Phase (check one)	**Type** (Check one)
☐ **Initial Site Investigation** ☐ **Corrective Action Feasibility Investigation** ☐ **Corrective Action Plan** ☒ **Corrective Action Summary Report** ☐ **Operations and Monitoring Report**	☐ **Work Scope** ☒ **Technical Report** ☐ **PCF Reimbursement Request** ☐ **General Correspondence**

FUEL OIL SPILL
MOULTON RESIDENCE
95 WHITESHILL ROAD
EAST DOVER, VT
VT DEC SMS #2006-3523

Prepared for:

LARRY MOULTON
1012 SHORELAND DRIVE
LOPEZ ISLAND, WASHINGTON 98261
PHONE: (360) 468-4821

FILE NO. 04-206526
DOCUMENT: SUMMARYLTRPT0606
JUNE 2006

PREPARED BY:
ENVIRONMENTAL COMPLIANCE SERVICES, INC.
30 HARRIS PLACE; BRATTLEBORO, VT 05301
802-257-1195 **FAX: 802-257-1603** **www.ecsconsult.com**

30 Harris Place
Brattleboro, VT 05301
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June 5, 2006
ECS Job# 04-206526.00
Document: Summary Report

Mr. Richard Spiese
Sites Management Section
VT DEC Waste Management Division
103 South Main Street
Waterbury, VT 05671-0404

RE: Fuel Oil Spill
Moulton Residence
95 Whiteshill Road
East Dover, VT
VT DEC # 20063523

Dear Mr. Spiese:

Environmental Compliance Services, Inc. (ECS) of Brattleboro, VT provided emergency response and remedial services on behalf of Lawrence Moulton, site owner of the above referenced location during the month of May 2006. Figure 1 is a Site Location Map. Photographs are provided as Attachment I. A summary of environmental actions is provided below.

Spill History

A leg on a 275 gallon aboveground storage tank (AST) containing kerosene failed resulting in the release of an estimated 150 gallons of product spilling to the ground. The tank was located approximately 50 feet upgradient of the residential building on a steep slope. The tank was reportedly installed by Guy Nido approximately 3 years ago according to the site owner. Oil apparently migrated via gravity down slope on what may have been snow or ice covered ground until it reached the foundation of the site building. The site is a second home for the site owner; primary residence is 1012 Shoreland Drive, Lopez Island Washington, 98261 (360-468-4821).

Upon arriving at the site on Sunday, May 7, 2006, the site owner discovered that the fuel oil AST was lying on its side. He notified the state police who then connected him with Chuck Schwer of the Vermont Department of Environmental Conservation (VT DEC). According to Mr. Moulton, the AST received about 230 gallons of oil during the fall of 2005, shortly before closing the house for winter. The tank tipped over sometime between the fall of 2005 and May 7, 2006.

Guy Nido was called to the site by the site owner to repair the AST. The tank was pumped of the remaining contents (80 gallons), righted, placed on wooden blocks and refilled with the 80 gallons recovered. The AST was relocated further uphill from its former location and connected to the heating system located in the basement of the site building.

Oil apparently flowed overland to the house foundation where it seeped into the ground and underlying fractured shale bedrock. The site's drilled drinking water well (approximately 260 feet deep, per site owner) was considered to be impacted based on odors detected by the site owner when drawing tap water inside the residence. The residence consists of a walkout unfinished basement/garage with first and second floor living areas. The heating system apparently consists of ceiling/wall units, which require the fuel source (AST) to be located up the hill to deliver the oil via gravity. The site consists of approximately 275 acres of forested land located mainly west of the residence. Additional human or environmental potential sensitive receptors are not located nearby the release site. Figure 2 is an aerial photograph showing the subject area.

Initial Response by ECS

Bruce Tease of ECS responded to the initial call received on May 8, 2006. The drinking water well head was accessed to determine if free phase product was present at the groundwater table interface within the well. Approximately 3 feet of oil was determined to be present. The well is located within a small wooden shed located approximately 30 feet crossgradient to the overland flow path of oil. Hand borings were advanced via hand auger and shovel to assess the horizontal and vertical extent of the oil impacted soil. A site sketch showing the soil boring locations and salient site features is provided as Figure 3.

Product Only Recovery Pump

ECS coordinated the installation of a KECK 2-inch diameter selective skimmer bladder pump with compressor on May 9, 2006, following communication with and approval by the VT DEC. A total of approximately 4-5 gallons of oil was collected during the first day of product recovery. Subsequent product gauging, which occurred daily through May 12, 2006, did not detect the return of free product at levels greater than 1 inch. The system remained off over the weekend to test for product rebound. Product thickness in the well remained below one inch, below the level recoverable by the product-only pump.

Bottled Water Delivery and Water Treatment System Installation

Bottled water delivery was initiated at the site on May 17, 2006, the same date that Green Mountain Water Treatment installed the water treatment system skid. The site owner returned to Washington on or about June 1, 2006. He plans on returning to the site in the fall of 2006.

Soil Excavation

ECS recommended that soil excavation occur to recover oil saturated soil and to determine the depth to bedrock. The VT DEC approved of this action and soil excavation was performed on May 19, 2006, by Browns Country Services (BCS) under the direction of David Balk from ECS. Approximately 36 cubic yards of oil impacted soil was removed and polyencapsulated on site, upgradient of the release area. Bedrock was encountered within 1 foot of the ground surface beneath the former AST area, 2-3 feet further downgradient and 8 feet near the house. The overall distance of the migration path was 30 feet, and approximately 10 feet in width. Due to the constraints of the house (located east of the excavation), two propane ASTs located immediately south of the excavation and the well shed located to the north, excavated soil had to be tracked uphill to the staging area. A site sketch showing the excavation grave is presented as Figure 4. Photographs are provided as Attachment 1.

