

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

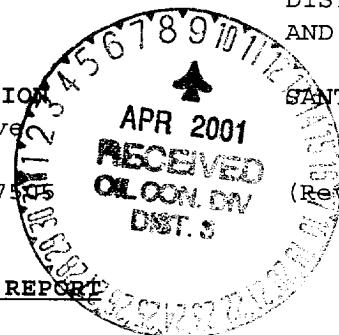
SUBMIT 1 COPY TO  
APPROPRIATE

DISTRICT OFFICE  
AND 1 COPY TO

SANTA FE OFFICE

OIL CONSERVATION DIVISION  
1220 St. Francis Drive

Santa Fe, New Mexico 87505



(Revised 3/9/94)

PIT REMEDIATION AND CLOSURE REPORT

Operator: Hallador Petroleum, LLP

Telephone: 1-800-839-5506

Address: 1660 Lincoln Street, Denver CO. 80264

Well Name: Storey 4

K

Location: Unit P, Sec34 T32N R11W, County: San Juan, NM

Pit Type: Separator ☒ Dehydrator ☐ Other ☐

Land Type: BLM

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

Reference: wellhead ☒

Footage from reference: 30'

Direction from reference: 150 Degrees West of North

**Depth To Ground Water:**

(Vertical distance from  
contaminants to seasonal  
high water elevation of  
ground water)

Less than 50 feet	(20 points)
50 feet to 99 feet	(10 points)
Greater than 100 feet	(0 points)
<u>0</u>	

**Wellhead Protection Area:**

(Less than 200 feet from a private  
domestic water source, or; less than  
1000 feet from all other water sources)

Yes	(20 points)
No	(0 points)
<u>0</u>	

**Distance To Surface Water:**

(Horizontal distance to perennial  
lakes, ponds, rivers, streams, creeks,  
irrigation canals and ditches)

Less than 200 feet	(20 points)
200 feet to 1,000 feet	(10 points)
Greater than 1,000 feet	(0 points) <u>10</u>

RANKING SCORE (TOTAL POINTS): >10

Date Remediation Started: 10/1999

Date Completed: 10/2000

Remediation Method: Excavation ☒

Approx. cubic yards 370

(Check all appropriate sections)

Landfarmed ☒

Insitu Bioremediation \_\_\_\_\_

Remediation Location: Onsite landfarmed

General Description Of Remedial Action: Contaminated soils were removed from the pit area to bedrock of shale at approx. 25 feet. The recovered soils were spread in twelve inch lifts on location and turned ten (10) times over a seven-month period. Following land farm remediation and sampling for clearance, the treated soils were backfilled in the original pit area.

Ground Water Encountered: No ☒ Yes \_\_\_\_\_ Depth \_\_\_\_\_

#### Closure Sampling

Sample Storey 4

Sample location Pit excavation bottom 5 point composite

Sample depth 1' below excavated bottom approximately 25' BGS

Lab ID Storey 4 CPC

Sample date 11/09/00 Sample time 2:45 PM

#### Sample Results

Benzene (ppm) NA

Total BTEX (ppm) NA

Field Headspace (ppm) 0.0

TPH ND

Sample location Side wall 4 point composite

Sample Depth 3-4' BGS

Lab ID Storey 4 SWC

Sample Date 11/09/00 Sample Time 2:55 PM

#### Sample Results

Benzene (ppm) NA

Total BTEX (ppm) NA

Field Headspace 0.0

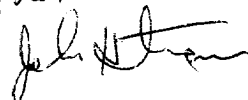
TPH ND

Ground Water Sample: Yes \_\_\_\_\_ No ☒

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

DATE 1/4/2001

SIGNATURE



NAME John Hagstrom

TITLE Environmental Technician

District I

State of New Mexico

SUBMIT 1 COPY  
TO

P.O. Box 1980,  
Hobbs, NM

Energy, Minerals and Natural Resources Department

APPROPRIATE

District II

DISTRICT  
OFFICE

P.O. Drawer DD,  
Artesia, NM 88211

AND 1 COPY TO

District III

OIL CONSERVATION DIVISION

SANTA FE  
OFFICE

1000 Rio Brazos Rd,  
Aztec, NM 87410

1220 St. Francis Drive  
Santa Fe, NM 87505

**Landfarm Remediation and Closure Report**

Owner/Operator: Hallador Petroleum, LLP

Telephone: 1-800-839-5506

Address: 1660 Lincoln Street Denver, CO 80264

Facility or Well Name: Storey 4

Location: Unit P, Section: 34, T32N, R11W

County: San Juan, NM

Land Type BLM X State     , Fee     , Other     

Land farm location Length: 80' Width: 30'

Reference: Wellhead: X Other:     

Footage from reference: 60'

Direction from reference: 180° South of North

Refer to attached map for land farm location



**GENERAL DISCRIPTION of LANDFARM ACTIVITIES:** Soils from pit area were excavated to bedrock (at approx. 25 feet). Soils were distributed on location and plowed/tilled ten times during a seven-month period. Following landfarm remediation and sampling for clearance, the treated soils were backfilled in original pit area.

