



State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Waste Management Division
103 South Main Street / West Building
Waterbury, Vermont 05671-0404
802-241-3877
Fax 802-241-3296
gerold.noyes@anr.state.vt.us

October 23, 2000

JANICE GREGORY
CUMBERLAND FARMS INC
777 DEDHAM STREET
CANTON, MASSACHUSETTS 02021-9118

RE: Site Investigation Report, Cumberland Farms Property No. V1696, Routes 22A and 74
SMS Site #89-0304, Shoreham, Vermont

Dear Ms. Gregory:

The Sites Management Section (SMS) has reviewed the October 20, 2000 Lincoln Applied Geology (LAG) report titled, "*Cumberland Farms, Inc. - Property #V1696, Corner of Routes 22A and 74, Shoreham, Vermont - Subsurface Contaminant Investigation Report*" and the SMS site file. Based on this review, the SMS has determined the following:

- During the April 26 and 27, 2000 removal of one waste oil and two diesel fuel underground storage tanks (UST) and 400' of product piping associated with a previous UST removal, contaminated soil and groundwater sheens were observed. Volatile organic compounds (VOC) were measured by a photoionization detector (PID). PID readings of the soils at the USTs ranged up to 263 parts per million (ppm). The soil was observed to be clay. Groundwater was encountered at a depth of 2'. 169 tons of contaminated soils were disposed of at the MTS facility in Epsom, New Hampshire. Additional investigation was required by the SMS.
- On August 28, 2000, 4 groundwater monitor wells were installed in order to evaluate potential contamination related to the USTs. Clay was observed from grade to 12 to 14' below the ground surface (bgs). A sand and silt layer was encountered below this to the maximum boring depth of 16'. No petroleum odors or above background PID readings were noted in soil samples from the four monitor wells.
- On September 6, MW-1 to -4 and an existing 18" culvert monitor well were

over



October 20, 2000
Oct 23 9 24 AM '00

WEST WINDHAM, VT
10000

Ms. Janice Gregory
Cumberland Farms, Inc.
777 Dedham Street
Canton, Massachusetts 02021-9118

Re: Cumberland Farms, Inc. - Property #V1696 (VDEC Site #89-0304), Corner of Routes 22A and 74, Shoreham, VT - Subsurface Contaminant Investigation Report.

Dear Ms. Gregory:

Lincoln Applied Geology, Inc. (LAG) is please to present the attached Subsurface Investigation Report for Cumberland Farms, Inc. (CFI) Property #V1696 (VDEC Site #89-0304) located at the corner of Routes 22A and 74 in Shoreham, Vermont. In response to the discovery of petroleum contaminated soils and ground water (i.e. sheen) during the removal and permanent closure of the Underground Storage Tank (UST) system, the Vermont Department of Environmental Conservation (VDEC) Sites Management Section (SMS) requested that a subsurface contaminant investigation be performed to determine the extent and magnitude of the petroleum contamination present beneath the site. The requested investigation was performed by LAG between August 26 and September 6, 2000. The enclosed report includes well logs, monitoring data, ground water quality results, observations made during the sensitive receptor survey, and our conclusions and recommendations for the site.

Results of the investigation show that ground water beneath the property in the vicinity of MW-2 and MW-3 contains detectable concentrations of methyl-tert-butyl-ether (MTBE) and naphthalene, respectively. MTBE was quantified in MW-2 above the State of Vermont, Ground Water Quality Enforcement Standards (GQES). During the investigation, LAG performed a sensitive receptor survey of the site and surrounding area. No contaminant vapor impacts were identified in any of the on-site buildings or the adjacent storm sewer catch basin. One residential water supply well (i.e. drilled bedrock well) was noted within a half mile of the site. However, due to its location (2,200 feet upgradient of the site), it is our opinion that the water supply well is not at risk of being impacted by the very limited amount of dissolved phase contamination present beneath the site.

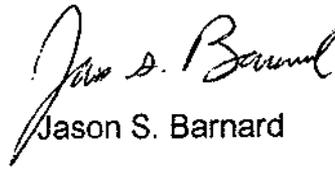
Based on the very low dissolved phase contaminant concentrations detected and the relative lack of surrounding sensitive receptors, we recommend that no additional subsurface investigation or any active remediation be performed at the

Ms. Janice Gregory
Page 2
October 20, 2000

property. However, we do recommend performing an additional round of site monitoring and ground water sampling in approximately two months to confirm the current low to non-detect contaminant levels. If the data collected during the confirmatory site monitoring and water quality sampling event is similar to that quantified during this initial subsurface investigation, we will recommend that a Site Management Activity Completed (SMAC) designation be granted to the subject property.

Please do not hesitate to call me or Richard S. Vandenberg, LAG Senior Project Manager, at (800) 477-4384, if you have any questions or comments regarding the attached report.

Sincerely,
Lincoln Applied Geology, Inc.


Jason S. Barnard
Geologist

JSB/njp

Enclosures

cc: Gerald Noyes, P.E.

F:\CLIENTS\Cumberland Farms\Shoreham\vptcoverletter102000wpd.wpd



Lincoln Applied Geology, Inc.
Environmental Consultants

163 Revell Road • Lincoln, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

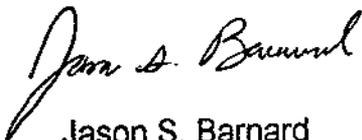
Subsurface Investigation Report
Cumberland Farms, Inc., Property #V1696
Routes 22A and 74, Shoreham, VT
(VDEC Site #89-0304)

Prepared for:

Cumberland Farms, Inc.
777 Dedham Street
Canton, Massachusetts 02021-9118
Contact: Ms. Janice Gregory
Phone: (781) 828-4900 ext. 3417

October 20, 2000

Prepared by:



Jason S. Barnard
Geologist

Reviewed and Approved by:


Richard S. Vandenberg, O.P.C.S.
Senior Project Manager




Lincoln Applied Geology, Inc.
Environmental Consultants

TABLE OF CONTENTS

Executive Summary	i
Site Description	1
Site History	1
Monitor Well Installation and Site Geology	1
Site Survey and Monitoring	2
Site Hydrogeology	2
Water Quality Sampling	3
Sensitive Receptor Survey	3
Summary of Findings	4
Conclusions	4
Recommendations	5
Table 1	Ground Water Elevation
Table 2	Well Headspace PID Assays
Table 3	Ground Water Quality Results
Figure 1	General Location Map
Figure 2	Detailed Site Map
Figure 3	Ground Water Contour Map for September 6, 2000
Figure 4	Water Quality Map for September 6, 2000
Appendix A	MTS Environmental Soil Destruction Certificate
Appendix B	Geologic Logs
Appendix C	Water Quality Laboratory Reports for September 6, 2000
Appendix D	Cost Estimate



Lincoln Applied Geology, Inc
Environmental Consultants

163 Revell Road • Lincoln, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

Executive Summary

In April 2000 Lincoln Applied Geology, Inc. (LAG) completed the removal and closure of three underground storage tanks (USTs) in conjunction with Masterson Excavating, Inc. (MEI) and Cyn Environmental Services (CES). Product piping related to two former 10,000 gallon USTs (removed in 1989 at CFI property #V1696) was also removed. Several holes were noted in the removed USTs and a petroleum sheen was present on the ground water surface in the excavation. Soils containing PID readings above background (BG) were removed from the excavation and temporarily stockpiled on-site using 6 mil polyethylene plastic. Petroleum impacted soil (168.75 tons) was taken to MTS Environmental in Epsom, New Hampshire where it was thermally destroyed.

In August 2000, LAG installed four monitor wells on-site in order to delineate the extent and magnitude of the contamination beneath the CFI property. The wells were properly developed and a complete stadia survey was conducted to determine the relative location and elevation of all monitor wells and pertinent site features. As part of the work, LAG also conducted a sensitive receptor survey of the site and nearby properties. On September 6, 2000, LAG was on-site to measure ground water levels, conduct a PID evaluation of each monitor well headspace, and collect water quality samples from the newly installed monitor wells. The collected samples were analyzed for the presence of dissolved VOCs via EPA 8021B and for total petroleum hydrocarbons (TPH) via EPA Method 8015 [gasoline range organics (GRO)]. The basement of a CFI tenant house, interior of the active auto repair shop, and various on-site buildings were evaluated by PID in order to identify the presence of any contaminant vapor impacts.

The water quality data indicates that detectable concentrations of methyl-tert-butyl-ether (MTBE) and naphthalene were quantified in monitor wells MW-2 and MW-3, respectively. Furthermore, MTBE concentrations in MW-2 exceed the State of Vermont, Ground Water Quality Enforcement Standards (GQES). No vapor impacts were noted in the surrounding buildings.

Based on the contaminant concentrations detected and the relative lack of sensitive receptors, we recommend that no additional subsurface investigation or any active remediation be performed at this time. However, we do recommend performing an additional site monitoring and water quality sampling event of the four on-site wells in two months to confirm the current low to non-detect levels. The data collected during the confirmatory site monitoring and water quality sampling event will be presented to you in a summary report once LAG has received and reviewed the water quality results. If the data collected during the confirmatory site visit are similar (i.e. very low to non-detect) then we will formally request that a Site Management Activity Completed (SMAC) designation be granted to the subject property.



Lincoln Applied Geology, Inc.
Environmental Consultants

Site Description

Cumberland Farms, Inc. (CFI) property #V1696 is located at the northeast corner of Routes 22A and 74 in Shoreham, Vermont (**Figure 1**). The property is bound by Routes 22A and 74 to the west and south and by the Rabinovitch and Campbell properties to the north and east. Several buildings are located on the CFI property which include: a former house, several former agricultural buildings, and an active automobile repair shop. **Figure 2** is a Detailed Site Map showing pertinent features of the site. All on-site buildings are served water by the Tri-Town Water System and there is a mound type wastewater disposal system on-site which currently serves the former CFI tenant house and auto repair shop. The use of the disposal system will be discontinued once the buildings are connected to the Town of Shoreham Municipal Sewer System (currently under construction).

Site History

Lincoln Applied Geology, Inc. (LAG) in conjunction with Masterson Excavating, Inc. (MEI) and Cyn Environmental Services (CES) completed the excavation, removal, and permanent closure of three USTs and piping related to an old UST facility (two 10,000 gallon USTs removed in 1989) in April 2000. During this work, LAG provided oversight and assessment of the USTs, piping, and soils. The UST Permanent Closure Form, photoionization detector (PID) data, and photographs of the site were submitted by LAG to the Vermont Department of Environmental Conservation (VDEC), Underground Storage Tank Program (USTP) in a report dated May 12, 2000. Excavated soils were screened for the presence of volatile organic compounds (VOCs) typically associated with petroleum products using a properly calibrated PID equipped with a 10.0 electron volt (eV) lamp. Data collected during the UST and piping dispenser island closure activities indicated that soils in the vicinity of the USTs and piping dispenser island contained detectable concentrations of VOCs. During the work, soil (112.5 yd³ or 168.75 tons) containing VOC concentrations of background (BG) were removed from the excavation and temporarily stockpiled (totally encapsulated) on-site using 6 mil polyethylene plastic. Once removed, the petroleum contaminated soils were shipped to MTS Environmental facility in Epsom, New Hampshire, where they were thermally destroyed. A copy of the MTS soil destruction certificate is included as **Appendix A**.

Monitor Well Installation and Site Geology

On August 28, 2000, four monitor wells (MW-1, 2, 3, and 4) were drilled and installed by Environmental Drilling, Inc. using vibratory drilling techniques. The locations of the four new monitor wells are shown on **Figure 2**. Descriptions of the soil and sediments encountered during the drilling, monitor well construction details, and PID data from the continuous macro-core samples are included in the geologic logs attached as **Appendix B**.

Review of **Appendix B** indicates that no VOC concentrations were present in any of the soil samples above BG. In general, the  data clearly shows that no significant

Lincoln Applied Geology, Inc.
Environmental Consultants

163 Revell Road • Lincoln, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

vadose zone contamination exists at the site.

Unconsolidated soils and sediments encountered during drilling consisted primarily of silty clay which extends anywhere from 4 feet (MW-3) to 14 feet (MW-2) below ground surface (BGS). Beneath the silty clay layer in MW-2, 3, and 4 is a more permeable coarse sand and gravel layer that ranges between 2 and 4 feet in thickness (**Appendix B**). The data also shows that a fine sandy silt layer is present below and above the silty clay unit in MW-1 and MW-2. This same fine sandy silt layer is also present beneath the coarse sand and gravel layer in MW-3.

Review of the Centennial Geologic Map of Vermont (C.G. Doll, 1961) indicates that the underlying bedrock is the Lower Ordovician age (478 to 505 million years old) Bridport Dolomite Member of the Chipman formation. The Bridport Dolomite Member consists of a buff to brown weathered dolomite.

Site Survey and Monitoring

On August 28, 2000, LAG conducted a stadia survey of the site in order to relate new monitor wells MW-1, 2, 3, and 4, the previously existing culvert well (installed during the UST closure activities), and other site features to one another. **Figure 2** was developed using the survey data. The approximate location of the Tri-Town water line, new municipal sewer line, and the storm sewer catch basin (CB-1) are also shown on **Figure 2**.

On September 6, 2000, LAG measured depth to ground water in all monitor wells and the culvert well using an electronic interface probe capable of measuring 0.01 feet of free-floating petroleum product. LAG also assayed the headspace of the four on-site monitor wells associated with the site, CB-1, the basement of the former CFI tenant house, the existing auto repair shop, and the agricultural buildings using a properly calibrated PID for the presence of petroleum related VOCs.

The data indicates that no free-floating petroleum product was present in any of the wells on September 6th. Depth to ground water ranged between 3.87 feet (culvert well) and 7.56 feet (MW-3) BGS across the site. A summary of ground water elevation data collected on September 6th is presented in **Table 1**, and the PID assay results are included as **Table 2**. PID data collected on September 6th show that all wells, CB-1, and all buildings associated with the site assayed at BG.

Site Hydrogeology

Ground water elevation data collected on September 6th was used to develop a Ground Water Contour Map (**Figure 3**) of the shallow ground water system. **Figure 3** shows that ground water flows across the site in a southwesterly direction along a gradient of 0.017 feet/foot (calculated using data collected from MW-1 and MW-4).



Lincoln Applied Geology, Inc.
Environmental Consultants

163 Revell Road • Lincoln, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

Water Quality Sampling

On September 6, 2000, LAG collected water quality samples from the four newly installed monitor wells (MW-1, 2, 3, and 4), and the existing culvert well using industry accepted methods. The collected samples were shipped on ice to Toxicon Laboratories, Inc. in Bedford, Massachusetts, where they were analyzed along with a trip blank for the presence of dissolved phase VOCs via EPA Method 8021B and for total petroleum hydrocarbons (TPH) via EPA Method 8015 [gasoline range organics (GRO)].

The water quality results are summarized in **Table 3** and are spatially depicted on the Water Quality Summary Map included as **Figure 4**. Copies of the laboratory reports are included as **Appendix C**. Review of **Table 3**, **Figure 3**, and **Appendix C** indicate that MTBE was quantified in MW-2 [81 parts per billion (ppb)] above the State of Vermont, QGES (40 ppb). The data also shows that naphthalene was quantified in MW-3 at a concentration of 4.3 ppb (below the QGES of 20 ppb). No other dissolved phase petroleum related constituents were quantified in the remaining monitor wells above method detection limits. The trip blank (deionized water) which was prepared prior to the sampling event contained 0.066 parts per million (ppm) of TPH. It is our professional opinion that this TPH detection is the result of laboratory cross contamination or contamination of the bottling when preparing the sample.

Sensitive Receptor Survey

During the August 28th site visit, LAG conducted a sensitive receptor survey of the site and surrounding properties. Potential sensitive receptors identified during the survey include: soil and ground water beneath the site; the indoor air of the former CFI tenant house, active automobile repair shop, and the abandoned agricultural related buildings; and the adjacent utility corridors (i.e. the new sewer main). The house and active automobile repair shop are served by the Tri-Town Water System (municipal) and on-site sewer. However, once the Town of Shoreham Municipal Sewer project is complete the buildings will be served by the new municipal sewer system. During the September 6th site monitoring survey, the same building were again screened for VOCs. Catch basin CB-1 was screened with a PID for the presence of VOCs. Review of **Table 2** indicates that no VOCs were detected in any of the evaluated buildings or CB-1 above BG. Based on the lack of vadose zone impacts at the site and the low dissolved phase contaminant concentrations detected in MW-2 and MW-3, we believe that none of above referenced buildings are at risk of vapor impacts in the future.

In addition to the on-site PID evaluations, LAG also conducted a windshield survey of this general area of Shoreham and interviewed Tri-Town Water System employees to determine if there any residential or commercial buildings located within a half mile of the site that are served by private on-site water supplies. Based on our conversation with Tri-Town Water, later confirmed during the windshield survey, one drilled bedrock well serving a single family residence is located within a half mile of the site. However, due to its location (2,200 feet upgradient), we believe that it is not at risk of being impacted.



Lincoln Applied Geology, Inc.
Environmental Consultants

163 Revell Road • Lincoln, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

Summary of Findings

Based on the data collected, observations made, and the evaluations presented, the following conditions exist at the site:

1. The bulk of the soil contamination that was encountered during the April 2000 UST closure activities has been removed from beneath the site and has been thermally treated at the MTS Environmental facility (**Appendix A**).
2. Ground water beneath the site in the vicinity of MW-2 and MW-3 contains low concentrations of MTBE and naphthalene, respectively. MTBE was quantified in MW-2 above the State of Vermont, GQES (40 ppb).
3. The very limited contaminant impact (i.e. plume) is effectively defined by the existing monitor well array.
4. No significant vadose zone contamination is associated with the CFI property.
5. No contaminant vapor impacts were noted in any of the evaluated building structures or CB-1.

Conclusions

Based on the existing site conditions and the observations made during several site visits, the following conclusion is offered:

1. The low level detections of MTBE in MW-2 is likely the result of small scale "drips and drops" type releases that have occurred in the vicinity of the active automobile repair shop.

Recommendations

Based on the existing site conditions and the conclusion presented above, the following recommendations are made:

1. No additional subsurface investigation should be performed at this site, other than a confirmatory site monitoring and water quality sampling of the four on-site wells and existing culvert well in December 2000. As part of the site monitoring event, LAG will also PID evaluate all buildings associated with the site and CB-1 for VOCs.
2. Prepare a summary report following our review of the data collected during the confirmatory site monitoring and sampling event. If the collected data is similar (i.e. very low to non-detect) to that presented in this initial subsurface investigation report, we will formally request that a SMAC designation be

Lincoln Applied Geology, Inc.
Environmental Consultants

granted to the subject property.

A cost estimate to implement the confirmatory site monitoring and ground water sampling survey is included as **Appendix D**. We anticipate that all data will be summarized and presented to you within 30 days of the initiation of the site work.

F:\CLIENTS\Cumberland Farms\Shoreham\subsurfacecontamininvestigation.wpd



Lincoln Applied Geology, Inc
Environmental Consultants

163 Revell Road • Lincoln, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

Ground Water Elevation/Product Level (feet)

Data Point	TOC	09-06-00				
MW-1	100.00	93.48				
MW-2	96.35	91.20				
MW-3	95.11	87.55				
MW-4	94.05	89.69				
Culvert Well	96.56	92.69				

Notes:

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

Photoionization Detector (PID) Results (ppm)

Data Point	09-06-00					
MW-1	BG					
MW-2	BG					
MW-3	BG					
MW-4	BG					
Culvert Well	BG					
Catch Basin (CB-1)	BG					
Abandoned Farm Shed	BG					
Abandoned Garage	BG					
Active Auto Repair Shop	BG					
Former CFI Tenant House	BG					
Abandoned Barn Opposite Rt. 22A	BG					

Notes:
BG - Background
SL - Saturated Lamp

Ground Water Quality Results (ppb)

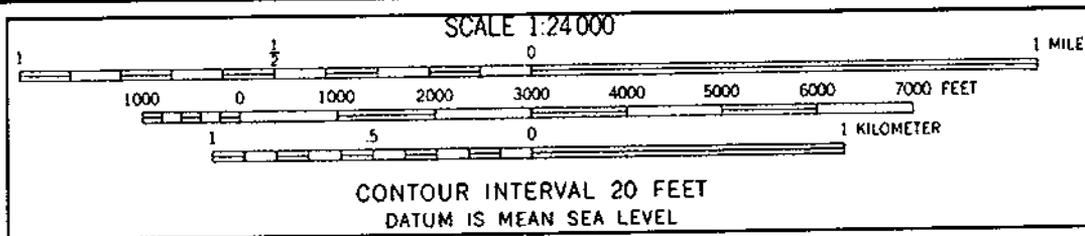
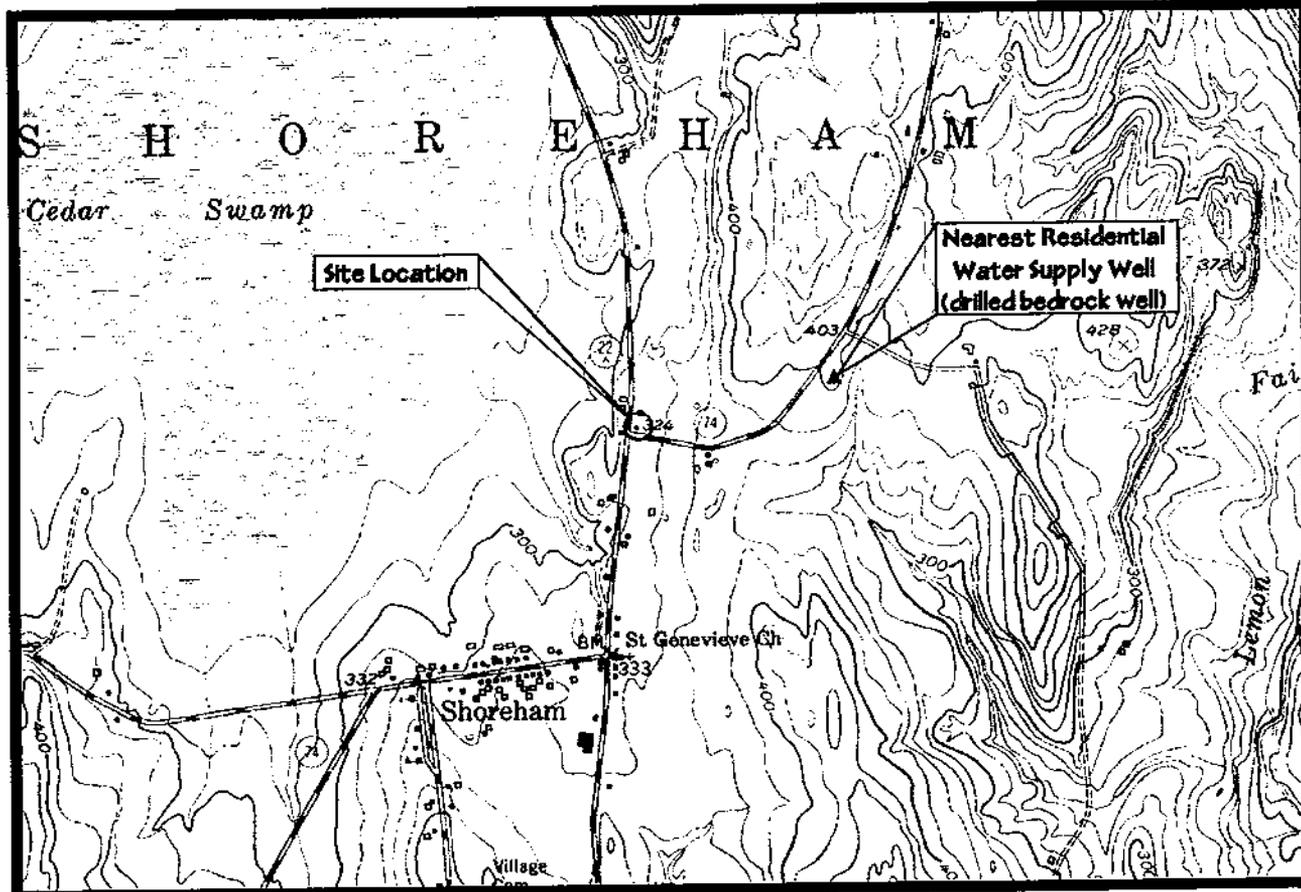
Data Point	Compound	*GQES	09/06/00				
MW-1	Benzene	5	<2				
	Toluene	1,000	<2				
	Ethylbenzene	700	<2				
	Xylenes	10,000	<4				
	1,3,5-Trimethylbenzene	4	<5				
	1,2,4-Trimethylbenzene	5	<2				
	Naphthalene	20	<2				
	MTBE	40	<5				
	BTEX		<10				
	BTEX + MTBE		<15				
TPH (ppm)		<0.02					
MW-2	Benzene	5	<2				
	Toluene	1,000	<2				
	Ethylbenzene	700	<2				
	Xylenes	10,000	<4				
	1,3,5-Trimethylbenzene	4	<2				
	1,2,4-Trimethylbenzene	5	<5				
	Naphthalene	20	<2				
	MTBE	40	81				
	BTEX		<10				
	BTEX + MTBE		91				
TPH (ppm)		<0.02					
MW-3	Benzene	5	<2				
	Toluene	1,000	<2				
	Ethylbenzene	700	<2				
	Xylenes	10,000	<4				
	1,3,5-Trimethylbenzene	4	<2				
	1,2,4-Trimethylbenzene	5	<5				
	Naphthalene	20	4.3				
	MTBE	40	<5				
	BTEX		<10				
	BTEX + MTBE		<15				
TPH (ppm)		<0.02					
MW-4	Benzene	5	<2				
	Toluene	1,000	<2				
	Ethylbenzene	700	<2				
	Xylenes	10,000	<4				
	1,3,5-Trimethylbenzene	4	<2				
	1,2,4-Trimethylbenzene	5	<5				
	Naphthalene	20	<2				
	MTBE	40	<5				
	BTEX		<10				
	BTEX + MTBE		<15				
TPH (ppm)		<0.02					
Culvert Well	Benzene	5	<2				
	Toluene	1,000	<2				
	Ethylbenzene	700	<2				
	Xylenes	10,000	<4				
	1,3,5-Trimethylbenzene	4	<2				
	1,2,4-Trimethylbenzene	5	<5				
	Naphthalene	20	<2				
	MTBE	40	<5				
	BTEX		<10				
	BTEX + MTBE		<15				
TPH (ppm)		<0.02					
Trip Blank	Benzene	5	<2				
	Toluene	1,000	<2				
	Ethylbenzene	700	<2				
	Xylenes	10,000	<4				
	1,3,5-Trimethylbenzene	4	<2				
	1,2,4-Trimethylbenzene	5	<5				
	Naphthalene	20	<2				
	MTBE	40	<5				
	BTEX		<10				
	BTEX + MTBE		<15				
TPH (ppm)		0.066					

NOTES:
 < - Contaminant not detected at specified detection limit
Bold/italized cell = constituent exceeds State of Vermont, Ground Water Quality Enforcement Standards (GQES)

Figure 1

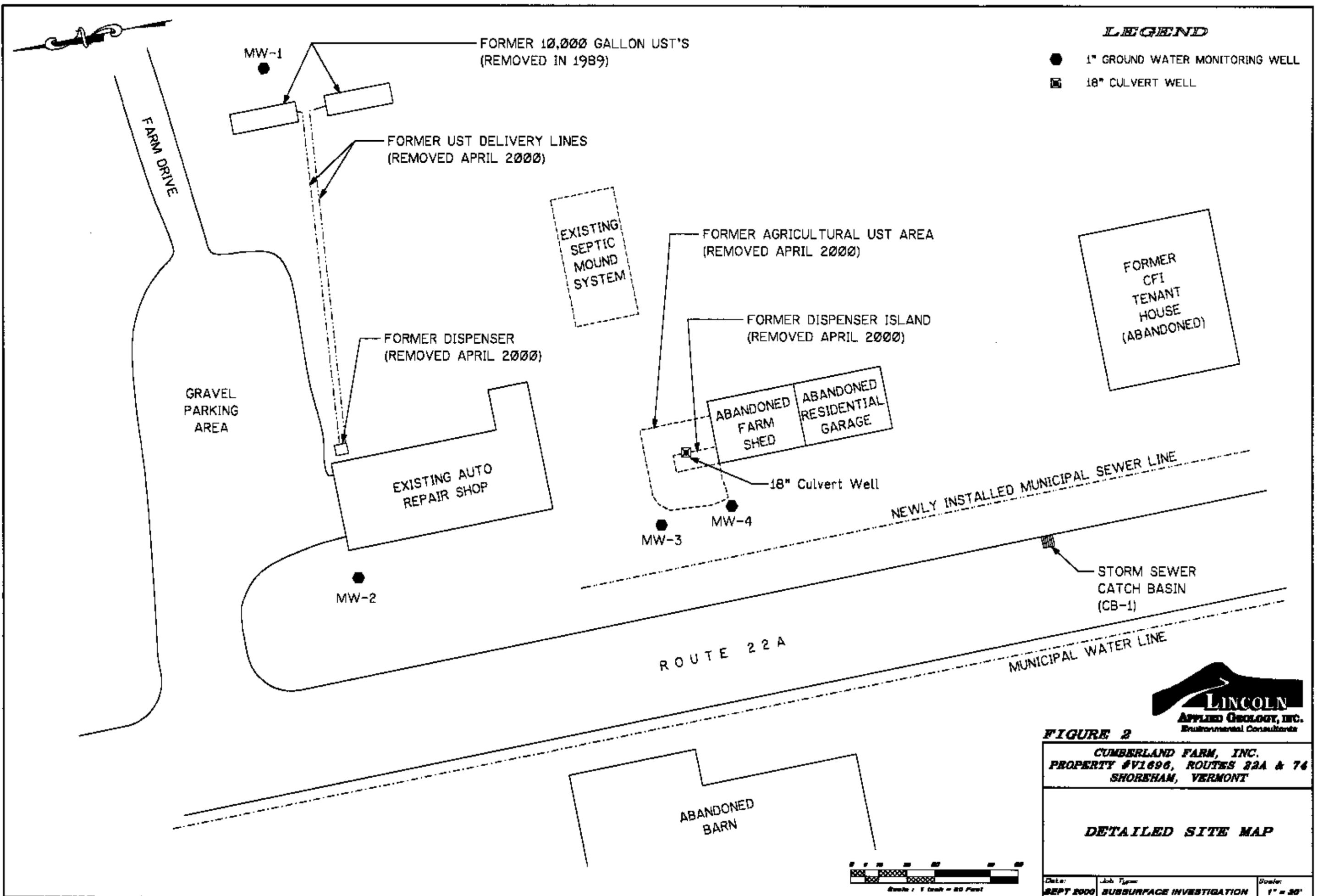
Cumberland Farms, Inc.
Property #V1696; Routes 22A & 74
Shoreham, Vermont

GENERAL LOCATION MAP



BRIDPORT, VT.
NE/4 TICONDEROGA 15' QUADRANGLE
N4352.5-W7315/7.5
PHOTOINSPECTED 1983
1949
PHOTOREVISED 1972
AMS 6371 IV NE-SERIES V813

QUADRANGLE LOCATION



LEGEND

- 1" GROUND WATER MONITORING WELL
- 18" CULVERT WELL

FIGURE 2

CUMBERLAND FARM, INC.
PROPERTY #V1696, ROUTES 22A & 74
SHOREHAM, VERMONT

DETAILED SITE MAP



Date: SEPT 2000	Job Type: SUBSURFACE INVESTIGATION	Scale: 1" = 20'
--------------------	---------------------------------------	--------------------



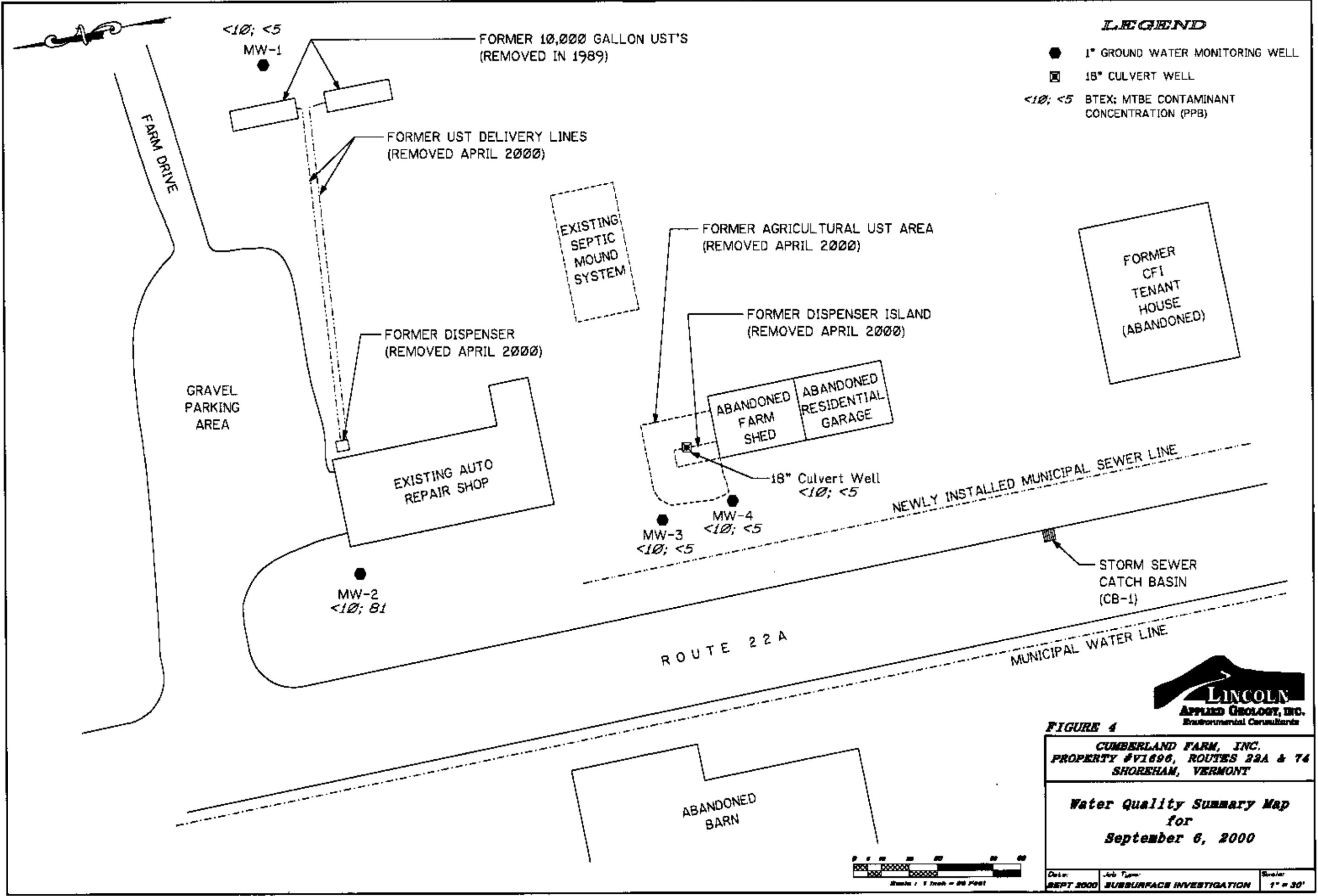


FIGURE 4

CUMBERLAND FARM, INC.
 PROPERTY #V1696, ROUTES 22A & 74
 SHOREHAM, VERMONT

Water Quality Summary Map
 for
September 6, 2000

Date: SEPT 2000	Job Type: SUBSURFACE INVESTIGATION	Scale: 1" = 30'
-----------------	------------------------------------	-----------------



2008/09/01 03:04:18 PM \\C:\Users\jacob\Documents\2008\09\01\20080901_030418.PDF

Appendix A

MTS Environmental Soil Destruction Certificate



EST. 1976

P.O. BOX 359, EPSOM, NH 03234 - (603) 798-4557 - FAX (603) 798-5641

CERTIFICATE OF DESTRUCTION

THIS IS TO CERTIFY that the waste materials described as 168.75 tons of soils containing petroleum hydrocarbon contamination, which were delivered to MTS, Inc. on 5/22/2000 originating from Shoreham Property/V#1696. Routes 22A and 74. Shoreham, VT were processed and incorporated with similar aggregate into bituminous asphaltic cold mix product on 5/25/2000 as evidenced by the attached completed Bills of Lading which constitute the entire amount of soils delivered for project number 25-5292:1.

This processing was carried out in strict accordance with the provisions of permit for pug mill cold patch mix process, number PO-BP-2635, granted from the State of New Hampshire Department of Environmental Services, Air Resources Division, effective August 7, 1990.

MTS Environmental, Inc.

S. M. Jr. 5-25-00
Processing Foreman Date

MTS Environmental, Inc.

[Signature] 5-25-00
Compliance Officer Date

Appendix B
Geologic Logs

WELL LOG

WELL: MW-1
LOCATION: Cumberland Farms, Inc. (CFI), Shoreham, VT, Property - Immediately upgradient of former
2 - 10,000 gallon underground storage tanks (USTs).
DRILLER: Environmental Drilling, Inc., Fort Edward, NY.
HYDROGEOLOGIST: John L. Kelliher, Lincoln Applied Geology, Inc.
DATE: August 28, 2000.

Soils Description: (BG = Background [], SL = Saturated Lamp [>500], ppm = Parts Per Million)

<u>Depth</u>	<u>Description</u>	<u>PID (ppm)</u>
0.0' - 4.0'	Light brown, silty clay, with a trace of silty sand, friable structure, damp. No hydrocarbon odor.	BG
4.0' - 8.0'	Light brown, silty clay, mottling present, damp. No hydrocarbon odor.	BG
8.0' - 12.0'	Brown, fine sandy silt with some limestone rock fragments, saturated. No hydrocarbon odor.	BG
12.0' - 16.0'	Brown, fine sandy silt, with some rounded limestone pebbles, damp. No hydrocarbon odor.	BG

Well Construction:

Bottom of Boring: 16.0'
Bottom of Well: 15.5'
Well Screen: 10.0' (5.5' - 15.5') of 1.0" diameter sch. 40 PVC with 0.010" slot.
Solid Riser: 5.5' of 1.0" diameter sch. 40 PVC casing pipe.
Sand Pack: 11.0' (4.5' - 15.5') of No. 1 sand.
Bentonite Seal: 2.0' (2.5' - 4.5') of chips.
Backfill: 1.5' (1.0' - 2.5') of drill cuttings.
Well Box: Cemented flush with grade.

WELL LOG

WELL: MW-2
LOCATION: Cumberland farms, Inc., Shoreham, VT, Property - Approximately 7 feet west of northwest corner of existing auto shop.
DRILLER: Environmental Drilling, Inc., Fort Edward, NY.
HYDROGEOLOGIST: John L. Kelliher, Lincoln Applied Geology, Inc.
DATE: August 28, 2000.

Soils Description: (BG = Background [], SL = Saturated Lamp [>500], ppm = Parts Per Million)

<u>Depth</u>	<u>Description</u>	<u>PID (ppm)</u>
0.0' - 4.0'	Brown, fine sandy silt with a trace of clay, damp. No hydrocarbon odor.	BG
4.0' - 14.0'	Brown to grey, silty clay with some rounded limestone pebbles and rock fragments, very dense blocky structure, damp. No hydrocarbon odor.	BG
14.0' - 16.0'	Dark brown, coarse sand, saturated. No hydrocarbon odor.	BG

Well Construction:

Bottom of Boring: 16.0'
Bottom of Well: 15.0'
Well Screen: 10.0' (5.0' - 15.0') of 1.0" diameter sch. 40 PVC with 0.010" slot.
Solid Riser: 4.5' (0.5' - 5.0') of 1.0" diameter sch. 40 PVC.
Sand Pack: 11.0' (4.0' - 15.0') of No. 1 sand.
Bentonite Seal: 2.0' (2.0' - 4.0') of chips.
Backfill: 1.0' (1.0' - 2.0') of drill cuttings.
Well Box: Cemented flush with grade.

WELL LOG

WELL: MW-3
LOCATION: Cumberland Farms, Inc., Shoreham, VT, Property - Downgradient of former UST area.
DRILLER: Environmental Drilling, Inc., Fort Edward, NY.
HYDROGEOLOGIST: John L. Kelliher, Lincoln Applied Geology, Inc.
DATE: August 28, 2000.

Soils Description: (BG = Background [], SL = Saturated Lamp [>500], ppm = Parts Per Million)

<u>Depth</u>	<u>Description</u>	<u>PID (ppm)</u>
0.0' - 4.0'	Brown, silty clay, with trace limestone pebbles, very dense block structure.	BG
4.0' - 6.0'	Light brown, coarse sand and gravel with a trace of clay.	BG
6.0' - 8.0'	Dark grey, fine sandy silt (glacial till), with numerous subangular limestone pebbles, moist. No hydrocarbon odor.	BG
8.0' -12.0'	Light brown, fine sandy silt with some limestone pebbles, trace fine sand, damp. No hydrocarbon odor.	BG
12.0' - 15.0'	Dark grey, fine sandy silt with some limestone pebbles (glacial till), damp. No hydrocarbon odor.	BG

Geoprobe refusal at 15 feet below ground surface.

Well Construction:

Bottom of Boring: 15.0
Bottom of Well: 15.0'
Well Screen: 10.0' (5.0' - 15.0') of 1.0" diameter sch. 40 PVC with 0.010" slot.
Solid Riser: 4.5' (0.5' - 5.0') of 1.0" diameter sch. 40 PVC.
Sand Pack: 11.0' (4.0' - 15.0') of No. 1 sand.
Bentonite Seal: 2.0' (2.0' - 4.0') of chips.
Backfill: 1.0' (1.0' - 2.0') of drill cuttings.
Well Box: Cemented flush with grade.

WELL LOG

WELL: MW-4
LOCATION: Cumberland Farms, Inc., Shoreham, VT, Property - Downgradient of former UST area and approximately 35 feet south of MW-3.
DRILLER: Environmental Drilling, Inc. Fort Edward, NY.
HYDROGEOLOGIST: John L. Kelliher, Lincoln Applied Geology, Inc.
DATE: August 28, 2000.

Soils Description: (BG = Background [], SL = Saturated Lamp [>500], ppm = Parts Per Million)

<u>Depth</u>	<u>Description</u>	<u>PID (ppm)</u>
0.0' - 4.0'	Brown, silty clay with a trace of coarse sand, dry to damp. No hydrocarbon odor.	BG
4.0' - 8.0'	Light brown, silty clay with a trace of coarse sand, dense blocky structure, damp. No hydrocarbon odor.	BG
8.0' - 12.0'	Light brown to grey, silty clay with some silty sand, damp to saturated. No hydrocarbon odor.	BG
12.0' - 16.0'	Dark brown to grey, coarse sand and gravel, with some small limestone pebbles, saturated. No hydrocarbon odor.	BG

Well Construction:

Bottom of Boring: 16.0'
Bottom of Well: 15.0'
Well Screen: 10.0' (5.0' - 15.0') of 1.0" diameter sch. 40 PVC with 0.010" slot.
Solid Riser: 4.5' of 1.0" diameter of sch. 40 PVC.
Sand Pack: 11.0' (4.0' - 15.0') of No. 1 sand.
Bentonite Seal: 2.0' (2.0' - 4.0') of chips
Backfill: Drill cuttings.
Well Box: Cemented flush with grade.

Appendix C

Water Quality Laboratory Reports for
September 6, 2000

TOXIKON CORPORATION
15 WIGGINS AVENUE
BEDFORD, MA 01730
TEL: (781) 275-3330

September 18, 2000

JASON BARNARD
LINCOLN APPLIED GEOLOGY
REVELL DRIVE
LINCOLN, VT 05443
TEL: (802) 453-4384
FAX (802) 453-5399

RE: CFI-SHOREHAM VT PROPERTY

Order No.: 0009128

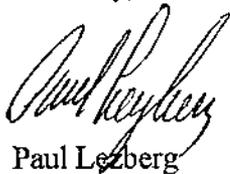
Dear JASON BARNARD,

Toxikon received 6 samples on 9/8/00 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in a Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Paul Lezberg

Certifications: MA: MA 064, NH: 204099A and 204099B, ME: MA064, RI: 55, VT: MA064, TN: MA
NY: 10778, FL: E87143 and 87394, NC: 286, PA 68-461, CT: PH 0563, NJ: 59538, MD

TOXIKON

18-9-00

Toxikon

Date: 18-Sep-00

CLIENT: LINCOLN APPLIED GEOLOGY
Project: CFI-SHOREHAM VT PROPERTY
Lab Order: 0009128
Date Received: 9/8/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0009128-01A	TRIP BLANK	9/6/00 8:00:00 AM
0009128-02A	MW-1	9/6/00 11:30:00 AM
0009128-03A	MW-2	9/6/00 11:40:00 AM
0009128-04A	MW-3	9/6/00 11:50:00 AM
0009128-05A	MW-4	9/6/00 12:00:00 PM
0009128-06A	CULVERT WELL	9/6/00 12:10:00 PM

Toxikon

Date: 18-Sep-00

CLIENT: LINCOLN APPLIED GEOLOGY
Lab Order: 0009128
Project: CFI-SHOREHAM VT PROPERTY
Lab ID: 0009128-01A

Client Sample ID: TRIP BLANK
Collection Date: 9/6/00 8:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Rpt Limit	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		GRO				Analyst: SP
Aliphatics	ND	0.010		mg/L	1	9/14/00
Aromatics	0.066	0.010		mg/L	1	9/14/00
NYS STARS VOLATILE ORGANICS		SW8021B				Analyst: SP
1,2,4-Trimethylbenzene	ND	5.0		µg/L	1	9/14/00
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/14/00
Benzene	ND	2.0		µg/L	1	9/14/00
Ethylbenzene	ND	2.0		µg/L	1	9/14/00
Methyl tert-butyl ether	ND	5.0		µg/L	1	9/14/00
Naphthalene	ND	2.0		µg/L	1	9/14/00
Toluene	ND	2.0		µg/L	1	9/14/00
m,p-Xylene	ND	2.0		µg/L	1	9/14/00
o-Xylene	ND	2.0		µg/L	1	9/14/00

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Toxikon

Date: 18-Sep-00

CLIENT:	LINCOLN APPLIED GEOLOGY	Client Sample ID:	MW-1
Lab Order:	0009128	Collection Date:	9/6/00 11:30:00 AM
Project:	CFI-SHOREHAM VT PROPERTY	Matrix:	AQUEOUS
Lab ID:	0009128-02A		

Analyses	Result	Rpt Limit	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		GRO				Analyst: SP
Aliphatics	ND	0.010		mg/L	1	9/14/00
Aromatics	ND	0.010		mg/L	1	9/14/00
NYS STARS VOLATILE ORGANICS		SW8021B				Analyst: SP
1,2,4-Trimethylbenzene	ND	5.0		µg/L	1	9/14/00
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/14/00
Benzene	ND	2.0		µg/L	1	9/14/00
Ethylbenzene	ND	2.0		µg/L	1	9/14/00
Methyl tert-butyl ether	ND	5.0		µg/L	1	9/14/00
Naphthalene	ND	2.0		µg/L	1	9/14/00
Toluene	ND	2.0		µg/L	1	9/14/00
m,p-Xylene	ND	2.0		µg/L	1	9/14/00
o-Xylene	ND	2.0		µg/L	1	9/14/00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Toxikon

Date: 18-Sep-00

CLIENT:	LINCOLN APPLIED GEOLOGY	Client Sample ID:	MW-2
Lab Order:	0009128	Collection Date:	9/6/00 11:40:00 AM
Project:	CFI-SHOREHAM VT PROPERTY	Matrix:	AQUEOUS
Lab ID:	0009128-03A		

Analyses	Result	Rpt Limit	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		GRO				Analyst: SP
Aliphatics	ND	0.010		mg/L	1	9/14/00
Aromatics	ND	0.010		mg/L	1	9/14/00
NYS STARS VOLATILE ORGANICS		SW8021B				Analyst: SP
1,2,4-Trimethylbenzene	ND	5.0		µg/L	1	9/14/00
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/14/00
Benzene	ND	2.0		µg/L	1	9/14/00
Ethylbenzene	ND	2.0		µg/L	1	9/14/00
Methyl tert-butyl ether	81	5.0		µg/L	1	9/14/00
Naphthalene	ND	2.0		µg/L	1	9/14/00
Toluene	ND	2.0		µg/L	1	9/14/00
m,p-Xylene	ND	2.0		µg/L	1	9/14/00
o-Xylene	ND	2.0		µg/L	1	9/14/00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Toxikon

Date: 18-Sep-00

CLIENT:	LINCOLN APPLIED GEOLOGY	Client Sample ID:	MW-3
Lab Order:	0009128	Collection Date:	9/6/00 11:50:00 AM
Project:	CFI-SHOREHAM VT PROPERTY	Matrix:	AQUEOUS
Lab ID:	0009128-04A		

Analyses	Result	Rpt Limit	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		GRO				Analyst: SP
Aliphatics	ND	0.010		mg/L	1	9/14/00
Aromatics	ND	0.010		mg/L	1	9/14/00
NYS STARS VOLATILE ORGANICS		SW8021B				Analyst: SP
1,2,4-Trimethylbenzene	ND	5.0		µg/L	1	9/14/00
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/14/00
Benzene	ND	2.0		µg/L	1	9/14/00
Ethylbenzene	ND	2.0		µg/L	1	9/14/00
Methyl tert-butyl ether	ND	5.0		µg/L	1	9/14/00
Naphthalene	4.3	2.0		µg/L	1	9/14/00
Toluene	ND	2.0		µg/L	1	9/14/00
m,p-Xylene	ND	2.0		µg/L	1	9/14/00
o-Xylene	ND	2.0		µg/L	1	9/14/00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Toxikon

Date: 18-Sep-00

CLIENT: LINCOLN APPLIED GEOLOGY
Lab Order: 0009128
Project: CFI-SHOREHAM VT PROPERTY
Lab ID: 0009128-05A

Client Sample ID: MW-4
Collection Date: 9/6/00 12:00:00 PM
Matrix: AQUEOUS

Analyses	Result	Rpt Limit	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		GRO				Analyst: SP
Aliphatics	ND	0.010		mg/L	1	9/14/00
Aromatics	ND	0.010		mg/L	1	9/14/00
NYS STARS VOLATILE ORGANICS		SW8021B				Analyst: SP
1,2,4-Trimethylbenzene	ND	5.0		µg/L	1	9/14/00
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/14/00
Benzene	ND	2.0		µg/L	1	9/14/00
Ethylbenzene	ND	2.0		µg/L	1	9/14/00
Methyl tert-butyl ether	ND	5.0		µg/L	1	9/14/00
Naphthalene	ND	2.0		µg/L	1	9/14/00
Toluene	ND	2.0		µg/L	1	9/14/00
m,p-Xylene	ND	2.0		µg/L	1	9/14/00
o-Xylene	ND	2.0		µg/L	1	9/14/00

SPL

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level

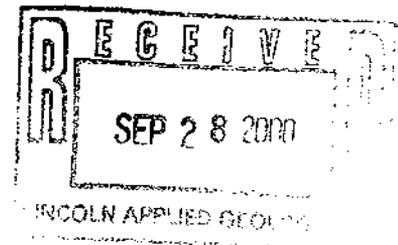
Toxikon

Date: 18-Sep-00

CLIENT: LINCOLN APPLIED GEOLOGY
Lab Order: 0009128
Project: CFI-SHOREHAM VT PROPERTY
Lab ID: 0009128-06A

Client Sample ID: CULVERT WELL
Collection Date: 9/6/00 12:10:00 PM
Matrix: AQUEOUS

Analyses	Result	Rpt Limit	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS						Analyst: SP
		GRO				
Aliphatics	ND	0.010		mg/L	1	9/14/00
Aromatics	ND	0.010		mg/L	1	9/14/00
NYS STARS VOLATILE ORGANICS						Analyst: SP
		SW8021B				
1,2,4-Trimethylbenzene	ND	5.0		µg/L	1	9/14/00
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/14/00
Benzene	ND	2.0		µg/L	1	9/14/00
Ethylbenzene	ND	2.0		µg/L	1	9/14/00
Methyl tert-butyl ether	ND	5.0		µg/L	1	9/14/00
Naphthalene	ND	2.0		µg/L	1	9/14/00
Toluene	ND	2.0		µg/L	1	9/14/00
m,p-Xylene	ND	2.0		µg/L	1	9/14/00
o-Xylene	ND	2.0		µg/L	1	9/14/00



Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank	E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level	

TOXIKON

15 Wiggins Ave., Bedford, MA 01730
 Telephone: (781) 275-3330
 Fax: (781) 275-7478

CHAIN OF CUSTODY RECORD

WORK ORDER #: 00-09-128

DUE DATE: 9-15-00

COMPANY: Lincoln Applied Geology
 ADDRESS: 163 Revell Dr.
Lincoln Vt. 05443
 PHONE #: (802) 453-4384 FAX #: ()
 P.O. #: _____
 PROJECT MANAGER: Jason Barnard
 PROJECT ID/LOCATION: CFI Shoreham

- SAMPLE TYPE CONTAINER TYPE
- 1. WASTEWATER P - PLASTIC
 - 2. SOIL G - GLASS
 - 3. SLUDGE V - VOA
 - 4. OIL
 - 5. DRINKING WATER
 - 6. WATER (GW/MW/SW)
 - 7. OTHER (SPECIFY)

ANALYSES

8021 B
 TPH 8015 DRD

TOXIKON #	SAMPLE IDENTIFICATION	SAMPLE TYPE	CONTAINER			SAMPLING		PRESERVATIVE	ANALYSES										SPECIAL INSTRUCTIONS/ COMMENTS
			SIZE	TYPE	#	DATE	TIME												
1	Trip Blank*	H2O	40ml	V	2	9/6/00	0800	HCL	↓ WATER (Large downward arrows in each column)										
	Trip Blank						0800												
2	MW-1						1130												
	MW-1						1130												
3	MW-2						1140												
	MW-2						1140												
4	MW-3						1150												
	MW-3						1150												
5	MW-4						1200												
	MW-4						1200												
6	culvert well						1210												
	culvert well						1210												

SAMPLED BY: Joseph Hogan
 RELINQUISHED BY: Greg Hogan
 RELINQUISHED BY: Fed-Ex
 METHOD OF SHIPMENT: Ex-press

DATE: 9-06-00
 TIME: 11-30
 DATE: 9-06-00
 TIME: 12-15
 DATE: 9-8-00
 TIME: 10-00-AM

QUOTATION #: _____
 RECEIVED BY: TOXIKON
 RECEIVED FOR LAB BY: Scott Cooper
 COOLER TEMPERATURE: _____

DATE: 9-8-00
 TIME: 10-00-AM
 DATE: 9-8-00
 TIME: 10-00-AM

RUSH BUSINESS DAY TURN AROUND
 ROUTINE
 Sample disposal information
 Are there any other known or suspected contaminants in these samples other than those listed above?
 Yes No If Yes 1st Known

Appendix D
Cost Estimate

Cumberland Farms, Inc. (CFI)
Shorham, Vermont Property #V1696
VDEC #89-0304
10-Oct-00

Cost Estimate for Confirmatory Site Monitoring, Water Quality Sampling, and Reporting

Task A. Ground Water Sampling (One Round)

Hydrogeologist/Site Manager -	0.5	hr(s) @	\$75.00 per hour	\$	37.50
Field Technician -	8	hr(s) @	\$45.00 per hour	\$	360.00
Disposable Bailer (1.5") -	4	@	\$8.89 each	\$	35.56
EPA 8021B -	5	@	\$60.00 each	\$	300.00
EPA 8100 TPH -	4	@	\$100.00 each	\$	400.00
Mileage -	100	mile(s) @	\$0.35 per mile	\$	35.00
Sampling Equipment -	1	day(s) @	\$110.00 per day	\$	110.00
				Subtotal Task A	\$ 1,278.06

Task B. Preparation of Summary Report

Principal/Senior Hydrogeologist	0.5	hr(s) @	\$85.00 per hour	\$	42.50
Hydrogeologist/Site Manager	2	hr(s) @	\$75.00 per hour	\$	150.00
Geologist	8	hr(s) @	\$55.00 per hour	\$	440.00
Computer/CAD Technician	3	hr(s) @	\$55.00 per hour	\$	165.00
Administrative Assistant	2	hr(s) @	\$35.00 per hour	\$	70.00
				Subtotal Task B	\$ 867.50

Grand Total >>> \$ 2,145.56

- Not required

- other work performed in 10/23/00 letter

$$= \$ 2145.56 - 400 + 60 = 1805.56$$