



November 7, 1995

Mr. Jason Feingold
Sites Management Section
Vermont Department of
Environmental Conservation
103 South Main Street
Waterbury, Vermont 05676

RE: A&B Beverage Fall 1995 Biannual Ground Water Quality Monitoring (VDEC Site #90-0554)

Dear Mr. Feingold:

On behalf of the Bradford Oil Company, Lincoln Applied Geology, Inc. (LAG) has performed the biannual monitoring program that was approved by your Department. The current results, including sampling in a new location (new MW-3), indicate that some low to moderate levels of soluble phase contamination exist in the ground water on-site. These levels do exceed Vermont's Ground Water Enforcement Standards (GWES) for benzene, MTBE, ethyl benzene, and xylene.

The general location of the A&B Beverage site in Grand Isle is depicted on **Figure 1**. A site sketch map depicting the relative location of the three existing monitoring wells is presented as **Figure 2**. The general topography and location of Lake Champlain on the easterly side of Route 2 strongly suggests that the ground water flow direction is easterly. The elevations of the existing monitoring wells have not been surveyed and therefore do not allow for determination of the ground water flow direction.

The monitoring round performed by LAG field staff on September 18, 1995 included measurements for liquid levels and headspace PID assays prior to appropriate well purging and ground water sampling and analyses. **Tables 1, 2, and 3** summarize the cumulative site data. The laboratory analytical reports are attached as **Appendix A**.

Ground water quality results obtained from the three sampling events have shown that concentrations in the three monitoring wells vary from 100 to 10,000 parts per billion (ppb) across the site. The ground water quality results from the latest sampling round are shown on **Figure 2**. Please note that MW-3 was replaced (as a result of the UST removal) to a different location since the previous sampling round in March 1995.

Mr. Jason Feingold
Page 2
November 7, 1995

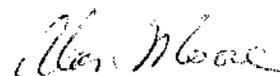
Volatile concentrations in the headspace of all three monitoring wells, as measured with a photoionization detector (PID) were at background levels. No free phase product was encountered during liquid level monitoring with an interface probe.

Copies of the analytical laboratory results are included in **Appendix A**. The chromatographic patterns generated during previous analyses indicates that the contaminant is a weathered gasoline and evidence of biological breakdown products are apparent in the sample chromatograms.

We have also attached the Tank Removal Report of June 14, 1995 for your information as **Appendix B**. Based on these current results we recognize that a SMAC designation cannot be obtained at this time due to exceedences of the GWES. Considering the significant MTBE and BTEX levels in MW-3, the unknown quality of the existing monitoring wells, the presence of potential receptors including utility trenches and basements founded in clay soils and shallow bedrock, and the lack of any monitoring wells away from the "source" area, we recommend that three new monitoring wells be installed to delineate the extent of on-site and off-site contamination. We understand that without these additional wells, it may be difficult to attain a SMAC designation. The proposed locations of these monitoring wells are shown on **Figure 2**. The costs to install these monitoring wells, survey their location and elevation (to improve the accuracy of the site map), sample all six monitoring wells, conduct a receptor assessment, and prepare a report are attached in **Appendix C**.

Please feel free to contact me or Rick Vandenberg, Site Manager with any questions or comments you may have on this report or our proposed scope of work. We can perform this field work as soon as it's approved. In the interim we will tentatively schedule the next semiannual monitoring round for March 1996.

Sincerely,



Alan Moore, P.E.
Project Engineer

ATM/smk
enclosures
cc: William Sellinger, Bradford Oil



Lincoln Applied Geology, Inc.
Environmental Consultants

RD # 1 Box 710 • Bristol, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

Project: A & B Beverage
Location: Grand Isle, Vermont

Table 1
VDEC Site # 90-0554
Sheet 1 of 1

Depth to Ground Water (feet)

Data Point	09-29-94	03-20-95	09-18-95					
MW-1		>7.70	4.79					
MW-2	4.51	2.41	4.21					
MW-3 Old	4.52	2.50						
MW-3			5.02					

Notes:

- 1 - Elevation datum assumed
 - 2 - Reference elevation is elevation of top of PVC well casing
- Light Grey Cell = DRY
Dark Grey Cell = Inaccessible

Project: A & B Beverage
Location: Grand Isle, Vermont

Table 2
VDEC Site # 90-0554
Sheet 1 of 1

Photoionization Results (PID - ppm)

Data Point	09-29-94	03-20-95	09-18-95					
MW-1	5.6	BG	BG					
MW-2	2.6	0.6	BG					
MW-3 Old	19.8	BG						
MW-3			BG					

