

3R - 356

**GENERAL
CORRESPONDENCE**

YEAR(S):

1996 - 1994

Contract Environmental Services, Inc.
Post Office Box 505
Kirtland, NM 87417-0505
505/325-1198

NEW MEXICO OIL CONSERVATION DIVISION
SANTA FE, NM
OCT 16 1996

October 31, 1996

New Mexico Oil Conservation Division
Mr. William Olson
2040 S. Pacheco
Santa Fe, NM 87505

RE: Groundwater Monitoring Wells at Snyder Oil Corporation's Landauer 1

Dear Mr. Olson:

Contract Environmental Services, Inc. (CES) is pleased to present the results of the groundwater sampling results at the Landauer 1 well site located in Unit H, Section 3, T31N, R13W of San Juan County, on behalf of Snyder Oil Corporation. There are three (3) monitor wells on this location, one (1) upgradient and two (2) down gradient. These monitor wells have been sampled two (2) times since they were installed just over one (1) year ago. This letter report contains a summary of this data.

Samples were analyzed using EPA Method 8020 for Aromatic Volatile Organics. This method has a detection limit of 0.2 ppb. A summary of the sampling results is given below in Table 1. Attached are analytical reports from the laboratory analyses.

Monitor Well No., Location and Lab I.D.	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (total) (ppb)
M.W.#1, Tank Battery, LAND-1800	ND	ND	ND	0.9
M.W.#2, Wellhead, LAND-1801	ND	ND	ND	0.3
M.W.#3, Separator, LAND-1802	ND	ND	ND	0.3

Note: ND means non-detectable.

Table 1. Results of Monitor Well Sampling on October 8, 1996.

Due to an unusually dry spring and summer, this is the first time this year there has been sufficient water to allow sampling of the monitor wells. Low water conditions would not allow bailing the normal three-times the well volume prior to sampling. Sampling was done with a clean and decontaminated ball-and-check type PVC plastic bailer.

Results from last year's sampling are given below in Table 2. These analytical reports are also attached. To date, all of the monitor wells have passed the New Mexico Water Quality Control Commission's drinking water standards for benzene, toluene, ethylbenzene, and total xylenes on two different sampling intervals.

Monitor Well No., Location and Lab I.D.	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (total) (ppb)
M.W.#1, Tank Battery, LAND-300	ND	0.4	ND	0.9
M.W.#2, Wellhead, LAND-301	ND	0.4	ND	0.8
M.W.#3, Separator, LAND-302	ND	0.4	ND	0.5

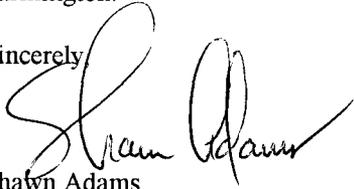
Note: ND means non-detectable.

Table 2. Results of Monitor Well Sampling on August 16, 1995.

It is our plan to abandon and plug these monitor wells at this time. The man-hole covers for each monitor well will be removed and the well casing cut off below the ground surface. The well casing will then be pumped full of bentonite-grout-cement mixture to seal it to the surface. The mixing ratio will be approximately one-third (1/3) each. The monitor well areas will be returned to the normal grade of the well pad. No further action is planned concerning groundwater at this location.

Contract Environmental Services, Inc. presents this plug and abandon plan for the Landauer 1 monitor wells on behalf of Snyder Oil Corporation for your approval. If you need any additional information, please do not hesitate to contact our offices at 505/325-1198, or stop by at 4200 Hawkins Road, Farmington.

Sincerely

A handwritten signature in black ink, appearing to read "Shawn Adams". The signature is written in a cursive, flowing style with a large initial "S".

Shawn Adams

Attachments: Analytical Reports

Copies: Mr. Bill Liese, U.S. BLM Farmington Office
Mr. Denny Foust, NMOCD Aztec Office

OFF: (505) 325-5667



LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn: *Shawn Adams*
 Company: *Contract Environmental Services, Inc.*
 Address: *P.O. Box 505*
 City, State: *Kirtland, NM 87417*

Date: 14-Oct-96
 COC No.: 4309
 Sample No. 12484
 Job No. 2-1000

Project Name: *Snyder Oil Corporation - Landauer #1*
 Project Location: *LAND-1800; MW by 400bbl Tank*
 Sampled by: SA
 Analyzed by: DC
 Sample Matrix: *Liquid*

Date: 8-Oct-96 Time: 12:54
 Date: 14-Oct-96

Laboratory Analysis

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<0.2	ug/L	0.2	ug/L
<i>Toluene</i>	<0.2	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	<0.2	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.5	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.4	ug/L	0.2	ug/L
TOTAL	0.9	ug/L		

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *[Signature]*
 Date: 10/14/96

