



MAR 31 10 03 AM '99

March 29, 1999

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

RE: Subsurface Investigation, L&B Truck Service, Westminster, VT (VTDEC #98-2459)

Dear Chuck:

Enclosed please find the March 1999 *Report on the Site Investigation of Subsurface Petroleum Contamination* for the L&B Truck Service site in Westminster, Vermont. Mr. Peter Bazin of L&B Truck Service requested that we forward a copy to you. Please call if you have any questions or comments.

Sincerely,

Timothy J. Kelly, PG
Geologist

Encl.

cc: Peter Bazin (w/o enclosure)
GI#129841445

**REPORT ON THE
SITE INVESTIGATION OF SUBSURFACE
PETROLEUM CONTAMINATION**

AT

**L&B TRUCK SERVICE
Route 5
Westminster, Vermont**

VTDEC Site #98-2459
Griffin Proj. #129841445

March 1999

Prepared For:

L&B Truck Service
PO Box 12
Westminster, VT 05158

Prepared By:

GRIFFIN INTERNATIONAL, INC.
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Mar 31 10 02 AM '99

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I. INTRODUCTION

This report provides a summary of the tasks completed for the investigation of subsurface petroleum contamination at L&B Truck Service in Westminster, 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;
- ◇ groundwater sampling and analyses; and
- ◇ sensitive receptor survey.

This work is being performed based on a request from Mr. Chuck Schwer of the Vermont Department of Environmental Conservation (VTDEC) in a letter to Mr. Luke Bazin of L&B Truck Service, dated November 11, 1998. Work was performed in accordance with the November 30, 1998, *Work Plan and Cost Estimate for Subsurface Investigation of Suspected Petroleum Contamination* at the site prepared by Griffin and verbally approved by Mr. Peter Bazin of L&B Truck Service in a telephone conversation on December 8, 1998.

II. SITE BACKGROUND

A. Site Setting

The L&B Truck Service is located on the west side of Route 5 in a rural commercial and residential area of Westminster, Vermont. Topography at the site is generally flat with a very gentle slope to the southwest. The Connecticut river flows south approximately 300 feet east of the site. The property is bordered on the north by open meadow; on the east by Vermont Route 5, across which are railroad tracks and the Connecticut River; on the south by a gas station and convenience store; and on the west by open fields.

One driven supply well provides the property with wash water for cleaning vehicles and is not used for drinking water. The L&B Truck Service is serviced by a municipal water system. The site is underlain by post-glacial fluvial sand according to the *Surficial Geologic Map of Vermont* (Ref. 1). The bedrock underlying the site is the Devonian Littleton formation. The Littleton formation consists of gray slate and phyllite (Ref. 2). There were no bedrock exposures observed in the immediate vicinity of the subject property.

B. Site History

One, 10,000-gallon underground storage tank (UST) of single-walled steel construction, formerly used to contain diesel fuel, was closed at this facility on August 11, 1998. A UST closure report, dated August 19, 1998, was forwarded to the VTDEC UST Program. Volatile organic

compounds (VOCs), were detected in the headspace of soil screening samples collected during the UST removal. VOCs were detected at concentrations ranging from 2 to 140 parts per million volume (ppmv) with an HNuTM Model PI-101 portable photoionization detector (PID) in soils collected from depths of 6 to 17 feet below grade. Based on the data obtained during the UST closure inspection, the contamination observed in the UST excavation was likely to be due to spills and overfills during UST filling.

III. INVESTIGATIVE PROCEDURES

To define the degree and extent of subsurface petroleum contamination in the area of the L&B Truck Service Facility, the following tasks were undertaken as per the November 30, 1998, Work Plan: installation of four monitoring wells, site survey, sampling and analyses for petroleum-related constituents, and an evaluation of sensitive receptors.

A. Monitoring Well Installation

On February 10, 1999, four soil borings were advanced and completed as monitoring wells at the site (see Site Map in Appendix A). The boreholes were installed utilizing hollow-stem auger drilling methods. T&K Drilling of Troy, New Hampshire, installed the wells under the direct supervision of a Griffin geologist. During borehole advancement, split spoon samples were collected from approximately every five feet. Soils were screened for hydrocarbon vapors using HNuTM Model PI-101 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 included in Appendix B.

