GRIFFIN INTERNATIONAL INC

Feb 19 10 51 AM '97

February 18, 1997

Mr. Andrew Shively
VT Department of Environmental Conservation
Waste Management Division
103 South Main St./ West Bldg.
Waterbury, VT 05671-0404

RE: Subsurface Investigation, Vermont Plastics, Montpelier, VT (VTDEC #96-2065)

Dear Andrew:

Enclosed please find the February *Report on the Site Investigation of Suspected Subsurface Petroleum Contamination* for the Vermont Plastics site in Montpelier, Vermont. Mr. George Curtis of Vermont Plastics requested that we forward a copy to you. Please do not hesitate to call if you have any questions or comments.

Sincerely,

Timothy J. Kelly, P.G.
Geologist

Enc.

cc: George Curtis, Vermont Plastics
GI #11964952

REPORT ON THE SITE INVESTIGATION OF SUSPECTED SUBSURFACE PETROLEUM CONTAMINATION

AT

VERMONT PLASTICS
Graves Road, Montpelier, Vermont

VTDEC Site #96-2065
Griffin Proj. #11964952

February 1997

Prepared For:

Vermont Plastics
P.O. Box 1349
Montpelier, VT 05602

Prepared by

P.O. Box 943/ 19 Commerce St.
Williston, Vermont 05495
(802) 865-4288

TABLE OF CONTENTS

I. INTRODUCTION

This report provides a summary of the tasks completed for the site investigation of suspected subsurface petroleum contamination at the Vermont Plastics manufacturing plant on Graves Road, Montpelier, Vermont (see Site Location Map in Appendix A). Results of the following investigative tasks performed by Griffin International, Inc., (Griffin) are presented:

- ◊ monitoring well installation;
- ◊ site survey;
- ◊ determination of groundwater flow direction and gradient;
- ◊ groundwater sampling and analyses;
- ◊ sensitive receptor survey.

This work is being performed based on requests from Mr. Andrew Shively of the Vermont Department of Environmental Conservation (VTDEC) in a letter to Mr. George Curtis of Vermont Plastics, dated October 24, 1996. Work was performed in accordance with the November 3, 1996, *Preliminary Work Plan and Cost Estimate for Subsurface Investigation of Suspected Petroleum Contamination*, prepared by Griffin. The work plan was approved by the VTDEC with the provision that the water samples would be analyzed for total petroleum hydrocarbon (TPH) in addition to the proposed analyses for benzene, toluene, ethylbenzene and xylene (BTEX) compounds.

II. SITE BACKGROUND

Vermont Plastics is located along the north side of Graves Road in Montpelier, Vermont, approximately 700 feet west of the intersection of Route 2 and Graves Road (see Site Location Map in Appendix A). Topography at the site generally flat. The property is bounded to the south by Graves road and on the north by railroad tracks and Route 2. To the northwest, the site is bounded by an unnamed tributary to the Winooski River. The Winooski River flows northwesterly approximately 400 feet to the south of the property.

No supply well exists on the Vermont Plastics property. The area is serviced by municipal water and sanitary sewer systems. Stormwater drains off the property through a storm sewer. The site is underlain by recent alluvial sands and gravels according to *the Surficial Geologic Map of Vermont* (Ref. 1). The bedrock underlying the site is mapped as the Moretown Member of the Missisquoi Formation. The Moretown Member of the Missisquoi Formation consists of interbedded greenish quartz-sericite-chlorite phyllite and schist with minor carbonaceous phyllite (Ref. 2). No bedrock exposures were observed on Vermont Plastics property or adjacent properties.

The suspected sources of petroleum contamination at the site are two 4,000-gallon, single-walled, steel, No. 2 fuel oil underground storage tanks (USTs) which were removed from the site on August 20, 1996. The tanks were replaced by a single, 3,000-gallon UST. Petroleum contaminated soils identified during the tank pull were replaced in the tank pit after it was determined that there was no practical way at the time to excavate all the contaminated soils without disturbing the adjacent utilities.

III. INVESTIGATIVE PROCEDURES

To further define the extent of subsurface petroleum contamination in the area of Vermont Plastics, the following additional investigative tasks were undertaken as per the November 3, 1996 Work Plan: installation of four monitoring wells; site survey; determination of groundwater flow direction; groundwater sampling and analyses for petroleum-related constituents; and an evaluation of sensitive receptors.

A. Monitoring Well Installation

On December 10 and 11, 1996, four shallow monitoring wells were installed at the site (see Site Map in Appendix A). The boreholes were installed utilizing hollow-stem auger drilling methods. Green Mountain Boring of East Barre, Vermont, installed the wells under the direct supervision of a Griffin geologist. During borehole advancement, two-foot split spoon samples were collected from approximately every five feet. Soils were screened for hydrocarbon vapors using an HNu™ Model HW-101 portable photoionization detector (PID) using the Griffin Jar/Polyethylene Bag Headspace Screening Protocol, which conforms to state and industry standards. Soil characteristics and contaminant concentrations were recorded by the geologist in detailed well logs which are presented in Appendix B. MW1 and MW4 were installed south of the tank pit in two potential downgradient directions from the former tank pit. MW2 was installed as close as possible to the former tank pit. Utilities and the replacement tank prohibited the installation of the well any closer than 20 feet from the pit. MW3 was installed in the presumed upgradient direction, east of the tank area.