Soil samples were collected for field screening of volatile organic compounds (VOCs) via a Photovac Model 2020 photoionization detector (PID) calibrated to a 100 ppmv isobutylene span gas. Results are included in Table 1 along with data collected on May 8, 2006. Soil samples collected on May 19, 2006, were submitted to Spectrum Analytical, Inc. for laboratory analysis of VOCs via EPA Method 8021b (VT Scan) and diesel range organic (DRO) via EPA Method 8015M. Results revealed the presence of 62.7 ug/kg of 1,2,4 trimethylbenzene and the absence of DRO compounds (minimum detection limit of 35.1 mg/kg) in the side wall composite sample (combination of four sidewall samples with similar PID levels of VOCs (8 ppmv, 10 ppmv, 25, ppmv and 30 ppmv), and 658 ug/kg of m-xylene, 982 ug/kg of 1,2,4 trimethylbenzene and 2,910 ug/kg of 1,3,5 trimethylbenzene, with 1,080 mg/kg of DRO in the base sample (150 VOCs ppmv) collected near the site residence in residual soil remaining at the bedrock surface. Analytical data sheets and chain of custody statement are included as Attachment II.

The product was identified as aviation fuel, which is consistent with kerosene. The excavation pit was backfilled on May 20, 2006.

Groundwater was not encountered during soil excavation activities. A perforated 4-inch diameter stand pipe was installed in the pit in the event surfactant injection is warranted to flush product from the bedrock formation. Heavy rains on May 19, 2006, which collected in the excavation pit had infiltrated the bedrock by May 20, 2006, indicating that a closed loop system (e.g. injection of surfactant into stand pipe, recovery of product by surface well pump followed by treatment via granular activated carbon (GAC) canisters and injection into the ground via the stand pipe) may be feasible in the event remedial actions are warranted at the site (e.g. return of free phase oil in well warrants active remediation).

The static groundwater level measured in the drinking water well fluctuated between 64 feet and 65 feet below ground surface. The presence of free phase product was measured during soil excavation and last on May 30, 2006, as a final check for the return of oil into the well. Product thickness continued to be limited to a thin film of oil, less than 1 inch in thickness.

Conclusions and Recommendations

ECS provides the following conclusions and recommendations;

1. A release of kerosene occurred from a 275 gallon AST located outdoors at a second residence sometime during the winter of 2005-2006. The volume of the release is estimated to be 150 gallons.

2. The oil release impacted soil and the site bedrock well, where approximately 4-5 gallons of free phase oil was recovered via the installation of a product only pump.

3. Following the initial recovery of oil from the well, free phase product levels remained below 1 inch.

4. A water treatment system was installed on May 17, 2006, at the same time bottled water delivery was initiated.

5. Approximately 36 cubic yards of oil impacted soils were excavated along a 10 foot wide by 30 foot long migration path. Depth to ledge ranged from 1 to 8 feet. The bedrock consisted of fractured shale.

6. The oil released from the AST apparently seeped into the bedrock after it migrated along the ground surface to the site building. Surface soil near the well head did not exhibit evidence of oil contamination. Therefore the preferential migration pathway the oil followed into the well appears to be bedrock fractures.

7. Based on the amount of soil removed, and pore space volume associated with this material, the maximum amount of oil potentially captured in the soil is estimated to be approximately 40-50 gallons, leaving approximately 100 gallons unaccounted for. Some of this oil may have migrated downgradient around the northwest corner of the house. Additional excavation in this direction was not performed due to the water line to the well. The presence of a stairwell and tree on the north side of the house prevented excavation of a test pit in a location reasonably proximate to the spill site.

8. The site owner has returned to Washington for the remainder of the summer and plans to return to Vermont in the fall of 2006.

9. ECS recommends that the treatment system remain in place until the fall of 2006, when the site owner returns, and at which time the well can be sampled to determine contaminant trends.

10. ECS recommends that the contaminated soil pile be disposed of off site due to the high levels of contamination present, and the likelihood of a very long period of land farming monitoring required before natural attention degrades the oil to levels where the soils could be spread on site.

11. ECS recommends that the KECK system be removed due to the absence of fee product in the well greater than 1 inch in thickness.

Should you have any questions, please contact me at (802) 257-1195.

Sincerely,
Environmental Compliance Services, Inc.

Bruce Tease

Digitally signed by Bruce Tease
DN: CN = Bruce Tease, C = US, O = ECS, Inc.
Reason: I am the author of this document
Location: Brattleboro VT
Date: 2006.06.07 16:29:57 -04'00'