MW1 and MW2 were each installed to a depth of 22 feet below grade. MW3 and MW4 were installed to a depth of 23 feet below grade. Monitoring well construction diagrams are included in Appendix B. The 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 approximately 2 feet above the top of the screened interval. A bentonite seal, approximately 2 feet thick, was placed above the sand pack in each well. The borehole was backfilled with native material to a depth of approximately 1 foot. Each of the four wells was completed with a flush-mounted road box and secured with a compression cap.

The soils encountered in the monitoring well boreholes consisted of light brown to gray, sandy silt and silty sand with local gravel. No VOCs were detected above background in the headspace of soil samples collected from the MW-1, MW-3, and MW-4 boreholes. VOCs were detected in the headspace of soil samples collected from the MW-2 borehole at concentrations of 3 and 18.8 ppmv. No petroleum odors or staining were observed in the MW-1, MW-3, and MW-4 boreholes. Minor petroleum odors were noted in the soils samples collected from the MW-2

borehole. Groundwater was encountered at approximately 16.5 feet below grade in monitoring well borings.

B. Determination of Groundwater Flow Direction and Gradient

The four wells were located in azimuth and elevation for inclusion on the Site Map presented in Appendix A. The top of PVC casing in MW1 was assigned an arbitrary elevation of 100.00 feet. The locations of the existing pump island and other prominent site features were surveyed for inclusion on this Site Map.

Prior to groundwater sampling on February 19, 1999, all four on-site monitoring wells were monitored for presence of free floating product and depths to water. Results are tabulated as Liquid Level Monitoring Data in Appendix C. The depth to groundwater measured on February 19, 1999, in the four on-site monitoring wells ranged from approximately 16.4 to 17.4 feet below grade. No free-phase product was observed in any of the on-site monitoring wells on February 19, 1999. For each well, the measured depth to fluid was subtracted from the surveyed elevation of the measurement reference point to determine the water table elevation. Water table elevations were plotted on the site map to generate the Groundwater Contour Map presented in Appendix A. Based on the available data, the groundwater flow is directed generally to the southeast toward the Connecticut River at an approximate gradient of 1.0%.

C. Groundwater Sampling and Analyses

Groundwater samples were collected from the monitoring wells, using disposable bailers, on February 19, 1999. A water sample was also collected from the on-site supply well, the water source for vehicle cleaning, on February 19, 1999. The water supply well is located approximately 150 feet northeast of the former diesel UST location near the front of the L& B Truck Service building. Water samples were analyzed by EPA Method 8021B by Endyne, Inc., laboratory of Williston, Vermont, for the petroleum-related VOCs and by EPA Method 8015B for total petroleum hydrocarbons (TPH). Quality control (QC) samples (a trip blank and duplicate sample) were also collected and analyzed by EPA Method 8021B. A summary table of the analytical results and the analytical laboratory reports are included in Appendix C.

Toluene was detected in the samples collected from MW-1 and MW-3 on February 19, 1999, at trace concentrations below the quantitation limit, which is well below the Vermont Groundwater Enforcement Standard (VGES) for this constituent. No other VOCs or TPHs were detected in the samples collected from MW-1 or MW-3 on February 19, 1999. Two unidentified peaks were identified in the MW-1 sample analysis and one unidentified peak was identified in the MW-3 sample analysis. No VOCs or TPHs were detected in the samples collected from MW-2 or MW-4 on February 19, 1999. One unidentified peak was identified in the MW-4 sample analysis and no unidentified peaks were detected in the MW-2 sample analysis. Toluene was detected in the sample collected from the on-site supply well on February 19, 1999, at a concentration well

below the applicable VGES, and no unidentified peaks were detected in the supply well sample analysis.

IV. EVALUATION OF POTENTIALLY SENSITIVE RECEPTORS

The following potentially sensitive receptors in the vicinity of the L&B Truck Service were identified:

- ♦ soil and groundwater at the L&B Truck Service site;
- ♦ L&B Truck Service vehicle cleaning supply well;
- ♦ the Connecticut River,

The groundwater at the site is found at approximately 17 feet below grade. No buildings are located near the former tank pit. No area private water supply wells are located between the former UST location and the Connecticut River, located approximately 300 feet east of the site. The on-site supply well for vehicle cleaning only is located approximately 150 feet northeast of the former diesel UST location. Based on the available data, the supply well for vehicle cleaning is not down gradient from the location of the former diesel UST.

Minimal soil contamination was detected during the installation of the monitoring well/soil borings. Very low levels of toluene were detected in the groundwater samples collected from the on-site monitoring wells MW-1 and MW-3 and the supply well for vehicle cleaning on February 19, 1999. Therefore, there is apparently minimal likelihood of significant impact to potentially sensitive receptors in the vicinity of the L&B Truck Service site.

