

SITE INFORMATION

Report Type: Work Plan

General Site Information:

Site:	Harper State # 10				
Company:	COG Operating LLC				
Section, Township and Range	Unit P	Sec 16	T17S	R30E	
Lease Number:	API-30-015-34870				
County:	Eddy County				
GPS:	32.82907° N			103.96906° W	
Surface Owner:	State				
Mineral Owner:					
Directions:	In Loco Hills, from the intersection of Goat Roper Rd and Hwy 82, travel north on Goat Roper Rd for 0.7m, turn right and travel 0.5m, turn right and travel 0.2m to site.				

Release Data:

Date Released:	2/7/2011
Type Release:	Produced Fluid
Source of Contamination:	Flowline failure
Fluid Released:	10 bbls
Fluids Recovered:	0 bbls

Official Communication:

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

Ranking Criteria

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

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



TETRA TECH

December 1, 2011

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
1301 West Grand Avenue
Artesia, New Mexico 88210

Re: Work Plan for the COG Operating LLC., Harper State # 10 Flow Line, Unit P, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Harper State # 10 flow line located in Unit P, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.82907°, W 103.96906°. 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 February 7, 2011, and released approximately ten (10) barrels of produced fluid from a flow line, with no fluid recovered. To alleviate the problem, COG personnel repaired the flow line. The spill initiated on the south end of the tank battery in the pasture and covered an area that measured 20' X 30'. The initial C-141 is enclosed in Appendix A.

Groundwater

No water wells were listed in Section 16. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 300' below surface. The groundwater data is shown in Appendix B.

Tetra Tech

11/29/2011 10:00 AM

11/29/2011 10:00 AM



TETRA TECH

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (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 February 21, 2011, Tetra Tech personnel inspected and sampled the spill area. One (1) auger hole (AH-1) was installed using a stainless steel hand auger to assess the impacted soils. Select 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 location is shown on Figure 3.

Referring to Table 1, the TPH and BTEX concentrations are below the RRAL. A shallow chloride impact was detected, with a chloride concentration of 2,320 mg/kg at 0-1' and declining to <200 mg/kg at 2-2.5'.

Work Plan

COG proposes to remove impacted material as highlighted (green) in Table 1. Once the areas are excavated to the appropriate depth (1.0'), the excavation will be backfilled with clean soil. Upon completion, a final report will be submitted to the NMOCD.



