1R - 187

REPORTS

DATE:

7/17/1998

District I
P O Box 1980, Hobbs, NM
District II
811 South 1st, Artesia, NM 88210
District III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

(Revised 3/9/94)

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NM 87505

PIT REMEDIATION AND CLOSURE REPORT

Operator: UMC/OCEAN ENERGY Telephone: (303) 573-4721

Address: 410 17th St. Suite 1400, Denver Colorado 80202

Facility Or: Carlisle State Com #1
Well Name

Location: Unit or Qtr/Qtr Sec _____ Sec 10 T 16S R 35E County Lea

Pit Type: Separator ___ Dehydrator ___ Other FIBRE PIT

Land Type: BLM ___, State ✓, Fee ___, Other _____

Pit Location: (attach diagram)
Pit dimensions: length 150', width 75', depth 2'
Reference: wellhead ✓, other _____
Footage from reference: 1000'
Direction from reference: NE Degrees 45° East North 45° of ___ West South ___

Depth To Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 Points)	10
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes (20 points) No (0 points)	0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet (20 points) 200 feet to 1000 feet (10 points) Greater than 1000 feet (0 points)	0
	RANKING SCORE (TOTAL POINTS):	10

JUL 1998
RECEIVED
Hobbs
OCD

Date Remediation Started: April 29 1998 Date Completed: 5-12-98

Remediation Method: (Check all appropriate sections) Excavation ✓ Approx. cubic yards 6 yd³

Landfarmed ___ Insitu Bioremediation ___

Other _____

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility) Onsite ✓ Offsite _____

General Description Of Remedial Action: The waste was removed and stored on site near the SW corner of the Carlisle #1 drilling reserve pit. An additional 1 foot of the pit bottom was removed and store at the same location. Disposition is pending.

Ground Water Encountered: No ✓ Yes ___ Depth _____

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location EAST Flare Pit Bottom Center

Sample depth 3'

Sample date 5-11-98 Sample time 1400

Sample Results

Benzene(ppm) <.002 ppm

Total BTEX(ppm) 0.103

Field headspace(ppm) 2.0-4.0

TPH 58

Ground Water Sample: Yes ___ No ✓ (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 7-16-98

SIGNATURE Pat W. McCasland PRINTED NAME AND TITLE Pat W. McCasland Safety & Environmental Director Callaway Safety Equipment Co. Inc.

Final Remedial Action Report

UMC/Ocean Energy:

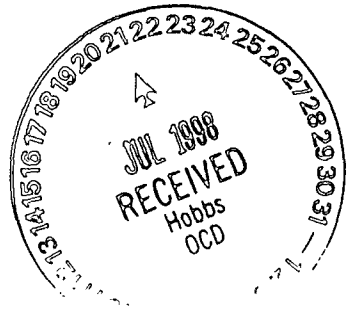
Carlisle State Com #1

"East Flare Pit"

N.M.P.M. S10 T16S R35E

Lea County New Mexico

Submitted July 17, 1998



Callaway Safety Equipment Co., Inc.
3311 North Grimes
Hobbs, New Mexico

TABLE OF CONTENTS

1 Introduction

At 3:30 AM on Friday March 20, 1998, during drilling of the UMC Petroleum Corporation Carlisle State Com #1 well at an estimated depth of 12,100 feet, a highly pressurized and uncontrollable flow of natural gas and natural gas liquids was encountered. The estimated volume was ~ 8 to 15 mmcf per day of sweet gas, i.e., 0.0 ppm H_2S concentration. Although H_2S was not a concern, initial responders were concerned that explosive levels of natural gas could migrate to nearby residences and possibly the City of Lovington, New Mexico located four miles east of the well. Consequently, residents within one mile of the well were evacuated, the site secured, the Lea County Sheriff Department, New Mexico State Police, Lovington Police and Fire Department, and the Local Emergency Planning Committee were notified, and the Incident Command System activated.

The well was brought under control and re-entry work begun and required excavation of two unlined flare pits. The "West Flare Pit" was excavated approximately 1,000 feet northwest of the Carlisle #1 wellbore and did not receive any discernable liquids and was subsequently backfilled and contoured. The "East Flare Pit" was excavated approximately 1,000 feet northeast of the Carlisle #1 wellbore and did receive a small quantity of drilling mud during the operation and is the subject of this report.