Monitoring well logs are included in Appendix B. Wells were completed with two-inch diameter Schedule 40 PVC riser and factory-slotted screened intervals (0.010-inch slots). A silica sand pack was installed in the annular space surrounding the screened interval. The sand pack was brought to a level a minimum of 1.5 feet above the top of the screened interval. In wells MW1 and MW3, the formation collapsed during removal of the augers, prohibiting installation of a bentonite seal directly above the sand pack. Each of the four wells was completed with a flush-mounted road box and secured with a compression cap.

The borehole for MW1 was completed to a depth of approximately 19 feet below grade. Groundwater was encountered at approximately 13 feet below the ground surface. The soils

encountered in the borehole consisted of gravel fill from grade to one foot and dark gray sand grading to medium brown silt with local sand and gravel from one foot to a depth of 10.9 feet. The soils from 10.9 feet to 17 feet were reddish brown, mottled sand which graded to gravel with a little sand and silt. The well was completed with a 10-foot screened interval from 9 to 19 feet below grade. The VOCs detected in the headspace of soil samples collected from this borehole ranged in concentration from 5.4 to 66 ppm. The 66 ppm reading was from a sample collected just above the water table. A petroleum odor and staining were observed at a depth of 15.3 feet in this borehole.

The soils encountered in MW2 consisted of dark brown silt with some gravel from grade to a depth of one foot below grade. Medium brown micaceous silt with a trace of sand was encountered from approximately one foot to a depth of 5.3 feet below grade. Yellowish-brown, grading to gray, fine, silty, micaceous sand was encountered from 5.3 feet to 12 feet below grade, grading to black, medium-grained sand at 17 feet. Groundwater was encountered at an approximate depth of 13 feet below ground surface. Petroleum odors and petroleum staining were observed in the samples collected from 10 to 12 feet and 15 to 17 feet below grade. PID readings in the soil sample headspaces ranged from 8.6 to 140 ppm, with the 140 ppm reading from the sample collected at 15 to 17 feet. MW2 was drilled to a depth of 19 feet below grade and completed with a ten-foot screened interval from approximately 8 feet to 18 feet below grade.

The borehole for MW3 was completed to a depth of approximately 20 feet below grade. Groundwater was encountered at approximately 13 feet below the ground surface. The soils encountered in the borehole consisted of gravel fill from grade to one foot. Dark yellowish-brown fine sand with some silt was encountered from one foot to 10.2 feet below grade. Medium brown, iron-stained, medium-grained sand with some gravel, grading to coarse sand and gravel with a little silt was encountered from 10.2 feet to 17 feet below grade. The well was completed with a 10-foot screened interval from 10 to 20 feet below grade. No VOCs were detected in soil samples collected from this borehole. A petroleum odor was observed in soils collected from 15 to 17 feet, and a sheen was observed on the water from this sample.

The soils encountered in MW4 consisted of yellowish-brown, silt with some fine sand, grading to gray, fine sand with a little silt from 5 to 11.6 feet below grade. Greenish-gray, grading to black and rust-colored gravel was encountered from approximately 11.6 to 17 feet below grade. A petroleum odor was noted in each sample collected from this borehole. VOC headspace readings ranged from 100 ppm in the sample from five to seven feet to 200 ppm in the samples collected from 10 to 12 feet and 15 to 17 feet below grade. MW4 was completed to a depth of 19 feet. Groundwater was encountered at an approximate depth of 13 feet below ground surface. MW4 was completed with a ten-foot screened interval from approximately 9 feet to 19 feet below grade.

APPENDIX B

Monitoring Well Logs

The concentration of xylenes detected in MW-4 was above the Vermont Groundwater Enforcement Standards (VGES) for this constituent. It should be noted that sample-specific detection limits for benzene, chlorobenzene, and MTBE in MW1, MW2, and MW4 were above their respective applicable groundwater standards due to the elevated levels of contaminants in these samples. Thus, there is the potential that these compounds could have been present at concentrations above their respective standards.

D. Stockpiled Soil

Petroleum-contaminated soils which resulted from borehole advancement to install monitoring wells MW2 and MW4 in December of 1996 are stockpiled and polyencapsulated on site near the eastern corner of the building. The volume of stockpiled soils is estimated to be approximately one cubic yard.

IV. EVALUATION OF POTENTIALLY SENSITIVE RECEPTORS

The following potentially sensitive receptors in the vicinity of the Vermont Plastics site were identified:

- the Vermont Plastics building,
- the Winooski River, located within 400 feet to the south.

Risks of vapor impact to the Vermont Plastics building was determined to be negligible, given that the building has no basement and given the generally low volatility of fuel oil constituents. Given the significant distance from the site to the Winooski River and the relatively low source strength of fuel oil constituents, the current risks posed to this surface water body are likely to be minimal.

V. CONCLUSIONS

Based upon the results of the above investigative tasks, Griffin presents the following conclusions:

1) A product sheen was detected in each of the four on-site monitoring wells.

2) Dissolved petroleum contamination was detected at relatively low levels in three of the on-site wells; the concentration of xylenes in MW4 exceeded the VGES. It is expected that dissolved petroleum compound concentrations will decrease over time with the progressive action of natural mitigative processes, including biodegradation, dispersion, and dilution.

3) Risks posed to potentially sensitive receptors in the vicinity of the Vermont Plastics building appear minimal, based on currently available data.

4) A small amount of petroleum-contaminated soils generated in the borehole advancement for MW2 and MW4 was stockpiled and polyencapsulated on site.

