

JAN 07 1994

# Environmental Services of America, Inc.



## Tri-S Division

205 Main Street  
P.O. Box 1760  
Brattleboro, VT 05302  
Phone: (802) 254-3677  
1-800-359-3677  
Fax: (802) 254-7630

January 6, 1994

Chuck Schwer  
VT DEC SMS HMMD  
103 South Main St/West Bldg  
Waterbury, VT 05671-0404

RE: Environmental Site Investigation Report, Former Smokehouse, Route 30,  
Newfane, VT, VT DEC Site #93-1473

Dear Mr. Schwer:

With approval from David Petersen we are submitting our completed report for your review of the above referenced site.

Should you have any questions please call me at 254-3677.

Sincerely,  
ENSA TRI-S, Inc. Environmental Consulting Division

A handwritten signature in cursive script that reads "Bruce Tease".

Bruce Tease, Ph.D.  
Project Manager

Enclosure

BET:dn

\\384.01\schwappv.let

Offices Nationwide

Newark, NJ - Baltimore, MD - Royersford, PA - Philadelphia, PA  
New Orleans, LA - Syracuse, NY - Hartford, CT - Brattleboro, VT  
Chicago, IL - Los Angeles, CA

# Environmental Services of America, Inc.



## Tri-S Division

205 Main Street  
P.O. Box 1760  
Brattleboro, VT 05302  
Phone: (802) 254-3677  
1-800-359-3677  
Fax: (802) 254-7630

December 27, 1993

David Peterson  
26 Danny Lane  
Agawam, MA 01001

RE: Former Smokehouse, Newfane, VT  
DEC File #93-1473

Dear: Mr. Peterson:

Enclosed please find the above-referenced report for your review. Also enclosed you will find 2 forms requiring your signature upon approval of this report. Please sign one form and return it to us in the self addressed, stamped envelope provided for your convenience. The second copy is for your records.

As soon as we receive this form, a copy of the above-referenced report will be mailed to the recipients noted on the form.

Should you have any questions please call me at 254-3677.

Sincerely,  
TRI-S, Inc. Environmental Consulting

Cindy Stafford  
Administrator

Enclosures

cc: Chuck Schwer, Supervisor VTDEC, HMMD, SMS

CLS/dan

docs\384.01\let

Offices Nationwide

Newark, NJ - Baltimore, MD - Royersford, PA - Philadelphia, PA  
New Orleans, LA - Syracuse, NY - Hartford, CT - Brattleboro, VT  
Chicago, IL - Los Angeles, CA

JAN 07 1994

**Environmental Site Investigation Report  
Former Smokehouse  
Route 30  
Newfane, VT  
VT DEC Site #93-1473**

*Prepared for*

David and Barbara Peterson  
26 Danny Lane  
Agawam, Massachusetts 01001

*by*

TRI-S, Inc. Environmental Consulting  
205 Main Street  
Brattleboro, VT 05301

December 27, 1993

## EXECUTIVE SUMMARY

A 500 gallon underground storage tank (UST), used for #2 heating oil, was removed from the Newfane Smokehouse site on September 24, 1993. Soils in the excavated pit were screened using a Thermo Environmental Instruments Model 580B Organic Vapor Meter (OVM). Volatile organic compounds were found at levels above 10 ppm. Contaminated soils were excavated, stockpiled, and polyencapsulated on the site. At the request of the Vermont Department of Environmental Conservation (VT DEC), Hazardous Sites Management Section (SMS), three monitoring wells were drilled, developed, and sampled to determine the degree of groundwater contamination. Laboratory results indicated non-detectable levels of the compounds tested for. Site evaluation, sampling results, conclusions, and recommendations are presented in this report.

**Table of Contents**

I. Site Overview ..... 1  
    A. *Setting and Layout* ..... 1  
    B. *Site History* ..... 1  
    C. *Initial Sampling and Screening* ..... 1  
    D. *Subsurface Soil and Groundwater Investigations* ..... 2  
    E. *Initial Risk Evaluation* ..... 3

II. Conclusions ..... 3

III. Recommendations ..... 4

**APPENDICES**

- Appendix A Site Location Map
- Appendix B Site Sketch Map
- Appendix C Soil Boring/Monitoring Well Logs
- Appendix D Groundwater Potentiometric Map
- Appendix E Laboratory Analysis Reports

## I. Site Overview

### A. *Setting and Layout*

The subject property, formerly known as the Smokehouse is located on Route 30 in Newfane, VT (Site Location Map, Appendix A). The site is 0.7 acres in size and includes two structures, both built on concrete slab foundations. According to the Newfane Lister's Office, the larger of the two structures (approximately 2100 square feet), referred to as "The Smokehouse", was built in 1968 and is heated by a forced hot water system fueled with #2 heating oil. The second structure was built in 1971 as a sales building, is approximately 808 square feet in size, and is fueled by liquid propane gas. Drinking water is supplied to the site from a potable groundwater well located on the adjacent lot located south of the subject property. This well services a commercial building on that lot, the subject property and a residence located northeast of the site. Domestic sewage is disposed of via an on-site septic system; the leach field is located in the northeast portion of the site.

