

CORRESPONDENCE

MISC.

RECEIVED

MAR 26 2004

24 March 2004

Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505

New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
Attn: Bill Olson, Hydrologist
1220 South Saint Francis Street
Santa Fe, New Mexico 87505-3491

Re: Case # 1R0053
Monarch White "A" State #1

Dear Bill:

This letter is to inform you and the State of New Mexico that on 27 February 2004 both monitoring wells located next to the abandon Monarch White "A" State # 1-15 tank battery have been plugged and abandon by Atkins Engineering Associates, Inc., the same company that installed the wells. Attached are two Log of Boring forms on which is a description of how each well was plugged as well as a schematic diagram of each well bore and the plugging materials used. According to Atkins Engineering, this operation is in accordance with state requirements.

Should you require anything further, please contact me at the address below or call me at (405)478-8770 ext 1130.

Sincerely,



Robert C. Lang IV, REM, CEA
Environmental, Health & Safety Manager

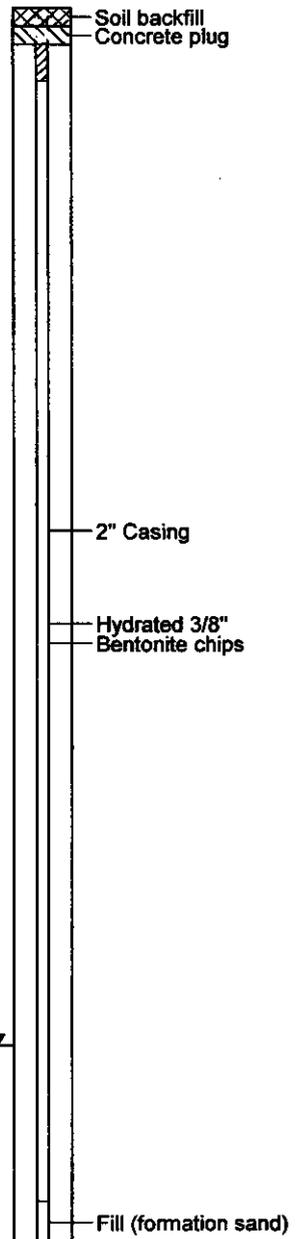
CC: NMOCD - Hobbs, NM
Well file



| | |
|---|---|
| Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202-3156 | <h2 style="margin: 0;">LOG OF BORING Monarch White "A" State 1 MW-2</h2> <p style="text-align: right;">(Page 1 of 1)</p> |
| Chaparral Energy, Inc. 701 Cedar Lake Blvd. Oklahoma City, OK 73114 | Date : 02/27/04 Site Location : T10S, R32E, Sec. 15 Drill Start : 0845 : (Lea County) Drill End : 1035 Auger Type : Hollow Stem Boring Location : 130' SE of MW-1 Logged By : Mort Bates |
| Contact: Robert Lang Job#: CHAPARL.PLG.04 | |

| Depth in Feet | GRAPHIC | USCS | Samples | DESCRIPTION | Lab No. | PID ppm-v |
|--|---------|------|---------|---|---------|-----------|
| 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 | | | | <p>Was not able to pull casing from the well. The casing was grouted in place.</p> <p>Well was plugged inside the casing with 3/8" bentonite chips from 64.69 ft. back to 4 ft. below land surface. At 4 ft. to 2 ft. below land surface, the casing was filled with concrete. The casing was cut off at 2 ft. below land surface and a 1 ft. concrete cap was placed from 1 to 2 ft. below land surface, with 1 ft. of soil coverage.</p> <p>Total depth inside of 2" casing 64.69'</p> <p>Total depth of casing 67'</p> | | |

Well: MW-2



03-01-2004 C:\MTECH\46\CHAP\mw2 bor

Atkins Engineering Associates, Inc.
 P.O. Box 3156
 Roswell, New Mexico 88202-3156

LOG OF BORING Monarch White "A" State 1 MW-1

(Page 1 of 1)

Chaparral Energy, Inc.
 701 Cedar Lake Blvd.
 Oklahoma City, OK 73114

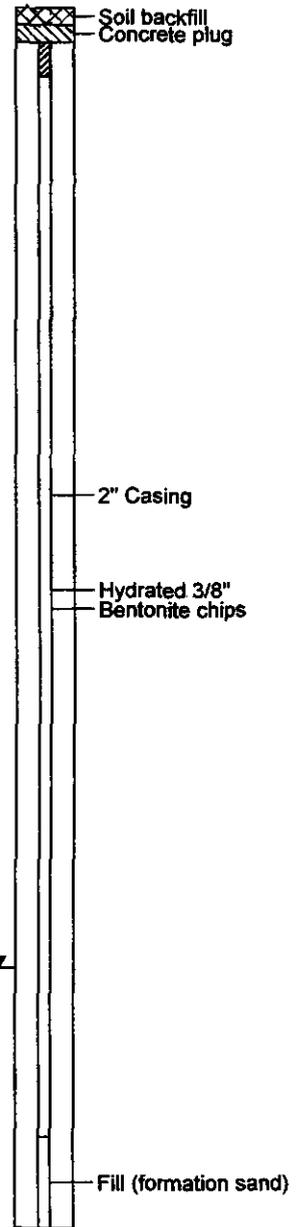
Date : 02/27/04
 Drill Start : 0845
 Drill End : 1035
 Boring Location : SE corner of pit

Site Location : T10S, R32E, Sec. 15
 : (Lea County)
 Auger Type : Hollow Stem
 Logged By : Mort Bates

Contact: Robert Lang
 Job#: CHAPARRAL.PLG.04

| Depth in Feet | GRAPHIC | USCS | Samples | DESCRIPTION | Lab No. | PID ppm-v |
|---------------|---------|------|---------|--|---------|-----------|
| 0 | | | | Was not able to pull casing from the well. The casing was grouted in place. | | |
| 5 | | | | Well was plugged inside the casing with 3/8" bentonite chips from 65.66 ft. back to 4 ft. below land surface. At 4 ft. to 2 ft. below land surface, the casing was filled with concrete. The casing was cut off at 2 ft. below land surface and a 1 ft. concrete cap was placed from 1 to 2 ft. below land surface, with 1 ft. of soil coverage. | | |
| 10 | | | | | | |
| 15 | | | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |
| 50 | | | | | | |
| 55 | | | | | | |
| 60 | | | | | | |
| 65 | | | | Total depth inside of 2" casing 65.66' | | |
| 70 | | | | Total depth of well 71' | | |
| 75 | | | | | | |

Well: MW-1





NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor

Jóanna Prukop
Cabinet Secretary

Lori Wrotenbery

Director

Oil Conservation Division

February 3, 2004

Mr. Robert C. Lang
Chaparral Energy, Inc.
701 Cedar Lake Blvd.
Oklahoma City, Oklahoma 73114-7806

**RE: CASE #1R0053
MONARCH WHITE "A" STATE #1**

Dear Mr. Lang:

The New Mexico Oil Conservation Division (OCD) has reviewed Chaparral Energy Inc.'s (Chaparral) October 14, 2003 correspondence titled "CASE #1R0053, REMEDIATION PROJECT, MONARCH WHITE "A" STATE #1-15, SEC. 15-T10S-R32E, LEA COUNTY, NEW MEXICO". This document contains the results of Chaparral's recent ground water monitoring at the White "A" State #1 former unlined pit site and requests closure of the remediation and monitoring actions at the site.

Final closure for the above-referenced pit site is approved on the condition that the site monitor wells be plugged and abandoned by cutting the casing off below ground surface and filling the casing annulus from bottom to top with a cement grout containing 3-5 % bentonite. Please be aware that OCD approval does not relieve Chaparral of responsibility if remaining contaminants pose a future threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve Chaparral of responsibility for compliance with any other federal, state, tribal or local laws and regulations.

If you have any questions, please call me at (505) 476-3491.

Sincerely,


William C. Olson
Hydrologist
Environmental Bureau

cc: Chris Williams, OCD Hobbs District Supervisor
Cody Morrow, NM State Land Office
Mike Griffin, Whole Earth Environmental, Inc.

RECEIVED

14 October 2003

OCT 16 2003

OIL CONSERVATION
DIVISION

New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
Attn: William C. Olson, Hydrologist
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Case #1R0053
Remediation Project
Monarch White "A" State #1-15
Sec. 15-T10S-R32E
Lea County, New Mexico

Dear Mr. Olson:

Per our conversation last July I have found the Monarch White "A" State #1-15 remediation file. Enclosed is a copy of the letter and the attachments sent to you by Mike Griffin back in November 2002 asking that this remediation project be closed and the monitoring wells plugged and abandon. I have attached three tables to outline the progress of the project since the old overflow pit was dug out and closed. We believe the objective has been achieved, the groundwater is clean and protected from any future pollution and having the two monitoring wells remain open is more of a threat to the water table than is the pit we cleaned up. Accordingly, we request your permission to close this project.

Should you require anything further please let us know.

Sincerely,



Robert C. Lang IV, REM, CEA
Environmental, Health & Safety Manager

cc: Mike Griffin, Whole Earth Environmental, Inc.
Chris Williams, NMOCD Hobbs District Supervisor

BTEX Testing

| Date | Well # | Benzene | Toluene | Ethyl-Benzene | m,p,o Xylene |
|-----------|--------|---------|---------|---------------|--------------|
| 13 Jan 01 | A | <0.001 | <0.001 | <0.001 | <0.001 |
| 13 Jan 01 | B | <0.001 | <0.001 | <0.001 | <0.001 |
| 5 Jan 02 | A | <0.001 | <0.001 | <0.001 | <0.001 |
| 5 Jan 02 | B | <0.001 | <0.001 | <0.001 | <0.001 |
| Threshold | Limit | 0.100 | 0.750 | 0.750 | 0.620 |

All results are in mg/l.

Anion, Cation and TDS Testing

| Date | Well# | Ca | K | Mg | Na | Carb. | Bi-Carb | Sulfate | TDS |
|-----------|-------|-----|------|------|------|--------|---------|---------|-----|
| 23 Jan 02 | A | 114 | 3.89 | 12.5 | 124 | <0.100 | 162 | 145 | 855 |
| 23 Jan 02 | B | 116 | 3.98 | 12.8 | 67.0 | <0.100 | 140 | 256 | 940 |

All results are in mg/l.

Chlorides in Water

| Date | Well A | Well B |
|-----------------|--------|--------|
| 13 Jan 01 | NT | NT |
| 5 Jan 02 | NT | NT |
| 23 Jan 02 | 160 | 71.0 |
| 30 Mar 02 | 137 | 71.0 |
| 6 Jun 02 | 84.2 | 70.9 |
| 29 Oct 02 | 65.0 | 70.9 |
| Threshold Limit | 250 | 250 |

All results are in mg/l.



Whole Earth Environmental, Inc.

19606 San Gabriel Houston, Tx. 77084
Tel: 281.492.7077 Fax: 281.646.8996
whearth@iamerica.net

New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Sante Fe NM 87505

November 16, 2002

Attn: Bill Olson

Dear Bill:

Attached, please find a copy of your letter of transmittal dated January 3rd, 2002 along with four quarters of laboratory analytical results along with the associated chain of custody documents for Chaparral Energy White State "A" No. 1 near Tatum, New Mexico.

We've now run four consecutive quarters in which the chloride concentrations within the well bores fall far below NMWQCC standards. We now request that we be allowed to plug the wells in anticipation of final closure of this project.

Thank you for your earliest attention to our request.

Warmest personal regards,

Mike Griffin

Cc: Bob Lang
Chaparral Energy
(attachments)



NEW MEXICO ENERGY, MINERALS and
NATURAL RESOURCES DEPARTMENT

MARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenberg
Director
Oil Conservation Division

May 21, 2001

CERTIFIED MAIL
RETURN RECEIPT NO. 5051-4393

Mr. Robert C. Lang
Chaparral Energy, Inc.
701 Cedar Lake Blvd.
Oklahoma City, Oklahoma 73114-7806

RE: CASE #1R0053
REMEDIATION PROJECT
MONARCH WHITE "A" STATE #1

Dear Mr. Lang:

The New Mexico Oil Conservation Division (OCD) has reviewed Chaparral Energy Inc.'s (CEI) January 18, 2001 correspondence titled "MONARCH CORPORATION, WHITE "A" STATE #1, SEC. 15-T10S-R32E, LEA COUNTY, NEW MEXICO". This document contains the results of CEI's recent ground water monitoring at the White "A" State #1 facility and requests closure of the remediation and monitoring actions at the site.

The sampling results show that concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) in ground water have been below New Mexico Water Quality Control Commission (WQCC) standards. However, the 2000 and 2001 sampling results do not contain the analytical results of the total dissolved solids, (TDS) and cation and anion sampling of ground water from the monitor wells as required in the OCD's August 16, 1999 approval of the ground water monitoring plan. Please submit this required information to the OCD Santa Fe Office by June 21, 2001 with a copy provided to the OCD Hobbs District Office.

The OCD defers comment on CEI's closure request until the OCD has reviewed this information.

Therefore, at this time the OCD cannot approve the final closure of the site. The OCD requires that Chaparral continue sampling ground water from the monitor wells for TDS and major cations and anions according to the OCD's August 16, 1999 monitoring plan approval. The OCD will reconsider issuing final closure approval upon receipt of sampling results of 4 consecutive sampling events where chloride and TDS are below WQCC standards.

If you have any questions, please call me at (505) 476-3491.

Sincerely,



William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Mike Matush, NM State Land Office
Mike Griffin, Whole Earth Environmental, Inc.