VI. RECOMMENDATIONS

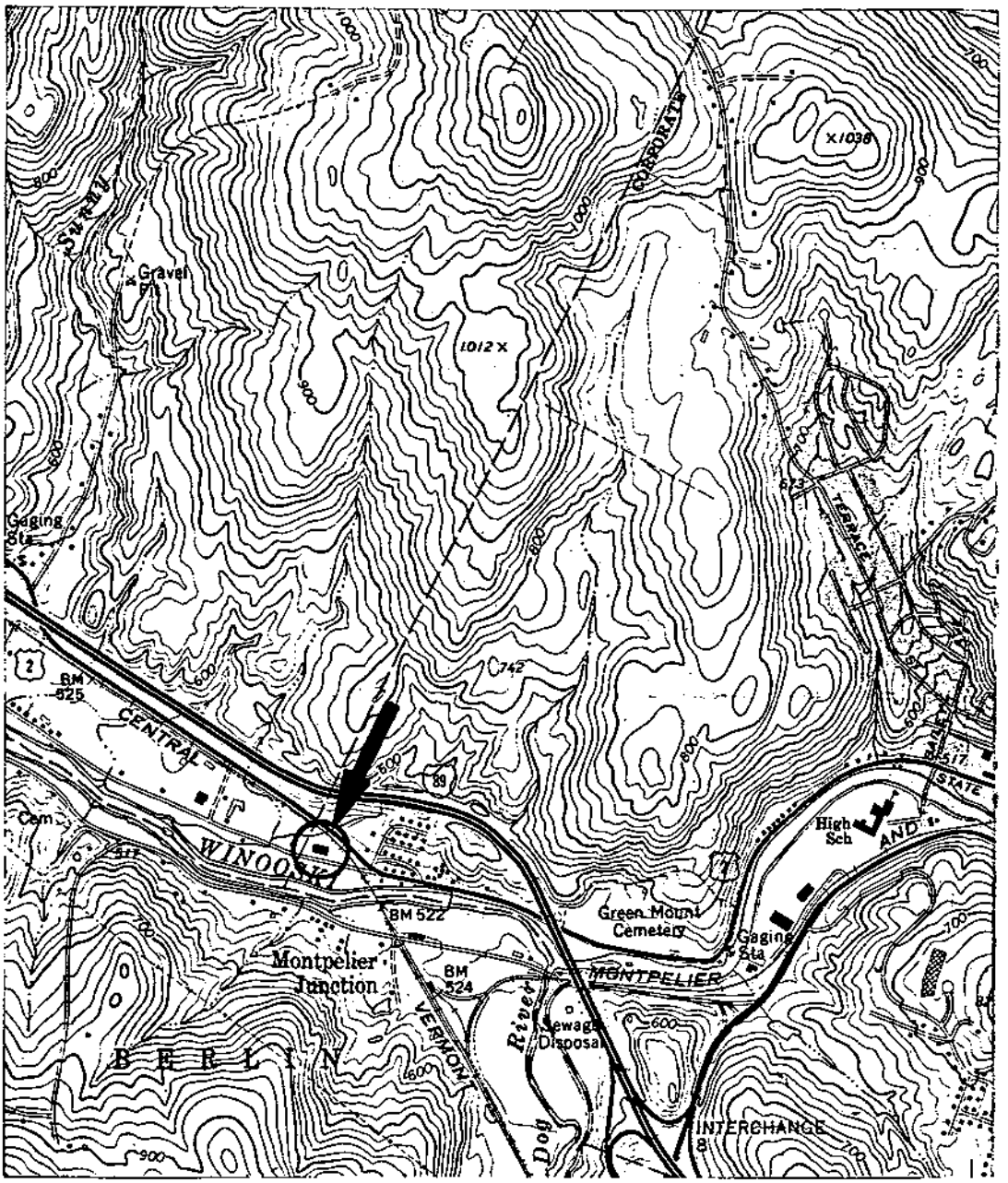
Based upon the above conclusions, Griffin offers the following recommendations:

1) To track migration of subsurface petroleum constituents at the site and document expected reductions in contaminant concentrations, groundwater from on-site wells should be sampled and analyzed once more in late summer. Samples should be analyzed by EPA Method 8020 for presence of petroleum-related constituents. If the groundwater results are less than the VGES, Griffin will recommend closure, provided that the stockpiled soils are also clean.

2) Polyencapsulated petroleum-contaminated soils on the property should be screened with a PID on an annual basis to track expected decreases in VOC concentrations with the progressive action of natural degradative processes including biodegradation and volatilization.