V. CONCLUSIONS

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

- 1) The source of petroleum contamination detected in soils at the L&B Truck Service site was the former 10,000-gallon diesel UST at the property. The release(s) appears to be the result of minor spills or overfills due to normal usage over time. The volume of product released is unknown but does not appear significant. The source of petroleum contamination (i.e., the UST system) was removed on August 11, 1998.
- 2) VOC readings of soils collected during the UST closure on August 11, 1998, indicate that adsorbed petroleum compounds existed in soils in the immediate vicinity of the former diesel UST. With the source UST eliminated, 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) Four groundwater monitoring wells, MW-1 through MW-4, were installed by Griffin at the L&B Truck Service site on February 10, 1999. Low concentrations of VOCs were detected in soils collected for screening from the MW-2 soil boring. No VOCs were detected in the soil screening samples collected from any of the other monitoring well boreholes.

4) The depth to groundwater measured on February 19, 1999, in the four on-site monitoring wells ranged from approximately 16.4 to 17.4 feet below grade. The shallow groundwater flow beneath the site on this date was estimated to be directed toward the southeast at a hydraulic gradient of approximately 1.0%.

5) Groundwater samples were collected from the four site monitoring wells on February 19, 1999. Dissolved toluene was detected in the samples collected from MW-1 and MW-3 at trace concentrations below the quantitation limit. Two unidentified peaks were identified in the MW-1 sample analysis and one unidentified peak was identified in the MW-3 sample analysis. No VOCs or TPHs were detected in samples collected from MW2 or MW4. One unidentified peak was identified in the MW-4 sample analysis and no unidentified peaks were detected in the MW-2 sample analysis.

6) A groundwater sample was collected from the vehicle cleaning supply well, located approximately 150 feet northeast of the former diesel UST location. A very low concentration of toluene, well below the applicable VGES, was detected in the sample collected from the supply well for vehicle cleaning. No unidentified peaks were detected in the vehicle cleaning supply well. The water from this well is not used for human consumption.

7) There appear to be no significant potential risks to the identified sensitive receptors based on currently available data.

VI. RECOMMENDATIONS

Based upon the above conclusions, Griffin recommends that the L&B Truck Service site in Westminster, Vermont, be considered for closure and 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 (dated December 1, 1997):

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

See Conclusions #1, #2, #3, and #5.

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

See Conclusions #1, #5, and #7.

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

See Conclusions #3, #5, and #6.

- 4) Groundwater enforcement standards are met at the following compliance points:

Any point of present use of groundwater as a source of potable water: See Conclusions #5 and #6.

Any point at or within the boundary of any Class I groundwater area: The L&B Truck Service site is not within a Class I groundwater area.

Any point at the boundary of the property on which the contaminant source is located: See Conclusion #5 and #6.

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

See Conclusion #3. In addition, the residual contaminated soils at the site are paved over and are inaccessible to workers conducting normal activities at the site.

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

See Conclusions #5, #6, and #7.

- 7) Site meets RCRA requirements.

Available records indicate that the L&B Truck Service site 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 L&B Truck Service site is not in violation of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as defined in 40 CFR 300.

