

Denny E. Foust
DEPUTY OIL & GAS INSPECTOR

DEC 02 1997

Approved

Meter Number:70517
Location Name:KERNAGHAN B #2
Location:TN-31 RG-08
SC-28 UL-H
2 - Federal
NMOCD Zone:OUTSIDE
Hazard Ranking Score:00

RECEIVED
APR 14 1997

OIL CON. DIV.
DIST. 3

**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.

GENERAL	<p>Meter: <u>70517</u> Location: <u>KERNAGHAN B #2</u></p> <p>Operator #: <u>0203</u> Operator Name: <u>AMOCO</u> P/L District: <u>BLOOMFIELD</u></p> <p>Coordinates: Letter: <u>H</u> Section <u>28</u> Township: <u>31</u> Range: <u>8</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>5.24.94</u> Area: <u>10</u> Run: <u>32</u></p>
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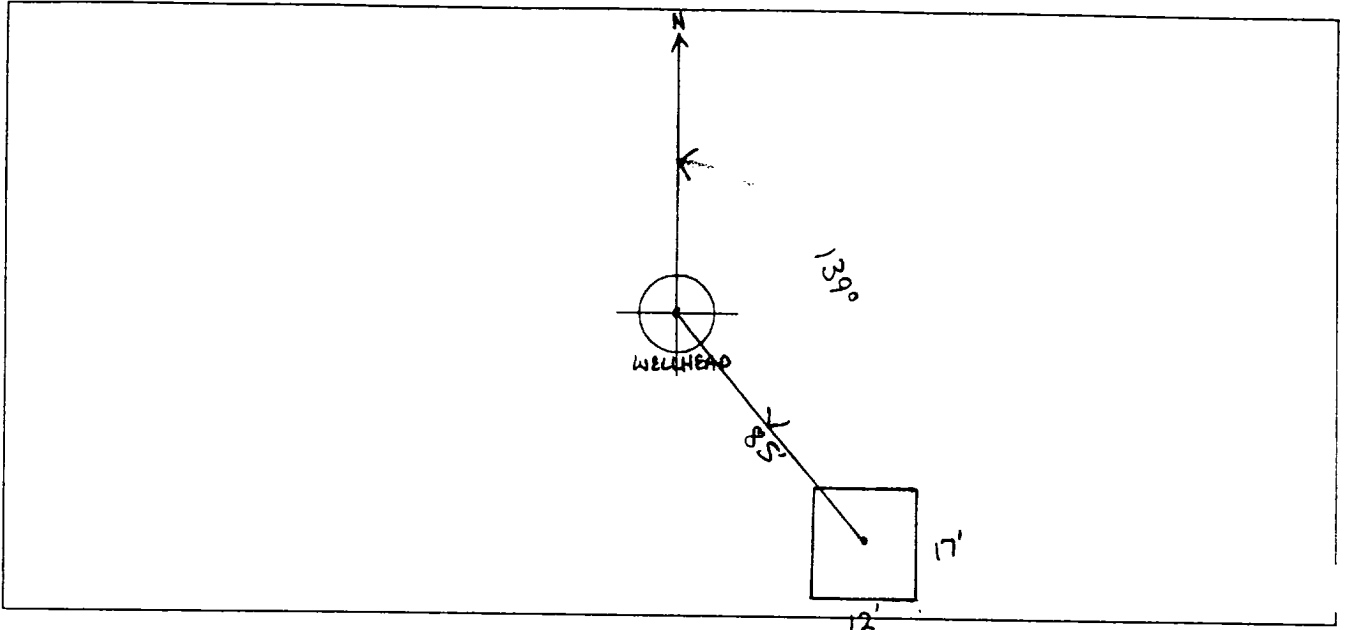
SITE ASSESSMENT	<p>NMOCD Zone: (From NMOCD Maps)</p> <p>Inside <input type="checkbox"/> (1) Outside <input checked="" type="checkbox"/> (2)</p> <p>Land Type: BLM <input checked="" type="checkbox"/> (1) State <input type="checkbox"/> (2) Fee <input type="checkbox"/> (3) Indian _____</p> <p>Depth to Groundwater</p> <p>Less Than 50 Feet (20 points) <input type="checkbox"/> (1) 50 Ft to 99 Ft (10 points) <input type="checkbox"/> (2) Greater Than 100 Ft (0 points) <input checked="" type="checkbox"/> (3)</p> <p>Wellhead Protection Area : 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>Horizontal Distance to Surface Water Body</p> <p>Less Than 200 Ft (20 points) <input type="checkbox"/> (1) 200 Ft to 1000 Ft (10 points) <input type="checkbox"/> (2) 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) < 100' (Navajo Pits Only) <input type="checkbox"/> (2) > 100'</p> <p>TOTAL HAZARD RANKING SCORE: <u>0</u> POINTS</p>
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REMARKS	<p>Remarks : <u>TWO PITS ON LOCATION. PIT IS DRY. WILL CLOSE ONLY ONE.</u> <u>LOCATION IS ON PUMP MESA. REDLINE AND TOPO CONFIRMED LOCATION</u> <u>IS OUTSIDE V.Z.</u></p>
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ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 139° Footage from Wellhead 85'
b) Length : 17' Width : 12' Depth : 2'

ORIGINAL PIT LOCATION



REMARKS

Remarks :

TOOK PICTURES AT 1:56 P.M.
END DUMP

Completed By:

Robert Thompson

Signature

5-24-94

Date

FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL	Meter: <u>70517</u> Location: <u>KERNAGHAN B#2</u> Coordinates: Letter: <u>H</u> Section <u>28</u> Township: <u>3</u> Range: <u>8</u> Or Latitude _____ Longitude _____ Date Started : <u>11/18/94</u> Run: <u>10</u> <u>32</u>
FIELD OBSERVATIONS	Sample Number(s): <u>KD368</u> Sample Depth: <u>12'</u> Feet Final PID Reading <u>784 ppm</u> PID Reading Depth <u>12'</u> Feet Groundwater Encountered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Approximate Depth _____ Feet
CLOSURE	Remediation Method : Excavation <input type="checkbox"/> Approx. Cubic Yards <u>0</u> Onsite Bioremediation <input type="checkbox"/> Backfill Pit Without Excavation <input checked="" type="checkbox"/> Soil Disposition: Envirotech <input type="checkbox"/> Tierra <input type="checkbox"/> Other Facility <input type="checkbox"/> Name: _____ Pit Closure Date: <u>11/18/94</u> Pit Closed By: <u>BEI</u>
REMARKS	Remarks : <u>Dog test hole to 12', took pid sample, closed pit.</u> _____ _____
	Signature of Specialist: <u>[Signature]</u>

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

Perkin-Elmer Model 1600 FT-IR
Analysis Report

94/11/22 10:49

Sample identification
946487

Initial mass of sample, g
2.090

Volume of sample after extraction, ml
25.000

Petroleum hydrocarbons, ppm
11.047

Net absorbance of hydrocarbons (3300 cm⁻¹)
0.727

Petroleum hydrocarbons 3300 cm⁻¹

10:49

