



SEP 8 10 25 AM '98

WASTE MANAGEMENT
DIVISION

September 4, 1998

Mr. Bob Butler
Sites Management Section
VTDEC WMD
103 South Main St./ West Bldg.
Waterbury, VT 05671-0404

RE: Investigation of Suspected Subsurface Petroleum Contamination at Grand Union
Distribution Center, Hartford, Vermont (VTDEC Site #98-2400)

Dear Mr. Butler:

Enclosed please find the September 1998 report titled *Initial Investigation of Suspected Subsurface Petroleum Contamination at Grand Union Distribution Center*. Mr. Bruce McVey of Grand Union requested that a copy be forwarded to you for review. Please do not hesitate to call, if you have any questions or comments.

Sincerely,

Robert Higgins
Engineer

Enc.

cc: Mr. Bruce McVey, Grand Union (w/out Enc.)
GI #69841285

**INITIAL INVESTIGATION OF SUBSURFACE
SUSPECTED PETROLEUM CONTAMINATION AT
GRAND UNION DISTRIBUTION CENTER**

SEPTEMBER 2, 1998

Site Location:

**Grand Union Distribution Center
61 Old River Road
Hartford, VT
VTDEC SITE #98-2400
GI Project # 69841285**

Prepared For:

**Grand Union
823 Main Street
Clifton Park, NY 12065
(518) 877-0772**

Prepared By:



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

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I. INTRODUCTION

This report summarizes the initial investigation of suspected subsurface petroleum contamination at the Former Grand Union Distribution Center located at 61 Old River Road in Hartford, VT (see location map in Appendix A). This investigation was conducted by Griffin International, Inc. (Griffin) for Grand Union to address petroleum contamination detected during the closure of three underground storage tanks (USTs) at the site in June of 1998. Work at the site was conducted in accordance with the June 19, 1998 Work Plan and Cost Estimate prepared by Griffin. The Work Plan was implemented through the Vermont Department of Environmental Conservation (VTDEC) Site Investigation Expressway Notification process. Approval to proceed with this plan was given in a letter dated June 22, 1998 from Mr. Bob Butler of the VTDEC to Mr. Bruce McVey of Grand Union. The site (VTDEC Site #98-2400) is owned by Grand Union of Clifton Park, NY.

Work conducted at the site included the installation of five groundwater monitoring wells and one soil boring, and the collection and laboratory analysis of groundwater and soil samples from the wells and boring. In addition, a sensitive receptor risk assessment was conducted to assess the risk that subsurface petroleum contamination at the site may pose to potentially sensitive receptors identified in the site vicinity.

II. SITE BACKGROUND

A. Site History

Low levels of subsurface petroleum contamination were detected on June 8, 1998 at this site during the permanent closure of two (2) diesel USTs and one (1) heating oil UST. The diesel USTs (UST #1 and UST #2) were located near the maintenance garage on the southeastern border of the property. The fuel oil UST (UST #3) was located near the water tower approximately 2000 feet to the northwest of the maintenance garage (see Site Maps A and B included in Appendix A). Total volatile organic compounds (VOCs) were detected in soils in the vicinity of each of the three USTs slightly in excess of the VTDEC UST closure soil standard (i.e. 20 parts per million [ppm]) using an HNu™ systems Model PI 101 photoionization detector (PID). The contaminated soils were placed back in the bottom of the tank pit and covered with approximately 6 to 8 feet of clean fill (Ref. 2).

Grand Union elected to complete an initial site investigation under the VTDEC Site Investigation Expressway Program to characterize the extent and degree of petroleum contamination. On June 9, 1998 Grand Union retained the services of Griffin to conduct this investigation.

B. Site Description

The Grand Union Distribution Center is located on the north side of Old River Road, approximately one mile west of White River Junction, in the Town of Hartford, Vermont. The

area consists of a mix of industrial, commercial, and residential properties. The subject property consists of 24.88 acres of land. Access to the subject property is restricted on all sides by a chain link fence and a gate at the entry way.

There are three buildings at the subject property with a total floor space of approximately 220,000 square feet: the main warehouse building with attached office area (center of the property), a maintenance garage (eastern side of the property), and a pump house (north side of the property). A 400,000-gallon water tank is situated directly adjacent to the pump house for use in the warehouse facility's sprinkler system.

The subject property was used as a food distribution facility from 1957 until 1998. Food products were delivered to the facility via truck and rail service, and then transported off-site by truck to grocery stores in the New England region. Currently, the warehouse facility is vacant and has been so since February 1998. The only occupant of the building at this time is Green Mountain Economic Development Corporation which utilizes some office space on the first floor of the main building. Green Mountain Economic Development Corp. has been operating at the subject property since June 1997. The area is served by municipal water and sewer systems (Ref. 1).

The Grand Union distribution facility is located on a relatively level site directly south of the White River. This river flows to the east into the Connecticut River approximately two miles east of the property. Land on the northern border of the property slopes downward toward the White River. As mentioned above, three buildings and a water tank exist at the subject property. A large paved parking and driveway area exists between the warehouse and the maintenance garage. Also, paved surfaces exist on the west and north sides of the warehouse and surround the maintenance garage on all sides. Numerous truck delivery bays are situated on the east and west sides of the warehouse. A railroad spur exists on the west side of the subject property and enters the warehouse through a bay located at the northwest corner of the building. Open fields and wooded areas were evident along the western portion of the property. The ground elevation at the property is approximately 380 feet above sea level.

C. Site Geologic Setting

According to the Surficial Geologic Map of Vermont (Ref. 3), the site is underlain by silt and silty clay. Soils encountered during the UST closure and during monitoring well installation consisted primarily of sand and gravel overlying silt. Bedrock at the site is of the Gile Mountain Formation, which consists predominately of gray quartz-muscovite phyllite (Ref. 4).

Based on visual site inspections shallow groundwater in the vicinity of the Grand Union Distribution Center site would be expected to flow to the north and northeast toward the White River, following topographic contours.

III. INVESTIGATIVE PROCEDURES

A. Monitoring Well Installation

On July 21 and 22, 1998 five monitoring wells and one soil boring were installed by Technical Drilling Services of Leominster, Massachusetts using a hollow-stem auger drill rig. Drilling and well construction were directly supervised by a Griffin engineer. Soil samples were collected at approximately five-foot intervals in each boring using a two-foot split spoon sampler. Each soil sample was screened for VOCs using an HnuTM Model HW-101 PID. Soils were screened using the Griffin Jar/Polyethylene Bag Headspace Screening Protocol, which conforms to state and industry standards. Contaminant concentrations and soil characteristics were recorded in detailed boring logs by the supervising Griffin engineer (see the Well Logs in Appendix B).