TETRA TECH

If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavaréz
Project Manager

cc: Pat Ellis – COG

Figures

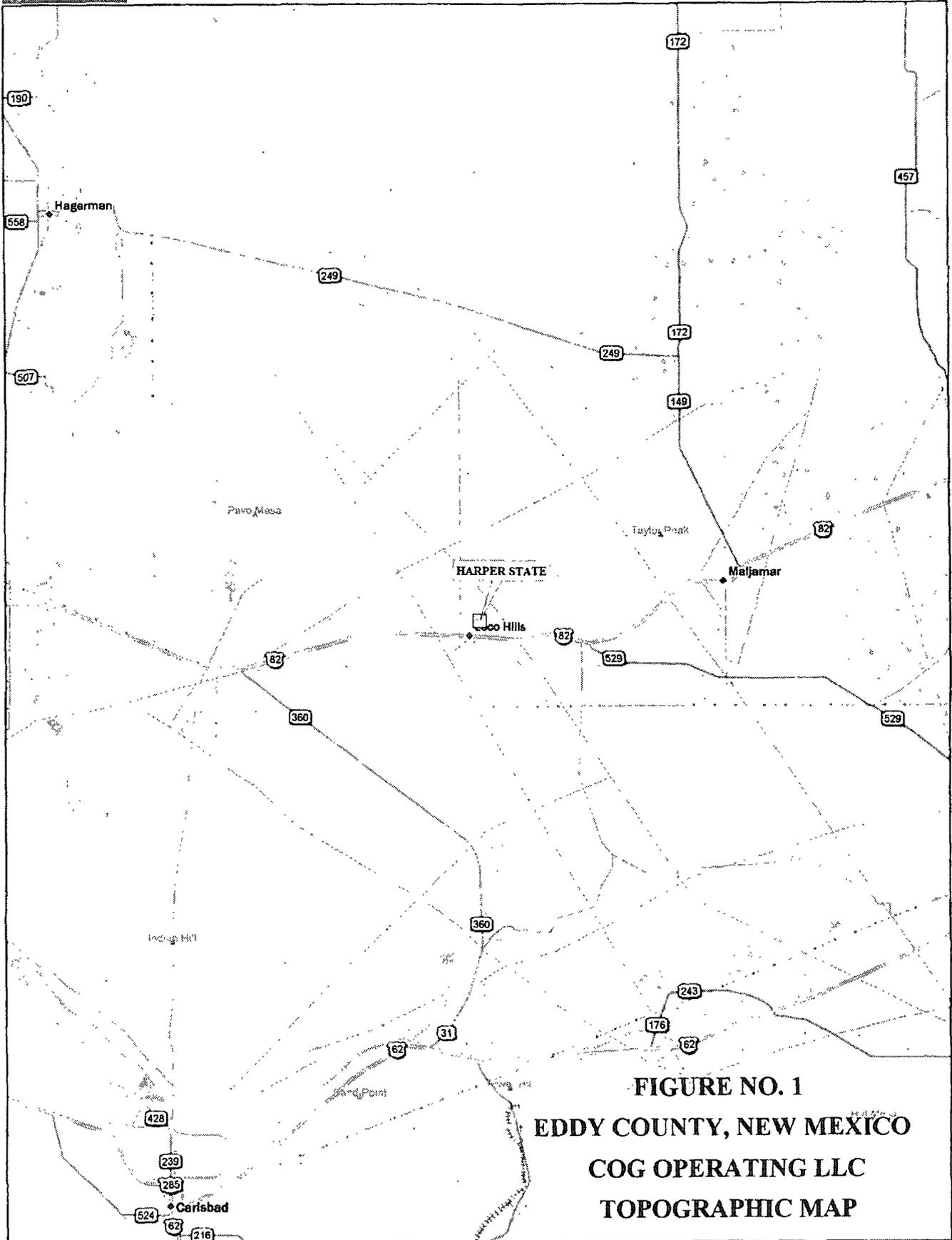
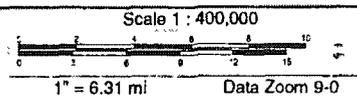


FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP



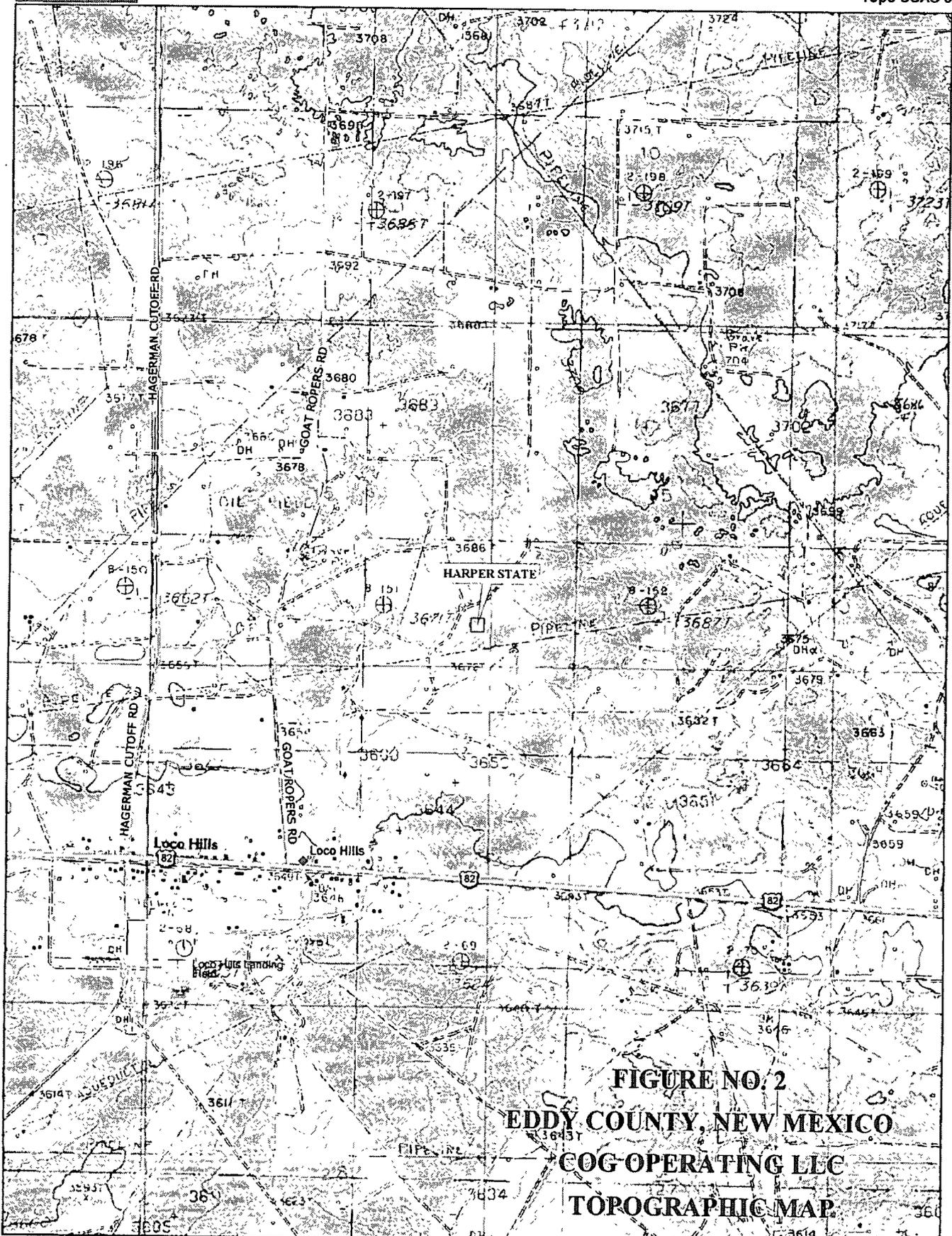
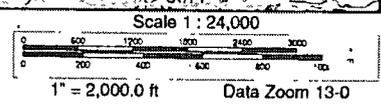
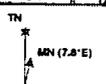


FIGURE NO. 2
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP.

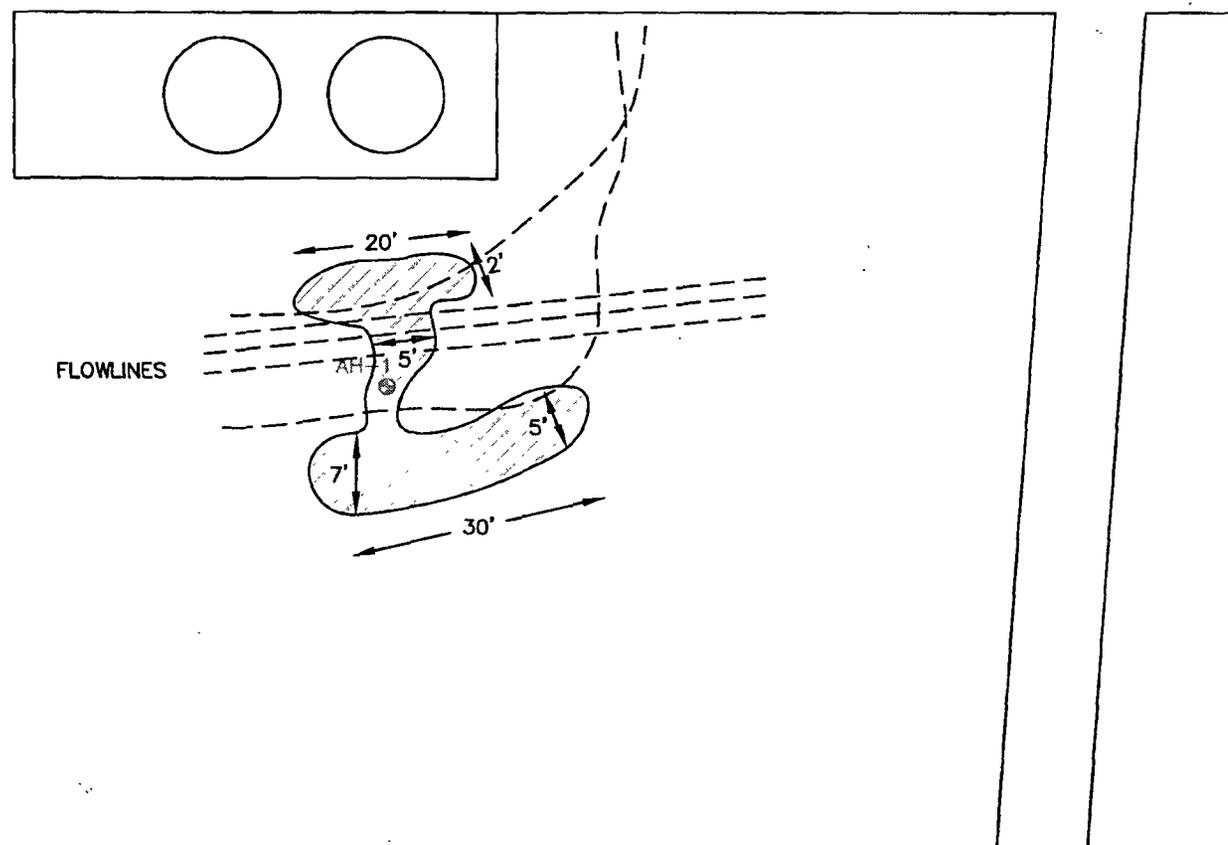
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PAD