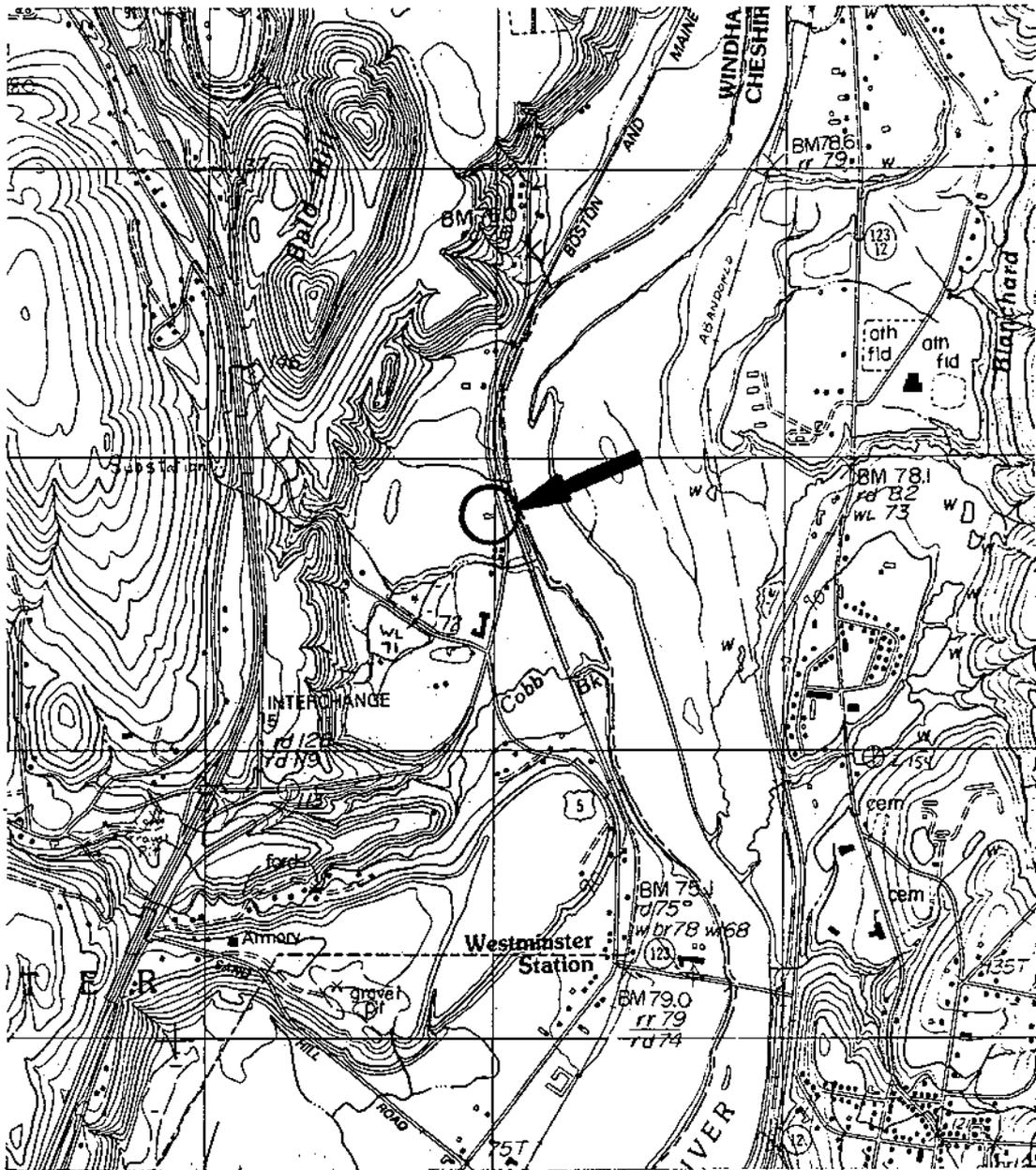
In addition, Griffin recommends that the four site monitoring wells be properly abandoned according to VTDEC requirements for well closure.

VII. REFERENCES

1. Doll, Charles G., D.P. Stewart, and P. MacClintock, eds., 1970, Surficial Geologic Map of Vermont, State of Vermont.
2. Doll, Charles G., W.M. Cady, J. B. Thompson, Jr., and M.P. Billings eds., 1961, Centennial Geologic Map of Vermont, State of Vermont.