To: Bob Lang / Chaparral

From: Mike Griffin / Whole Earth Environmental

Date: January 18, 2000

Subject: Monitor Well testing Results

Enclosed, please find a copy of the test results from samples taken from the White State "A" monitor wells. The "A" sample was taken from the monitor well nearest the pit site, "B" came from the well located down-gradient.

Ten liters of fluid were bailed from each well prior to sample collection. The bailed water was placed within the Burro Pipeline disposal system for subsequent re-injection.

We need one more sample to be taken this time next year. If the sample results show BTEX concentrations falling within the NMWQCC standards, we may apply for final closure.

Please forward these results to:

NMOCD
2040 South Pacheco St.
Sante Fe, NM 87505

Attn: Bill Olson

AND

NMOCD
P.O. Box 1980
Hobbs, NM 88241

Attn: Donna Williams

If you've any questions or comments, please do not hesitate to call.

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 1-281-846-8996

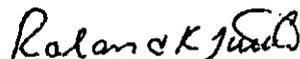
Sample Type: Water
Sample Condition: Intact/ Iced/HCl
Project #: Chaparral MW
Project Name: None Given
Project Location: Tatum, N.M.

Sampling Date: 01/13/00
Receiving Date: 01/18/00
Analysis Date: 01/17/00

| ELT# | FIELD CODE | BENZENE mg/L | TOLUENE mg/L | ETHYLBENZENE mg/L | m,p-XYLENE mg/L | o-XYLENE mg/L |
|-------|------------|-----------------|-----------------|----------------------|--------------------|------------------|
| 22858 | A | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 22859 | B | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

| | | | | | |
|-------|--------|--------|--------|--------|--------|
| % IA | 94 | 90 | 89 | 88 | 87 |
| % EA | 90 | 86 | 86 | 94 | 85 |
| BLANK | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

METHODS: SW 846-8021B.5030


Raland K. Tuttle

1-17-00
Date

**Environmental Lab of Texas, Inc. 12600 West 1-20 East Odessa, Texas 79763
 (915) 563-1800 FAX (915) 563-1713**

Project Manager:
 M.G.A.F. n
 Phone #: (800) 654-4358
 FAX #: (281) 646-8596

Company Name & Address:
 Whole Earth Environ.

Project #:
 Chaparral MW

Project Location:
 Tatom, NM

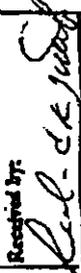
Sampler Signature:


CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

ANALYSIS REQUEST

| | |
|-------------|--|
| DTX # 418.1 | TCLP Metals Ag As Ba Ca Cd Cr Pb Hg Se |
| DTX # 418.1 | TCLP Metals Ag As Ba Ca Cd Cr Pb Hg Se |
| DTX # 418.1 | TCLP Volatiles |
| DTX # 418.1 | TCLP Semi Volatiles |
| DTX # 418.1 | TDS |
| DTX # 418.1 | HCl |

| LAB # (LAB USE ONLY) | FIELD CODE | # CONTAINERS | Volume/Amount | PRESERVATIVE METHOD | | | | | | | | | | DATE | TIME | | |
|-------------------------|------------|--------------|---------------|---------------------|------|-----|--------|-------|-----|------|-----|------|-------|------|------|------|------|
| | | | | WATER | SOIL | AIR | SLUDGE | OTHER | HCL | HNO3 | ICE | NONE | OTHER | | | | |
| 22858 | A | 1 | 40 ml | ✓ | | | | | | | | | | | | 1-13 | 2:30 |
| 22859 | B | 1 | 40 ml | ✓ | | | | | | | | | | | | 1-13 | 2:40 |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

| Requisitioned by: | Date: | Time: | Received by: | REMARKS |
|---|---------|-------|--|---------|
|  | 1-15-00 | | | |
| Requisitioned by: | Date: | Time: | Received by: | |
| | 1-16-00 | 1600 |  | |
| Requisitioned by: | Date: | Time: | Received by: | |
| | | | | |



To: Bob Lang / Chaparral Energy

From: Mike Griffin / Whole Earth Environmental

Date: January 13, 2001

Subject: White "A" State # 1 Monitor Well Test Results

Attached, please find a copy of the chain of custody and laboratory analytical results for the above site. As you will note, all concentrations fall into the non-detect range and thus should qualify for final closure.

We will be drilling at least one monitor well within the next few months within the Tatum area (probably around the end of the first quarter). We would like to coordinate the plugging of the monitor wells with the new drilling to save you some money. I'll call you for final authority as we get closer to the date.

Thanks again for the opportunity of working with you.

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. ELLIOT WERNER
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

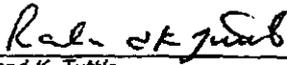
Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 2.8 deg. C
Project #: None Given
Project Name: Chaparral
Project Location: None Given

Sampling Date: 01/05/01
Receiving Date: 01/10/01
Analysis Date: 01/11/01

| ELT# | FIELD CODE | BENZENE mg/L | TOLUENE mg/L | ETHYLBENZENE mg/L | m,p-XYLENE mg/L | o-XYLENE mg/L |
|-------|------------|-----------------|-----------------|----------------------|--------------------|------------------|
| 36130 | #1 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 36131 | #2 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

| | | | | | |
|-------|--------|--------|--------|--------|--------|
| %IA | 87 | 87 | 86 | 91 | 88 |
| %EA | 86 | 87 | 87 | 93 | 91 |
| BLANK | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

METHODS: EPA SW 846-8021B, 5030


Raiaud K. Tuttle

1-11-01
Date

ENVIRONMENTAL LAB OF I, LTD.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ 1.0 deg. C
Project Name: White "A" State #1
Project #: None Given
Project Location: Tatum, NM

Sampling Date: 01/23/02
Receiving Date: 01/30/02
Analysis Date: 01/31/02

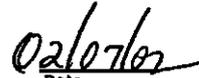
| ELT# | FIELD CODE | Ca mg/L | K mg/L | Mg mg/L | Na mg/L |
|------------|------------|------------|-----------|------------|------------|
| 0202509-01 | North | 114 | 3.89 | 12.5 | 124 |
| 0202509-02 | South | 116 | 3.98 | 12.8 | 67.0 |

| | | | | |
|--------------|-------|-------|-------|-------|
| REPORT LIMIT | 0.010 | 0.050 | 0.001 | 0.010 |
|--------------|-------|-------|-------|-------|

| | | | | |
|-----------------------|--------|--------|--------|--------|
| QUALITY CONTROL | 1.95 | 1.83 | 2.18 | 1.78 |
| TRUE VALUE | 2.00 | 2.00 | 2.00 | 2.00 |
| % INSTRUMENT ACCURACY | 98 | 92 | 109 | 89 |
| SPIKED AMOUNT | 1.00 | 1.00 | 1.00 | 1.00 |
| ORIGINAL SAMPLE | <0.010 | <0.050 | <0.001 | <0.010 |
| SPIKE | 0.980 | 0.863 | 1.15 | 0.846 |
| SPIKE DUP | 0.963 | 0.868 | 1.14 | 0.846 |
| % EXTRACTION ACCURACY | 96 | 87 | 114 | 85 |
| BLANK | <0.010 | <0.050 | <0.001 | <0.010 |
| RPD | 1.68 | 0.64 | 0.87 | 0.04 |

METHODS: SW 846-6010B


Raland K. Tuttle
Caley D. Keene


Date

ENVIRONMENTAL LAB OF I, LTD.

"Don't Treat Your Soil Like Dirt!"

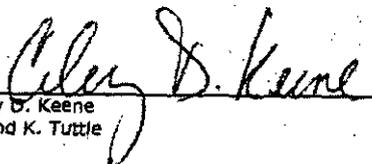
WHOLE EARTH ENVIRONMENTAL
ATTN: MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

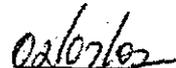
Sample Type: Water
Sample Condition: Intact/ Iced/ 1.0 deg C
Project Name: White "A" State #1
Project #: None Given
Project Location: Tatum, NM

Sampling Date: 01/23/02
Receiving Date: 01/30/02
Analysis Date: See Below

| ELT# | FIELD CODE | Carbonate mg/L | Bicarbonate mg/L | Chloride mg/L | Sulfate mg/L | TDS mg/L |
|-----------------------|------------|-------------------|---------------------|------------------|-----------------|-------------|
| 0202509-01 | North | <0.100 | 162 | 160 | 145 | 855 |
| 0202509-02 | South | <0.100 | 140 | 71.0 | 256 | 940 |
| REPORT LIMIT | | 0.100 | 2.00 | 5.00 | 0.500 | 5.00 |
| QUALITY CONTROL | | 0.020 | 0.020 | 5050 | 50.6 | NA |
| TRUE VALUE | | 0.020 | 0.020 | 5000 | 50.0 | NA |
| % INSTRUMENT ACCURACY | | 100 | 100 | 101 | 101 | NA |
| SPIKED AMOUNT | | NA | NA | 1000 | NA | NA |
| ORIGINAL SAMPLE | | NA | NA | 2320 | NA | NA |
| SPIKE | | NA | NA | 3330 | NA | NA |
| SPIKE DUP | | NA | NA | 3350 | NA | NA |
| % EXTRACTION ACCURACY | | NA | NA | 101 | NA | NA |
| BLANK | | <0.100 | <2.00 | <5.00 | <0.500 | <5.00 |
| RPD | | 0.29 | 0.29 | 0.90 | 0.78 | 4.80 |
| ANALYSIS DATE | | 01/30 | 01/30 | 02/01 | 02/05 | 01/30 |

METHODS: EPA 375.4, 310.1, 160.1, SW 846-9253


Caley D. Keene
Randall K. Tuttle


Date

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

MIKE GRIFFIN
WHOLE EARTH
19606 SAN GABRIEL
HOUSTON, TX 77084

Order#: G0202999
Project:
Project Name: Quarterly Sampling
Location: Tatum, New Mexico

Lab ID: 0202999-01
Sample ID: North

Test Parameters

| <u>Parameter</u> | <u>Result</u> | <u>Units</u> | <u>Dilution Factor</u> | <u>RL</u> | <u>Method</u> | <u>Date Analyzed</u> | <u>Analyst</u> |
|------------------|---------------|--------------|------------------------|-----------|---------------|----------------------|----------------|
| Chloride | 137 | mg/L | 1 | 5.00 | 9253 | 04/09/2002 | SB |

Lab ID: 0202999-02
Sample ID: South

Test Parameters

| <u>Parameter</u> | <u>Result</u> | <u>Units</u> | <u>Dilution Factor</u> | <u>RL</u> | <u>Method</u> | <u>Date Analyzed</u> | <u>Analyst</u> |
|------------------|---------------|--------------|------------------------|-----------|---------------|----------------------|----------------|
| Chloride | 71.0 | mg/L | 1 | 5.00 | 9253 | 04/09/2002 | SB |

Approval: Ralund K Tuttle 4-11-02
Ralund K. Tuttle, Lab Director, QA Officer Date
Coley D. Koene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

MIKE GRIFFIN
WHOLE EARTH
19606 SAN GABRIEL
HOUSTON, TX 77084

Order#: G0203566
Project:
Project Name: Chaparral
Location: Tatum

Lab ID: 0203566-01
Sample ID: North

Test Parameters

| <u>Parameter</u> | <u>Result</u> | <u>Units</u> | <u>Dilution Factor</u> | <u>RL</u> | <u>Method</u> | <u>Date Analyzed</u> | <u>Analyst</u> |
|------------------|---------------|--------------|----------------------------|-----------|---------------|--------------------------|----------------|
| Chloride | 84.2 | mg/L | 1 | 5.00 | 9253 | 6/11/02 | SB |

Lab ID: 0203566-02
Sample ID: South

Test Parameters

| <u>Parameter</u> | <u>Result</u> | <u>Units</u> | <u>Dilution Factor</u> | <u>RL</u> | <u>Method</u> | <u>Date Analyzed</u> | <u>Analyst</u> |
|------------------|---------------|--------------|----------------------------|-----------|---------------|--------------------------|----------------|
| Chloride | 70.9 | mg/L | 1 | 5.00 | 9253 | 6/11/02 | SB |

Approval: Roland K. Tuttle 6-17-02
Roland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezogbe, Lab Tech.
Sara Molina, Lab Tech.

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

WHOLE EARTH
19606 SAN GABRIEL
HOUSTON, TX 77084
281-646-8996

Order#: G0204928
Project: None Given
Project Name: White "A"
Location: Tatum, NM

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

| <u>Lab ID:</u> | <u>Sample :</u> | <u>Matrix:</u> | <u>Date / Time</u> | | <u>Container</u> | <u>Preservative</u> |
|----------------|---------------------------------|----------------|--------------------|------------------|------------------|---------------------|
| | | | <u>Collected</u> | <u>Received</u> | | |
| 0204928-01 | #1 | WATER | 10/29/02 17:10 | 11/5/02 13:00 | 8 oz Jar | Ice |
| | <u>Lab Testing:</u> Chloride | Rejected: No | | Temp: 18 C | | |
| 0204928-02 | #2 | WATER | 10/29/02 17:20 | 11/5/02 13:00 | 8 oz Jar | Ice |
| | <u>Lab Testing:</u> Chloride | Rejected: No | | Temp: 18 C | | |

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

MIKE GRIFFIN
WHOLE EARTH
19606 SAN GABRIEL
HOUSTON, TX 77084

Order#: G0204928
Project: None Given
Project Name: White "A"
Location: Tatum, NM

Lab ID: 0204928-01
Sample ID: #1

Test Parameters

| <u>Parameter</u> | <u>Result</u> | <u>Units</u> | <u>Dilution Factor</u> | <u>RL</u> | <u>Method</u> | <u>Date Analyzed</u> | <u>Analyst</u> |
|------------------|---------------|--------------|------------------------|-----------|---------------|----------------------|----------------|
| Chloride | 65.0 | mg/L | 1 | 5.00 | 9253 | 11/5/02 | SB |

Lab ID: 0204928-02
Sample ID: #2

Test Parameters

| <u>Parameter</u> | <u>Result</u> | <u>Units</u> | <u>Dilution Factor</u> | <u>RL</u> | <u>Method</u> | <u>Date Analyzed</u> | <u>Analyst</u> |
|------------------|---------------|--------------|------------------------|-----------|---------------|----------------------|----------------|
| Chloride | 70.9 | mg/L | 1 | 5.00 | 9253 | 11/5/02 | SB |

Approval: Raland K. Tuttle 11-07-02
Raland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keane, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biczugbe, Lab Tech.
Sara Molina, Lab Tech.

