

THE JOHNSON COMPANY, INC.

Environmental Sciences and Engineering

December 29, 1994

Mr. Richard Spiese
Hazardous Materials Management Division
Department of Environmental Conservation
103 South Main Street / West Building
Waterbury, Vermont 05671-0404

Re: Carl's Equipment Inc., Barton, Vermont
DEC Site # 94-1724
JCO No. 1-1242-1 (042)

Dear Richard:

Attached is a description of our findings with respect to the preliminary site investigation at the above-referenced site. This work was performed pursuant to your letter dated November 28, 1994, and also pursuant to our Expressway communication to you which was dated December 5, 1994.

Please don't hesitate to call me if you have questions or comments on this information. Thank you.

Sincerely,

THE JOHNSON COMPANY, INC.

By: 

Alan R. Liptak
Senior Scientist

cc: Buzz LaRosa, Carl's Equipment Inc.

Reviewed by: dmm
I:\PROJECTS\1-1242-1\NVRPT1.LTR December 28, 1994 11:20 arl

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SUMMARY

A 5,000 gallon underground storage tank (UST), which had formerly been used for storage of #2 heating oil, was removed from the ground at Carl's Equipment, Inc. Barton, Vermont on November 11, 1994. Oversight and direction of the tank and soil removal were performed by Griffin International, Inc. (see, "Tank Removal Report", submitted to the Vermont Department of Environmental Conservation (DEC) by Don Touranleau, Griffin International Inc., November 11, 1994)("Griffin Report").

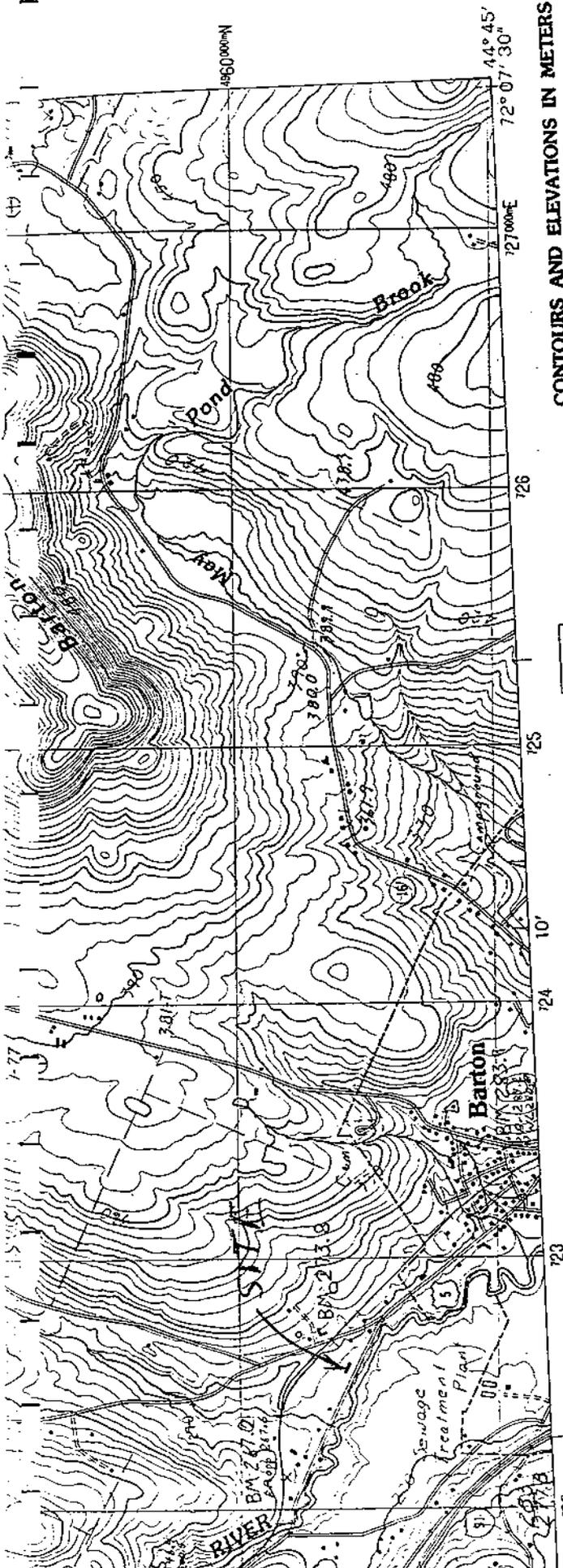
Carl's Equipment Inc. is on the east side of Vermont Route 5, approximately 1/2 mile northwest of the Village of Barton, Vermont (See Figure 1). The site is about 200-300 feet northeast of the Barton River and is between 20-30 feet higher in elevation than the river.