APPENDIX A

Site Maps



JOB #: 11964952
SOURCE: USGS- MONTPELIER, VERMONT QUADRANGLE

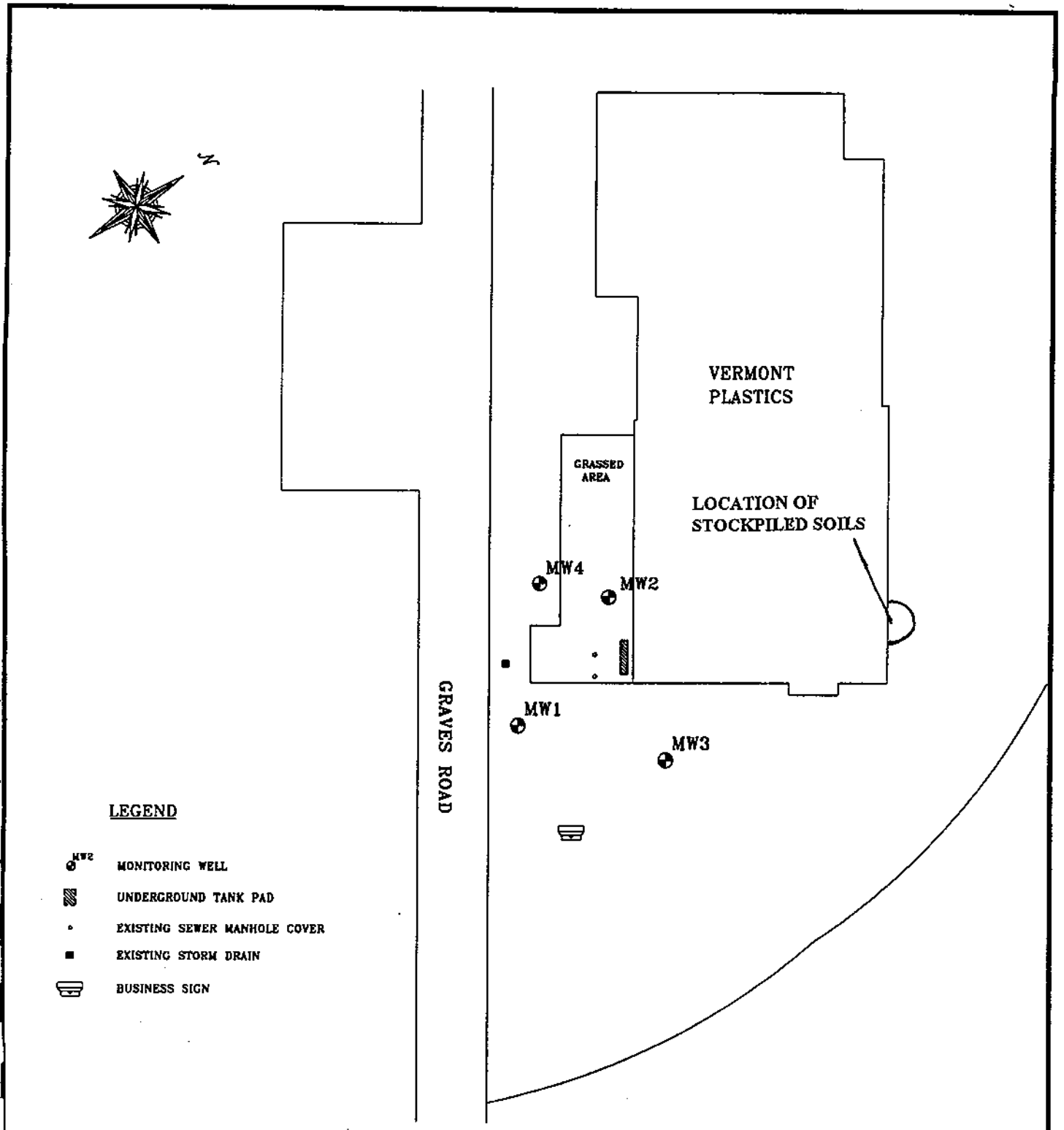
GRIFFIN INTERNATIONAL INC

VERMONT PLASTICS

MONTPELIER, VERMONT

SITE LOCATION MAP

DATE: 12/27/96	DWG.#:1	SCALE: 1:24000	DRN.:SB	APP.:TK



JOB #: 11964952
SAMPLE DATE:

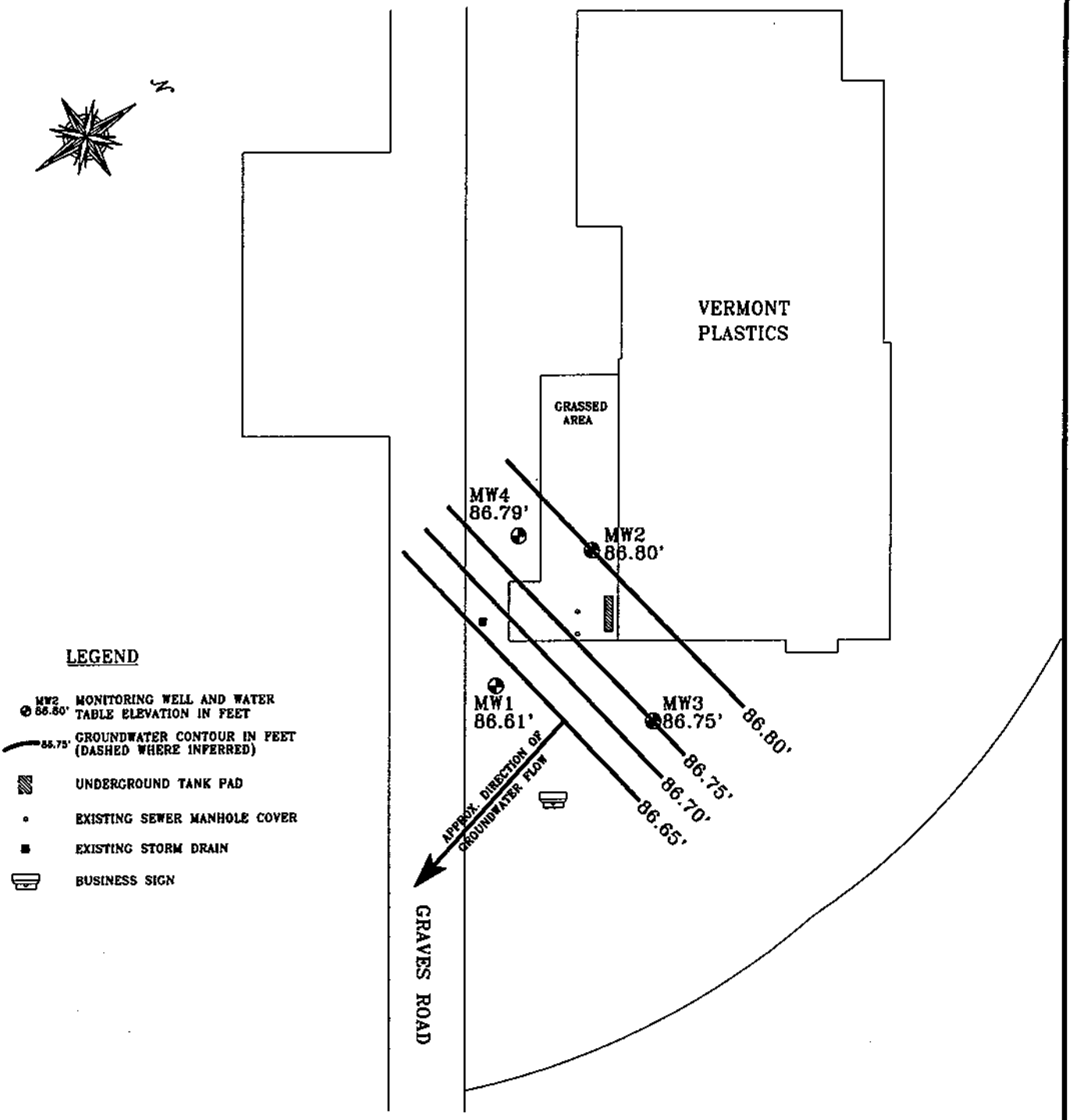
GRIFFIN INTERNATIONAL INC

VERMONT PLASTICS

MONTPELIER, VERMONT

SITE MAP

DATE: 12/27/96	DWG.#:2	SCALE: 1"=60'	DRN.:SB	APP.:TK



JOB #: 11964952
MEASUREMENT DATE: 12/19/96

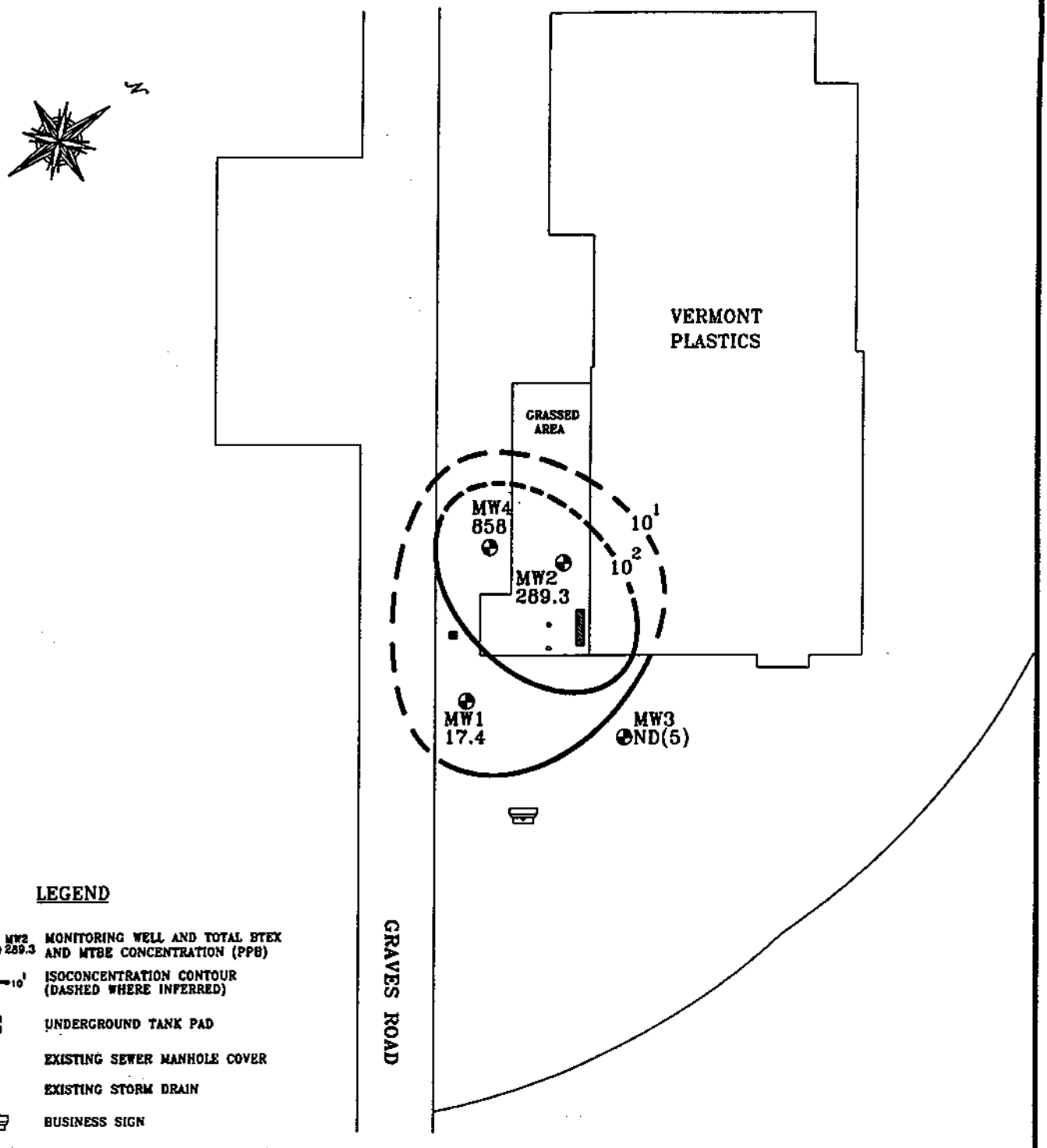
GRIFFIN INTERNATIONAL INC

VERMONT PLASTICS

MONTPELIER, VERMONT

GROUNDWATER CONTOUR MAP

DATE: 12/27/96	DWG.#:3	SCALE: 1"=60'	DRN.:SB	APP.:TK



LEGEND

- MW2 289.3 — MONITORING WELL AND TOTAL BTEX AND MTBE CONCENTRATION (PPB)
- 10^1 — ISOCONCENTRATION CONTOUR (DASHED WHERE INFERRED)
- UNDERGROUND TANK PAD
- EXISTING SEWER MANHOLE COVER
- EXISTING STORM DRAIN
- BUSINESS SIGN

JOB #: 11964952
SAMPLE DATE: 12/19/9

GRIFFIN INTERNATIONAL INC

VERMONT PLASTICS

MONTPELIER, VERMONT

CONTAMINANT DISTRIBUTION MAP

DATE: 2/6/97	DWG.#: 4	SCALE: 1"=60'	DRN.:SB	APP.:TK

APPENDIX B

Monitoring Well Logs

PROJECT VERMONT PLASTICS

LOCATION MONTPELIER, VERMONT

DATE DRILLED 12/10/96 TOTAL DEPTH OF HOLE 19.5'

DIAMETER 4.25"

SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

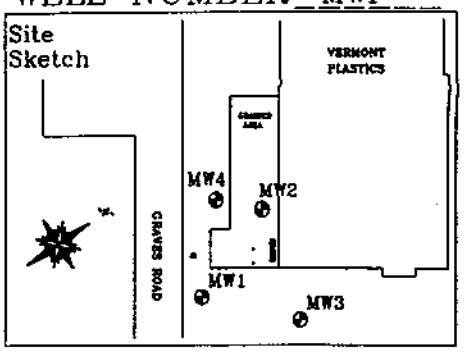
CASING DIA. 2" LENGTH 8.5' TYPE sch 40 pvc

DRILLING CO. GMB DRILLING METHOD HSA

DRILLER R. GARNEAU LOG BY T. KELLY

WELL NUMBER MW1

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE			0
1				Gravel fill.	1
2		BENTONITE			2
3		NATIVE BACKFILL	2'–5' 10 ppm	Moist, dark gray, medium SAND with some gravel and silt.	3
4					4
5					5
6		WELL RISER	5'–7'– 4/4/6/6	Moist, medium brown SILT, with a little fine to medium sand and gravel.	6
7					7
8					8
9					9
10		SAND PACK			10
11			10'–12'– 6/9/9/9 5.4 ppm	Moist, medium brown SILT, with a little fine to medium silt and gravel grading to fine sand, micaceous.	11