Olson, William

From: Olson, William
Sent: Wednesday, May 01, 2002 12:58 PM
To: 'Bob Lang'
Subject: RE: Monarch (Chaparral Energy) White "A" State #1, Sec. 15-10S-32E, L ea County, NM

Bob,

It would be better to send the results in an annual report. Glad to see the recent chloride results are looking good. If you have any questions let me know.

Sincerely,

William C. Olson
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505
(505) 476-3491

=====

-----Original Message-----
From: Bob Lang [mailto:bobl@chaparralenergy.com]
Sent: Wednesday, May 01, 2002 8:58 AM
To: Bill Olson (E-mail)
Subject: Monarch (Chaparral Energy) White "A" State #1, Sec. 15-10S-32E, L ea County, NM

Bill,

I'm not sure if you want the quarterly water tests every quarter or just wait until the end of the year and send it all in at once. I have the chloride test results on this well in hand for January and April 2002. If you want to see the full Analytical Report I can mail them to you now, or email them to you or wait until December. Your call.

Just for the record, January's Chloride readings were:

MW#1 (North) 160 mg/l
MW#2 (South) 71.0 mg/l

April's were:

MW#1 (North) 137 mg/l
MW#2 (South) 71.0 mg/l

Bob Lang
Environmental, Health & Safety Manager
(405) 478-8770 Ext. 1130 (O)
(405) 478-4162 (F)

bobl@chaparralenergy.com <mailto:bobl@chaparralenergy.com>



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

January 3, 2002

CERTIFIED MAIL
RETURN RECEIPT NO. 7000-1670-0012-5357-8154

Mr. Robert C. Lang
Chaparral Energy, Inc.
701 Cedar Lake Blvd.
Oklahoma City, Oklahoma 73114-7806

RE: CASE #1R0053
REMEDIATION PROJECT
MONARCH WHITE "A" STATE #1

Dear Mr. Lang:

The New Mexico Oil Conservation Division (OCD) has reviewed Chaparral Energy Inc.'s (Chaparral) July 23, 2001 correspondence titled "MONARCH CORPORATION, WHITE STATE "A" #1, SEC. 15-T10S-R32E, LEA COUNTY, NEW MEXICO". This document contains the results of Chaparral's recent ground water monitoring at the White "A" State #1 facility and requests closure of the remediation and monitoring actions at the site.

Ground water in monitor well MW-1 was originally contaminated with chloride in excess of New Mexico Water Quality Control Commission (WQCC) standards. The OCD's August 16, 1999 ground water monitoring plan approval allowed Chaparral to submit the site for closure when the concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) and chloride in ground water are below WQCC standards for 4 consecutive sampling events. While the sampling results show that concentrations of BTEX in ground water have been below New Mexico WQCC standards for 4 consecutive sampling events, Chaparral has provided only one set of chloride and total dissolved solids (TDS) sampling results showing concentrations in ground water below WQCC standards.

Therefore, at this time the OCD cannot approve the final closure of the site. The OCD requires that Chaparral continue sampling ground water from the monitor wells for TDS and major cations and anions according to the OCD's August 16, 1999 monitoring plan approval. The OCD will reconsider issuing final closure approval upon receipt of sampling results of 4 consecutive sampling events where chloride and TDS are below WQCC standards.

If you have any questions, please call me at (505) 476-3491.

Sincerely,

A handwritten signature in black ink, appearing to read "William C. Olson". The signature is fluid and cursive, with the first name "William" being the most prominent part.

William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Mike Matush, NM State Land Office
Mike Griffin, Whole Earth Environmental, Inc.

Chaparral Energy, Inc

701 Cedar Lake Blvd, Oklahoma City, OK 73114-7806
(405) 478-8770 ♦ Fax: (405) 478-1947

OIL CONSERVATION DIV.
01 JUL 27 PM 1:20

July 23, 2001

New Mexico Oil Conservation Division
Attn: Mr. Bill Olson
1220 St. Francis Drive
Santa Fe, NM 87505

Re: Monarch Corporation
White State "A" #1
Sec. 15-T10S-R32E
Lea County, NM

Dear Sir:

Enclosed with this letter is a copy of the Chain of Custody form and the laboratory analysis report for the two monitoring wells located at the captioned site. It appears all parameters are under OCD limits and these monitoring wells can now be plugged and abandoned.

Would you please authorize us to plug these wells? Should you have any questions or other concerns, please contact the undersigned.

Sincerely,



Robert C. Lang IV, REM, CEA
Environmental, Health & Safety Manager

Enclosure

CC: Hobbs, NM Office NMOCI

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

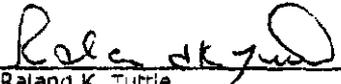
WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996
FAX: 505-397-3591 (motel)

Sample Type: Water
Sample Condition: Intact/ 25 deg C
Project #: None Given
Project Name: Chaparral White State A
Project Location: Tatum, N.M.

Sampling Date: 07/05/01
Receiving Date: 07/07/01
Analysis Date: 07/13/01

| ELT# | FIELD CODE | Ca mg/L | K mg/L | Mg mg/L | Na mg/L |
|------------|-----------------------|------------|-----------|------------|------------|
| 0101099-01 | North | 115 | 5.33 | 13.5 | 148 |
| 0101099-02 | South | 127 | 4.05 | 14.2 | 43.9 |
| | REPORT LIMIT | 0.01 | 0.05 | 0.001 | 0.01 |
| | QUALITY CONTROL | 5.00 | 4.95 | 5.01 | 5.00 |
| | TRJE VALUE | 5.00 | 5.00 | 5.00 | 5.00 |
| | % INSTRUMENT ACCURACY | 100 | 99 | 100 | 100 |
| | SPIKED AMOUNT | 2.00 | 2.00 | 2.00 | 2.00 |
| | ORIGINAL SAMPLE | <0.01 | <0.05 | <0.001 | <0.01 |
| | SPIKE | 2.00 | 1.76 | 2.10 | 2.02 |
| | SPIKE DUP | 1.98 | 1.76 | 2.09 | 1.98 |
| | % EXTRACTION ACCURACY | 100 | 88 | 105 | 101 |
| | BLANK | <0.01 | <0.05 | <0.001 | <0.01 |
| | RPD | 1.00 | 0.00 | 0.96 | 2.00 |

METHODS: SW846-6010B


Roland K. Tuttle

7-13-01
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996
FAX: 505-397-3591 (motel)

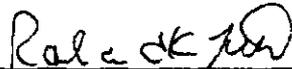
Sample Type: Water
Sample Condition: Intact/ 25 deg. C
Project #: None Given
Project Name: Chaparral White State A
Project Location: Tatum, N.M.

Sampling Date: 07/05/01
Receiving Date: 07/07/01
Analysis Date: See Below

| ELT# | FIELD CODE | TDS mg/L | Conductivity uS/cm | Chloride mg/L | Sulfate mg/L | Carbonate mg/l | Bicarbonate mg/l |
|------------|------------|-------------|-----------------------|------------------|-----------------|-------------------|---------------------|
| 0101099-01 | North | 911 | 1427 | 213 | 274 | <0.10 | 174 |
| 0101099-02 | South | 671 | 976 | 59 | 253 | <0.10 | 144 |

| | | | | | | |
|-----------------|---------|---------|---------|---------|---------|---------|
| REPORTING LIMIT | 10.0 | N/A | 10.0 | 0.5 | 0.10 | 2.00 |
| QUALITY CONTROL | N/A | 1439 | 5140 | 41.8 | 0.0205 | 0.0205 |
| TRUE VALUE | N/A | 1413 | 5000 | 50.0 | 0.0200 | 0.0200 |
| % IA | N/A | 102 | 103 | 84 | 103 | 103 |
| RPD | 1.32 | 1.1 | 0.0 | 13.6 | 0.57 | 0.57 |
| BLANK | <10.0 | 8.0 | <10.0 | <0.5 | <0.10 | <2.00 |
| ANALYSIS DATE | 7/10/01 | 7/07/01 | 7/09/01 | 7/11/01 | 7/10/01 | 7/10/01 |

METHODS: EPA 375.4, 310.0, 160.1, 120.1, SW846-9253,


Raiand K. Tuttle

7-13-01
Date

Olson, William

From: Olson, William
Sent: Monday, June 18, 2001 9:53 AM
To: 'Mike @ Whole Earth'
Subject: RE: Case # 1R0053

The below extension request is approved.

From: Mike @ Whole Earth [SMTP:whearth@lamerica.net]
Sent: Friday, June 15, 2001 8:29 AM
To: Bill Olson
Cc: bob Lang
Subject: Case # 1R0053

Bill,

We are in receipt of your letter of May 21st regarding this site and request an extension to your request for additional testing on the monitor wells.

We plan to be in the Tatum area around the first of July and will have a complete addendum to the closure request to you by July 15th.

Thank you in advance for your flexibility.

Mike Griffin



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor

Jennifer A. Salisbury

Cabinet Secretary

Lori Wrotenbery

Director

Oil Conservation Division

May 21, 2001

CERTIFIED MAIL

RETURN RECEIPT NO. 5051-4393

Mr. Robert C. Lang
Chaparral Energy, Inc.
701 Cedar Lake Blvd.
Oklahoma City, Oklahoma 73114-7806

**RE: CASE #1R0053
REMEDICATION PROJECT
MONARCH WHITE "A" STATE #1**

Dear Mr. Lang:

The New Mexico Oil Conservation Division (OCD) has reviewed Chaparral Energy Inc.'s (CEI) January 18, 2001 correspondence titled "MONARCH CORPORATION, WHITE "A" STATE #1, SEC. 15-T10S-R32E, LEA COUNTY, NEW MEXICO". This document contains the results of CEI's recent ground water monitoring at the White "A" State #1 facility and requests closure of the remediation and monitoring actions at the site.

The sampling results show that concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) in ground water have been below New Mexico Water Quality Control Commission (WQCC) standards. However, the 2000 and 2001 sampling results do not contain the analytical results of the total dissolved solids, (TDS) and cation and anion sampling of ground water from the monitor wells as required in the OCD's August 16, 1999 approval of the ground water monitoring plan. Please submit this required information to the OCD Santa Fe Office by June 21, 2001 with a copy provided to the OCD Hobbs District Office.

The OCD defers comment on CEI's closure request until the OCD has reviewed this information.

If you have any questions, please call me at (505) 476-3491.

Sincerely,

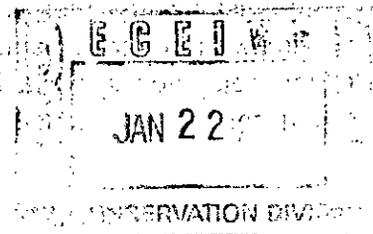
A handwritten signature in black ink, appearing to read "Will Olson". The signature is fluid and cursive, with the first name "Will" and last name "Olson" clearly distinguishable.

William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Mike Matush, NM State Land Office
Mike Griffin, Whole Earth Environmental, Inc.

Chaparral Energy, Inc

701 Cedar Lake Blvd. ♦ Oklahoma City, OK 73114-7806
(405) 478-8770 ♦ Fax: (405) 478-1947



18 January 2001

New Mexico Oil Conservation Division
Attn: Mr. Bill Olson
2040 South Pacheco Street
Santa Fe, New Mexico 87504

Re: Monarch Corporation
White "A" State #1
Sec. 15-T10S-R32E
Lea County, New Mexico

Dear Sir:

Enclosed with this letter is a copy of the final laboratory analysis report for the captioned well. Once again the groundwater from both monitoring wells is non-detect for BTEX. It is our understanding this result complies with all requirements set forth by your office. Chaparral Energy, Inc. now requests permission to bring this project to final closure by plugging and abandoning the monitoring wells and cleaning up what little surface disturbance remains.

Should you require anything further, please contact the undersigned.

Sincerely,

Robert C. Lang IV, REM, CEA
Environmental, Health & Safety Manager

RCL/me

Encl.

cc: Hobbs, NM Office, NMOCD

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. ELLIOT WERNER
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

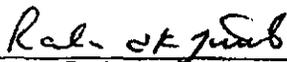
Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 2.8 deg. C
Project #: None Given
Project Name: Chaparal
Project Location: None Given

Sampling Date: 01/05/01
Receiving Date: 01/10/01
Analysis Date: 01/11/01

| ELT# | FIELD CODE | BENZENE mg/L | TOLUENE mg/L | ETHYLBENZENE mg/L | m,p-XYLENE mg/L | o-XYLENE mg/L |
|-------|------------|-----------------|-----------------|----------------------|--------------------|------------------|
| 36130 | #1 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 36131 | #2 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

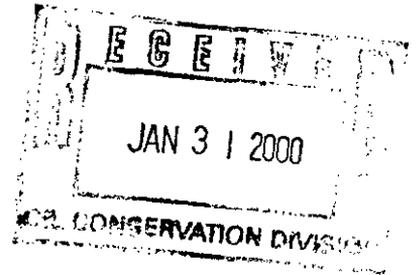
| | | | | | |
|-------|--------|--------|--------|--------|--------|
| %IA | 87 | 87 | 86 | 91 | 88 |
| %EA | 86 | 87 | 87 | 93 | 91 |
| BLANK | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

METHODS: EPA SW 846-8021B ,5030


Raiand K. Tuttle

1-11-01
Date

Chaparral Energy, Inc.
701 Cedar Lake Boulevard
Oklahoma City, Oklahoma 73114-7806
(405) 478-8770 (O) (405) 478-1947 (F)



26 January 2000

State of New Mexico
Oil Conservation Division
Attn: Bill Olsen
2040 South Pacheco Street
Santa Fe, New Mexico 87504

Re: Monarch Corporation
White "A" State #1
Sec. 15-T10S-R32E
Lea County, New Mexico

Dear Sir:

On behalf of Monarch Corporation, I am forwarding a copy of the results of the laboratory analysis completed on the two water samples drawn from the groundwater monitoring wells at the captioned lease. Sample "A" was taken from the monitoring well nearest the pit site, "B" came from the well located down-gradient. BTEX was non-detect in each sample. It remains our understanding that should BTEX be non-detect this time next year we may apply for final closure.

Should you have any questions or concerns, please contact the undersigned.

Sincerely,


Robert C. Lang IV, REM, CEA
Environmental & Special Projects Engineer

RCL/me

cc: Hobbs, NM Office, NMOCD

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 1-281-846-8996

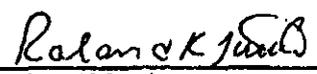
Sample Type: Water
Sample Condition: Intact/Iced/HCl
Project #: Chaparral MW
Project Name: None Given
Project Location: Tatum, N.M.

Sampling Date: 01/13/00
Receiving Date: 01/16/00
Analysis Date: 01/17/00

| ELT# | FIELD CODE | BENZENE mg/L | TOLUENE mg/L | ETHYLBENZENE mg/L | m,p-XYLENE mg/L | o-XYLENE mg/L |
|-------|------------|-----------------|-----------------|----------------------|--------------------|------------------|
| 22858 | A | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 22859 | B | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

| | | | | | |
|-------|--------|--------|--------|--------|--------|
| % IA | 94 | 90 | 89 | 88 | 87 |
| % EA | 90 | 86 | 86 | 94 | 85 |
| BLANK | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

METHODS: SW 846-8021B.5030


Raland K. Tuttle

1-17-00
Date



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

August 16, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-693

Mr. Robert C. Lang
Chaparral Energy, Inc.
701 Cedar Lake Blvd.
Oklahoma City, Oklahoma 73114

**RE: REMEDIATION PROJECT
MONARCH WHITE "A" STATE #1**

Dear Mr. Lang:

The New Mexico Oil Conservation Division (OCD) has reviewed Chaparral Energy Inc.'s (CEI) June 16, 1999 correspondence and another undated correspondence which was received by the OCD on May 20, 1999. These documents, which were submitted on behalf of CEI by their consultant Whole Earth Environmental, Inc., contain the results of CEI's recent ground water monitoring and a long term ground water plan for the White "A" State #1 facility.

The above referenced ground water monitoring plan is approved with the following conditions:

1. During each sampling event ground water from all monitor wells shall be purged, sampled and analyzed for concentrations of benzene, toluene, ethylbenzene, xylene (BTEX), total dissolved solids (TDS) and cations and anions using EPA approved methods and quality assurance/quality control (QA/QC) procedures.
2. All wastes generated shall be disposed of at an OCD approved facility.
3. CEI shall submit the results of the ground water quality monitoring in a comprehensive annual report. The report shall be submitted to the OCD Santa Fe Office by April 1, 2000 with a copy provided to the OCD Hobbs District Office and shall include:
 - a. A description of all monitoring procedures and activities which have occurred including conclusions and recommendations.
 - b. A map showing the location of pits, spills, monitor wells, boreholes and any other pertinent site features.

- c. Summary tables of all past and present ground water quality sampling results including copies of all recent laboratory analytical data sheets and associated QA/QC data.
 - d. Tables listing the water table elevation in each monitor well during each sampling event.
 - e. The disposition of all wastes generated.
4. CEI shall notify the OCD at least 1 week in advance of all scheduled activities such that the OCD has the opportunity to witness the events and split samples.

Please be advised that OCD approval does not limit CEI to the proposed plan should the activities fail to adequately monitor contamination related to CEI's activities, or if contamination exists which is outside the scope of the plan. In addition, OCD approval does not relieve CEI of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions, please call me at (505) 827-7154.

Sincerely,



William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Mike Matush, NM State Land Office
Mike Griffin, Whole Earth Environmental, Inc.

Bill Olson - 0210
Z 274 520 693

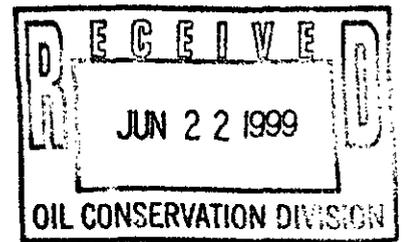
US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

| | |
|---|---------------------|
| Sent to | |
| Street & Number | |
| Post Office, State, & ZIP Code | |
| Postage | \$ |
| Certified Fee | |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | |
| Return Receipt Sent to Whom | |
| Date & Post Office Address | |
| TOTAL Postage & Fees | \$ |
| Postmark | Albuquerque 17 1999 |

PS Form 3800, April 1995



Whole Earth Environmental, Inc.
19606 San Gabriel, Houston, Texas 77084
281/492-7077 • Fax: 281/646-8996



June 16, 1999

New Mexico Oil Conservation Division
2040 S. Pacheco
Sante Fe, NM 87505

Attn: Bill Olson

Enclosed, please find a copy of the second quarter testing results of the monitoring well adjacent to the Chaparral Energy White "A" State # 1 remediation project.

We plan to do another sampling round in September and will pass the results promptly to you.

Warmest regards,

A handwritten signature in black ink, appearing to read "Mike Griffin".

Mike Griffin
President
Whole Earth Environmental, Inc.

cc: Bob Lang / Chaparral Energy

LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 1-281-646-8996

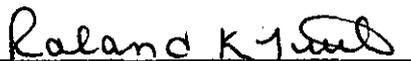
Receiving Date: 06/08/99
Sample Type: Water
Project Name: None Given
Project #: Chaparral WM
Project Location: None Given

Analysis Date: 06/08/99
Sampling Date: 06/08/99
Sample Condition: Iced/Intact

| ELT# | FIELD CODE | BENZENE mg/L | TOLUENE mg/L | ETHYLBENZENE mg/L | m,p-XYLENE mg/L | o-XYLENE mg/L |
|-------|------------|-----------------|-----------------|----------------------|--------------------|------------------|
| 18302 | C-2 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

| | | | | | |
|-------|--------|--------|--------|--------|--------|
| % IA | 93 | 89 | 90 | 88 | 89 |
| % EA | 97 | 94 | 92 | 91 | 91 |
| BLANK | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

METHODS: SW 846-8020.5030

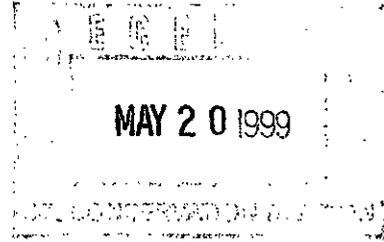

Raland K. Tuttle

6-9-99
Date



Whole Earth Environmental, Inc.

19606 San Gabriel, Houston, Texas 77084
281/492-7077 • Fax: 281/646-8996



**Oil Conservation Division
2040 South Pacheco
Sante Fe, NM 87505**

Attn: Bill Olson

Dear Bill:

Enclosed, please find a copy of a new plat map showing the location of the two monitoring wells located at White State "A" # 1 near Tatum. Both wells were constructed with bright white lid covers and are surrounded by a three foot circle of cement and are thus relatively easy to find once you've arrived at the dry hole marker.

Due to the low concentrations of BTEX and chlorides found within the monitor wells, we propose to conduct annual monitoring at the site for a period of four years. After four consecutive sampling events in which the BTEX and chloride levels test below WQCC standards, we will request final closure of the site.

Thank you again for your prompt review of the closure report.

Warmest personal regards,

A handwritten signature in black ink, appearing to read "Mike Griffin". The signature is written in a cursive, somewhat stylized font.

**Mike Griffin
President
Whole Earth Environmental, Inc.**

**CC: Bob Lang / Chaparral Energy
Donna Williams / OCD, Hobbs**

enclosures



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

May 4, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-648

Mr. Robert C. Lang
Chaparral Energy, Inc.
701 Cedar Lake Blvd.
Oklahoma City, Oklahoma 73114

**RE: REMEDIATION PROJECT
MONARCH WHITE "A" STATE #1**

Dear Mr. Lang:

The New Mexico Oil Conservation Division (OCD) has reviewed Chaparral Energy Inc.'s (CEI) March 2, 1999 "MONARCH WHITE "A" STATE #1 REMEDIATION PROJECT". This document contains the results of CEI's remediation of unlined pits at the White "A" State #1 facility and the investigation of potential ground water contamination at the site.

The soil remediation work conducted to date is satisfactory. However, the report does not contain a map showing the locations of the site monitoring wells in relation to all the pits and other site features. In addition, the report does not contain a work plan for investigation of the extent of ground water contamination resulting from CEI's activities as required in the OCD's December 2, 1998 approval of the remediation plan. Please submit this information to the OCD Santa Fe Office by July 2, 1999 with a copy provided to the OCD Hobbs District Office.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

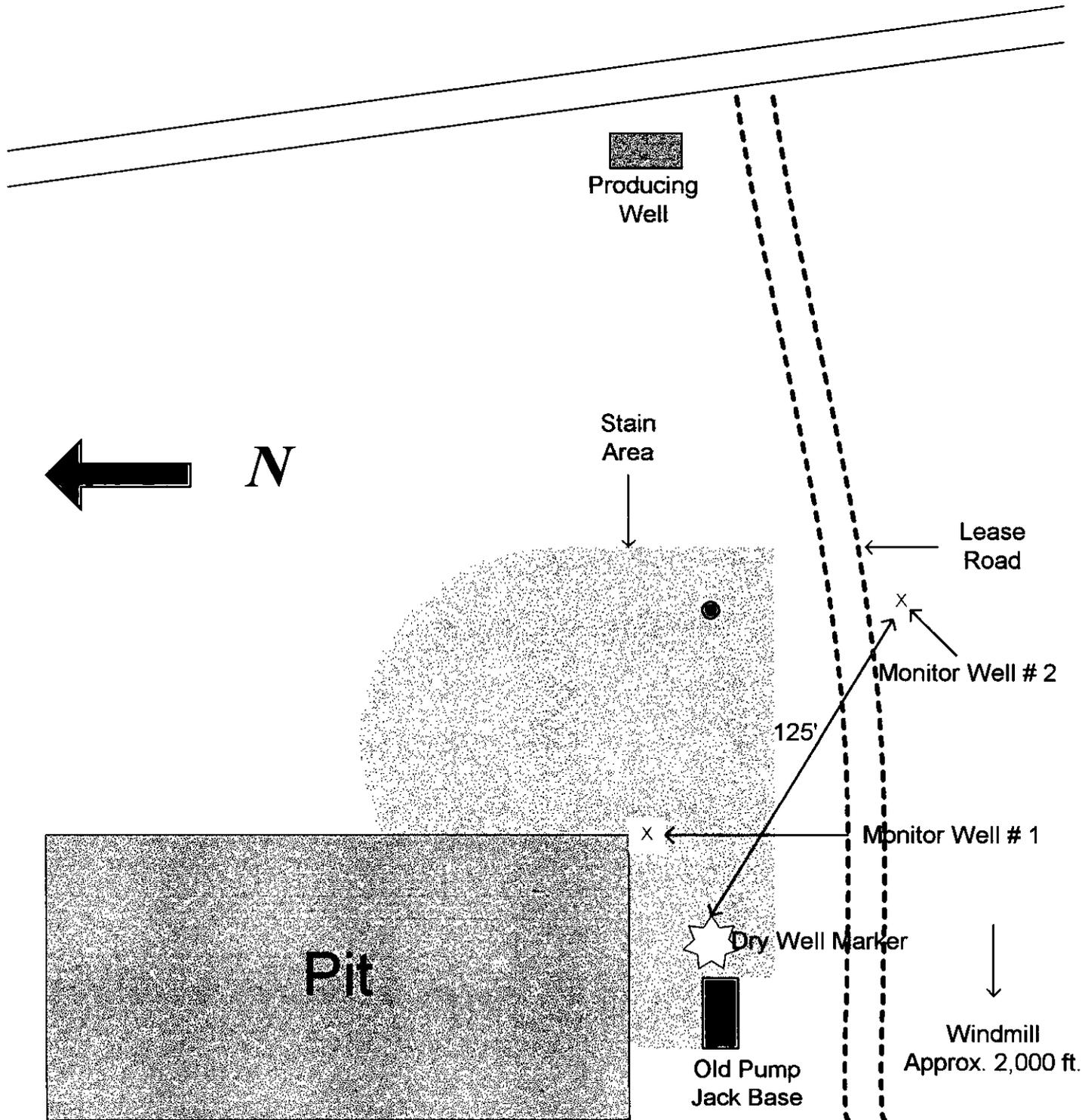
A handwritten signature in cursive script, appearing to read "Will Olson".

William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Mike Matush, NM State Land Office
Mike Griffin, Whole Earth Environmental, Inc.

Monarch White "A" State # 1 Overall View

↑
Windmill
Approx. 900 ft.