Soil screening information from the tank removal indicated that some subsurface soil contamination was present (Griffin Report). Photoionization Device measurements of headspace air derived from excavated soils of up to 60 ppmV were reported by Griffin International. Excavated soils were replaced into the tank excavation on November 11, 1994.

In response to a DEC request dated November 28, 1994, three soil borings were advanced at the site on December 12, 1994 by Tristate Drilling and Boring, Inc. with oversight by The Johnson Company. The results of these soil borings indicate that contamination beneath the site is aerially- and vertically-limited. Some of the contaminated soils within the UST excavation area produced PID headspace measurements which exceeded the DEC's action level of 10 ppmV for fuel oil contamination. No non-aqueous phase liquids were encountered during the soil boring work.

There is a perched water table beneath the site, at depths between 7 and 12 feet below ground surface. Laboratory analysis of a sample of the perched groundwater which was collected from one of the soil borings indicates that none of the compounds which were tested for (BTEX + MTBE) were reported at or above groundwater enforcement standards, preventative action limits or health advisory levels.

Based upon the information collected at this site, The Johnson Company recommends that soils near the former tank location be re-excavated and stockpiled on-site for treatment in accord with DEC Guidelines for Handling of Petroleum Contaminated soils. No further remedial work is recommended due to the limited extent of contamination, the absence of nearby receptors at risk and the presence of only trace concentrations of contaminants not exceeding standards for contaminants in groundwater.



CONTOURS AND ELEVATIONS IN METERS
ROAD LEGEND

Improved Road
 Unimproved Road
 Trail

○ Interstate Route □ U. S. Route ○ State Route

ORLEANS, VERMONT
PROVISIONAL EDITION 1986
 44072-G2-TM-024

○ Interstate Route □ U. S. Route ○ State Route

WEST CHARLESTON, VERMONT
PROVISIONAL EDITION 1986
 44072-H1-TM-024

Figure 1



QUADRANGLE LOCATION

1	2	3	4	5	6	7	8
1 Newport Center	2 Newport	3 West Charleston	4 Iraaburg	5 Westmore	6 Craftsbury	7 Crystal Lake	8 Sutton

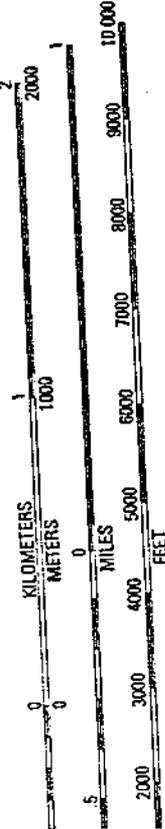
ADJOINING 7.5' QUADRANGLE NAMES

4	5	6	7	8
4 Newport	5 Morgan Center	6 Orleans	7 Westmore	8 Island Pond

ADJOINING 7.5' QUADRANGLE NAMES

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1986

SCALE 1:24 000



CONTOUR INTERVAL 6 METERS
 AND FIELD ESTABLISHED ELEVATIONS SHOWN TO THE NEAREST 0.1 METER
 OTHER ELEVATIONS SHOWN TO THE NEAREST METER
 To convert meters to feet multiply by 3.2808
 To convert feet to meters multiply by .3048

MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U. S. GEOLOGICAL SURVEY
 NUMBER, COLORADO 80225, OR RESTON, VIRGINIA 22092

CONTOUR INTERVAL 6 METERS
 ESTABLISHED ELEVATIONS SHOWN TO THE NEAREST 0.1 METER
 OTHER ELEVATIONS SHOWN TO THE NEAREST METER
 To convert meters to feet multiply by 3.2808
 To convert feet to meters multiply by .3048

MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U. S. GEOLOGICAL SURVEY
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1.0 SITE USE AND NEIGHBORING LANDOWNERS

The site is currently used for the maintenance and sale of used automobiles. There is an underground gasoline storage tank at the north end of the building which was installed in 1986.

Neighboring landowners and the nature of the use are as follows:

Direction	Name	Address	Phone #	Nature of Use
Northwest	Philip Bailey	Route 5, Barton, Vermont	(802) 525-3068	Residential - open
Southeast	Henry Bjorkman	Route 5, Barton, Vermont	(802) 525-4478	Residential
Southwest	Vermont Agency of Transportation		----	Vermont Route 5
Northeast	Canadian Pacific Railroad	Newport, Vermont	(802) 334-8435	Railroad Tracks

2.0 SOIL BORING INSTALLATION

Three soil borings were advanced at the site on December 12, 1994 by Tristate Drilling and Boring, Inc. with oversight by The Johnson Company. The purpose of these borings was to ascertain the extent of subsurface fuel oil contamination as well as the nature of the subsurface soils and the depth to groundwater. Two of these borings were advanced within the former tank excavation and the third was advanced directly between the former tank excavation and the Barton River (Figure 2).

Soil boring logs for each of the three soil borings are included as Attachment 1. Generally the soils are composed of olive-brown or olive-grey fine sand with small amounts of silt, coarse sand and pebbles. From a formative perspective, these are probably glacial till soils overlain by a thin layer of fill. Soil density appears to increase at approximately 10' below ground surface (bgs) in the former tank excavation, as was indicated by an increase in the standard blow count during split spoon sampling. The UST removal excavation was approximately 10 feet deep according to the tank removal report, which was the same depth as the noted change in soil density. In the downgradient boring SB-3, the change in soil density was noted at approximately 12' bgs.

SITE SKETCH (APPROX. SCALE 1" = 30')