12				100% moist, reddish brown, fine SAND, trace mica.	12
13				13.01' WATER TABLE	13
14		WELL SCREEN			14
15					15
16			15'–17'– 6/17/41/31 66 ppm	Wet, green, rust and black, fine to medium GRAVEL with a little sand and silt, clasts are lithic, petroleum stain and odor @ 15.3'.	16
17					17
18		BOTTOM CAP			18
19					19
20		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 19.2' END OF EXPLORATION AT 19.5'	20
21					21
22					22
23					23
24					24
25					25

WELL NUMBER MW2

PROJECT VERMONT PLASTICS

LOCATION MONTPELIER, VERMONT

DATE DRILLED 12/10/96 TOTAL DEPTH OF HOLE 19.0'

DIAMETER 4.25"

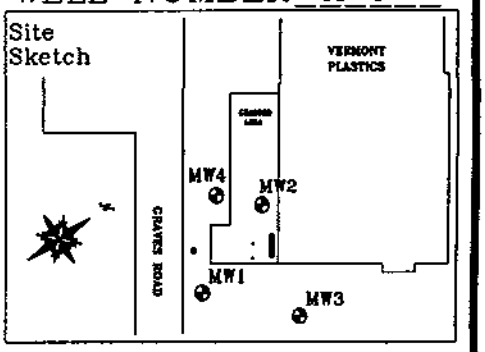
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 7.5' TYPE sch 40 pvc

DRILLING CO. GMB DRILLING METHOD HSA

DRILLER R. GARNEAU LOG BY T. KELLY

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP			0
1		CONCRETE		Dark brown SILT with gravel, topsoil.	1
2		BENTONITE			2
3		NATIVE BACKFILL	0'–5' 17 ppm	Moist, medium brown, micaceous SILT with trace sand.	3
4					4
5				Same as above.	5
6		WELL RISER	5'–7'– 2/2/2/4 8.6 ppm	Wet, yellowish brown, fine, silty, micaceous SAND.	6
7					7
8					8
9					9
10		SAND PACK	10'–12'– 1/2/4/5 124 ppm	Wet, gray, fine, silty, micaceous SAND, petroleum odor.	10
11					11
12					12
13				13.0' WATER TABLE ▼	13
14		WELL SCREEN			14
15					15
16			15'–17'– 4/9/1/7 140 ppm	Wet, black, medium SAND with a little silt and gravel, petroleum odor.	16
17		BOTTOM CAP			17
18					18
19					19
20		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 18.2' END OF EXPLORATION AT 19.0'	20
21					21
22					22
23					23
24					24
25					25

PROJECT VERMONT PLASTICS

LOCATION MONTPELIER, VERMONT

DATE DRILLED 12/10/96 TOTAL DEPTH OF HOLE 20.0'