Notes:
BG - Background
SL - Saturated Lamp

Project: A & B Beverage
 Location: Grand Isle, Vermont

Table 3
 VDEC Site # 90-0554
 Sheet 1 of 1

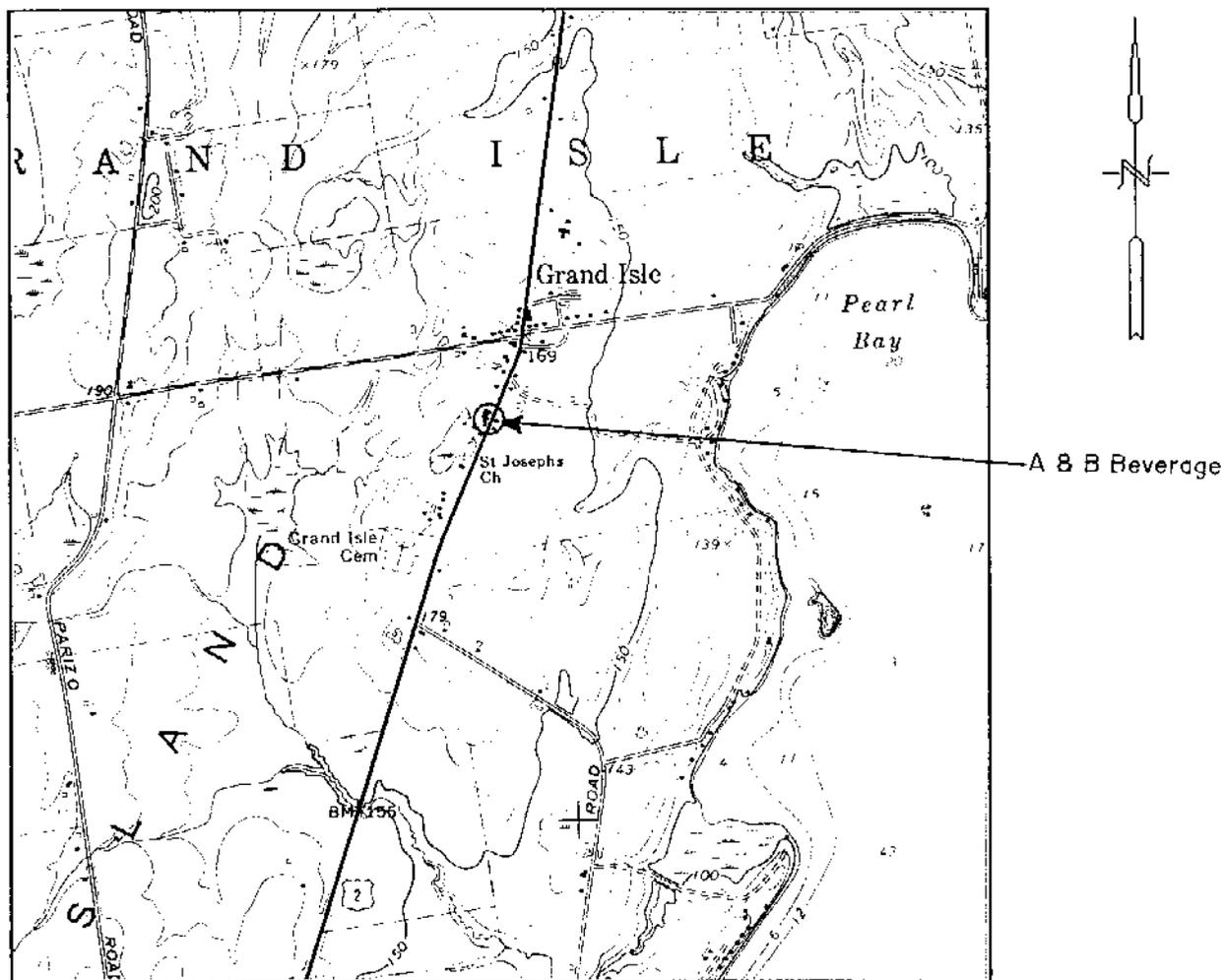
Ground Water Quality Results (ppb)

Data Point	09-30-94	03-20-95	09-18-95				
MW-1			97	92			
MW-2	588	1,058	123.3				
MW-3 Old	368	306					
MW-3			9,900	1,700			
Trip Blank	<6	<6	<6	<5	<5		

NOTES:
 MTBE in upper right corner of cell
 BTEX in lower left corner of cell
 < - Contaminant not detected at specified detection limit