The monitoring wells (MW-2; MW-5 through MW-8) and soil boring (SB-1), were installed to help define groundwater flow direction and gradient and the degree and extent of suspected petroleum contamination in the vicinity of the former on-site USTs. MW-2 and SB-1 were installed in the vicinity of the former diesel USTs on the eastern side of the property. MW-5 through MW-8 were installed in the vicinity of the pump house, on the northwestern side of the property. Wells were installed following the drilling scheme proposed in Griffin's June 19, 1998 Work Plan. In the work plan Griffin proposed to install source area borings first; if no petroleum contamination was identified in the soils then no well would be installed in that boring, and no other wells would be installed in the vicinity of that source area. However if petroleum contamination was evident in a source area boring then a well would be installed and additional wells would be constructed as outlined in Griffin's work plan.

MW-2 was advanced on the presumed downgradient edge of the UST #2 tank pit. No evidence of petroleum contamination, olfactory or otherwise, was identified in soils collected from this borehole. As this was the first boring to be advanced in this source area, a monitoring well was installed in the borehole to its maximum depth of 32 feet below grade. This was done in the event that contamination was encountered in the borehole for the immediately adjacent UST #1 source area and it became necessary to proceed with the installation of additional monitoring wells. SB-1 was advanced on the presumed downgradient edge of former the UST #1 tank pit. Because no evidence of petroleum contamination, olfactory or otherwise, was identified in soils collected from this borehole, no monitoring well was installed in SB-1. Because no evidence of petroleum contamination was identified in either of these source area borings, no additional borings were advanced in the vicinity of UST #1 and UST #2. The locations of the MW-2 and SB-1 are shown on Site Map A in Appendix A.

MW-5 was advanced on the presumed downgradient edge of the former UST #3 tank pit. Because low levels of petroleum contamination were detected in soils collected from this borehole, a well was constructed and additional soil borings/monitoring wells were advanced in other proposed locations for this source area. MW-6 was installed in the expected upgradient direction from the former tank pit. MW-7 and MW-8 were installed in the presumed

downgradient direction from the former tank pit. The locations of the monitoring wells are shown on Site Map B in Appendix A.

SB-1

The boring for SB-1 was advanced to 27 feet below grade, approximately 2 feet below the water table. Soils from the boring for SB-1 consisted of brown, coarse to fine sand with some silt from 5 to 7 feet below grade and from 10 to 12 feet below grade. Fine gravel with coarse to fine sand and little silt was observed from 15 to 17 feet below grade and from 20 to 22 feet below grade. Wet coarse sand was observed from 25 to 27 feet below grade. Petroleum odors were not observed in the soils from this boring. Soil samples collected for PID screening from SB-1 were non-detect (i.e. less than 1 ppm) for VOCs.

A soil sample collected from the SB-1 borehole at a depth of 25 feet below grade was submitted for laboratory analysis. This depth of sample represented the approximate depth of the regional water table in the borehole. The groundwater saturated soil sample was laboratory analyzed for BTEX (benzene, toluene, ethyl benzene, xylenes) and MTBE (methyl tertiary butyl ether) by EPA Method 602, and for total petroleum hydrocarbons (TPH) by EPA Method 8100 Modified. Laboratory report forms are presented in Appendix D. According to the laboratory results, none of the compounds targeted by either of the analyses were detected above method detection limits in the soil sample collected from SB-1.

MW-2

The boring for MW-2 was advanced to 32 feet below grade, approximately 9 feet below the water table. Soils from the boring for MW-2 consisted of brown, coarse to fine sand with silt with and few small cobbles from 5 to 7 feet below grade. Brown medium to fine sand with silt and some fine gravel was observed from 10 to 12 feet below grade. Medium gravel with coarse to fine sand was observed from 15 feet to 17 feet below grade. Medium to fine sand with little silt was observed from 20 to 22 feet below grade. Wet silt with some clay was observed from 25 to 27 feet below grade. Wet silt and sand was observed from 30 to 32 feet below grade. Petroleum odors were not observed in the soils from this boring. Soil samples collected for PID screening from MW-2 were non-detect for VOCs.

A soil sample collected from the MW-2 borehole at a depth of 23 feet below grade was submitted for laboratory analysis. This depth of sample represented the approximate depth of the regional water table in the borehole. The groundwater saturated soil sample was laboratory analyzed for BTEX and MTBE by EPA Method 602, and for TPH by EPA Method 8100 Modified. Laboratory report forms are presented in Appendix D. According to the laboratory results, none of the compounds targeted by either of the analyses were detected above method detection limits in the soil sample collected from MW-2.

MW-5

The boring for MW-5 was advanced to 25 feet below grade, approximately 4 feet below the water table. Soils from the boring for MW-5 consisted of brown medium sand from 5 to 7 feet below grade. Brown, coarse to fine gravel with coarse to fine sand and some silt was observed from 10 to 12 feet below grade. Fine silt with some fine sand was observed from 15 to 17 feet below grade. Brown medium to fine sand with some silt was observed from 20 to 22 feet below grade. Slight petroleum odors were observed only in the soil sample collected from 10 to 12 feet below grade. No elevated VOC levels were detected using the PID except for a reading of 12 ppm in the sample collected from 10 to 12 feet below grade.

MW-6

The boring for MW-6 was advanced to 25 feet below grade, approximately 3.5 feet below the water table. Soils from the boring for MW-6 consisted of brown, fine sand and silt from 5 to 7 feet below grade. There was no recovery in the spoon at the sample interval of 10 to 12 feet below grade. Coarse gravel with coarse to fine sand was observed from 15 to 17 feet below grade. Brown silt with trace clay was observed from 20 to 22 feet below grade. Petroleum odors were not observed in the soils from this boring. Soil samples collected for PID screening from MW-6 were non-detect for VOCs.

MW-7

The boring for MW-6 was advanced to 25 feet below grade, approximately 4 feet below the water table. Soils from the boring for MW-6 consisted of brown medium sand with few cobbles from 5 to 7 feet below grade. Fine gravel with coarse sand was observed from 10 to 12 feet below grade. Coarse to fine sand with silt was observed from 15 to 17 feet below grade. Medium to fine sand with some silt was observed from 20 to 22 feet below grade. Petroleum odors were not observed in the soils from this boring. Soil samples collected for PID screening from MW-7 were non-detect for VOCs.