DIAMETER 4.25"

SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

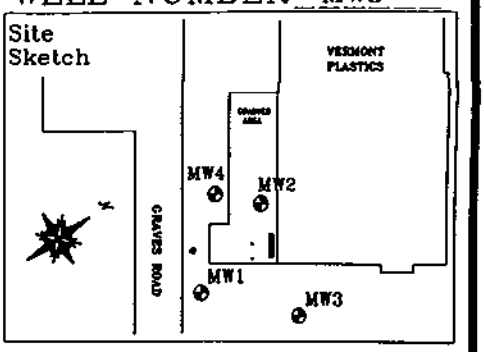
CASING DIA. 2" LENGTH 9.5' TYPE sch 40 pvc

DRILLING CO. GMB DRILLING METHOD HSA

DRILLER R. GARNEAU LOG BY T. KELLY

WELL NUMBER MW3

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE		Gravel fill.	0
1–5		NATIVE BACKFILL BENTONITE WELL RISER			1–5
5–8		NATIVE BACKFILL	5'–7'– 3/4/4/4 5.4 ppm	Moist, dark yellowish brown, fine SAND with some silt.	5–8
8–10					8–10
10–13		SAND PACK	10'–12'– 12/31/41/44 4.7 ppm	Moist, medium brown, iron stained, medium SAND with some lithic, quartz gravel, trace mica.	10–13
13				13.0' WATER TABLE ▼	13
13–15					13–15
15–20		WELL SCREEN BOTTOM CAP	15'–17'– 4/9/10/11 32 ppm	Wet, dark yellowish brown, coarse SAND and GRAVEL, lithic and quartz grains, little silt, slight petroleum odor, sheen on water.	15–20
20		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 20.0' END OF EXPLORATION AT 20.0'	20
20–25					20–25

WELL NUMBER MW4

PROJECT VERMONT PLASTICS

LOCATION MONTPELIER, VERMONT

DATE DRILLED 12/10/96 TOTAL DEPTH OF HOLE 19.0'

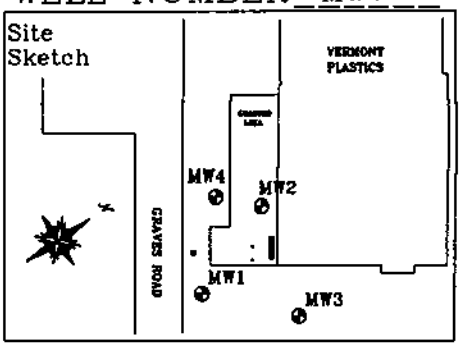
DIAMETER 4.25"

SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 8.5' TYPE sch 40 pvc

DRILLING CO. GMB DRILLING METHOD HSA

DRILLER R. GARNEAU LOG BY T. KELLY



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE			0
5		NATIVE BACKFILL WELL RISER			5
6		BENTONITE	5'–7'– 8/5/3/5 100 ppm	Moist, yellowish brown, grading to gray, micaceous SILT with some fine sand, slight petroleum odor.	6
10		SAND PACK	10'–12'– 5/5/5.4 200 ppm	Gray, micaceous fine SAND with a little silt.	10
12				Moist, greenish gray, fine to medium GRAVEL with coarse sand and a little silt, petroleum odor.	12
13				13.0' WATER TABLE ▼	13
14		WELL SCREEN			14
15			15'–17'– 5/6/8/11 200 ppm	Moist, black grading to strong brown, fine to medium GRAVEL with coarse sand and a little silt, petroleum odor.	15
18		BOTTOM CAP			18
19		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 19.0' END OF EXPLORATION AT 19.0'	19
25					25

APPENDIX C

Liquid Level Data

Liquid Level Monitoring Data
Vermont Plastics
Montpelier, Vermont

12/19/96

Well	Top of Casing Elevation	Depth To Product	Depth To Water	Water Table Elevation
MW1	99.09	NA	12.48	86.61
MW2	100.00	NA	13.2	86.80
MW3	99.36	NA	12.61	86.75
MW4	99.20	NA	12.41	86.79

all units in feet

4952wtlv.xls

APPENDIX D

Groundwater Quality Data

Summary of Groundwater Quality Data, Vermont Plastics, Montpelier, VT

PARAMETER	12-19-96 and 1-13-97					VGES*
	MW1	MW2	MW3	MW4	Trip Bl.	
Benzene	ND(10)	ND(50)	ND(5)	ND(200)	ND(1)	5
Chlorobenzene	ND(10)	ND(50)	ND(5)	ND(200)	ND(1)	100
1,2-DCB	ND(10)	ND(50)	ND(5)	ND(200)	ND(1)	600
1,3-DCB	ND(10)	ND(50)	ND(5)	ND(200)	ND(1)	600
1,4-DCB	ND(10)	ND(50)	ND(5)	ND(200)	ND(1)	75
Ethylbenzene	**17.4**	**94.3**	ND(5)	**416.0**	ND(1)	680
Toluene	ND(10)	ND(50)	ND(5)	ND(200)	**1.1**	1000
Xylenes	ND(10)	**195.0**	ND(5)	**442.0**	ND(1)	400
Total BTEX	**17.4**	**289.3**	ND(5)	**858.0**	**1.1**	
MTBE	ND(100)	ND(500)	ND(50)	ND(2000)	ND(10)	40[a]
BTEX+MTBE	**17.4**	**289.3**	ND(5)	**858.0**	**1.1**	
TPH (mg/l)	**282.0**	**61.3**	**3.8**	**976.0**	ND(0.8)	---

Detections are **BOLD**
Values greater than the VGES are shaded
All values reported in ug/l (ppb) unless otherwise noted
NA - Not Analyzed
ND(1000) - Not Detected (Detection Limit)
a: Vermont Health Advisory Limit (HAL)
* Vermont Groundwater Enforcement Standards.
Source: VTDEC Groundwater Protection Rule and Strategy.