The property is bordered by a steep wooded slope to the southeast and Route 30 to the northwest. The underground fuel oil storage tank (UST) that was removed from the site on September 24, 1993, was located on the northeast side of the smokehouse building. A Site Sketch map is included in Appendix B.

### B. *Site History*

The site was vacant at the time of this assessment. It is presently owned by New Moon Extracts, P.O. Box 1947, Brattleboro, VT 05301. In November of 1993 the site was purchased from David and Barbara Peterson of 26 Danny Lane in Agawam, Massachusetts. During the relatively short time period that the site was owned by the Peterson's, The Smokehouse was not operated. The site was initially developed by the Lawrence Family for meat curing and was used for the retailing of Vermont products until approximately 1989. According to Dorothy Jones of the Newfane Lister's Office, the site was an open lot prior to 1968.

### C. *Initial Sampling and Screening*

One 500 gallon UST was excavated and removed on September 24, 1993, by Gould & Sons, Inc. Upon removal, the tank was inspected by David Gagnon of TRI-S Environmental Consulting (TEC) and found to be in good condition with some rust. On the same day soils in the tank excavation pit were screened by TEC, using a Thermo Environmental Instruments Model 580B Organic Vapor Meter (OVM), and found to be contaminated. Approximately 15 cubic yards of contaminated soil was excavated, polyencapsulated and stockpiled on site. Excavation of additional soils was not performed due to the close proximity of the UST to the site building.

The levels of volatile organic compounds (VOCs) detected in the UST pit soils ranged from 0.0 to 126 ppm. The highest levels of contamination were found at the 2 foot and 4 foot depth range. The levels of VOCs at the limit of excavation ranged from 2.0 ppm to 25 ppm. The area of highest residual VOC contamination was found at and/or immediately west of the fill pipe end of the UST pit. The VT DEC guidelines for treatment of soils contaminated with #2 heating oil requires the stockpiling of soils contaminated with 10 ppm or greater of VOCs. It should be noted that VOC levels obtained with the OVM should be reduced by a factor of 2 when comparison to Benzene is desired (based on manufacture's specifications). Following excavation, the UST pit was backfilled with clean fill.

A total of six samples were collected from the stockpiled soils at a depth approximately 1-2 feet below the pile surface. The samples were screened for VOCs using an HNu Systems PID unit equipped with a 10.2 V lamp calibrated to Isobutylene. Readings from this PID unit can be directly compared to Benzene without conversion. VOC levels ranged from 2.0 ppm to 2.9 ppm.

#### *D. Subsurface Soil and Groundwater Investigations*

On November 4, 1993, three monitoring wells were installed and developed at the site by TEC and T&K Drilling (Monitoring Well Installation Logs, Appendix C). Except for the soil sample collected at the 10-12 foot depth range from the SH-3 soil boring, no VOCs were detected during split spoon sampling. A direct reading of 6.0 ppm was obtained during screening of the above noted soil sample. Groundwater was encountered at approximately 13 feet below the ground surface in each soil boring advanced. Monitoring wells (MW) were emplaced following the completion of each soil boring.

On November 16, 1993, the monitoring wells were sampled by TEC personnel. Depth to groundwater was measured in each well before sampling using an electronic water/air interface probe sensitive to 0.01 feet. Following elevation of the wells by survey, the groundwater elevations were then calculated and a groundwater potentiometric map was developed (Appendix D). Based on measurements taken on November 16, 1993, groundwater flow was determined to be in a northerly direction.

Groundwater samples from the monitoring wells and the drinking water well located on the property immediately south of the site were collected and preserved on November 16, 1993, in accordance with State of Vermont sampling protocol. Samples were analyzed by EPA Methods 8020 for purgeable aromatics and 418.1 for Total Petroleum Hydrocarbons (TPH). Analysis of the samples was performed by Matrix Analytical Laboratories located in Hopkinton, Massachusetts. Results indicated the absence of compounds tested for. Full laboratory reports and chain of custody statement are included in Appendix E.

**E. Initial Risk Evaluation**

Based on the absence of compounds tested for in the groundwater and potable drinking water well samples, the soil contamination detected during the excavation of the 500 gallon fuel oil UST appears not to have impacted the groundwater resources at the site. Therefore, a threat of contamination to the area drinking water wells does not appear to exist at this time.

An intermittent stream is depicted on the topographic quadrangle map (Appendix A) for the subject property. This stream does not currently exist on the subject property. A curtain drainage system was installed some time ago immediately east of the subject buildings to channel runoff from the steep hill located in this area (see Appendix A). An open ditch is located north of the site where curtain drains discharge during seasonally wet periods. This ditch was dry with no evidence of flow during the time of this site investigation. The ditch is located upgradient of the former UST and is not considered to be a sensitive receptor based on the results of this investigation.