Bruce Tease, Ph.D., LSP, P.G.
Branch Manager/Principal

cc Larry Moulton, site owner

FIGURE 1

SITE LOCATION MAP

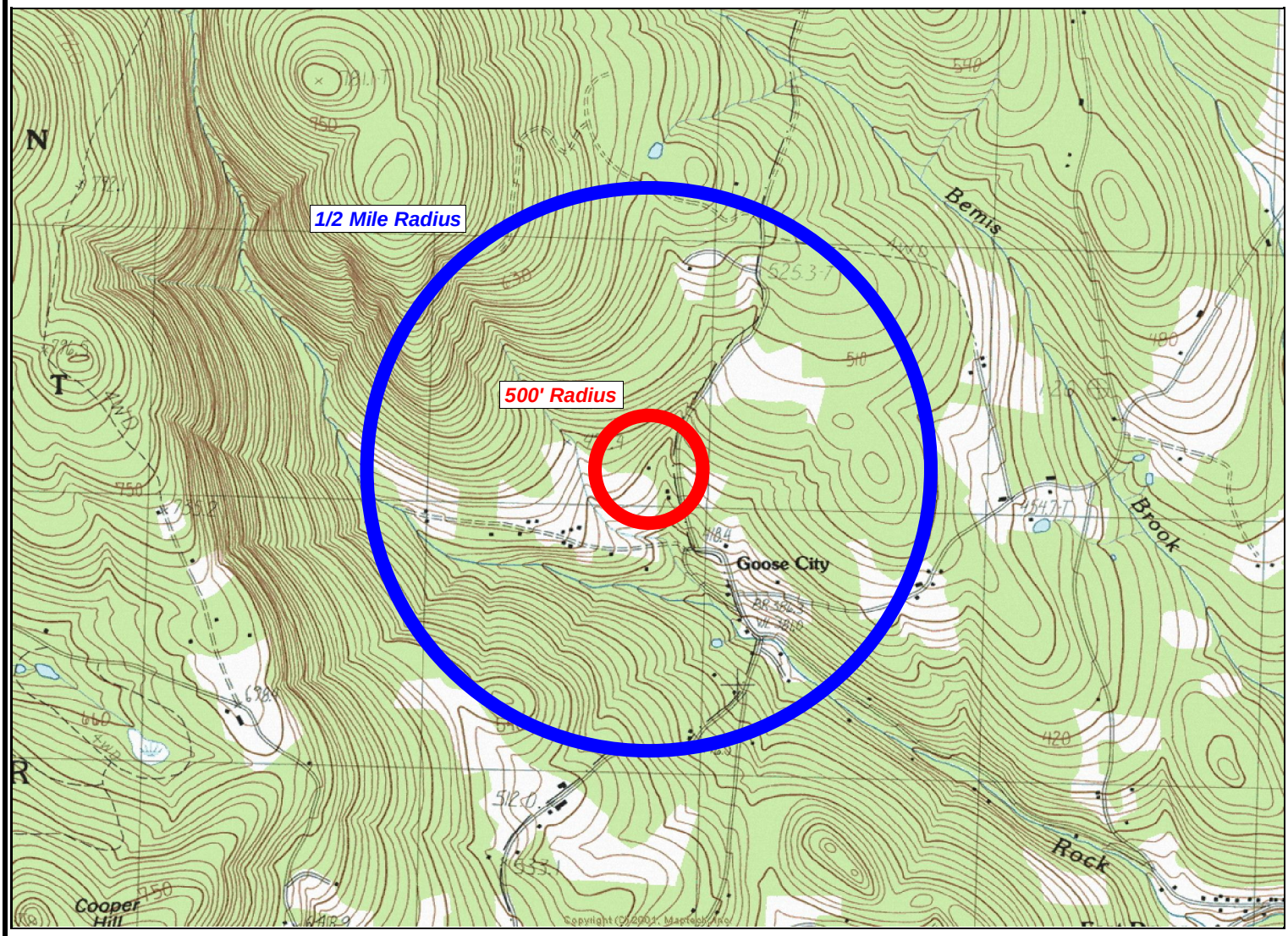
Environmental Compliance Services, Inc.
588 Silver Street, Agawam, MA 01001
Phone (413)-789-3530 Fax (413)-789-2776
www.ecsconsult.com

SITE LOCUS

Figure: ***1***

Moulton Residence
95 Whiteshill Road
Dover, VT
05341

Job Number: 206526



1 1/2 0 1 Mile

1 inch = 1500 feet

Contour Interval: 6 Meters

North

Base Map: U.S. Geological Survey; Quadrangle Location: West Dover, VT

UTM Coordinates: 18 0679784 East / 4759144 North

Map Edited: 1986 ***Map Revised: NA*** ***Generated By: RAS***

FIGURE 2

AERIAL PHOTOGRAPHS

Send To Printer Back To TerraServer Change to 11x17 Print Size Show Grid Lines Change to Landscape

USGS **3 km N of Dover, Vermont, United States** 07 May 1992

Image courtesy of the U.S. Geological Survey

FIGURE 3

SITE SKETCH OF SOIL BORING LOCATIONS
AND SALIENT SITE FEATURES

Site Sketch (Figure3)