LEASE RD.



FLOWLINES

□ SPILL AREA
⊕ SAMPLE LOCATIONS

NOT TO SCALE

DATE:
2/21/11
DWG. BY:
JJ
FILE:
H:\COG\HARPER STATE
HARPER STATE

FIGURE NO. 3
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
HARPER STATE
TETRA TECH, INC. MIDLAND, TEXAS

Tables

Table 1
COG Operating LLC.
Harper State #10
EDDY COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	2/21/2011	0-1'	1'	X		<2.00	<50.0	<50.0	<0.0200	0.14	0.126	0.382	2,320
		1-1.5'	1'	X		-	-	-	-	-	-	-	342
		2-2.5'	1'	X		-	-	-	-	-	-	-	<200
		3-3.5'	1'	X		-	-	-	-	-	-	-	<200
		4-4.5'	1'	X		-	-	-	-	-	-	-	<200
		5-5.5'	1'	X		-	-	-	-	-	-	-	<200
		6-6.5'	1'	X		-	-	-	-	-	-	-	<200

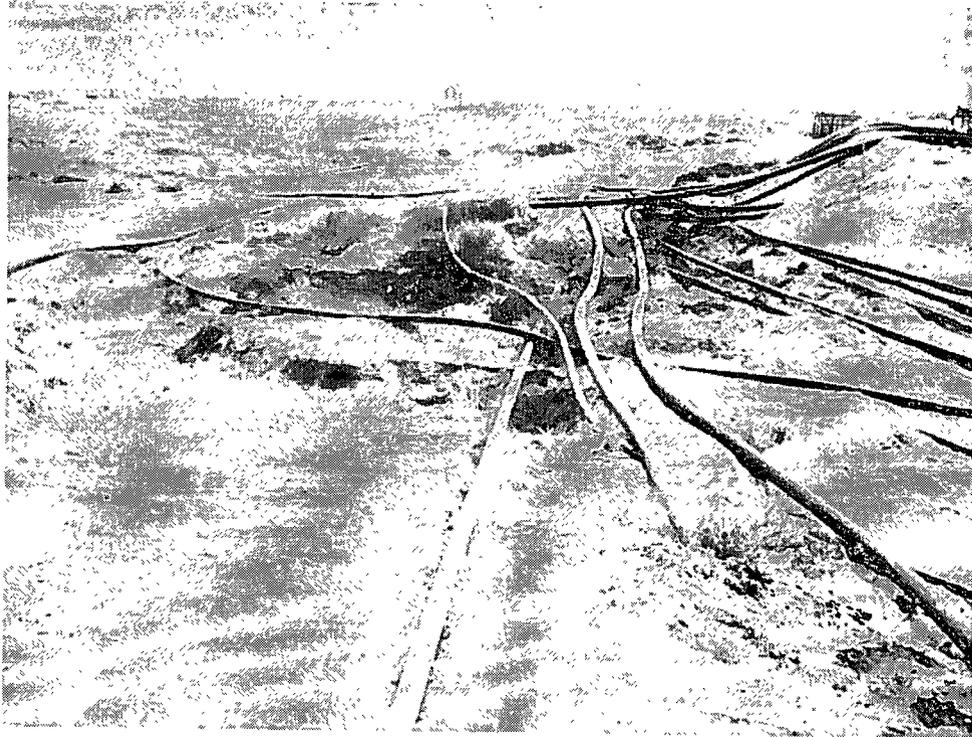
BEB Below Excavation Bottom
 (--) Not Analyzed
 Proposed Excavated Depth

