

SEP 04 2001



August 30, 2001

Mr. Gerold Noyes  
Vermont ANR/DEC  
Waste Management Division  
103 South Main St. /West Building  
Waterbury, VT 05671-0404

RE: Initial Site Investigation, Danby Four Corners Store (VTDEC Site #97-2253)

Dear Mr. Noyes:

In response to your August 24, 2001 letter to Linda Ralph of the Danby Four Corner Store enclosed is another copy of Griffin's *Initial Investigation of Suspected Subsurface Petroleum Contamination* that was originally submitted to the Vermont Department of Environmental Conservation (VTDEC) on May 11, 1998.

Griffin is recommending that the Danby Four Corners Store site be considered for Site Management Actively Complete (SMAC) status and removed from the VTDEC Active Hazardous Waste Sites List.

Please contact me if you have any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads "Christine Ward".

Christine Ward  
Hydrogeologist

Enclosure

c: Linda Ralph, Danby Four Corners Store (w/o attachment)  
GI #19841176



May 11, 1998

Mr. Chuck Schwer  
Vermont ANR/DEC  
Waste Management Division  
103 South Main St. /West Building  
Waterbury, VT 05671-0404

RE: Initial Investigation of Suspected Subsurface Petroleum Contamination  
Danby Four Corners Store, Danby, Vermont (VTDEC Site #97-2253)

Dear Mr. Schwer:

Enclosed please find the summary report for the site investigation conducted at the Danby Four Corners Store in Danby, Vermont. Griffin is recommending that the Danby Four Corners Store site be removed from the VTDEC Active Hazardous Waste Sites List.

Please contact me if you have any questions or comments.

Sincerely,

Christine Ward  
Hydrogeologist

Enclosure

c.: Ms. Linda Ralph, Danby Four Corners Store  
GI#19841176

SEP 04 2001

**INITIAL INVESTIGATION OF  
SUSPECTED SUBSURFACE PETROLEUM  
CONTAMINATION**

**DANBY FOUR CORNERS STORE  
DANBY, VERMONT 05739**

(VTDEC SITE #97-2253)  
GI #19841176

May 1998

*Prepared for*

Danby Four Corners Store  
Danby, VT 05739

*Prepared by*



P.O. Box 943  
Williston, Vermont 05495  
(802) 865-4288

## TABLE OF CONTENTS

<b>I. INTRODUCTION.....</b>	<b>1</b>
<b>II. SITE BACKGROUND.....</b>	<b>1</b>
A. SITE HISTORY .....	1
B. SITE DESCRIPTION.....	2
C. SITE GEOLOGY .....	2
<b>III. INVESTIGATIVE PROCEDURES.....</b>	<b>2</b>
A. GROUNDWATER FLOW DIRECTION AND GRADIENT .....	3
B. MONITORING WELL SAMPLING AND ANALYSES.....	3
C. SUPPLY WELL SAMPLING AND ANALYSES .....	4
D. SENSITIVE RECEPTOR SURVEY .....	4
<b>IV. CONCLUSIONS.....</b>	<b>6</b>
<b>V. RECOMMENDATIONS.....</b>	<b>7</b>
<b>REFERENCES.....</b>	<b>9</b>

### APPENDICES

#### Appendix A - Maps

    Site Location Map

    Site Map

    Groundwater Elevation Map

#### Appendix B - Liquid Level Monitoring Data

#### Appendix C - Water Quality Data

## **I. INTRODUCTION**

This report summarizes the initial investigation of suspected subsurface petroleum contamination at the Danby Four Corners Store on the Danby Pawlett Road in Danby, Vermont (see Site Location Map, Appendix A). This work was requested by Mr. Chuck Schwer of the Vermont Department of Environmental Conservation (VTDEC) in a letter to Mr. Harry Ralph of the Danby Four Corners Store dated January 13, 1998. This work was performed largely in accordance with the January 21, 1998, *Work Plan and Cost Estimate - Site Investigation of Suspected Subsurface Petroleum Contamination* for the site prepared by Griffin. The Work Plan was approved by Mr. Schwer (VTDEC) in a letter to Ms. Linda Ralph dated March 17, 1998, with the modification that the supply well be analyzed by EPA Method 524.2. Another modification was that the work plan outlined sampling three monitoring wells, however only two of the three monitoring wells were observed to exist on April 9, 1998.

## **II. SITE BACKGROUND**

### **A. Site History**

On October 1, 1997, petroleum contamination was detected at the Danby Four Corners Store site during soil field screening at a routine removal of two gasoline underground storage tanks (USTs). The USTs were constructed of single wall steel. The USTs were located in a common tank field on the west side of the Store (see Site Map, Appendix A). UST #1, located on the west side of the tank field, had a capacity of 1,000 gallons and UST #2, located on the east side of the tank field, had a capacity of 2,000 gallons. The age of the former USTs is unknown. UST #1 was reported to be in poor condition and UST #2 was reported to be in fair condition at the time of removal. The USTs were replaced with a 4,000-gallon gasoline double wall UST.

