1R - 187

REPORTS

DATE:

7/17/1998

1 of NP

District I
P O Box 1980 Hobbs, NM
District II
Drawer DD, Artesia, NM 88211
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 1 T 16S R 35E County LEA

Pit Type: Separator ___ Dehydrator ___ Other Utility Pit

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

Pit Location: (Attach diagram)	Pit dimensions: length 50', width 10', depth 3'	
	Reference: wellhead ✓, other _____	
	Footage from reference: .5 mile (2640')	
	Direction from reference: S Degrees 0 East North 0 of 0 West South 180	

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

HNP

Date Remediation Started: 4-29-98 Date Completed: 5-31-98

Remediation Method: (Check all appropriate sections) Excavation ✓ Approx. cubic yards 5 yd³

Landfarmed ___ Insitu Bioremediation ___

Other ___

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

General Description Of Remedial Action: The mud and 1 foot of the pit bottom were excavated + Stored at the SW corner of the Carlisle State Com #1 drilling reserve Pit.

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 "Halliburton North Pit"

Sample depth 3' below grade

Sample date 4-29-98 Sample time 1400

Sample Results

Benzene(ppm) <0.002

Total BTEX(ppm) 0.041

Field headspace(ppm) 15

TPH 123

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 Calloway Safety Equipment Co., Inc.

Final Remedial Action Report

UMC/Ocean Energy:

Carlisle State Com #1

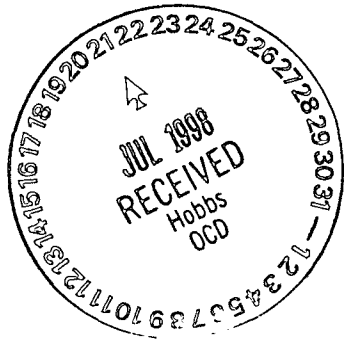
"Halliburton North Pit"

N.M.P.M. S15 T16S R35E

990' FNL & 2310' FWL

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.

In an attempt to regain control of the well, it was decided to use a multiple weighted mud system to stifle the well flow. Because of the flammability hazards , i.e., condensate and natural gas, associated with area immediately surrounding the well where typically the pumping and mud storage equipment would be deployed, it was decided to deploy the equipment at a remote location. A permanently abandoned well location .5 mile due south of the Carlisle State Com #1 was chosen as the point of operation and deployment. The attempt to pump mud down the well bore failed and the operation halted, leaving approximately 3,000 barrels of multiple weighted muds distributed in six 500 barrel frac tanks The majority of these muds were subsequently hauled off location for use elsewhere.

The "Halliburton North Pit," was excavated by the tank rental company so as to contain the rinsate that resulted when the residual tank mud was jetted out with fresh water prior to the tanks being removed from the location. This activity resulted in the unlined pit being partially filled with mud contaminated rinsate and is the subject of this report.

2 Site Information

2.1 Site History

This is the location of the Eidson 56-959 #1, drilled by Great Western Onshore, Inc. and permanently abandoned in March 1993. It is probable that the site was contaminated with Hydrocarbon and Chloride during these operations. It appears that the surrounding grassland, currently used for livestock grazing, was not impacted by the drilling of the Eidson 56-959 #1.

2.2 Legal Description

The legal description of the site is as follows:

Sec 15, T-16S, R35E 990 FWL & 2310 FWL

2.3 Site Characterization

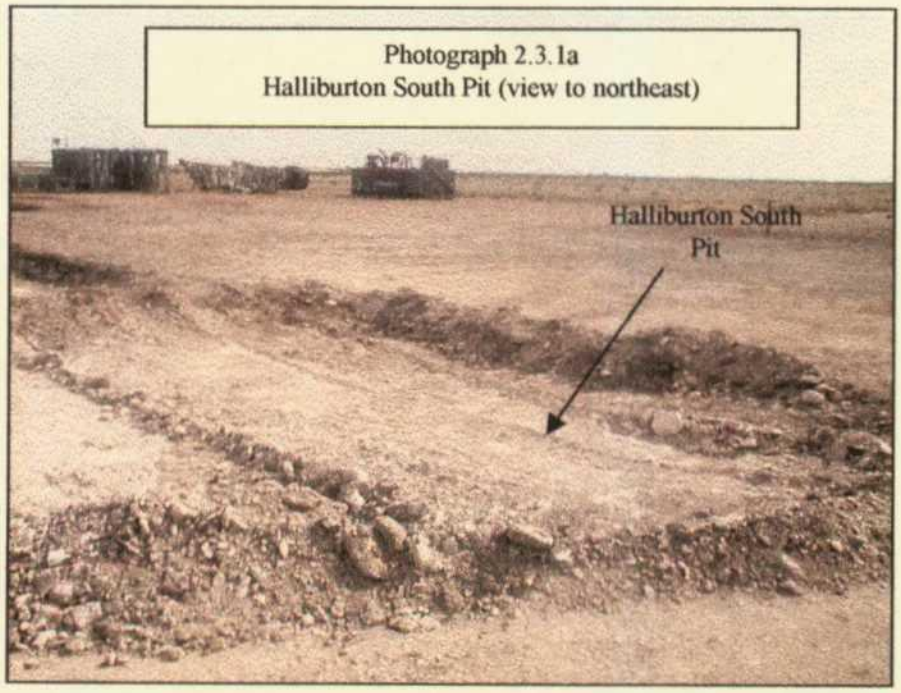
The site is typical of a permanently abandoned drill site, i.e., caliche pad and access road and dry hole marker, however, the decommissioned drilling reserve pit area is not discernable. There was no observable environmental impact on this site by the effluent of the Carlisle State Com #1 well. Well control activities however resulted in the excavation and use of the "Halliburton North Pit." Another, almost identical pit, i.e., "Halliburton South Pit," is located

