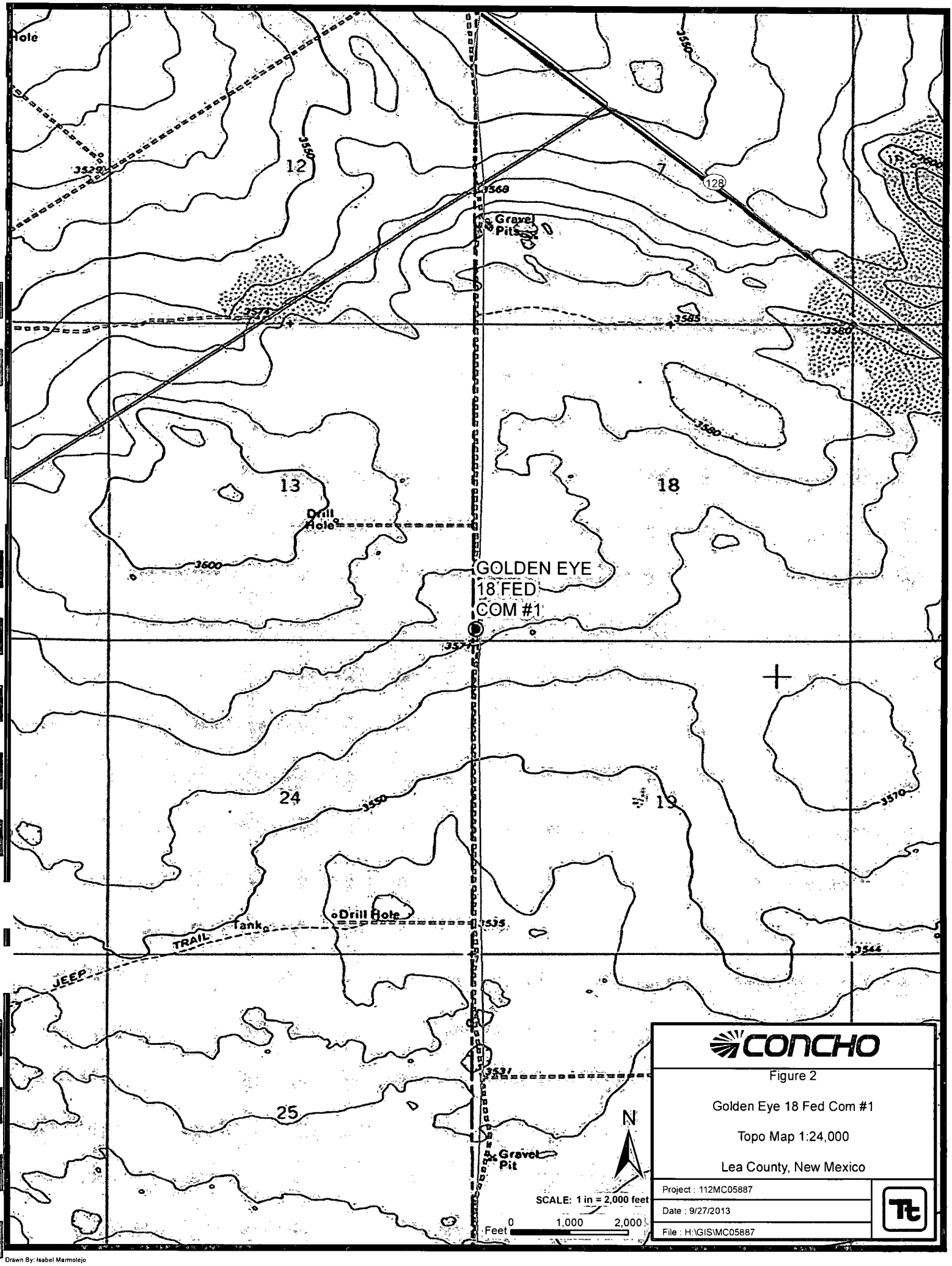
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist

cc: Robert McNeil – COG
Mike Burton – BLM
Jeff Robertson - BLM

FIGURES


Loco Hills
82
Buckeye
Monumen
62
Oil Center
Lea
Eddy
Loving
Malaga
GOLDEN EYE
18 FED
COM #1
285
Angeles
Red Bluff
Orla
Culberson
Loving
Reeves
Riverton
Mentone
Ward
N
SCALE: 1 in = 41,667 fee
0
20,000
40,000
Feet
CONCHO
Figure 1
Golden Eye 18 Fed Com #1
Overview Map
Lea County, New Mexico
Project : 112MC05887
Date : 9/27/2013
File : H:\GIS\MC05887
Drawn By: Isabel Marmolejo