Soil samples collected during the UST removals were screened for volatile organic compounds (VOCs) using an HNu™ systems photoionization detector (PID). Readings of up to 200 parts per million (ppm) were detected in soils excavated from the western side of the UST pit under UST#1. Soils were returned to the excavation.

As a result of the petroleum contamination detected in the subsurface beneath the former USTs, the VTDEC requested that additional work be conducted at the site in order to determine the extent and degree of petroleum contamination.

## **B. Site Description**

The Danby Four Corners Store is a two story building with a basement. The first floor is utilized as a retail store, and the second floor is an apartment. The former and current UST field is located on the west side of the store, and the fuel dispenser island is located at the north end of the UST field. The area north of the store and fuel dispenser island is asphalt paved. The area over the former UST field is grass covered, except for a concrete pad over the newly installed UST. The site topography is gently sloping toward the southwest.

The surrounding area is served by private water and sewer systems. The Danby Four Corners Store supply well is located approximately 60 feet southeast of the UST field.

There are two existing monitoring wells located near the UST field that had been installed as a leak detection measure. Monitoring well MW-1 is located immediately west of the UST and monitoring well MW-2 is located approximately 10 feet north of the UST field and fuel dispenser island. One other monitoring well was apparently destroyed during the UST replacement.

## **C. Site Geology**

Soils in the vicinity of the UST pit during the removal inspection consisted of silty loam with some clay and medium gravel from grade to 4 feet below grade, clay with some silt and a trace of gravel from 4 feet to 8 feet below grade, and clay with little gravel from 8 feet to 12 feet below grade. According to the Surficial Geologic Map of Vermont (Doll, 1970), the site is underlain by a glaciofluvial kame moraine. Bedrock below the site is mapped as the Hortonville formation, a black, carbonaceous and pyritic slate and phyllite (Doll, 1961).

## **III. INVESTIGATIVE PROCEDURES**

To further define the extent of subsurface petroleum contamination in the area of the former USTs, the following investigative tasks were undertaken: water table elevation measurements; determination of shallow groundwater flow direction; groundwater sample collection and analyses for petroleum related constituents; and a sensitive receptor survey.

## **A. Groundwater Flow Direction and Gradient**

Water table elevation measurements were collected from the two on-site monitoring wells, MW-1 and MW-2, on April 9, 1998. Monitoring well MW-3 was destroyed during the UST replacement. The top of casing elevations were determined relative to MW-1, which was arbitrarily set at 100 feet. The depth to water in each well was subtracted from the top of casing elevation to obtain the relative water table elevation. Water level data are presented in Appendix B. No free phase product was detected in the wells on April 9, 1998. Water table elevations were plotted on the site map to generate the Groundwater Elevation Map figure presented in Appendix A.

The relative water table elevations measured on April 9, 1998, suggest that the shallow groundwater flow at the site is directed generally toward the south, southwest, or southeast. The surface topography suggests that groundwater flow would be directed to the south, southwest, or southeast, toward an unnamed tributary to the Mill Brook. The hydraulic gradient at the site could not be established since there were only two sampling points. Three sampling points are the minimum required to calculate a hydraulic gradient.

Based on this estimated shallow groundwater flow direction, monitoring well MW-1 is located near the source area of the former USTs, and monitoring well MW-2 is located in an upgradient direction relative to the former USTs.

The depth to water in the monitoring wells was approximately 4 feet below grade on April 9, 1998. During the UST excavation on October 1, 1997, the depth to water in the monitoring wells was approximately 8 feet below grade. However, during the UST excavation, no groundwater was encountered in the excavation to a depth of 12 feet below grade, marking the vertical extent of the excavation.

## **B. Monitoring Well Sampling and Analyses**

Griffin collected groundwater samples from the two on-site monitoring wells on April 9, 1998. The groundwater samples were analyzed by Endyne, Inc. of Williston, Vermont, by EPA Method 602 for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE). Results of the laboratory analyses for the monitoring wells are summarized in Appendix C. The laboratory analysis report is also contained in Appendix C. Analytical results of the trip blank and duplicate samples indicate that adequate quality assurance and control were maintained during sample collection and analysis.

Very low concentrations of toluene and xylenes, and a trace concentration of MTBE below the quantitation limit, were detected in the groundwater sample collected from

MW-1. The detected concentrations were all below the Vermont Groundwater Enforcement Standards (VGES) for these compounds.

A low concentration of MTBE, below the VGES for this compound, was detected in the groundwater sample collected from MW-2.

### **C. Supply Well Sampling and Analyses**

Griffin collected a groundwater sample from the Store's supply well on April 9, 1998. The supply well is located near the southeast corner of the Store, and is reportedly completed in bedrock. The supply well sample was collected from the outside tap on the southeast corner of the building. Water was run through the tap for approximately one hour prior to collecting the sample to purge the water that had been sitting in the pipes and in the well, and to collect a sample representative of that which the store utilizes for drinking.

The supply well sample was analyzed by Endyne, Inc. of Williston, Vermont, for drinking water VOCs by EPA Method 524.2. Results of the laboratory analysis for the supply well are summarized in Appendix C. The laboratory analysis report is also contained in Appendix C.

No VOCs were detected in the groundwater sample collected from the supply well.

### **D. Sensitive Receptor Survey**

A qualitative risk assessment was conducted to identify known and potential receptors of the contamination detected at the Danby Four Corners Store. A visual survey was conducted on April 9, 1998, as well as at the time of the UST removal inspection on October 1, 1997. Based on these observations, a determination of the potential risk to identified receptors was made.

The soil and groundwater in the immediate vicinity of the former gasoline USTs are potential sensitive receptors. The risk to these sensitive receptors is considered minimal based on the very low VOC concentrations in the groundwater samples collected at the site.

The area is served by private water. The supply well for the Danby Four Corners Store is located approximately 60 feet southeast of the tank field and is reported to be completed in bedrock. Based on the surface topography and the estimated shallow groundwater flow direction measured on April 9, 1998, the supply well is located in a crossgradient direction from the UST field with respect to the surficial aquifer at the site. The risk of impact to the Store's supply well from the petroleum contamination detected in the

surficial aquifer in the area of the UST field is considered minimal based on the construction of the supply well and because the supply well is in an estimated crossgradient direction from the UST field. NO VOCs were detected by EPA Method 524.2 in the groundwater sample collected from the supply well on April 9, 1998.

The indoor air of the Danby Four Corners Store basement was screened with an HNu™ systems model PI-101 PID on April 9, 1998. No VOC readings were detected above the background reading. The risk of impact from soil gas vapors to the indoor air of the Danby Four Corners Store is considered minimal based on the non-detection of VOCs with the PID in the basement on April 9, 1998, and the non-detection of VOCs with the PID from the soils collected from the eastern side of the UST excavation, adjacent to the Store, on October 1, 1997.

The residence to the west of the Danby Four Corners Store, Chipman Stables, is slab on grade construction. The water supply for this residence is reportedly from a spring on the mountain to the east. The water supply spring for this residence is topographically upgradient from the UST field, and therefore the risk to this sensitive receptor is considered minimal.

North of the site, across the Danby Pawlet Road, is a trailer and a house with a basement. The supply well for the trailer is approximately 100 feet from the UST field. The supply well for the house is approximately 300 feet from the UST field. The supply wells for these residences are topographically upgradient from the UST field, and therefore the risk to these sensitive receptors is considered minimal. The risk to the indoor air of the house's basement is considered minimal based on its distance from the UST field and the apparent minimal source strength.

East of the site, across Brook Road, is a house with a basement. The supply well for this residence is approximately 200 feet from the UST field. The risk to the supply well and the indoor air of the basement are considered minimal, based on the distance from the UST field, and given that they are topographically upgradient from the UST field.

South of the Danby Four Corners Store is an open field.

There were no identified surface waters in close vicinity of the Danby Four Corners Store.

#### IV. CONCLUSIONS

Based on the results of this investigation, Griffin presents the following conclusions:

- 1) There was a release(s) of petroleum to the subsurface in the vicinity of the former UST field on the west side of the Danby Four Corners Store. The source of the detected petroleum contamination is likely due to spills, overfills, and leaks due to usage over time. The amounts and duration of the release(s) are unknown. The source of the petroleum contamination (i.e., the UST system) was replaced in October 1997.
- 2) VOC readings of soil samples screened during the UST removal indicate that adsorbed petroleum compounds existed in the soils in the immediate vicinity of the former tank field. With the source USTs replaced, it is expected that adsorbed petroleum compound concentrations will decrease over time with the progressive action of natural mitigative processes including biodegradation, volatilization, and diffusion.
- 3) The depth to groundwater measured on April 9, 1998, was approximately 4 feet below the ground surface. The shallow groundwater flow beneath the site is estimated to be directed toward the south, southwest, or southeast.
- 4) Monitoring well MW-1 is located in the source area of the former USTs. Monitoring well MW-2 is located in a presumed upgradient direction relative to the former USTs.
- 5) Relatively low levels of dissolved VOCs exist in the groundwater collected from MW-1 and MW-2. With the source USTs replaced, it is expected that dissolved petroleum compound concentrations will decrease over time with the progressive action of natural mitigative processes, including dilution, dispersion, and biodegradation.
- 6) No VOCs were detected by EPA Method 524.2 in the groundwater from the Store's supply well.
- 7) There appear to be no significant potential risks to identified sensitive receptors, at this time, based on currently available data.

## V. RECOMMENDATIONS

Based on the results of this site investigation, Griffin recommends that the Danby Four Corners Store site be removed from the VTDEC Active Hazardous Waste Sites List. This recommendation is offered based upon achievement of the following closure criteria, as per the VTDEC Site Management Activity Completed (SMAC) Checklist (draft, December 1, 1997):

- 1) The source(s), nature, and extent of the petroleum contamination at the site has been adequately defined.

On October 1, 1997, petroleum contamination was detected in the soils excavated during the routine removal of two gasoline USTs. VOC readings of up to 200 parts per million (ppm) were detected in soils excavated from the western side of the UST pit under UST#1. No VOCs were detected from the soil excavated from the eastern side of the UST pit under UST#2. The source of the detected petroleum contamination is likely due to spills, overfills, and leaks due to usage over time.

No VOCs exceeding the VGES were detected in the groundwater samples collected on April 9, 1998, from the on-site monitoring wells. Monitoring well MW-1 is located in the source area, thus suggesting that the strength of the source area is minimal. Dissolved petroleum contamination was not detected by EPA Method 524.2 in the water sample collected from the on-site bedrock supply well on April 9, 1998. These results suggest that the extent of the petroleum contamination detected near the former USTs is minimal.

- 2) Source(s) has been removed, remediated, or adequately contained.

The gasoline USTs and associated piping were removed in October 1997.

- 3) Levels of contaminants in soil and groundwater shall be stable, falling, or non-detectable.

No VOCs exceeding the VGES were detected in the groundwater samples collected on April 9, 1998, from the on-site monitoring wells located near the source area.

Dissolved petroleum contamination was not detected by EPA Method 524.2 in the water sample collected from the on-site bedrock supply well on April 9, 1998.

- 4) Groundwater enforcement standards are met on entire property.

No VOCs exceeding the VGES were detected in the groundwater samples collected on April 9, 1998, from the on-site monitoring wells.

Petroleum contamination was not detected by EPA Method 524.2 in the water sample collected from the on-site bedrock supply well on April 9, 1998.

- 5) Soil guideline levels are met. If not, engineering or institutional controls are in place.

The new 4,000-gallon gasoline UST is covered with a concrete slab, thus minimizing the risk of impact to the air from residual soil gas vapors in the source area.

No VOCs were detected above background with the PID in the indoor air of the Danby Four Corners Store basement.

- 6) No unacceptable threat to human health or the environment exists on site.

Petroleum contamination was not detected by EPA Method 524.2 in the water sample collected from the on-site supply well on April 9, 1998.

No VOCs were detected above background with the PID in the indoor air of the Danby Four Corners Store basement.

- 7) Site meets RCRA requirements.

Available records indicate that the Danby Four Corners Store is not in violation of the Resource Conservation and Recovery Act (RCRA) as defined in 40 CFR 264.

- 8) Site meets CERCLA requirements.

Available records indicate that the Danby Four Corners Store is not in violation of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as defined in 40 CFR 300.

## REFERENCES

USGS 7.5 Minute Topographic Map, Dorset quadrangle, Vermont, dated 1967.

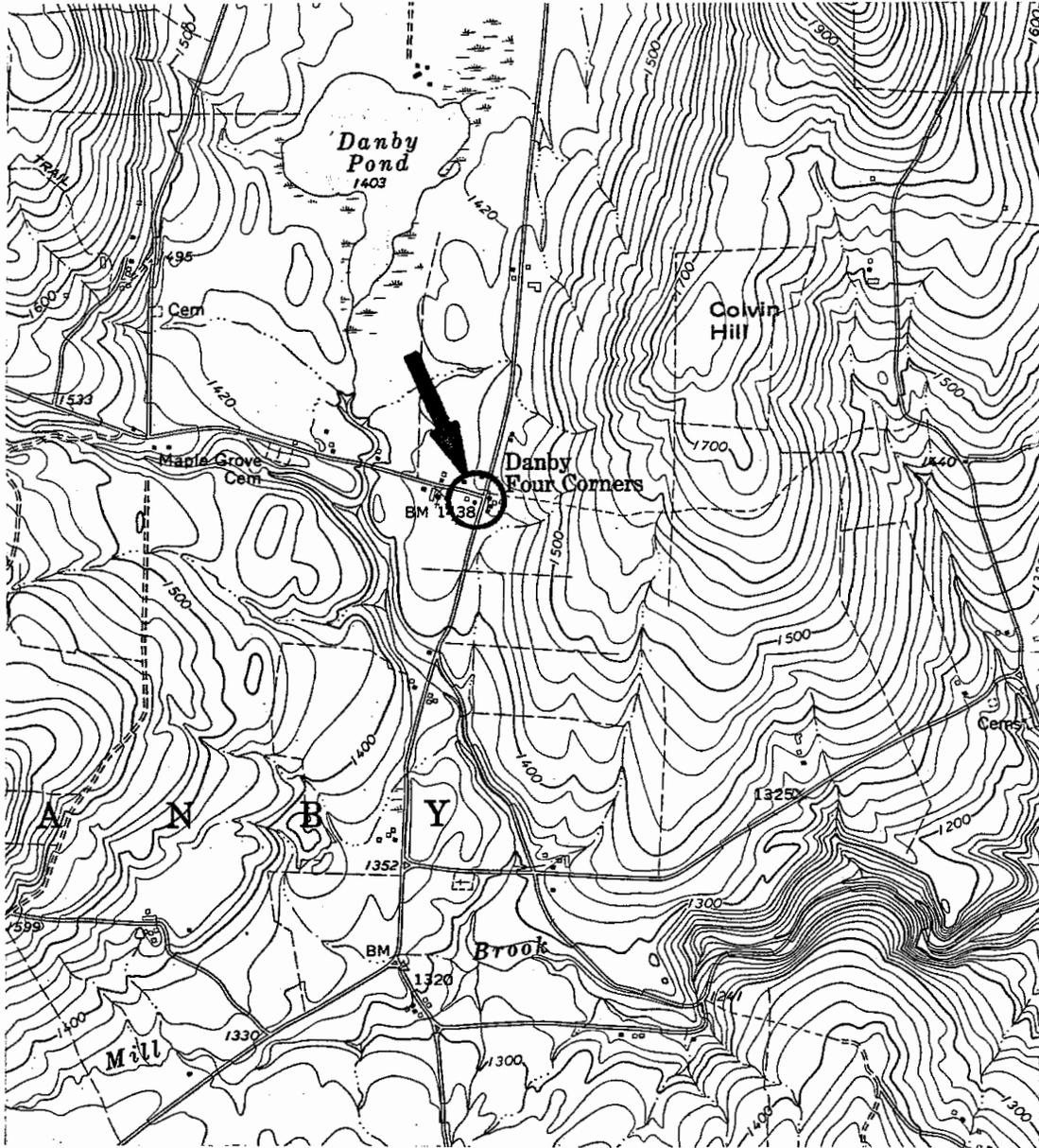
Doll, Charles G., ed., 1961, *Centennial Geologic Map of Vermont*, Vermont Geological Survey.

Doll, Charles G., ed., 1970, *Surficial Geologic Map of Vermont*, Vermont Geological Survey.

Griffin International, October 2, 1997, *Danby Four Corners Store UST Closure letter report to Ms. Sue Thayer, Vermont ANR/DEC, Waste Management Division.*

**APPENDIX A**

**Site Location Map  
Site Map  
Groundwater Elevation Map**



JOB #: 19841176  
 SOURCE: USGS- DORSET, VERMONT QUADRANGLE



**DANBY FOUR CORNER STORE**

DANBY, VERMONT

**SITE LOCATION MAP**

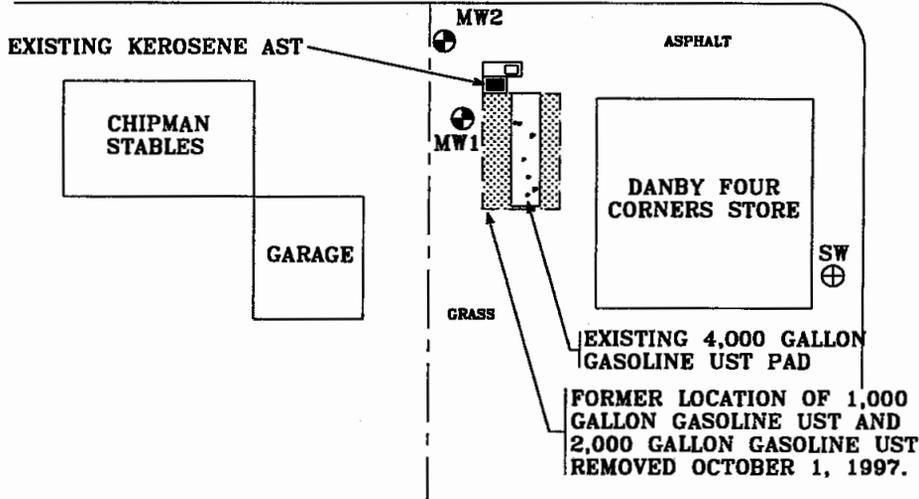
DATE: 4/15/98	DWG.#:1	SCALE: 1:24000	DRN.:SB	APP.:CW
---------------	---------	----------------	---------	---------



TINMOUTH ROAD

DIRT ROAD

DANBY/PAWLET ROAD



**LEGEND**

-  MW2 MONITORING WELL
-  SW SUPPLY WELL
-  PROPERTY LINE
-  PUMP ISLAND

JOB #: 19841176



**DANBY FOUR CORNERS STORE**

DANBY, VERMONT

**SITE MAP**

DATE: 4/30/98

DWG.#:2

SCALE: 1"=40'