MW-8

The boring for MW-8 was advanced to 22 feet below grade, approximately 1 foot below the water table as measured on August 4, 1998. At the time of monitoring well installation water was encountered at 16 feet below grade in the borehole for MW-8. For this reason the screened interval of MW-8 was set at 12 to 22 feet below grade. Soils from the boring for MW-8 consisted of brown, coarse to fine gravel with coarse to fine sand from 5 to 7 feet below grade. Fine gravel with coarse sand was observed from 10 to 12 feet below grade. Dense fine silt was observed from 15 to 17 feet below grade. Wet coarse sand was observed from 20 to 22 feet below grade. Petroleum odors were not observed in the soils from this boring. Soil samples collected for PID screening from MW-8 were non-detect for VOCs.

Well Construction Details

All five monitoring wells were constructed with two-inch diameter Schedule 40 PVC riser and 0.010-inch slotted screen. Each well was constructed with one ten-foot length of screened

section. The length of the riser varied depending on the depth of the well. A silica sand pack was placed around the screened portion of each well and a bentonite seal was placed above the sand pack. A second bentonite seal was placed approximately 3 feet below the ground surface to block the infiltration of surface water. Native backfill was placed in between the two bentonite seals. To complete the construction of each well, a road box was set in concrete at grade level. In addition, locking well caps were placed on the monitoring wells. Specific well construction details are displayed in the detailed well logs included in Appendix B.

B. Determination of Groundwater Flow Direction and Gradient

On August 4, 1998, depth to water measurements were taken with the use of a Keck™ interface probe in four of the five site wells (MW-5 - MW-8). These measurements were subtracted from the top of casing elevations, which were determined relative to an arbitrary datum of 100 feet at the top of the casing for MW-6, to determine the water table elevation at each of the wells. Groundwater level data are recorded in Appendix C.

As displayed on the groundwater contour map included in Appendix A, the groundwater flow direction for August 4, 1998, was estimated to be to the north-northeast at a gradient of approximately 2.4% in the vicinity of former UST #3. No free phase petroleum product was observed in any of the monitoring wells gauged on August 4, 1998.

Under this flow regime MW-5 and MW-7 are downgradient from former UST #3; MW-6 is upgradient of former UST #3; and MW-8 is cross-gradient of former UST #3.

C. Groundwater Sample Collection and Analysis

On July 30, 1998 samples of the groundwater were collected from three of the monitoring wells located in the vicinity of UST #3 (MW-8 did not contain sufficient water for sampling). The samples were analyzed per EPA Methods 602 and 8100 Modified. Laboratory report forms are presented in Appendix D.

None of the petroleum compounds targeted by EPA Method 602 were found above detection limits in any of the primary groundwater samples. All of the groundwater samples collected on July 30, 1998 were non-detect for TPHs. In addition, no unidentified peaks were detected in any of the groundwater samples.

All samples were collected according to Griffin's groundwater sampling protocol which complies with industry and state standards. Results from the analyses of the trip blank sample indicate that adequate quality assurance and control (QA/QC) were maintained during sample collection and analysis.

D. Sensitive Receptor Risk Assessment

A visual survey of the area surrounding the Grand Union Distribution Center was conducted at the time of the monitoring well installation. Based on these observations, an estimation of the

potential risk to identified receptors was made based on proximity to the source areas, groundwater flow direction, and contaminant concentration levels in subsurface soils and groundwater.

Water Supplies

According to the Hartford Town Clerks Office, the town of Hartford receives its water from a drilled well which is located in the village of Wilder, approximately 3-4 miles to the west of the site. The Grand Union Distribution Center and properties immediately surrounding the Grand Union Distribution Center are reportedly all served by this municipal water source. Due to the significant distance from the site to this municipal water source, and the negligible source area contamination present at the site, there is likely little risk posed to area drinking water by the Grand Union Distribution Center site.

Buildings in the Vicinity

The main warehouse building with attached office area, the maintenance garage, and the pump house are the only buildings located on the subject property. Each of these buildings is constructed on a slab foundation. There are no abutting properties to the north or east of the subject property since the White River borders the property in these directions. The abutting property to the west appears to be a forested, undeveloped piece of land. To the south lie several residences and one business named Country Care Mini Storage. Based on these visual observations, and the negligible source area contamination at the site, there is likely little risk posed to area buildings by the Grand Union Distribution Center site.

Surface Water

The White River is located approximately 50 feet to the northeast of the site in the vicinity of both of the UST source areas. The river is approximately 30 to 40 feet lower in elevation than the site. Based on the negligible source area contamination at the Grand Union Distribution Center site, it is not likely that the nearby White River will be adversely affected by the site.

Utility Corridors

Groundwater is found at approximately 15 to 16 feet below grade at the Grand Union Distribution Center site; this elevation is much deeper than the elevation (4 to 5 feet below grade) where utilities are typically found. In addition, there are no known underground utilities in the downgradient vicinity of either of the UST source areas, therefore, the potential for vapor migration through utility corridors is considered insignificant. Based on these facts and the negligible source strength in the vicinity of the former USTs at the Grand Union Distribution Center site, it is not likely that underground utilities are serving as a preferential pathway for dissolved contaminant or vapor phase migration at the Grand Union Distribution Center site.

Because no groundwater contamination was identified through laboratory analysis in either of the two source areas, the potential threat to nearby receptors from subsurface petroleum contamination related to former USTs #1, 2, and 3 at the Grand Union Distribution Center is considered negligible.

IV. CONCLUSIONS

Based on the initial site investigation of petroleum contamination at the Grand Union Distribution Center site, the following conclusions are offered:

1. As displayed on the groundwater contour map included in Appendix A, the regional groundwater flow direction for August 4, 1998 was estimated to be to the north-northeast at a gradient of approximately 2.4% in the vicinity of former UST #3. No free phase petroleum product was observed in any of the monitoring wells on August 4, 1998.
2. None of the compounds targeted by EPA Method 602 were found above detection limits in any of the groundwater or soil samples. In addition, no unidentified peaks were detected in any of the groundwater samples.
3. All of the groundwater and soil samples were non-detect for TPHs.
4. Petroleum contaminated soils detected during the June 8, 1998 UST closure were placed in the bottom of their respective UST excavation and covered with approximately 6 to 8 feet of clean fill material. Over time, the natural mitigative processes of biodegradation, diffusion, and volatilization are expected to continue to reduce contaminant concentrations present in subsurface soils.
5. Access to the Grand Union Distribution Center property is restricted on all sides by a chain link fence and a gate at the entry way.
6. The apparent source of contamination at the site (former USTs) has been removed.
7. There are no known receptors currently affected by subsurface petroleum contamination at the Grand Union Distribution Center facility, and none are deemed at significant risk, based on currently available data.

V. RECOMMENDATION

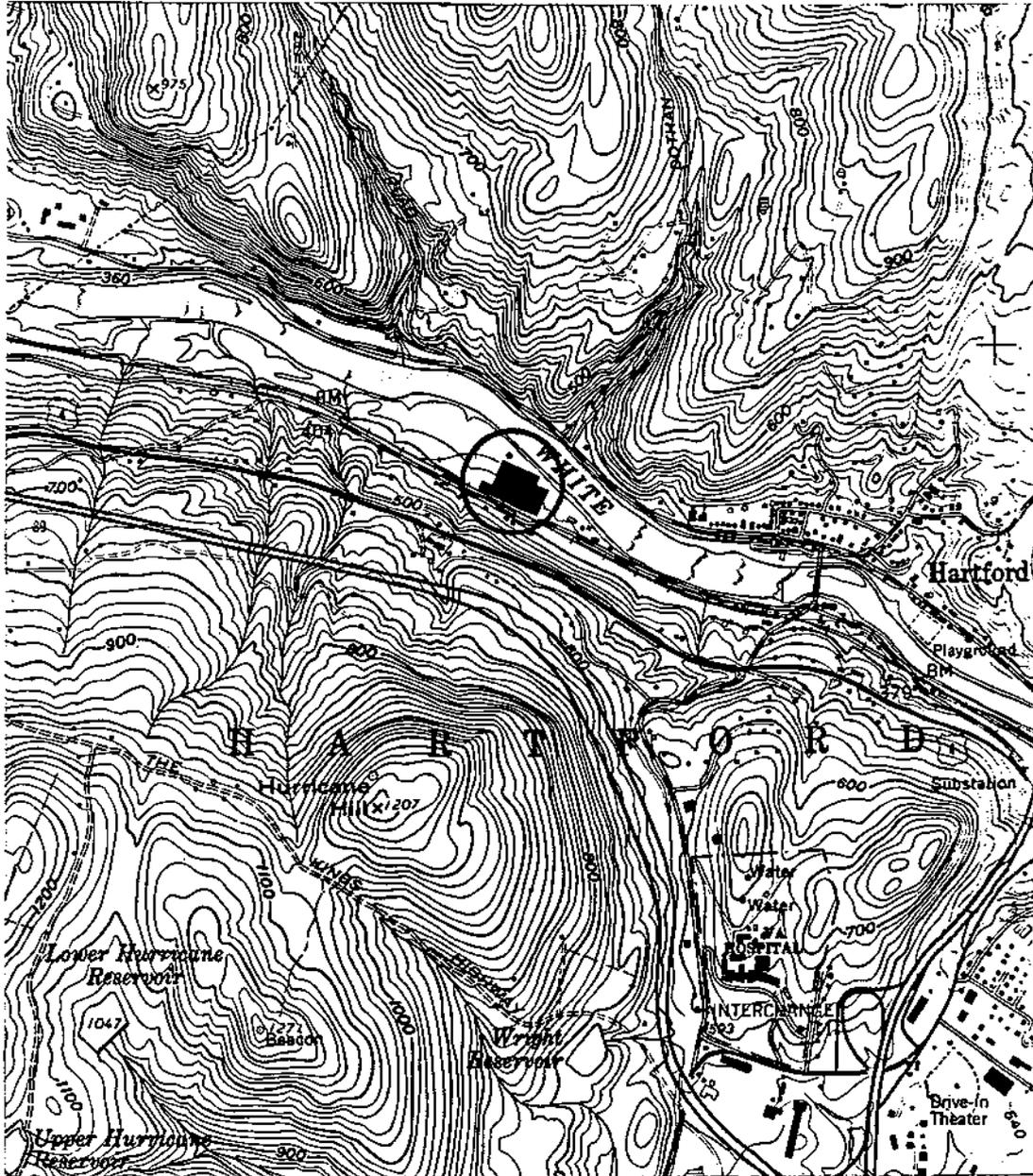
Based on the above conclusions Griffin recommends that no further investigative work be conducted at this site. Griffin recommends that this site be considered for Sites Management Activity Completed (SMAC) status and removed from the Hazardous Waste Sites List.

References

1. Hemenway, Donald, Former Director of Distribution for P&C Food Markets, May 4, 1998, telephone conversation.
2. Griffin International, Inc., June 12, 1998, UST Closure Report for Grand Union Distribution Center.
3. Doll, Charles G., ed., 1970, Surficial Geologic Map of Vermont, State of Vermont.
4. Doll, Charles G., ed., 1961, Centennial Geologic Map of Vermont, State of Vermont.

APPENDIX A

Maps



JOB #: 69841285

SOURCE: USGS- HANOVER, N.H. & WHITE RIVER JUNCTION, VERMONT QUADRANGLE



**FORMER GRAND UNION
DISTRIBUTION CENTER**
61 OLD RIVER ROAD, HARTFORD, VERMONT

SITE LOCATION MAP

DATE: 7/27/98

DWG.#:1

SCALE: 1:24000

DRN.:SB

APP.:RH

OLD RIVER ROAD

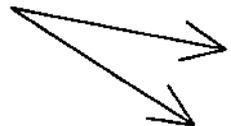


10,000 GALLON #2 FUEL OIL UST - TEMPORARILY OUT OF SERVICE

MAINTENANCE GARAGE

FUEL SHED

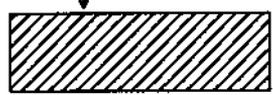
PRESUMED GROUNDWATER FLOW DIRECTION



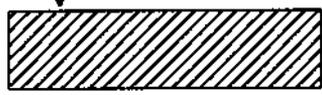
PAVEMENT

UST #1 FORMER 10,000 GALLON DIESEL UST REMOVED 6/8/98

UST #2 FORMER 10,000 GALLON DIESEL UST REMOVED 6/8/98



FUEL SHED



SB1

GRASS

MW2



APPROXIMATE 40' EMBANKMENT

LEGEND

- ⊕ SB1
- ⊕⊕ MONITORING WELL

- FENCE
- [Hatched Box] FORMER USTS
- [Cross-hatched Box] UST

- [Sunburst Symbol] BUSHES

WHITE RIVER APPROXIMATELY 30'

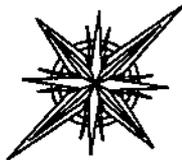
JOB #: 69841285



**FORMER GRAND UNION
DISTRIBUTION CENTER**
61 OLD RIVER ROAD, HARTFORD, VERMONT

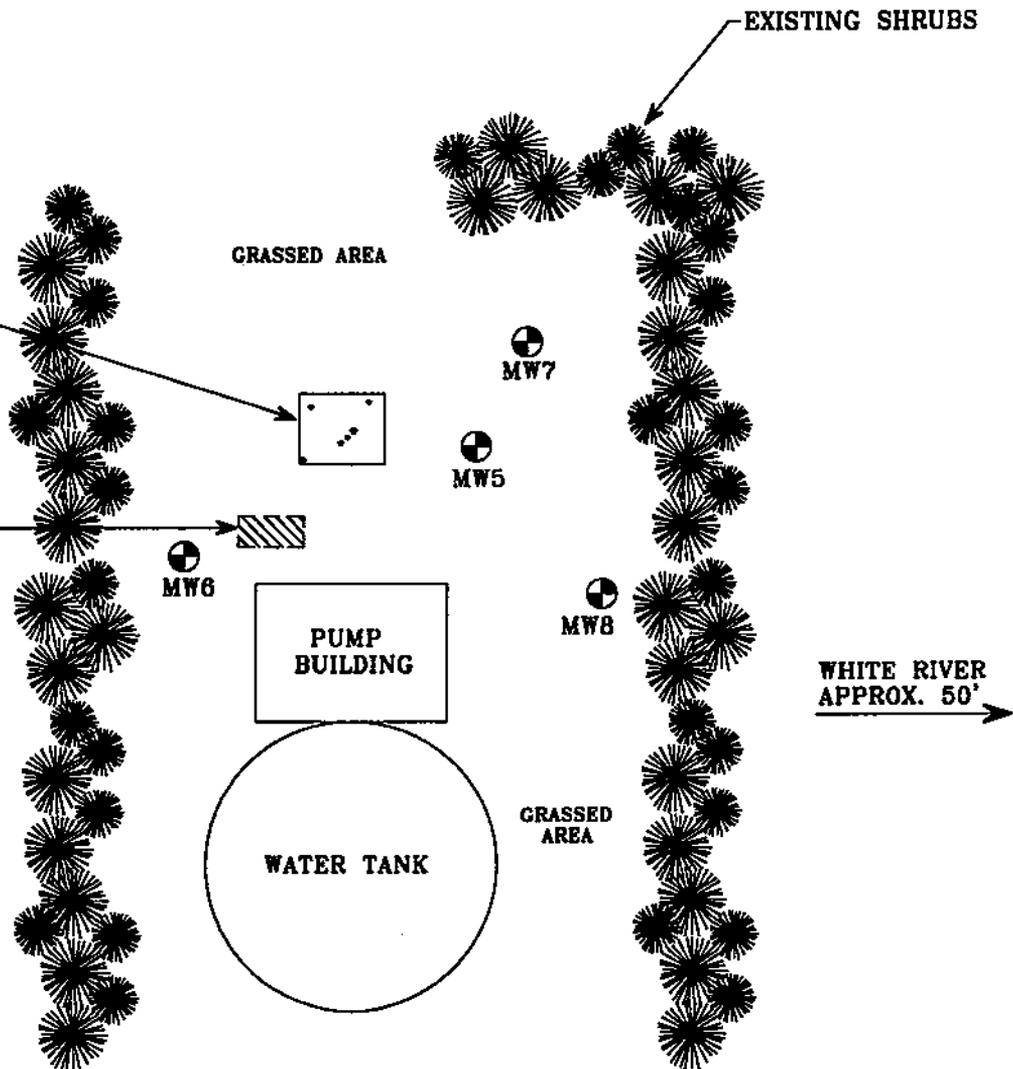
SITE MAP A

DATE: 8/14/98	DWG.#:2	SCALE: 1"=20'	DRN.:SB	APP.:RH
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EXISTING 5,000 GALLON FUEL OIL UST AND LOCATION OF FORMER 5,000 GALLON #2 FUEL OIL UST REMOVED 6/8/98.

EXISTING 1,000 GALLON FUEL OIL UST #3



LEGEND

 MW5 MONITORING WELL

JOB #: 69841285



**FORMER GRAND UNION
DISTRIBUTION CENTER**

61 OLD RIVER ROAD, HARTFORD, VERMONT

SITE MAP B

DATE: 8/14/98	DWG.#:2	SCALE: 1"=30'	DRN.:SB	APP.:RH
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APPENDIX B

Well Logs

PROJECT FORMER GRAND UNION DISTRIBUTION CENTER

LOCATION HARTFORD, VERMONT

DATE DRILLED 7/21/98 TOTAL DEPTH OF HOLE 27.0'

DIAMETER 4.25"

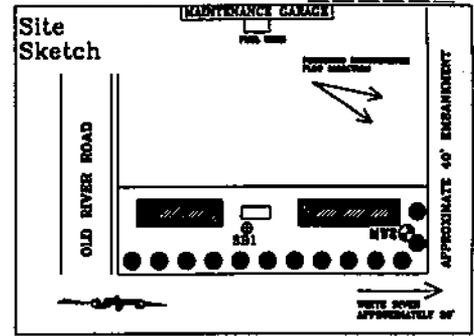
SCREEN DIA. NA LENGTH NA SLOT SIZE NA

CASING DIA. NA LENGTH NA TYPE NA

DRILLING CO. TDS DRILLING METHOD HSA

DRILLER SCOTT LOG BY R. HIGGINS

WELL NUMBER SB1



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					0
2					2
4					4
6			5'-7'- 1/2/1/1 0 ppm	Brown, coarse to fine SAND with some silt, dry, no odor.	6
8					8
10			10'-12'- 4/5/4/12 0.2 ppm	Same as above.	10
12		NATIVE BACKFILL			12
14					14
16			15'-17'- 13/17/15/11 0 ppm	Brown, fine GRAVEL with coarse to fine sand, little silt, dry, no odor.	16
18					18
20			20'-22'- 9/8/13/18 0 ppm	Brown, fine GRAVEL with coarse to fine sand, little silt, dry, no odor.	20
22					22
24				25.0' WATER TABLE	24
26			25'-27'- 2/3/4/8 0 ppm	Brown, coarse SAND, wet, no odor.	26
28		UNDISTURBED NATIVE SOIL		END OF EXPLORATION AT 27'	28
30					30
32					32
34					34
36					36
38					38
40					40
42					42
44					44
46					46
48					48
50					50

PROJECT FORMER GRAND UNION DISTRIBUTION CENTER

LOCATION HARTFORD, VERMONT

DATE DRILLED 7/21/98 TOTAL DEPTH OF HOLE 32.0'

DIAMETER 4.25"