Photos

COG Operating LLC
Harper State # 10
Eddy County, New Mexico



TETRA TECH



View West – AH-1



View East – AH-1

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Harper State #10	Facility Type	Flowline

Surface Owner	State	Mineral Owner	Lease No. (API#) 30-015-34870
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	16	17S	30E					Eddy

Latitude 32 49.741 Longitude 103 58.142

NATURE OF RELEASE

Type of Release	Produced fluid	Volume of Release	10bbls	Volume Recovered	Obbbls
Source of Release	Flowline	Date and Hour of Occurrence	02/07/2011	Date and Hour of Discovery	02/07/2011 1:30 p.m.
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

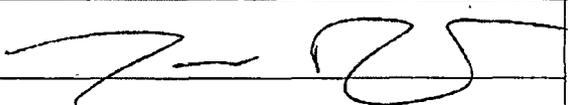
If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Steel flowline spilt due to freezing temperatures. The split joint of flowline has been replaced with a new one and returned to service.

Describe Area Affected and Cleanup Action Taken.*
Initially 10bbls of produced fluid was released from the split Harper State #10 flowline located behind the Harper State Tank Battery. The fluid traveled 10' x 50' outside of the facility dike walls. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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

OIL CONSERVATION DIVISION

Signature: 	Approved by District Supervisor:		
Printed Name: Josh Russo	Approval Date:	Expiration Date:	
Title: HSE Coordinator	Conditions of Approval:		
E-mail Address: jrusso@conchoresources.com			Attached <input type="checkbox"/>
Date: 02/16/2011	Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Harper State #10
Eddy County, New Mexico

16 South 29 East

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

16 South 30 East

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

16 South 31 East

6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35
290				

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				153	

17 South 30 East

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

17 South 31 East

6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35
			271	

18 South 29 East

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

18 South 30 East

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

18 South 31 East

6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35
				251

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data

Appendix C

Summary Report

Victoria Inman
 Tetra Tech
 1910 N. Big Spring Street
 Midland, TX 79705

Report Date: March 16, 2011

Work Order: 11030103



Project Name: COG/Harper State #10
 Project Number: 114-6400824

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
259081	AH-1 0'-1' 1' BEB	Soil	2011-02-21	00:00	2011-02-28
259082	AH-1 1'-1.5' 1' BEB	Soil	2011-02-21	00:00	2011-02-28
259083	AH-1 2'-2.5' 1' BEB	Soil	2011-02-21	00:00	2011-02-28
259084	AH-1 3'-3.5' 1' BEB	Soil	2011-02-21	00:00	2011-02-28
259085	AH-1 4'-4.5' 1' BEB	Soil	2011-02-21	00:00	2011-02-28
259086	AH-1 5'-5.5' 1' BEB	Soil	2011-02-21	00:00	2011-02-28
259087	AH-1 6'-6.5' 1' BEB	Soil	2011-02-21	00:00	2011-02-28

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenc (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
259081 - AH-1 0-1' 1' BEB	<0.0200	0.140	0.126	0.382	<50.0	<2.00

Sample: 259081 - AH-1 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		2320	mg/Kg	4.00

Sample: 259082 - AH-1 1'-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		342	mg/Kg	4.00

Sample: 259083 - AH-1 2'-2.5' 1' BEB

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

Sample: 259084 - AH-1 3'-3.5' 1' BEB

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

Sample: 259085 - AH-1 4'-4.5' 1' BEB

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

Sample: 259086 - AH-1 5'-5.5' 1' BEB

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

Sample: 259087 - AH-1 6'-6.5' 1' BEB

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