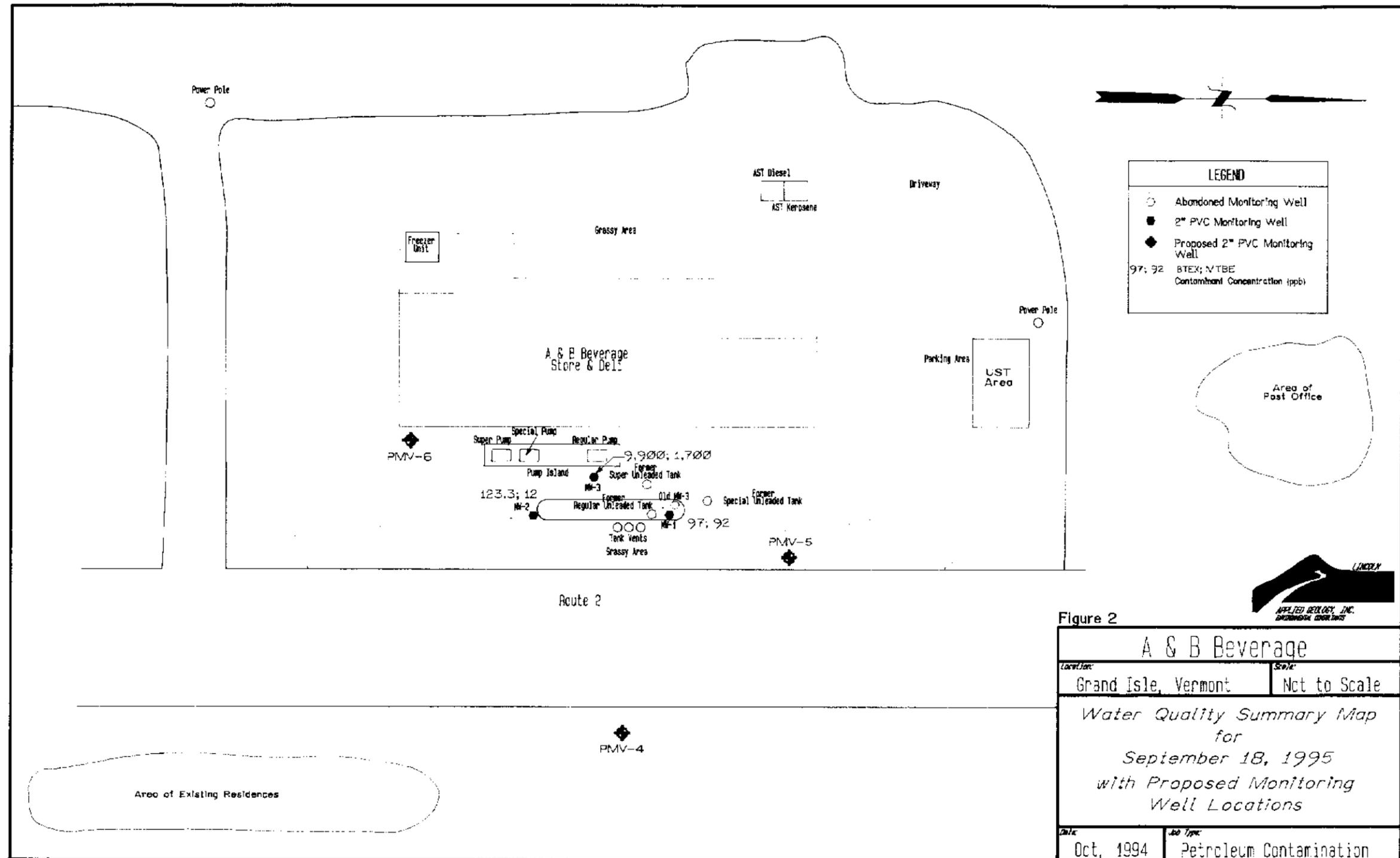
Figure 1

A & B Beverage
Grand Isle, Vermont
GENERAL LOCATION MAP



Source: U.S.G.S. 7.5 Min
Topo Series
South Hero, Vt - N.Y. (1966) Quad.

Scale: 1" = 2,000'



Appendix A
Analytical Results

Green Mountain Laboratories, Inc.

RR#3, Box 5210
Montpelier, Vermont 05602

Phone: (802) 223-1488

Fax: (802) 223-8688

LABORATORY RESULTS

CLIENT NAME:	Lincoln Applied Geology	REF #:	176
ADDRESS:	RD1 Box 710 Bristol, Vermont 05443	PROJECT NO.:	not given
SAMPLE LOCATION:	A-B Beverage	DATE OF SAMPLE:	September 18, 1995
SAMPLER:	James Robideau	DATE OF RECEIPT:	September 18, 1995
		DATE OF ANALYSIS:	September 18, 1995
ATTENTION:	Rick Vandenberg	DATE OF REPORT:	September 20, 1995

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 from 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 analytes to all samples, standards, and blanks. Surrogate recoveries were found to be within laboratory QA/QC acceptance limits, unless noted otherwise.

Reviewed by:

Althea R. Russell

Director, Chemical Services

Green Mountain Laboratories, Inc.

RD#1, Box 5210
Montpelier, Vermont 05602

Phone (802) 223-1468

Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	A-B Beverage	GML REF.#:	176
REPORT DATE:	September 20, 1995	STATION:	Trip
DATE SAMPLED:	September 18, 1995	TIME SAMPLED:	0800
DATE RECEIVED:	September 18, 1995	SAMPLER:	James Robideau
ANALYSIS DATE:	September 18, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	ND
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	3	ND
MTBE	5	ND

Surrogate % Recovery: 103 %

ND = Not Detected.

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LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	A-B Beverage	GML REF.#:	176
REPORT DATE:	September 20, 1995	STATION:	MW-1
DATE SAMPLED:	September 18, 1995	TIME SAMPLED:	1000
DATE RECEIVED:	September 18, 1995	SAMPLER:	James Robideau
ANALYSIS DATE:	September 18, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL ($\mu\text{g/L}$)	Conc. ($\mu\text{g/L}$)
Benzene	10	47
Toluene	10	ND
Ethylbenzene	10	BPQL
Xylenes	30	ND
MTBE	50	92

Surrogate % Recovery: 102 %

ND = Not Detected.

BPQL= Below Practical Quantitation Limit

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Fax (802) 223-8688

LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	A-B Beverage	GML REF.#:	176
REPORT DATE:	September 20, 1995	STATION:	MW-2
DATE SAMPLED:	September 18, 1995	TIME SAMPLED:	1005
DATE RECEIVED:	September 18, 1995	SAMPLER:	James Robideau
ANALYSIS DATE:	September 18, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	58
Toluene	1	1.3
Ethylbenzene	1	42
Xylenes	3	22
MTBE	5	12

Surrogate % Recovery: 96.9 %

ND = Not Detected.

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Montpelier, Vermont 05602

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LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	A-B Beverage	GML REF.#:	176
REPORT DATE:	September 20, 1995	STATION:	MW-3
DATE SAMPLED:	September 18, 1995	TIME SAMPLED:	1015
DATE RECEIVED:	September 18, 1995	SAMPLER:	James Robideau
ANALYSIS DATE:	September 18, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	10	1700
Toluene	10	1700
Ethylbenzene	10	1200
Xylenes	30	5300
MTBE	50	1700

Surrogate % Recovery: 98.1 %

ND = Not Detected.

Green Mountain Laboratories, Inc.

