JUL 30 1992

THE JOHNSON COMPANY, INC.

Environmental Sciences and Engineering

July 28, 1992

Mr. Richard Spiese
Hazardous Materials Management Division
Agency of Natural Resources
103 South Main Street
Waterbury, Vermont 05671-0404

Re: Cabot Creamery - Groundwater Contamination at Permeate Ponds Site
JCO No. 1-0303-1(43)

Dear Richard:

Thank you for dropping by our offices today to discuss the above referenced project and pick up related information. The site location map, groundwater flow map, and monitoring well logs which you picked up should be referenced in your review of this letter. We have enclosed with this letter the analytical results obtained to date from the monitoring wells sampled and the data used in developing the groundwater contour map.

Groundwater samples which detected and confirmed toluene contamination at the site were collected on three different dates: May 28, 1992, June 24, 1992 and June 30, 1992. The May 28 samples were collected by ERM-Northeast, the consultant hired by Agri-Mark to perform an environmental site assessment (ESA) of the Cabot Creamery property as part of their ESA tasks. The results of this sampling event were the first indication of the toluene contamination at the site. The June 24 and June 30 samples were collected by The Johnson Company and were split with ERM. The Johnson Company samples were analyzed by Scitest Laboratory Services of Randolph, Vermont. As can be noted from the analytical data, toluene was found at high concentrations, 38,000-54,300 parts per billion (ppb), in Monitoring Well (MW)-2. Lower concentrations of toluene, 3,700-5,100 ppb, were noted in MW-3. The enforcement standard for toluene, as specified in the Groundwater Protection Rule and Strategy, is 2420 ppb. Toluene was the only analyte detected in these wells via Environmental Protection Agency (EPA) Method 8240.

In order to aid in the characterization of the extent of the toluene contamination, four one-inch diameter monitoring wells were installed on either side of MWs 2 and 3 designated as MW TEMP-1 through MW-TEMP 4 (see groundwater contour map). Low concentrations of toluene, 2.1 ppb to 19 ppb, were noted in these wells which were sampled on June 30, 1992. Benzene was noted in MW-TEMP 4 at concentrations of 90-93 ppb. The enforcement standard for benzene is 5 ppb. Low concentrations of ethylbenzene and xylenes in MW-TEMP 4 and a low concentration of ethylbenzene in MW-TEMP 3 were noted in ERM's sample results. These results were not noted by Scitest as these concentrations are below their practical quantitation limits.

The source of the high concentrations of toluene in MWs 2 and 3 is unknown. There is no development at the site except for the ponds. A gasoline engine which operates the sprayfield pump is located downgradient of MW-2, at the southwest edge of Pond 2. This engine is fueled manually by Cabot personnel from 5-gallon containers. Contamination with exclusively toluene is not typically associated with gasoline contamination. Toluene concentrations fall off dramatically on either side of MWs 2 and 3. Because of these observations, it appears that the possibility of sabotage of MWs 2 and 3 can not be ruled out. Until recently, these wells were not protected with locking steel well guards. Cabot personnel indicated that there had been a spill of diesel fuel in the vicinity of MW-TEMP 4 in the past. The source of the benzene contamination in MW-TEMP 4 may be a result of this previous diesel spill.

Civil/environmental Engineering · Hydrogeologic · Water Supply & Wastewater Disposal · Hazardous Waste Remediation · Hydrology · Contaminant Fate Analysis
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5 State Street · Montpelier, VT 05602 ■ (802) 229-4600 · Fax: (802) 229 5876

As you know, because the extent of the toluene contamination around MWs 2 and 3 appears to be very limited, we have been pumping groundwater from MW-2 since July 22 in an attempt to clean up the most contaminated groundwater at the site. The discharge water is being treated via a 55-gallon carbon canister and being drained into Pond 2. The pumping rate is variable and at times the water level in the well is pumped below the suction line. Also, the pump has needed intermittent repairs throughout the pumping episode. Therefore, it is difficult to determine the exact amount of water pumped from the well; however, we estimate that less than 500 gallons of water have been pumped from the well to date.

During the pumping episode, three groundwater samples were collected: 1) when pumping began, 2) 24 hours after pumping began, and 3) on the fifth day of pumping. The results of these sampling episodes of pumping indicate high, but declining, levels of toluene contamination of 45,000 ppb, 30,500 ppb, and 27,000 ppb. The results of the first two sampling episodes can be noted on the attached laboratory sheet. The results of the third sampling episode (27,000 ppb) were received via a phone call today.