**SAMPLING INFORMATION**

Type of sample: Grab:      Composite: 10 points

Sample Depth : 0-12"

Sample Date: 09/11/00 Sample Time: 1500

Laboratory Analysis: BTEX      (ppm) TPH ND (ppm)

OVM/PID 0.0 units

Refer to attached map for sample location. Laboratory results attached

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

Date: 4/4/01

Signature: [Signature]

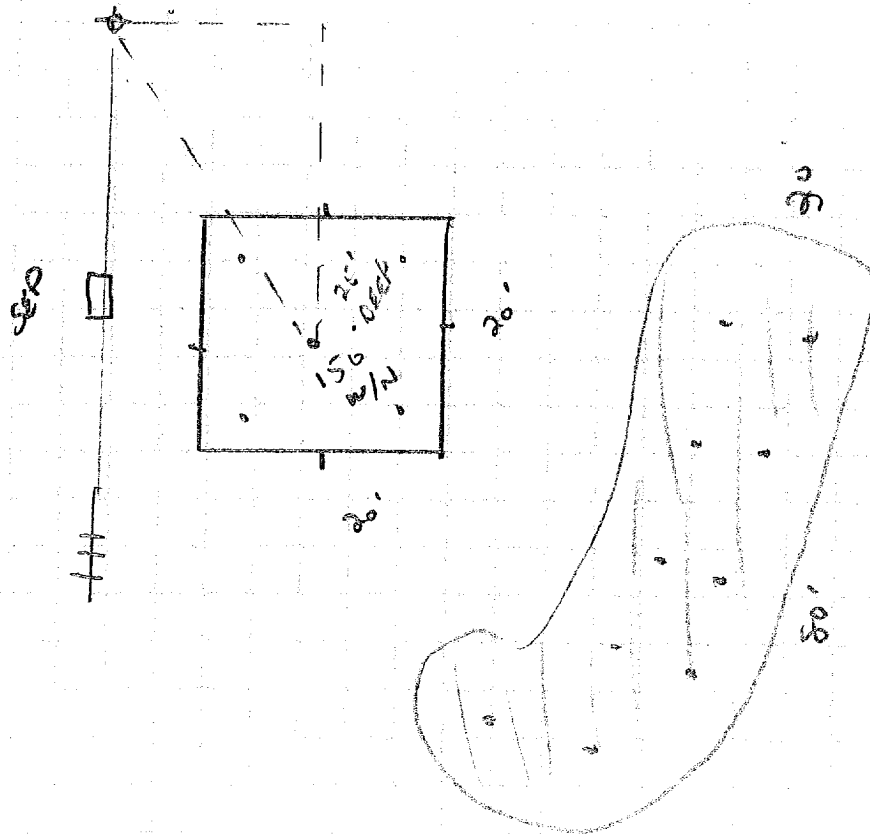
Print Name: John Hagstrom

Title: Environmental Technician



DATE 11/9/00  
BY JPH

SUBJECT STOREY 4  
NE/SW SEC 34 T32N R11W SAN JUAN COUNTY



OFF: (505) 325-5667  
FAX: (505) 327-1496



LAB: (505) 325-1556  
FAX: (505) 327-1496

November 20, 2000

John Hagstrom  
On Site Technologies Limited  
612 E. Murray Drive  
P.O. Box 2606  
Farmington, NM 87499  
TEL: (505) 325-5667  
FAX (505) 327-1496

RE: 4-1771; Hallador Pits

Order No.: 0011019

Dear John Hagstrom,

On Site Technologies, LTD. received 3 samples on 11/9/2000 for the analyses presented in the following report.

The Samples were analyzed for the following tests:  
SOPREP SONICATION: TPH 418.1 (SW3550A)  
TPH, T/R Soil (E418.1)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Cox', is written over a horizontal line.