RR #3, box 5210
 Montpelier, VT 05602
 (802) 223-1468 • fax (802) 223-8688

ANALYSIS REQUESTED

Page
 1 of 1
 GML #

CLIENT NAME LINCOLN APPLIED GEOLOGY
 ADDRESS RD 1 BOX 710 BRISTOL, VT 05443
 PROJECT NAME A-B BEVERAGE
 PROJECT NUMBER
 PROJECT MANAGER RICH V
 SAMPLER JAMES ROBIDEAU

B Test - MTBE

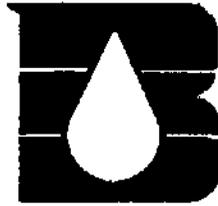
0176

Sample Location	Date	Time	# of cont.	pres ervd	Sample Type															REMARKS:
TRIP	9-18-95	8:00 AM	2	HQL	40MILL	✓														
MW-1	9-18-95	10:00	2	HQL	40MILL	✓														
MW-2	9-18-95	10:05	2	HQL	40MILL	✓														
MW-3	9-18-95	10:15	2	HQL	40MILL	✓														

CHAIN OF CUSTODY RECORD

1) Relinquished by:	<u>James Robideau</u>	Received by:	<u>J. BERRY</u>	Date/Time	<u>9-18-95 1:26 pm</u>
2) Relinquished by:		Received by:		Date/Time	
3) Relinquished by:		Received by:		Date/Time	

Appendix B
Tank Pull Report



BRADFORD OIL COMPANY

SITE ASSESSMENT

Site:	A & B Beverage	Assessment By:	Rusty Ayotte
	Facility ID #200		Bradford Oil Co.
	Route 2		PO Box 394
	Grand Isle, VT		Bradford, VT
	Contact Person:	William Sellinger	
		Bradford Oil Co.	
	Phone:	800-788-3002	

Tanks Involved:

- #1-4000 gallon UST gasoline tank
- #2-3000 gallon UST gasoline tank
- #3-6000 gallon UST gasoline tank

The three tanks were removed from the site due to an upgrade, and were replaced by two new (Permatank) fiberglass coated steel tanks. Upon removal of the tanks I found them all to be in good to excellent condition. Tanks 1 & 2 were single walled steel tanks both in good condition. Tank #3 was a double walled steel tank in excellent condition. There were no signs of leaking around the tanks. All three tanks had two feet of cover over them. Tanks 1 & 2 had six inches of concrete poured right over the top of the tank, then about fifteen inches of gravel and three inches of asphalt. Tanks 1 & 2 were buried with sand all around them. Tank #3 was buried in 3/8" crushed stone. This tank had about six inches of stone over the tank, about a foot of gravel, and then eight inches of concrete over the tank.

Tanks 1 & 2 had galvanized piping and tank 3 had fiberglass piping.

All three tanks were lying in a North/South direction. There were three monitoring wells near the tanks, one of which was taken out at the time of the removal of tank #3. A new well was installed at the south end of tank #2.

The piping on tanks 1 & 3 showed no signs of leaking. On tank #2 I did pick up some higher readings, possibly one time it could have leaked around the suction pipe or from an old tank that was in that area as you can see by # 16, 17, 22, & 32 on the log sheet.

Reading 1-6 were taken 25' north of the island, in front of the store and around the old island where we were digging the ditch for the new piping. Readings 7 thru 14 were taken around tank #1 and readings 15 thru 36 were taken around the other two tanks.

-2-

I encountered water at approximately five feet and there was no sheen on the water. Water samples were taken from each hole where the tanks had been. I used approximately 30 yards of the dirt that was dug out of the new ditch line for backfill for the old tanks. I stockpiled about 40 yards on plastic and covered it with plastic.

In conclusion, I feel the highest concentration was around the old mid grade tank (#2) and it hasn't migrated north or east to where the other two tanks had been. If needed it could be attended to from the new monitoring well I installed.

Respectfully Submitted,

Rusty Ayotte
Construction Foreman

RA/cs

Log Form

Sheet 1 of 3

Date 6-13-95

Data Compiled by: R. Ayotte

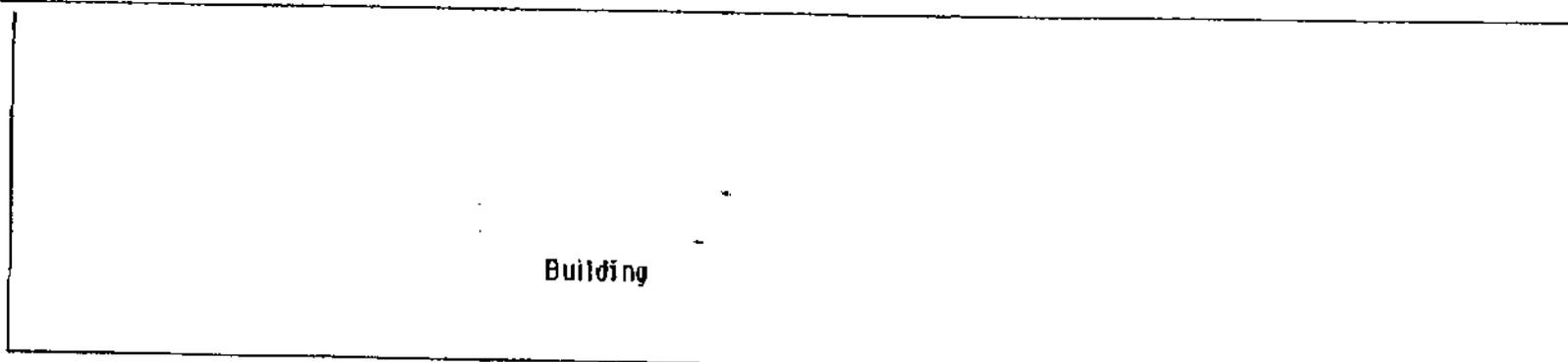
Log #	Description	Initial Reading in ppm	Contained Reading in ppm	Soil Profile	Sample Taken
1	in the ditch for the new piping		7.2	gravel fill	
2	in the new ditch some rocks		26	gravel	
3	new ditch some rocks		17.8	gravel	
4	Near old island new ditch line		40	gravel	
5	new ditch line		10.8	gravel	
6	near old island		92	gravel	
#1 Super Tank.					
7	under top 3' west side of fill		5	sand	
8	2' below surface next to fill w. side		5.4	sand	
9	4' below surface west side		13.2	sand	
10	4' below surface 11' at of fill		5.2	sand	
11	5' below surface 11' at of fill on the east side		4.8	sand	
12	14' below top of the tank North end		2.8	sand	
13	3' below the bottom of the north end of the tank		8.4	sand	✓
14	3' below the bottom of the south end of the tank		4.4	sand	✓
#2 Special tank.					
15	2' below grade 2' east of the fill		4.8	sand	
16	1' below top of the tank at the fill		66	sand	