Producing Well

← N

Stain Area

Lease Road

125'

Monitor Well # 2

Monitor Well # 1

Dry Well Marker

Old Pump Jack Base

↓
Windmill
Approx. 2,000 ft.



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
 2040 S. PACHECO
 SANTA FE, NEW MEXICO 87505
 (505) 827-7131

Z 274 520 648

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

May 4, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-648

Mr. Robert C. Lang
 Chaparral Energy, Inc.
 701 Cedar Lake Blvd.
 Oklahoma City, Oklahoma 73114

**RE: REMEDIATION PROJECT
 MONARCH WHITE "A" STATE #1**

Dear Mr. Lang:

The New Mexico Oil Conservation Division (OCD) has reviewed Chaparral Energy Inc.'s (CEI) March 2, 1999 "MONARCH WHITE "A" STATE #1 REMEDIATION PROJECT". This document contains the results of CEI's remediation of unlined pits at the White "A" State #1 facility and the investigation of potential ground water contamination at the site.

The soil remediation work conducted to date is satisfactory. However, the report does not contain a map showing the locations of the site monitoring wells in relation to all the pits and other site features. In addition, the report does not contain a work plan for investigation of the extent of ground water contamination resulting from CEI's activities as required in the OCD's December 2, 1998 approval of the remediation plan. Please submit this information to the OCD Santa Fe Office by July 2, 1999 with a copy provided to the OCD Hobbs District Office.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
 Hydrologist
 Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
 Mike Matush, NM State Land Office
 Mike Griffin, Whole Earth Environmental, Inc.

| | |
|---|-----------|
| Sent to | |
| Street & Number | |
| Post Office, State, & ZIP Code | |
| Postage | \$ |
| Certified Fee | |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| TOTAL Postage & Fees | \$ |
| Postmark or Date | |

PS Form 3800 April 1995



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

December 2, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-579

Mr. Robert C. Lang
Chaparral Energy, Inc.
701 Cedar Lake Blvd.
Oklahoma City, Oklahoma 73114

**RE: REMEDIATION WORK PLAN
MONARCH WHITE "A" STATE #1**

Dear Mr. Lang:

The New Mexico Oil Conservation Division (OCD) has reviewed Chaparral Energy Inc.'s (CEI) November 3, 1998 "MONARCH CORPORATION, WHITE "A" STATE #1, SEC 15-T10S-R32E, LEA COUNTY, NEW MEXICO". This document contains CEI's proposed remediation plan for an unlined pit at the White "A" State #1 facility.

The above referenced remediation plan is **approved** with the following conditions:

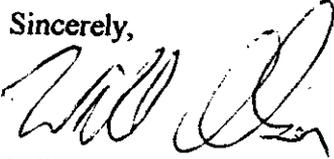
1. CEI will sample and analyze soils from the base of the excavated areas and those blended and returned to the excavations for chloride concentrations using EPA approved methods.
2. The final report will be submitted to the OCD Santa Fe Office with a copy provided to the OCD Hobbs District Office. The final report on the remedial actions will include a work plan for investigation of the extent of ground water contamination resulting from CEI's activities.

Please be advised that OCD approval does not relieve CEI of liability if the proposed work plan fails to adequately remediate contamination related to CEI's activities. In addition, OCD approval does not relieve CEI of responsibility for compliance with any other state, federal or local laws and regulations.

Mr. Robert C. Lang
December 2, 1998
Page 2

If you have any questions, please call me at (505) 827-7154.

Sincerely,



William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Mike Matush, NM State Land Office
Mike Griffin, Whole Earth Environmental, Inc.

Z 274 520 579

US Postal Service
Receipt for Certified Mail
No insurance Coverage Provided.
Do not use for International Mail (See reverse)

| | |
|---|----|
| Sent to | |
| Street & Number | |
| Post Office, State, & ZIP Code | |
| Postage | \$ |
| Certified Fee | |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| TOTAL Postage & Fees | \$ |
| Postmark or Date | |

PS Form 3800, April 1995

3 November 1998

State of New Mexico
Oil Conservation Division
Attn: Bill Olsen
2040 South Pacheco Street
Santa Fe, New Mexico 87504

Re: Monarch Corporation
White "A" State #1
Sec. 15-T10S-R32E
Lea County, New Mexico

Dear Sir:

On behalf of Monarch Corporation, I am forwarding a copy of QP-46A from Whole Earth Environmental, Inc. It is our understanding you have discussed this at length with Mr. Mike Griffin and the two of you are in agreement as to the contents of this protocol. With this in mind, we are prepared to start remediation as soon as we received permission from the State of New Mexico and from Monarch.

Should you have any questions or concerns, please contact the undersigned.

Sincerely,



Robert C. Lang IV, REM, CEA
Environmental & Special Projects Engineer

RCL/me

✓ cc: Hobbs, NM Office, NMOCD



**Pit Remediation Protocol
Chaparral Energy
Tatum Pit Closure Project**

1.0 Purpose

This protocol is provide a detailed outline of the steps to be employed in the remediation and final closure of the Chaparral Energy White "A" State # 1 pit.

2.0 Scope

This protocol is site specific for the above stated site.

3.0 Preliminary

Prior to any field operations, Whole Earth Environmental shall conduct the following activities:

3.1 Client Review

3.1.1 Whole Earth shall meet with cognizant personnel within Chaparral to review this protocol and make any requested modifications or alterations prior to submittal to the State of New Mexico Oil Conservation Division.

3.1.2 Changes to this protocol will be documented and submitted for final review by Chaparral prior to submittal to the Oil Conservation Division.

3.2 Oil Conservation Division Review

3.2.1 Upon client approval, this protocol and associated modeling results will be submitted to the New Mexico Oil Conservation Division for review and comment. Recommended changes will be reviewed by the client prior to implementation.

3.2.2 Any recommended changes effecting costs will require a revised quotation to be issued to the client for approval prior to the commencement of any on-site remediation activity.

4.0 Safety

4.1 Prior to work on the site, Whole Earth shall obtain the location and phone numbers of the nearest emergency medical treatment facility. We will review all

safety-related issues with the appropriate Chaparral personnel, sub-contractors and exchange phone numbers.

4.2 A tailgate safety meeting shall be held and documented each day. All sub-contractors must attend and sign the daily log-in sheet.

4.3 *Anyone allowed on to location must be wearing sleeved shirts, steel-toed boots, and long pants.* Each vehicle must be equipped with two-way communication capabilities.

4.4 Prior to any excavation, the area shall be surveyed with a line finder. If lines are discovered within the area to be excavated, they shall be marked with pin flags on either side of the line at maximum five-foot intervals. The area will be photographed prior to any excavation or fluid removal.

4.5 Each pit area will be swept with a Ludlam 2350 to determine if NORM is present in concentrations greater than $40\mu\text{r} / \text{hr}$.

5.0 Fluid Removal

Prior to any excavation, the pit fluids shall be removed by vacuum truck and transported to the Gandy / Marley, Inc. Landfarm. A shipping manifest and O.C.D. Form C-117-A shall be prepared for each waste load.

6.0 Compaction & Coring

6.1 Soils which are highly saturated with hydrocarbons, (>20% generally), will be excavated and transported to the Gandy / Marley, Inc. Landfarm. A shipping manifest and O.C.D. Form C-117-A shall be prepared for each waste load. Care will be taken to insure that these soils remain within the truck during transport.

6.2 Atkins Engineering Associates, Inc. will drill a monitor well immediately adjacent to the southeast corner of the pit center using a continuous core sampler. The monitor well will be cased and screened in accordance with OCD guidelines. Whole Earth will collect water samples in accordance with our procedures WEQP-76 & WEQP-77. Confirmation samples will be analyzed by Environmental Labs of Texas for BTEX and DRO using EPA Methods 8020, 5030 and 8015m.

6.3 If the monitor well indicates the presence of "free product", two additional monitor wells will be drilled, cased and sampled in accordance with paragraph 6.2 of this protocol. The location of the two additional wells will be a minimum distance of 100' down gradient from the initial monitoring well and at a lateral distance of 50' from a continuation of the initial monitoring well and pit center.

6.4 If free product is discovered within the initial monitoring well, a recovery well will be drilled and developed in the approximate pit center at the completion of all remediation and surface reclamation activities.

7.0 Modeling

7.1 Whole Earth will model the migration potential of the plume on VADSAT using the results of the field screen analyses. If the results reflect a zero percentage probability of the plume impacting ground water, the OCD will be immediately notified and excavation operations begun.

7.2 The confirmation samples will be modeled upon receipt to verify a zero percentage probability. All modeling data will be included within the final closure documentation.

8.0 Excavation & Remediation

8.1 The site shall be excavated to the maximum contaminant concentrations specified in paragraph 8.2 of this protocol. All excavated material will be deposited immediately adjacent to the pit site.

8.2 The bottom of the pit and all four side walls will be tested for TPH and Benzene concentrations using WEQP-06 and WEQP-19. Excavation will continue until such concentrations are <10,000 ppm TPH, <10 ppm benzene and <50 ppm total BTEX or until the maximum practical depth that may be obtained using conventional excavation equipment is reached. Confirmation samples will be collected and analyzed as described in 6.3 of this protocol.

8.3 Upon reaching the required depth and side wall concentrations, the bottom of the pit will be made as smooth as possible with excavation equipment. Sand will be deposited in the bottom of the pit to a minimum thickness of 6".

8.4 A polyethylene liner of a minimum thickness of 30 mils will be spread atop the sand to the pit edge and an additional 6" of sand deposited above it.

8.5 The excavated materials will be mixed and blended with additional topsoils obtained from the area immediately adjacent to the pit until the hydrocarbon concentrations fall below the maximum limits as described in Paragraph 8.2 of this protocol. The remediated materials will then be replaced into the excavated area, compacted and the surface contoured to provide for positive drainage.

8.6 The top six feet of the excavation shall be covered in remediated materials having a maximum TPH concentration of <1,000 ppm and benzene concentrations of <2 ppm. The area will be seeded with a mixture of local grasses.

7.0 Documentation & Reporting

7.1 At the conclusion of the pit remediation project, Whole Earth will prepare a closure report to include the following information:

- A plat map of the location showing the exact location of the pit, the dimensions prior to excavation and the actual excavated dimensions.
- Photographs of the pit prior to excavation, at the point of maximum excavation and after final closure
- Field Sampling Report to include the side wall and pit bottom TPH, BTEX and chloride concentrations after excavation.
- Field Sampling Report to include TPH, BTEX and chloride concentrations of all remediated materials deposited into the pit.
- Daily calibration records of each testing instrument
- Shipping manifests and OCD Form C-117-A
- Risk assessment model and supporting documentation
- M.S.D.S. and permeability certification of liner materials



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

October 6, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-565

Mr. Robert C. Lang
Chaparral Energy, Inc.
701 Cedar Lake Blvd.
Oklahoma City, Oklahoma 73114

**RE: REMEDIATION WORK PLAN
MONARCH WHITE "A" STATE #1**

Dear Mr. Lang:

The New Mexico Oil Conservation Division (OCD) has reviewed Chaparral Energy Inc.'s (CEI) June 23, 1998 "CHAPARRAL ENERGY, MONARCH WHITE "A" STATE #1 REMEDIATION PROJECT" and June 1, 1998 "MONARCH CORPORATION WHITE "A" STATE #1, SEC 15-T10S-R32E, LEA COUNTY, NEW MEXICO". These documents contain the results of soil and ground water samples taken at the site of an unlined pit at the White "A" State #1 facility. The document also contains a proposed remediation plan and proposed alternate soil remediation standards for the site.

Below is the OCD's review of this document:

1. The proposed soil remediation standard of 100,000 mg/l of total petroleum hydrocarbons is not supported by either the model or the current state of contamination at the site. The model does not use actual site data for input to the model but uses a variety of input data assumptions. Some of these assumptions are inaccurate such as the unsaturated zone thickness and others are unknown. In addition, the model fails to accurately predict the current state of ground water contamination existing at the site. The OCD will consider the use of a model for contaminant migration only if actual site characteristics are used and if the model is calibrated and validated by predicting actual site contaminant concentrations in soil and ground water.
2. The document assumes that the contaminants in the pit are not leachable based upon a toxic characteristic leaching procedure (TCLP) laboratory analysis of the pit wastes. This is an inappropriate use of these analyses. The TCLP method is used only to determine if a waste is characteristically hazardous for disposal purposes under United States Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) hazardous waste regulations and is not intended for determining if contamination can leach into ground water. In addition, the site ground water analyses show that contamination has already leached from the pit and contaminated ground water in excess of New Mexico Water Quality Control Commission ground water standards.

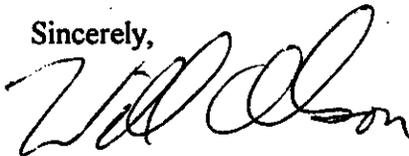
Mr. Robert C. Lang
October 6, 1998
Page 2

3. The soil analytical methods used for determining the benzene, toluene, ethylbenzene and xylene (BTEX) concentrations in soil are not acceptable analytical methods. The methods which were used measure BTEX which has volatilized into the headspace of a ziplock bag and not the concentration of BTEX in the soil. The OCD only accepts EPA approved laboratory methods for determining BTEX contaminant concentrations in soil. This was not an EPA approved method. Since the field analytical methods used at the site do not measure the concentration of BTEX in soil, the results have little scientific value.
4. The proposed ground water investigation plan does not contain proposed well construction information, a map showing proposed monitor well locations nor a complete ground water sampling and analysis program based on potential pit contaminants.

Based upon the above deficiencies, CEI's proposed remediation plan and proposed soil remediation standards are denied. The OCD requires that CEI submit a new soil and ground water investigation and remediation plan to the OCD by November 13, 1998. The plan will be submitted to the OCD Santa Fe Office with a copy provided to the OCD Hobbs District Office

If you have any questions, please call me at (505) 827-7154.