APPENDIX A

Site Maps



SOURCE: USGS-- WALPOLE NEW HAMPSHIRE--VERMONT QUADRANGLE



JOB #: 129841445

L&B TRUCK SERVICE

WESTMINSTER, VERMONT

SITE LOCATION MAP

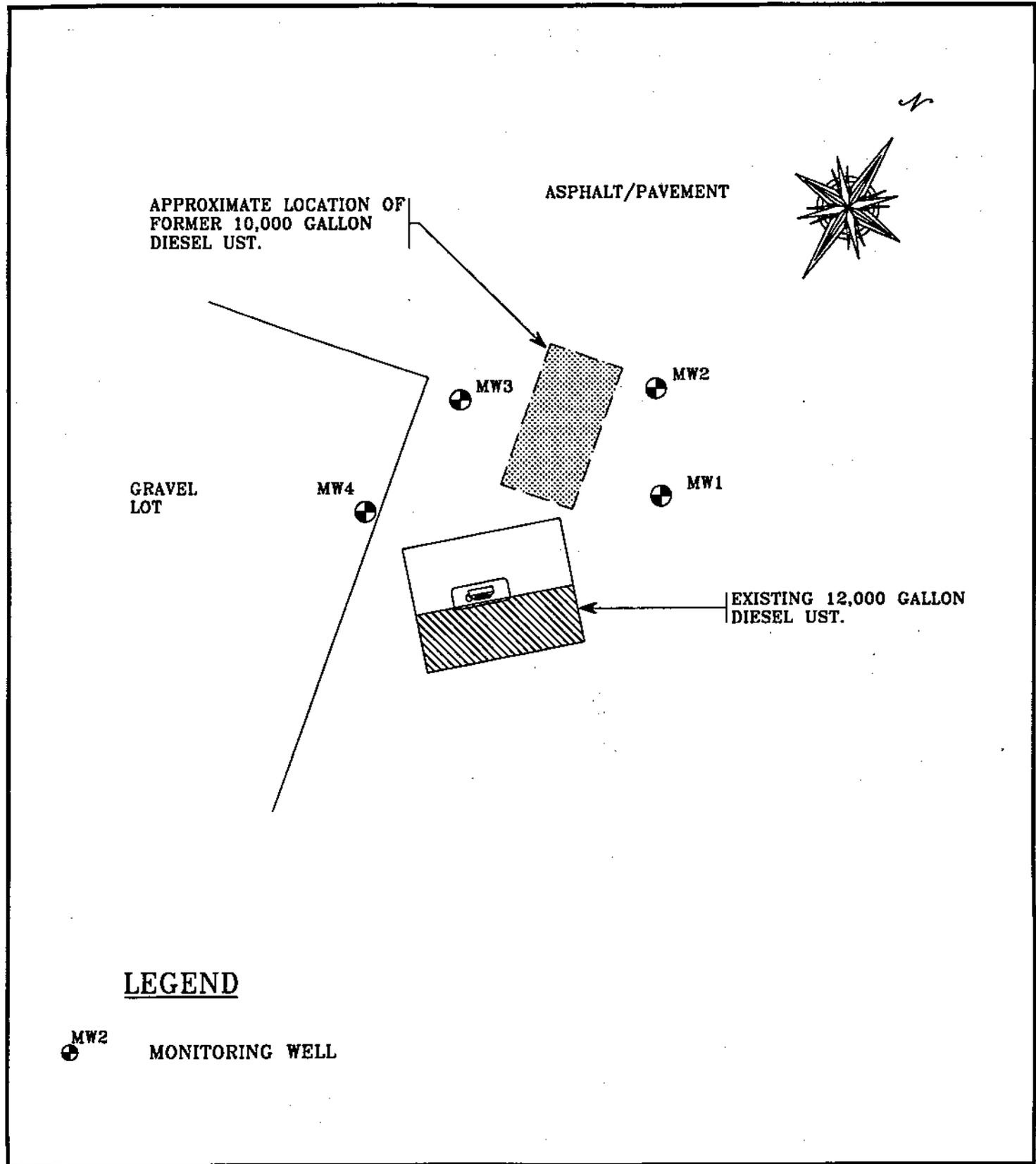
DATE: 3/4/99

DWG.#:1

SCALE: 1:25000

DRN.:SB

APP.:TK



JOB #: 129841445

GRIFFIN
INTERNATIONAL INC.

L&B TRUCK SERVICE

WESTMINSTER, VERMONT

SITE SKETCH

DATE: 3/19/99	DWG.#:2	SCALE: 1"=30'	DRN.:SB	APP.:TK
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APPROXIMATE LOCATION OF
FORMER 10,000 GALLON
DIESEL UST.

ASPHALT/PAVEMENT



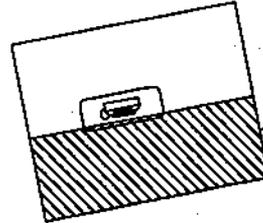
GRAVEL
LOT

MW4
ND(10)

MW3
TBQ(10)

MW2
ND(10)

MW1
TBQ(10)



EXISTING 12,000 GALLON
DIESEL UST.