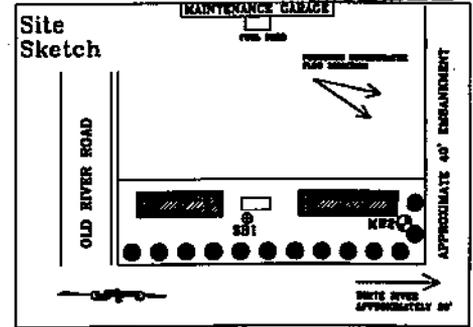
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 19.5' TYPE sch 40 pvc

DRILLING CO. TDS DRILLING METHOD HSA

DRILLER SCOTT LOG BY R. HIGGINS

WELL NUMBER MW2



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
2	CONCRETE				2
4	NATIVE BACKFILL				4
4	BENTONITE				4
6			5'-7'- 4/4/5/7 0 ppm	Brown, coarse to fine SAND with silt, trace clay, few small cobbles, dry, no odor.	6
8	WELL RISER				8
10			10'-12'- 1/1/2/1 0 ppm	Brown, medium to fine SAND with silt, some fine gravel, dry, no odor.	10
12	NATIVE BACKFILL				12
14					14
16			15'-17'- 14/14/17/14 0 ppm	Medium GRAVEL with coarse to fine sand, dry, no odor.	16
18	BENTONITE				18
20			20'-22'- 7/8/8/7 0 ppm	Brown, medium to fine SAND with little silt, trace cobbles, no odor.	20
22	WELL SCREEN			23.0' WATER TABLE	22
24	SAND PACK				24
26	BOTTOM CAP		25'-27'- 4/6/5/6 0 ppm	Dark brown SILT with some clay, wet, no odor.	26
28					28
30			30'-32'- 2/3/3/3 0 ppm	Dark brown, SAND and SILT, wet, no odor.	30
32	UNDISTURBED NATIVE SOIL			BASE OF WELL AT 30' END OF EXPLORATION AT 32'	32
34					34
36					36
38					38
40					40
42					42
44					44
46					46
48					48
50					50

PROJECT FORMER GRAND UNION DISTRIBUTION CENTER

LOCATION HARTFORD, VERMONT

DATE DRILLED 7/22/98 TOTAL DEPTH OF HOLE 22.0'

DIAMETER 4.25"

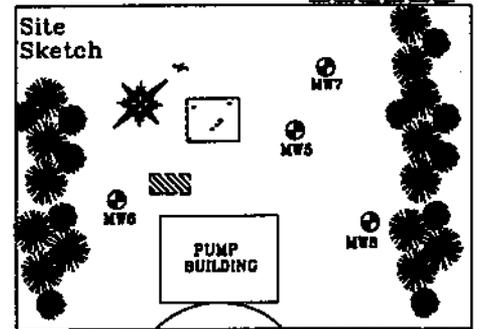
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 14.5' TYPE SCH. 40 PVC

DRILLING CO. TDS DRILLING METHOD HSA

DRILLER SCOTT LOG BY R. HIGGINS

WELL NUMBER MW8



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
0	CONCRETE				0
1	NATIVE BACKFILL				1
2	NATIVE BACKFILL				2
3	BENTONITE				3
4	BENTONITE				4
5	WELL RISER		5'-7' 9/13/7/15	Dry, coarse to fine GRAVEL with coarse to fine sand, few small cobbles, no odor.	5
6	WELL RISER		0 ppm		6
7	NATIVE BACKFILL				7
8	NATIVE BACKFILL				8
9	NATIVE BACKFILL				9
10	BENTONITE		10'-12' 7/25/22/20	Dry, coarse to fine GRAVEL with coarse to fine sand, no odor.	10
11	BENTONITE		0 ppm		11
12	SAND PACK				12
13	SAND PACK				13
14	SAND PACK				14
15	SAND PACK		15'-17' 3/5/4/5	Damp, dense, fine SILT, no odor.	15
16	SAND PACK		0 ppm		16
17	WELL SCREEN				17
18	WELL SCREEN				18
19	WELL SCREEN				19
20	WELL SCREEN				20
21	BOTTOM CAP		20'-22' 3/2/4/4	Wet, coarse to fine SAND, no odor.	21
21	BOTTOM CAP		0 ppm		21
22	UNDISTURBED NATIVE SOIL			21.6' WATER TABLE	22
22	UNDISTURBED NATIVE SOIL				22
23	UNDISTURBED NATIVE SOIL			BASE OF WELL AT 22'	23
23	UNDISTURBED NATIVE SOIL			END OF EXPLORATION AT 22'	23
24					24
25					25

PROJECT FORMER GRAND UNION DISTRIBUTION CENTER

LOCATION HARTFORD, VERMONT

DATE DRILLED 7/21/98 TOTAL DEPTH OF HOLE 25.0'

DIAMETER 4.25"

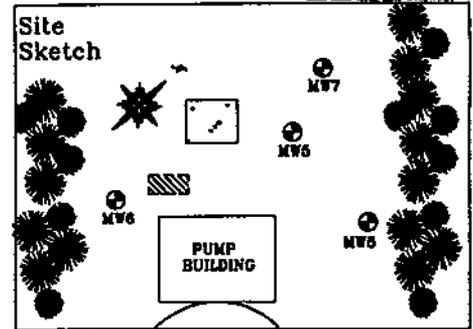
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 14.5' TYPE SCH. 40 PVC

DRILLING CO. TDS DRILLING METHOD HSA

DRILLER SCOTT LOG BY R. HIGGINS

WELL NUMBER MW5



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			0
0		LOCKING WELL CAP			0
0		CONCRETE			0
1		NATIVE BACKFILL			1
2		NATIVE BACKFILL			2
3		BENTONITE			3
4		BENTONITE			4
5		WELL RISER	5'-7' 4/5/14/21 0 ppm	Dry, brown, medium SAND, no odor.	5
6		WELL RISER			6
7		WELL RISER			7
8		WELL RISER			8
9		NATIVE BACKFILL			9
10		NATIVE BACKFILL			10
11		NATIVE BACKFILL	10'-12' 12/23/24/67 12 ppm	Damp, brown, coarse to fine GRAVEL with coarse to fine SAND, some silt, slight petroleum odor.	11
12		NATIVE BACKFILL			12
13		BENTONITE			13
14		BENTONITE			14
15		SAND PACK	15'-17' 2/5/3/3 0 ppm	Wet, fine SILT, some fine sand, no odor.	15
16		SAND PACK			16
17		SAND PACK			17
18		SAND PACK			18
19		SAND PACK			19
20		SAND PACK			20
21		WELL SCREEN	20'-22' 3/3/4/4 0 ppm	21.0' WATER TABLE	21
22		WELL SCREEN		Wet, brown, medium to fine SAND, some silt, no odor.	22
23		WELL SCREEN			23
24		BOTTOM CAP			24
25		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 25' END OF EXPLORATION AT 25'	25