OFF: (505) 325-5667



LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn: *Shawn Adams*
 Company: *Contract Environmental Services, Inc.*
 Address: *P.O. Box 505*
 City, State: *Kirtland, NM 87417*

Date: 14-Oct-96
 COC No.: 4309
 Sample No. 12485
 Job No. 2-1000

Project Name: *Snyder Oil Corporation - Landauer #1*
 Project Location: *LAND-1801; MW by Wellhead*
 Sampled by: SA Date: 8-Oct-96
 Analyzed by: DC Date: 14-Oct-96
 Sample Matrix: *Liquid*

Time: 13:28

Laboratory Analysis

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<0.2	ug/L	0.2	ug/L
<i>Toluene</i>	<0.2	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	<0.2	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.3	ug/L	0.2	ug/L
<i>o-Xylene</i>	<0.2	ug/L	0.2	ug/L
	TOTAL	0.3		ug/L

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *[Signature]*
 Date: 10/14/96

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn: *Shawn Adams*
 Company: *Contract Environmental Services, Inc.*
 Address: *P.O. Box 505*
 City, State: *Kirtland, NM 87417*

Date: 14-Oct-96
 COC No.: 4309
 Sample No. 12486
 Job No. 2-1000

Project Name: *Snyder Oil Corporation - Landauer #1*
 Project Location: *LAND-1802; MW by Separator*
 Sampled by: SA Date: 8-Oct-96
 Analyzed by: DC Date: 14-Oct-96
 Sample Matrix: *Liquid*

Time: 14:05

Laboratory Analysis

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<0.2	ug/L	0.2	ug/L
<i>Toluene</i>	<0.2	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	<0.2	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.3	ug/L	0.2	ug/L
<i>o-Xylene</i>	<0.2	ug/L	0.2	ug/L
	<i>TOTAL</i>	0.3		ug/L

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *[Signature]*
 Date: 10/14/96

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Shawn Adams*
Company: *Contract Environmental Services, Inc.*
Address: *P.O. Box 505*
City, State: *Kirtland, NM 87417*

Date: *18-Aug-95*
COC No.: *3176*
Sample No. *7792*
Job No. *2-1000*

Project Name: *Snyder Oil Corporation - Landauer 1*

Project Location: *LAND - 300 Landauer MW1 Water*

Sampled by: SA Date: *16-Aug-95* Time: *10:48*

Analyzed by: DC Date: *17-Aug-95*

Type of Sample: *Water*

Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
<i>Benzene</i>	ND	0.2
<i>Toluene</i>	0.4	0.2
<i>Ethylbenzene</i>	ND	0.2
<i>m,p-Xylene</i>	0.9	0.2
<i>o-Xylene</i>	ND	0.2
	TOTAL 1.3 ug/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *JaG*
Date: *8/18/95*

P. O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Shawn Adams*
Company: *Contract Environmental Services, Inc.*
Address: *P.O. Box 505*
City, State: *Kirtland, NM 87417*

Date: 18-Aug-95
COC No.: 3176
Sample No. 7793
Job No. 2-1000

Project Name: *Snyder Oil Corporation - Landauer 1*

Project Location: *LAND - 301 Landauer MW2 Water*

Sampled by: SA Date: 16-Aug-95 Time: 11:11

Analyzed by: DC Date: 17-Aug-95

Type of Sample: *Water*

Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
<i>Benzene</i>	ND	0.2
<i>Toluene</i>	0.4	0.2
<i>Ethylbenzene</i>	ND	0.2
<i>m,p-Xylene</i>	0.8	0.2
<i>o-Xylene</i>	ND	0.2
	TOTAL 1.2 ug/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *Ja 4*
Date: *8/18/95*

P. O. BOX 2606 • FARMINGTON, NM 87499

— TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT —

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Shawn Adams*
 Company: *Contract Environmental Services, Inc.*
 Address: *P.O. Box 505*
 City, State: *Kirtland, NM 87417*

Date: 18-Aug-95
 COC No.: 3176
 Sample No. 7794
 Job No. 2-1000

Project Name: *Snyder Oil Corporation - Landauer 1*
 Project Location: *LAND - 302 Landauer MW3 Water*
 Sampled by: SA Date: 16-Aug-95 Time: 11:30
 Analyzed by: DC Date: 17-Aug-95
 Type of Sample: *Water*

Aromatic Volatile Organics

<i>Component</i>	<i>Measured Concentration ug/L</i>	<i>Detection Limit Concentration ug/L</i>
<i>Benzene</i>	ND	0.2
<i>Toluene</i>	0.4	0.2
<i>Ethylbenzene</i>	ND	0.2
<i>m,p-Xylene</i>	0.5	0.2
<i>o-Xylene</i>	ND	0.2
	<i>TOTAL</i> 0.9 ug/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *Ja4*
 Date: 8/18/95

P. O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OIL CONSERVATION DIVISION
 RECEIVED

04 SEP 1994 AM 8 50

Contract Environmental Services, Inc.
 Post Office Box 505
 Kirtland, New Mexico 87417-0505
 Phone (505) 325-1198

August 31, 1994

Energy, Minerals And Natural Resources Department
 Oil Conservation Division
 Mr. Bill Olsen
 Post Office Box 2088
 Santa Fe, New Mexico 87504-2088

Dear Mr. Olsen:

Contract Environmental Services, Inc. (CES) is pleased to present the following well location earthen pits for closure on behalf of Snyder Oil Corporation (SOCO). The laboratory data has been summarized in the following Tables. Individual laboratory reports are available to the New Mexico Oil Conservation Division (NMOCD) upon request.