LEGEND

⊕ MW2
ND(10) MONITORING WELL AND TOTAL
VOC CONCENTRATION (ppb)

TBQ TRACE BELOW QUANTITATION LIMIT

ND NONE DETECTED



JOB #: 129841445

L&B TRUCK SERVICE

WESTMINSTER, VERMONT

CONTAMINANT CONCENTRATION MAP
SAMPLE DATE: 2/19/99

DATE: 3/19/99

DWG.#:4

SCALE: 1"=30'

DRN.:SB

APP.:TK

APPENDIX B

Monitoring Well Logs

PROJECT L&B TRUCK SERVICE

LOCATION WESTMINSTER, VERMONT

DATE DRILLED 2/10/99 TOTAL DEPTH OF HOLE 22.0'

DIAMETER 4.25"

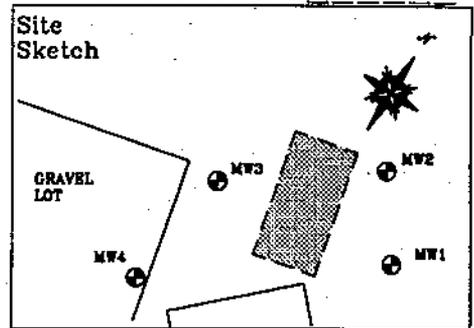
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 11.5' TYPE sch 40 pvc

DRILLING CO. T&K DRILLING METHOD HSA

DRILLER ALAN TOMMILA LOG BY T. KELLEY

WELL NUMBER MW1



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		<i>PENETRATION/RECOVERY</i>		0
1	CONCRETE				1
2	NATIVE BACKFILL			SILTY SAND WITH GRAVEL (SM)- 25% silt, 80% fine, subrounded sand, 15% gravel, moist, light brown.	2
3					3
4					4
5	WELL RISER				5
6			5'-7' 3/4/11/13 0 ppm 24/16	SILTY SAND (SM)- 45% silt, 50% subrounded sand, 5% gravel, poorly graded, moist, light brown.	6
7					7
8					8
9	BENTONITE				9
10					10
11			10'-12' 3/4/3/5 0 ppm 24/18	SANDY SILT (ML)- 80% silt, 40% fine, subrounded sand, poorly graded, moist, light brown.	11
12					12
13	SAND PACK				13
14					14
15					15
16			15'-17' 4/3/3/3 0 ppm 24/17	16.5' WATER TABLE	16
17	WELL SCREEN			SANDY SILT (ML)- 55% silt, 45% fine, subrounded sand, poorly graded, wet, olive brown.	17
18					18
19					19
20					20
21	BOTTOM CAP		20'-22' 1/1/1/3 0 ppm 24/21	SILTY SAND (SM)- 45% silt, 55% fine to medium, subangular sand, well graded, wet, gray. <i>lense of medium sand @ 21.5'</i>	21
22	UNDISTURBED NATIVE SOIL				22
23				BASE OF WELL AT 22' END OF EXPLORATION AT 22'	23
24					24
25					25

PROJECT L&B TRUCK SERVICE

LOCATION WESTMINSTER, VERMONT

DATE DRILLED 2/10/99 TOTAL DEPTH OF HOLE 23.0'

DIAMETER 4.25"

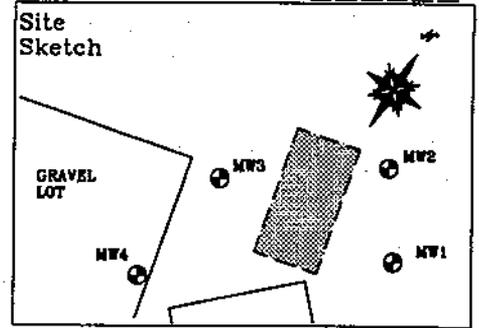
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 11.5' TYPE sch 40 pvc

DRILLING CO. T&K DRILLING METHOD HSA

DRILLER ALAN TOMMILA LOG BY T. KELLEY

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
1	CONCRETE				1
2	NATIVE BACKFILL		0'-5' 0 ppm	SANDY SILT (ML)- 70% silt, 30% fine, subrounded sand, moist, medium brown.	2
3					3
4					4
5	WELL RISER		5'-7' 3/3/4/4 0 ppm 24/18	SANDY SILT (ML)- 70% silt, 30% fine, subrounded sand, moist, light brown.	5
6					6
7					7
8					8
9					9
10	BENTONITE		10'-12' 4/4/4/6 3 ppm 24/19	SANDY SILT (ML)- 55% silt, 45% fine, subrounded sand, moist, light brown.	10
11					11
12	SAND PACK				12
13					13
14					14
15			15'-20' 4/4/8/7 15'-15.6' 0 ppm	SANDY SILT (ML)- 55% silt, 45% fine, subrounded sand, moist, light brown.	15
16				16.5' WATER TABLE	16
17	WELL SCREEN		15.6'-17' 18.8 ppm 24/18	SILTY SAND (SM)- 30% silt, 70% fine, subangular to subrounded sand, moist, light brown, slight petroleum odor.	17
18					18
19					19
20			20'-25' 1/3/8/12 20'-21.8' 0 ppm	SILTY SAND (SM)- 40% silt, 60% fine, subangular to subrounded sand, wet, gray. 1/8" Fe-stained layer @ 21.7'	20
21					21
22	BOTTOM CAP		21.8'-22' 0 ppm	SILTY SAND WITH GRAVEL (SM)- 15% silt, 70% fine to coarse, subangular to subrounded sand, wet, gray.	22
23	UNDISTURBED NATIVE SOIL		24/16		23
24					24
25				BASE OF WELL AT 22' END OF EXPLORATION AT 23'	25