95 Whiteshill Road, Dover, VT

May 2006 NTS

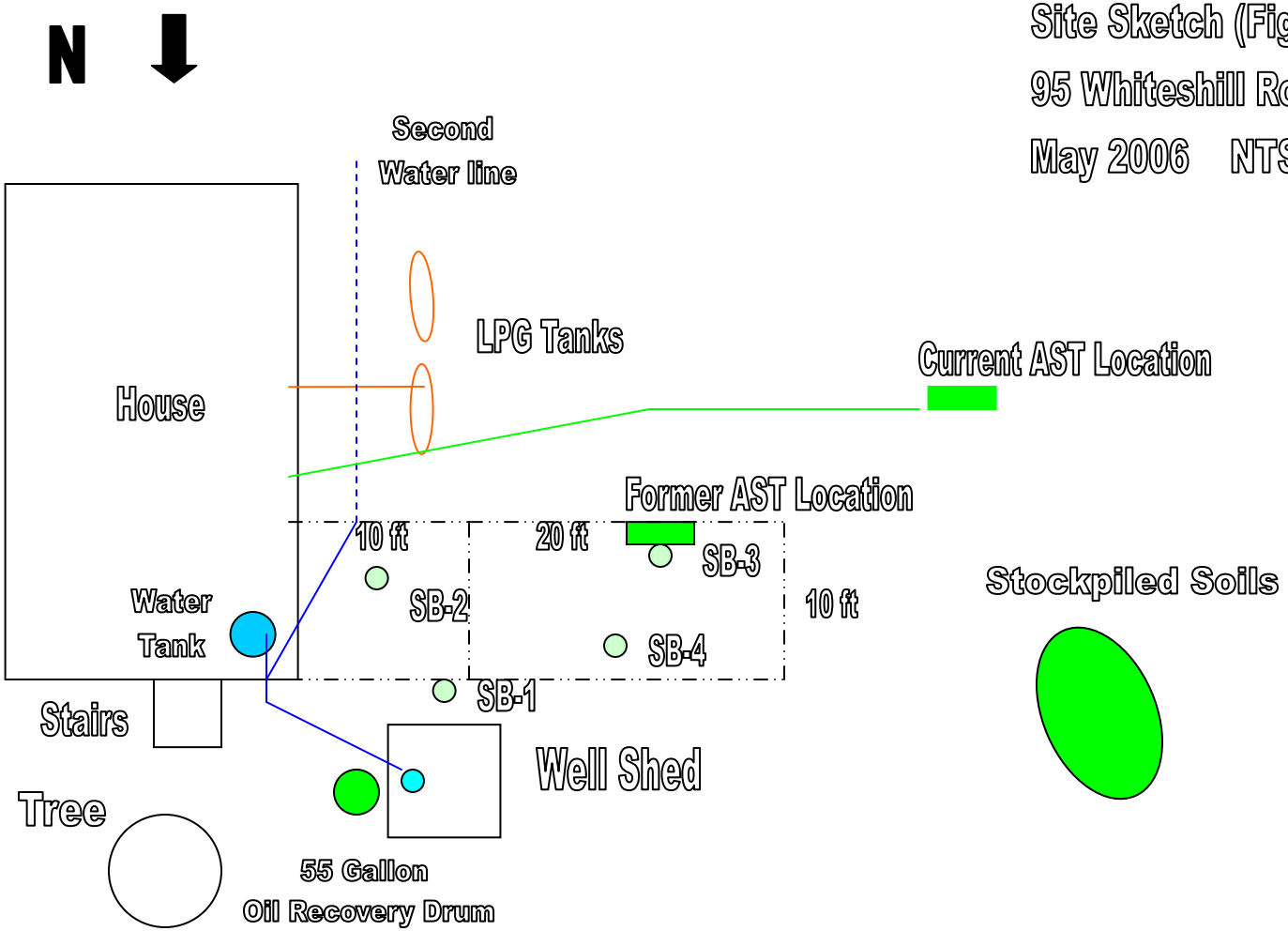


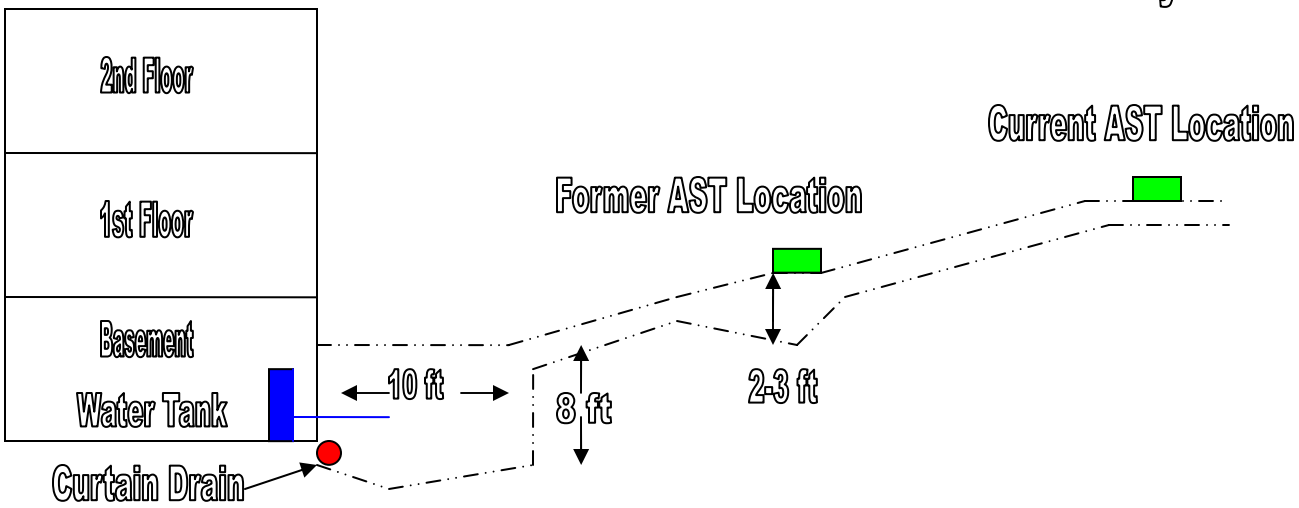
FIGURE 4

SITE SKETCH OF EXCAVATION GRAVE

Site Sketch (Figure 4)