just south of the north pit and was used for the same purpose. The pits are not contiguous and are therefore treated as separate unlined pits requiring individual "Final Remedial Action Reports" and "NMOCD Pit Remediation and Closure Reports."

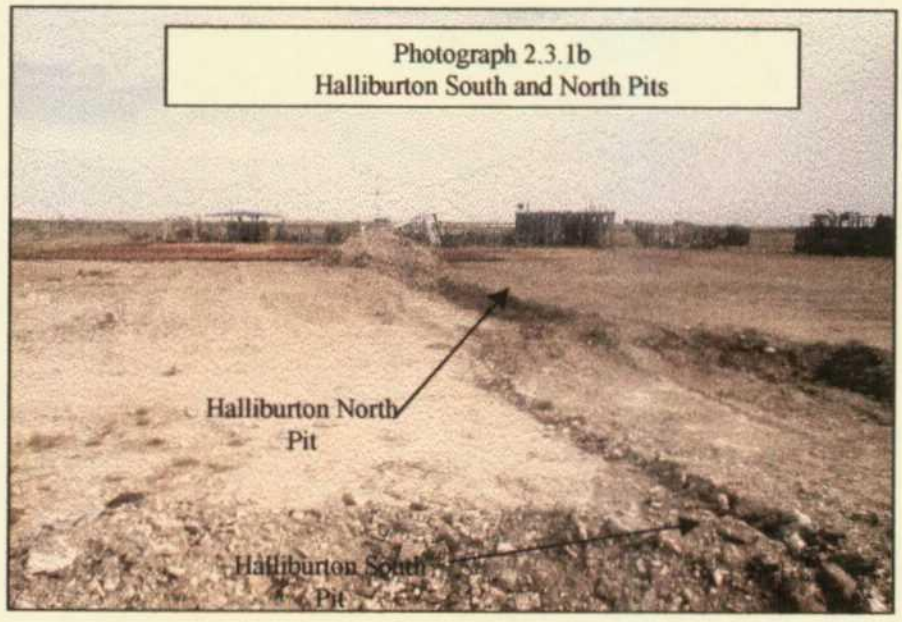
2.3.1 Halliburton North Pit Metrics

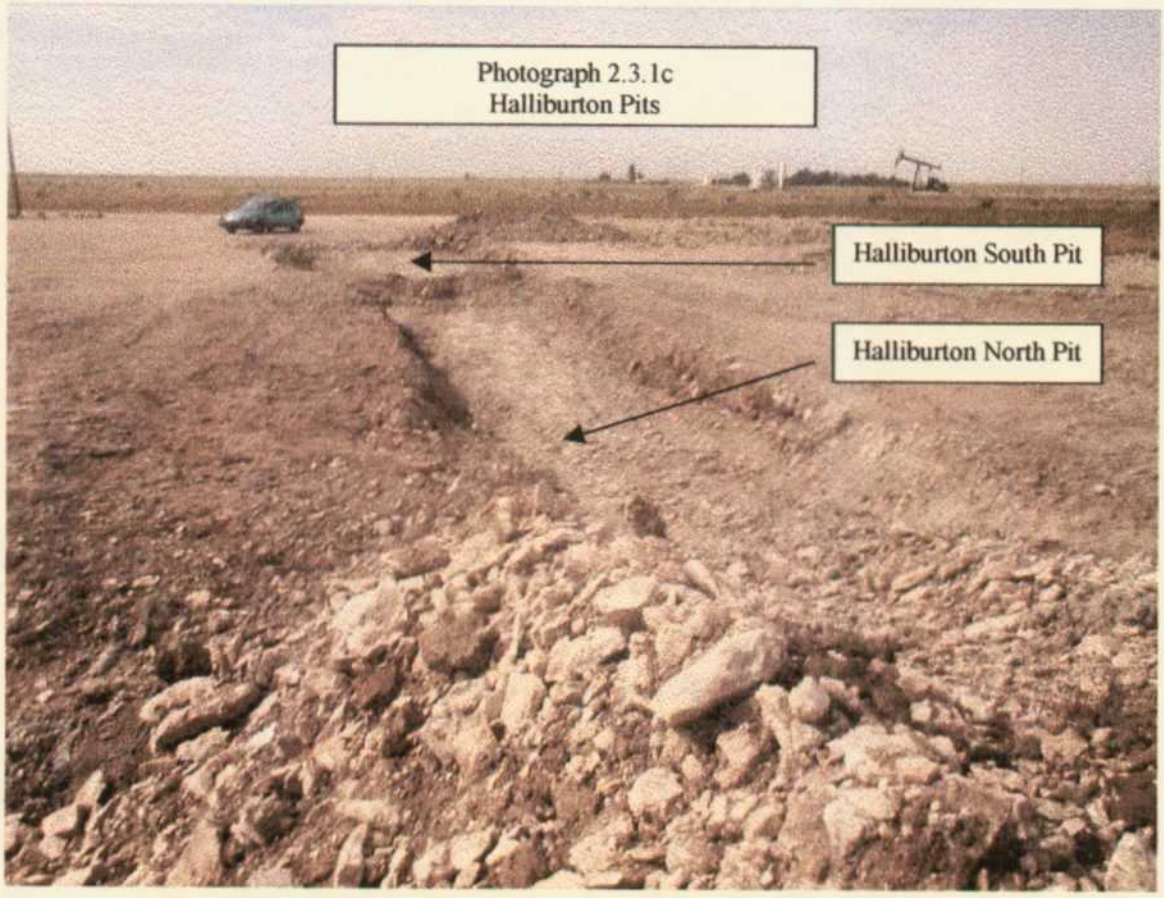
Photograph 2.3.1a shows the Halliburton South Pit looking northeast. Stored on the northern part of the location are various pieces of drilling rig equipment.

Photograph 2.3.1a
Halliburton South Pit (view to northeast)



Photograph 2.3.1b
Halliburton South and North Pits





Photographs 2.3.1b & c illustrate the view of the unlined pits looking north and south, respectively.

2.3.1.1 Pit Dimensions

The Halliburton North Pit is approximately 50 feet long, 10 feet wide, and 2-3 feet deep.

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 Halliburton South 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