Table 1-1. List of wells having earthen pit(s) submitted for closure

Well Name	Location (S, T, R)	County	State	Area
Jackson 2E	Section 18, T31N, R12W	San Juan	NM	La Plata
Payne 1E	Section 35, T31N, R13W	San Juan	NM	La Plata
Landauer 1	Section 3, T31N, R13W	San Juan	NM	La Plata

Table 1-2. List of soil concentrations of Total Petroleum Hydrocarbons

Well Name	Ranking Score	Concentration (PPM)
Jackson 2E	1000	135
Payne 1E	1000	356

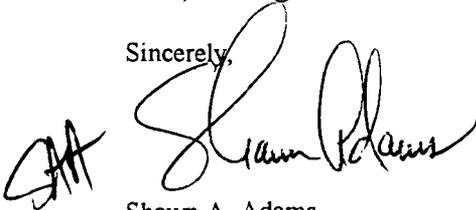
Table 1-3. List of water concentrations of Benzene, Toluene, Ethylbenzene, Xylenes

Well Name	Test Pit No.	Concentration	B,	T,	E,	X (PPB)
Landauer 1	TP-1		ND	ND	ND	1.2
	TP-2		ND	ND	ND	0.3

Following approval for closure, each of the above listed earthen pits will have the fencing taken down, the excavation backfilled using remediated soil and/or fill material, shaping to include slightly doming the pit area to prevent standing water, and reseeding using a native seed mixture.

Final reports are available for each of the well location earthen pits listed above. If additional information is required, please don't hesitate to contact our offices at (505) 325-1198 or stop by at 4200 Hawkins Road, Farmington.

Sincerely,

A handwritten signature in black ink, appearing to read "Shawn Adams". To the left of the main signature is a smaller, more stylized set of initials, possibly "SAA".

Shawn A. Adams
Contract Environmental Services, Inc.

CR: DENNY FOUST, OLD AZTEC BRANCH

Date Remediation Started: N/A Dated Completed: _____

Remediation Method: Excavation _____ Approx. cubic yards _____
(Check all appropriate sections) Landfarmed _____ Insitu Bioremediation _____
Other N/A

Remediation Location: Onsite _____ Offsite N/A
(ie. landfarmed onsite, name and location of offsite facility)

General Description Of Remedial Action: Investigation revealed no significant contamination to soils or groundwater. Additional investigation was performed at the request of Mr. Denny Foust NMOCD. No remediation required.

Ground Water Encountered: No _____ Yes X Depth 8'

Final Pit: Sample location Test Pit 1 33' West of Wellhead
Closure Sampling: Test Pit 2 24' South of Wellhead
(if multiple samples, attach sample results and diagram of sample locations and depths) Sample depth TP-1 8' TP-2 8'
Sample date 3/15/94 Sample time 10:30 and 11:45

Sample Results

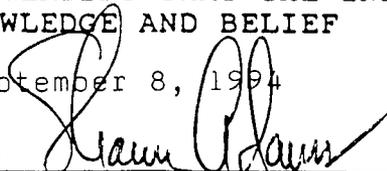
Benzene (ppm) TP-1 ND TP-2 ND
Total BTEX (ppm) TP-1 1.2 TP-2 0.3
Field headspace (ppm) _____
TPH _____

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

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE September 8, 1994

SIGNATURE



PRINTED NAME Shawn A. Adams
AND TITLE Env. Consultant, Contract Env. Service

VOLATILE AROMATIC HYDROCARBONS

Snyder Oil Corporation

Project ID:	Water Investigation	Report Date:	03/28/94
Sample ID:	SOCO-005 A	Date Sampled:	03/15/94
Lab ID:	4943	Date Received:	03/16/94
Sample Matrix:	water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	03/27/94

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	0.3	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Toluene-d8	95.0	88 -110%
	Bromofluorobenzene	94.3	86 -115%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Austin Watt
Analyst

mk
Review

VOLATILE AROMATIC HYDROCARBONS

Snyder Oil Corporation

Project ID:	Water Investigation	Report Date:	03/28/94
Sample ID:	SOCO-004 A	Date Sampled:	03/15/94
Lab ID:	4942	Date Received:	03/16/94
Sample Matrix:	Water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	03/27/94