CONCHO

Figure 2

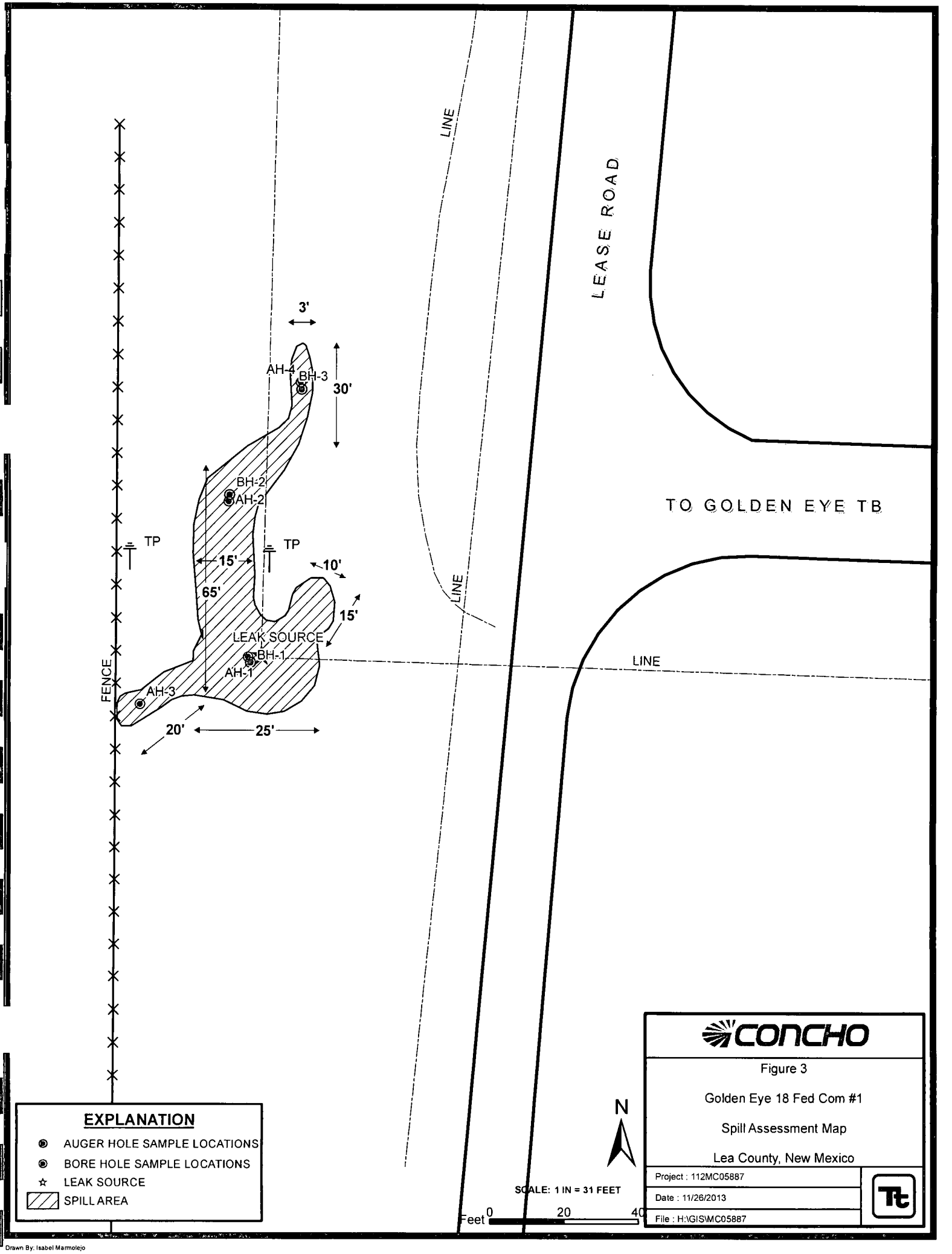
Golden Eye 18 Fed Com #1

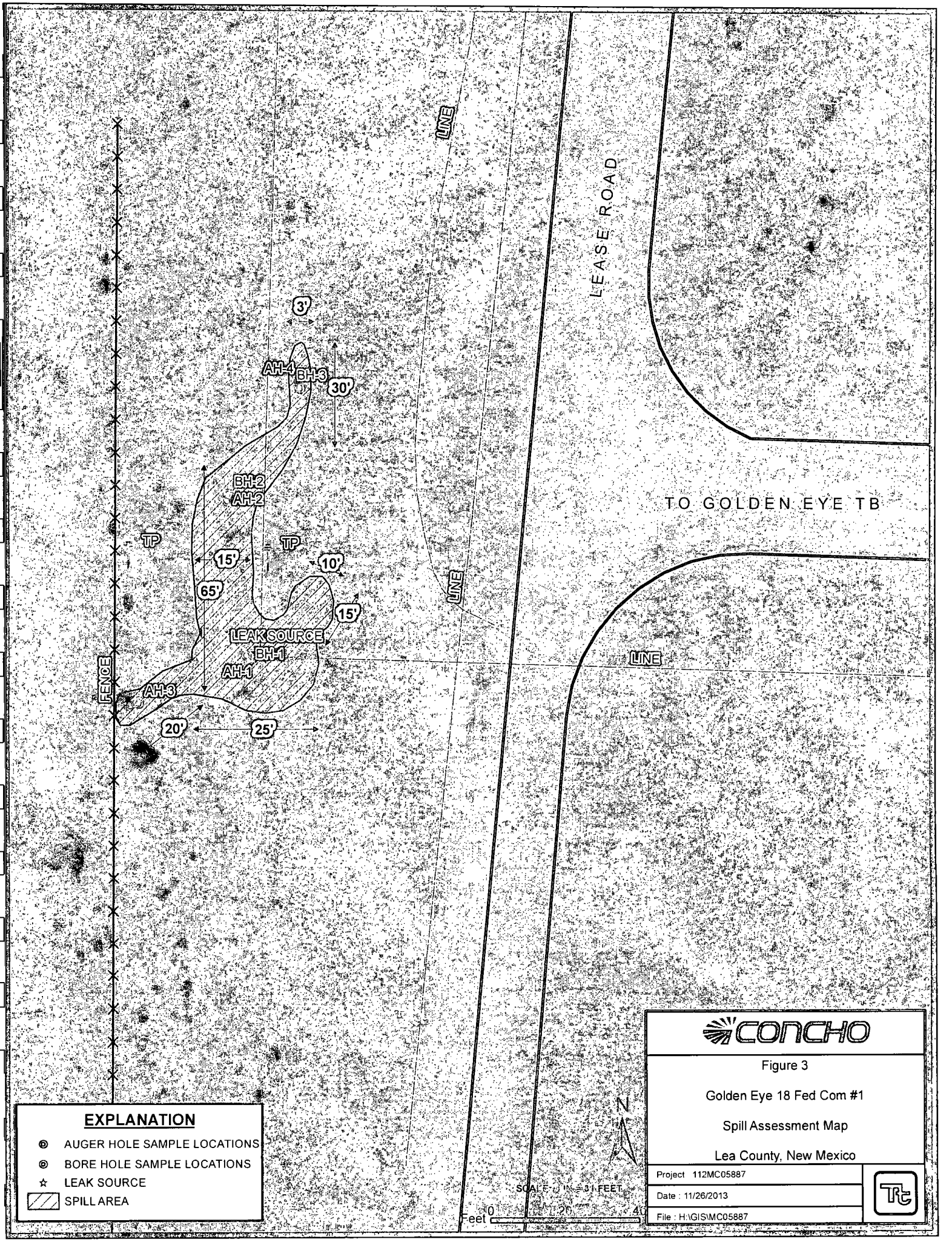
Topo Map 1:24,000

Lea County, New Mexico

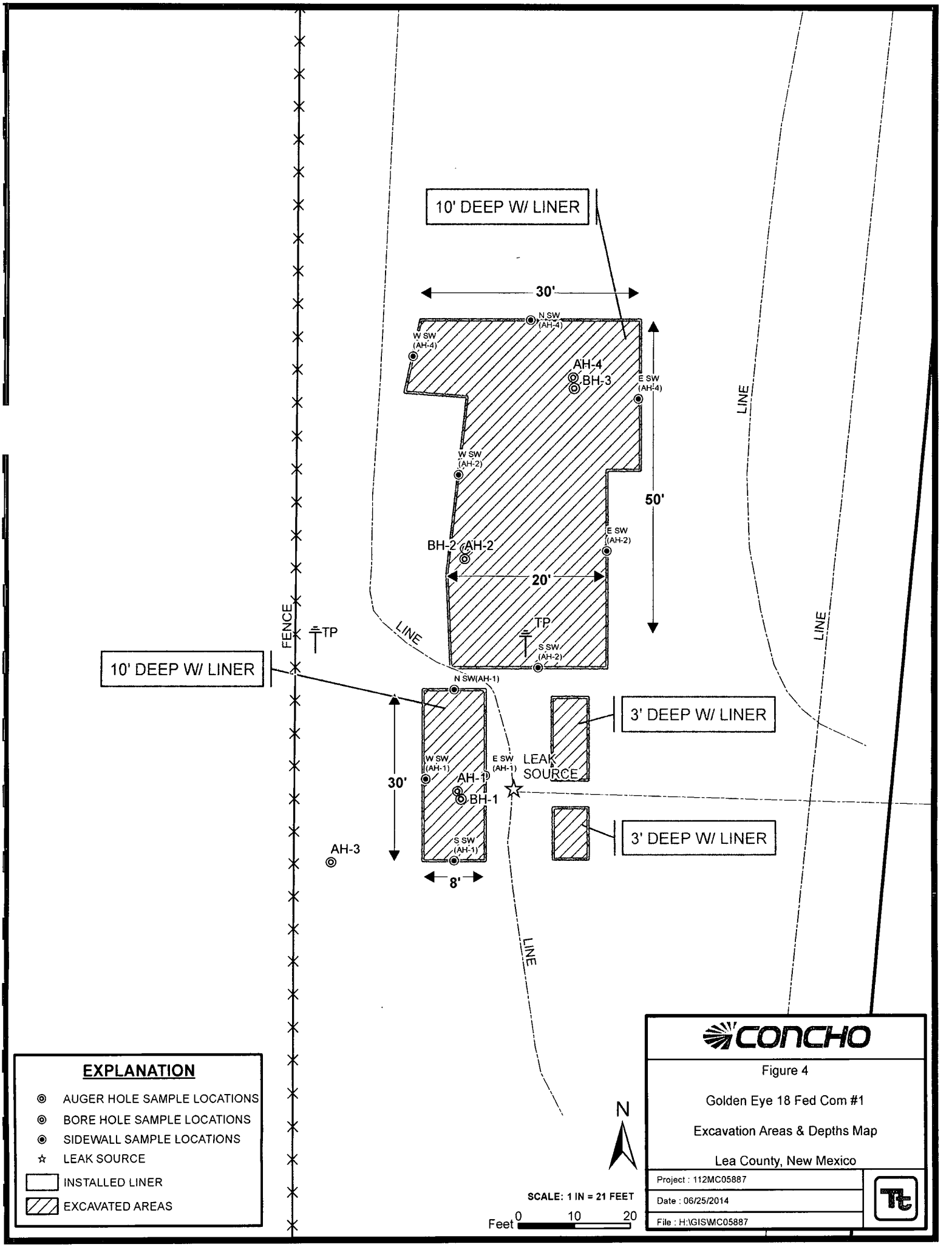
Project : 112MC05887	
Date : 9/27/2013	
File : H:\GIS\MC05887	

Drawn By: Isabel Marmolejo


LEASE ROAD
LINE
LINE
LINE
TO GOLDEN EYE TB
3'
30'
AH-4
BH-3
BH-2
AH-2
TP
TP
15'
10'
65'
15'
LEAK SOURCE
BH-1
AH-1
AH-3
FENCE
20'
25'
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
BORE HOLE SAMPLE LOCATIONS
LEAK SOURCE
SPILL AREA
N
SCALE: 1 IN = 31 FEET
Feet 0 20 40
CONCHO
Figure 3
Golden Eye 18 Fed Com #1
Spill Assessment Map
Lea County, New Mexico
Project : 112MC05887
Date : 11/26/2013
File : H:\GIS\MC05887
Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo

TABLES

Table 1
COG Operating LLC.
Golden Eye 18 Federal Com. #1
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	8/28/2013	0-1	-		X	<4.00	255	255	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	520