Log Form

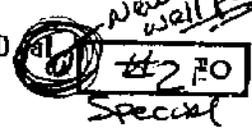
Date 4-13-95

Data Compiled by: R. Ayotte

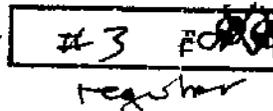
Log #	Description	Initial Reading in ppm	Contained Reading in ppm	Soil Profile	Sample Taken
17					
17	1' below top of the tank next to the suction		72	sand	
18	near the top of the tank 7' south of the fill E side		26	sand	
19	near the top of the tank 7' south of the fill W side		5	sand	
21	Between under special 7' east of special tank under pipes		3	stone sand	
22	18' below top of the tank which next to suction		116	sand	
28	5' below surface east side of the fill		1.2	stone	
29	11' south of fill west side of tank 5' below surface		44	sand	
30	4 1/2' below surface south end of tank		26	sand	
31	3' below the bottom of the tank W end under fill		22	sand	✓
32	3' below the bottom of the south end of tank		172		✓
<u>#3 Work Tank</u>					
20	Top of the tank east side of the fill		1	stone	
23	18" below the top of tank under suction		0	stone	
24	1' below top of tank and the south end		0	stone	



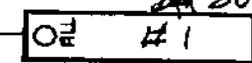
64" x 3,000
Mid. Uni.



72" X 6,000 gal.
Unleaded



64" x 4,000 gal.
Spr. Uni.



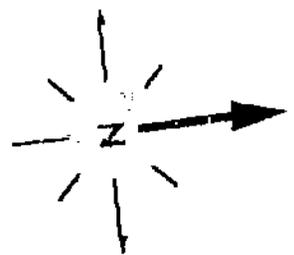
monitor well



Existing Catchbasin

Existing Catchbasin

VT ROUTE 2



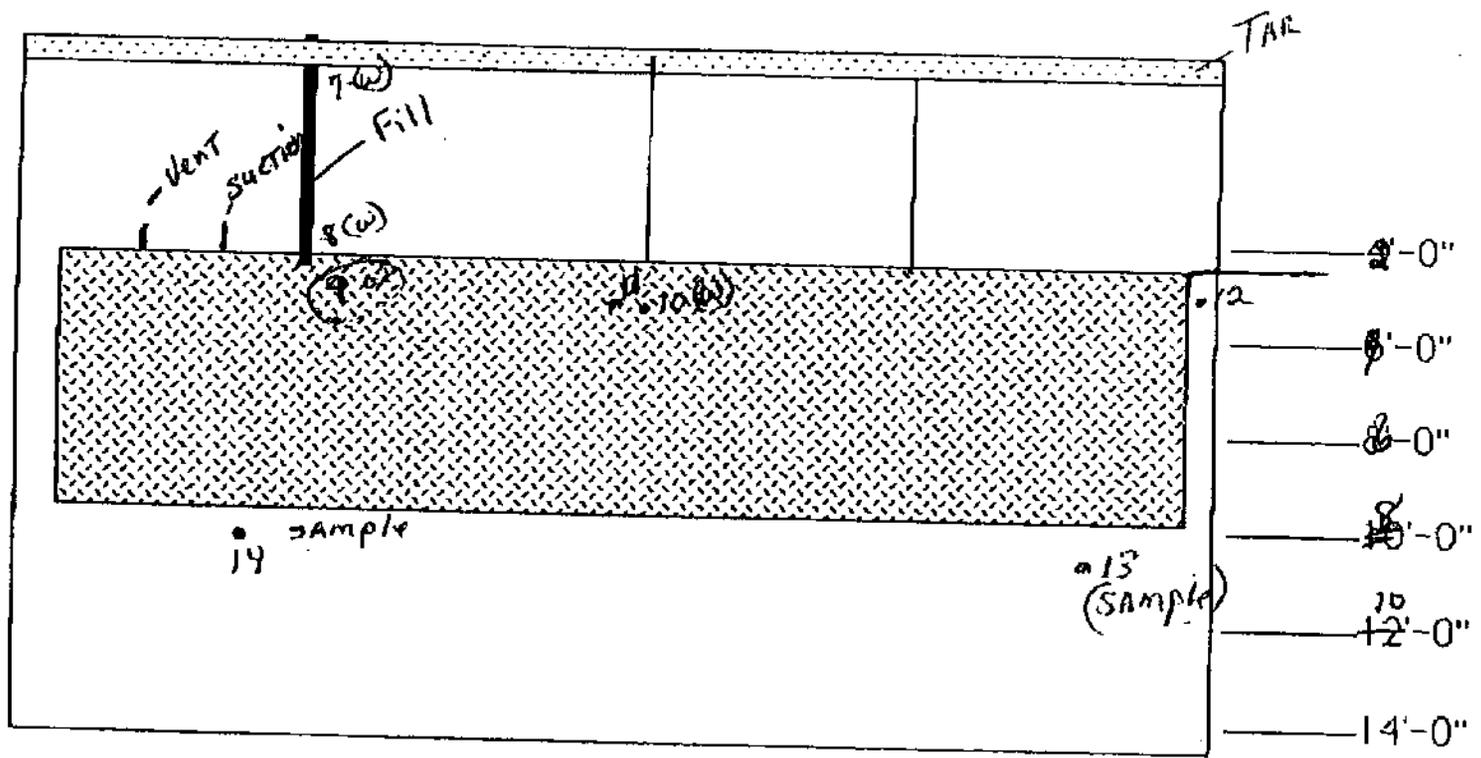
Legend:

Existing Monitoring well

A & B Beverage, Grand Isle VT	
View: Plan	Scale: 1"=20'
Date:	Apprvd. By:

↔ N

Tank # 1
 Product Type: Gasoline
 Tank Size: 64" x 4,000 gal.



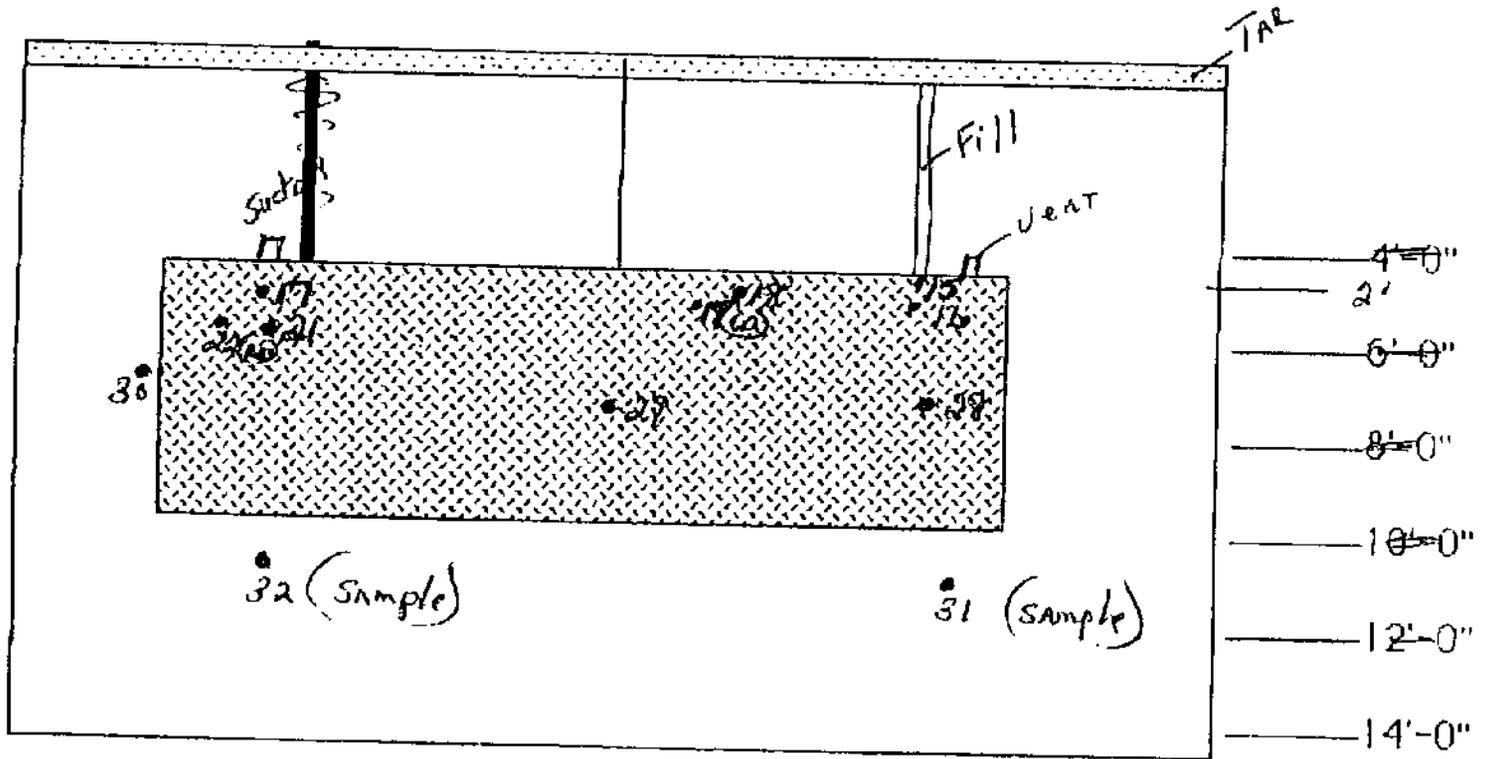
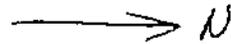
Notes: WATER sample also Taken

A & B Beverage, Grand Isle VT.	
View: X-Section	Scale: 1/4" = 1'
Date:	Apprvd. By:

Tank # 2

Product Type: Gasoline

Tank Size: 64" x 3,000 gal.