DRN.:SB

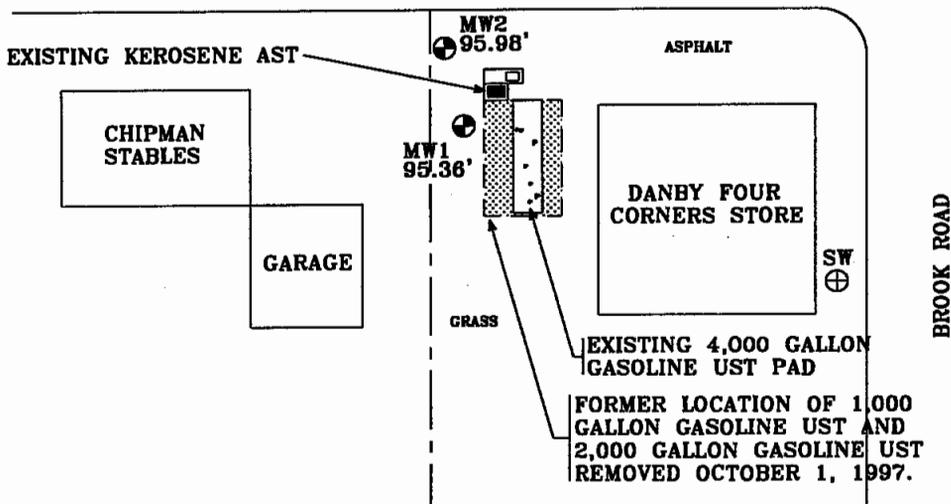
APP.:CW



TINMOUTH ROAD

DIRT ROAD

DANBY/PAWLET ROAD



**LEGEND**

MW2 MONITORING WELL AND WATER  
 ⊕ 95.98' TABLE ELEVATION IN FEET

SW  
 ⊕ SUPPLY WELL

--- PROPERTY LINE

▭ PUMP ISLAND

JOB #: 19841176  
 MEASUREMENT DATE: 4/9/98



DANBY FOUR CORNERS STORE

DANBY, VERMONT

GROUNDWATER ELEVATION MAP

DATE: 4/30/98	DWG.#:3	SCALE: 1"=40'	DRN.:SB	APP.:CW
---------------	---------	---------------	---------	---------

**APPENDIX B**

**Liquid Level Monitoring Data**

**LIQUID LEVEL MONITORING DATA**

**DANBY FOUR CORNERS STORE  
DANBY, VERMONT**

4/9/98

Well I.D.	Top of Casing Elevation	Depth To Product btoc	Depth To Water btoc	Product Thickness	Specific Gravity Of Product	Water Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
MW-1	100.00	-	4.64	-	-	-	-	95.36
MW-2	99.67	-	3.69	-	-	-	-	95.98

All Values Reported in Feet

btoc - Below Top of Casing

Elevations determined relative to top of casing of MW-1, which was arbitrarily set at 100'

**APPENDIX C**

**Water Quality Data**

# GROUNDWATER QUALITY SUMMARY

## DANBY FOUR CORNERS STORE DANBY, VERMONT

4/9/98

PARAMETER	ANALYSIS:	SAMPLE LOCATION			VGES (ppb)
		MW-1 EPA 602	MW-2 EPA 602	Supply Well EPA 524.2	
Benzene		ND > 1	ND > 1	ND > 0.5	5.
Chlorobenzene		ND > 1	ND > 1	ND > 0.5	100.
1,2-DCB		ND > 1	ND > 1	ND > 0.5	600.
1,3-DCB		ND > 1	ND > 1	ND > 0.5	600.
1,4-DCB		ND > 1	ND > 1	ND > 0.5	75.
Ethylbenzene		ND > 1	ND > 1	ND > 0.5	700.
Toluene		2.0	ND > 1	ND > 0.5	1,000.
Xylenes		26.6	ND > 1	ND > 1.0	10,000.
Total BTEX		28.6	ND	ND	-
MTBE		TBQ < 10	14.6	ND > 1.0	40.
BTEX+MTBE		28.6	14.6	ND	-

All Values Reported in ug/L (ppb)

ND>1 - None Detected above Detection Limit

TBQ<1 - Trace Below Quantitation Limit

NA - Not Analyzed

VGES - Vermont Groundwater Enforcement Standard

> VGES

**GROUNDWATER QUALITY SUMMARY  
QA/QC SAMPLES**

**DANBY FOUR CORNERS STORE  
DANBY, VERMONT**

4/9/98

PARAMETER	Trip Blank	Equipment Blank	Duplicate of MW-2	VGES (ppb)
Benzene	ND > 1	No	ND > 1	5.
Chlorobenzene	ND > 1	Sample	ND > 1	100.
1,2-DCB	ND > 1		ND > 1	600.
1,3-DCB	ND > 1	Disposable	ND > 1	600.
1,4-DCB	ND > 1	Bailers	ND > 1	75.
Ethylbenzene	ND > 1	Used	ND > 1	700.
Toluene	ND > 1		ND > 1	1,000.
Xylenes	ND > 1		ND > 1	10,000.
Total BTEX	ND		ND	-
MTBE	ND > 10		15.8	40.
BTEX+MTBE	ND		15.8	-

BTEX Analysis by EPA 602

All Values Reported in ug/L (ppb)

ND>1 - None Detected above Detection Limit

TBQ<1 - Trace Below Quantitation Limit

NA - Not Analyzed

VGES - Vermont Groundwater Enforcement Standard

> VGES



**ENDYNE, INC.**

**Laboratory Services**

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

**REPORT OF LABORATORY ANALYSIS**

**CLIENT:** Griffin International  
**PROJECT NAME:** Danby Four Corner Store  
**REPORT DATE:** April 16, 1998  
**DATE SAMPLED:** April 9, 1998

**PROJECT CODE:** GIDF1173  
**REF.#:** 118,895 - 118,898

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. However, sample 118898 was found to have a pH of 4.