	"	1-1.5	-		X	-	-	-	-	-	-	-	-	381
	"	2-2.5	-		X	-	-	-	-	-	-	-	-	337
	"	3-3.5	-		X	-	-	-	-	-	-	-	-	**5,880**
	"	4-4.5	-		X	-	-	-	-	-	-	-	-	**9,470**
	"	5-5.5	-		X	-	-	-	-	-	-	-	-	**24,800**
	"	6-6.5	-		X	-	-	-	-	-	-	-	-	**21,700**
	"	7-7.5	-		X	-	-	-	-	-	-	-	-	**12,200**
	"	8-8.5	-		X	-	-	-	-	-	-	-	-	**1,720**
	"	9-9.5	-		X	-	-	-	-	-	-	-	-	**1,260**
BH-1	11/5/2013	0-1	-		X	-	-	-	-	-	-	-	-	<20.0
	"	2-3	-		X	-	-	-	-	-	-	-	-	29.4
	"	4-5	-		X	-	-	-	-	-	-	-	-	**1,340**
	"	6-7	-		X	-	-	-	-	-	-	-	-	**21,000**
	"	9-10	-		X	-	-	-	-	-	-	-	-	**7,410**
	"	14-15	-	X		-	-	-	-	-	-	-	-	235
	"	19-20	-	X		-	-	-	-	-	-	-	-	63.7
	"	24-25	-	X		-	-	-	-	-	-	-	-	24.5
AH-1 North Sidewall	5/20/2014	-	-	X		-	-	-	-	-	-	-	-	202
AH-1 South Sidewall	"	-	-	X		-	-	-	-	-	-	-	-	**4,700**
AH-1 East Sidewall	"	-	-	X		-	-	-	-	-	-	-	-	**11,400**
AH-1 West Sidewall	"	-	-	X		-	-	-	-	-	-	-	-	<20.0
AH-1 Bottom Hole	"	10	-	X		-	-	-	-	-	-	-	-	**1,160**