Sincerely,



William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Mike Matush, NM State Land Office
Mike Griffin, Whole Earth Environmental, Inc.

Z 274 520 565

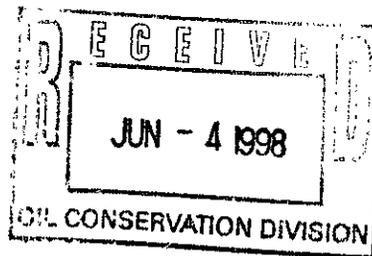
US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

| | |
|---|-----------|
| Sent to | |
| Street & Number | |
| Post Office, State, & ZIP Code | |
| Postage | \$ |
| Certified Fee | |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| TOTAL Postage & Fees | \$ |
| Postmark or Date | |

PS Form 3800, April 1995

1 June 1998

State of New Mexico
Oil Conservation Division
Attn: Bill Olsen
2040 South Pacheco Street
Santa Fe, New Mexico 87504



Re: Monarch Corporation
White "A" State #1
Sec 15-T10S-R32E
Lea County, New Mexico

Dear Sir:

Chaparral Energy, Inc., on behalf of Monarch Corporation, had Whole Earth Environmental, Inc. drill a monitoring well at the captioned location in order to ascertain the extent, if any, of contamination to the soil and groundwater. Enclosed is a copy of their report. Notice of this operation and the results were reported via telephone to Mr. Roger Anderson on 1 May 1998 with a follow up letter the same day.

Whole Earth Environmental, Inc. is in the process of developing plans to affect remediation of the site. As soon as further tests are completed, their recommendations will be forwarded to us and to the NMOCD.

Should you require anything further, please feel free to contact me at (405) 478-8770.

Sincerely,

A handwritten signature in dark ink, appearing to read "R. Lang IV".

Robert C. Lang IV, REM, CEA
Environmental & Special Projects Engineer

RCL/me

cc: NMOCD Dist. 1 - Wayne Price



Whole Earth Environmental, Inc.

19606 San Gabriel, Houston, Texas 77084
713/492-7077 Fax: 713/492-7077

April 29, 1998

Chaparral Energy
701 Cedar Lake Blvd.
Oklahoma City, OK 73114

Attn: Bob Lang

Enclosed, please find a project report for the drilling, installation and analysis of a monitoring well immediately adjacent to the White "A" State #1 pit site. Included within this report is the following:

- ❖ Driller's Log and well construction detail
- ❖ Environmental Laboratories of Tx. test results
- ❖ Chain of Custody form
- ❖ Plat maps of the location
- ❖ Field analytical results
- ❖ Photo detail of well installation & general site conditions
- ❖ Executive Summary

Because of the chloride content of the sampled water, you are required under Rule 116 of the NMOCD regulations to notify the OCD at the District and Sante Fe levels within twenty-four hours of your receipt of this report.

Thank you again for the opportunity of working with you on this very interesting project.

Warmest regards,

A handwritten signature in black ink, appearing to read "Mike Griffin".

Mike Griffin
President

Whole Earth Environmental, Inc.



Site Profile

The site is situated approximately 5.5 miles north of the intersection of US Hwy. 380 and NM State Hwy. 156. The pit lies approximately 150 yards west of Hwy. 156 on gently rolling hills. The surrounding land is classified as semi-arid and is principally used for grazing cattle. There is no agricultural development within five miles of the pit.

The pit area is approximately 210' north to south and 125' east to west. The pit is surrounded with a well-maintained four-strand barbed wire fence. Access to the pit is through an unsecured gate at the southern perimeter. The pit topography is slightly indented to the surrounding terrain and appears to adequately contain any storm water runoff. There is no sign of recently stressed vegetation around the pit area.

There is an area of "hard pack" centered at the southeast corner of the pit. The surface contamination appears as patchy areas covered with a highly weathered, asphalt-like surface coating ranging in thickness from 2-8 cm. There is an abandoned steel reinforced cement pump jack base to the south of the pit and a cement separator base to the southeast of the location.

The pit appears to be uniformly covered with a mixture of "gin trash" and manure to a depth of at least 2' bgl. This mixture is quite "spongy" is likely to bog down any non-tracked equipment brought onto location. Several surface seeps were observed ranging in size from 1-6 sq. ft. The seeps reveal an extremely viscous (almost brittle in 36^oF temperatures) asphaltine compound to be emerging from the pit.

There are no power lines within the immediate area and no posted pipeline crossings within 200 feet of the location.

Monarch White "A"
State # 1
Overall View

↑
Windmill
Approx. 900 ft.



Producing Well

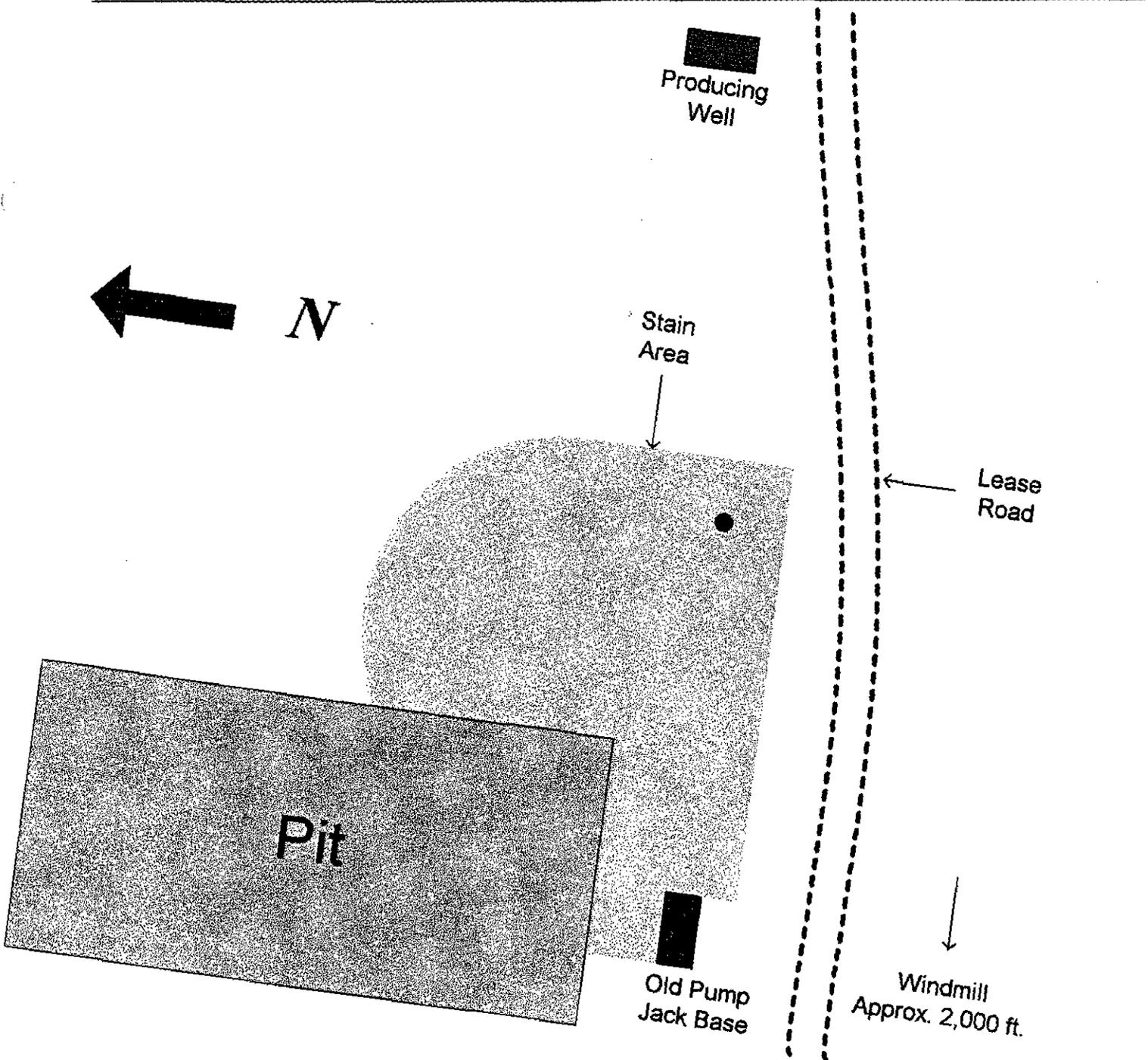
Stain Area

Lease Road

Pit

Old Pump
Jack Base

↓
Windmill
Approx. 2,000 ft.





Driller's Log

This section contains the Driller's Log and well construction details for Monitor Well # 1.

Atkins Engineering Associates, Inc.
P.O. Box 3156
Roswell, New Mexico 88202

LOG OF BORING Monarch Corporation MW-1

(Page 1 of 2)

Choparral Energy, Inc.
701 Cedar Lake Boulevard
Oklahoma City, OK 73114

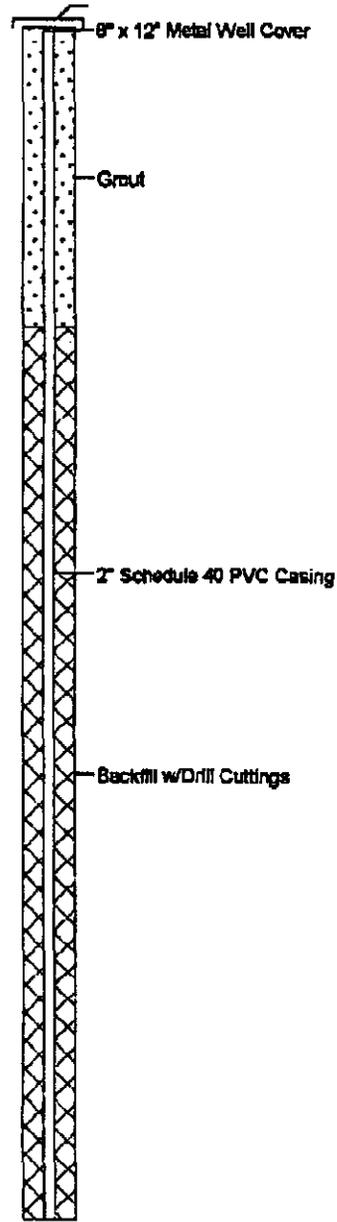
Date : 4-27-98
Drill Start : 8:40 A.M.
Drill End : 5:30 P.M.
Boring Location : SE corner of pit

Site Location : White "A" State #1, Sec. 15
: T10S, R22E, Lea County
Auger Type : Hollow Stem
Logged By : Mort Bates

Contact: Mr. Mike Griffin-Whole Earth
Job #98192

| Depth in feet | GRAPHIC | USCS | Samples | DESCRIPTION | |
|---------------|---------|------|---------|--|--|
| 0 | | | 1 | Caliche Rock w/Silty Clay, Brown, Firm, Damp | |
| 0 | | | | Caliche Clay, Tan, Firm, Dry | |
| 5 | | | | Caliche Rock, White, Hard, Dry | |
| 10 | | | | Caliche Rock w/Clay, Tan, Firm, Dry | |
| 10 | | | | Caliche Rock, White, Hard, Dry | |
| 15 | | | | Caliche Rock w/Clay, Tan, Firm, Damp | |
| 20 | | | | Caliche w/Clay, Tan, Firm, Damp | |
| 25 | | CL | 5 | Silty Sandy Clay, Reddish-Tan, Firm, Damp | |
| 30 | | | | 6 | |
| 35 | | | | 7 | |
| 40 | | | | | |

Well: MW-1
Elev.:



DS-28-1928 c:\mktc\48\mch\in\new\1.bor

Atkins Engineering Associates, Inc.
 P.O. Box 3156
 Roswell, New Mexico 88202

LOG OF BORING Monarch Corporation MW-1

(Page 2 of 2)

Chaparrel Energy, Inc.
 701 Cedar Lake Boulevard
 Oklahoma City, OK 73114

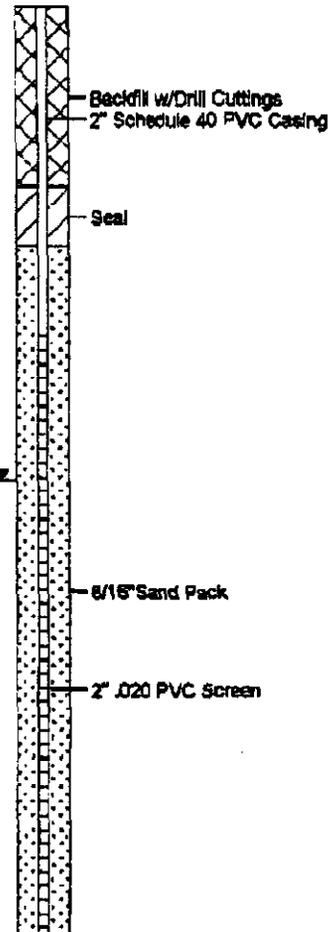
Date : 4-27-98
 Drill Start : 8:40 A.M.
 Drill End : 5:30 P.M.
 Boring Location : SE corner of plf

Site Location : White "A" State #1, Sec. 19
 : T10S, R32E, Lea County
 Auger Type : Hollow Stem
 Logged By : Mori Bates

Contact: Mr. Mike Griffin-Whole Earth
 Job #98192

| Depth in Feet | GRAPHIC | USCS | Samples | DESCRIPTION |
|---------------------|-------------------|------|---------|-----------------------------------|
| 40 | [Hatched pattern] | CL | | Silty Sandy Clay, Tan, Firm, Damp |
| 45 | | | | |
| 50 | [Hatched pattern] | CL | | |
| 55 | | | | WL @ 55.83 |
| 58 | | CL | | Sandy Clay, Tan, Loose, Moist |
| 60 | | | | Sandy Clay, Tan, Firm, Saturated |
| 65 | [Hatched pattern] | CL | | |
| 70 | | | | TD = 71 FT |
| 75 | | | | |
| 80 | | | | |

Well: MW-1
 Elev.:

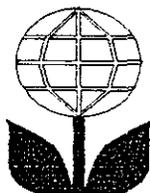


04/29/98 c:\atkins\10\mhw1\lms-1.log



Field Analyses

This section contains the procedures, calibration methods and results of testing the first 30' of depth of soils within the monitor well for TPH and BTEX concentrations. Further testing below the 30' horizon was deemed to be unproductive due to the extremely low concentrations encountered.