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.**

**Laboratory Services**

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

**EPA METHOD 602--PURGEABLE AROMATICS**

**CLIENT: Griffin International**

**DATE RECEIVED: April 10, 1998**

**PROJECT NAME: Danby Four Corner Store**

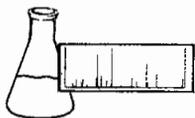
**REPORT DATE: April 16, 1998**

**CLIENT PROJ. #: 19841176**

**PROJECT CODE: GIDF1173**

Ref. #:	118,895	118,896	118,897	118,898	← Mislabelled on chain of custody cw 4/25/98
Site:	Trip Blank	MW2	Duplicate MW2	MW2 I	
Date Sampled:	4/9/98	4/9/98	4/9/98	4/9/98	
Time Sampled:	7:29	13:20	13:20	13:30	
Sampler:	R.H./S.B.	R.H./S.B.	R.H./S.B.	R.H./S.B.	
Date Analyzed:	4/14/98	4/15/98	4/15/98	4/16/98	
UIP Count:	0	0	0	>10	
Dil. Factor (%):	100	100	100	100	
Surr % Rec. (%):	97	99	103	91	
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	
Benzene	<1	<1	<1	<1	
Chlorobenzene	<1	<1	<1	<1	
1,2-Dichlorobenzene	<1	<1	<1	<1	
1,3-Dichlorobenzene	<1	<1	<1	<1	
1,4-Dichlorobenzene	<1	<1	<1	<1	
Ethylbenzene	<1	<1	<1	<1	
Toluene	<1	<1	<1	2.0	
Xylenes	<1	<1	<1	26.6	
MTBE	<10	14.6	15.8	TBQ <10	

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



**ENDYNE, INC.**

Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

**REPORT OF LABORATORY ANALYSIS**

CLIENT: Griffin International

PROJECT CODE: GIDF1174

PROJECT NAME: Danby Four Corner Store/19841176

REF. #: 118,899

DATE REPORTED: April 22, 1998

DATE SAMPLED: April 9, 1998

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy were 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 data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

enclosures



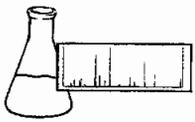
LABORATORY REPORT

EPA METHOD 524.2

CLIENT: Griffin International  
PROJECT NAME: Danby Four Corner Store/19841176  
REPORT DATE: April 22, 1998  
DATE SAMPLED: April 9, 1998  
DATE RECEIVED: April 10, 1998  
ANALYSIS DATE: April 20, 1998

PROJECT CODE: GIDF1174  
STATION: SW  
REF. #: 118,899  
TIME SAMPLED: 13:59  
SAMPLER: R.H./S.B.

<u>Parameter</u>	<u>Detection Limit(ug/L)</u>	<u>Maximum Contaminant Level (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	0.5	5.0	ND <sup>1</sup>
Bromobenzene	0.5	-----	ND
Bromochloromethane	0.5	-----	ND
Bromomethane	0.5	-----	ND
n-Butylbenzene	0.5	-----	ND
sec-Butylbenzene	0.5	-----	ND
tert-Butylbenzene	0.5	-----	ND
Carbon tetrachloride	0.5	5.0	ND
Chlorobenzene	0.5	100.	ND
Chloroethane	0.5	-----	ND
Chloromethane	0.5	-----	ND
(2&4)Chlorotoluene	1.0	-----	ND
1,2-Dibromo-3-chloropropane	1.0	0.2	ND
1,2-Dibromoethane	0.5	0.05	ND
Dibromomethane	1.0	-----	ND
1,2-Dichlorobenzene	0.5	600.	ND
1,3-Dichlorobenzene	0.5	-----	ND
1,4-Dichlorobenzene	0.5	75.0	ND
Dichlorodifluoromethane	0.5	-----	ND
1,1-Dichloroethane	0.5	-----	ND
1,2-Dichloroethane	0.5	5.0	ND
1,1-Dichloroethene	0.5	7.0	ND
cis-1,2-Dichloroethene	0.5	70.0	ND
trans-1,2-Dichloroethene	0.5	100.	ND
Dichloromethane	1.0	5.0	ND
1,2-Dichloropropane	0.5	5.0	ND



REF.#: 118,899

<u>Parameter</u>	<u>Detection Limit(ug/L)</u>	<u>Maximum Contamination Level(ug/L)</u>	<u>Concentration (ug/L)</u>
1,3-Dichloropropane	0.5	-----	ND
2,2-Dichloropropane	0.5	-----	ND
1,1-Dichloropropene	0.5	-----	ND
cis-1,3-Dichloropropene	0.5	-----	ND
trans-1,3-Dichloropropene	0.5	-----	ND
Ethylbenzene	0.5	700.	ND
Hexachlorobutadiene	0.5	-----	ND
Isopropylbenzene	0.5	-----	ND
4-Isopropyltoluene	0.5	-----	ND
Naphthalene	1.0	-----	ND
n-Propylbenzene	0.5	-----	ND
Styrene	0.5	100.	ND
1,1,1,2-Tetrachloroethane	0.5	-----	ND
1,1,2,2-Tetrachloroethane	1.0	-----	ND
Tetrachloroethene	0.5	5.0	ND
Toluene	0.5	1,000.	ND
1,2,3-Trichlorobenzene	0.5	-----	ND
1,2,4-Trichlorobenzene	0.5	70.0	ND
1,1,1-Trichloroethane	0.5	200.	ND
1,1,2-Trichloroethane	0.5	-----	ND
Trichloroethene	0.5	5.0	ND
Trichlorofluoromethane	1.0	-----	ND
1,2,3-Trichloropropane	0.5	-----	ND
1,2,4-Trimethylbenzene	0.5	-----	ND
1,3,5-Trimethylbenzene	0.5	-----	ND
Vinyl Chloride	0.5	2.0	ND
Total Xylenes	1.0	10,000.	ND
MTBE	1.0	-----	ND