The site is remote. Due to its limited extent, the contamination noted at the site does not appear to pose a environmental threat outside a very limited area. If this was an act of sabotage, which we suspect, the source of the contamination has been eliminated via the installation of locking steel well guards which occurred on July 14, 1992. Pumping and treating of groundwater does not appear to be a feasible long term solution of this problem due to the low yielding aquifer and operational difficulties. Also, flushing of the groundwater at the site may be facilitated by the fluctuating water levels in the ponds. Therefore, we recommend performing twice-annual sampling of MWs 2 and 3 for analysis via EPA Method 602 to monitor toluene concentrations. We also recommend that, due to their vulnerability to damage and potential sabotage, the temporary wells be decommissioned. This would disable the monitoring of the violating benzene levels noted at MW-TEMP 4; however, since no benzene has been detected in MW-2, this appears to be of limited extent. We believe that protecting the site from potential future sabotage is of primary concern.

Please look over this information and do not hesitate to call with any questions.

Sincerely,

THE JOHNSON COMPANY, INC.

By: _____
Eric R. Hanson
Project Hydrologist

cc: Ray Dyke

Reviewed by: crh
J:\PROJECTS\1-0303 1\SPIESE.LTR July 28, 1992 14:01 erh

CABOT PONDS SITE-GROUNDWATER LEVELS
JULY 22, 1992

MW ID	TOC elev (ft)	Ground elev (ft)	Water Level (ft btoc)
MW-1	110.86	108.09	8.25
MW-2	109.80	106.65	18.47
MW-3	103.34	100.00	18.75
MW-4	92.13		19.66
MW-5	92.55		19.45
MW-6	91.93	88.89	17.30
MW-T1	100.02	99.31	15.38
MW-T2	100.26	99.58	15.48
MW-T3	108.54	107.45	15.20
MW-T4	107.63	105.95	16.83

Note: All elevations based on arbitrary datum of 100 feet at ground surface at MW-3
TOC = top of well casing
btoc = below top of casing

TABLE 2-2: * ON-SITE SPRAY IRRIGATION SYSTEM - WATER SAMPLES
CABOT FARMERS COOPERATIVE CREAMERY
CABOT, VERMONT

COMPOUND		POND #1 5/28/92	POND #2 5/28/92	POND #3 5/28/92	LAGOON #1 WELL 5/28/92	LAGOON #2 WELL 5/28/92	LAGOON #3 WELL 5/28/92
		SURFACE WATER SAMPLES			(MW 2)	(MW 3)	(MW 5)
VOCs							
Toluene		U	U	U	38,000 ug/l *	5,100 ug/l *	U
Metals							
Arsenic		U	U	U	0.035 mg/l	0.046 mg/l	0.45 mg/l
Barium		U	U	U	0.22 mg/l	0.26 mg/l	U
Cadmium		U	U	U	U	U	U
Chromium		U	U	U	U	U	U
Lead		U	U	U	U	U	U
Mercury		U	0.0005 mg/l *	U	0.0006 mg/l *	0.0007 mg/l *	0.0005 mg/l *
Selenium		U	U	U	U	U	U
Silver		U	U	U	0.02 mg/l	U	U

COMPOUND	(MW 2) LAGOON #1 WELL 6/24/92	(MW 3) LAGOON #2 WELL 6/24/92	WATER SUPPLY WELL CABOT WELL #1 6/24/92	MW TEMP-1 6/30/92	MW TEMP-2 6/30/92	MW TEMP-3 6/30/92	MW TEMP-4 6/30/92
VOCs							
Benzene	U	U	U	U	U	U	90.0 ug/l
Toluene	45,000 ug/l	3,700 ug/l	U	12.2 ug/l	9.5 ug/l	2.1 ug/l	15.2 ug/l
Ethylbenzene	U	U	U	U	U	3.8 ug/l	2.8 ug/l
Xylenes	U	U	U	U	U	U	9.9 ug/l

NOTES:

*: Compound also found in Field Blank.

U: Undetected.

* FROM ERM-NORTHEAST REPORT

LABORATORY REPORT

CLIENT NAME:	Cabot Farmers Coop Creamery	PROJECT NO.:	70157
ADDRESS:	Cabot, VT 05647	DATE OF SAMPLE:	6/23-24/92
ATTENTION:	Greg Riley	DATE OF RECEIPT:	6/25/92
SAMPLED BY:	Eric Hanson, The Johnson Co.	DATE OF ANALYSIS:	6/26/92
LABORATORY NO.:	2-0998	DATE OF REPORT:	6/29/92

VOLATILE ORGANIC DATA FOR WATER SAMPLE
RESULTS IN MICROGRAMS/LITER(ppb)