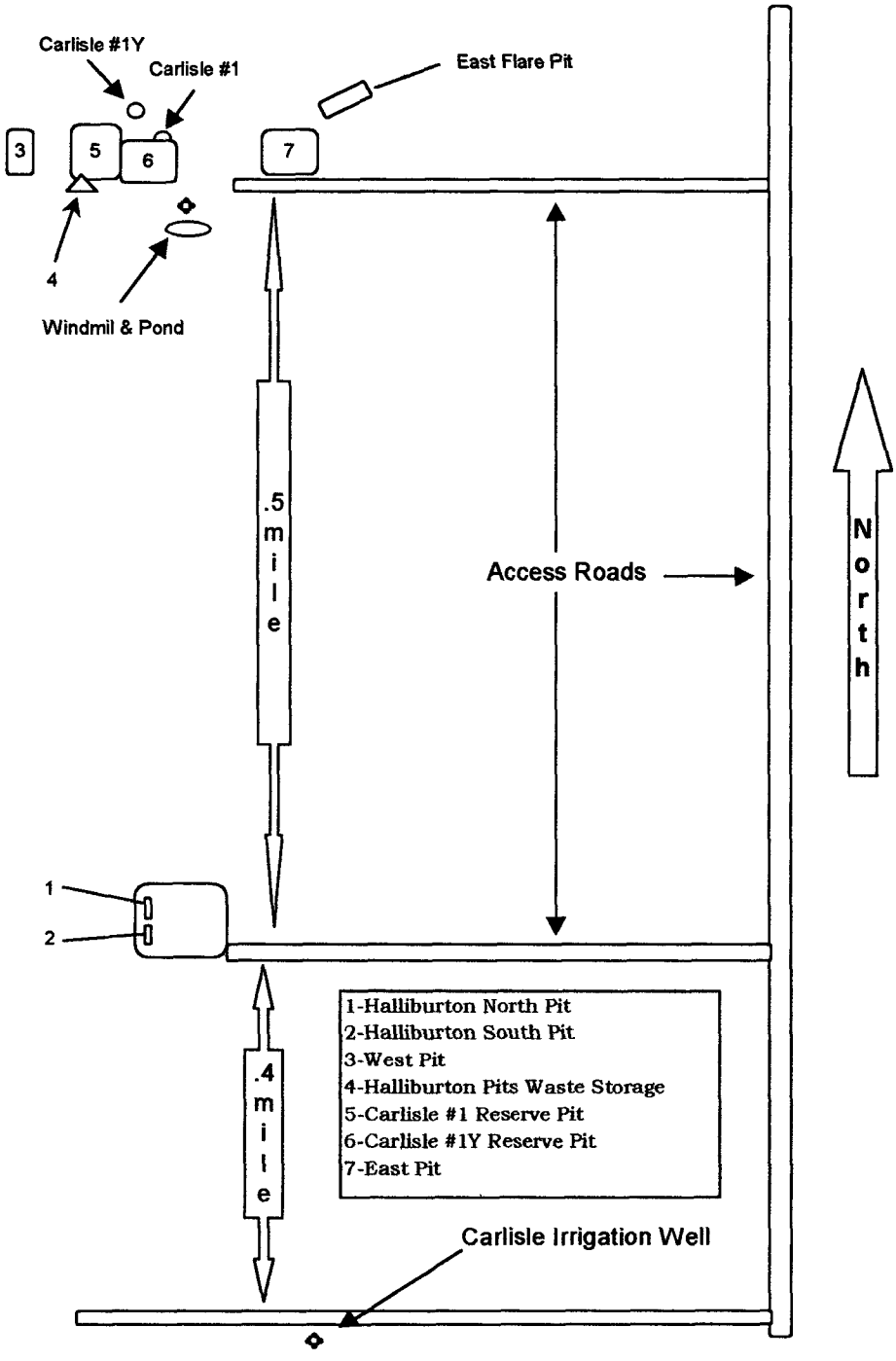


Diagram 2.3.1.2

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 Company at the Townsend Site, TNM-97-04, located 1.5 miles due east of the Halliburton North Pit location. These data are presented in Attachment B.

2.3.3 Well Protection Area (Points = 0)

The Halliburton North Pit is approximately .4 mile (2,112 feet) from the Carlisle Irrigation well located to the southeast and approximately .5 mile (2,640 feet) due south of the Carlisle Windmill and Pond which are adjacent to the Carlisle #1 drilling location. Each water source is >1,000 feet from the pit and neither are considered public water supply wells.

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 due north .5 mile (2,640 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 Halliburton North 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 Halliburton North Pit involved excavation, waste storage, and sampling and analyses.

3.1 Excavation

Liquids were vacuumed from the surface and disposed of in an NMOCD approved facility. The pit contents were then allowed to dry out for approximately 10 days, at which time, a Front-end loader and dump truck excavated the contents and bottom foot of the pit 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 April 29, 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 summarizes the analytical results, the original analyses are submitted in Attachment C.

Halliburton North Pit
Analytical Results Sample ID.# S42998HNP