Whole Earth Environmental Field Test Analytical Results

| | | | |
|--------------------------|----------------------------|---------------------------|-------------------|
| Facility Name | <u>White "A" State # 1</u> | Date of Collection | <u>4/27/98</u> |
| Pit Type | <u>Emergency Overflow</u> | Date of Analysis | <u>4/27/98</u> |
| Client | <u>Chaparral Energy</u> | Analysist | <u>M. Griffin</u> |
| TPH Analyzer S/N | <u>01152</u> | VOC Analyzer S/N | <u>N/A</u> |
| Chromatograph S/N | <u>3714</u> | E.C. Analyzer S/N | <u>3659251</u> |

Analysis: TPH (418.1)

Analysis: BTEX

Analysis: Chlorides

Analysis:

Sample Location: Monitor Well # 1

| | 5' bgl | 10' bgl | 15' bgl | 20' bgl | 25' bgl | 30' bgl | Water |
|-----------------------------------|--------|---------|---------|---------|---------|---------|--------|
| TPH | 56 | 12 | 22 | ND | ND | ND | N/A |
| E.C.⁽²⁾ | N/A | N/A | N/A | N/A | N/A | N/A | 28.8 |
| TPH | N/A | N/A | N/A | N/A | N/A | N/A | 16,300 |
| Benzene⁽¹⁾ | ND | 0.5 | 1.2 | ND | 0.5 | ND | N/A |
| Toluene⁽¹⁾ | ND | ND | 0.7 | 0.6 | ND | 0.3 | N/A |
| Ethylbenzene⁽¹⁾ | ND | ND | ND | ND | ND | ND | N/A |
| Xylene⁽¹⁾ | ND | ND | ND | ND | ND | ND | N/A |

Notes: 1. Results shown in mg / L (ppm)

2. Results Shown in mmhos / cm

Technician: _____



Laboratory Analyses

This section contains the Chain of Custody form, analytical results and QC data from Environmental Labs of Texas for water samples obtained from Monitor Well # 1.

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 1-281-646-8996

Receiving Date: 04/28/98
Sample Type: Water
Project: Chaparral Energy
Project #: White A State #1
Project Location: Tatum, New Mexico

Analysis Date: 04/28/98
Sampling Date: 04/27/98
Sample Condition: Intact

| ELT# | FIELD CODE | BENZENE mg/L | TOLUENE mg/L | ETHYL.BENZENE mg/L | m.p.-XYLENE mg/L | o.-XYLENE mg/L | DRO C10-C28 mg/L |
|-------|------------|-----------------|-----------------|-----------------------|---------------------|-------------------|------------------------|
| 14288 | 1 | 0.002 | 0.002 | <0.001 | <0.001 | <0.001 | <3 |

| | | | | | | |
|-------|--------|--------|--------|--------|--------|-----|
| % IA | 101 | 100 | 99 | 99 | 103 | 103 |
| % EA | 102 | 100 | 98 | 97 | 101 | ** |
| BLANK | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <3 |

METHODS: SW 846-8020,5030,8015


Michael R. Fowler

4-29-98
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

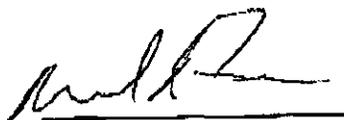
RECEIVING DATE: 04/28/98
SAMPLE TYPE: Water
PROJECT #: White A State #1
PROJECT NAME: Chaparral Energy
PROJECT LOCATION: Tatum, New Mexico

ANALYSIS DATE: 04/28/98
SAMPLING DATE: 04/27/98
SAMPLE CONDITION: INTACT

| ELT# | FIELD CODE | Chloride mg/L |
|-------|------------|------------------|
| 14288 | 1 | 2.785 |

| | |
|-----------------|-------|
| QUALITY CONTROL | 4.998 |
| TRUE VALUE | 5.000 |
| % PRECISION | 100 |

Methods: SW 846-9252


Michael R. Fowler

4-29-98
Date

Environmental Lab of Texas, Inc. 12600 West I-20 East Odessa, Texas 79763
 (915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:
 Mike Griffin
 Phone #: (800) 354-4358
 FAX #: (888) 646-8996

Company Name & Address:
 Chemical Energy
 Project:
 White A State #1
 Project Location:
 Tatum, N.M.

Sampler Signature:
M. J. Griffin

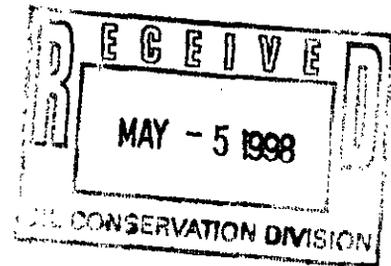
| LAB # (LAB USE ONLY) | FIELD CODE | # CONTAINERS | Volume/Amount | MATRIX | | | | | | | PRESERVATIVE METHOD | | | | SAMPLING | |
|-------------------------|------------|--------------|---------------|--------|------|-----|--------|-------|-----|------|---------------------|------|-------|------|----------|------|
| | | | | WATER | SOIL | AIR | SLUDGE | OTHER | HCL | HNO3 | ICE | NONE | OTHER | DATE | TIME | |
| 14280 | | 1 | | | | | | | | | | | | | 4-27 | 6:30 |
| 14281 | | 1 | | | | | | | | | | | | | | |
| 14282 | | 1 | | | | | | | | | | | | | | |

| BTEX 8120/S030 | TPH #88 8015 D20 | TCP Metals Ag As Ba Cd Cr Pb Hg Se | Total Metals Ag As Ba Cd Cr Pb Hg Se | TCP Volatiles | TCP Semi Volatiles | TOS | RCI | Chlorides |
|----------------|------------------|------------------------------------|--------------------------------------|---------------|--------------------|-----|-----|-----------|
| | | | | | | | | |

| Relinquished by: | Date: | Times: | Received by: | REMARKS: |
|----------------------|---------|--------|-------------------------|----------|
| <i>M. J. Griffin</i> | 4-28-98 | 800 | <i>Calvin K. Smith</i> | |
| Relinquished by: | Date: | Times: | Received by Laboratory: | |

1 May 1998

State of New Mexico
Oil Conservation Division
Attn: Roger Anderson, Environmental Bureau Chief
2040 South Pacheco Street
Santa Fe, New Mexico 87504



Re: Monarch Corporation
White "A" State #1
Sec 15-T10S-R32E
Lea County, New Mexico

Dear Sir:

On 27 April 1998, after earlier notifying your District 1 office of our intent, Chaparral Energy, Inc., on behalf of Monarch Corporation, had Whole Earth Environmental supervise the drilling of a monitoring well at the southeast corner (down gradient side) of an old sludge pit the state wants remediated. Atkins Engineering was hired to do the actual drilling and they drilled to a total depth of 70 feet, encountering water at a depth of 55.8 feet. Solid core samples were taken on five-foot intervals to a depth of 30 feet with no field detectable presence of TPH or BTEX. Water samples were taken and properly delivered to Environmental Labs of Texas for analysis. BTEX and TPH concentrations are within the NM water quality standards, but Total Chlorides were found to be 2,765 ppm (see attached laboratory reports).

Whole Earth Environmental, Inc. is in the process of developing plans to affect remediation to New Mexico's standards. As soon as their recommendations are in they will be forwarded to you.

Should you have any questions about what has been done, please feel free to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Lang IV".

Robert C. Lang IV, REM, CEA
Environmental & Special Projects Engineer

cc: NMOCD District 1

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 1-281-646-8996

Receiving Date: 04/28/98
Sample Type: Water
Project: Chaparral Energy
Project #: White A State #1
Project Location: Tatum, New Mexico

Analysis Date: 04/28/98
Sampling Date: 04/27/98
Sample Condition: Intact

| ELT# | FIELD CODE | BENZENE mg/L | TOLUENE mg/L | ETHYLBENZENE mg/L | m,p-XYLENE mg/L | o-XYLENE mg/L | DRO C10-C28 mg/L |
|-------|------------|-----------------|-----------------|----------------------|--------------------|------------------|------------------------|
| 14288 | 1 | 0.002 | 0.002 | <0.001 | <0.001 | <0.001 | <3 |

| | | | | | | |
|-------|--------|--------|--------|--------|--------|-----|
| % IA | 101 | 100 | 99 | 99 | 103 | 103 |
| % EA | 102 | 100 | 98 | 97 | 101 | ** |
| BLANK | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <3 |

METHODS: SW 846-8020,5030,8015



Michael R. Fowler

4-29-98
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

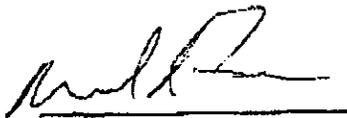
RECEIVING DATE: 04/28/98
SAMPLE TYPE: Water
PROJECT #: White A State #1
PROJECT NAME: Chaparral Energy
PROJECT LOCATION: Tatum, New Mexico

ANALYSIS DATE: 04/28/98
SAMPLING DATE: 04/27/98
SAMPLE CONDITION: INTACT

| ELT# | FIELD CODE | Chloride mg/L |
|-------|------------|------------------|
| 14288 | 1 | 2.785 |

| | |
|-----------------|-------|
| QUALITY CONTROL | 4.998 |
| TRUE VALUE | 5.000 |
| % PRECISION | 100 |

Methods: SW 846-9252


Michael R. Fowler

4-29-98
Date

Olson, William

From: Price, Wayne
Sent: Friday, May 01, 1998 10:40 AM
To: Roger Anderson
Cc: Bill Olson; Chris Williams
Subject: Chaparral Energy White "A" ST #1 Pit Closure

NMOCD District I received verbal notification from Robert Lang of Groundwater impact.

NMOCD instructed them to notify NMOCD SF with verbal and written & CC district.

Olson, William

From: Price, Wayne
Sent: Friday, May 01, 1998 10:40 AM
To: Roger Anderson
Cc: Bill Olson; Chris Williams
Subject: Chaparral Energy White "A" ST #1 Pit Closure

NMOCD District I received verbal notification from Robert Lang of Groundwater impact.

NMOCD instructed them to notify NMOCD SF with verbal and written & CC district.



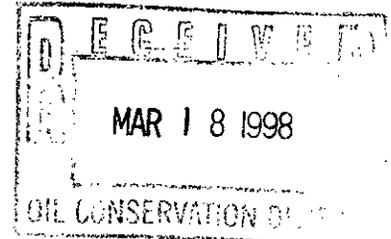
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

March 13, 1998

POST OFFICE BOX 1880
HOBBS, NEW MEXICO 88241-1880
(505) 383-6161

Mr. Robert C. Lang
Chaparral Energy, Inc. (CEI)
701 Cedar Lake Blvd.
Oklahoma City, OK 73114



Re: Pit Closure
White "A" State #1
Sec 15-Ts10s-R32e
Lea County, NM

Dear Mr. Lang:

New Mexico Oil Conservation Division (NMOCD) is in receipt of the letter and attached "Sludge Pit Remediation Prognosis". **Please note your plan is hereby approved with the following additional conditions:**

1. The Monitor well shall be located as close as possible to the pit and located down-gradient. Please note the burden of locating the down-gradient direction will be upon CEI. NMOCD reserves the right to require additional monitors wells if deemed necessary.
2. CEI will be required to install, develop, and purge for sampling, the monitor well pursuant to NMOCD guidelines. Please call this office prior to drilling for guidance on this manner.
3. CEI will be required to perform the following analysis on the first initial set of samples of the groundwater using EPA methods; BTEX (8020), general chemistry such as TDS, PH, Major Cations & Anions, etc., WQCC metals. Please note TPH is not a requirement, therefore it will be CEI's option.
4. **Upon discovery of ground water contamination CEI must notify both the NMOCD Environmental Bureau and the District office within 24 hours.**
5. At the end of the one year project (item #11) but no later than March 15, 1999 CEI will provide to NMOCD a progress and/or closure report to include a detail summary of all the work performed such as; Included shall be the analytical results of representative samples of the pit area, both surface and subsurface, the analyticals of the remediated soils, sludges, etc, shall be BTEX (8020) and TPH(418.1). Manifest of all waste disposed of off-site, pictures, findings, conclusions, recommendations etc. Also CEI must fill out in detail a pit closure form.

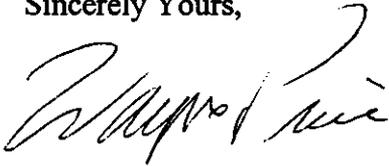
6. The results of the monitor well sampling shall be sent to the NMOCD District office within 30 days of the results being issued by the lab. Please note CEI must seek approval before closing the monitor well. NMOCD will evaluate and determine a long term monitoring program if deemed necessary. NMOCD will notify CEI of its determination.

Please note CEI must demonstrate at some time during or after the one year period the vertical extent of the contamination and closure information as per the guidelines.

CEI is hereby ordered to start this remediation project within 60 days of receipt of this letter.

If you require any further information or assistance please do not hesitate to call (505-393-6161) or write this office.