PROJECT FORMER GRAND UNION DISTRIBUTION CENTER

LOCATION HARTFORD, VERMONT

DATE DRILLED 7/22/98 TOTAL DEPTH OF HOLE 25.0'

DIAMETER 4.25"

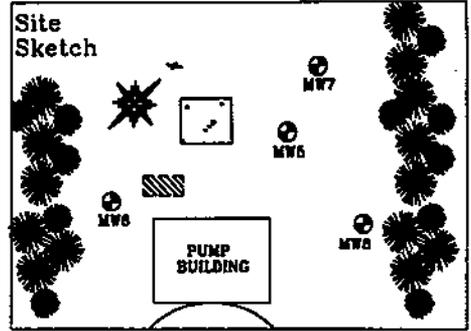
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 14.5' TYPE SCH. 40 PVC

DRILLING CO. TDS DRILLING METHOD HSA

DRILLER SCOTT LOG BY R. HIGGINS

WELL NUMBER MW6

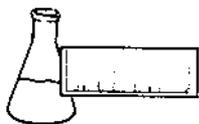


GRIFFIN INTERNATIONAL, INC

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					1
2	NATIVE BACKFILL				2
3	BENTONITE				3
4					4
5	WELL RISER		5'-7' 4/4/4/4 0 ppm	Dry, brown, fine SAND and SILT, no odor.	5
6					6
7					7
8	NATIVE BACKFILL				8
9					9
10				No recovery.	10
11			10'-12' 22/30/39/35		11
12					12
13	BENTONITE				13
14					14
15			15'-17' 15/14/9/9 0 ppm	Damp, coarse GRAVEL with coarse to fine sand.	15
16					16
17	SAND PACK				17
18					18
19					19
20					20
21	WELL SCREEN		20'-22' 1/1/2/4 0 ppm	Wet, brown SILT, trace clay, no odor.	21
22				21.5' WATER TABLE	22
23					23
24	BOTTOM CAP				24
25	UNDISTURBED NATIVE SOIL			BASE OF WELL AT 25' END OF EXPLORATION AT 25'	25

APPENDIX C

Liquid Level Monitoring Data



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: Grand Union/#69841285
DATE REPORTED: August 7, 1998
DATE SAMPLED: Not Indicated

PROJECT CODE: GIGU1843
REF. #: 124,533 - 124,534

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

Chain of custody indicated proper sample preservation.

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.

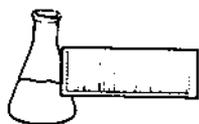
Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

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



ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 602 COMPOUNDS BY EPA METHOD 8260

CLIENT: Griffin International
PROJECT NAME: Grand Union/#69841285
REPORT DATE: August 7, 1998
SAMPLER: R. Higgins
DATE SAMPLED: Not Indicated
DATE RECEIVED: July 23, 1998

PROJECT CODE: GIGU1843
ANALYSIS DATE: August 3, 1998
STATION: SB-2
REF.#: 124,533
TIME SAMPLED: 10:27

<u>Parameter</u>	<u>Detection Limit ($\mu\text{g}/\text{kg}$)</u>	<u>Concentration As Received ($\mu\text{g}/\text{kg}$)</u>
Benzene	10	ND ¹
Chlorobenzene	10	ND
1,2-Dichlorobenzene	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
Ethylbenzene	10	ND
Toluene	10	ND
Xylene	20	ND
MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

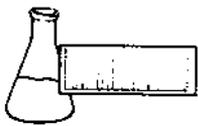
ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane: 105.%
Toluene-d8: 111.%
4-Bromofluorobenzene: 96.%

PERCENT SOLID: 77.%

NOTES:

1 None detected



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
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LABORATORY REPORT

EPA METHOD 602 COMPOUNDS BY EPA METHOD 8260

CLIENT: Griffin International
PROJECT NAME: Grand Union/#69841285
REPORT DATE: August 7, 1998
SAMPLER: R. Higgins
DATE SAMPLED: Not Indicated
DATE RECEIVED: July 23, 1998

PROJECT CODE: GIGU1843
ANALYSIS DATE: August 3, 1998
STATION: SB-1
REF.#: 124,534
TIME SAMPLED: 12:19

<u>Parameter</u>	<u>Detection Limit ($\mu\text{g}/\text{kg}$)</u>	<u>Concentration As Received ($\mu\text{g}/\text{kg}$)</u>
Benzene	10	ND ¹
Chlorobenzene	10	ND
1,2-Dichlorobenzene	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
Ethylbenzene	10	ND
Toluene	10	ND
Xylene	20	ND
MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

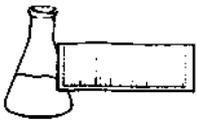
ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane: 107.0%
Toluene-d8: 107.0%
4-Bromofluorobenzene: 97.0%

PERCENT SOLID: 80.0%

NOTES:

1 None detected



ENDYNE, INC.

Laboratory Services

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REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International
PROJECT NAME: Grand Union/69841285
DATE REPORTED: August 3, 1998
DATE SAMPLED: Not Indicated

PROJECT CODE: GIGU1842
REF. #: 124,531 - 124,532

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

Chain of custody indicated proper sample preservation.

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.

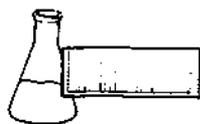
Blank contamination was not observed at levels affecting the analytical results.

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

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

LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: August 3, 1998
CLIENT: Griffin International
PROJECT: Grand Union/69841285
PROJECT CODE: GIGU1842
COLLECTED BY: R. Higgins
DATE SAMPLED: Not Indicated
DATE RECEIVED: July 23, 1998

Reference #	Sample ID	Concentration (mg/kg) ¹
124,531	SB-2;10:27	ND ²
124,532	SB-1;12:19	ND

Notes:

- 1 Values quantitated based on the response of #2 Fuel Oil. Method detection limit is 5.0 mg/kg.
- 2 None Detected

CHAIN-OF-CUSTODY RECORD

28159

69841255 124,531 - 124,534

Project Name: GRAND UNION Site Location: HARTFORD, VT	Reporting Address: GRIFFIN	Billing Address:
Endyne Project Number: GIGU1842	Company: Contact Name/Phone #: R. Higgins	Sampler Name: Phone #: R. Higgins

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				
124,531	SR-2	SOIL	✓		10/27	2	402G	TPH 8/100M + 602		CWC	
124,532	SR-1	SOIL	✓		12/9	2	402G	TPH 8/100M + 602		↓	