2 Site Information

2.1 Site History

Prior to drilling the Carlisle State Com #1 and subsequent excavation of the East Flare Pit, the land was used for livestock grazing.

2.2 Legal Description

The legal description of the site is as follows:

Sec 10, T-16S, R35E

2.3 Site Characterization

The site is excavated in the caliche overburden prevalent in the area and is on the south slope of a general surface decline. The area had previously been cleared of vegetation to decrease fire hazards during well control efforts.

2.3.1 East Flare Pit Metrics

The pit is oriented longitudinally northeast to southwest and is approximately 150 feet long, 75 feet wide, and approximatley 2 feet in depth. The berm was formed with the excavated caliche is open toward the Carlisle wellbore to accommodate the flare line. Refer to Photographs 2.3.1a & b.

Photograph 2.3.1a – East Flare Pit looking SW

Photograph 2.3.1b – East Flare Pit looking NE

2.3.1.1 Pit Dimensions

The East Flare Pit is approximately 150 feet long, 75 feet wide, and 2 feet in depth.

2.3.1.2 Location of Pit relative to the Carlisle State Com #1 wellbore and water sources

Diagram 2.3.1.2 illustrates the spatial relationship of the East Flare Pit to the Carlisle State Com #1 wellbore and water wells in the area.

UMC/Ocean Energy Carlisle State Com #1 Site Map

July 13, 1998

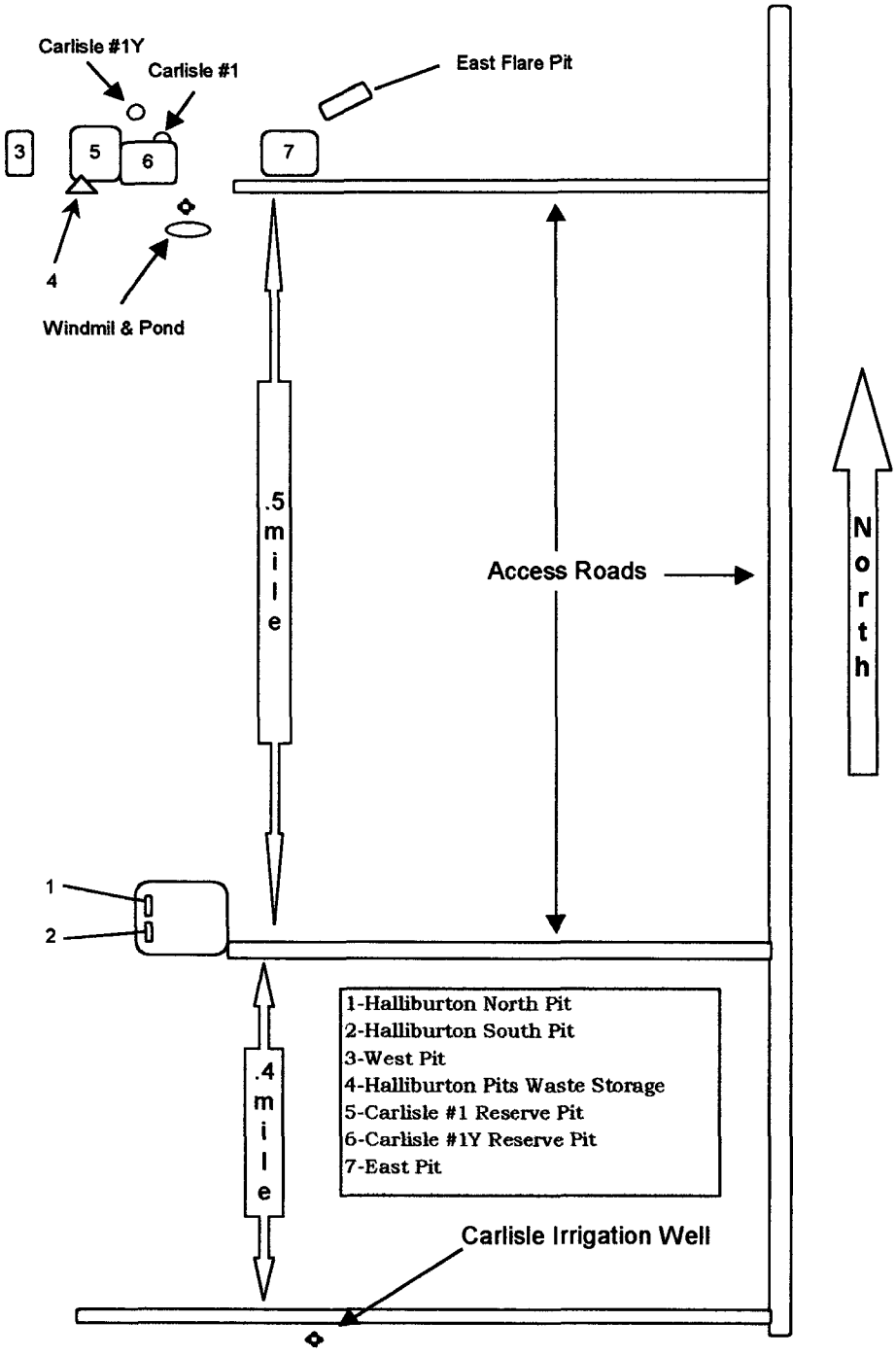


Diagram 2.3.1.2

2.3.2 Depth to Ground Water (Points = 10)

Depth to ground water, i.e., distance between the lower most contamination to uppermost vertical extent of the aquifer, at this location is approximated to be 50.5 feet. This distance was derived by subtracting the pit depth, 2.0 feet , from the approximated land surface to ground water surface of 52.5 feet. This approximation is based on area water well information supplied by the District II Office of the New Mexico State Engineer and is included as Attachment A. This approximation is also consistent with data collected by KEI for Tex New-Mex Pipeline at the Townsend Site, TNM-97-04, located 1.5 miles southeast of the East Flare Pit location. These data are presented in Attachment B.

2.3.3 Well Protection Area (Points = 0)

The East Flare Pit is approximately .9 mile (4,752 feet) from the Carlisle Irrigation well located to the southeast and approximately .19 mile (1,000 feet) northeast of the Carlisle Windmill and Pond which are adjacent to the Carlisle #1 drilling location. Neither water source is considered to be a public water supply.

2.3.4 Distance to Surface Water (Points = 0)