The site's drinking water well is located approximately 75 feet south of the subject property. Based on the proximity of this well to the former UST pit area and the calculated groundwater flow direction, this well is not considered to be at risk of contamination from the fuel oil release identified at the site.

**II. Conclusions**

TEC makes the following conclusions:

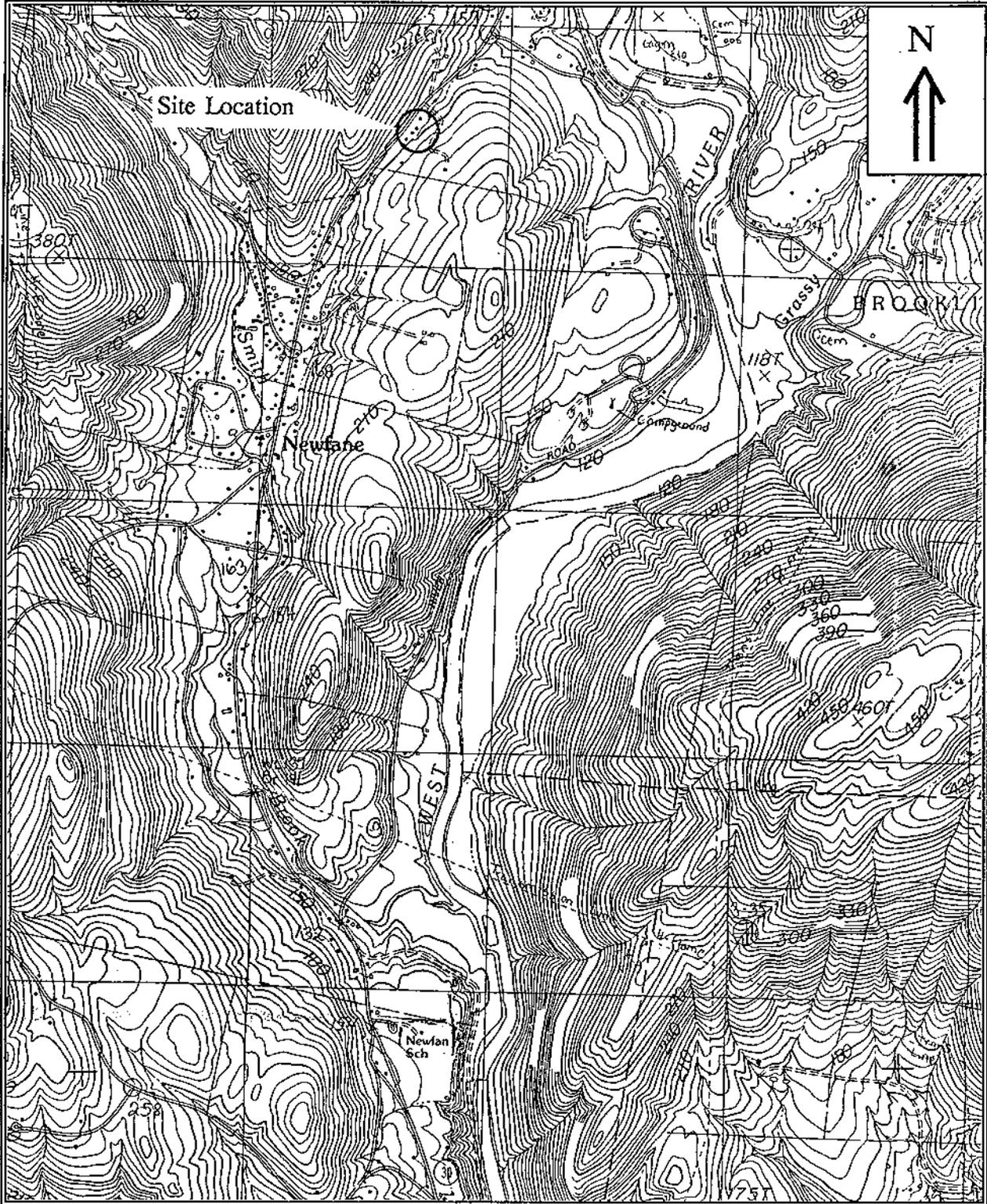
- Soil screening with an OVM following UST excavation showed levels of volatile organic compounds above 10 ppm.
- Approximately 15 cubic yards of contaminated soil was removed and stockpiled following UST removal.
- Analysis of the groundwater monitoring well and drinking water samples revealed the absence of the compounds tested for.
- Groundwater flow direction was determined to be in a northerly direction
- Based on the absence of compounds tested for in the groundwater and potable drinking water well samples, the soil contamination detected during the excavation of the 500 gallon fuel oil UST appears not to have impacted the groundwater resources at the site.