Table 1
COG Operating LLC.
Golden Eye 18 Federal Com. #1
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-2	8/28/2013	0-1	-		X	16.30	529	545	<0.0200	0.0248	0.0665	0.172	0.263	1,870
	"	1-1.5	-		X	-	-	-	-	-	-	-	-	1,960
	"	2-2.5	-		X	-	-	-	-	-	-	-	-	2,880
	"	3-3.5	-		X	-	-	-	-	-	-	-	-	6,000
	"	4-4.5	-		X	-	-	-	-	-	-	-	-	12,800
	"	5-5.5	-		X	-	-	-	-	-	-	-	-	25,100
	"	6-6.5	-		X	-	-	-	-	-	-	-	-	19,500
	"	7-7.5	-		X	-	-	-	-	-	-	-	-	14,800
	"	8-8.5	-		X	-	-	-	-	-	-	-	-	13,700
BH-2	11/5/2013	0-1	-		X	-	-	-	-	-	-	-	-	<20.0
	"	2-3	-		X	-	-	-	-	-	-	-	-	58.7
	"	4-5	-		X	-	-	-	-	-	-	-	-	10,600
	"	6-7	-		X	-	-	-	-	-	-	-	-	18,400
	"	9-10	-		X	-	-	-	-	-	-	-	-	15,000
	"	14-15	-	X		-	-	-	-	-	-	-	-	1,070
	"	19-20	-	X		-	-	-	-	-	-	-	-	<20.0
	"	27-28	-	X		-	-	-	-	-	-	-	-	39.2
	"	34-35	-	X		-	-	-	-	-	-	-	-	240
AH-2 West Sidewall	5/20/2014	-	-	X		-	-	-	-	-	-	-	-	1,410
AH-2 South Sidewall	"	-	-	X		-	-	-	-	-	-	-	-	6,770
AH-2 East Sidewall	"	-	-	X		-	-	-	-	-	-	-	-	4,950
AH-2 Bottom Hole	"	10	-	X		-	-	-	-	-	-	-	-	2,220

Table 1
COG Operating LLC.
Golden Eye 18 Federal Com. #1
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-3	8/28/2013	0-1	-	X		4.92	101	106	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	623
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	161
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	569
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	**2,260**
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	550
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	272
AH-4	8/28/2013	0-1	-	X	X	<4.00	105	105	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	**1,070**
	"	1-1.5	-	X	X	-	-	-	-	-	-	-	-	379
	"	2-2.5	-	X	X	-	-	-	-	-	-	-	-	**1,580**
	"	3-3.5	-	X	X	-	-	-	-	-	-	-	-	**11,700**
	"	4-4.5	-	X	X	-	-	-	-	-	-	-	-	**9,690**
	"	5-5.5	-	X	X	-	-	-	-	-	-	-	-	**27,400**
	"	6-6.5	-	X	X	-	-	-	-	-	-	-	-	**14,500**
	"	7-7.5	-	X	X	-	-	-	-	-	-	-	-	**17,500**
	"	8-8.5	-	X	X	-	-	-	-	-	-	-	-	**6,310**
BH-3	11/5/2013	0-1	-	X	X	-	-	-	-	-	-	-	-	309
	"	2-3	-	X	X	-	-	-	-	-	-	-	-	250
	"	4-5	-	X	X	-	-	-	-	-	-	-	-	**14,300**
	"	6-7	-	X	X	-	-	-	-	-	-	-	-	**19,500**
	"	9-10	-	X	X	-	-	-	-	-	-	-	-	**7,780**
	"	14-15	-	X		-	-	-	-	-	-	-	-	255
	"	19-20	-	X		-	-	-	-	-	-	-	-	<20.0
	"	24-25	-	X		-	-	-	-	-	-	-	-	54.0
AH-4 North Sidewall	5/20/2014	-	-	X		-	-	-	-	-	-	-	-	**1,770**
AH-4 East Sidewall	"	-	-	X		-	-	-	-	-	-	-	-	990
AH-4 West Sidewall	"	-	-	X		-	-	-	-	-	-	-	-	**5,300**
AH-4 Bottom Hole	"	11	-	X		-	-	-	-	-	-	-	-	**10,400**