David Cox

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: [ONSITE@ONSITELTD.COM](mailto:ONSITE@ONSITELTD.COM)

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667  
FAX: (505) 327-1496



LAB: (505) 325-1556  
FAX: (505) 327-1496

**On Site Technologies, LTD.**

**Date:** 20-Nov-00

---

**CLIENT:** On Site Technologies Limited  
**Project:** 4-1771; Hallador Pits  
**Lab Order:** 0011019

---

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

OFF: (505) 325-5667  
FAX: (505) 327-1496



LAB: (505) 325-1556  
FAX: (505) 327-1496

## ANALYTICAL REPORT

Date: 20-Nov-00

**Client:** On Site Technologies Limited  
**Work Order:** 0011019  
**Lab ID:** 0011019-01A    **Matrix:** SOIL  
**Project:** 4-1771; Hallador Pits

**Client Sample Info:** Hallador Pits  
**Client Sample ID:** Storey 4 CPC  
**Collection Date:** 11/9/2000 2:45:00 PM  
**COC Record:** 11013

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>TPH, T/R SOIL</b>		<b>E418.1</b>				<b>Analyst: DM</b>
Petroleum Hydrocarbons, T/R	ND	25		mg/Kg	1	11/16/2000

**Qualifiers:**  
PQL - Practical Quantitation Limit  
ND - Not Detected at Practical Quantitation Limit  
J - Analyte detected below Practical Quantitation Limit  
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits  
E - Value above quantitation range  
Surr: - Surrogate

1 of 3

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667  
FAX: (505) 327-1496



LAB: (505) 325-1556  
FAX: (505) 327-1496

## ANALYTICAL REPORT

Date: 20-Nov-00

**Client:** On Site Technologies Limited  
**Work Order:** 0011019  
**Lab ID:** 0011019-02A    **Matrix:** SOIL  
**Project:** 4-1771; Hallador Pits

**Client Sample Info:** Hallador Pits  
**Client Sample ID:** Storey 4 SWC  
**Collection Date:** 11/9/2000 2:55:00 PM  
**COC Record:** 11013

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>TPH, T/R SOIL</b>		<b>E418.1</b>				<b>Analyst: DM</b>
Petroleum Hydrocarbons, T/R	ND	25		mg/Kg	1	11/16/2000

**Qualifiers:**  
PQL - Practical Quantitation Limit  
ND - Not Detected at Practical Quantitation Limit  
J - Analyte detected below Practical Quantitation Limit  
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits  
E - Value above quantitation range  
Surr: - Surrogate

2 of 3

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



OFF: (505) 325-5667  
FAX: (505) 327-1496



LAB: (505) 325-1556  
FAX: (505) 327-1496

## ANALYTICAL REPORT

Date: 20-Nov-00

**Client:** On Site Technologies Limited  
**Work Order:** 0011019  
**Lab ID:** 0011019-03A    **Matrix:** SOIL  
**Project:** 4-1771; Hallador Pits

**Client Sample Info:** Hallador Pits  
**Client Sample ID:** Storey 4 LFC  
**Collection Date:** 11/9/2000 3:00:00 PM  
**COC Record:** 11013

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>TPH, T/R SOIL</b> Petroleum Hydrocarbons, T/R	ND	<b>E418.1</b>	25	mg/Kg	1	Analyst: DM 11/16/2000

**Qualifiers:**  
PQL - Practical Quantitation Limit  
ND - Not Detected at Practical Quantitation Limit  
J - Analyte detected below Practical Quantitation Limit  
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits  
E - Value above quantitation range  
Surr: - Surrogate

3 of 3

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



# CHAIN OF CUSTODY RECORD

11013

Date: 11/9/00

Page: 1 of 1

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499  
LAB: (505) 325-5667 • FAX: (505) 327-1496

Purchase Order No.:		Project No. 9-1771	
Name: J. HAGSTROM		Title:	
Company:		Company:	
Address:		Mailing Address:	
City, State, Zip:		City, State, Zip:	
Telephone No.:		Telefax No.:	
PROJECT LOCATION:		ANALYSIS REQUESTED	
SAMPLER'S SIGNATURE: [Signature]		LAB ID	
SAMPLE IDENTIFICATION		Containers	
DATE	TIME	MATRIX	PRES.
11/9/00	1445	SOIL	COLO
1455	↓	↓	↓
1500	↓	↓	↓
RELINQUISHED BY: [Signature]		Date/Time 11/9/00	
RELINQUISHED BY: [Signature]		Date/Time	
RELINQUISHED BY: [Signature]		Date/Time	
Method of Shipment:		Rush	
Authorized by: [Signature]		Date	
Special Instructions / Remarks:		10 Working Days	
By Date		By Date	