PARAMETER	FIELD BLANK	MW-1	MW-2	MW-3	SOIL	PRACTICAL QUANTITATION LIMIT
Chloromethane	BPQL	BPQL	<100	BPQL	<50	10
Bromomethane	BPQL	BPQL	<100	BPQL	<50	10
Vinyl Chloride	BPQL	BPQL	<100	BPQL	<50	10
Chloroethane	BPQL	BPQL	<100	BPQL	<50	10
Methylene Chloride	BPQL	BPQL	<100	BPQL	<50	10
Acetone	BPQL	BPQL	<200	BPQL	<100	20
Trichlorofluoromethane	BPQL	BPQL	<100	BPQL	<50	10
Carbon Disulfide	BPQL	BPQL	<100	BPQL	<50	10
1,1-Dichloroethene	BPQL	BPQL	<50	BPQL	<25	5
1,1-Dichloroethane	BPQL	BPQL	<50	BPQL	<25	5
1,2-Dichloroethene(Total)	BPQL	BPQL	<50	BPQL	<25	5
Chloroform	BPQL	BPQL	<50	BPQL	<25	5
1,2-Dichloroethane	BPQL	BPQL	<50	BPQL	<25	5
2-Butanone (MEK)	BPQL	BPQL	<200	BPQL	<100	20
1,1,1-Trichloroethane	BPQL	BPQL	<50	BPQL	<25	5
Carbon Tetrachloride	BPQL	BPQL	<50	BPQL	<25	5
Vinyl Acetate	BPQL	BPQL	<200	BPQL	<100	20
Bromodichloromethane	BPQL	BPQL	<50	BPQL	<25	5
1,2-Dichloropropane	BPQL	BPQL	<50	BPQL	<25	5
c-1,3-Dichloropropene	BPQL	BPQL	<50	BPQL	<25	5
Trichloroethene	BPQL	BPQL	<50	BPQL	<25	5
Dibromochloromethane	BPQL	BPQL	<50	BPQL	<25	5
1,1,2-Trichloroethane	BPQL	BPQL	<50	BPQL	<25	5
Benzene	BPQL	BPQL	<50	BPQL	<25	5
t-1,3-Dichloropropene	BPQL	BPQL	<50	BPQL	<25	5
2-Chloroethylvinylether	BPQL	BPQL	<200	BPQL	<100	20
Bromoform	BPQL	BPQL	<50	BPQL	<25	5
4-Methyl-2-Pentanone (MIBK)	BPQL	BPQL	<200	BPQL	<100	20
2-Hexanone	BPQL	BPQL	<200	BPQL	<100	20
Tetrachloroethene	BPQL	BPQL	<50	BPQL	<25	5
1,1,2,2-Tetrachloroethane	BPQL	BPQL	<50	BPQL	<25	5
Toluene	BPQL	BPQL	54300	3820	<25	5
Chlorobenzene	BPQL	BPQL	<50	BPQL	<25	5
Ethylbenzene	BPQL	BPQL	<50	BPQL	<25	5
Styrene	BPQL	BPQL	<100	BPQL	<50	10
m-Xylene	BPQL	BPQL	<100	BPQL	<50	10
o,p-Xylene	BPQL	BPQL	<100	BPQL	<50	10
1,3-Dichlorobenzene	BPQL	BPQL	<100	BPQL	<50	10
1,2-Dichlorobenzene	BPQL	BPQL	<100	BPQL	<50	10
1,4-Dichlorobenzene	BPQL	BPQL	<100	BPQL	<50	10

EPA Method 8240, SW 846, 3rd Ed., Nov 1986.
BPQL = Below Practical Quantitation Limit.

RECEIVED
JUN 30 1992
THE JOHNSON CO., INC.
MONTPELIER, VERMONT

Respectfully submitted,
SCITEST, INC.

Roderick Lamothe
Roderick J. Lamothe
Laboratory Director

RJL/ps
c: Eric Hanson

SCITEST
LABORATORY SERVICES

LABORATORY REPORT

CLIENT NAME:	Cabot Farmers Coop.	LABORATORY NO.:	2-1024
ADDRESS:	Cabot, VT 05647	PROJECT NO.:	70157
SAMPLED BY:	Eric Hanson	DATE OF SAMPLE:	6/30/92
	The Johnson Company	DATE OF ANALYSIS:	7/1/92
ATTENTION:	Greg Riley	DATE OF REPORT:	7/2/92

VOLATILE ORGANIC DATA FOR WATER SAMPLE
RESULTS IN MICROGRAMS/LITER(ppb)

