

*Kenneth E. Frost*  
DISTRICT LEAD INSPECTOR

DEC 9 9 1997

*Approved*

Meter Number: 70462  
Location Name: VANDERWART A6  
Location: TN-29 RG-08  
SC-24 UL-A  
2 - Federal  
NMOCD Zone: OUTSIDE  
Hazard Ranking Score: 00

RECEIVED  
APR 14 1997

ON 07/11/97

**RATIONALE FOR RISK-BASED CLOSURE OF PRODUCTION PITS  
LOCATED OUTSIDE OF THE VULNERABLE ZONE  
IN THE SAN JUAN BASIN**

This production pit location was ranked according to the criteria in the New Mexico Oil Conservation Division's Unlined Surface Impoundment Closure Guidelines and received a ranking score of zero. The estimated depth to groundwater is greater than 100-feet beneath ground surface (bgs), the pit is not in a well head protection area, and there are no surface water bodies within 1,000 horizontal feet of the pit location.

The primary source, discharge to the pit has been removed. There has been no discharge to the pits for at least 4 years and the pits have been closed for at least one year.

Each pit was backfilled with clean soil and graded in a manner to divert precipitation away from the excavated area. Minimal infiltration of rainfall is expected. Any rainfall that does infiltrate the ground surface must migrate through clean backfill before reaching the residual hydrocarbons.

There is no source material at the ground surface, so direct contact of hydrocarbons with livestock and the populous is not likely.

In general, outside of the vulnerable area and alluvial valleys, bedrock material is generally encountered within 20 feet of the ground surface. Bedrock material in the San Juan Basin consists of interbedded sandstones, shales and clays. According to Freeze and Cherry, 1979, the hydraulic conductivity of the bedrock material are as follows:

|           |                                 |
|-----------|---------------------------------|
| Sandstone | $10^{-9}$ to $10^{-13}$ cm/sec  |
| Shale     | $10^{-12}$ to $10^{-16}$ cm/sec |
| Clay      | $10^{-12}$ to $10^{-15}$ cm/sec |

Based on this information, the residual hydrocarbons should not migrate to groundwater.

Natural process (bioremediation) are degrading the residual hydrocarbon to carbon dioxide and water and will continue until the source is gone, therefore minimizing any impact to the environment.

Based on the above information, it is highly unlikely that any source material will impact groundwater or ever find an exposure pathway to affect human health and therefore El Paso Field Services Company (EPFS) requests closure of this pit location.