NUMBER OF UNIDENTIFIED PEAKS: 0

Analytical Surrogate Recovery:

4-Bromofluorobenzene:	109.%
1,2-dichlorobenzene-d4:	93.%

NOTES:

1 None Detected



**ENDYNE, INC.**

**Laboratory Services**

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

LABORATORY REPORT

TRIHALOMETHANES BY EPA METHOD 524.2

CLIENT: Griffin International  
PROJECT NAME: Danby Four Corner Store/19841176  
REPORT DATE: April 22, 1998  
DATE SAMPLED: April 9, 1998  
DATE RECEIVED: April 10, 1998  
ANALYSIS DATE: April 20, 1998

PROJECT CODE: GIDF1174  
STATION: SW  
REF. #: 118,899  
TIME SAMPLED: 13:59  
SAMPLER: R.H./S.B.

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Maximum Contamination Level (ug/L)</u>	<u>Concentration (ug/L)</u>
Bromodichloromethane	0.5	---	ND <sup>1</sup>
Bromoform	0.5	---	ND
Chloroform	0.5	---	ND
Dibromochloromethane	0.5	---	ND
Total Trihalomethanes		100.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

**ANALYTICAL SURROGATE RECOVERY:**

4-Bromofluorobenzene: 109.%  
1,2-Dichlorobenzene-d4: 93.%

NOTES:

1 None Detected

**CHAIN-OF-CUSTODY RECORD**

26863

1984/176

Project Name: **DANBY FOUR CORNER STORE** Reporting Address: **GRIFFIN INT'L**  
 Site Location: **DANBY, VT**  
 Endyne Project Number: **GEDE 1174** Company: **C. WARD**  
 Billing Address:  
 Sampler Name: **R.H. / S.B.**  
 Phone #: \_\_\_\_\_

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	TRIP BLANK	HR2	✓		7:29	2	12ML		6022	AC1	
	MW2				13:20						
	DUPHASTE MW2				13:20						
	MW3				13:30						
118,899	SW1				13:59				5242		

Relinquished by: Signature *[Signature]* Received by: Signature *[Signature]* Date/Time **10:24** **4/10/98**  
 Relinquished by: Signature *[Signature]* Received by: Signature *[Signature]* Date/Time **4-10-98** **10:25**

New York State Project: Yes  No

**Requested Analyses**

Lab #	Parameter	Requested
1	pH	
2	Chloride	
3	Ammonia N	
4	Nitrite N	
5	Nitrate N	
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)	
30	Other (Specify):	

Lab #	Parameter	Requested
16	Metals (Specify)	EPA 624
17	Coliform (Specify)	EPA 625 B/N or A
18	TDS	EPA 418.1
19	Turbidity	EPA 608 Pest/PCB
20	Conductivity	EPA 601/602
21	Metals (Specify)	EPA 624
22	Coliform (Specify)	EPA 625 B/N or A
23	COD	EPA 418.1
24	BTEX	EPA 608 Pest/PCB
25	Conductivity	EPA 601/602
26	Metals (Specify)	EPA 8270 B/N or Acid
27	Coliform (Specify)	EPA 8010/8020
28	COD	EPA 8080 Pest/PCB



32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333

GEZDF 1174

CHAIN-OF-CUSTODY RECORD

26863

Project Name: DANBY FOUR CORNER STON Reporting Address: GRIFFIN INT'L  
 Site Location: DANBY, VT  
 Endyne Project Number: GEZDF 1173  
 Billing Address:  
 Company: C. WARD  
 Contact Name/Phone #: C. WARD  
 Sampler Name: R.H./S.B.  
 Phone #:

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
18,895	TRIP BLANK	HR2	✓		7:29	2	ADMLG		602	ACI	
18,896	MW2	↓			13:20				↓		
18,897	DUPPLICATE MW2	↓			13:20				↓		
18,898	MW3	↓			13:30						
	SW	↓			13:57				524.2	↓	

Relinquished by: Signature *[Signature]* Received by: Signature *[Signature]* Date/Time 10:24 4/10/98  
 Relinquished by: Signature *[Signature]* Received by: Signature *[Signature]* Date/Time 4-10-98 10:25

New York State Project: Yes  No

Requested Analyses

Requested Analysis	Requested Analysis	Requested Analysis	Requested Analysis	Requested Analysis
1 pH	6 TKN	11 Total Solids	16 Metals (Specify)	21 EPA 624
2 Chloride	7 Total P	12 TSS	17 Coliform (Specify)	22 EPA 625 B/N or A
3 Ammonia N	8 Total Diss. P	13 TDS	18 COD	23 EPA 418.1
4 Nitrite N	9 BOD <sub>5</sub>	14 Turbidity	19 BTEX	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):				