PARAMETER	TEMP MW-1	TEMP MW-2	TEMP MW-3	PRACTICAL QUANTITATION LIMIT
Chloromethane	BPQL	BPQL	BPQL	10
Bromomethane	BPQL	BPQL	BPQL	10
Vinyl Chloride	BPQL	BPQL	BPQL	10
Chloroethane	BPQL	BPQL	BPQL	10
Methylene Chloride	BPQL	BPQL	BPQL	10
Acetone	37	BPQL	BPQL	20
Trichlorofluoromethane	BPQL	BPQL	BPQL	10
Carbon Disulfide	BPQL	BPQL	BPQL	10
1,1-Dichloroethene	BPQL	BPQL	BPQL	5
1,1-Dichloroethane	BPQL	BPQL	BPQL	5
1,2-Dichloroethene(Total)	BPQL	BPQL	BPQL	5
Chloroform	BPQL	BPQL	BPQL	5
1,2-Dichloroethane	BPQL	BPQL	BPQL	5
2-Butanone (MEK)	BPQL	BPQL	BPQL	20
1,1,1-Trichloroethane	BPQL	BPQL	BPQL	5
Carbon Tetrachloride	BPQL	BPQL	BPQL	5
Vinyl Acetate	BPQL	BPQL	BPQL	20
Bromodichloromethane	BPQL	BPQL	BPQL	5
1,2-Dichloropropane	BPQL	BPQL	BPQL	5
c-1,3-Dichloropropene	BPQL	BPQL	BPQL	5
Trichloroethene	BPQL	BPQL	BPQL	5
Dibromochloromethane	BPQL	BPQL	BPQL	5
1,1,2-Trichloroethane	BPQL	BPQL	BPQL	5
Benzene	BPQL	BPQL	BPQL	5
t-1,3-Dichloropropene	BPQL	BPQL	BPQL	5
2-Chloroethylvinylether	BPQL	BPQL	BPQL	20
Bromoform	BPQL	BPQL	BPQL	5
4-Methyl-2-Pentanone (MIBK)	BPQL	BPQL	BPQL	20
2-Hexanone	BPQL	BPQL	BPQL	20
Tetrachloroethene	BPQL	BPQL	BPQL	5
1,1,2,2-Tetrachloroethane	BPQL	BPQL	BPQL	5
Toluene	19	6	BPQL	5
Chlorobenzene	BPQL	BPQL	BPQL	5
Ethylbenzene	BPQL	BPQL	BPQL	5
Styrene	BPQL	BPQL	BPQL	10
m-Xylene	BPQL	BPQL	BPQL	10
o,p-Xylene	BPQL	BPQL	BPQL	10
1,3-Dichlorobenzene	BPQL	BPQL	BPQL	10
1,2-Dichlorobenzene	BPQL	BPQL	BPQL	10
1,4-Dichlorobenzene	BPQL	BPQL	BPQL	10
EPA Method 8240, SW 846, 3rd Ed., Nov 1986			Note 1	
BPQL = Below Practical Quantitation Limit.			Note 2	

Respectfully submitt
SCITEST, INC.

Roderick Lamothe
Roderick J. Lamothe
Laboratory Director

RJL/ps
Page 1 of 2

SCITEST
LABORATORY SERVICES

LABORATORY REPORT

CLIENT NAME:	Cabot Farmers Coop.	LABORATORY NO.:	2-1024
ADDRESS:	Cabot, VT 05647	PROJECT NO.:	70157
SAMPLED BY:	Eric Hanson	DATE OF SAMPLE:	6/30/92
	The Johnson Company	DATE OF ANALYSIS:	7/1/92
ATTENTION:	Greg Riley	DATE OF REPORT:	7/2/92

VOLATILE ORGANIC DATA FOR WATER SAMPLE
RESULTS IN MICROGRAMS/LITER(ppb)

PARAMETER	TEMP MW-4	FIELD BLANK	TRIP BLANK	PRACTICAL QUANTITATION LIMIT
Chloromethane	BPQL	BPQL	BPQL	10
Bromomethane	BPQL	BPQL	BPQL	10
Vinyl Chloride	BPQL	BPQL	BPQL	10
Chloroethane	BPQL	BPQL	BPQL	10
Methylene Chloride	BPQL	BPQL	BPQL	10
Acetone	BPQL	BPQL	BPQL	20
Trichlorofluoromethane	BPQL	BPQL	BPQL	10
Carbon Disulfide	BPQL	BPQL	BPQL	10
1,1-Dichloroethene	BPQL	BPQL	BPQL	5
1,1-Dichloroethane	BPQL	BPQL	BPQL	5
1,2-Dichloroethene(Total)	BPQL	BPQL	BPQL	5
Chloroform	BPQL	BPQL	BPQL	5
1,2-Dichloroethane	BPQL	BPQL	BPQL	5
2-Butanone (MEK)	BPQL	BPQL	BPQL	20
1,1,1-Trichloroethane	BPQL	BPQL	BPQL	5
Carbon Tetrachloride	BPQL	BPQL	BPQL	5
Vinyl Acetate	BPQL	BPQL	BPQL	20
Bromodichloromethane	BPQL	BPQL	BPQL	5
1,2-Dichloropropane	BPQL	BPQL	BPQL	5
c-1,3-Dichloropropene	BPQL	BPQL	BPQL	5
Trichloroethene	BPQL	BPQL	BPQL	5
Dibromochloromethane	BPQL	BPQL	BPQL	5
1,1,2-Trichloroethane	BPQL	BPQL	BPQL	5
Benzene	93	BPQL	BPQL	5
t-1,3-Dichloropropene	BPQL	BPQL	BPQL	5
2-Chloroethylvinylether	BPQL	BPQL	BPQL	20
Bromoform	BPQL	BPQL	BPQL	5
4-Methyl-2-Pentanone (MIBK)	BPQL	BPQL	BPQL	20
2-Hexanone	BPQL	BPQL	BPQL	20
Tetrachloroethene	BPQL	BPQL	BPQL	5
1,1,2,2-Tetrachloroethane	BPQL	BPQL	BPQL	5
Toluene	17	BPQL	BPQL	5
Chlorobenzene	BPQL	BPQL	BPQL	5
Ethylbenzene	BPQL	BPQL	BPQL	5
Styrene	BPQL	BPQL	BPQL	10
m-Xylene } 9.2 TOTAL	BPQL	BPQL	BPQL	10
o,p-Xylene }	BPQL	BPQL	BPQL	10
1,3-Dichlorobenzene	BPQL	BPQL	BPQL	10
1,2-Dichlorobenzene	BPQL	BPQL	BPQL	10
1,4-Dichlorobenzene	BPQL	BPQL	BPQL	10
		Note 2		

