



September 15, 2008

Mr. Ashley Desmond
Vermont Department of Environmental Conservation
Waste Management Division
103 South Main Street/West Building
Waterbury, Vermont 05671-0404

Re: Initial Site Investigation Report
VTrans – Middlebury
341 Creek Road
Middlebury, Vermont
VDEC Site #2008-3798
LAG Project #08035

Dear Mr. Desmond:

On behalf of Mr. Andrew Shively of the Vermont Agency of Transportation (VTrans), Lincoln Applied Geology, Inc. (LAG) is pleased to present the attached Initial Site Investigation Report detailing recent work efforts at the above referenced site. Please do not hesitate to contact me at (802) 453-4384 with any questions or comments regarding this report.

Sincerely,
Lincoln Applied Geology, Inc.

Dagan Murray
Project Manager

DM/IM/LR:rc

Enclosures

Cc: Mr. Andrew Shively (w/o enclosure)

F:\CLIENTS\2008\08035\Reports\July 2008 Site Investigation Report\SI Cover Letter to DEC 09-08.doc

Initial Site Investigation Report

**VTrans – Middlebury Garage
341 Creek Road
Middlebury, Vermont
VDEC SMS Site #2007-3798
LAG Project #08035**

September 15, 2008

Prepared for:

**Mr. Andrew Shively
Hazardous Materials and Waste Coordinator
Vermont Agency of Transportation
133 State Street/Administrative Building
Montpelier, Vermont 05633-5110**

Prepared by:

**Lincoln Applied Geology, Inc.
163 Revell Road
Lincoln, Vermont**

**Dagan Murray
Project Manager**



Executive Summary

The VTrans Middlebury Garage is located at 341 Creek in Middlebury, Vermont. The Site is a commercial property. A release of approximately 25 gallons of product occurred during the removal of one 8,000-gallon diesel fuel underground storage tank (UST) in May 2008. The Vermont Department of Environmental Conservation (VDEC) requested an Initial Subsurface Investigation in a letter from Mr. Ashley Desmond dated July 10, 2008. Notification of VTrans intent to participate in the Site Investigation Expressway Program was faxed to the VDEC in July 2008.

On July 29, 2008, Lincoln Applied Geology, Inc. (LAG), in conjunction with T&K Drilling of Troy, New Hampshire installed six soil borings, five of which were completed as ground water monitoring wells. Contamination was identified from 5 to 11 feet below grade in the source area, with a peak photoionization detector (PID) reading of 10.0 parts per million (ppm). Petroleum impacted soils were encountered in one downgradient location, SB-5/MW-4, at 2 feet below grade.

LAG returned to the Site on August 19, 2008 to conduct PID monitoring well headspace screening, ground water level gauging, ground water quality sampling, and a sensitive receptor survey. Laboratory analysis of the collected ground water and samples indicates minimal to no volatile organic compound (VOC) impact to shallow ground water beneath the Site. The existing petroleum contamination appears to be adsorbed to the soils and not in the dissolved phase and relatively confined to the source area with minimal downgradient migration. LAG recommends the Site receive a Sites Management Activity Complete (SMAC) designation after all monitoring wells are properly abandoned in accordance with the Water Supply Rule.

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1.0 INTRODUCTION

The Vermont Agency of Transportation (VTrans) Garage “the Site” is located at 341 Creek Road in Middlebury, Vermont (43° 59’ 55.37” North, 73° 9’ 35.21” West) as shown on Figures 1, 2, and 3, which depict the Site via a USGS Topographic Map, digital orthophotographic map, and a detailed surveyed Site Map, respectively. Figure 1 and 2 provide a view of the property and surrounding area, while Figure 3 provides Site-specific information and pertinent features.

Current property uses include a maintenance garage, salt and sand storage, and other activities associated with highway maintenance. Property uses within the area are mixed commercial residential. All site maintenance buildings, storage sheds, and outbuildings are of slab-on-grade construction. The Site and surrounding areas are served by municipal water and sewer. The property is bounded to the north and east by a residential housing development, to the west by Creek Road and Otter Creek, and to the south by a neighboring residence.

Lincoln Applied Geology, Inc. (LAG) has conducted the Initial Subsurface Investigation required by the Vermont Department of Environmental Conservation (VDEC) in accordance with the VDEC Site Investigation Expressway Program under contract with VTrans. This Initial Site Investigation is being carried out in response to a release of product from the closure of one 8,000-gallon diesel underground storage tank (UST) conducted in May 2008. The VDEC was notified in July 2007 that this Site would participate in the Expressway Program. The Expressway Notification Form is included in Appendix D.

2.0 SUBSURFACE INVESTIGATION ACTIVITIES

Investigation activities include soil boring and monitoring well installation, ground water level measurements from the newly installed monitoring wells, photoionization detector (PID) well headspace assays, and ground water quality sampling. These investigations are summarized below.

2.1 Soil Boring and Monitoring Well Installation

On July 29, 2008, LAG, in conjunction with T&K Drilling of Troy, New Hampshire installed six soil borings at the Site. Five soil borings were completed as 2” diameter monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5). An extra monitoring well was installed due to the semi-radial nature of presumed ground water flow beneath the Site. Mr. Andrew Shively of VTrans was contacted on the day of drilling about the need for an additional monitoring well for site characterization. Mr. Ashley Desmond of the VDEC was also contacted

and gave approval for an additional monitoring well at the Site in a July 29, 2008 electronic mail.

Soil boring and monitoring well locations are depicted on the Site Map presented as Figure 3. Soil borings were conducted using hollow stem auger drilling methodologies with split spoon sampling. Detailed boring logs and monitoring well construction diagrams are included in Appendix A. Concentrations of VOCs were detected with the PID during the installation of SB-4/MW-3 and SB-5/MW-4. A peak PID reading of 28.0 parts per million (ppm) was obtained at a depth of 2 feet below grade (bg) in SB-5/MW-4. PID readings declined steeply to 5 feet below grade at boring location SB-5/MW-4. Petroleum odor was noted in soils in the former diesel UST location down to a depth of 10 feet bg, however, minimal PID signature was noted during soil screening. No VOCs were detected in borings SB-1, SB-2, SB-3, or SB-6. Estimated ground water depth was between 5 and 7 feet across the Site during soil boring installation. Copies of the raw field data notes are included in Appendix B.

Review of the available data indicates that:

- Soils encountered at the Site consist predominately of dense clays overlain by 1 to 2 feet of gravel in the parking lot area down to 17 feet bg, which was the limit of exploration.
- Vapor phase contamination was present in a small gravel and clay layer located from 10 to 12 feet bg in SB-4/MW-3, and in a shallow gravel layer in SB-5/MW-4. Contamination was not identified above or below these horizons in those two areas. These layers also appeared to be within the saturated zone.
- Vapor phase contamination is mostly confined to the location of the former diesel UST and extends to the south (downgradient) to the area of SB-5/MW-4.
- Bedrock was not encountered during drilling and is estimated to be at a significant depth in the Otter Creek River Valley.

2.2 Ground Water Elevation Data and Site Hydrogeology

On August 19, 2008, depth to ground water measurements were collected from monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5 at the Site. Liquid level monitoring data for the August 19th monitoring event is presented in Table 1. Calculated ground water elevation data is presented in Table 2.

The August 19, 2008 ground water elevation data was used to generate the Ground Water Contour Map presented as Figure 4. Based on this data,

ground water beneath the Site flows in a semi-radial pattern to the southwest at an estimated hydraulic gradient of 3.5%. Ground water flow at the Site is likely controlled by topography, the nearby wetland to the south-southeast, and the Otter Creek, which is the ultimate discharge location for ground water in the area.

2.3 Well Headspace Monitoring Results

Each monitoring well headspace was screened with a PID to determine residual vapor phase contamination present in the vadose zone beneath the Site. PID assay results are presented in Table 3. No vapor phase contamination was measured with a PID during the August 2008 monitoring event. Vadose zone contamination appears to be relatively low and the lack of PID readings is likely due to the very shallow water table submerging the monitoring well screen.

2.4 Ground Water Quality Results

Ground water quality samples were collected from all accessible monitoring locations on August 18, 2008. Ground water samples were analyzed at Green Mountain Laboratories, Inc. in Montpelier, Vermont for petroleum related VOCs per EPA Method 8021B and for total petroleum hydrocarbons (TPH) diesel range organics (DRO) per EPA Method 8015. Water quality results are summarized in Table 4 and the laboratory analytical reports are included in Appendix C. The August 19, 2008 data were used to generate the Total Targeted VOC Map presented as Figure 5.

Methyl tertiary butyl ether (MTBE) was the only VOC reported above laboratory detection limits in MW-1. No petroleum related VOCs were reported above method specific detection limits in monitoring wells MW-2 through MW-5.

3.0 SENSITIVE RECEPTOR SURVEY

During monitoring well installation and ground water sampling, LAG conducted a sensitive receptor survey. The Site and the surrounding areas are served by municipal sewer and water.

Two surface water bodies were identified as sensitive receptors during the visual survey. The first is the Otter Creek, which is located approximately 100' west of the Site, the second is a wetland area to the south and southeast adjacent to the Site. Visual inspections during drilling and monitoring activities did not identify any sheens, odors, or other visual evidence of contamination at either of these sensitive receptor locations.

At this point Site soils appear to be the only sensitive receptor impacted at the Site. Ground water quality results indicate that contamination adsorbed to the soils has not been readily dissolved and ground water beneath the Site appears to not be significantly impacted by petroleum related VOCs.

4.0 CONCEPTUAL MODEL

Petroleum contaminants have impacted soils and ground water in the immediate vicinity of the former UST. It appears that the primary contaminant is diesel fuel based on olfactory and visual evidence, as well as the source of the release. The release occurred from a product line that had been compromised during the excavation process, and apparently hadn't been drained back to the tank prior to excavation. The Site is underlain by subgrade gravel from grade to 2 feet bg, which is underlain by dense clays to a depth of at least 17 feet, which was the limit of exploration.

The Centennial Geologic Map of Vermont¹ identifies bedrock as undifferentiated granitic rocks of the New Hampshire Plutonic Series surrounded by the Waits River Formation, which is a gray quartzose and micaceous crystalline limestone. The Surficial Geologic Map of Vermont identifies surficial deposits as till.

It appears that petroleum contamination has vertically penetrated through the clay to a maximum depth of 11 feet bg in the immediate area of the former UST, but appears to have not impacted ground water beneath the Site at this point. Contamination is present in a small horizon of soils between 10 and 12 feet bg in the former UST area. A shallow horizon of contamination (~ 2 feet bg) exists in the vicinity of MW-4. Given the relatively dense characteristic of glacial lake and marine clay deposits in the Addison County area, contamination appears to be confined to the source area and likely remains adsorbed to the soils and not readily dissolved into the ground water.

The MTBE detected in downgradient monitoring well MW-1 is not unexpected given the fact that the VTrans Middlebury Garage also had a gasoline UST and dispenser in the past. MW-1 is directly downgradient of the former fuel dispensing systems.

Based on the very tight soils beneath the site, contaminant transport, dilution, and dispersion will be less rapid, and likely continue to stay confined to the area of the former UST.

5.0 CONCLUSIONS

Based on the results presented herein, LAG provides the following conclusions:

¹ C. Doll. Centennial Geologic Map of Vermont. Vermont Geologic Survey. 1961

- Soils impacted by petroleum VOCs appear to be predominantly confined to the the former UST location with some extension downgradient from the source area in the vicinity of MW-4.
- Based on existing hydrogeological data for the Site, the current monitoring well array is acceptable and will adequately characterize ground water conditions beneath the Site.
- Ground water flows in a southwest direction across the Site at an estimated hydraulic gradient of 3.5%.
- PID well headspace screening results were non-detect for VOCs, likely the result of a high water table, which submerged well screens across the Site.
- MTBE was the only compound reported above laboratory detection limits in MW-1, at 22 parts per billion (ppb), which is below its respective Ground Water Quality Enforcement Standard (GQES).
- No VOCs were reported above laboratory detection limits in the samples collected from monitoring wells MW-2 through MW-5 on August 19, 2009.
- No visual or olfactory evidence of contamination was noted in the wetland adjacent to the Site or along the bank of the Otter Creek.
- Currently a dissolved phase contaminant plume does not exist beneath the Site, with the majority of contamination adsorbed to the soils.

6.0 RECOMMENDATIONS

Based on the above conclusions, LAG presents the following recommendations:

- Since limited soil contamination was identified during monitoring well installation on July 29, 2008, and no VOCs other than a minor concentration of MTBE were reported in the five newly installed monitoring wells, LAG recommends that Site be given a Sites Management Activity Completed (SMAC) designation.
- If the VDEC agrees with the above SMAC recommendation, LAG will properly abandon the 5 monitoring wells in accordance with the Water Supply Rule, and submit proper documentation that well abandonment procedures were carried out.

Tables

Project: VTrans-Middlebury
Location: Middlebury, Vermont
LAG Project #08035

Photoionization Detector Results (ppm)

Table 3
VDEC Site #2008-3798

Data Point	8-19-08		
MW-1	0.0		
MW-2	0.0		
MW-3	0.0		
MW-4	0.0		
MW-5	0.0		

NOTES:

TOC - Reference elevation is elevation of top of PVC well casing relative to an arbitrary datum on-site

All data measured in feet.

Dark Grey - Inaccessible

Project: VTrans-Middlebury
Location: Middlebury, Vermont
LAG Project #08035

Historical Ground Water Elevation Data

Table 2
VDEC Site #2008-3798

Data Point	TOC	8-19-08		
MW-1	101.65	98.59		
MW-2	102.21	99.09		
MW-3	101.59	100.27		
MW-4	99.91	97.56		
MW-5	98.26	96.51		

NOTES:

TOC - Reference elevation is elevation of top of PVC well casing relative to an arbitrary datum on-site

All data measured in feet.

Dark Grey - Inaccessible

Project: VTrans-Middlebury
Location: Middlebury, Vermont
LAG Project #08035

Liquid Level Monitoring Data

Table 1
VDEC Site #2008-3798

August 19, 2008

Well ID	TOC Elevation	Total Well Depth	Depth to Product	Depth to Water	Product Thickness	Water Table Elevation
MW-1	101.65	14.5	-	3.06	-	98.59
MW-2	102.21	14.5	-	3.12	-	99.09
MW-3	101.59	14.4	-	1.32	-	100.27
MW-4	99.91	12.2	-	2.35	-	97.56
MW-5	98.26	12.7	-	1.75	-	96.51

NOTES:

TOC - Reference elevation is elevation of top of PVC well casing relative to an arbitrary datum on-site

All data measured in feet.

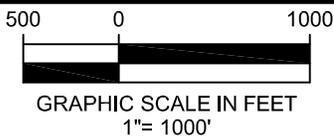
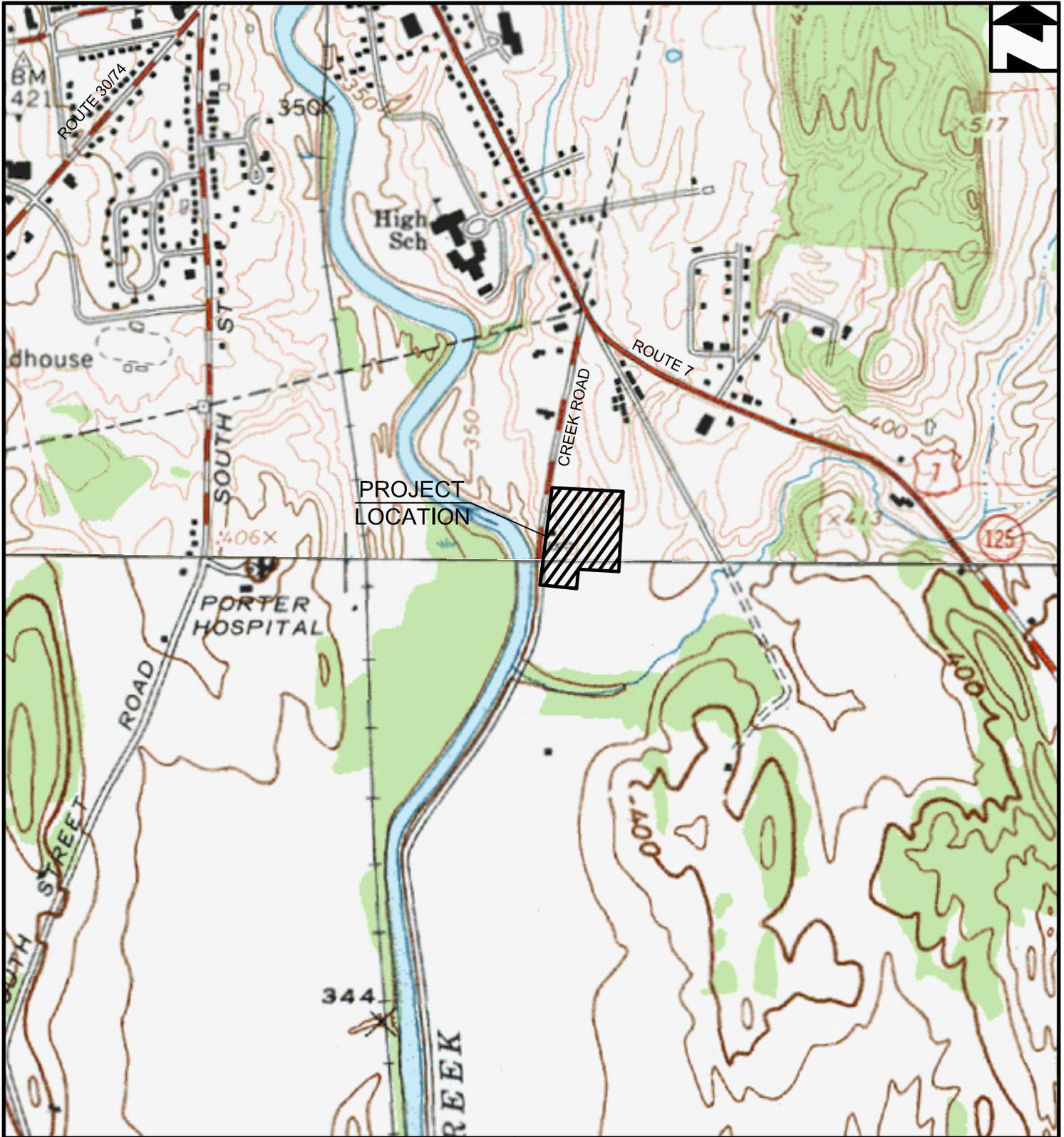
Dark Grey - Inaccessible

Ground Water Quality Results (ppb)

Data Point	Compound	*GQES	8/19/08
MW-1	Benzene	5	<1
	Toluene	1,000	<1
	Ethylbenzene	700	<1
	Xylenes	10,000	<5
	Total BTEX		ND/BQL
	1,3,5-Trimethylbenzene	350	<2
	1,2,4-Trimethylbenzene		<2
	Naphthalene	20	<5
	MTBE	40	22
	Total Targeted VOCs		22
MW-2	Benzene	5	<1
	Toluene	1,000	<1
	Ethylbenzene	700	<1
	Xylenes	10,000	<5
	Total BTEX		ND/BQL
	1,3,5-Trimethylbenzene	350	<2
	1,2,4-Trimethylbenzene		<2
	Naphthalene	20	<5
	MTBE	40	<5
	Total Targeted VOCs		ND/BQL
MW-3	Benzene	5	<1
	Toluene	1,000	<1
	Ethylbenzene	700	<1
	Xylenes	10,000	<5
	Total BTEX		ND/BQL
	1,3,5-Trimethylbenzene	350	<2
	1,2,4-Trimethylbenzene		<2
	Naphthalene	20	<5
	MTBE	40	<5
	Total Targeted VOCs		ND/BQL
MW-4	Benzene	5	<1
	Toluene	1,000	<1
	Ethylbenzene	700	<1
	Xylenes	10,000	<5
	Total BTEX		ND/BQL
	1,3,5-Trimethylbenzene	350	<2
	1,2,4-Trimethylbenzene		<2
	Naphthalene	20	<5
	MTBE	40	<5
	Total Targeted VOCs		ND/BQL
MW-5	Benzene	5	<1
	Toluene	1,000	<1
	Ethylbenzene	700	<1
	Xylenes	10,000	<5
	Total BTEX		ND/BQL
	1,3,5-Trimethylbenzene	350	<2
	1,2,4-Trimethylbenzene		<2
	Naphthalene	20	<5
	MTBE	40	<5
	Total Targeted VOCs		ND/BQL
TRIP BLANK	Benzene	5	<1
	Toluene	1,000	<1
	Ethylbenzene	700	<1
	Xylenes	10,000	<5
	Total BTEX		ND/BQL
	1,3,5-Trimethylbenzene	350	<2
	1,2,4-Trimethylbenzene		<2
	Naphthalene	20	<5
	MTBE	40	<5
	Total Targeted VOCs		ND/BQL

NOTES:
 TOC - Reference elevation is elevation of top of PVC well casing relative to an arbitrary datum on-site
 All data measured in feet.
 Dark Grey - Inaccessible

Figures



VTrans-Middlebury
341 Creek Road
Middlebury, Vermont

Site Location Map

VDEC SMS SITE NUMBER
2008-3798

LAG PROJECT #
08035

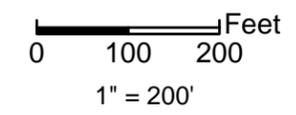
DATE
September 2008

PROJECT MANAGER
DAM

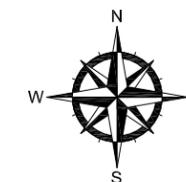
DRAWN BY
TAM

FIGURE

1

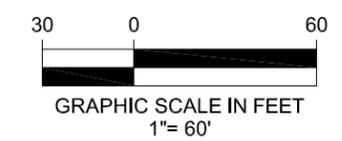


VTrans- Middlebury 341 Creek Road Middlebury, Vermont	LAG PROJECT # 08035
	DATE September 2008
Area Map	PROJECT MANAGER DAM
	DRAWN BY TAM
VDEC SMS SITE NUMBER 2008-3798	FIGURE 2



LEGEND

- EXISTING FENCE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL DRIVE
- EXISTING PROPERTY LINE
- EXISTING SWALE/STREAM
- EDGE OF RIVER
- DECIDUOUS TREE
- MONITORING WELL
- TEMPORARY BENCHMARK
- UTILITY POLE

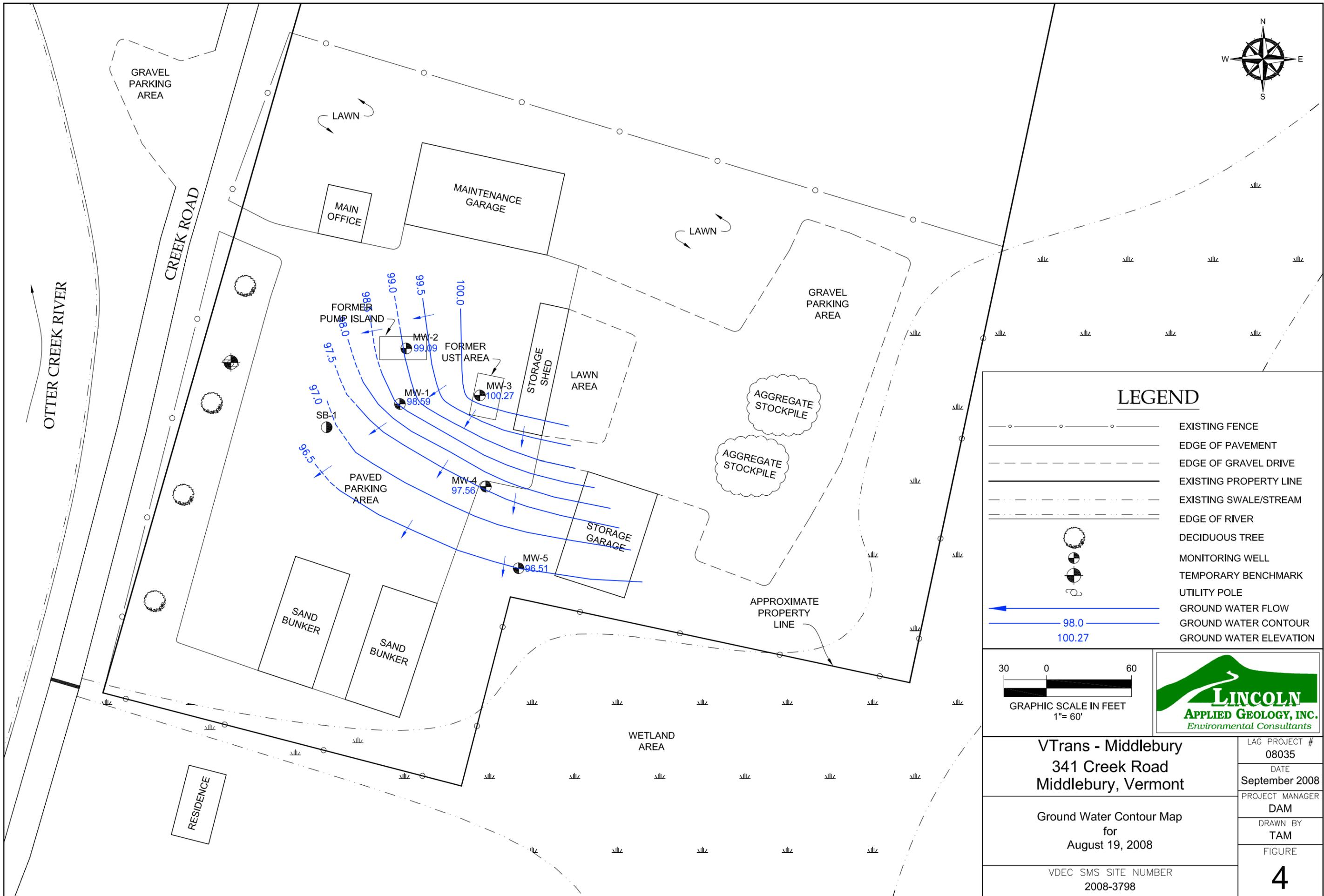


VTrans - Middlebury
341 Creek Road
Middlebury, Vermont

Site Map

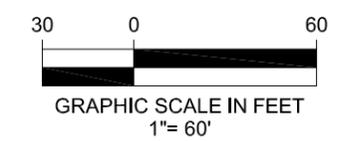
VDEC SMS SITE NUMBER
2008-3798

LAG PROJECT # 08035
DATE August 25, 2008
PROJECT MANAGER DAM
DRAWN BY LAG
FIGURE 3



LEGEND

- EXISTING FENCE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL DRIVE
- EXISTING PROPERTY LINE
- EXISTING SWALE/STREAM
- EDGE OF RIVER
- DECIDUOUS TREE
- MONITORING WELL
- TEMPORARY BENCHMARK
- UTILITY POLE
- GROUND WATER FLOW
- GROUND WATER CONTOUR
- GROUND WATER ELEVATION



VTrans - Middlebury
 341 Creek Road
 Middlebury, Vermont

Ground Water Contour Map
 for
 August 19, 2008

VDEC SMS SITE NUMBER
 2008-3798

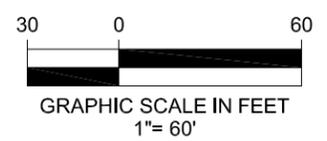
LAG PROJECT #
 08035
 DATE
 September 2008
 PROJECT MANAGER
 DAM
 DRAWN BY
 TAM
 FIGURE

4



LEGEND

- EXISTING FENCE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL DRIVE
- EXISTING PROPERTY LINE
- EXISTING SWALE/STREAM
- EDGE OF RIVER
- DECIDUOUS TREE
- MONITORING WELL
- TEMPORARY BENCHMARK
- UTILITY POLE
- NON-DETECT/BELOW QUANTITATION LIMIT
- TOTAL TARGETED VOC CONCENTRATION (ppb)



VTrans - Middlebury Creek Road Middlebury, Vermont	LAG PROJECT # 08035
	DATE August 25, 2008
Total Targeted VOC's Map for August 19, 2008	PROJECT MANAGER DAM
	DRAWN BY TAM
VDEC SMS SITE NUMBER 2008-3798	FIGURE 5

Appendix A

Boring Logs

Appendix B

Raw Data Field Notes

Vtrans Middlebury

7/29/08

● #08835

SB-6/NW-5

● SB-5/MW-4

SB-1

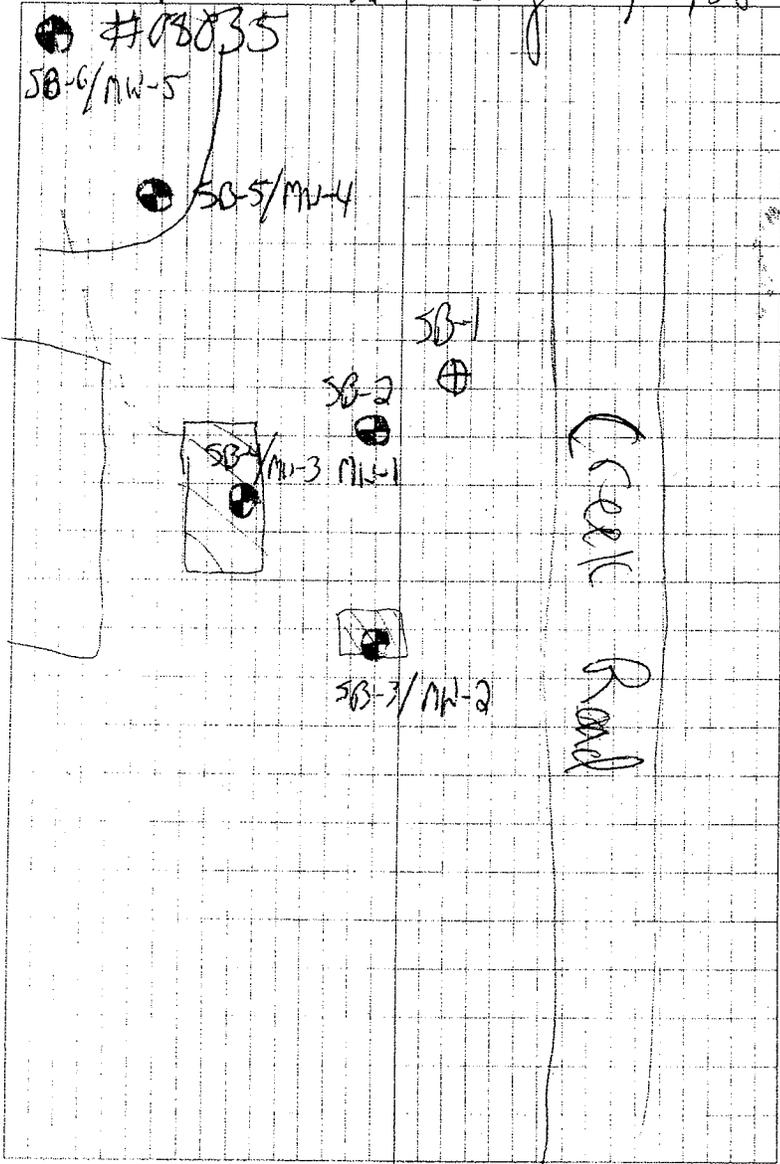
SB-2

SB-4/MW-3

SB-3

SB-3/NW-2

Creek Road



SB-1

1-3' B.C. 4-5-4-7

100% Dense, gray clay

PTD = 0.0 ppm

5-7' B.C. 3-3-4-7

100% Dense, Brown clay, Damp to Moist

PTD = 0.0 ppm

10-12' B.C. 2-3-3-5

100% Dense, Brown clay, Moist to Wet

15-17' B.C. 2-2-3-4

Same as above

PTD = 0.0

SB-2

0-1' Gravelly Sand

1-3' Same as SB-1 PTD = 0.0

5-7' B.C. 4-5-6-7

Same as SB-1 NO PTD = 0.0

10-12' B.C. 3-3-4-5

Same as SB-1 NO PTD = 0.0

Set MW-1 to 15'

Screen 5-15'

Sam 4-15'

Riser 05-5'

Butt 2-4'

SB-3

1-3' Gravel P20 = 0.0 NB odor
4-7-9-1

5-7' Olive drab clay 100%
P20 = 0.0 4-6-4-5

Slight Diesel odor

10-12' BC. 2-2-3-4-5

Brn Dense clay, Moist

NO odor P20 = 0.0

15-17' BC. 3-4-4-5

Same as above

P20 = 0.0

Set MW-2 to 15'

Screen 5-15'

Kick 0.5-5'

Sampl 3.5-15'

Boat 1.5-3.5'

SB-4

0-2' Gravelly Sand P20 = 0.0

NO odor

5-7' BC. 2-2-4-4

Gravelly Clay, Wet

Diesel odor

P20 = 10.0 ppm

10-11' ~~BC~~ Brn clay, Wet 2-2-4-5

Slight Diesel odor P20 = 1.0

11-12' Gravel 100%

Slight Diesel odor, very wet

P20 = 2.0 ppm

BC. 1-1-3-4

15-17' BC. 3-5-7-10

100% Silty Fine Sand, wet

Set MW-3 P20 = 0.0

Same Configuration as MW-1

SB-5

7/29/08

0-2' ³⁻³⁻⁵⁻⁶ naturally clay P₂₀ = 28.0
strange Diesel odor @ 2-3'

5-7' 3-4-4-6 Blas (a.s.)

Brown clay
slight Petroleum odor P₂₀ = 3.0

10-12' D.C. 3-4-7-8

Brown Clay P₂₀ = 0.0

Set MW-5 @ 13'

Screen 3-13'

Rise 0.5'-3'

Sand 2-13'

Dist. 1-2'

SB-6

7/29/08

Same as SB-5
from 0-13'

Set MW-5 @ 13'

Same Construction as MW-4

Vtrans - Middlebury
 Creek Road
 Middlebury, VT
 LAG Project #08035

Tech(s): JH
 Date: 8/19/08
 Time on-site: 1000
 Time off-site: 1200

Equipment: PID, interface probe, peristaltic pump, tubing, bailers, decon equipment, sample vials, labels, hand tools

Monitoring Well ID	TOC order	Elevation	Total Depth	PID (ppm)	Depth to Product	Depth to Water	Sample Time
MW-1		14.52		0.0		3.06	1140
MW-2		14.51		0.0		3.12	1145
MW-3		14.35		0.0		1.32	1150
MW-4		12.20		0.0		2.35	1135
MW-5		12.65		0.0		1.75	1130

Laboratory Used: GML
 Chain of Custody #: 475C

NOTES:

Appendix C

Laboratory Analytical Reports

August 19, 2008

GREEN MOUNTAIN LABORATORIES, INC.

2 Moonlight Terrace
Montpelier, VT 05602

Phone (802) 262-2004

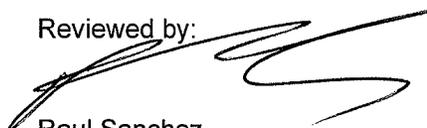
LABORATORY RESULTS

CLIENT NAME:	Lincoln Applied Geology	REFERENCE NO.:	475C
ADDRESS:	163 Revell Drive Lincoln, VT 05443	PROJECT NO.:	NA
SAMPLE LOCATION:	AOT Midd.	DATE OF SAMPLE:	08/19/2008
SAMPLER:	Joseph Hagan	DATE OF RECEIPT:	08/26/2008
ATTENTION:	Dagan Murray	DATE OF ANALYSIS:	08/28-08/29/2008
		DATE OF REPORT:	08/29/2008

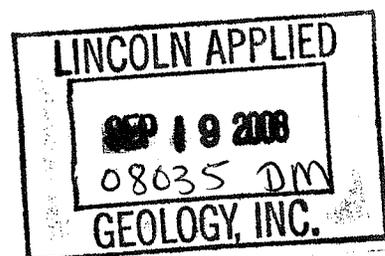
Pertaining to the analyses of specimens submitted under the accompanying chain of custody form, please note the following:

- Water samples submitted for VOC analysis were preserved with HCl. The trip blank was prepared by the client with reagent water supplied by the laboratory.
- Specimens were processed and examined according to the procedures outlined in the specified method.
- Holding times were honored.
- Instruments were appropriately tuned and calibrations were checked with the frequencies required in the specified method.
- Blank contamination was not observed at levels interfering with the analytical results.
- Continuing Calibration Standards were monitored at intervals indicated in the specified method. The resulting analytical precision and accuracy were determined to be within method QA/QC acceptance limits.
- The efficiency of analyte recovery for individual samples was monitored by the addition of surrogate analyte to all samples, standards, and blanks. Surrogate recoveries were found to be within laboratory QA/QC acceptance limits, unless noted otherwise.

Reviewed by:



Raul Sanchez
Chemical Services



GREEN MOUNTAIN LABORATORIES, INC.

2 Moonlight Terrace
Montpelier, VT 05602

Phone (802) 262-2004

LABORATORY RESULTS

GC/MS METHOD - 8260M

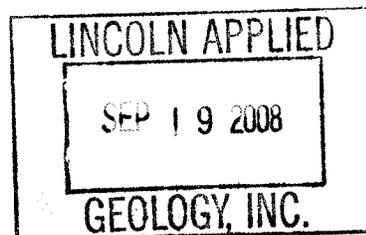
GML REF. #: 475C
SAMPLE ID: TRIP BLANK
ANALYSIS DATE: 08/28/2008
SAMPLE DATE: 08/19/2008
SAMPLE TYPE: WATER

<u>PARAMETER</u>	<u>PQL (ug/L)</u>	<u>RESULT (ug/L)</u>
Methyl-t-butyl-ether (MTBE)	5	ND
Benzene	1	ND
1,2-Dichloroethane	1	ND
Toluene	1	ND
1,2-Dibromoethane	1	ND
Ethylbenzene	1	ND
Xylenes	3	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Naphthalene	5	ND

Surrogate % Recovery: 94 %

ND = Not Detected

BPQL = Below Practical Quantitation Limit



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LABORATORY RESULTS

GC/MS METHOD - 8260M

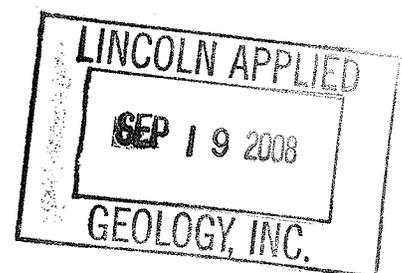
GML REF. # : 475C
SAMPLE ID: MW-1
ANALYSIS DATE: 08/28/2008
SAMPLE DATE: 08/19/2008
SAMPLE TYPE: WATER

<u>PARAMETER</u>	<u>PQL (ug/L)</u>	<u>RESULT (ug/L)</u>
Methyl-t-butyl-ether (MTBE)	5	22
Benzene	1	ND
1,2-Dichloroethane	1	ND
Toluene	1	ND
1,2-Dibromoethane	1	ND
Ethylbenzene	1	ND
Xylenes	3	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Naphthalene	5	ND

Surrogate % Recovery: 93 %

ND = Not Detected

BPQL = Below Practical Quantitation Limit



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LABORATORY RESULTS

GC/MS METHOD - 8260M

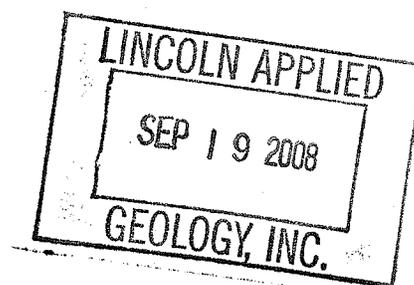
GML REF. # : 475C
SAMPLE ID: MW-2
ANALYSIS DATE: 08/28/2008
SAMPLE DATE: 08/19/2008
SAMPLE TYPE: WATER

<u>PARAMETER</u>	<u>PQL (ug/L)</u>	<u>RESULT (ug/L)</u>
Methyl-t-butyl-ether (MTBE)	5	ND
Benzene	1	ND
1,2-Dichloroethane	1	ND
Toluene	1	ND
1,2-Dibromoethane	1	ND
Ethylbenzene	1	ND
Xylenes	3	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Naphthalene	5	ND

Surrogate % Recovery: 94 %

ND = Not Detected

BPQL = Below Practical Quantitation Limit



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LABORATORY RESULTS

GC/MS METHOD - 8260M

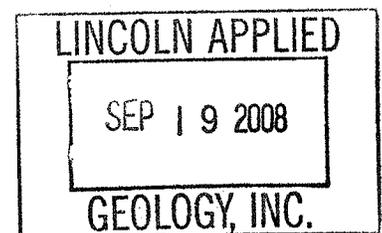
GML REF. # : 475C
SAMPLE ID: MW-3
ANALYSIS DATE: 08/29/2008
SAMPLE DATE: 08/19/2008
SAMPLE TYPE: WATER

<u>PARAMETER</u>	<u>PQL (ug/L)</u>	<u>RESULT (ug/L)</u>
Methyl-t-butyl-ether (MTBE)	5	ND
Benzene	1	ND
1,2-Dichloroethane	1	ND
Toluene	1	ND
1,2-Dibromoethane	1	ND
Ethylbenzene	1	ND
Xylenes	3	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Naphthalene	5	ND

Surrogate % Recovery: 91 %

ND = Not Detected

BPQL = Below Practical Quantitation Limit



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LABORATORY RESULTS

GC/MS METHOD - 8260M

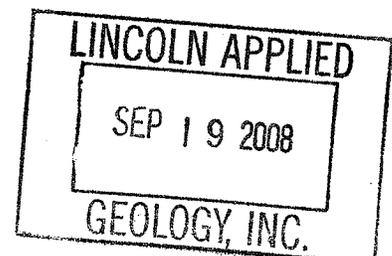
GML REF. # : 475C
SAMPLE ID: MW-4
ANALYSIS DATE: 08/28/2008
SAMPLE DATE: 08/19/2008
SAMPLE TYPE: WATER