- Based on the screening of six samples collected from the stockpiled soils, the degree of fuel oil contamination is considered to be low.

### **III. Recommendations**

Fifteen cubic yards of #2 heating oil contaminated soil have been polyencapsulated on site. TEC recommends that the contaminated soils be disposed of at the Brattleboro Landfill and used as daily cover material.

*Appendix A*  
*Site Location Map*



Site Location Map	Former Smokehouse Route 30 Newfane, Vermont	Newfane VT-NH USGS Topographic Quadrangle scale : 1:25,000 metric Provisional Edition 1984
-------------------	---	---

*Appendix B*  
*Site Sketch Map*

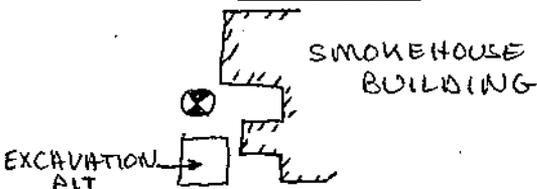
*Appendix E*

*Laboratory Analysis Reports*

*Appendix C*

*Soil Boring/Monitoring Well Logs*

**TRI-S, INC. ENVIRONMENTAL CONSULTING**  
**SOIL BORING/MONITORING WELL LOG**

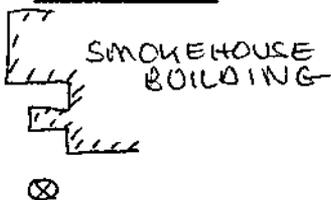
Project #: <u>384.01</u> Date: <u>11/4/93</u> Project Name: <u>Smokehouse/Site</u> Location: <u>Route 30, Newfane</u> Driller: <u>T&amp;K Drilling</u> TEC Personnel: <u>KHJ</u> Boring/Well #: <u>SH-1</u> Sheet <u>1</u> of <u>1</u>	<b>SITE LOCUS</b> 
---	---

Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As-Built Diagram
	0-6	6-12	12-18	18-24				
0-2	grab sample					0.0	brown medium-fine sand, silt and cobbles  gray/tan fine-coarse sand and silt, some cobbles	
5-7	34	31	28	23	16"	0.0		
10-12	13	21	23	21	0	0.0	gray/tan fine-coarse sand and silt, some cobbles	
12	1	1	1	7	4"		gray/brown/black cobbles and fine-coarse gravel black some fine-coarse sand and silt-organic matter	
13	wet, hit groundwater							
15-17	10	14	16	23	9"	0.0		
18	set well end of boring							

Drilling Method: <u>Hollow Stem Auger</u> Total Well Depth: <u>18'</u> Groundwater Depth: <u>12'</u> PVC elevation: _____	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>8'</u> Slot Size: <u>10</u> Ground Elevation: _____
--	---

- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
  2. ND indicates Non-Detectable contaminant concentrations as read by the OVM.
  3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
  4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
  5. HSA = Hollow Stem Auger, AR = Air Rotary

**TRI-S, INC. ENVIRONMENTAL CONSULTING**  
**SOIL BORING/MONITORING WELL LOG**

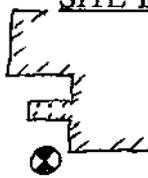
Project #: <u>384.01</u> Date: <u>11/4/93</u> Project Name: <u>Smokehouse/Site</u> Location: <u>Route 30, Newfane</u> Driller: <u>T&amp;K Drilling</u> TEC Personnel: <u>KHJ</u> Boring/Well #: <u>SH-2</u> Sheet <u>1</u> of <u>1</u>	<b>SITE LOCUS</b> 
---	---

Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0-2	grab sample						asphalt - silt, fine-coarse sand and cobbles	
5-7	25	28	23	31	14"	0.0	brown/tan fine-coarse sand and fine-coarse gravel, some silt, few cobbles	
10-12	35	104	43/3"		6"	0.0	brown/gray fine-coarse sand and silt, some fine-coarse gravel, few cobbles	
	refusal						no well set	

Drilling Method: <u>Hollow Stem Auger</u> Total Well Depth: _____ Groundwater Depth: _____ PVC elevation: _____	Screen Diameter: _____ Length: _____ Riser Diameter: _____ Length: _____ Slot Size: _____ Ground Elevation: _____
--	--

- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
  2. ND indicates Non-Detectable contaminant concentrations as read by the OVM.
  3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
  4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.