(-) Not Analyzed

(BEB) Below Excavation Bottom

Soil Removed and Excavation Depths

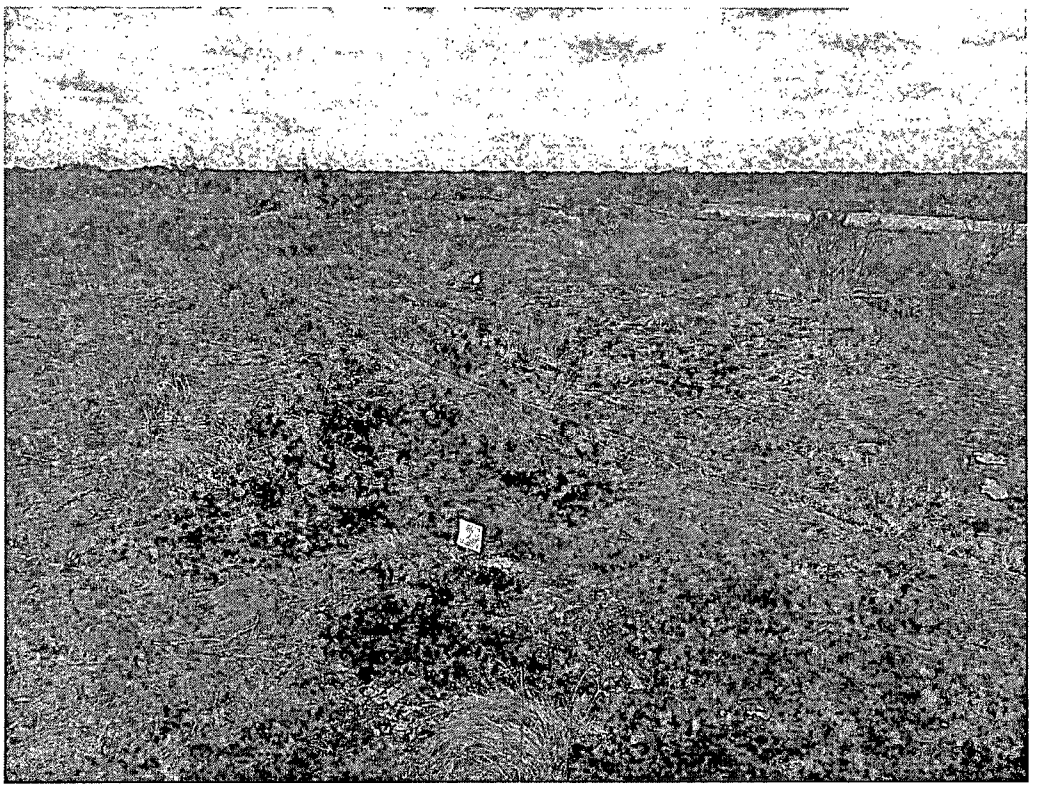
40 mil Liner Installed

PHOTOGRAPHS

COG Operating LLC
GoldenEye 18 Federal Com #1
Lea County, New Mexico

TETRA TECH

View Southwest – Leak source and AH-1



View North – AH-2 and AH-3

COG Operating LLC
GoldenEye 18 Federal Com #1
Lea County, New Mexico

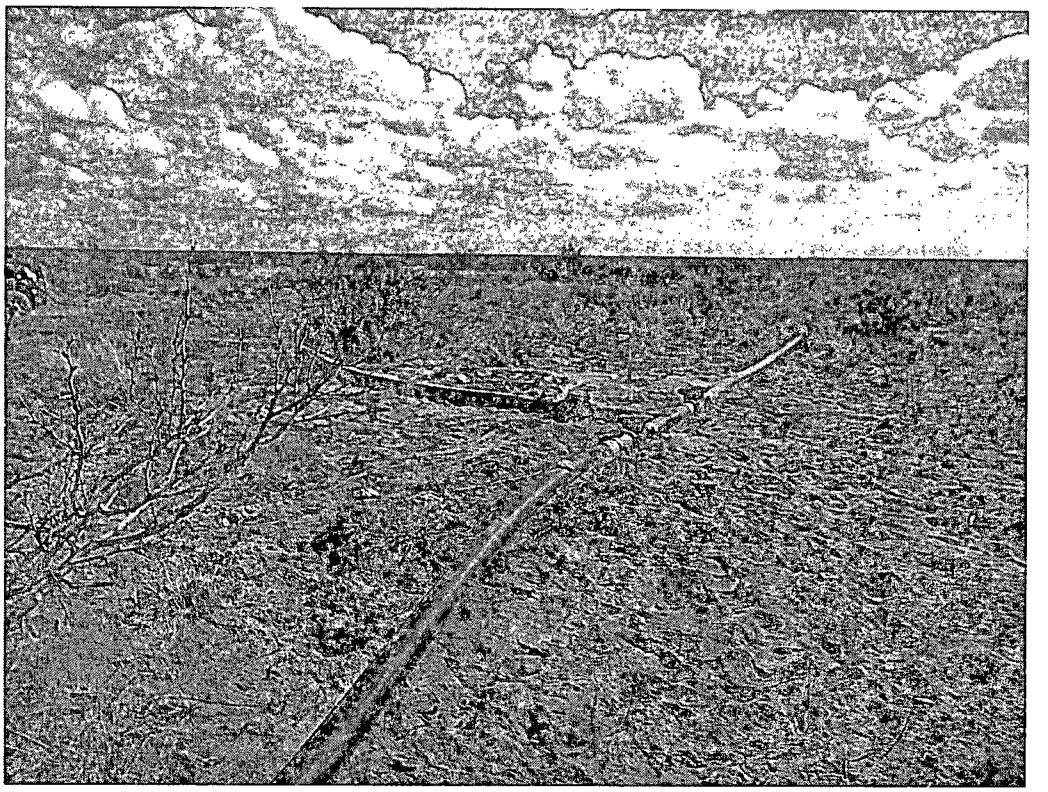
TETRA TECH

View South –Area of AH-3

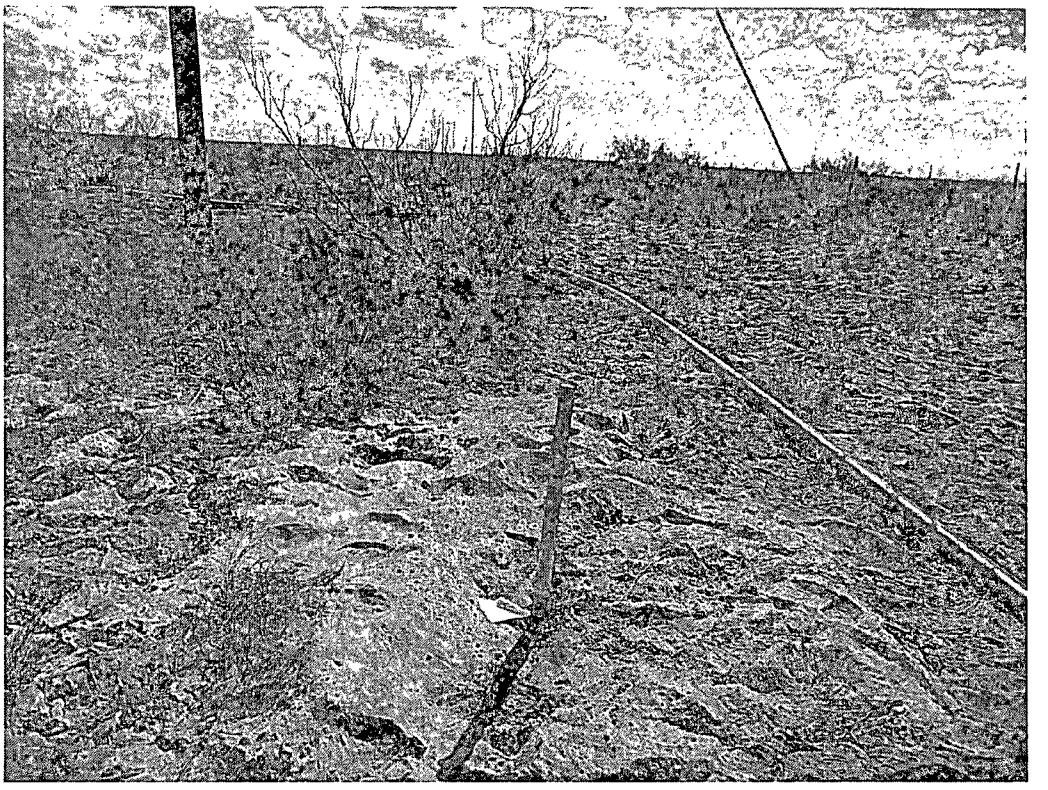
View Northwest – Area of AH-4

COG Operating LLC
GoldenEye 18 Federal Com #1
Lea County, New Mexico

TETRA TECH



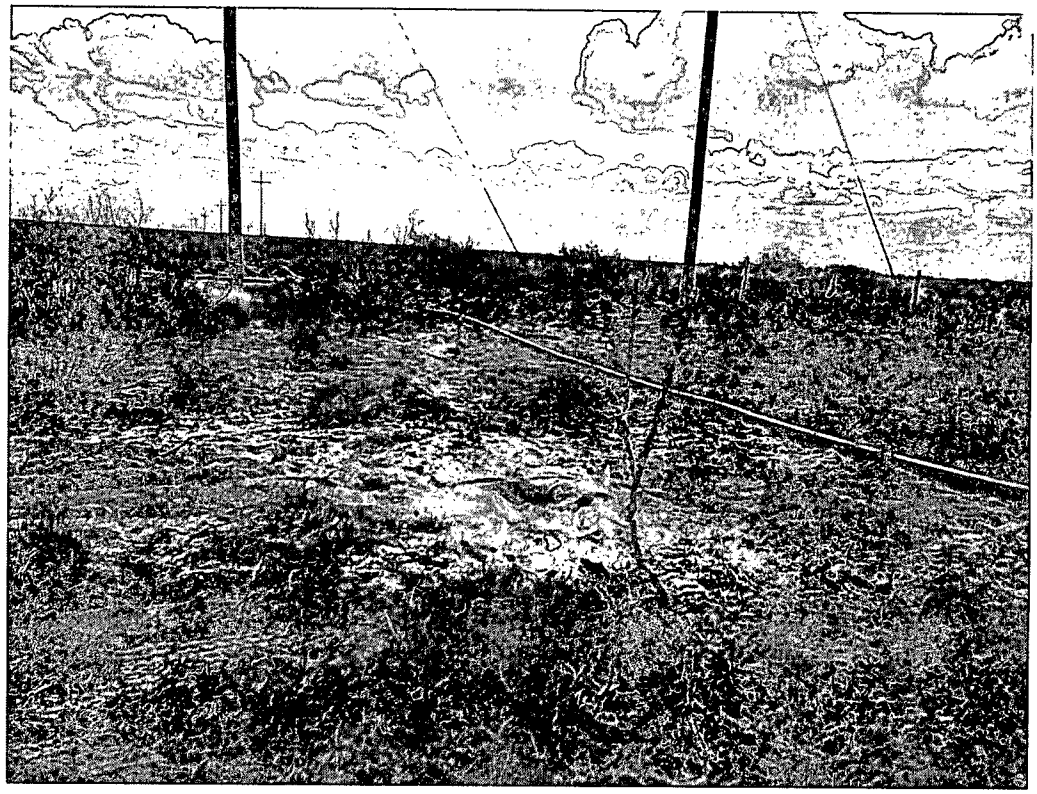