**FIELD PIT SITE ASSESSMENT FORM**

2

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     |                                         |       |                              |     |                              |        |       |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------------------------------|-------|------------------------------|-----|------------------------------|--------|-------|
| <b>GENERAL</b>         | <p>Meter: <u>70462</u> Location: <u>Vanderwart A6</u></p> <p>Operator #: <u>0203</u> Operator Name: <u>AMOCO</u> P/L District: <u>Blanco</u></p> <p>Coordinates: Letter: <u>A</u> Section <u>24</u> Township: <u>29N</u> Range: <u>8W</u></p> <p>Or Latitude _____ Longitude _____</p> <p>Pit Type: Dehydrator <input checked="" type="checkbox"/> Location Drip: _____ Line Drip: _____ Other: _____</p> <p>Site Assessment Date: <u>6-8-94</u> Area: <u>13</u> Run: <u>21</u></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                         |       |                              |     |                              |        |       |
| <b>SITE ASSESSMENT</b> | <p><b>NMOCD Zone:</b> (From NMOCD Maps)</p> <p style="margin-left: 150px;">Inside <input type="checkbox"/> (1)</p> <p style="margin-left: 150px;">Outside <input checked="" type="checkbox"/> (2)</p> <p><b>Land Type:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">BLM</td> <td style="width: 50%; text-align: right;"><input checked="" type="checkbox"/> (1)</td> </tr> <tr> <td>State</td> <td style="text-align: right;"><input type="checkbox"/> (2)</td> </tr> <tr> <td>Fee</td> <td style="text-align: right;"><input type="checkbox"/> (3)</td> </tr> <tr> <td>Indian</td> <td style="text-align: right;">_____</td> </tr> </table> <p><b>Depth to Groundwater</b></p> <p>Less Than 50 Feet (20 points) <input type="checkbox"/> (1)</p> <p>50 Ft to 99 Ft (10 points) <input type="checkbox"/> (2)</p> <p>Greater Than 100 Ft (0 points) <input checked="" type="checkbox"/> (3)</p> <p><b>Wellhead Protection Area :</b></p> <p>Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? <input type="checkbox"/> (1) YES (20 points) <input checked="" type="checkbox"/> (2) NO (0 points)</p> <p><b>Horizontal Distance to Surface Water Body</b></p> <p>Less Than 200 Ft (20 points) <input type="checkbox"/> (1)</p> <p>200 Ft to 1000 Ft (10 points) <input type="checkbox"/> (2)</p> <p>Greater Than 1000 Ft (0 points) <input checked="" type="checkbox"/> (3)</p> <p>Name of Surface Water Body _____</p> <p>(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)</p> <p>Distance to Nearest Ephemeral Stream <input type="checkbox"/> (1) &lt; 100' (Navajo Pits Only)</p> <p style="margin-left: 350px;"><input type="checkbox"/> (2) &gt; 100'</p> <p><b>TOTAL HAZARD RANKING SCORE:</b> <u>0</u> <b>POINTS</b></p> | BLM | <input checked="" type="checkbox"/> (1) | State | <input type="checkbox"/> (2) | Fee | <input type="checkbox"/> (3) | Indian | _____ |
| BLM                    | <input checked="" type="checkbox"/> (1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |                                         |       |                              |     |                              |        |       |
| State                  | <input type="checkbox"/> (2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |                                         |       |                              |     |                              |        |       |
| Fee                    | <input type="checkbox"/> (3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |                                         |       |                              |     |                              |        |       |
| Indian                 | _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                         |       |                              |     |                              |        |       |
| <b>REMARKS</b>         | <p>Remarks : <u>Pit is dry - adjacent to Meter house</u></p> <p style="margin-left: 40px;"><u>Bridge Road</u></p> <p><u>outside V.Z. on Redline &amp; Topo</u></p> <p style="text-align: right;"><u>D. J. ...</u></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |                                         |       |                              |     |                              |        |       |

# FIELD PIT REMEDIATION/CLOSURE FORM

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GENERAL</b>                                        | <p>Meter: <u>70462</u> Location: <u>Vander Wark #A6</u></p> <p>Coordinates: Letter: <u>A</u> Section <u>24</u> Township: <u>29</u> Range: <u>8</u></p> <p>Or Latitude _____ Longitude _____</p> <p>Date Started : <u>8-3-94</u> Run: <u>13</u> <u>21</u></p>                                                                                                                                                                                                      |
| <b>FIELD OBSERVATIONS</b>                             | <p>Sample Number(s): <u>MK 216</u></p> <p>Sample Depth: <u>5</u> Feet</p> <p>Final PID Reading <u>266</u> PID Reading Depth <u>5</u> Feet</p> <p style="text-align: center;">Yes      No</p> <p>Groundwater Encountered <input type="checkbox"/> <input checked="" type="checkbox"/> Approximate Depth _____ Feet</p>                                                                                                                                             |
| <b>CLOSURE</b>                                        | <p>Remediation Method :</p> <p>Excavation <input type="checkbox"/> Approx. Cubic Yards _____</p> <p>Onsite Bioremediation <input type="checkbox"/></p> <p>Backfill Pit Without Excavation <input checked="" type="checkbox"/></p> <p>Soil Disposition:</p> <p>Envirotech <input type="checkbox"/> Tierra <input type="checkbox"/></p> <p>Other Facility <input type="checkbox"/> Name: _____</p> <p>Pit Closure Date: <u>8-3-94</u> Pit Closed By: <u>BEI</u></p> |
| <b>REMARKS</b>                                        | <p><b>Remarks :</b> <u>EPUG lines marked soil brown Strong Hydrocarbon</u></p> <p><u>odor Hot Sand stone 5</u></p>                                                                                                                                                                                                                                                                                                                                                |
| <p>Signature of Specialist: <u>Morgan Kellian</u></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



# FIELD SERVICES LABORATORY

## ANALYTICAL REPORT

### PIT CLOSURE PROJECT - Soil

#### SAMPLE IDENTIFICATION

SAMPLE NUMBER:

Field ID

Lab ID

MTR CODE | SITE NAME:

SAMPLE DATE | TIME (Hrs):

SAMPLED BY:

DATE OF TPH EXT. | ANAL.:

DATE OF BTEX EXT. | ANAL.:

TYPE | DESCRIPTION:

|        |                   |
|--------|-------------------|
| mk216  | 945831            |
| 70462  | N/A               |
| 8-3-94 | 1157              |
| N/A    | N/A               |
| 8-4-94 | 8-4-94            |
| N/A    | N/A               |
| VG     | Brown sand + clay |

REMARKS:

#### RESULTS

| PARAMETER      | RESULT | UNITS | QUALIFIERS |   |      |       |
|----------------|--------|-------|------------|---|------|-------|
|                |        |       | DF         | Q | M(g) | V(ml) |
| BENZENE        |        | MG/KG |            |   |      |       |
| TOLUENE        |        | MG/KG |            |   |      |       |
| ETHYL BENZENE  |        | MG/KG |            |   |      |       |
| TOTAL XYLENES  |        | MG/KG |            |   |      |       |
| TOTAL BTEX     |        | MG/KG |            |   |      |       |
| TPH (418.1)    | 1210   | MG/KG |            |   | 2.01 | 28    |
| HEADSPACE PID  | 266    | PPM   |            |   |      |       |
| PERCENT SOLIDS | 91.6   | %     |            |   |      |       |

— TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 —

The Surrogate Recovery was at N/A % for this sample All QA/QC was acceptable.  
Narrative:

DF = Dilution Factor Used

Approved By: J. J.

Date: 8/12/94

Test Method for  
Oil and Grease and Petroleum Hydrocarbons  
in Water and Soil

Perkin-Elmer Model 1600 FT-IR  
Analysis Report

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14/08/04 12:14

Sample Identification  
00001

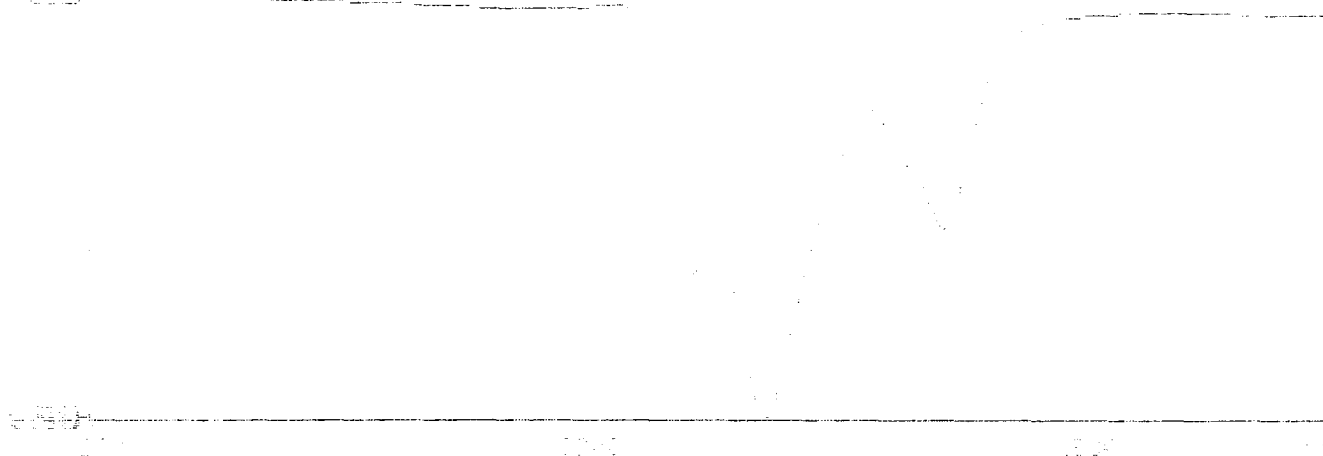
Initial mass of sample g  
0.0

Mass of sample after extraction, g  
0.0

Initial mass of sample, g  
0.0

Mass of sample after extraction, g  
0.0

Perkin-Elmer Model 1600 FT-IR  
00001



**ILLEGIBLE**