**TRI-S, INC. ENVIRONMENTAL CONSULTING**  
**SOIL BORING/MONITORING WELL LOG**

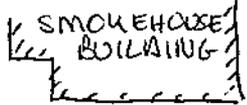
Project #: <u>384.01</u> Date: <u>11/4/93</u> Project Name: <u>Smokehouse/Site</u> Location: <u>Route 30, Newfane</u> Driller: <u>T&amp;K Drilling</u> TEC Personnel: <u>KHJ</u> Boring/Well #: <u>SH-3</u> Sheet <u>1</u> of <u>1</u>	<b>SITE LOCUS</b> 
---	---

Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0-2							brown/tan coarse-fine sand and silt some coarse-fine gravel and cobbles	
5-7	17	10	8	12	5"	0.0	brown/tan fine-coarse sand and silt some fine-coarse gravel	
10-12	12	9	22	30	8"	6.0	brown/tan/gray fine-coarse sand, fine-coarse gravel, some silt, few cobbles	
15-17	80/5"				2"	0.0	end of boring	
17-19	39	49	50	72	14"	0.0		

Drilling Method: <u>Hollow Stem Auger</u> Total Well Depth: <u>17'</u> Groundwater Depth: _____ PVC elevation: _____	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>7'</u> Slot Size: <u>10</u> Ground Elevation: _____
---	---

- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
  2. ND indicates Non-Detectable contaminant concentrations as read by the OVM.
  3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
  4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
  5. HSA = Hollow Stem Auger, AR = Air Rotary

**TRI-S, INC. ENVIRONMENTAL CONSULTING  
SOIL BORING/MONITORING WELL LOG**

Project #: <u>384.01</u> Date: <u>11/4/93</u> Project Name: <u>Smokehouse/Site</u> Location: <u>Route 30, Newfane</u> Driller: <u>T&amp;K Drilling</u> TEC Personnel: <u>KHJ</u> Boring/Well #: <u>SH-4</u> Sheet <u>1</u> of <u>1</u>	<b>SITE LOCUS</b> 
---	---

Depth	Blow Counts				Rec (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0-2	grab sample					0.0	brown fine-medium sand and silt some medium-coarse gravel	
5-7	45	23	13	13	16"	0.0	tan/gray fine-coarse sand and silt some fine-coarse gravel	
10-12	10	25	29	40	16"	0.0	brown/tan/gray fine-coarse sand and silt some fine-coarse gravel	
15-17	12	11	11	35	18"	0.0	brown/tan fine-coarse sand and silt some fine-coarse gravel little clay	
17	end of boring							

Drilling Method: <u>Hollow Stem Auger</u> Total Well Depth: <u>17'</u> Groundwater Depth: _____ PVC elevation: _____	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>7'</u> Slot Size: <u>10</u> Ground Elevation: _____
---	---

- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
  2. ND indicates Non-Detectable contaminant concentrations as read by the OVM.
  3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
  4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
  5. HSA = Hollow Stem Auger, AR = Air Rotary

*Appendix D*

*Groundwater Potentiometric Map*

GROUNDWATER POTENTIOMETRIC  
MAP FOR 11/16/93

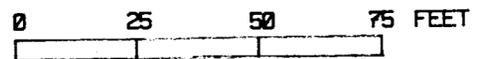
FORMER SMOKEHOUSE  
ROUTE 30  
NEWFANE, VERMONT

LEGEND

- SH-4  
⊕ MONITORING WELL
- 85' GROUNDWATER CONTOUR (FEET)

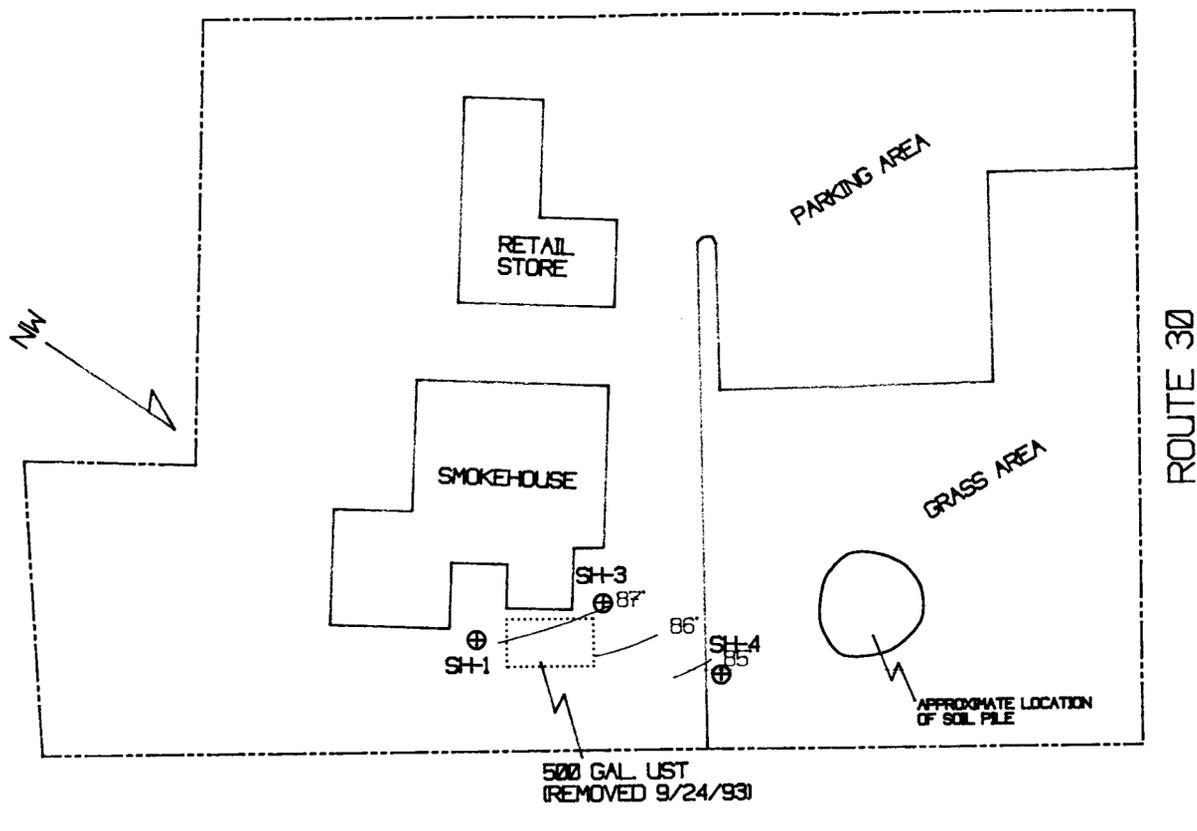
MONITORING WELL GROUNDWATER ELEVATIONS (IN FEET)	
SH-1	87.23
SH-3	87.08
SH-4	84.71