Sincerely Yours,



Wayne Price-Environmental Engineer

cc: Chris Williams-NMOCD District I Supervisor
Bill Olson-Environmental Bureau, Santa Fe, NM

October 10, 1997

Mr. Ron Brown
Monarch Corporation (MC)
701 Cedar Lake Blvd.
Oklahoma City, OK 73114
405-478-8770

Re: Pit Closure
White "A" State #1
Sec. 15-Ts10s-R32e
Lea Co., New Mexico

Dear Mr. Brown:

New Mexico Oil Conservation Division (NMOCD) is in receipt of the pit assessment and pit closure form submitted by MC dated August 21, 1997. **Your request for a two year extension using the same remediation technology is hereby denied for the following reasons:**

1. As of to date MC has yet to properly define the vertical extent of the contamination pursuant to the NMOCD guidelines.
2. MC's technology of using "gin trash" has apparently not worked. The surface of the pit is unstable, the sludge still remains in the pit and appears that new leaching is taking place.
3. MC's report indicates that sample area #1 had "no hard bottom".
4. MC's pit closure report indicates that your ranking score for this project is 40 which requires a clean-up standard of 100 ppm for TPH. Your soil analysis report show values as high as 130,850 ppm.

Therefore you are hereby ordered to perform one of the two options listed below:

1. Remove the major source of contamination by excavation and remediate on or off-site, or dispose of at an approved NMOCD facility. The excavated area shall be backfilled with remediated soil that meets NMOCD guidelines or clean material. Bottom hole samples shall be taken that include TPH, BTEX., and chlorides; or, (see attached list of NMOCD District I permitted disposal facilities.)
2. Provide to the NMOCD for approval a known and proven risk assessment method that will demonstrate any contaminates left on site will not be a future threat to public health, ground water, and/or the environment. Risk assessments of this type will require monitor wells to be installed for long term monitoring.

Due to the depth of shallow ground water in the area the NMOCD is concerned any additional time might cause the ground waters of the State to be impacted. Therefore, please provide to the NMOCD within 60 days of receipt of this letter a new work plan for NMOCD approval.

If you require any further information or assistance please do not hesitate to call (505-393-6161) or write this office.

Sincerely Yours,

Wayne Price-Environmental Engineer
cc: Chris Williams-NMOCD District I Supervisor
Roger Anderson-Environmental Bureau Chief, Santa Fe, NM



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

RECEIVED
96 DE 31 11 8 52

December 26, 1996

POST OFFICE BOX 1880
HOBBS, NEW MEXICO 88241-1880
(505) 393-6161

Chaparral Energy, Inc. (CEI)
10701 N. Broadway Extension
Oklahoma City, Ok 73114

Re: WHITE "A" STATE SLUDGE PIT RECLAMATION
SECTION 15-Ts10S-R32E
LEA COUNTY, NEW MEXICO

Attention: Mr. Ron Brown

New Mexico Oil Conservation Division (NMOCD) approved a pit closure work plan for the above referenced site on October 31, 1995. The submitted plan was approved contingent upon certain approval conditions which included a commitment for CEI to provide a closure report for NMOCD approval.

Please find enclosed our standard pit closure form to be submitted to our office for approval. In order for the NMOCD to properly evaluate your closure please provide all the information requested on the form.

Sincerely yours,

Wayne Price-Environmental Engineer

cc: ~~Bill Olson-NMOCD Environmental Bureau-Santa Fe~~
~~Jerry Sexton-District I Supervisor~~
Gary Wink-Field Rep. II

attachments: - "PIT CLOSURE FORM"



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

OIL CONSERVATION DIVISION
RECEIVED
95 NOV 2 AM 8 52

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

October 31, 1995

Chaparral Energy, Inc.
10701 N. Broadway Extension
Oklahoma City, Ok 73114

Re: WHITE "A" STATE SLUDGE PIT RECLAMATION
SECTION 15-Ts10S-R32E
LEA COUNTY, NEW MEXICO

Attention: Mr. Ron Brown

The New Mexico Oil Conservation Division (NMOCD) District I office is in receipt of Chaparral Energy, Inc. (CEI) Sludge Pit Reclamation plan (attached) submitted for the above referenced facility.

The submitted plan is hereby approved contingent upon the OCD Approval Conditions attached hereto.

Please note the NMOCD recommends voluntary compliance on this matter and urges CEI to inform this office of any problems associated with this project that might cause the remedial actions to deviate from the approved plan.

Please notify our office by contacting Mr. Gary Wink (Head Field Supervisor) at 505-393-6161 when you plan to begin this project.

It is our recommendation that your final report should be no later than one year from today, which would be on October 31, 1996.

If you have any questions or need assistance please do not hesitate to call or write.

Sincerely yours,

Wayne Price-Environmental Engineer

cc: Bill Olson-NMOCD Environmental Bureau-Santa Fe
Jerry Sexton-District I Supervisor
Gary Wink-Field Rep. II

attachments: 1- CEI'S SLUDGE PIT RECLAMATION PLAN
2-"OCD APPROVAL CONDITIONS"
3-"PIT CLOSURE FORM"



**WHITE "A" STATE
SLUDGE PIT RECLAMATION
SECTION 15-10S-32E
LEA COUNTY, NEW MEXICO**

1. Haul in 15 loads of cotton spurs, and 1 load of milo stubble, large round bails.
2. Spread out this material about 6" thick covering the pit in 10' square working areas.
3. Haul in 370 yards of cow manure.
4. Spread the manure about 1' thick over the spurs and stubble in the 10' square working areas.
5. With the use of a backhoe, mix the spurs, stubble and manure into the sludge. This should solidify the pit enough to drive the backhoe out onto the pit to keep stirring farther out. May have to use a track hoe for the middle of the pit.
6. Spread Johnson grass seed over pit.
7. Water pit with 1/2" water per week for four months.
8. Have State of New Mexico Conservation Division okay the finished pit closure.

RECEIVED

OCT 20 1995

UCD HUBBS
OFFICE

OCD APPROVAL CONDITIONS
FOR
RCRA EXEMPT
UNLINED PIT CLOSURES

1. The following closure actions will be performed in accordance with OCD's February 1993 "SURFACE IMPOUNDMENT CLOSURE GUIDELINES":
 - a. Vertical and horizontal extent of contamination will be determined either prior to, during or upon completion of remedial actions.
 - b. Contaminated soils will be remediated to the OCD's recommended levels or a risk assessment will be provided which shows that an alternate cleanup level is protective of surface water, ground water, human health and the environment.
 - c. Final soil contaminant concentrations will be determined upon completion of remedial actions.
 - d. Soil samples for verification of completion of remedial actions will be sampled and analyzed for benzene, toluene, ethylbenzene, xylene and total petroleum hydrocarbons.
2. All wastes removed from a specific site will be disposed of at an OCD approved facility.
3. The OCD Santa Fe Office's Environmental Bureau Chief and the OCD Hobbs District Office will be notified within 24 hours of the discovery of ground water contamination related to a pit closure.
4. Upon completion of all closure activities, a completed OCD "Pit Remediation and Closure Report" form containing the results of all pit closure and soil remediation activities will be submitted to the OCD for approval. The report will include the concentrations and application rates of any materials or additives used to enhance bioremediation of the contaminants and the final concentrations of any soils landfarmed onsite or the final disposition of soils removed from the site. To simplify the approval process, the OCD requests that the final pit closure reports be submitted only upon completion of all closure activities including onsite remediation or landfarming of contaminated soils.
5. All original documents will be submitted to the OCD Hobbs Office for approval with copies provided to the OCD Santa Fe Office.
6. OCD approval does not relieve you of liability should closure activities determine that contamination exists which is beyond the scope of the work plan or if the closure activities fail to adequately remediate contamination related to your activities. In addition, OCD approval does not relieve you of responsibility for compliance with other federal, state or local laws and regulations.

Chaparral Energy, Inc.

(405) 749-9992 FAX (405) 749-9996

10701 N. Broadway Extension • Oklahoma City, OK 73114

June 2, 1995

State of New Mexico
Environment Department - Air Quality Section
P.O. Box 26110
Santa Fe, New Mexico 87501

Attn: Mr. Mike Snyder

Re: Application for an Open-Burning Permit

Gentlemen:

Enclosed is an Application for an Open-Burning Permit. The purpose of the application is to allow Chaparral Energy, Inc. to burn off the contents of a small sludge pit which has been in existence at an oil well site since 1964. Please note that this is a one-time operation after which this pit will be back-filled with dirt. Also, it should be noted that when Chaparral Energy, Inc. assumed operations of the oil lease, this sludge pit was already in existence and Chaparral has not dumped any additional materials into the pit. Chaparral is attempting to restore this pit to comply with New Mexico Oil Conservation Division regulations, and burning off this excess sludge is the only feasible and practical method to initiate restoration of the pit. If you have any additional questions, please call either Mark Fischer or Dan Fischer at (405) 749-9992.

Respectfully,

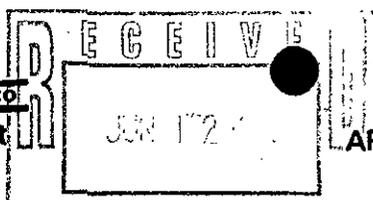


Mark A. Fischer

DWF/db

Enclosure

BPermit.ltr



APPLICATION FOR AN OPEN-BURNING PERMIT



Name of Applicant OIL CONSERVATION DIVISION
Chaparral Energy, Inc. Telephone (405) 749-9992

Address 10701 N. Broadway Extension, Oklahoma City, OK 73114

Date(s) burning requested 6/12/95 through 6/16/95

Exact location and direction to site 330' FEL & 660' FNL of Sec. 15-10S-32E, Lea Co., N.M. 16 miles West of Tatum, N.M., 6 miles North on west side of blacktop.

Type and quantity of material to be burned 155 cu. yards of oilfield pit sludge, low gravity oil and paraffin.

Method of ignition and how burning will be maintained and controlled Mix small area inside pit containing sludge with diesel and start fire. Fire should be self sustained as low gravity oil heats and thins. The fire will be contained within the dirt burn walls surrounding the pit.

Why is burning necessary? To effectively and cost efficiently eliminate a significant amount of pit sludge which will allow further reclamation and restoration of the pit site.

List alternatives to burning and reasons why alternatives to burning are not feasible See attached.

I herewith make application to the Environmental Improvement Division for an open-burning permit under the requirements of Air Quality Control Regulation 301, Sub-section F. I agree to meet all conditions set forth by the Environmental Improvement Division.

Signed Mark A. Fischer Date 6/11/95
Applicant

This application has been received by the Environmental Improvement Division and is APPROVED DENIED for the following reasons:

Per AQCR 301 E, 2. + 6. 1.

This permit is approved for the following dates: _____ and is subject to the following conditions:

1. All burning must take place during the time period of three hours after sunrise to one hour before sunset.
2. The wind direction at the site of burning must be such that the smoke will generally be carried away from public roads and areas of human habitation.
3. All burning will cease when atmospheric conditions are such that an air stagnation advisory is issued for your area by the U.S. Weather Service.
4. All material to be burned shall be as dry as possible and amount of dirt must be minimized on material being burned.
5. No natural or synthetic rubber products or petroleum products shall be burned.
6. All applicable restrictions, codes and ordinances (e.g., fire codes or ordinances), whether temporary or permanent, of other governmental bodies must be complied with.
7. Other conditions: _____

The Division reserves the right to cancel this permit at any time if the public interest so warrants it. If such action occurs, an alternative method of disposal must be used. The holder of this permit is therefore cautioned and charged that he/she, and he/she alone, assumes full responsibility to exercise the utmost care and judgment before setting any fires. The Environmental Improvement Division hereby disclaims any and all liability of itself or it's agents that might be incurred by petitioner's acts.

Signed Michael Schmale Dist. No. _____ Date 6/8/95
Env. Scientist
Name and Title

ATTACHMENT TO APPLICATION FOR AN OPEN-BURNING PERMIT

Alternatives to burning and reasons why alternatives to burning are not feasible:

1. Mix sludge with clean caliche, then load and haul resulting product to an approved waste disposal site.
 - a) Based on conversations with environmental firms, the resulting product is simply stored at an approved site, but is never completely degraded into an environmentally safe substance.
 - b) The estimated cost for this method to fully restore this pit is \$100,000 which makes this an unfeasible option.

2. Mix the sludge with clean caliche, fertilizer and an anaerobic bacteria, then spread the resulting product in a thin layer over open ground. Keep this area wet and periodically turn and re-spread the product which will eventually degrade into an environmentally safe byproduct.
 - a) The large quantity of sludge which has accumulated since 1964, when this pit was initially used as a waste pit, makes this an unfeasible option. It is estimated that approximately six acres of land will be required to spread the resulting product thin enough to biodegrade. The surface owner of the surrounding property is not willing to allow the use of this acreage for this purpose. Also, an adequate supply of water is not available for this large of an area.
 - b) The estimated cost for this method to fully restore this pit is \$40,000 which also makes this an unfeasible option.

3. Hauling the pit sludge to an oil reclaiming facility is not an option because over time, dirt and gravel has become mixed with the sludge which prevents effective processing of the heavy oil. Also, the thickness of the material precludes any method of transporting the material.

**AIR POLLUTION CONTROL
BUREAU
OF
THE NEW MEXICO ENVIRONMENT
DEPARTMENT**

WE HAVE MOVED

OUR NEW ADDRESS IS

**2048 GALISTEO
SANTA FE, NEW MEXICO 87505**

OUR NEW PHONE NUMBERS ARE

VOICE NUMBER: (505) 827-1494

FAX NUMBER: (505) 827-1523

ELECTRONIC BBS: (505) 827-1522