EPA Method 8240, SW 846, 3rd Ed., Nov 1986
BPQL = Below Practical Quantitation Limit.
Note 1: Traces of Toluene and Chlorobenzene were found below 5 ppb.
Note 2: Hexane was present in the Field Blank at the 150-600 ppb range.

SCITEST LABORATORY SERVICES

SCITEST
LABORATORY SERVICES
P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-6313

LABORATORY REPORT

CLIENT NAME:	CABOT FARMERS COOP CREAMERY	LABORATORY NO.:	2-1157
ADDRESS:	Cabot, VT 05647	PROJECT NO.:	70157
		DATE OF SAMPLE:	7/22-23/92
		DATE OF RECEIPT:	07/24/92
		DATE OF ANALYSIS:	07/24/92
ATTENTION:	Greg Riley	DATE OF REPORT:	07/27/92

RESULTS
(ug/l micrograms per liter)

PARAMETER	MW-2A (7/22 SAMPLE)	Replicate MW-2A	MW-2B (7/23 SAMPLE)	FIELD B
Benzene	BPQL	BPQL	BPQL	BPQ
Toluene	49000	48000	30500	BPQ
Ethylbenzene	BPQL	BPQL	BPQL	BPQ
Total Xylenes	BPQL	BPQL	BPQL	BPQ
BTEX	BPQL	BPQL	BPQL	BPQ
Chlorobenzene	BPQL	BPQL	BPQL	BPQ
1,2-Dichlorobenzene	BPQL	BPQL	BPQL	BPQ
1,3-Dichlorobenzene	BPQL	BPQL	BPQL	BPQ
1,4-Dichlorobenzene	BPQL	BPQL	BPQL	BPQ
Methyl Tertiary Butyl Ether	BPQL	BPQL	BPQL	BPQ
% Surrogate Recovery	98% Note 1	92% Note 1	94% Note 1	100%

Detection level 1 ug/l, except as noted
EPA Method 602

Note 1: Samples were diluted 1/1000 to bring to toluene into the working ra of the method. The detection limits for these samples are raised b factor of 1000.