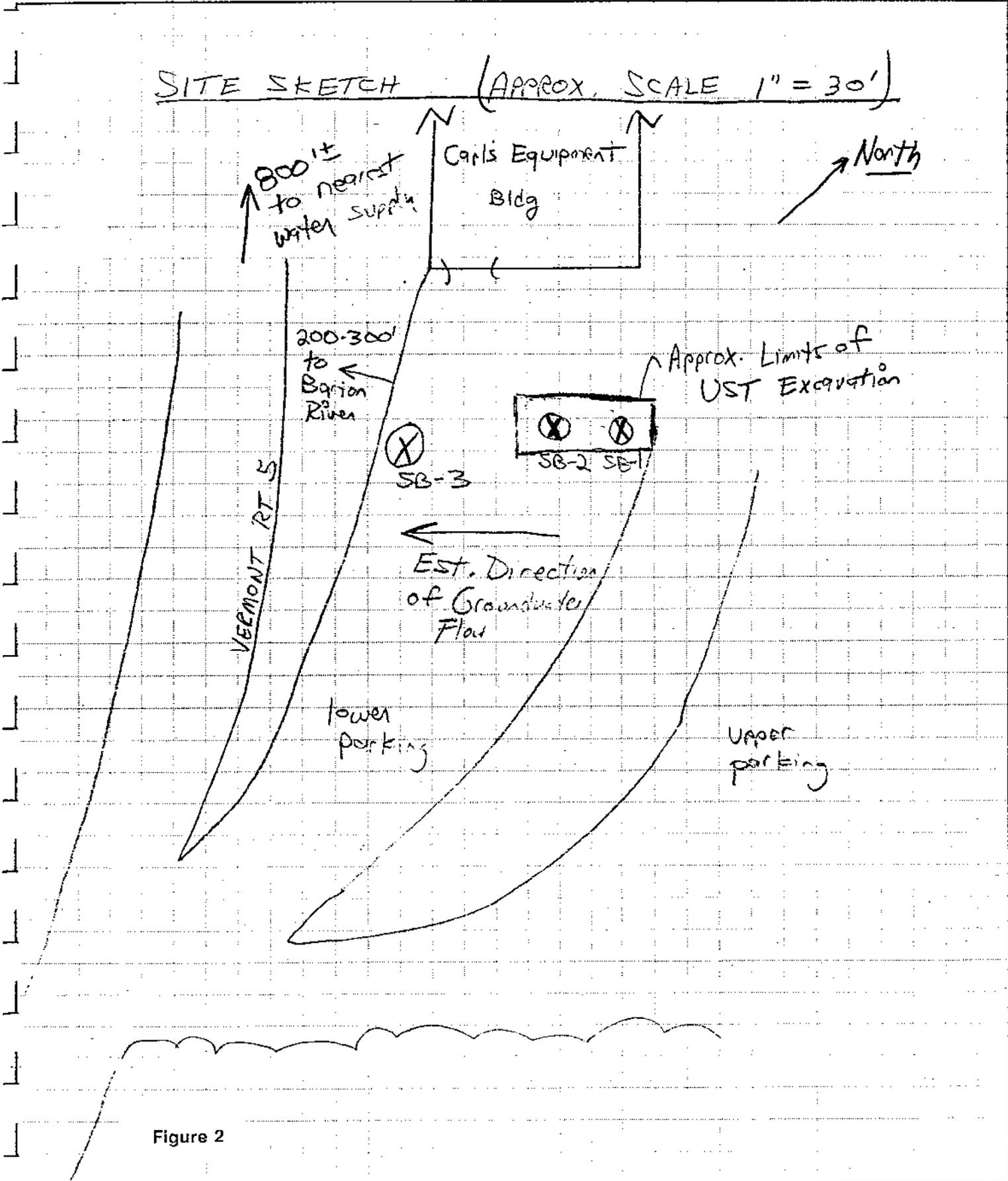


Figure 2

3.0 HYDROGEOLOGY

A comprehensive hydrogeological site assessment was not performed during this site investigation. Based upon the information collected, there appears to be a perched water table beneath the site. The evidence for this perched water table is the presence of wet soils above dry-to-moist soils in each of the soil borings. The base of this perched water table appears to be at approximately 11-12' bgs in SB-2 and between 12-15' bgs in SB-3. These depths roughly correspond with the change in density which was noted in the soils and lacking any noted change in the soil grain size distribution or sorting at these depths, the perched water above these depths could be due to increased soil density which was noted during soil sampling. The probable groundwater flow direction is south west toward the Barton River.

4.0 EXTENT OF CONTAMINATION ENCOUNTERED

Moderate fuel oil odors and elevated PID measurements were noted during soil sampling in SB-1 and SB-2 at 5-7' bgs (up to 150 ppmV), and a faint fuel oil odor and a slightly elevated PID measurement were noted in SB-2 at 12'-14' bgs (12-17 ppmV). No odors or elevated PID measurements were noted during the advancement of SB-3 or during the advancement of SB-1 from 12-16 feet bgs. These observations suggest that the extent of the contamination may be limited mostly to the former tank excavation, and that little if any of the contaminant had migrated outside of these confines as of the date of the borings.