Sample Date: 4-29-98 Analytical Date: 5-02-98

Parameter	Value	Units	Method
TPH	123	mg/Kg (ppm)	418.1
Benzene	<0.002	mg/Kg (ppm)	8020
Toluene	0.006	mg/Kg (ppm)	8020
Ethyl Benzene	0.003	mg/Kg (ppm)	8020
Xylenes - Total	0.032	mg/Kg (ppm)	8020
Chloride	2800	mg/Kg (ppm)	325.3

4 Conclusion

The unlined Halliburton North 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
SED. 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
SED. 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
SED. 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
OTID 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
[illegible] 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
OTID 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: 325556103252B01
LOC: 16S.35E.11.411331
OTID 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: 04/29/98
Reporting Date: 05/02/98
Project Owner: UMC
Project Name: UMC CARLISLE STATE COM #1
Project Location: 4 MILES WEST OF LOVINGTON, NM

Sampling Date: 04/29/98
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JS
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:		05/02/98	04/30/98	05/01/98	05/01/98	05/01/98	05/01/98
H3615-1	S42998HSP	2010	11300	0.011	0.259	0.099	0.641
H3615-2	S42998HNP	123	2800	<0.002	0.006	0.003	0.032
Quality Control		186	476	0.108	0.104	0.104	0.315
True Value QC		200	500	0.100	0.100	0.100	0.300
% Accuracy		93.2	95.0	108	104	104	105
Relative Percent Difference		1.9	0.8	1.8	0	1.1	0.7

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.

5/2/98
Date

H3615.XLS