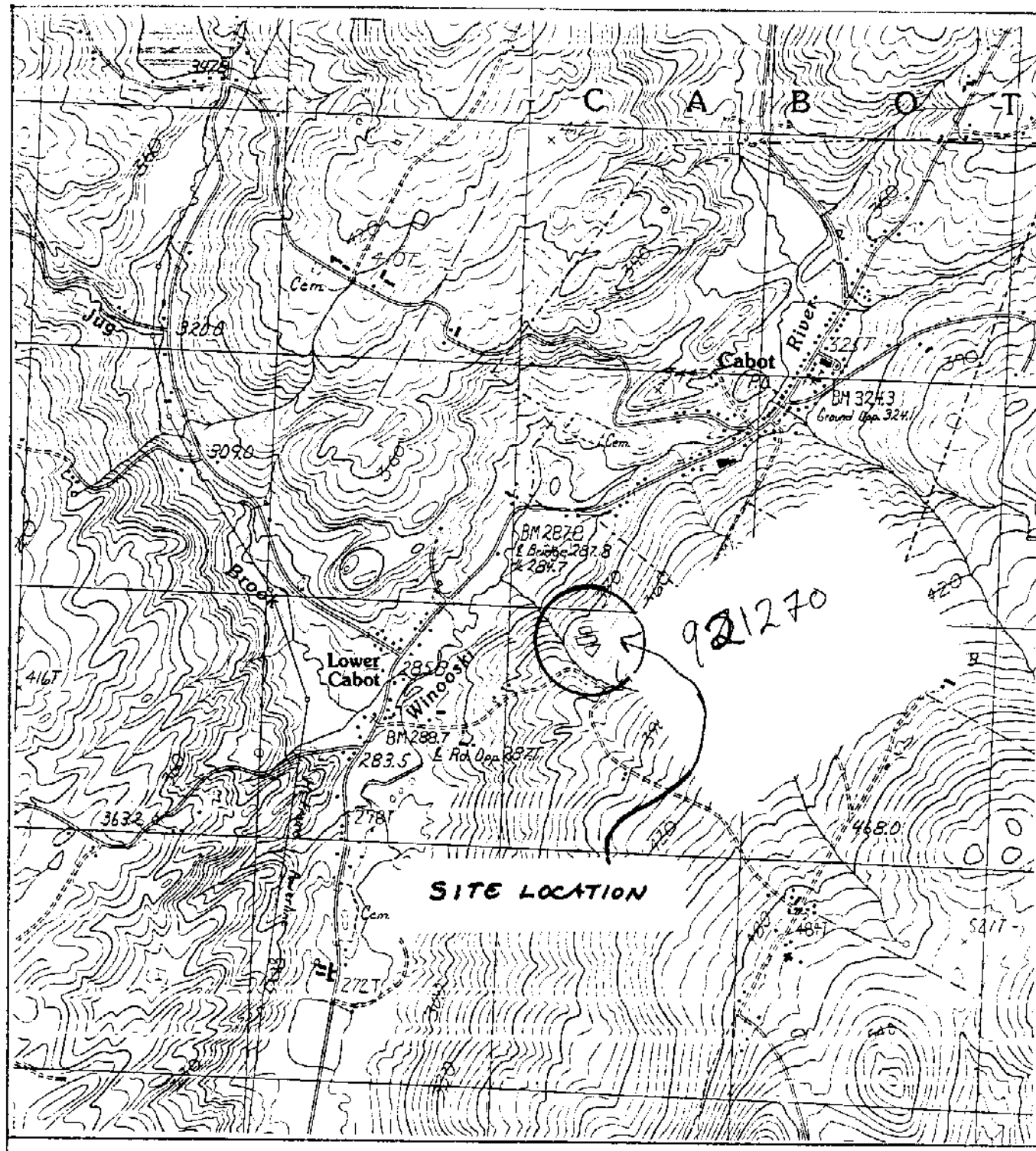
Respectfully submitted,

SCITEST, INC.

Roderick J. Lamothe
Laboratory Director

RJL/lap

C: Eric Hanson
Johnson Co.



NORTH

1 0.5 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

CONTOUR INTERVAL 20 FEET

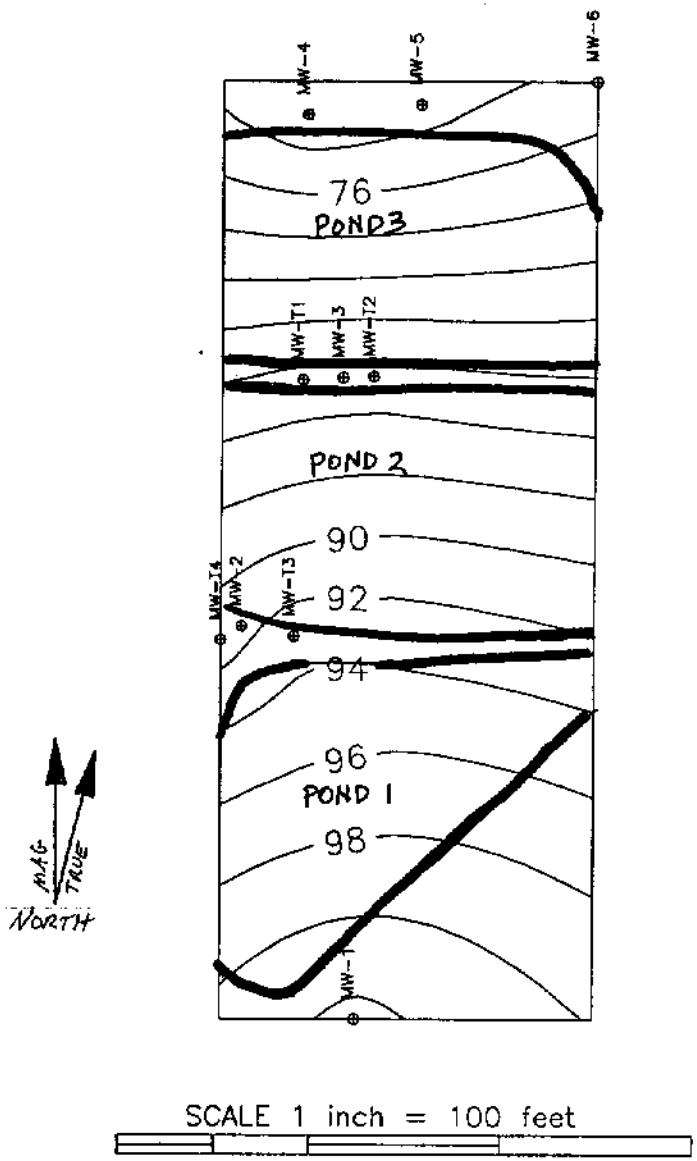
VT
MAP LOCATION

BASE MAP : USGS 7.5 Minute Topographic Quadrangle; Cabot, Vermont Provisional Edition 1986

FIGURE 1 : Site Location Map
Cabot Permeate Storage Lagoon Site
Cabot, Vermont

THE JOHNSON COMPANY
Environmental Sciences and Engineering
MONTPELIER, VERMONT

Cabot Ponds Site:Groundwater Contour Map



SCALE 1 inch = 100 feet

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

DRILLING LOG
WELL # Pond-1

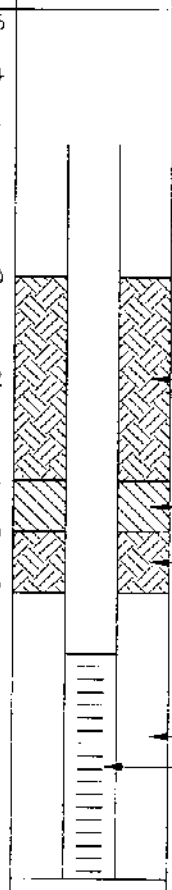
Project: Cabot Creamery
Location: Cabot, Vermont
Job # 1-0303-1
Logged By: CRH/TMJ
Date Drilled: 10/16/91
Driller: Adams Engineering
Drill Method: HSA

Casing Type: PVC
Casing Diameter: 2.0 in.
Casing Length: 10.0 ft.
Screen Type: Factory
Screen Diameter: 2.0 in.
Screen Length: 4.4 ft.
Slot Size: .01

Total Pipe: 14.4 ft.
Stick Up: 2.6 ft.
Total Hole Depth: 11.8 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, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17		Backfill Bentonite Backfill Sand Pack Screen			2,2,2,3 4.0–4.6 olive brown, friable, damp, sandy silt, few rotten stones 4.6–5.0 olive brown, orange mottled, friable, damp, sandy silt, some rotten stones 6,6,9,9 8.7–9.4 olive brown, orangle mottled, firm, wet sandy silt. 9.4–10.0 olive brown, damp, sandy silt, many rotten stones

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

DRILLING LOG
WELL # Pond -2

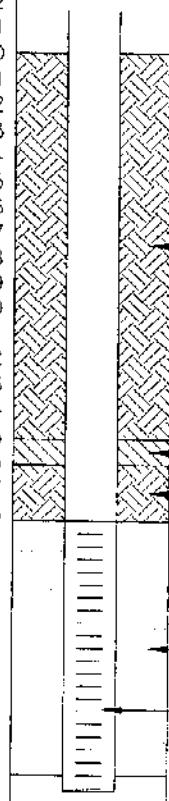
Project: Cabot Creamery
Location: Cabot, Vermont
Job # 1-0303-1
Logged By: CRH
Date Drilled: 10/16/91
Driller: Adams Engineering
Drill Method: HSA

Casing Type: PVC
Casing Diameter: 2.0 in.
Casing Length: 20.0 ft.
Screen Type: Factory
Screen Diameter: 2.0 in.
Screen Length: 10.6 ft
Slot Size: 0.010

Total Pipe: 30.6 ft.
Stick Up: 1.7 ft.
Total Hole Depth: 28.3 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, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40		Backfill Bentonite Backfill Sand Pack Screen			3 blows total. Moist, olive, coarse sandy loam with some gravel, abundant gray mottles 1 Blow. Moist, gray, fine sandy loam with coarse sand and gravel 1,1,4,6 Moist olive gray silt loam with coarse sand and gravel, common gray mottles moist gray sandy loam 14,15,15,21 0–17" moist, firm, olive gray sandy loam. 17–28" saturated, olive gray sandy loam, manure-like odor 32,35,58,62 Moist to Dry, dark gray silty sand and gravel, including the remains of one granite pebble 2" thick. Wet debris in top of spoon has strong manure-like odor

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

DRILLING LOG
WELL # Pond-3

Project: Cabot Creamery
Location: Cabot Settling Ponds
Job # 1-0303-1
Logged By: TMJ
Date Drilled: 10/17/91
Driller: Adams Engineering
Drill Method: HSA

Casing Type: PVC
Casing Diameter: 2.0 in.
Casing Length: 20.8 ft.
Screen Type: Factory
Screen Diameter: 2.0 in.
Screen Length: 10.0 ft.
Slot Size: 0.020

Total Pipe: 30.0 ft.
Stick Up. 4.5 ft.
Total Hole Depth: 25.5 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, 7, 8, 9, 10, 11, 12, 13, 14		Backfill; Bentonite; Backfill			
15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26		Sand Pack; Screen			1,2,2,3 14.7-15.8 olive gray, firm, damp, sandy silt with some pebbles 15.8-16 dark brown, friable, moist silt some fine sand 16-16.3 olive gray, firm, wet sandy silt 2,3,2,4 medium gray, firm, wet sandy silt, some pebbles 12,15,17,50 24.5-25.6 medium gray friable saturated, sandy silt 25.6 – 26.5 medium gray, firm, moist, sandy silt
27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40					