95 Whiteshill Road, Dover, VT

May 2006 NTS



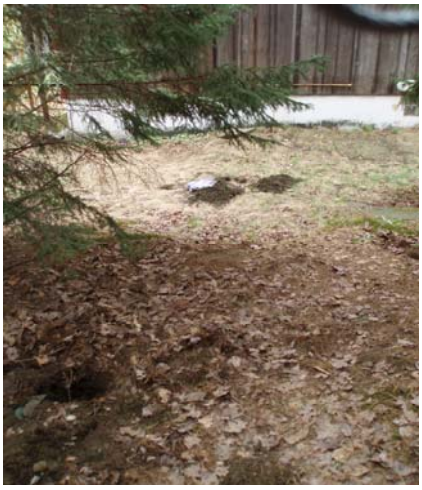
ATTACHMENT I
PHOTOGRAPHS

View looking west of former AST location (see rag on ground). Guy Nido staff relocated AST just right of tree and are shown transferring recovered product to tank.

View looking southeast of former AST location marked by rag.
Note two LPG ASTs in background.

Well head in shed northwest of house. Note oil in hand bailer.

View looking north of well shed and hand boring SB-2 advanced at base of slope.



Hand borings advanced at well shed (SB-1) and up hill north of former AST (SB-4).

View looking east of relocated AST. Iron legs were removed by Guy Nido and tank was positioned on concrete blocks supported with wood blocks.

Delivery and return rubbing from product recovery pump to drum storage.
Note solenoid provided for product shut off.

Start of soil excavation at base of slope.

Excavation was determined to be deepest at house foundation. Bedrock was present immediately beneath house foundation and to the north, west and south of excavation grave.

Second water line from pressure tank in basement extending south of site building. Site owner thought this line delivered water to an undetermined location, south of house. The water line from the well enters house of the north side of house, approximately 1-2 feet north of excavation pit.

View looking north of ledge immediately below ground surface.

View looking west of excavation in vicinity of former AST location.

Secondary water line extending to the south from house (left). Note curtain drain along west side of house foundation. Drain was mostly filled with gravel and not considered to be a pathway for free phase oil. Note ledge immediately beneath curtain drain and house foundation.

View looking west of excavation from pit at house.

Polyencapsulated soil pile west of excavation area.

Backfilled excavation pit. Note standpipe installed in the event future remedial actions are warranted.

View looking east of backfilled area.

View looking east of backfilled area showing well shed.

View looking south of backfilled area showing LPG tanks.

ATTACHMENT II

ANALYTICAL DATA SHEET AND CHAIN OF CUSTODY

Report Date:
05-Jun-06 13:12

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
30 Harris Place
Brattleboro, VT 05301
Attn: Bruce Tease

Project: Moulton Residence - E.Dover, VT
Project 04-206526

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SA45447-01	Compsidewall	Soil	19-May-06 15:00	23-May-06 13:20
SA45447-02	Base	Soil	19-May-06 15:10	23-May-06 13:20
SA45447-03	Trip	Trip	19-May-06 08:00	23-May-06 13:20

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. All applicable NELAC requirements have been met.
Please note that this report contains 9 pages of analytical data plus Chain of Custody document(s).
This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Massachusetts Certification # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538/2972
New York # 11393/11840
Rhode Island # 98
USDA # S-51435
Vermont # VT-11393

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method indicated. Please refer to our "Quality" webpage at www.spectrum-analytical.com for a full listing of our current certifications.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Compsidewall	04-206526	Soil	19-May-06 15:00	23-May-06
SA45447-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst
Volatile Organic Compounds											
	VOC Extraction	Field extracted		N/A		1	VOC	25-May-06	25-May-06	6051727	RD
Volatile Organic Compounds by 8260B											
Prepared by method SW846 5030 Soil (high level)											
71-43-2	Benzene	BRL		µg/kg dry	53.1	50	SW846 8260B	01-Jun-06	01-Jun-06	6060028	EK
100-41-4	Ethylbenzene	BRL		µg/kg dry	53.1	50	"	"	"	"	"
1634-04-4	Methyl tert-butyl ether	BRL		µg/kg dry	53.1	50	"	"	"	"	"
91-20-3	Naphthalene	BRL		µg/kg dry	53.1	50	"	"	"	"	"
108-88-3	Toluene	BRL		µg/kg dry	53.1	50	"	"	"	"	"
95-63-6	1,2,4-Trimethylbenzene	62.7		µg/kg dry	53.1	50	"	"	"	"	"
108-67-8	1,3,5-Trimethylbenzene	BRL		µg/kg dry	53.1	50	"	"	"	"	"
1330-20-7	m,p-Xylene	BRL		µg/kg dry	106	50	"	"	"	"	"
95-47-6	o-Xylene	BRL		µg/kg dry	53.1	50	"	"	"	"	"
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*85.8*		*70-130 %*			"	"	"	"	"
2037-26-5	*Toluene-d8*	*102*		*70-130 %*			"	"	"	"	"
17060-07-0	*1,2-Dichloroethane-d4*	*133*	S-GC	*70-130 %*			"	"	"	"	"
1868-53-7	*Dibromofluoromethane*	*111*		*70-130 %*			"	"	"	"	"
Extractable Petroleum Hydrocarbons											
Diesel Range Organics											
Prepared by method SW846 3550B											
68476-30-2	Fuel Oil #2	BRL		mg/kg dry	35.1	1	8015BM/ME4.1.25	31-May-06	01-Jun-06	6051952	LK
68476-31-3	Fuel Oil #4	BRL		mg/kg dry	35.1	1	"	"	"	"	"
68553-00-4	Fuel Oil #6	BRL		mg/kg dry	35.1	1	"	"	"	"	"
M09800000	Motor Oil	BRL		mg/kg dry	35.1	1	"	"	"	"	"
J00100000	Aviation Fuel	BRL		mg/kg dry	35.1	1	"	"	"	"	"
	Unidentified	BRL		mg/kg dry	35.1	1	"	"	"	"	"
	Other Oil	BRL		mg/kg dry	35.1	1	"	"	"	"	"
	Diesel Range Organics (DRO)	BRL		mg/kg dry	35.1	1	"	"	"	"	"
Surrogate recoveries:											
3386-33-2	*1-Chlorooctadecane*	*67.7*		*40-140 %*			"	"	"	"	"
General Chemistry Parameters											
	% Solids	78.3		%		1	SM2540 G Mod.	26-May-06	26-May-06	6051794	RD