SCALE  
1 : 300



PREPARED BY:

TRI-S, INC. ENVIRONMENTAL CONSULTING  
P.O. BOX 1760, 205 MAIN STREET  
BRATTLEBORO, VT 05302



500 GAL UST  
(REMOVED 9/24/93)

APPROXIMATE LOCATION  
OF SOIL PILE

ROUTE 30

*Appendix E*

*Laboratory Analysis Reports*

Peterson/Smokehouse - Newfane, VT  
TEC Job #384.01

Please Initial: PDGM

Date: 11/16/93

Arrive Site: 13:35

Depart Site: 15:15

Weather: clear and sunny

Temperature: ~ 53

### Sampling

Wells	Well depth	Depth to G.W.	Time Measured	Total H2O(ft.)	# of Bailers	Sample # (on bottle)	Time Sampled	Notes & Comments (water odor and appearance)
SH-1	18'	14.27	14:03	3.73	22	SH-1-111693-384	14:44	slightly muddy, no odor
SB-2	11'	refusal						
SH-3	17'	12.41	14:02	4.59	27	SH-3-111693-384	14:48	slightly muddy, no odor
SH-4	17'	14.56	14:00	2.44	15	SH-4-111693-384	14:57	generally clear, light cloudiness, no odor
Drinking water						SH-DW-111693-384 from Windham Environmental bathroom tap	14:30	clear, no odor
Dup of SH-3						SH-5-111693-384	14:51	
Trip Blank						SH-01-111693-384	9:55	
Samples analysed by EPA methods 8020 (gc only)								

### Notes:

- ▶ Number of bailers needed to evacuate 5 bore volumes from each well is determined by subtracting Groundwater depth from well depth, then multiply by 3.4.



ANALYTICAL DATA  
SUMMARY

RECEIVED DEC 01 1993

Report Date: 11/23/93

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302  
802-254-3677

Project Manager: DAG  
Project Name: Smokehouse (11-17-93)  
Project No.: 384.01

Sample Information:

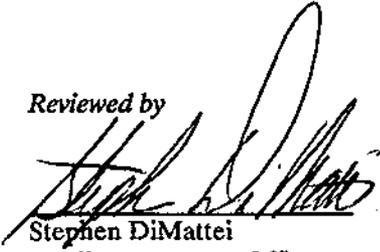
Laboratory ID. Client ID.

Laboratory ID. Client ID.

33216578-001 SH-1-111693-384  
33216578-002 SH-3-111693-384  
33216578-003 SH-4-111693-384  
33216578-004 SH-5-111693-384

33216578-005 SH-01-111693-384  
33216578-006 SH-DW-111693-384  
33216578-007 QC Report -Water

Reviewed by

  
Stephen DiMattei  
Quality Assurance Officer

Lab Certifications

EPA ID: No. MA059  
Massachusetts: No. 313  
Maine: Reciprocity  
New York: ELAP No. 11116

Connecticut: No. PH 0515  
Florida: QA Plan No. 900437G  
New Hampshire: No. 24190-A,B  
Rhode Island: Reciprocity



Matrix Analytical, Inc.  
 106 South Street  
 Hopkinton, MA 01748  
 1 800 3-MATRIX

RECEIVED DEC 01 1993

**F I N A L R E P O R T**

**Client Information**

Account: TRI-S Environmental Consulting  
 Address: P.O. Box 1760  
 Brattleboro, VT 05302

Project Name: Smokehouse (11-17-93)  
 Project Number: 384.01  
 Project Manager: DAG  
 Sampler Name: TRI-S Environmental Consult

**Sample Information**

Lab ID: 33216578-001  
 Client ID: SH-1-111693-384  
 Matrix: Water

Date Sampled: 11/16/93 14:44  
 Date Received: 11/17/93 : 0  
 Date Reported: 11/23/93

Analytical Parameter	Result	Unit	Detection Limit	Method No	Analyst	Date Analyzed
----------------------	--------	------	-----------------	-----------	---------	---------------

**VOLATILE ORGANICS**

Benzene	ND	ug/l	1	8020	kp	11/22/93
Chlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
Ethylbenzene	ND	ug/l	1	8020	kp	11/22/93
MTBE	ND	ug/l	5	8020	kp	11/22/93
Toluene	ND	ug/l	1	8020	kp	11/22/93
Xylene	ND	ug/l	1	8020	kp	11/22/93

**Surrogate Studies - Volatiles**

Bromofluorobenzene (602/8020)	107	Percent			kp	11/22/93
-------------------------------	-----	---------	--	--	----	----------

**Petroleum Hydrocarbon Analysis**

Total Petroleum Hydrocarbon (IR)	ND	mg/l	1.0	418.1	sh	11/19/93
----------------------------------	----	------	-----	-------	----	----------



Matrix Analytical, Inc.  
 106 South Street  
 Hopkinton, MA 01748  
 1 800 3-MATRIX

RECEIVED DEC 01 1993

**F I N A L   R E P O R T**

**Client Information**

Account: TRI-S Environmental Consulting  
 Address: P.O. Box 1760  
 Brattleboro, VT 05302

Project Name: Smokehouse (11-17-93)  
 Project Number: 384.01  
 Project Manager: DAG  
 Sampler Name: TRI-S Environmental Consult

**Sample Information**

Lab ID: 33216578-002  
 Client ID: SH-3-111693-384  
 Matrix: Water

Date Sampled: 11/16/93 14:48  
 Date Received: 11/17/93 :0  
 Date Reported: 11/23/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b><u>VOLATILE ORGANICS</u></b>						
Benzene	ND	ug/l	1	8020	kp	11/22/93
Chlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
Ethylbenzene	ND	ug/l	1	8020	kp	11/22/93
MTBE	ND	ug/l	5	8020	kp	11/22/93
Toluene	ND	ug/l	1	8020	kp	11/22/93
Xylene	ND	ug/l	1	8020	kp	11/22/93
<b><u>Surrogate Studies - Volatiles</u></b>						
Bromofluorobenzene (602/8020)	116	Percent			kp	11/22/93
<b><u>Petroleum Hydrocarbon Analysis</u></b>						
Total Petroleum Hydrocarbon (IR)	ND	mg/l	1.0	418.1	sh	11/19/93



Matrix Analytical, Inc.  
 106 South Street  
 Hopkinton, MA 01748  
 1 800 3-MATRIX

RECEIVED DEC 01 1993

**F I N A L R E P O R T**

**Client Information**

Account: TRI-S Environmental Consulting  
 Address: P.O. Box 1760  
 Brattleboro, VT 05302

Project Name: Smokehouse (11-17-93)  
 Project Number: 384.01  
 Project Manager: DAG  
 Sampler Name: TRI-S Environmental Consult

**Sample Information**

Lab ID: 33216578-003  
 Client ID: SH-4-111693-384  
 Matrix: Water

Date Sampled: 11/16/93 14:57  
 Date Received: 11/17/93 :0  
 Date Reported: 11/23/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b><u>VOLATILE ORGANICS</u></b>						
Benzene	ND	ug/l	1	8020	kp	11/22/93
Chlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
Ethylbenzene	ND	ug/l	1	8020	kp	11/22/93
MTBE	ND	ug/l	5	8020	kp	11/22/93
Toluene	ND	ug/l	1	8020	kp	11/22/93
Xylene	ND	ug/l	1	8020	kp	11/22/93
<b><u>Surrogate Studies - Volatiles</u></b>						
Bromofluorobenzene (602/8020)	101	Percent			kp	11/22/93
<b><u>Petroleum Hydrocarbon Analysis</u></b>						
Total Petroleum Hydrocarbon (IR)	ND	mg/l	1.0	418.1	sh	11/19/93



Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

## FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302

Project Name: Smokehouse (11-17-93)  
Project Number: 384.01  
Project Manager: DAG  
Sampler Name: TRI-S Environmental Consult

