

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

OK
Submit 1 copy to
appropriate
District Office
and 1 copy to
the Santa Fe Office

(Revised 3/9/94)

PIT REMEDIATION AND CLOSURE REPORT

30045-21957

Operator: Hallador Petroleum, LLP Telephone: 1-800-839-5506

Address: 1660 Lincoln Street, Denver, CO 80264

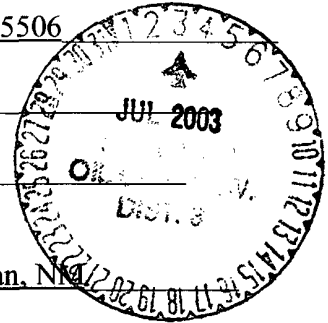
Facility Or: Storey 1A

Well Name

Location: Unit P Sec 34 T 32N R 11W County San Juan, NM

Pit Type: Separator X Dehydrator Other

Land Type: BLM X State Fee Other



Pit Location: Pit dimensions: length 20', width 20', depth 25'
(Attach diagram)

Reference: wellhead X, other

Footage from reference: 80'

Direction from reference: 18 Degrees South of East

Depth To Ground Water	Less than 50 feet	(20 points)
(Vertical distance from	50 feet to 99 feet	(10 points)
contaminants to seasonal	Greater than 100 feet Yes	(0 points)
high water elevation of		<u>0</u>
ground water.)		

Wellhead Protection Area:	Yes	(20 points)
(Less than 200 feet from a private	No	(0 points)
domestic water source, or; less than		<u>0</u>
1000 feet from all other water sources.)		

Distance To Surface Water:	Less than 200 feet	(20 points)
(Horizontal distance to perennial	200 feet to 1000 feet Yes	(10 points)
lakes, ponds, rivers, streams, creeks,	Greater than 1000 feet	(0 points)
irrigation canals and ditches.)		<u>10</u>

RANKING SCORE (TOTAL POINTS): 10

Date Remediation Started: 10/1999 Date completed: 6/2003

Remediation Method: Excavation X Approx. cubic yards 370
(Check all appropriate sections.) Landfarmed X Insitu Bioremediation

Other _____

Remediation Location: Onsite Landfarmed Offsite

(i.e. landfarmed onsite,
name and location of
offsite facility)

General Description of Remedial Action: Contaminated soils were excavated from pit area to a bedrock of shale at approx. 22 feet. Recovered soil was distributed on the location and plowed and tilled periodically over a two year period.

Ground Water Encountered: No X Yes _____ Depth _____

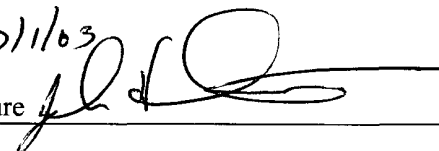
Final Pit:
Closure Sampling:
(if multiple samples,
attach sample results
and diagram of sample
locations and depths)

Sample location Storey 1A, pit excavation bottom
Sample depth 1' below excavated bottom approx. 23' BGS
Sample Date 11/09/00 Sample time 1330
Sample Results
Benzene(ppm) NA
Total BTEX(ppm) NA
Field headspace(ppm) 0.0
TPH 59 mg/Kg

Sample location Storey 1A, side wall
Sample depth 3-4' BGS
Sample Date 11/09/00 Sample time 1340
Sample Results
Benzene(ppm) NA
Total BTEX(ppm) NA
Field headspace(ppm) 0.0
TPH 1000 mg/Kg

Ground Water Sample: Yes _____ No X (If yes, attach sample results)

As an agent for Hallador LLP, I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Date 7/1/03
Signature 

Printed Name: John Hagstrom
and Title: Environ. Technician

Operator: Hallador Petroleum Inc.
Location Name: Storey 1A
Location: Unit P Sec. 34, T32N, R11W, San Juan County, NM
Risk Ranking: 10

**RATIONAL FOR RISK-BASED CLOSURE OF PRODUCTION PITS LOCATED INSIDE OF THE
VULNERABLE ZONE IN 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 ten. The estimated depth to groundwater is greater than 100-feet beneath ground surface (BGS); the pit is not in a well head protection area. There is surface water bodies within 1,000 horizontal feet of the pit location (ephemeral washes).

The primary source of contamination, discharge to the pit has been removed. There has been no discharge to the pit for at least two (2) years. The pit has been closed for at least two years. Bedrock was encountered at approximately 22 feet with no ground water encountered.

The pit has not been back filled with clean soil yet. When back filling is accomplished it will be graded in a manner to divert precipitation away from 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 with livestock and populous is not likely.

In general, outside of the vulnerable area and alluvial valleys, bedrock material is generally encountered within twenty (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 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 effect human health, therefore

Hallador Petroleum Inc. requests closure of this pit location.

District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM
88211
District III
1000 Rio Brazos Rd, Aztec,
NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088

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

Landfarm Remediation and Closure Report

Owner/Operator: Hallador Petroleum, LLP Telephone: 1-800-839-5506

Address: 1660 Lincoln Street, Denver CO 80264

Well Name: Storey 1A

Location: Unit P, Section: 34 T 32N R 11W
County: San Juan, NM

Land Type BLM X, State _____, Fee _____, Other _____

Landfarm location Length: 80' Width: 60'

Reference: Wellhead: x Other: _____

Footage from reference: 20'

Direction from reference: 50° West of North

Refer to attached map for land farm location

GENERAL DISCRIPTION of LANDFARM ACTIVITIES: Contaminated soils from pit area were excavated to bedrock. Excavated soil was distributed on location and plowed to turn, numerous times over twenty four months.

SAMPLING INFORMATION

Type of sample: Grab: _____ Composite: 10 points

Sample Depth : 12"

Sample Date: 6/9/2003 Sample Time: 1420

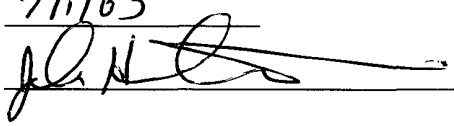
Laboratory Analysis: BTEX _____ (ppm) TPH 345 (ppm)

OVM/PID 0.3 units

Refer to attached map for sample location. Laboratory results attached

AS AN AGENT FOR HALLADOR, LLP, I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

Date: 7/1/03

Signature: 

Name: John Hagstrom

Title: Environmental Technician



DATE 11/9/00
BY JPH

SW 1/4 SEC 34 T32N R11W SAN JUAN COUNTY



612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

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P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

ANALYTICAL REPORT

Date: 17-Jun-03

CLIENT: Souder, Miller & Associates
Work Order: 0306015
Project: 1114128: Storey 1A
Lab ID: 0306015-001A

Client Sample Info: Storey 1A
Client Sample ID: Storey 1A
Collection Date: 6/9/2003 2:20:00 PM
Matrix: SOIL

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS						Analyst: JEM
T/R Hydrocarbons: C10-C28	345	25.0		mg/Kg	1	6/16/2003
GASOLINE RANGE ORGANICS						Analyst: JEM
T/R Hydrocarbons: C6-C10	ND	4.50		mg/Kg	25	6/16/2003

Qualifiers: ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT