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Internet:
www.marinenv.com

12 March, 1998

Mr. Jamie Roy
One-Stop Mini Mart
89 Main Street
Newport, VT 05855

Re: Initial Site Investigation Report, One-Stop Mini Mart, Newport, VT

Dear Mr. Roy:

Enclosed is one bound copy of the Initial Site Investigation Report for the One-Stop Mini Mart, located in Newport, Vermont. This report outlines the findings and recommendations of the expressway investigation completed in January 1998.

Please contact me or Ron Miller, Regional Manager, if you have any questions or comments regarding this report.

Sincerely,

Bruce Hamilton

Bruce Hamilton
Environmental Engineer

enclosure

cc: Michael Young, VT DEC

Ref: 97119L01.DOC

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INITIAL SITE INVESTIGATION REPORT

ONE STOP MINI MART
Main Street
Newport, VT

VT DEC Site # 91-1017

12 March, 1998

Prepared for:

Mr. Jamie Roy
89 Main Street
Newport, VT 05855

Phone: 802-334-5512

Prepared by:

Marin Environmental, Inc.
1700 Hegeman Avenue
Colchester, VT 05446

Contact: Bruce Hamilton
Phone: 802-655-0011

MARIN Project #: V97-119
MARIN Document #: 97119R01.DOC

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EXECUTIVE SUMMARY

Marin Environmental, Inc. (MARIN) has conducted an initial site investigation at the One Stop Mini Mart located on Main Street, Newport, Vermont and has concluded the following:

- Petroleum releases from former underground storage tank (UST) systems at the site appear to have resulted in a minor impact to ground water in the vicinity of the former UST systems. Low levels of the gasoline additive methyl tertiary butyl ether (MTBE) were detected at a level below the Vermont Groundwater Enforcement Standards (VGES) in a ground-water sample collected from a monitoring well located within the former UST excavation. No contamination was detected in the remaining downgradient or crossgradient monitoring well.
- Observations summarized during the UST closure activities and the ground-water sample results suggest that residual contamination is limited to the immediate vicinity of the former USTs.
- The residual subsurface contamination at the site does not appear to pose a threat to any nearby sensitive receptors.
- No drinking-water supplies appear to be at risk from the residual contamination at the site and surrounding properties are served by the municipal system.
- Surficial soils at the site consist mainly of fine to coarse sands to a depth of twenty-five feet below ground surface (bgs), underlain by fine silty sand or clay. On 15 January 1998, the water table was found to be about 24 feet below ground surface, and exhibited a south, southeasterly trending gradient of about 0.6? percent.

On the basis of the results of this investigation, MARIN recommends that no further work be performed and that the site be considered for "Site Management Activities Completed" (SMAC) status by the Vermont Department of Environmental Conservation (VT DEC).

1.0 INTRODUCTION

This report details the results of an initial site investigation conducted at the One Stop Mini Mart located on Main Street in the city of Newport, Vermont (Figure 1). This report has been prepared by Marin Environmental, Inc. (MARIN) under the direction of Jamie Roy, the current owner of the property. The site investigation was initiated with Vermont Department of Environmental Conservation (VT DEC) approval under the expressway notification procedure following the discovery of subsurface petroleum contamination during the removal of eight petroleum underground storage tanks (USTs) on 10 June 1991. The delay encountered in conducting the subsequent site investigation resulted from transitional ownership of the involved property.

1.1 Site Location and Physical Setting

The One Stop Mini Mart site is occupied by a one-story wood-framed structure which currently serves as a retail grocery outlet and petroleum fuel dispensing station. The site is located at the intersection of Main and Third Streets (U.S. Route 5) in a combined commercial/residential section of Newport (Figure 1).

The northern property boundary is formed by Main Street, with a parking area for RJ Friendly's Market located further north. A multi-unit retail and office complex (a portion of which is occupied by Jay Photo) is situated on the abutting property to the east and a parking lot for the United Church abuts the store's property to the south. The western property boundary is formed by Third Street, with a BP gasoline station, Radio Shack outlet and an apartment dwelling on the west side of Third Street. The site and all adjacent properties are supplied by municipal water and sewer services. Lake Memphremagog is located approximately 1,000 feet to the north and 3,000 feet south of the site. The ground surface around the One Stop Mini Mart building has an average elevation of about 722 feet above mean sea level and is relatively flat. Photographs of the site and surrounding property are included in Appendix B.

Five of the removed petroleum USTs were located on the northern portion of the property (between the on-site building and the southern edge of Main Street) and the other three USTs were located along the southern edge of the site (see Figure 2, Appendix A). Currently three in-service gasoline USTs are on-site.

1.2 Site History

On 10 June 1991eight underground storage tanks (USTs) containing either gasoline, diesel, heating oil, kerosene or waste oil were removed from the site under the supervision of Griffin International, Inc. Although only evidence of minor releases was observed around the USTs and piping systems, soils beneath the pump island and two gasoline tanks (UST #7 and #8) showed evidence of significant petroleum releases, with strong gasoline odors and photoionization detector (PID) readings exceeding 350 parts per million (ppm). The VT DEC guideline for gasoline contaminated soils requiring treatment or site characterization is 20 ppm.

The vertical extent of contamination beneath the pump island could not be determined; a sample collected from the bottom of excavation at 11 feet bgs (the limit of the excavation) had PID reading of 50 ppm. Soils in the excavations consisted of medium-to-fine sands. Ground water was not observed in any of the former UST excavations during closure activities.

Approximately 30 cubic yards of petroleum-contaminated soils were removed from the vicinity of the USTs for on-site treatment by polyencapsulation and eventual disposition in a certified landfill in accordance with VT DEC guidance documents.

MARIN initiated an initial site investigation under the VT DEC "Expressway" process after receiving approval on 2 January 1998 from Mr. Jamie Roy, the site owner, and the VT DEC.

1.3 Objectives and Scope of Work

The objectives of this initial site investigation were to:

- Evaluate the degree and extent of petroleum contamination in soil and ground water;
- Qualitatively assess the risks to environmental and public health via relevant sensitive receptors and potential contaminant migration pathways; and
- Identify potentially appropriate monitoring and/or remedial actions based on the site conditions.

To accomplish these objectives, MARIN has:

- Supervised the installation of three soil borings/monitoring wells, and determined the extent of petroleum contamination, and the local ground-water flow direction.
- Screened subsurface soils from the soil borings for the possible presence of volatile organic compounds (VOCs) using a photoionization detector (PID).
- Collected and submitted ground-water samples from the three on-site monitoring wells for laboratory analysis of volatile petroleum compounds.
- Identified sensitive receptors in the area, and assessed the risk posed by the contamination to these potential receptors.
- Evaluated the need for treatment and/or a long-term monitoring plan for the site.
- Prepared this summary report, which details the work performed, qualitatively assesses risks, provides conclusions and offers recommendations for further action.

2.0 INVESTIGATIVE PROCEDURES AND RESULTS

2.1 Soil Boring / Monitoring Well Installation

On 7 January 1998, MARIN supervised the installation of three soil borings/monitoring wells (MW-1, MW-2, and MW-3). The monitoring wells were installed by Tri-State Drilling and Boring of West Burke, Vermont using hollow-stem-auger (HSA) drilling techniques. One

well (MW-1), was placed near the apparent source area and two (MW-2 and MW-3) were placed in areas presumed to be hydraulically upgradient and cross-gradient from the former USTs. Additional borings were not installed due to the pump island canopy and on-site subsurface utilities. Approximate monitoring well locations are shown on Figure 2. Boring logs and monitoring-well construction details are in Appendix C.

The soils encountered in each boring generally consisted of fine to coarse sands. Borings were completed to approximately 30 feet below ground surface (bgs). Ground water was encountered at approximately 23 feet bgs at the time of drilling. Soil samples were collected using a standard split-spoon barrel at two-foot intervals in MW-1 and at five-foot intervals in MW-2 and MW-3. Soil recovery was generally good, ranging between 58 and 100 percent. The soil samples were screened for the possible presence of volatile organic compounds (VOCs) with a photoionization detector (PID) and logged for lithology by a MARIN engineer. All downhole drilling and sampling equipment was decontaminated during use as appropriate.

Monitoring wells were constructed of 2-inch-diameter schedule 40 PVC protected by a flush-mounted steel roadbox cemented into place. Each well casing was topped with a water-tight compression cap.

2.2 Soil-Screening Results

PID readings in soil samples collected from the borings ranged from 1.4 to 10.8 ppm. The highest PID reading was obtained in MW-3, at approximately 25 feet below ground surface (bgs). PID screening results are included on the boring logs in Appendix C.

MARIN field personnel screened soil samples from each soil boring for the possible presence of volatile organic compounds (VOCs) using a Photovac Model 580B portable photoionization detector (PID). The PID was calibrated with an isobutylene standard gas to a benzene reference.

2.3 Determination of Ground-Water Flow Direction and Gradient

Ground water in the unconfined surficial aquifer directly beneath the site appears to be flowing in an easterly direction, toward Lake Memphremagog. The average gradient of the local ground-water table on 15 January 1998 was about 0.6? percent. No free-phase petroleum or sheens were observed in any of the on-site monitoring wells. Water-level measurements and elevation calculations for 15 January 1998 are presented in Table 1. The ground-water contour map in Figure 3 was prepared using this data.

TABLE 1. Ground-Water Elevation Data
15 January 1998

Well I. D.	Top of Casing Elevation *	Depth to Water (feet, TOC)	Ground Water Elevation
MW-1	99.79	23.53	76.26
MW-2	99.45	24.03	75.42
MW-3	100.00	24.50	75.50

*Top of casing (TOC) and ground water elevations are relative to an arbitrary site datum of 100.00 feet

2.4 Ground-Water Sampling and Analysis

No petroleum contamination was detected in any of the monitoring wells with the exception of 2.0 parts per billion (ppb) methyl-tertiary-butyl ether (MTBE) found in MW-2 (the downgradient well). The Vermont Groundwater Enforcement Standards (VGESs) for benzene, toluene, ethylbenzene, xylenes (collectively referred to as BTEX) or MTBE were not exceeded in any of the ground water samples collected on-site. Ground-water analytical results are summarized below in Table 2; Laboratory report forms are included in Appendix D.

TABLE 2. Ground-Water Analytical Results
December 1997

Well I.D.	Benzene	Ethyl benzene	Toluene	Xylenes	MTBE
MW-1	ND <1	ND <1	ND <1	ND <1	ND <1
MW-2	ND <1	ND <1	ND <1	ND <1	**2.0**
MW-3	ND <1	ND <1	ND <1	ND <1	ND <1
Duplicate (MW-1)	ND <1	ND <1	ND <1	ND <1	ND <1
Trip Blank	ND <1	ND <1	ND <1	ND <1	ND <1
VGES*	5	700	1,000	10,000	40

Results reported as parts per billion (ppb), unless noted otherwise.
ND = Compound not detected above indicated detection limit.
TBQ = Compound detected at trace levels below quantitation limit indicated.

Ground-water samples were collected from the three on-site monitoring wells on 15 January 1998. Each monitoring well was purged and then sampled using the dedicated bailer and dropline. Purge water was discharged directly to the ground in the vicinity of each well. A trip blank and a duplicate sample were collected during the sampling event for quality assurance/quality control (QA/QC) purposes. All field procedures were conducted in accordance with MARIN standard protocols.

The ground-water samples were submitted to Endyne, Inc. of Williston, Vermont, where they were analyzed for the possible presence of benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl-tertiary butyl ether (MTBE) by EPA Method 8020. Analytical results from the QA/QC samples indicate that adequate QA/QC was maintained during sample collection and analysis. No petroleum compounds were detected in the trip blank, and analytical results for the blind field duplicate sample from MW-1 were identical (non-detect) to the original sample results.

3.0 SENSITIVE RECEPTOR SURVEY AND RISK ASSESSMENT

3.1 Sensitive Receptor Survey

MARIN conducted a survey to identify sensitive receptors in the vicinity of the One Stop Mini Mart site. The following sensitive receptors were identified in the vicinity of the site:

- The on-site One Stop Mini Mart building (constructed using slab-on-grade design) located adjacent to the former USTs.
- Lake Memphremagog, located approximately 1,000 feet north and 3,000 feet south of the former tanks.
- The office and retail complex (housing Jay Photo), located approximately 40 feet east of the former USTs.
- Municipal water and sewer lines, which cross through the area of the removed USTs.

3.2 Risk Assessment

MARIN assessed the risks that the residual subsurface contamination poses to the receptors identified above. In general, human exposure to petroleum related contamination is possible through inhalation, ingestion, or direct contact while impacts to environmental receptors are due either to a direct release or contaminant migration through one receptor to another or along a preferential pathway.

The findings of our risk assessment indicate that the residual subsurface petroleum contamination at the site does not appear to pose a significant threat to any nearby sensitive receptors. Observations made during the UST closure and recent ground-water sample results from monitoring wells completed in and downgradient of the former USTs suggest that residual contamination is limited to the immediate vicinity of the former USTs. Current information suggests that ground-water contamination has not migrated, and is not likely to migrate to Lake Memphremagog.

- Potential impact to indoor air of the on-site building is considered to be very low. Ground-water data at the site suggest that the area of ground-water contamination is limited to the immediate area of the former UST location and does not extend beneath the existing on-site structure. The slab-on-grade construction of the building further

reduces the potential threat of vapor entry. No elevated PID readings were observed in main-floor portions of the building area during the 15 January 1998 site visit.

- Several off-site structures are located south and cross-gradient of the on-site building. With the exception of Jay Photo, all of these buildings are located at least 100 feet from the probable source area, so the likelihood of vapor impact to these buildings is low.
- Potential impacts to Lake Memphremagog are considered to be very low at this time. Although Lake Memphremagog likely represents the eventual surface discharge point of the ground water flowing beneath the site, ground-water analytical data suggests that the degree of ground-water contamination is very low, and that contamination does not extend beyond the immediate vicinity of the source area.
- Direct contact with petroleum contaminated soils at the site is considered to be very low. PID soil screening data from the UST excavations and monitoring-well borings suggest that the area of significant soil contamination is limited to the immediate vicinity of the former USTs. This area is surfaced with concrete and asphalt, which limits the potential for direct public exposure to contaminated soils.
- The risk of ingestion of contaminated ground water appears to be very low. All drinking water in the surrounding area is provided by the municipal system. No drinking-water supply wells were identified in the immediate vicinity of the site.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the initial site investigation described above, MARIN concludes the following:

- Petroleum releases from former underground storage tank (UST) systems at the site appear to have resulted in a minor impact to ground water in the vicinity of the former UST systems. Low levels of methyl tertiary butyl ether (MTBE) were detected at a level below the Vermont Groundwater Enforcement Standards (VGES) in a ground-water sample collected from a monitoring well located downgradient from the former UST excavation. No VGES exceedances were detected in any of the three monitoring wells.
- Observations summarized during the UST closure activities and the ground-water sample results suggest that residual contamination is limited to the immediate vicinity of the former USTs.
- The residual subsurface contamination at the site does not appear to pose a threat to any nearby sensitive receptors.
- No drinking-water supplies appear to be at risk from the residual contamination; the site and surrounding properties are served by the municipal system.
- Surficial soils at the site consist mainly of fine to coarse sands to a depth of twenty-five feet below ground surface (bgs), underlain by fine silty sand or clay. On 15 January 1998, the water table was found to be about 24 feet below ground surface, and exhibited a south, southeasterly trending gradient of about 0.6? percent.

On the basis of the results of this investigation, MARIN recommends that no further work be performed and that the site be considered for "Site Management Activities Completed" (SMAC) status by the Vermont Department of Environmental Conservation (VT DEC).

5.0 REFERENCES

Doll, C.G. and others, 1961. *Geologic Map of Vermont*, Office of the State Geologist.

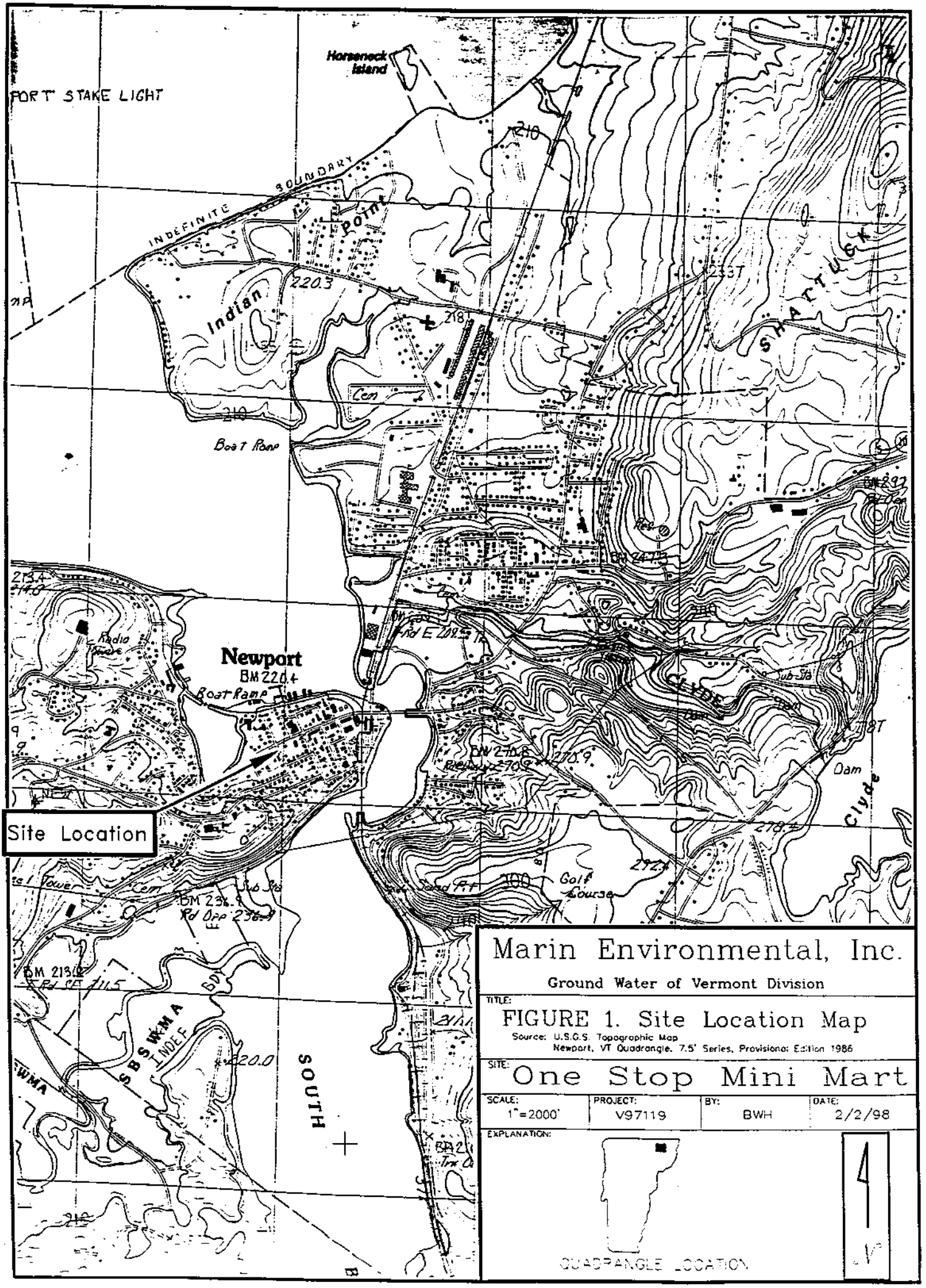
Fetter, C.W., 1994. *Applied Hydrogeology, 3rd Ed.*, Prentice Hall, Englewood Cliffs, New Jersey, 691 p.

USGS, 1983. Newport, VT Quadrangle . U.S. Geological Survey. 7.5x15 minute series (topographic). Provisional Edition, 1986.

Griffin International, Inc., UST Closure Assessment Report, 12 June 1991.

APPENDIX A

Figures



Marin Environmental, Inc.

Ground Water of Vermont Division

TITLE:

FIGURE 1. Site Location Map

Source: U.S.G.S. Topographic Map
Newport, VT Quadrangle, 7.5' Series, Provisional Edition 1986

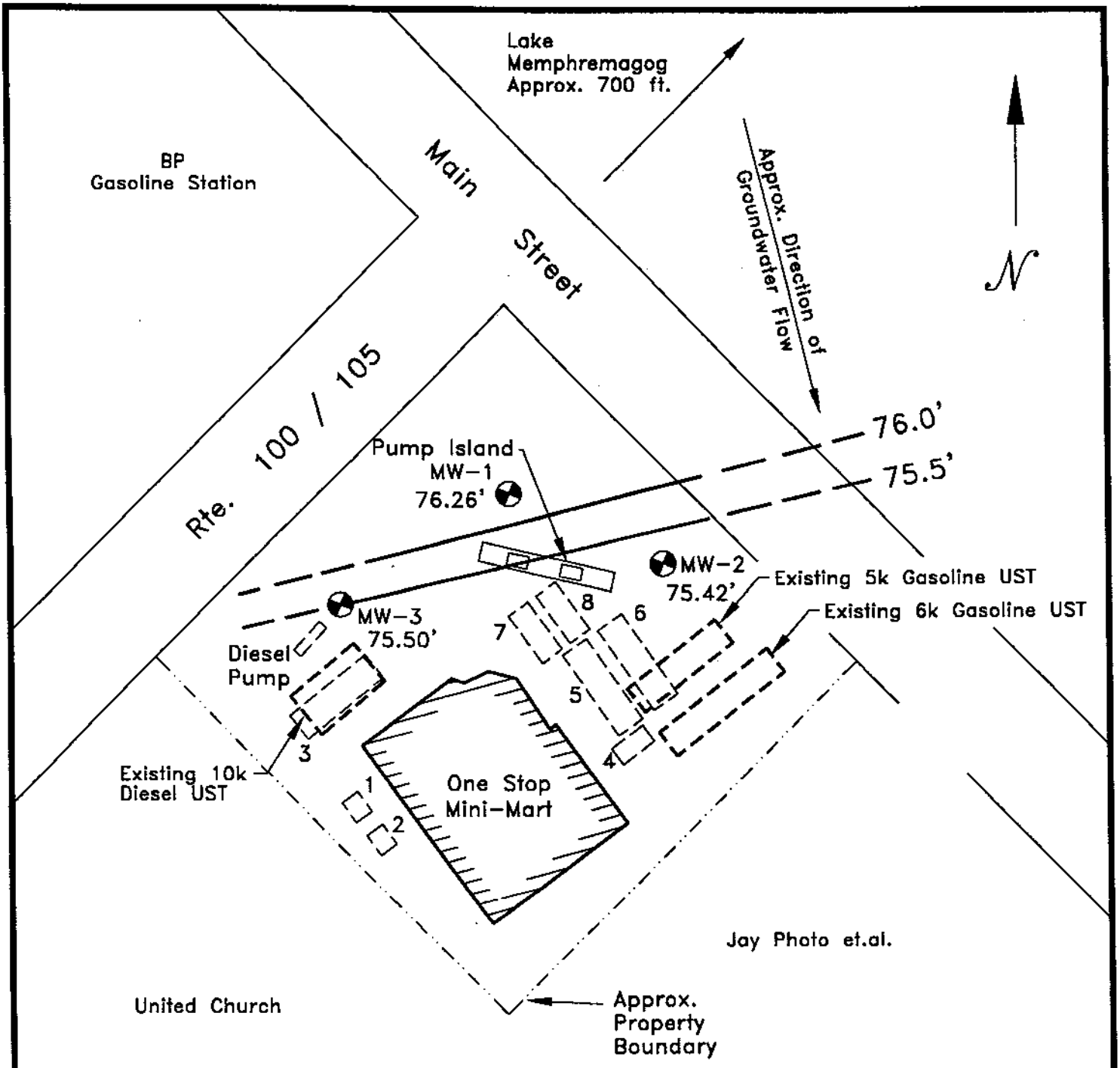
SITE: One Stop Mini Mart

SCALE:	PROJECT:	BY:	DATE:
1"=2000'	V97119	BWH	2/2/98

EXPLANATION:

QUADRANGLE LOCATION

N



Former UST Locations

1.....	UST #1	500 gallon kerosene
2.....	UST #2	500 gallon fuel-oil
3.....	UST #3	3,000 gallon diesel
4.....	UST #4	575 gallon waste-oil
5.....	UST #5	4,000 gallon gasoline
6.....	UST #6	4,000 gallon gasoline
7.....	UST #7	3,000 gallon gasoline
8.....	UST #8	3,000 gallon gasoline

0 30'

SCALE

ALL LOCATIONS ARE APPROXIMATE

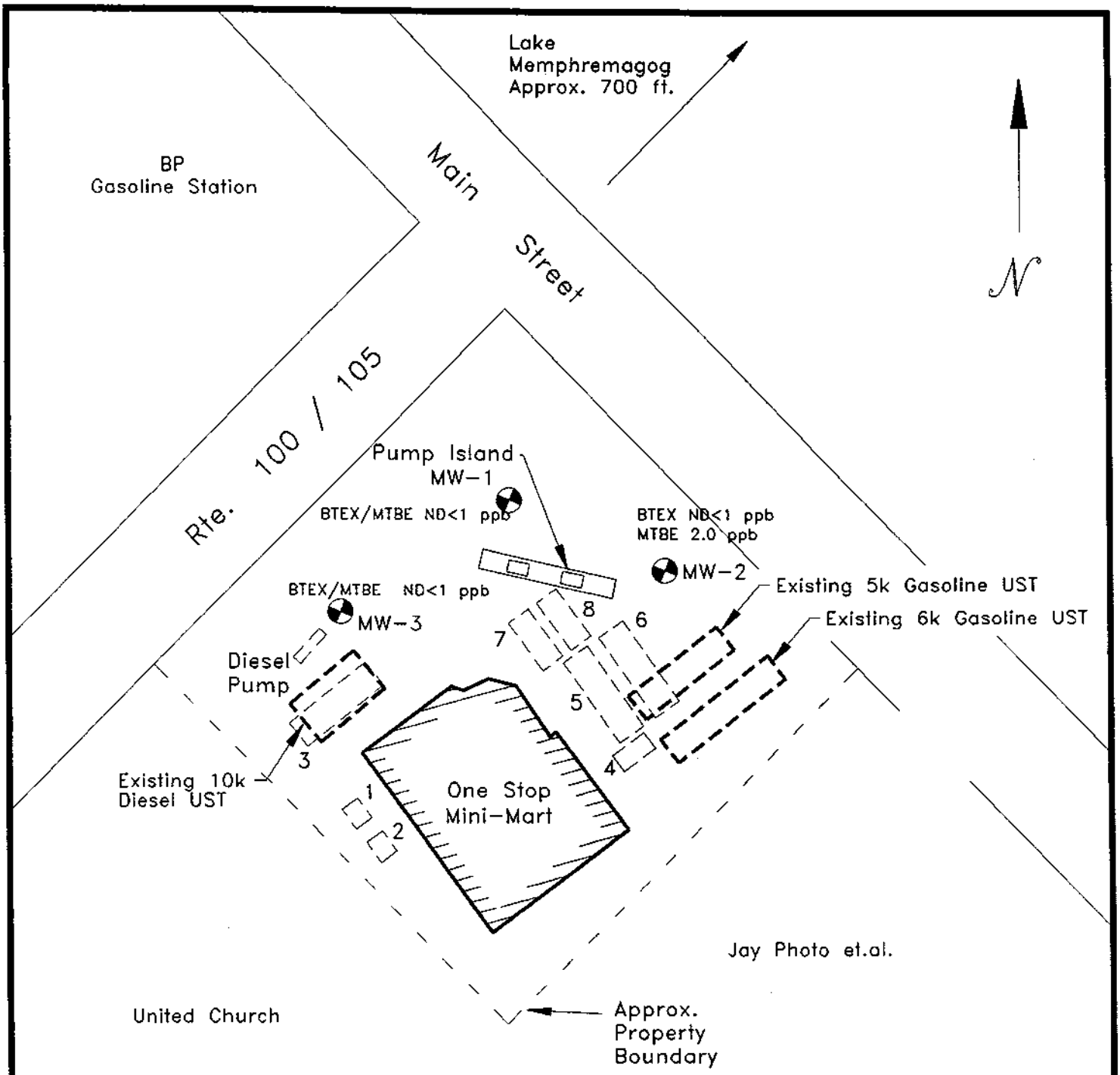
Marin Environmental, Inc.
1700 Hegeman Ave.
Colchester, VT 05446
(802) 655-0011

SITE: One Stop Mini-Mart
Newport, VT

TITLE: FIGURE 3.
GROUND-WATER CONTOUR MAP
MONITORING DATE: 01 JAN 1998

LEGEND: ⊕ Approx. Monitoring Well Locations
— Ground-Water Contour

DRAWN BY: MJB	DATE: FEB 98
APPROVED BY: JG/BH	FILE No.: 97119sp



Former UST Locations

1.....	UST #1	500 gallon kerosene
2.....	UST #2	500 gallon fuel-oil
3.....	UST #3	3,000 gallon diesel
4.....	UST #4	575 gallon waste-oil
5.....	UST #5	4,000 gallon gasoline
6.....	UST #6	4,000 gallon gasoline
7.....	UST #7	3,000 gallon gasoline
8.....	UST #8	3,000 gallon gasoline

0 30'

SCALE

ALL LOCATIONS ARE APPROXIMATE

Marin Environmental, Inc.
1700 Hegeman Ave.
Colchester, VT 05446
(802) 655-0011

SITE: One Stop Mini-Mart
Newport, VT

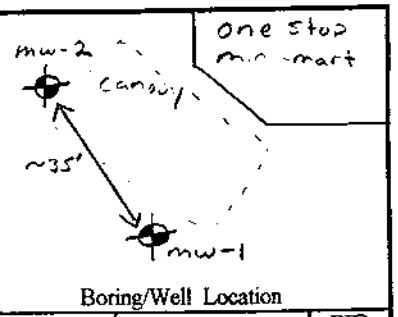
TITLE: FIGURE 4.
CONTAMINANT DISTRIBUTION MAP
MONITORING DATE: 01 JAN 1998

LEGEND: Approx. Monitoring Well Locations
ND None Detected

DRAWN BY: MJB/BWH | DATE: FEB 98
APPROVED BY: JG/BH | FILE No.: 97119sp

Marin Environmental, Inc.

SITE NAME:	One Stop Mini-Mart	BORING NO:	MW-1
LOCATION:	Newport, Vermont	TOTAL DEPTH:	30 ft
JOB NO.	V97-119	DEPTH TO WATER:	23 ft
DATE:	1/7/98		
DRILLING METHOD	Hollow Stem Auger	FIELD SUPERVISOR:	Jay Gonyaw
BORING DIAMETER	8"	CONTRACTOR:	Tri-State Drilling and Boring
		DRILLERS:	Neal/Theron Faulkner



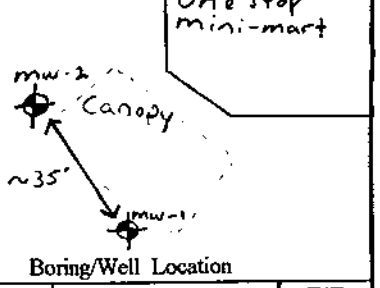
Boring/Well Location

Depth	SN	BLOW COUNTS PER 6" (0-6 / 6-12 / 12-18 / 18-24)	Rec.	SAMPLE DESCRIPTION/COMMENTS	WELL DETAIL	PID (ppm)
	S-1	6 / 3	14/24			1.6
		3 / 3				
5'	S-2	5 / 3	15/24			1.4
		4 / 5		dry, light brown, medium SAND, with no petroleum odor.		
	S-3	5 / 5	17/24			7.3
		4 / 5				
	S-4	8 / 7	16.5/24			3.2
10'		7 / 8				
	S-5	4 / 4	15/24	dry, dark horizontal bedding in medium SAND, with no		2.8
		5 / 6		petroleum odors		
	S-6	5 / 5	20.5/24			1.5
		4 / 5				
15'	S-7	7 / 8	22.5/24	dry, coarse SAND, with no petroleum odor		5.0
		8 / 9				
	S-8	6 / 6	20.5/24			3.9
		7 / 8				
	S-9	5 / 5	18/24	dry, uniform medium/fine SAND with horizontal bedding.		6.1
20'		6 / 8		No petroleum odors.		
				Ground wat ▽ '@ 23 ft A.T.D.		
25'						
	S-10	2 / 2	21/24			2.8
		2 / 4		wet, medium SAND with little oxydized staining		
	S-11	1 / 1	17/24			6.3
		1 / 4				
30'				B.O.B. @ 30 ft		
35'						
40'						

		BLOW COUNT		MATERIALS USED	SIZE/TYPE	QUANTITY
		0 - 4	VERY LOSE	WELL SCREEN	2" Sch 40 PVC	10 ft
AND	33-50%	4 - 10	LOOSE	SLOT SIZE	0.01"	
SOME	20-33%	10 - 30	MEDIUM	RISER	2" PVC	20 ft
LITTLE	10-20%	30 - 50	DENSE	GRADED SAND	#1 silica sand	3 bags
TRACE	0-10%	> 50	VERY DENSE	BENTONITE PELLETS	Enviro Grout	1 bag
				BENTONITE GROUT		

Marin Environmental, Inc.

SITE NAME:	One Stop Mini-Mart	BORING NO:	MW-2
LOCATION:	Newport, Vermont	TOTAL DEPTH:	30 ft
JOB NO.	V97-119	DEPTH TO WATER:	23 ft
DATE:	1/7/98		
DRILLING METHOD	Hollow Stem Auger	FIELD SUPERVISOR:	Jay Gonyaw
BORING DIAMETER	8"	CONTRACTOR:	Tri-State Drilling and Boring
		DRILLERS:	Neal/Theron Faulkner



Boring/Well Location

Depth	SN	BLOW COUNTS PER 6" (0 6 12 18 24)	Rec.	SAMPLE DESCRIPTION/COMMENTS	WELL DETAIL	PID (ppm)
5'	S-1	3 3 5 6	17/24	dry, coarse/medium SAND,with no petroleum odor		3.2
10'	S-2	4 6 4 4	16/24	dry, uniform medium SAND, with no petroleum odor		5.1
15'	S-3	1 4 4 7	16/24	dry, coarse SAND, with no odor, bottom 4"fine SAND/SILT		5.1
				dry, uniform bedding of medium SAND, no odor		6.8
20'	S-4	7 6 7 8	16.5/24			8.3
				Ground water ▽ @ 23 ft A.T.D.		
25'	S-5	4 4 5 6	16/24	wet, 4"of medium/fine SAND, no petroleum odor		6.3
				wet, SAND/SILT, no petroleum odor		
30'	S-6	5 6 6 7	16/24	B.O.B. @ 30 ft		4.2
35'						
40'						

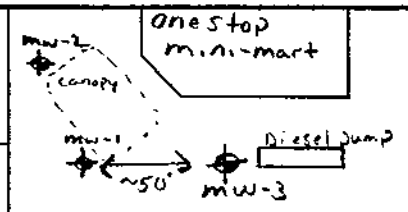
AND	33-50%
SOME	20-33%
LITTLE	10-20%
TRACE	0-10%

BLOW COUNT	
0 - 4	VERY LOSE
4 - 10	LOOSE
10 - 30	MEDIUM
30 - 50	DENSE
> 50	VERY DENSE

MATERIALS USED	SIZE/TYPE	QUANTITY
WELL SCREEN	2" Sch 40 PVC	10 ft
SLOT SIZE	0.01"	
RISER	2" PVC	20 ft
GRADED SAND	#1 silica sand	3 bags
BENTONITE PELLETS	Enviro Grout	1 bag
BENTONITE GROUT		

Marin Environmental, Inc.