The only perennial surface water body exists as the livestock watering pond associated with the windmill located southwest .19 mile (1,000 feet) adjacent to the Carlisle State Com #1 drill site.

2.4 Total Ranking Score and Recommended Remediation Action Levels

The "Total Ranking Score" for the East Flare Pit is 10. According to Section IV, 2, b. of the New Mexico Oil Conservation Division, "Guidelines for Remediation of Leaks, Spills, and Releases," the remediation action levels for the following parameters should be achieved before closure of the pit will be granted.

Remediation Action Levels	
Benzene EPA Method 602/8020 Or Field Soil Vapor Headspace Measurement	 10 ppm Or 100 ppm
BTEX EPA Method 602/8020 Or Field Soil Vapor Headspace Measurement	 10 ppm Or 100 ppm
Total Petroleum Hydrocarbon (TPH) EPA Method 418.1 or 8015 modified	1000 ppm

3 Remediation Process

Remediation of the East Flare Pit involved excavation, waste storage, and sampling and analyses.

3.1 Excavation

There no liquids observed in the pit, only wet drilling medium. The pit contents were allowed to dry out for approximately 10 days, at which point, a Front-end loader and dump truck excavated the contents and bottom foot of the pit where the drilling medium occurred and hauled to the storage location.

3.2 Waste Storage

Approval was obtained from the NMOCD Hobbs, New Mexico field office to transport and store the waste at a location just outside the southwest corner of the Carlisle State Com #1 drilling reserve pit. This was necessary to allow time for waste characterization and classification and to determine appropriate disposition.

3.3 Sampling and Analyses

The NMOCD Hobbs field office waived the 48-hour notification requirement for bottom hole sampling of this pit. On May 11, 1998 the bottom hole samples were obtained and transmitted to the third party laboratory, i.e., Cardinal Laboratories, Hobbs, New Mexico, for analyses. The following matrix summarizes the analytical results, the original analyses are submitted in Attachment C.

East Flare Pit
Analytical Results - Sample ID.# S51198EFP
Sample Date: 5-11-98 Analytical Date: 5-12-98

Parameter	Value	Units	Method
TPH	58	mg/Kg (ppm)	418.1
Benzene	<0.002	mg/Kg (ppm)	8020
Toluene	0.003	mg/Kg (ppm)	8020
Ethyl Benzene	<0.002	mg/Kg (ppm)	8020
Xylenes – Total	0.100	mg/Kg (ppm)	8020
Chloride	4742	mg/Kg (ppm)	325.3

4 Conclusion

The unlined East Flare Pit has been remediated to below the recommended remediation action levels and poses no reasonable risk to the environment or public. It is therefore concluded that the pit is ready for decommissioning and closure.