5.0 GROUNDWATER SAMPLING RESULTS

A sample of groundwater was collected from SB-1 (within the former UST excavation limits) during its advancement. This sample was collected from inside of the hollow stem augers after they had been drilled to 14' bgs. A disposable bailer and string were used to evacuate approximately 5 gallons of water from the inside of the augers prior to sample collection.

The sample was submitted to Microassays laboratory on December 12 for analysis of BTEX, MTBE and TPH. The laboratory test results indicate that while trace concentrations of toluene, ethylbenzene and xylenes as well as TPH were reported, none of these were reported at concentrations equal to or greater than preventative action limits, groundwater enforcement standards or health advisory levels. Neither benzene nor MTBE were reported above the Practical Quantitation Limit of 1 part per billion (Attachment 2).

ATTACHMENT 1

Soil Boring Logs

The Johnson Company, Inc.
 Environmental Sciences and Engineering
 100 State Street
 Montpelier, Vermont 05602

DRILLING LOG
 WELL # SB-1

Project: Carl's Equipment
 Location: Barton, Vermont
 Job # 1-1242-1
 Logged By: ARL
 Date Drilled: 12/12/94
 Driller: Trlstate
 Drill Method: 4.25" HSA

Casing Type: none
 Casing Diameter:
 Casing Length:
 Screen Type:
 Screen Diameter:
 Screen Length:
 Slot Size:

Total Pipe: 0.0 ft.
 Stick Up: 0.0 ft.
 Total Hole Depth: 16.0 ft.
 Well Guard Length: 0.0 ft.
 Initial Water Level: 7.0 ft.
 Surface Elevation: -
 T.O.C. Elevation: -

■ = Sampled Interval

Sheet 1 of 1

Depth (feet)	Well Construction	Notes	Geology	PID Reading	Description
5					
4					
3					
2					
1					
0					
1					
2					
3					
4					
5					
6				4-18 ppm	5'-7' bgs; 1,3,10,12; 2"/24" recovery; grey fine to medium sand, few pebbles, moist, no odor, fill soils.
7					
8				33-67ppm	7'-9' bgs; 4,6,2,17; 6"/24" recovery; olive-grey fine sand with little silt, few pebbles to 2 cm, moist, fuel oil odor.
9					
10					
11				7-15 ppm	10'-12' bgs; 22,24,25,32; 18"/24" recovery; olive-grey fine sand with some coarse sand and pebbles, stiff, no odor. Top 12" of sample is wet, lowest 6" is moist to dry.
12					
13				8-9 ppm	12'-14' bgs; 18,17,25,29; 24"/24" recovery; olive-grey fine sand with some silt, few sand grains to 1 cm; no stratification; no odor. Moist to wet.
14					
15				8 ppm	
16					14'-16' bgs; 8,10,8,6; 24"/24" recovery; olive-grey fine sand with little silt, wet.
17					

The Johnson Company, Inc.
 Environmental Sciences and Engineering
 100 State Street
 Montpelier, Vermont 05602

DRILLING LOG
WELL # SB-2

Project: Carl's Equipment
 Location: Barton, Vermont
 Job # 1-1242-1
 Logged By: ARL
 Date Drilled: 12/12/94
 Driller: Tristate
 Drill Method: 4.25" HSA

Casing Type: none
 Casing Diameter:
 Casing Length:
 Screen Type: none
 Screen Diameter:
 Screen Length:
 Slot Size:

Total Pipe: 0.0 ft.
 Stick Up: 0.0 ft.
 Total Hole Depth: 14.0 ft.
 Well Guard Length: 0.0 ft.
 Initial Water Level: None
 Surface Elevation: -
 T.O.C. Elevation: -