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Base SA45447-02	04-206526	Soil	19-May-06 15:10	23-May-06

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst
Volatile Organic Compounds											
	VOC Extraction	Field extracted		N/A		1	VOC	25-May-06	25-May-06	6051727	RD
Volatile Organic Compounds by 8260B			R-05								
Prepared by method SW846 5030 Soil (high level)											
71-43-2	Benzene	BRL		µg/kg dry	170	200	SW846 8260B	01-Jun-06	01-Jun-06	6060028	EK
100-41-4	Ethylbenzene	BRL		µg/kg dry	170	200	"	"	"	"	"
1634-04-4	Methyl tert-butyl ether	BRL		µg/kg dry	170	200	"	"	"	"	"
91-20-3	Naphthalene	BRL		µg/kg dry	170	200	"	"	"	"	"
108-88-3	Toluene	BRL		µg/kg dry	170	200	"	"	"	"	"
95-63-6	1,2,4-Trimethylbenzene	982		µg/kg dry	170	200	"	"	"	"	"
108-67-8	1,3,5-Trimethylbenzene	2,910		µg/kg dry	170	200	"	"	"	"	"
1330-20-7	m,p-Xylene	BRL		µg/kg dry	340	200	"	"	"	"	"
95-47-6	o-Xylene	658		µg/kg dry	170	200	"	"	"	"	"
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*90.2*		*70-130 %*			"	"	"	"	"
2037-26-5	*Toluene-d8*	*108*		*70-130 %*			"	"	"	"	"
17060-07-0	*1,2-Dichloroethane-d4*	*138*	S-GC	*70-130 %*			"	"	"	"	"
1868-53-7	*Dibromofluoromethane*	*115*		*70-130 %*			"	"	"	"	"
Extractable Petroleum Hydrocarbons											
Diesel Range Organics											
Prepared by method SW846 3550B											
68476-30-2	Fuel Oil #2	BRL		mg/kg dry	32.6	1	8015BM/ME4.1.25	31-May-06	01-Jun-06	6051952	LK
68476-31-3	Fuel Oil #4	BRL		mg/kg dry	32.6	1	"	"	"	"	"
68553-00-4	Fuel Oil #6	BRL		mg/kg dry	32.6	1	"	"	"	"	"
M09800000	Motor Oil	BRL		mg/kg dry	32.6	1	"	"	"	"	"
J00100000	Aviation Fuel	1,080		mg/kg dry	32.6	1	"	"	"	"	"
	Unidentified	BRL		mg/kg dry	32.6	1	"	"	"	"	"
	Other Oil	BRL		mg/kg dry	32.6	1	"	"	"	"	"
	Diesel Range Organics (DRO)	1,080		mg/kg dry	32.6	1	"	"	"	"	"
Surrogate recoveries:											
3386-33-2	*1-Chlorooctadecane*	*71.9*		*40-140 %*			"	"	"	"	"
General Chemistry Parameters											
	% Solids	80.2		%		1	SM2540 G Mod.	26-May-06	26-May-06	6051794	RD

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip SA45447-03	04-206526	Trip	19-May-06 08:00	23-May-06

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst
Volatile Organic Compounds											
Volatile Organic Compounds by 8260B											
Prepared by method SW846 5030 Soil (high level)											
71-43-2	Benzene	BRL		µg/kg wet	50.0	50	SW846 8260B	01-Jun-06	01-Jun-06	6060028	EK
100-41-4	Ethylbenzene	BRL		µg/kg wet	50.0	50	"	"	"	"	"
1634-04-4	Methyl tert-butyl ether	BRL		µg/kg wet	50.0	50	"	"	"	"	"
91-20-3	Naphthalene	BRL		µg/kg wet	50.0	50	"	"	"	"	"
108-88-3	Toluene	BRL		µg/kg wet	50.0	50	"	"	"	"	"
95-63-6	1,2,4-Trimethylbenzene	BRL		µg/kg wet	50.0	50	"	"	"	"	"
108-67-8	1,3,5-Trimethylbenzene	BRL		µg/kg wet	50.0	50	"	"	"	"	"
1330-20-7	m,p-Xylene	BRL		µg/kg wet	100	50	"	"	"	"	"
95-47-6	o-Xylene	BRL		µg/kg wet	50.0	50	"	"	"	"	"
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*87.6*		*70-130 %*			"	"	"	"	"
2037-26-5	*Toluene-d8*	*107*		*70-130 %*			"	"	"	"	"
17060-07-0	*1,2-Dichloroethane-d4*	*128*		*70-130 %*			"	"	"	"	"
1868-53-7	*Dibromofluoromethane*	*107*		*70-130 %*			"	"	"	"	"