SITE NAME:	One Stop Mini-Mart
LOCATION:	Newport, Vermont
JOB NO.	V97-119
DATE:	1/7/98
DRILLING METHOD	Hollow Stem Auger
BORING DIAMETER	8"
BORING NO:	MW-3
TOTAL DEPTH:	30 ft
DEPTH TO WATER:	23 ft
FIELD SUPERVISOR:	Jay Gonyaw
CONTRACTOR:	Tri-State Drilling and Boring
DRILLERS:	Neal/Theron Faulkner



Boring/Well Location

Depth	SN	BLOW COUNTS PER 6" 0-6	6-12	12-18	18-24	Rec.	SAMPLE DESCRIPTION/COMMENTS	WELL DETAIL	PID (ppm)
5'	SS-1	1	2	1	3	20/24	dry, loose medium SAND, no petroleum odor		4.5
10'	SS-2	3	4	4	5	17/24			7.5
15'	SS-3	4	4	5	6	21/24	dry, coarse SAND, no petroleum odor		6.3
20'	SS-4	3	6	4	8	24/24	Dry, medium SAND with uniform horizontal bedding, no petroleum odors		7.7
							Ground water ▽ @ 23 ft A.T.D.		
25'	SS-5	3	3	3	3	24/24	wet, fine SAND and SILT, no petroleum odor		10.8
							wet, 7"grey CLAY, no petroleum odor		8.0
							wet, fine SAND and SILT, no petroleum odor		
	SS-6	3	2	2	4	23/24			2.0
30'							B.O.B @ 30 ft		
35'									
40'									

AND	33-50%
SOME	20-33%
LITTLE	10-20%
TRACE	0-10%

BLOW COUNT	
0 - 4	VERY LOSE
4 - 10	LOOSE
10 - 30	MEDIUM
30 - 50	DENSE
> 50	VERY DENSE

MATERIALS USED	SIZE/TYPE	QUANTITY
WELL SCREEN	2" Sch 40 PVC	10 ft
SLOT SIZE	0.01"	
RISER	2" PVC	20 ft
GRADED SAND	#1 silica sand	3 bags
BENTONITE PELLETS	Enviro Grout	1 bag
BENTONITE GROUT		

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
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REPORT OF LABORATORY ANALYSIS

CLIENT: Marin Environmental
PROJECT NAME: One Stop Mini-Mart
REPORT DATE: January 23, 1998
DATE SAMPLED: January 15, 1998

PROJECT CODE: GWVT1049
REF.#: 115,696 - 115,700

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

ENDYNE, INC.

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EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Marin Environmental
PROJECT NAME: One Stop Mini-Mart
CLIENT PROJ. #: V97119

DATE RECEIVED: January 19, 1998
REPORT DATE: January 23, 1998
PROJECT CODE: GWVT1049

Ref. #:	115,696	115,697	115,698	115,699	115,700
Site:	Duplicate	Trip Blank	MW-1	MW-2	MW-3
Date Sampled:	1/15/98	1/15/98	1/15/98	1/15/98	1/15/98
Time Sampled:	NI	7:03	14:30	14:05	13:45
Sampler:	J.G.	J.G.	J.G.	J.G.	J.G.
Date Analyzed:	1/22/98	1/21/98	1/22/98	1/22/98	1/22/98
UIP Count:	0	0	0	0	0
Dil. Factor (%):	100	100	100	100	100
Surr % Rec. (%):	93	99	97	96	97
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)
Benzene	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1
Toluene	<1	<1	<1	<1	<1
Xylenes	<1	<1	<1	<1	<1
MTBE	<1	<1	<1	2.0	<1

Note: UIP = Unidentified Peaks TBQ = Trace Below Quantitation NI = Not Indicated

ENDYNE, INC.
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CHAIN-OF-CUSTODY RECORD

25235

1/97119

Project Name: one stop Site Location: mini-mart	Reporting Address: 1700 Hogeman Ave colchester VT	Billing Address:
Endyne Project Number: GWVT1049	Company: Marin Env. Contact Name/Phone #: B. Hamilton 655-1411	Sampler Name: T.G. Phone #:

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
115696	Duplicate	H_2O	X		11/15/98	2	40cc vials		19	HCl	
115697	~~Trip~~ Trip Blank				0703						
115698	MW-1				1430						
115699	MW-2				1405			no odors no Petro.			
115700	MW-3				1345						

Relinquished by: Signature [signature] Received by: Signature Raymond Brainard Date/Time 1/19/98 1027

Relinquished by: Signature Received by: Signature Jason Dodard Date/Time 1/19/98 11:05

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS (1)	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX & MTBE	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										