View South – Area of BH-1



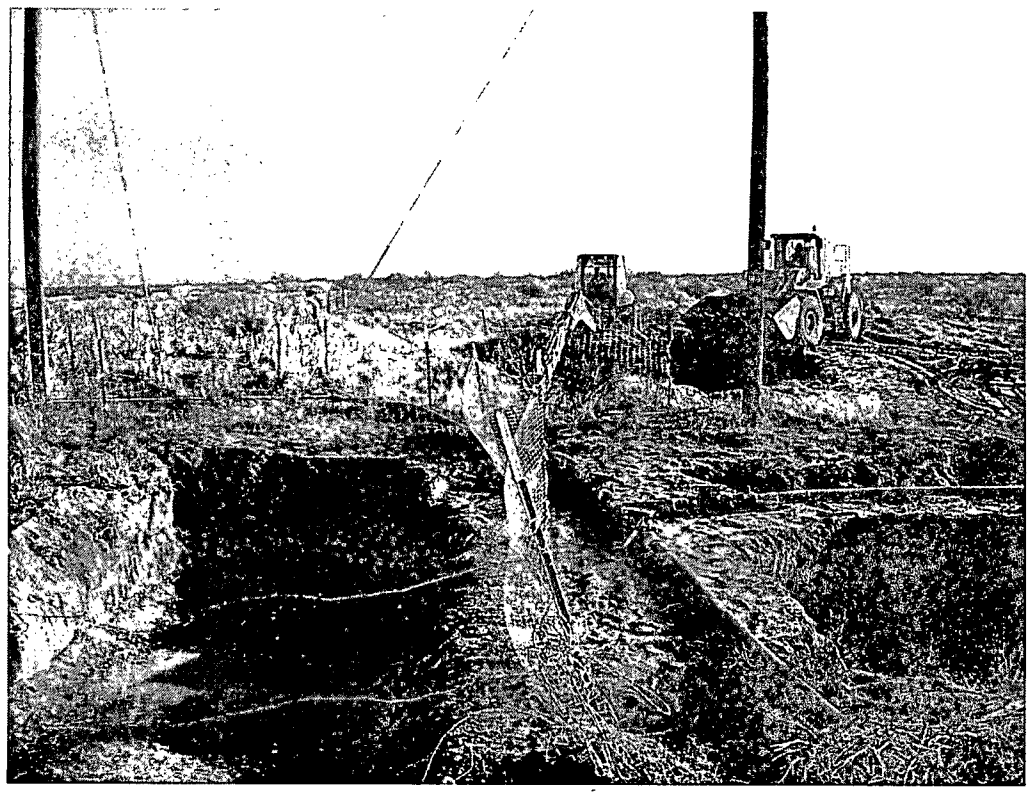
View South – Area of BH-2

COG Operating LLC
GoldenEye 18 Federal Com #1
Lea County, New Mexico

TETRA TECH



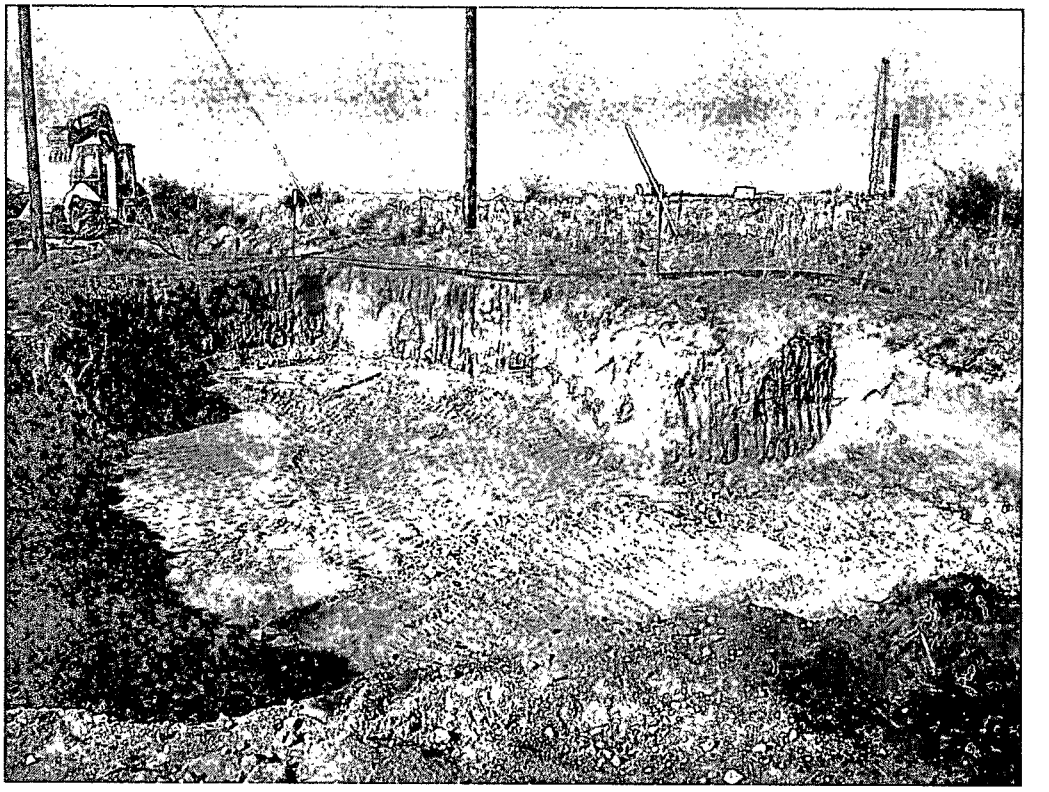
View South – Area of BH-2 and BH-3



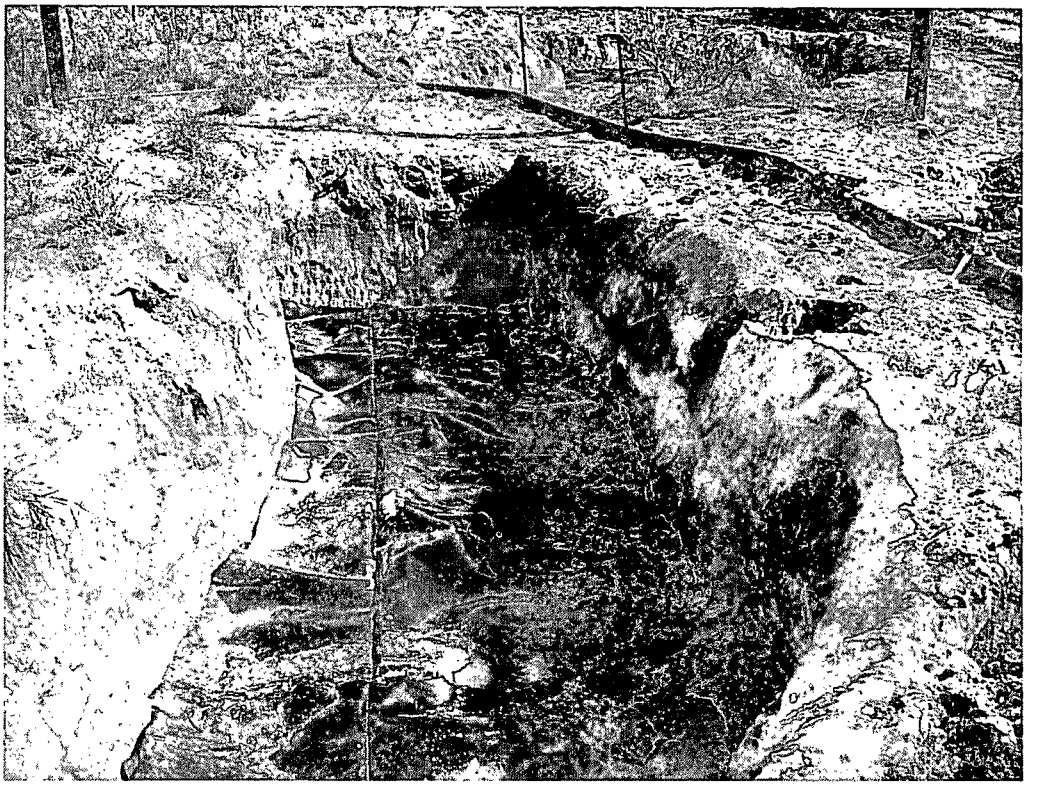
View North – Excavated area of AH-1

COG Operating LLC
GoldenEye 18 Federal Com #1
Lea County, New Mexico

TETRA TECH



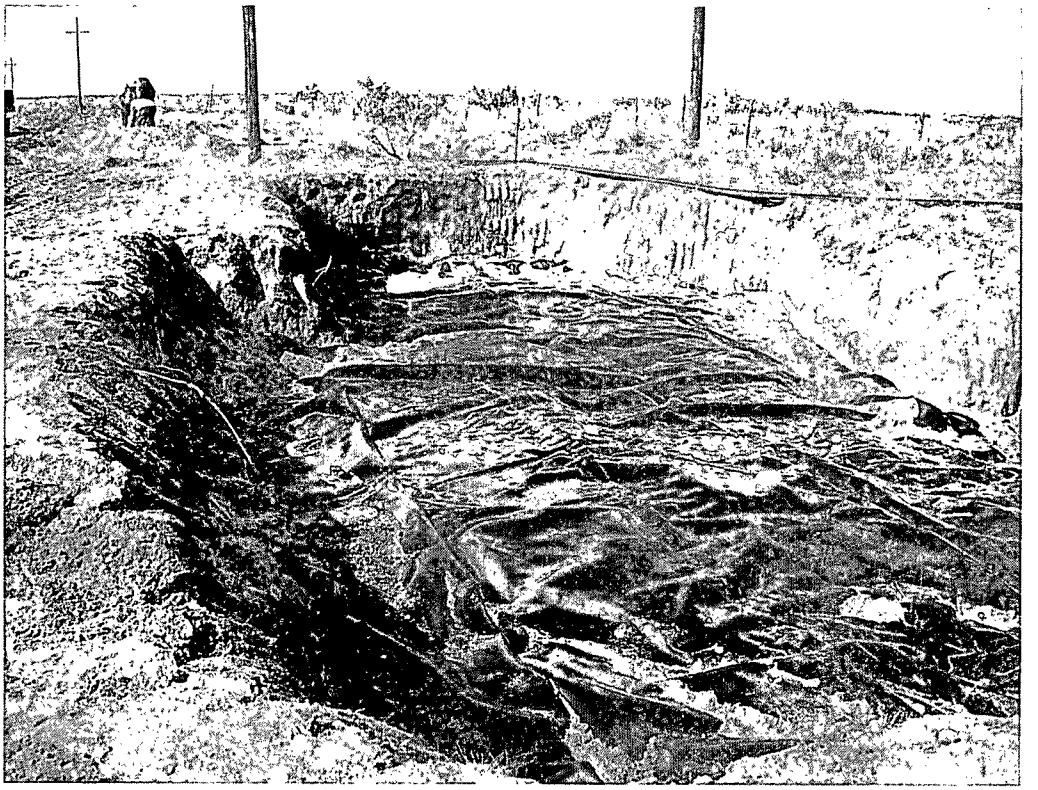
View Southwest – Excavated area of AH-2 and AH-4



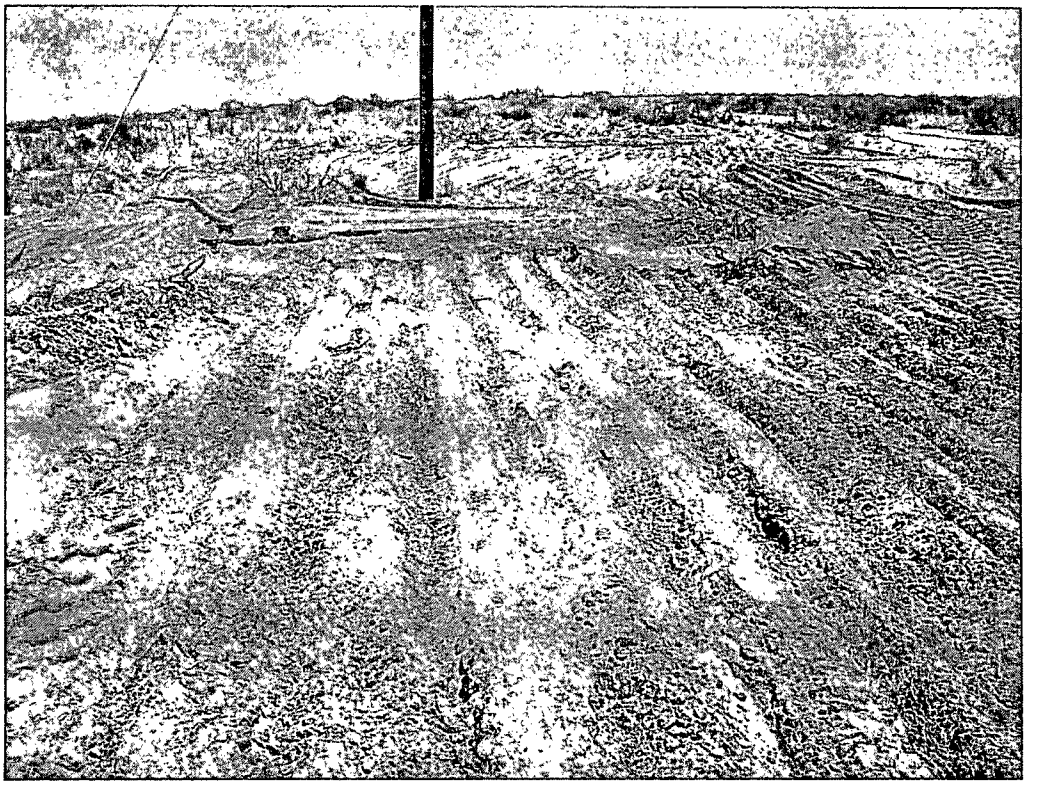
View North – Lined area of AH-1

COG Operating LLC
GoldenEye 18 Federal Com #1
Lea County, New Mexico

TETRA TECH



View South – Lined area of AH-2 and AH-4



View North – Backfilled area of excavation

APPENDIX A

Water Well Data
Average Depth to Groundwater (ft)
GoldenEye 18 Federal Com #1
Lea County, New Mexico

23 South 31 East

6 **85**	5 **354**	4 **168**	3	2	1
7 **140**	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

23 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 **400**	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South 33 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

24 South 31 East

6	5	4	3	2 **192**	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

24 South 32 East

6	5 **380**	4	3	2	1
7	8	9	10 **20**	11	12
18 **SITE**	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33 **290**	34	35	36

24 South 33 East

6	5	4	3	2	1
7	8	9	10 **24.6**	11	12
18	17	16	15	14	13
19	20	21	22	23 **208**	24 **16.9**
30	29	28	27	26	25
31	32	33 **93.2**	34	35	36

25 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 **390**	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 32 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 **290**	33	34	35	36

25 South 33 East

6	5	4	3 172	2	1
7	8	9	10	11 140	12 200
18	17	16	15	14	13
19	20 **200**	21 120	22	23	24
30	29	28	27 125	26	25
31 **257**	32	33	34	35	36

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System

APPENDIX B