Relinquished by: Signature <i>R. Higgins</i>	Received by: Signature <i>Tina Desrochers</i>	Date/Time 7-23-98 10:00 AM
Relinquished by: Signature <i>Tina Desrochers</i>	Received by: Signature <i>M. Fausch</i>	Date/Time 7/23/98 10:00 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	TCPLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

CHAIN-OF-CUSTODY RECORD
28159

643-1285

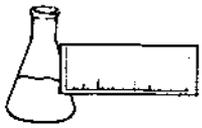
Project Name: <u>LEWIS MOUNTAIN</u>	Reporting Address: <u>CRITFIELD</u>	Billing Address:
Site Location: <u>10000 RD</u>	Company: <u>R. Higgins</u>	Sampler Name: <u>R. Higgins</u>
Endyne Project Number:	Contact Name/Phone #: <u>R. Higgins</u>	Phone #: <u>R. Higgins</u>

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				
	SR-2	Soil	/		10/27	2	4L/6G	TPH 3/100M + 602		Can	
	SR-1	Soil	/		12/4	2	4L/6G	TPH 3/100M + 602		↓	

Relinquished by: Signature <u>R. Higgins</u>	Received by: Signature <u>T. D. [unclear]</u>	Date/Time <u>7-23-98 11:00 AM</u>
Relinquished by: Signature <u>T. D. [unclear]</u>	Received by: Signature <u>[unclear]</u>	Date/Time <u>7/23/98 10:00 AM</u>

 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
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(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International

PROJECT CODE: GIGU1976

PROJECT NAME: Grand Union (Fmr) Dist Ctr.

REF.#: 124,858 - 124,861

REPORT DATE: August 4, 1998

DATE SAMPLED: July 30, 1998

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.

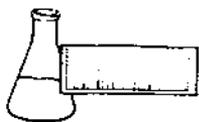
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

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



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

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International

DATE RECEIVED: July 31, 1998

PROJECT NAME: Grand Union (Fmr) Dist Ctr.

REPORT DATE: August 4, 1998

CLIENT PROJ. #: 69841285

PROJECT CODE: GIGU1976

Ref. #:	124,858	124,859	124,860	124,861	
Site:	Trip Blank	MW6	MW5	MW7	
Date Sampled:	7/30/98	7/30/98	7/30/98	7/30/98	
Time Sampled:	7:30	11:13	11:30	12:00	
Sampler:	NI	NI	NI	NI	
Date Analyzed:	8/3/98	8/3/98	8/3/98	8/3/98	
UIP Count:	0	0	0	0	
Dil. Factor (%):	100	100	100	100	
Surr % Rec. (%):	92	99	102	100	
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	<1	
Xylenes	<1	<1	<1	<1	
MTBE	<10	<10	<10	<10	

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

CHAIN-OF-CUSTODY RECORD

27372

69241285 124,858 - 124,864

Project Name: <i>Groundwater (former) Distiller</i>	Reporting Address: <i>Griffin Int.</i>	Billing Address:
Site Location: <i>Heatsford VT</i>		
Endyne Project Number: <i>GIGU1976</i>	Company: Contact Name/Phone #:	Sampler Name: 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				
<i>124,858</i>	<i>Trip Blank</i>				<i>7/30/98</i>	<i>2</i>	<i>10ml</i>		<i>20,30</i>	<i>HCL</i>	
<i>124,859</i>	<i>11016</i>				<i>11.15</i>	<i>2</i>			<i>20,30</i>		
<i>124,860</i>	<i>11015</i>				<i>11.30</i>	<i>2</i>			<i>20,30</i>		
<i>124,861</i>	<i>11017</i>				<i>12.00</i>	<i>2</i>			<i>20,30</i>		

Relinquished by: Signature <i>Veronica Albino</i>	Received by: Signature <i>Tina Desrosiers</i>	Date/Time <i>7/30 5PM</i>
Relinquished by: Signature <i>Tina Desrosiers</i>	Received by: Signature <i>[Signature]</i>	Date/Time <i>7/31 9:40</i>

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): <i>pH 8.00</i>										



ENDYNE, INC.

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Williston, Vermont 05495
(802) 879-4333

CHAIN-OF-CUSTODY RECORD

27372

09841285

Project Name: Site Location: <i>Hartford T</i>	Reporting Address:	Billing Address:
Endyne Project Number:	Company: Contact Name/Phone #:	Sampler Name: 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				

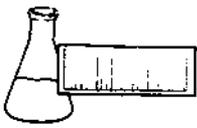
Relinquished by: Signature <i>Veronica White</i>	Received by: Signature <i>T. D. ...</i>	Date/Time <i>4/1/01</i>
--	---	-------------------------

Relinquished by: Signature <i>T. D. ...</i>	Received by: Signature <i>[Signature]</i>	Date/Time <i>7/31 9:40</i>
---	---	----------------------------

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
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REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International

PROJECT CODE: GIGU1977

PROJECT NAME: Grand Union (former) Dist Ctr/69841285 REF. #: 124,862 - 124,864

DATE REPORTED: August 18, 1998

DATE SAMPLED: July 30, 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.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures



ENDYNE, INC.

Laboratory Services

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LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: August 18, 1998
CLIENT: Griffin International
PROJECT: Grand Union (Former) Dist Ctr/69841285
PROJECT CODE: GIGV1977
COLLECTED BY: Veronica
DATE SAMPLED: July 30, 1998
DATE RECEIVED: July 31, 1998

Reference #	Sample ID	Concentration (mg/L) ¹
124,862	MW6; 11:13	ND ²
124,863	MW5; 11:30	ND
124,864	MW7; 12:00	ND

Notes:

- 1 Values quantitated based on the response of #2 Fuel Oil. Method detection limit is 0.4 mg/L.
- 2 None detected

CHAIN-OF-CUSTODY RECORD

27372

69841285

Project Name: Grand Union (former) Dist Center	Reporting Address: Griffin Int.	Billing Address:
Site Location: Hartford VT	Company:	Sampler Name:
Endyne Project Number: GIGU1977	Contact Name/Phone #:	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				7/30/98						
					7:30	2	40ml		20, 30	HCL	
124,862	MW 6				11:13	2			20, 30		
124,863	MW 5				11:30	2			20, 30		
124,864	MW 7				12:00	2			20, 30		

Relinquished by: Signature <i>Veronica Almeida</i>	Received by: Signature <i>Tina Desrosiers</i>	Date/Time 7/30 5pm
Relinquished by: Signature <i>Tina Desrosiers</i>	Received by: Signature <i>[Signature]</i>	Date/Time 7/31 9:40

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 Pesu/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): TPH 8100										