PROJECT L&B TRUCK SERVICE

LOCATION WESTMINSTER, VERMONT

DATE DRILLED 2/10/99 TOTAL DEPTH OF HOLE 22.0'

DIAMETER 4.25"

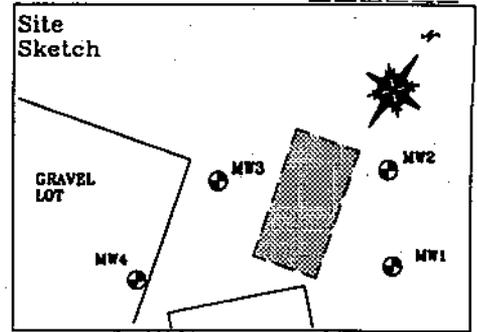
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 11.5' TYPE sch 40 pvc

DRILLING CO. T&K DRILLING METHOD HSA

DRILLER ALAN TOMMILA LOG BY T. KELLEY

WELL NUMBER MW3



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		<i>PENETRATION/RECOVERY</i>		0
1	CONCRETE			SANDY SILT WITH GRAVEL (ML)- 60% silt, 25% fine to coarse, subangular to subrounded sand, 15% fine to coarse, subrounded gravel, moist, light brown.	1
2					2
3	NATIVE BACKFILL		2'-5' 0 ppm	SILT WITH SAND (ML)- 75% silt, 25% fine, subrounded sand, moist, light brown.	3
4					4
5					5
6	WELL RISER		5'-10' 2/3/3/3	SILT WITH SAND (ML)- 80% silt, 20% fine, subrounded sand, moist, light brown.	6
7			5'-6.5' 0 ppm		7
8			6.5'-7' 0 ppm	SILTY SAND (SM)- 40% silt, 60% fine, subrounded sand, poorly graded, moist, light brown.	8
9			24/17		9
10	BENTONITE				10
11			10'-12' 4/3/4/5	SANDY SILT (ML)- 55% silt, 45% fine, subrounded sand, poorly graded, moist, light brown.	11
12			0 ppm		12
13			24/19		13
14	SAND PACK				14
15					15
16			15'-17' 2/2/2/4		16
17	WELL SCREEN		0 ppm	16.5' WATER TABLE	17
18			24/17	SILTY SAND (SM)- 35% silt, 65% subangular to subrounded sand, poorly graded, wet, light brown, matted	18
19					19
20					20
21	BOTTOM CAP		20'-22' 0/1/1/1	SILTY SAND (SM)- 40% silt, 60% fine, subrounded sand, poorly graded, wet, gray.	21
22	UNDISTURBED NATIVE SOIL		24/24		22
23				BASE OF WELL AT 22' END OF EXPLORATION AT 22'	23
24					24
25					25

PROJECT L&B TRUCK SERVICE

LOCATION WESTMINSTER, VERMONT

DATE DRILLED 2/10/99 TOTAL DEPTH OF HOLE 23.0'

DIAMETER 4.25"

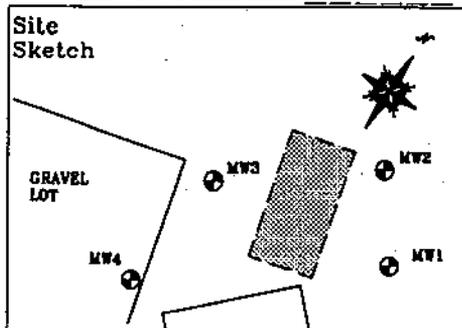
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 11.5' TYPE sch 40 pvc