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: VT Plastics
REPORT DATE: January 2, 1997
DATE SAMPLED: December 19, 1996

PROJECT CODE: GIVT1403
REF.#: 98,178 - 98,183

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.

Laboratory Services

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

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: VT Plastics
CLIENT PROJ. #: 11964952

DATE RECEIVED: December 20, 1996
REPORT DATE: January 2, 1997
PROJECT CODE: GIVT1403

Ref. #:	98,178	98,179	98,180	98,181	98,182
Site:	Trip Blank	MW1	Duplicate MW1	MW4	MW3
Date Sampled:	12/19/96	12/19/96	12/19/96	12/19/96	12/19/96
Time Sampled:	7:40	10:47	10:47	10:56	11:13
Sampler:	R. Higgins	R. Higgins	R. Higgins	R. Higgins	R. Higgins
Date Analyzed:	12/27/96	12/31/96	1/2/97	12/31/96	1/2/97
UIP Count:	0	>10	>10	>10	>10
Dil. Factor (%):	100	10	10	0.5	20
Surr % Rec. (%):	105	113	105	117	111
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)
Benzene	<1	<10	<10	<200	<5
Chlorobenzene	<1	<10	<10	<200	<5
1,2-Dichlorobenzene	<1	<10	<10	<200	<5
1,3-Dichlorobenzene	<1	<10	<10	<200	<5
1,4-Dichlorobenzene	<1	<10	<10	<200	<5
Ethylbenzene	<1	17.4	15.3	416.	<5
Toluene	1.1	<10	<10	<200	<5
Xylenes	<1	<10	<10	442.	<5
MTBE	<10	<100	<100	<2000	<50

Ref. #:	98,183
Site:	MW2
Date Sampled:	12/19/96
Time Sampled:	11:24
Sampler:	R. Higgins
Date Analyzed:	12/30/96
UIP Count:	>10
Dil. Factor (%):	2
Surr % Rec. (%):	114
Parameter	Conc. (ug/L)
Benzene	<50
Chlorobenzene	<50
1,2-Dichlorobenzene	<50
1,3-Dichlorobenzene	<50
1,4-Dichlorobenzene	<50
Ethylbenzene	94.3
Toluene	<50
Xylenes	195.
MTBE	<500

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

ENDYNE, INC.

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

20551

CHAIN-OF-CUSTODY RECORD

11960192

Project Name: VT PLASTICS Site Location: MONTPELIER, VT	Reporting Address: GRIFFIN	Billing Address:
Endyne Project Number: GJVT1403	Company: Contact Name/Phone #: T. KELLY	Sampler Name: R. HIGGINS Phone #:

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 12/19/96	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
98,178	TRIP BLANK	H_2O	✓		7:40	2	40ml G		602	HCl	
98,179	MW 1				10:47						
98,180	Duplicate MW1				10:47						
98,181	MW4				10:56						
98,182	MW3				11:13						
98,183	MW2				11:24						

Relinquished by: Signature [signature]	Received by: Signature B. Conroy	Date/Time 12-20-96 7:00
Relinquished by: Signature B. Conroy	Received by: Signature Lori M. Chambers	Date/Time

New York State Project: Yes ____ No ✓

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	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	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):										

ENDYNE, INC.

Laboratory Services

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

TMC

REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International
PROJECT NAME: VT Plastics/11964952
DATE REPORTED: January 21, 1997
DATE SAMPLED: January 13, 1997

PROJECT CODE: GIVP1697
REF. #: 98,760 - 98,764

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.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

ENDYNE, INC.

Laboratory Services

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Williston, Vermont 05495
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LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: January 21, 1997
CLIENT: Griffin International
PROJECT: VT Plastics/11964952
PROJECT CODE: GIVP1697
COLLECTED BY: R. Higgins
DATE SAMPLED: January 13, 1997
DATE RECEIVED: January 14, 1997

Reference #	Sample ID	Concentration (mg/L)[1]
98,760	Trip Blank; 7:20	ND[2]
98,761	MW3; 9:57	3.77
98,762	MW4; 10:18	976.
98,763	MW1; 10:31	282.
98,764	MW2; 10:42	61.3

Notes:

1 Method detection limit is 0.8 mg/L.
2 None Detected

ENDYNE, INC.

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20571

CHAIN-OF-CUSTODY RECORD

11964952

Project Name: VT PLASTICS Site Location: MONTPELIER	Reporting Address: GRIFFIN	Billing Address:
Endyne Project Number: GIVP 1697	Company: Contact Name/Phone #: T. KELLY	Sampler Name: R. HAWLEY Phone #:

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 1/13/97	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Runs
98,760	TRIP BLANK	H_2O	✓	7:20	~~9:09~~	2	40ml G	TPH	8015 Mod	HCl	
98,761	MW3				9:57						
98,762	MW4				10:19						
98,763	MW1				10:31						
98,764	MW2				10:42						

Relinquished by: Signature	Received by: Signature	Date/Time 1-14-97 9:30 am
Relinquished by: Signature	Received by: Signature	Date/Time 1-14-97 9:55 am

New York State Project: Yes ____ No ____

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	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	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):										

TOTAL P.06