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	0.8	0.2
o-Xylene	0.4	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Toluene-d8	100.2	88 -110%
	Bromofluorobenzene	98.0	86 -115%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Austin Was
Analyst

mh
Review

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
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

ORIGINAL

PIT REMEDIATION AND CLOSURE REPORT

Operator: Snyder Oil Corporation Telephone: 505 - 632-8056

Address: Post Office Box 2038, Farmington, New Mexico 87499

Facility Or: Jackson #2E

Well Name

Location: Unit or Qtr/Qtr Sec 0 Sec 18 T 31 R 12 County San Juan

Pit Type: Separator Dehydrator Other

Land Type: BLM, State, Fee X, Other

Pit Location: Pit dimensions: length 10', width 10', depth 3'
(Attach diagram)

Reference: wellhead X, other

Footage from reference: 60'

Direction from reference: N Degrees 170° East North
of
West South

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 (0 Points) 0
high water elevation of
ground water)

Wellhead Protection Area: Yes (20 points)
(Less than 200 feet from a private No (0 points) 0
domestic water source, or; less than
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 (10 points)
lakes, ponds, rivers, streams, creeks, Greater than 1000 feet (0 points) 0
irrigation canals and ditches)

RANKING SCORE (TOTAL POINTS): 0

Date Remediation Started: N/A Dated Completed: _____

Remediation Method: Excavation _____ Approx. cubic yards _____
(Check all appropriate sections) Landfarmed _____ Insitu Bioremediation _____
Other Pit contents stirred to 10' depth

Remediation Location: Onsite Offsite _____
(ie. landfarmed onsite, name and location of offsite facility)

General Description Of Remedial Action: Pit contents removed, tested with PID meter, clearance sample taken, pit contents returned and stirred to be certain to add aeration.

Ground Water Encountered: No Yes _____ Depth _____

Final Pit: Sample location Bottom center of earthen pit

Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)
Sample depth 10'
Sample date 6/10/94 Sample time 2:13P

Sample Results

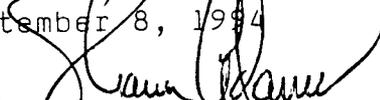
Benzene (ppm) _____
Total BTEX (ppm) _____
Field headspace (ppm) _____
TPH 135

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

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE September 8, 1994

SIGNATURE



PRINTED NAME Shawn A. Adams
AND TITLE Env. Consultant, Contract Env. Service

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
Santa Fe, New Mexico 87504-2088

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

ORIGINAL

PIT REMEDIATION AND CLOSURE REPORT

Operator: Snyder Oil Corporation **Telephone:** 505 . 632-8056
Address: Post Office Box 2038, Farmington, New Mexico 87499
Facility Or: Payne #1E
Well Name
Location: Unit or Qtr/Qtr Sec P Sec 35 T 31 R 13 County San Juan
Pit Type: Separator ___ Dehydrator ___ Other ___
Land Type: BLM ___ , State ___ , Fee X , Other ___

Pit Location: Pit dimensions: length 25' , width 15' , depth 3'
(Attach diagram)
Reference: wellhead X , other ___
Footage from reference: 56'
Direction from reference: N Degrees 28° East North ___
of
___ West South ___

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 (0 Points) 0
high water elevation of
ground water)

Wellhead Protection Area: Yes (20 points)
(Less than 200 feet from a private No (0 points) 0
domestic water source, or; less than
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 (10 points)
lakes, ponds, rivers, streams, creeks, Greater than 1000 feet (0 points) 0
irrigation canals and ditches)

RANKING SCORE (TOTAL POINTS): 0

Date Remediation Started: June 8, 1994 Date Completed: N/A

Remediation Method: Excavation Approx. cubic yards 42
(Check all appropriate sections) Landfarmed Insitu Bioremediation
Other _____

Remediation Location: Onsite Offsite _____
(ie. landfarmed onsite, name and location of offsite facility)

General Description Of Remedial Action: Pit contents removed, sandstone surface scraped 2' beyond pit bottom, clearance sample taken, pit contents spread to north and east of earthen pit, allowed to volatilize, clearance sample taken of soil farm. Bedrock encountered (Sandstone).

Ground Water Encountered: No Yes Depth _____

Final Pit: Sample location Bottom center of south end of pit
Closure Sampling: _____
(if multiple samples, attach sample results and diagram of sample locations and depths)
Sample depth 6'
Sample date 6/13/94 Sample time 2:07P

Sample Results

Benzene (ppm) _____
Total BTEX (ppm) _____
Field headspace (ppm) _____
TPH 356

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

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE September 8, 1994

SIGNATURE Shawn Adams

PRINTED NAME Shawn A. Adams
AND TITLE Env. Consultant, Contract Env. Services