<u>PARAMETER</u>	<u>PQL (ug/L)</u>	<u>RESULT (ug/L)</u>
Methyl-t-butyl-ether (MTBE)	5	ND
Benzene	1	ND
1,2-Dichloroethane	1	ND
Toluene	1	ND
1,2-Dibromoethane	1	ND
Ethylbenzene	1	ND
Xylenes	3	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Naphthalene	5	ND

Surrogate % Recovery: 94 %

ND = Not Detected

BPQL = Below Practical Quantitation Limit



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LABORATORY RESULTS

GC/MS METHOD - 8260M

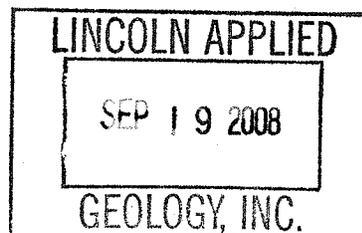
GML REF. # : 475C
SAMPLE ID: MW-5
ANALYSIS DATE: 08/28/2008
SAMPLE DATE: 08/19/2008
SAMPLE TYPE: WATER

<u>PARAMETER</u>	<u>PQL (ug/L)</u>	<u>RESULT (ug/L)</u>
Methyl-t-butyl-ether (MTBE)	5	ND
Benzene	1	ND
1,2-Dichloroethane	1	ND
Toluene	1	ND
1,2-Dibromoethane	1	ND
Ethylbenzene	1	ND
Xylenes	3	ND
1,3,5-Trimethylbenzene	2	ND
1,2,4-Trimethylbenzene	2	ND
Naphthalene	5	ND

Surrogate % Recovery: 94 %

ND = Not Detected

BPQL = Below Practical Quantitation Limit



Green Mountain Laboratories, Inc.

2 Moonlight Terrace
Montpelier, Vermont 05602
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www.greenmtlabs.com

LABORATORY RESULTS

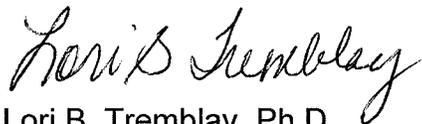
CLIENT NAME:	Lincoln Applied Geology	GML REFERENCE #:	475C
CLIENT ADDRESS:	163 Revell Drive Lincoln, VT 05443	PROJECT #:	NA
PROJECT NAME:	AOT. Midd	DATE OF SAMPLE:	08/19/2008
SAMPLER:	Joseph Hagan	DATE OF RECEIPT:	08/26/2008
ATTENTION:	Dagan Murray	DATE OF ANALYSIS:	08/28-08/29/2008
		DATE OF REPORT:	08/29/2008

Total Petroleum Hydrocarbons (TPH) by EPA Method 8015 DRO (mg/L - ppm)

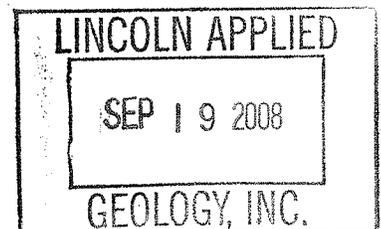
Sample	PQL	TPH Results
TRIP BLANK	1.0	<1.0
MW-5	1.0	<1.0
MW-4	1.0	<1.0
MW-1	1.0	<1.0
MW-2	1.0	<1.0
MW-3	1.0	<1.0

BPQL = Below Practical Quantitation Limit

Reviewed by:



Lori B. Tremblay, Ph.D.
Chemical Services



Green Mountain Laboratories, Inc.

2 Moonlight Terrace
 Montpelier, Vermont 05602
 Phone (802) 262-2004 Fax (802) 262-2005
 www.greenmtlabs.com

Analysis Requested

Page

1 of 1

GML #

4750

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Client Name: Lincoln Applied Geology
 Address: 163 Revell Dr., Lincoln Vt. 05443
 Phone / Fax (802) 453-4384 (802) 453-5399
 Project Name: AOT, Midd
 Project Number:
 Project Manager: Dagan Murray
 Sampler: Joseph Hagan

#	Sample Location	Date	Time	# of Cont.	Pres.	Sample Type	Remarks
1	Trip Blank	8/19/08	0800	2	HCL	H2O	
2	MW-5	↓	1130	↓	↓	↓	
3	MW-4	↓	1135	↓	↓	↓	
4	MW-1	↓	1140	↓	↓	↓	
5	MW-2	↓	1145	↓	↓	↓	
6	MW-3	↓	1150	↓	↓	↓	

LINCOLN APPLIED
 GEOLOGY INC
 SEP 19 2008

Digital Copy Requested

Chain of Custody

Relinquished By: <i>Greg Hagan</i>	Date/Time: 8/19/08 1155	Received By:	Date/Time:
Relinquished By: <i>Greg Hagan</i>	Date/Time: 8/26/08 0940	Received By: <i>UDT</i>	Date/Time: 8/26/08 0940
Relinquished By:	Date/Time:	Received By:	Date/Time:
Temperature Blank:	Vial Lot ID #:	Received By:	Date/Time:

Appendix D

Site Investigation Expressway Notification Form

Site Investigation Procedure
June 2005

Appendix A

Waste Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404
(802) 241-3888, FAX (802) 241-3296

SITE INVESTIGATION EXPRESSWAY NOTIFICATION FORM

Site Owner: Vermont Agency of Transportation

Site Name, Town: VTcars - Middlebury

Yes, this site will participate in the Site Investigation Expressway Process.

No, this site will not participate in the Site Investigation Expressway Process.

If yes, please complete the checklist below:

Contamination present in soils above action levels Yes No

If yes, summarize levels:

PFO levels above zero 1.5 to 36.0 ppm

Free product observed Yes No

Groundwater contamination observed Yes No

Surface water contamination observed Yes No

Suspected release of hazardous substances Yes No

If yes, please explain:

Diesel product released to the ground water surface

Affected receptors Yes No

If yes, please identify receptors including names and addresses of third party receptors:

Please provide an estimated date of when you expect to submit Site Investigation Report:

Owner's Signature/Date: Ann Kelly

Consultant's Signature/Date: by 9/30/08
[Signature] Lincoln Applied Geology 7/17/08