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 6060028 - SW846 5030 Soil (high level)										
Blank (6060028-BLK1)										
Prepared & Analyzed: 01-Jun-06										
Benzene	BRL		µg/kg wet	1.0						
Chlorobenzene	BRL		µg/kg wet	1.0						
1,1-Dichloroethene	BRL		µg/kg wet	1.0						
Ethylbenzene	BRL		µg/kg wet	1.0						
Methyl tert-butyl ether	BRL		µg/kg wet	1.0						
Naphthalene	BRL		µg/kg wet	1.0						
Toluene	BRL		µg/kg wet	1.0						
Trichloroethene	BRL		µg/kg wet	1.0						
1,2,4-Trimethylbenzene	BRL		µg/kg wet	1.0						
1,3,5-Trimethylbenzene	BRL		µg/kg wet	1.0						
m,p-Xylene	BRL		µg/kg wet	2.0						
o-Xylene	BRL		µg/kg wet	1.0						
Surrogate: 4-Bromofluorobenzene	*41.5*		µg/kg wet		*50.0*		*83.0*	*70-130*		
Surrogate: Toluene-d8	*51.6*		µg/kg wet		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*68.6*	*S-GC*	µg/kg wet		*50.0*		*137*	*70-130*		
Surrogate: Dibromofluoromethane	*57.9*		µg/kg wet		*50.0*		*116*	*70-130*		
LCS (6060028-BS1)										
Prepared & Analyzed: 01-Jun-06										
Benzene	20.1		µg/kg wet		20.0		100	70-130		30
Ethylbenzene	20.0		µg/kg wet		20.0		100	70-130		30
Methyl tert-butyl ether	22.9		µg/kg wet		20.0		114	70-130		30
Naphthalene	17.7		µg/kg wet		20.0		88.5	70-130		30
Toluene	19.6		µg/kg wet		20.0		98.0	70-130		30
1,2,4-Trimethylbenzene	20.2		µg/kg wet		20.0		101	70-130		30
1,3,5-Trimethylbenzene	22.5		µg/kg wet		20.0		112	70-130		30
m,p-Xylene	38.9		µg/kg wet		40.0		97.2	70-130		30
o-Xylene	19.6		µg/kg wet		20.0		98.0	70-130		30
Surrogate: 4-Bromofluorobenzene	*46.3*		µg/kg wet		*50.0*		*92.6*	*70-130*		
Surrogate: Toluene-d8	*51.8*		µg/kg wet		*50.0*		*104*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*64.8*		µg/kg wet		*50.0*		*130*	*70-130*		
Surrogate: Dibromofluoromethane	*56.1*		µg/kg wet		*50.0*		*112*	*70-130*		
LCS Dup (6060028-BSD1)										
Prepared & Analyzed: 01-Jun-06										
Benzene	19.7		µg/kg wet		20.0		98.5	70-130	1.51	30
Ethylbenzene	19.1		µg/kg wet		20.0		95.5	70-130	4.60	30
Methyl tert-butyl ether	22.3		µg/kg wet		20.0		112	70-130	1.77	30
Naphthalene	17.5		µg/kg wet		20.0		87.5	70-130	1.14	30
Toluene	19.1		µg/kg wet		20.0		95.5	70-130	2.58	30
1,2,4-Trimethylbenzene	19.1		µg/kg wet		20.0		95.5	70-130	5.60	30
1,3,5-Trimethylbenzene	21.6		µg/kg wet		20.0		108	70-130	3.64	30
m,p-Xylene	37.2		µg/kg wet		40.0		93.0	70-130	4.42	30
o-Xylene	18.9		µg/kg wet		20.0		94.5	70-130	3.64	30
Surrogate: 4-Bromofluorobenzene	*45.4*		µg/kg wet		*50.0*		*90.8*	*70-130*		
Surrogate: Toluene-d8	*51.9*		µg/kg wet		*50.0*		*104*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*66.7*	*S-GC*	µg/kg wet		*50.0*		*133*	*70-130*		
Surrogate: Dibromofluoromethane	*56.6*		µg/kg wet		*50.0*		*113*	*70-130*		
Matrix Spike (6060028-MS1)	**Source: SA45694-01**									
Prepared & Analyzed: 01-Jun-06										
Benzene	17.0		µg/kg dry		20.0	BRL	85.0	70-130		30
Chlorobenzene	16.0		µg/kg dry		20.0	BRL	80.0	70-130		30
1,1-Dichloroethene	19.1		µg/kg dry		20.0	BRL	95.5	70-130		30
Toluene	18.2		µg/kg dry		20.0	BRL	91.0	70-130		30
Trichloroethene	17.6		µg/kg dry		20.0	BRL	88.0	70-130		30
Surrogate: 4-Bromofluorobenzene	*48.4*		µg/kg dry		*50.0*		*96.8*	*70-130*		