Notes: WATER SAMPLE WAS TAKEN

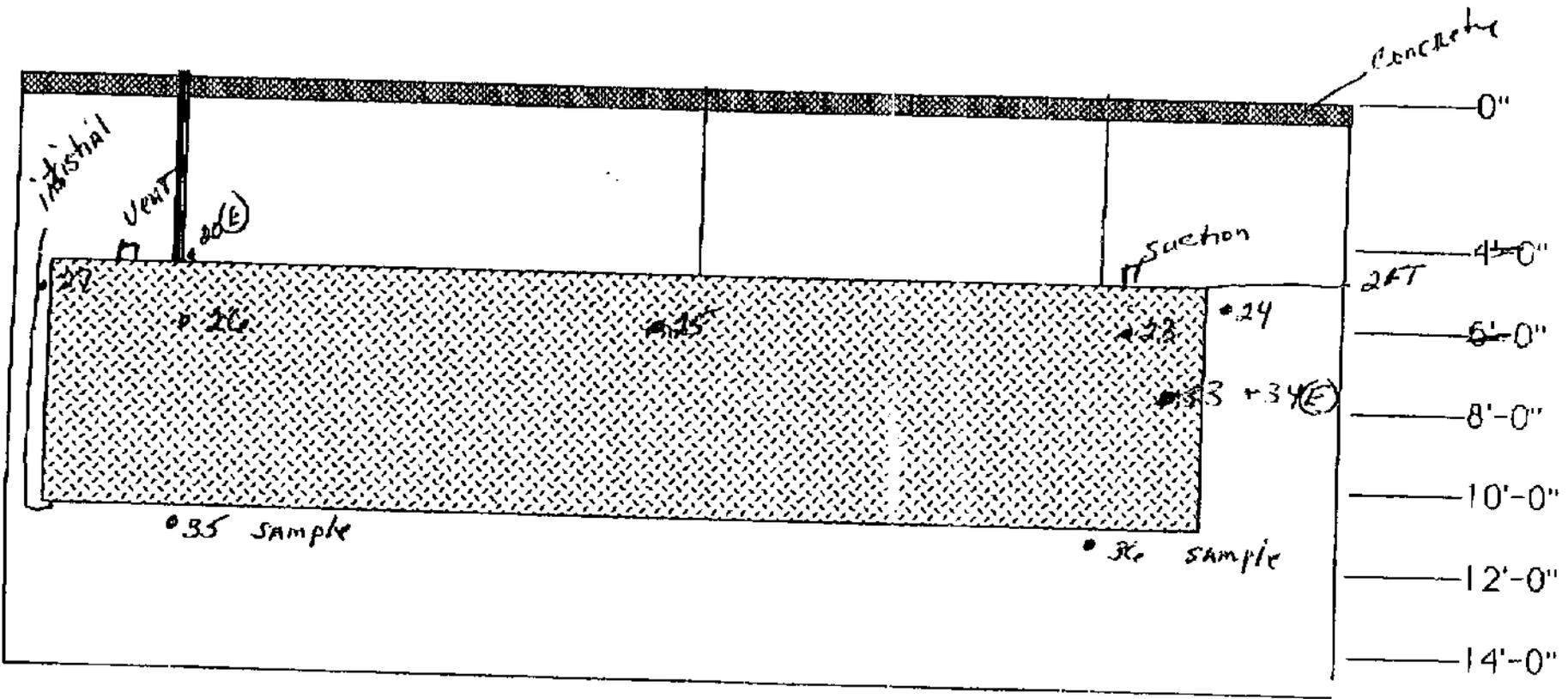
A & B Beverage, Grand Isle VT.	
View: X-Section	Scale: 1/4" = 1'
Date:	Apprvd. By:

Tank # 3

Product Type: Gasoline

Tank Size: 72" x 6,000 gal.

N \longleftrightarrow ~~E~~



Notes: WATERIL Sample was also Taken

A & B Beverage, Grand Isle VT.	
View: X-Section	Scale: 1/4" = 1'
Date:	Apprvd. By:

UNDERGROUND STORAGE TANK PERMANENT CLOSURE FORM

Agency Use Only
 Sched. closure date: 6/13/95
 Facility Name: A+B Beverage
 Facility Town: Grand Isle
 Facility ID#: 200
 DEC Official: TEM

VERMONT AGENCY OF NATURAL RESOURCES
 DEPT. OF ENVIRONMENTAL CONSERVATION
 HAZARDOUS MATERIALS MANAGEMENT DIV.
 103 SOUTH MAIN STREET, WEST BUILDING
 WATERBURY, VERMONT 05671-0404
 TELEPHONE: (802) 241-3888

Company conducting site assessment: BRADFORD Oil Co
 Person conducting site assessment: Rusty Ayotte
 Telephone number of company (or person): 1-800-788-3002
 Date of UST closure: 6-14-95
 Date of site assessment: 6-14-95

This Closure Form may only be used for the facility and date indicated in the upper left hand corner. Changes in the scheduled closure date should be phoned in at least 48 hours in advance. Both the yellow and white copies must be returned to the above address within 72 hours of tank closure, the pink copy should be retained by the UST owner. A written report from an environmental consultant covering all aspects of closure and site assessment, complete with photographs and any other relevant data, must accompany this form. All procedures must be conducted by qualified personnel - including training required by 29 CFR 1910.120. Documentation of all methods and materials used must be adequate. All work must be performed in compliance with DEC policy "UST Closure and Site Assessment Requirements" as well as all applicable statutes, regulations, and additional policies. The DEC may reject inadequate closure forms and reports.