ATTACHMENT A: Area Ground Water Information, District II State Engineer's Office

LOC: 16S.35E.09.21320
OTID 11117
ELEV: 4017.10
USE: U
DEPTH: 115
GEO. UNIT: 1210GLL

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
JAN 25, 1961	51.97	FEB 09, 1966	53.07	FEB 12, 1971	53.33	FEB 25, 1976	53.26

HIGHEST 51.97 JAN 25, 1961
LOWEST 53.33 FEB 12, 1971

SITE ID: 325548103273701
LOC: 16S.35E.09.342213
OTID 11118
ELEV: 4011.50
USE: I
DEPTH: 152
GEO. UNIT: 1210GLL

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
JAN 20, 1961	50.00	FEB 09, 1966	49.37	FEB 12, 1971	49.71	FEB 26, 1976	49.63

HIGHEST 49.37 FEB 09, 1966
LOWEST 50.00 JAN 20, 1961

SITE ID: 325553103272801
LOC: 16S.35E.09.411421
OTID 11119
ELEV: 4011.90
USE: U
DEPTH: 106
GEO. UNIT: 1210GLL

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
JAN 20, 1961	49.22	FEB 12, 1971	50.46	MAR 31, 1981	50.79	MAR 01, 1991	51.37
FEB 09, 1966	50.12	FEB 26, 1976	50.42	JAN 31, 1986	50.93		

HIGHEST 49.22 JAN 20, 1961
LOWEST 51.37 MAR 01, 1991

SITE ID: 325542103265701
LOC: 16S.35E.10.33321
OTID 12666
ELEV: 4002.00
USE: U

PTH: 120
GEO. UNIT: 1210GLL

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
FEB 16, 1971	50.36	MAR 31, 1981	50.60	MAR 01, 1991	51.33		
FEB 26, 1976	50.50	JAN 30, 1986	50.75				

HIGHEST 50.36 FEB 16, 1971
LOWEST 51.33 MAR 01, 1991

SITE ID: 325627103254401
LOC: 16S.35E.11.12111
GTID 11120
ELEV: 3998.00
USE: I
DEPTH: 80
GEO. UNIT: 1210GLL

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
MAR 27, 1961	51.61	FEB 16, 1971	52.76	JAN 30, 1986	53.70		
MAR 02, 1966	53.17	FEB 26, 1976	52.42	MAR 01, 1991	53.31		
DEC 04, 1969	52.69	MAR 31, 1981	53.38	JAN 26, 1996	52.85 S		

HIGHEST 51.61 MAR 27, 1961
LOWEST 53.70 JAN 30, 1986

SITE ID: 325627103251301
LOC: 16S.35E.11.221113
GTID 11121
ELEV: 3981.00
USE: I
DEPTH: 90
GEO. UNIT: 1210GLL

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS	DATE	WATER LEVEL MS
FEB 07, 1961	52.61	FEB 16, 1971	54.26	MAR 31, 1981	54.77	MAR 01, 1991	54.44
FEB 10, 1966	54.20	FEB 26, 1976	54.02	JAN 17, 1986	54.78		