■ = Sampled Interval

Sheet 1 of 1

Depth (feet)	Well Construction	Notes	Geology	PID Reading	Description
5					
4					
3					
2					
1					
0					
1					
2					
3					
4					
5					
6				94-150ppm	5'-7' bgs; WOH,1,1,1; 4"/24" recovery; olive grey fine sand, little silt, few pebbles to 4 cm, wet, fuel oil odor.
7					
8					
9					
10					
11				9 ppm	10'-12' bgs; 19,22,21,23; 18"/24" recovery; olive-grey fine to medium sand with some coarse sand, few pebbles to 4 cm, firm, dry, crumbles with compression, no odor.
12					
13				12-17 ppm	12'-14' bgs; 23,23,36,31; 18"/24" recovery; olive grey fine sand with some silt, little coarse sand and pebbles to 2 cm, dry to moist, slight fuel oil odor.
14					
15					
16					
17					

The Johnson Company, Inc.
 Environmental Sciences and Engineering
 100 State Street
 Montpelier, Vermont 05602

DRILLING LOG
WELL # SB-3

Project: Carl's Equipment
 Location: Barton, Vermont
 Job # 1-1242-1
 Logged By: ARL
 Date Drilled: 12/12/94
 Driller: Tristate
 Drill Method: 4.25" HSA

Casing Type: none
 Casing Diameter:
 Casing Length:
 Screen Type: none
 Screen Diameter:
 Screen Length:
 Slot Size:

Total Pipe: 0.0 ft.
 Stick Up: 0.0 ft.
 Total Hole Depth: 17.0 ft.
 Well Guard Length: 0.0 ft.
 Initial Water Level: None
 Surface Elevation: -
 T.O.C. Elevation: -

█ = Sampled Interval

Sheet 1 of 1

Depth (feet)	Well Construction	Notes	Geology	PID Reading	Description
5					
4					
3					
2					
1					
0					
1					
2					
3					
4					
5					
6				6-7 ppm	5'-7' bgs; 7,9,7,8; 14"/24" recovery; olive-brown fine sand with little silt and coarse sand, moist to wet, no odor.
7					
8					
9					
10				6-7 ppm	10'-12' bgs; 6,6,9,15; 16"/24" recovery; olive brown fine sand with little silt, wet, no odor.
11					
12					
13					
14					
15					
16				6-7 ppm	15'-17' bgs; 18,27,29,27; 22"/24" recovery; olive brown fine to medium sand with little silt, coarse sand and a few pebbles, dry to sl. moist, no odor.
17					

ATTACHMENT 2
Laboratory Analyses Results



RECEIVED

DEC 27 1994

LABORATORY ANALYSIS

THE JOHNSON CO., INC.
MONTPELIER, VERMONT

CLIENT NAME:	The Johnson Company	REF #:	10338
ADDRESS:	Suite 600, 100 State Street Montpelier, VT 05602	PROJECT NO.:	1-1242-1
SAMPLE LOCATION:	Carls Equipment Inc.	DATE OF SAMPLE:	12/12/94
SAMPLER:	Alan Liptak	DATE OF RECEIPT:	12/12/94
		DATE OF ANALYSIS:	12/14/94
ATTENTION:	Alan Liptak	DATE OF REPORT:	12/22/94

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.
- 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:

Brendan McMahon, Ph.D.
Director, Chemical Services



LABORATORY REPORT

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

CLIENT NAME:	The Johnson Company	PROJECT CODE:	1-1242-1
PROJECT NAME:	Carls Equipment Inc.	REF.#:	10,338
REPORT DATE:	December 22, 1994	STATION:	SB-1
DATE SAMPLED:	December 12, 1994	TIME SAMPLED:	12:15
DATE RECEIVED:	December 12, 1994	SAMPLER:	Alan Liptak
ANALYSIS DATE:	December 14, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	BPQL
Toluene	1	2
Ethylbenzene	1	1
Xylenes	3	5
MTBE	1	BPQL

Surrogate % Recovery: 99%

TPH-GC	1 mg/L	2
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BPQL = Below Practical Quantitation Limit (PQL).