Section A. Facility Information:

Name of Facility: A+B Beverage Number of Employees: 6
 Street address of facility: RT 2
 Owner of UST(s) to be closed: BRADFORD Oil Co
 Name of Contact and telephone number if different from owner: _____
 Mailing address of owner: PO Box 395 BRADFORD VT 05033
 Telephone number of owner: 1-800-788-3002

Section B. UST Closure Information:

USTs undergoing permanent closure. Include condition and if leaks were found:

UST#	Product	Size (gallons)	Tank age	Piping age	Tank condition	Piping condition
1	Gasoline	4,000	10 OR 12 YRS	SAME	Good	Good
2	Gasoline	3,000	10 OR 12 YRS	SAME	Good	Good
3	Gasoline	6,000 D/W	7 OR 8 YRS	SAME	Excellent	Excellent

USTs not closed. Include all USTs, regardless of size, and status, whether "abandoned", "in use", "to be installed" or otherwise. (Most new installations require permits and advance notice to this office.)

UST#	Product	Size (gallons)	Tank age	Piping age	Tank Status	Piping Status

Location, method and date of disposal/destruction of removed UST(s). (With limited exceptions, USTs may never be reused):

Reason for initiating UST Closure: Suspected Leak Liability Replacement of UST
 Abandoned Replacement of Product Lines

Amount (gal.) and type of waste generated from USTs: 10 gal sludge

Tank cleaning company (must be trained in confined space entry): BRADFORD OIL CO

Certified hazardous waste hauler (tank contents are hazardous waste unless recovered and usable product): P&H TRANS VTD 049284209

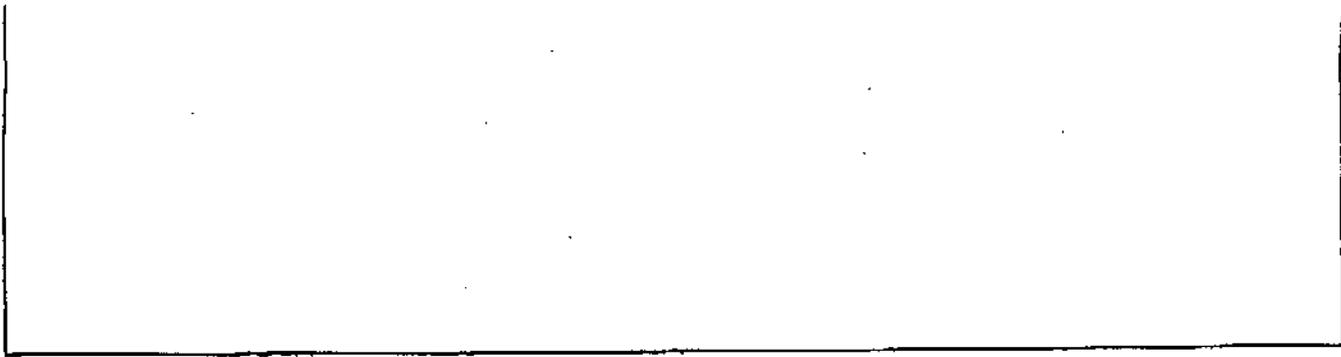
Hazardous waste generator ID number: VTD 988880564

Section C. Initial site characterization:

Work in this section must be completed by a professional environmental consultant or hydrogeologist with experience in environmental sampling for the presence of hazardous materials. A full report from the consultant must accompany this form.

Excavation size (ft²): 20 x 40 Excavation depth (ft): 8' Soil type: STONE + SAND Bedrock depth (ft): 8 1/2'

PID Information: Make HULL Model HW 101



Return form along with complete narrative report and photographs to the Department of Environmental Conservation,
Underground Storage Tank Program within 72 hours of closure.

Page 2 of 2

Appendix C
Cost Estimate

**A&B Beverage
Grand Isle, Vermont
Cost Estimate for Proposed Work
November 01, 1995**

Task 1 Monitor Well Installation and Supervision

Driller's Charges -					\$	1,533.00
Hydrogeologist/Site Manager -	14.0	hr(s) @	\$45.00	per hour	\$	630.00
PID and Interface Probe -	1.0	day(s) @	\$100.00	day	\$	100.00
Metal Detector -	1.0	day(s) @	\$30.00	day	\$	30.00
Mileage -	150.0	mile(s) @	\$0.30	per mile	\$	45.00

Total Task 1 \$ 2,338.00

Task 2 Monitor Well Sampling

Field Technician -	8.0	hr(s) @	\$30.00	per hour	\$	240.00
Field Technician O.T. -	2.0	hr(s) @	\$45.00	per hour	\$	90.00
PID and Interface Probe -	1.0	day(s) @	\$100.00	day	\$	100.00
Generator and Pump -	1.0	day(s) @	\$110.00	day	\$	110.00
Bailer(s) -	7.0	@	\$6.75	each	\$	47.25
Laboratory Analyses (includes trip) BTEX & MTBE -	7.0	@	\$60.00	each	\$	420.00
Mileage -	180.0	mile(s) @	\$0.30	per mile	\$	54.00

Total Task 2 \$ 1,061.25

Task 3 Summary Report

Principal/Senior Hydrogeologist -	1.0	hr(s) @	\$75.00	per hour	\$	75.00
Project Manager -	2.0	hr(s) @	\$50.00	per hour	\$	100.00
Hydrogeologist/Site Manager -	8.0	hr(s) @	\$45.00	per hour	\$	360.00
Computer Technician -	3.0	hr(s) @	\$30.00	per hour	\$	90.00
Administrative Assistant -	4.0	hr(s) @	\$30.00	per hour	\$	120.00

Total Task 3 \$ 745.00

Total Tasks I, II, and III >>> \$ 4,144.25