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Environmental Sciences and Engineering
5 State Street
Montpelier, Vermont 05602

DRILLING LOG
WELL # Pond-4

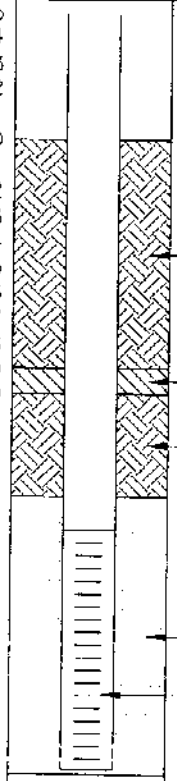
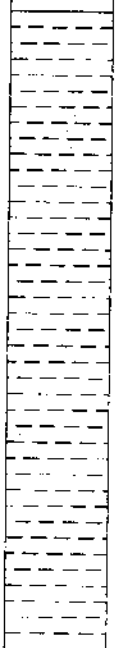
Project: Cabot Cramery
Location: Cabot Settling Ponds
Job # 1-0303-1
Logged By: TMJ
Date Drilled: 10/17/91
Driller: Adams Engineering
Drill Method: HSA

Casing Type: PVC
Casing Diameter: 2.0 in.
Casing Length: 20.2 ft.
Screen Type: Factory
Screen Diameter: 2.0 in.
Screen Length: 9.4 ft.
Slot Size: 0.020

Total Pipe: 29.6 ft.
Stick Up: 4.9 ft.
Total Hole Depth: 24.9 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, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40		Backfill Bentonite Backfill Sand Pack Screen			1,2,1,1 15.1–16.6 olive gray, firm, damp fine sandy silt, few pebbles 4,4,6,10 medium gray, firm, damp fine sandy silt, few pebbles 16 blows, medium gray, firm, damp fine sandy silt

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DRILLING LOG
WELL # Pond-5

Project: Cabot Creamery
Location: Cabot Settling Ponds
Job # 1-0303-1
Logged By: TMJ
Date Drilled: 10/18/92
Driller: Adams Engineering
Drill Method: HSA

Casing Type: PVC
Casing Diameter: 2.0 in.
Casing Length: 19.0 ft.
Screen Type: Factory
Screen Diameter: 2.0 in.
Screen Length: 10.0 ft.
Slot Size: 0.020

Total Pipe: 29.0 ft.
Stick Up: 5.0 ft.
Total Hole Depth: 24.0 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, 7, 8, 9		Backfill			
10, 11		Bentonite			13,8,7,8 9.5–9.8 rock, 9.8–10.2 medium gray friable moist sandy silt some pebbles 10.2–10.8 olive gray, firm, moist sandy silt some pebbles
12, 13		Backfill			
14, 15, 16, 17, 18, 19		Sand Pack			2,9,16,16 19.1–19.6 gray, friable, moist, coarse to medium sand 19.6 – 20 olive brown, friable moist sand some silt 20–20.3 black friable moist fine sandy silt 20.7–20.9 broken layered rock, 20.0–21.1 olive gry, firm, moist sandy silt
20, 21, 22, 23, 24		Screen			
25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40					

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DRILLING LOG
WELL # Pond-6

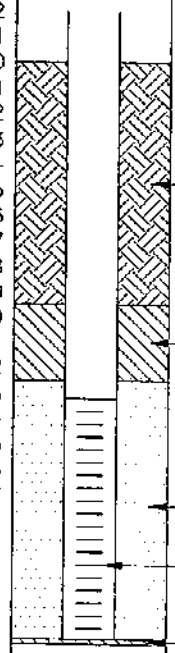
Project: Cabot Creamery
Location: Cabot Settling Ponds
Job # 1-0303-1
Logged By: TMJ
Date Drilled: 10/18/91
Driller: Adams Engineering
Drill Method: HSA

Casing Type: PVC
Casing Diameter: 2.0 in.
Casing Length: 15.2 ft.
Screen Type: Factory
Screen Diameter: 2.0 in.
Screen Length: 9.4 ft.
Slot Size: 0.020

Total Pipe: 24.6 ft.
Stick Up: 2.0 ft.
Total Hole Depth: 22.8 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, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40		Backfill Bentonite Sand Pack Screen Bentonite			1,1,1,1 8.9–10.1 olive gray, firm, damp, sandy silt 10.1–10.3 Black, friable, damp, medium sand some silt 2,4,6,24 13.6–14.1 olive gray, firm, wet sandy silt few pebbles 14.1–14.8 black, firm, damp medium sandy silt some pebbles 14.8–15 Black, friable, damp coarse sand some silt, few pebbles 6,16,17,19 18.7–20.2 medium gray firm, damp, sandy silt with pockets of black coarse sand