HIGHEST 52.61 FEB 07, 1961
LOWEST 54.78 JAN 17, 1986

SITE ID: 325556103252801
LOC: 16S.35E.11.411331
GTID 11122
ELEV: 3981.00
USE: U
DEPTH: 85

ATTACHMENT B: GROUND WATER LEVEL MEASUREMENT REFERENCES

TABLE III

SUMMARY OF GROUND WATER MONITORING
TEXAS - NEW MEXICO PIPE LINE COMPANY
TNM-97-04
LOVINGTON, NEW MEXICO

WELL NO.	DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
				Actual	Corrected	
MW-1	06/18/97	3,974.19	53.15	3921.04	—	—
	07/29/97	3,974.19	53.05	3921.14	—	—
MW-2	06/18/97	3,974.65	53.24	3921.41	—	—
	07/29/97	3,974.65	53.14	3921.51	—	—
MW-3	06/18/97	3,974.63	60.08	3914.55	3921.94	8.69
	06/23/97	3,974.63	60.08	3914.55	3921.96	8.72
	06/23/97	3,974.63	53.30	3921.33	3921.56	0.27
	06/23/97	3,974.63	53.78	3920.85	3921.71	1.01
	06/25/97	3,974.63	59.85	3914.78	3921.99	8.48
	06/25/97	3,974.63	55.50	3919.13	3921.72	3.05
	06/25/97	3,974.63	56.34	3918.29	3921.78	4.10
	06/25/97	3,974.63	53.29	3921.34	—	—
	06/27/97	3,974.63	59.99	3914.64	3921.96	8.61
	06/27/97	3,974.63	56.68	3917.95	3921.60	4.29
	07/01/97	3,974.63	59.99	3914.64	3921.96	8.61
	07/03/97	3,974.63	60.04	3914.59	3921.98	8.69
	07/03/97	3,974.63	55.22	3919.41	3921.75	2.75
	07/29/97	3,974.63	60.03	3914.60	3921.96	8.66
	07/29/97	3,974.63	54.47	3920.16	3921.90	2.05
MW-4	06/18/97	3,974.55	52.96	3921.59	—	—
	07/29/97	3,974.55	52.92	3921.63	—	—
MW-5	06/18/97	3,974.31	60.85	3913.46	3922.41	10.53
	06/23/97	3,974.31	58.09	3916.22	3922.08	6.89
	06/23/97	3,974.31	56.57	3917.74	3922.38	5.46
	06/23/97	3,974.31	59.18	3915.13	3921.32	7.28
	06/23/97	3,974.31	59.74	3914.57	3922.08	8.83
	06/23/97	3,974.31	54.91	3919.40	3921.88	2.92
	06/25/97	3,974.31	60.47	3913.84	3922.02	9.62
	06/25/97	3,974.31	58.47	3915.84	3921.99	7.24
	06/25/97	3,974.31	59.49	3914.82	3922.01	8.46
	06/25/97	3,974.31	53.42	3920.89	3921.94	1.23
	06/25/97	3,974.31	55.95	3918.36	3921.90	4.16
	06/25/97	3,974.31	58.50	3915.81	3922.02	7.30
	06/25/97	3,974.31	52.46	3921.85	3921.87	0.02
	06/25/97	3,974.31	51.81	3922.50	3922.50	0.00
	06/27/97	3,974.31	60.46	3913.85	3922.06	9.66
	06/27/97	3,974.31	57.47	3916.84	3922.00	6.07
	07/01/97	3,974.31	60.45	3913.86	3922.01	9.59
	07/01/97	3,974.31	56.40	3917.91	3921.94	4.74
	07/03/97	3,974.31	60.41	3913.90	3922.01	9.54
	07/03/97	3,974.31	57.53	3916.78	3921.98	6.12
	07/29/97	3,974.31	60.19	3914.12	3922.02	9.29
	07/29/97	3,974.31	57.69	3916.62	3920.97	5.12

ATTACHMENT C: GROUND WATER DATA ORIGINAL LABORATORY REPORTS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
CALLAWAY SAFETY/UMC
ATTN: PAT McCASLAND
3229 INDUSTRIAL DRIVE
HOBBS, NM 88240
FAX TO: 505-392-4990

Receiving Date: 05/11/98
Reporting Date: 05/13/98
Project Owner: UMC
Project Name: CARLISLE STATE COM #1
Project Location: 4 MILES WEST OF LOVINGTON, NM

Sampling Date: 05/11/98
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)	Cl (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		05/12/98	05/11/98	05/12/98	05/12/98	05/12/98	05/12/98
H3636-1	S51198HSP	5160	1778	0.003	0.009	0.007	0.044
H3636-2	S51198EFP	58	4742	<0.002	0.003	<0.002	0.100
Quality Control		202	1334	0.097	0.095	0.094	0.286
True Value QC		200	1355	0.100	0.100	0.100	0.300
% Accuracy		101	98.4	97.2	95.2	93.8	95.2
Relative Percent Difference		2.1	1.6	2.1	1.2	4.8	2.5

METHODS: TRPHC-EPA 600/4-79-020, 418.1;Cl-EPA 600/4-79-020 325.3 BTEX-EPA SW-846-8020

Burgess J. A. Cooke, Ph. D.

5/13/98
Date

H3636XLS