Sample Information

Lab ID: 33216578-004  
Client ID: SH-5-111693-384  
Matrix: Water

Date Sampled: 11/16/93 14:51  
Date Received: 11/17/93 : 0  
Date Reported: 11/23/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b><u>VOLATILE ORGANICS</u></b>						
Benzene	ND	ug/l	1	8020	kp	11/22/93
Chlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
Ethylbenzene	ND	ug/l	1	8020	kp	11/22/93
MTBE	ND	ug/l	5	8020	kp	11/22/93
Toluene	ND	ug/l	1	8020	kp	11/22/93
Xylene	ND	ug/l	1	8020	kp	11/22/93
<b><u>Surrogate Studies - Volatiles</u></b>						
Bromofluorobenzene (602/8020)	114	Percent			kp	11/22/93
<b><u>Petroleum Hydrocarbon Analysis</u></b>						
Total Petroleum Hydrocarbon (IR)	ND	mg/l	1.0	418.1	sh	11/19/93



Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

## FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302

Project Name: Smokehouse (11-17-93)  
Project Number: 384.01  
Project Manager: DAG  
Sampler Name: TRI-S Environmental Consult

Sample Information

Lab ID: 33216578-005  
Client ID: SH-01-111693-384  
Matrix: Water

Date Sampled: 11/16/93 09:55  
Date Received: 11/17/93 :0  
Date Reported: 11/23/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<u>VOLATILE ORGANICS</u>						
Benzene	ND	ug/l	1	8020	kp	11/22/93
Chlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
Ethylbenzene	ND	ug/l	1	8020	kp	11/22/93
MTBE	ND	ug/l	5	8020	kp	11/22/93
Toluene	ND	ug/l	1	8020	kp	11/22/93
Xylene	ND	ug/l	1	8020	kp	11/22/93
<u>Surrogate Studies - Volatiles</u>						
Bromofluorobenzene (602/8020)	115	Percent			kp	11/22/93
<u>Petroleum Hydrocarbon Analysis</u>						
Total Petroleum Hydrocarbon (IR)	ND	mg/l	1.0	418.1	sh	11/19/93



Matrix Analytical, Inc.  
 106 South Street  
 Hopkinton, MA 01748  
 1 800 3-MATRIX

RECEIVED DEC 0 1 1993

**F I N A L R E P O R T**

**Client Information**

Account: TRI-S Environmental Consulting  
 Address: P.O. Box 1760  
 Brattleboro, VT 05302

Project Name: Smokehouse (11-17-93)  
 Project Number: 384.01  
 Project Manager: DAG  
 Sampler Name: TRI-S Environmental Consult

**Sample Information**

Lab ID: 33216578-006  
 Client ID: SH-DW-111693-384  
 Matrix: Water

Date Sampled: 11/16/93 14:30  
 Date Received: 11/17/93 :0  
 Date Reported: 11/23/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b><u>VOLATILE ORGANICS</u></b>						
Benzene	ND	ug/l	1	8020	kp	11/22/93
Chlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	11/22/93
Ethylbenzene	ND	ug/l	1	8020	kp	11/22/93
MTBE	ND	ug/l	5	8020	kp	11/22/93
Toluene	ND	ug/l	1	8020	kp	11/22/93
Xylene	ND	ug/l	1	8020	kp	11/22/93
<b><u>Surrogate Studies - Volatiles</u></b>						
Bromofluorobenzene (602/8020)	104	Percent			kp	11/22/93
<b><u>Petroleum Hydrocarbon Analysis</u></b>						
Total Petroleum Hydrocarbon (IR)	ND	mg/l	1.0	418.1	sh	11/19/93



Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

RECEIVED DEC 01 1993

FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302

Project Name: Smokehouse (11-17-93)  
Project Number: 384.01  
Project Manager: DAG  
Sampler Name:

Sample Information

Lab ID: 33216578-007  
Client ID: QC Report -Water  
Matrix: Water

Date Sampled: 11/16/93 :  
Date Received: 11/17/93 :0  
Date Reported: 11/23/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
----------------------	--------	------	-----------------	------------	---------	---------------

METHOD BLANK - VOLATILES

Method Blank	ND	ug/l		8020/602		
--------------	----	------	--	----------	--	--

METHOD SUMMARIES

Petroleum Hydrocarbon Analysis:

- (1) TPH (IR) Based on Methods SW846 9073 and EPA 418.1  
Analyzed by FTIR using BioRad FTS 7 instrumentation.
- (2) TPH (GC) / Petroleum Hydrocarbon Profile  
Based on Methods ASTM D3328, SW846 8100/3550 and the  
State of California L.U.F.T. field manual.  
Analyzed by GC/FID using Hewlett Packard 5890 GC.

Volatile organic analysis is performed using H/P 5995 or 5970 GC/MS, Tekmar purge and trap, and ALS autosampler. Chromatography incorporates packed and megabore columns. Data reduction is performed on RTE 1000 and ChemStation systems. Tuning is based on BFB standards. Procedural guidelines follow EPA 624 or SW846 for all analyses. Aromatic volatiles listed in VOA 8020 are analyzed using GC/MS systems.

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846. November 1986.
2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACF., 16th Edition. 1985.