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 6060028 - SW846 5030 Soil (high level)										
Matrix Spike (6060028-MS1)	**Source: SA45694-01**									
Prepared & Analyzed: 01-Jun-06										
Surrogate: Toluene-d8	*54.0*		µg/kg dry		*50.0*		*108*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*61.5*		µg/kg dry		*50.0*		*123*	*70-130*		
Surrogate: Dibromofluoromethane	*50.2*		µg/kg dry		*50.0*		*100*	*70-130*		
Matrix Spike Dup (6060028-MSD1)	**Source: SA45694-01**									
Prepared & Analyzed: 01-Jun-06										
Benzene	19.7		µg/kg dry		20.0	BRL	98.5	70-130	14.7	30
Chlorobenzene	19.5		µg/kg dry		20.0	BRL	97.5	70-130	19.7	30
1,1-Dichloroethene	24.8		µg/kg dry		20.0	BRL	124	70-130	26.0	30
Toluene	21.0		µg/kg dry		20.0	BRL	105	70-130	14.3	30
Trichloroethene	21.2		µg/kg dry		20.0	BRL	106	70-130	18.6	30
Surrogate: 4-Bromofluorobenzene	*48.2*		µg/kg dry		*50.0*		*96.4*	*70-130*		
Surrogate: Toluene-d8	*52.6*		µg/kg dry		*50.0*		*105*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*61.5*		µg/kg dry		*50.0*		*123*	*70-130*		
Surrogate: Dibromofluoromethane	*51.5*		µg/kg dry		*50.0*		*103*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 6051952 - SW846 3550B										
Blank (6051952-BLK1)										
Prepared: 31-May-06 Analyzed: 01-Jun-06										
Fuel Oil #2	BRL		mg/kg wet	13.3						
Fuel Oil #4	BRL		mg/kg wet	13.3						
Fuel Oil #6	BRL		mg/kg wet	13.3						
Motor Oil	BRL		mg/kg wet	13.3						
Aviation Fuel	BRL		mg/kg wet	13.3						
Unidentified	BRL		mg/kg wet	13.3						
Other Oil	BRL		mg/kg wet	13.3						
Diesel Range Organics (DRO)	BRL		mg/kg wet	13.3						
C9 - C36	BRL		mg/kg wet	13.3						
Surrogate: 1-Chlorooctadecane	*2.52*		mg/kg wet		*3.33*		*75.7*	*40-140*		
LCS (6051952-BS1)										
Prepared: 31-May-06 Analyzed: 01-Jun-06										
Fuel Oil #2	569		mg/kg wet	13.3	667		85.3	40-140		200
Surrogate: 1-Chlorooctadecane	*7.80*	*S-02*	mg/kg wet		*3.33*		*234*	*40-140*		
Duplicate (6051952-DUP1)	**Source: SA45556-02**									
Prepared: 31-May-06 Analyzed: 01-Jun-06										
Fuel Oil #2	BRL		mg/kg dry	28.4		BRL				50
Fuel Oil #4	BRL		mg/kg dry	28.4		BRL				50
Fuel Oil #6	BRL		mg/kg dry	28.4		BRL				50
Motor Oil	BRL		mg/kg dry	28.4		BRL				50
Aviation Fuel	BRL		mg/kg dry	28.4		BRL				50
Unidentified	BRL		mg/kg dry	28.4		BRL				50
Other Oil	BRL		mg/kg dry	28.4		BRL				50
Diesel Range Organics (DRO)	BRL		mg/kg dry	28.4		BRL				50
Surrogate: 1-Chlorooctadecane	*3.13*		mg/kg dry		*3.56*		*87.9*	*40-140*		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 6051794 - General Preparation										
Duplicate (6051794-DUP1)	**Source: SA45488-04**									
Prepared & Analyzed: 26-May-06										
% Solids	86.7		%			86.1			0.694	20

Notes and Definitions

R-05	The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
vext2	Field extracted
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from analyses of various petroleum products. Possible match categories are as follows:

Gasoline - includes regular, unleaded, premium, etc.
Fuel Oil #2 - includes home heating oil, #2 fuel oil, and diesel
Fuel Oil #4 - includes #4 fuel oil
Fuel Oil #6 - includes #6 fuel oil and bunker "C" oil
Motor Oil - includes virgin and waste automobile oil
Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha
Aviation Fuel - includes kerosene, Jet A and JP-4
Other Oil - includes lubricating and cutting oil, and silicon oil

At times, the unidentified petroleum product is quantified using a calibration that most closely approximates the distribution of compounds in the sample. When this occurs, the result is qualified as *TPH (Calculated as).

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Validated by:
Hanibal C. Tayeh, Ph.D.
Nicole Brown

SA45447 mj

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☑ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS - BRATTLEBORO

Invoice To: ECS - AGAWAM

Project No.: 04-206526

Site Name: Moulton Residence

Location: Whitesh'll Road, E. Dover State: VT

Project Mgr.: BRUCE TEASE

P.O. No.: _____ RQN: STANDARD

Sampler(s): David Balk

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9= ICE 4°C 10= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= TRIP X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOCs VT VOC SCAN	8021B	TPH 8015M (DRO)	DRO/Range Organics	QA Reporting Notes: (check if needed)
SA45447-01	COMPSIDEWALL	5/19/06	3:00	C	SO	7,9	2	2			X		X		
-02	BASE	↓	3:10	G	SO	7,9	2	2			X		X		
-03	TRIP	↓	8:00	G	X,	7,9	1				X				

QA Reporting Notes (check if needed):
- ☐ Provide MA DEP MCP CAM Report
- ☐ Provide CT DPH RCP Report

QA/QC Reporting Level
- ☐ Standard ☐ No QC
- ☐ Other _____

State specific reporting standards: _____

☐ Fax results when available to (____) _____

☑ E-mail to KRufus@ECSConsult.com

EDD Format _____

Condition upon receipt: ☐ Iced ☐ Ambient ☐ °C 4°

Relinquished by:	Received by:	Date:	Time:
Dave Balk		5-23-06	1245
		5/23/6	13:20

FRIG