DRILLING CO. T&K DRILLING METHOD HSA

DRILLER ALAN TOMMILA LOG BY T. KELLEY

WELL NUMBER MW4



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		<i>PENETRATION/RECOVERY</i>		0
1	CONCRETE			SILTY SAND WITH GRAVEL (SM)- 15% silt, 55% fine to coarse, subangular to subrounded sand, 30% fine to coarse, subrounded gravel, well graded, moist, medium brown.	1
2					2
3	NATIVE BACKFILL				3
4					4
5					5
6	WELL RISER		5'-7' 5/6/5/5 0 ppm 24/17	SILTY SAND (SM)- 30% silt, 70% fine, subangular to subrounded sand, poorly graded, moist, light brown, <i>silt interbeds locally</i>	6
7					7
8					8
9					9
10					10
11	BENTONITE		10'-12' 3/2/3/5 0 ppm 24/20	SANDY SILT (ML)- 70% silt, 30% fine, subrounded sand, moist, medium brown. <i>Weakly stratified</i>	11
12					12
13	SAND PACK				13
14					14
15					15
16			15'-17' 1/2/3/4 0 ppm 24/18	16.5' WATER TABLE	16
17	WELL SCREEN			SANDY SILT (ML)- 70% silt, 30% fine, subrounded sand, moist, medium brown, <i>mottled.</i>	17
18					18
19					19
20					20
21			20'-22' 1/3/2/2 0 ppm 24/21	SANDY SILT (ML)- 65% silt, 35% fine to medium, subrounded sand, wet, grayish brown, <i>sand and silt are interbedded.</i>	21
22	BOTTOM CAP				22
23	UNDISTURBED NATIVE SOIL			BASE OF WELL AT 22' END OF EXPLORATION AT 23'	23
24					24
25					25

APPENDIX C

Liquid Level Data, Groundwater Analytical Data

**Liquid Level Monitoring Data, L&B Truck Service
Westminster, VT**

Monitoring Date: 2-19-99

Well I.D.	Top of Casing Elevation	Depth to Product	Depth to Water	Water Table Elevation
MW-1	100.00	--	17.26	82.74
MW-2	100.40	--	17.38	83.02
MW-3	99.81	--	16.68	83.13
MW-4	99.59	--	16.43	83.16

Note: All values reported in feet.

41445wq.xls\liquid level

NM = Not Measured

Summary of Groundwater Quality Data, L&B Truck Service
Westminster, VT

PARAMETER	2-19-99					VGES
	MW1	MW2	MW3	MW4	Supply Well	
Benzene	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	5
Ethylbenzene	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	700
Toluene	TBQ(10)	ND(1)	TBQ(10)	ND(1)	2.3	1,000
MTBE	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	40
Naphthalene	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	20
1,2,4-Trimethylbenzene	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	5
1,3,5-Trimethylbenzene	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	4
Xylenes	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	10,000
Total VOCs	TBQ(10)	ND(10)	TBQ(10)	ND(10)	2.3	-
TPHs (mg/L)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	-

All values reported in ug/L (ppb) except as noted.

41445wq.xls\water quality

Detections are **Bold**

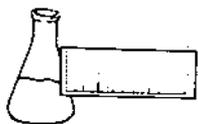
Values greater than the applicable Groundwater Standard are shaded

NA - Not Analyzed

ND(10) - Not Detected (Detection Limit)

TBQ(10) - Trace Below Quantitation Limit (Detection Limit)

VGES - Vermont Groundwater Enforcement Standard



ENDYNE, INC.

Laboratory Services

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

EPA METHOD 8021B--PURGEABLE AROMATICS

CLIENT: Griffin International

DATE RECEIVED: February 22, 1999

PROJECT NAME: L&B Truck Stop/#129841445

REPORT DATE: February 24, 1999

CLIENT PROJ. #: 129841445

ORDER ID: 1417

Ref. #:	134,939	134,940	134,941	134,942	134,943
Site:	Trip Blank	Duplicate	MW #4	MW #1	MW #2
Date Sampled:	2/19/99	2/19/99	2/19/99	2/19/99	2/19/99
Time Sampled:	7:08	11:57	11:30	11:57	12:30
Sampler:	D. Tourangeau				
Date Analyzed:	2/24/99	2/24/99	2/23/99	2/24/99	2/24/99
UIP Count:	0	2	1	2	0
Dil. Factor (%):	100	100	100	100	100
Surr % Rec. (%):	98	100	98	104	97
Parameter	Conc. (ug/L)				
MTBE	<10	<10	<10	<10	<10
Benzene	<1	<1	<1	<1	<1
Toluene	<1	TBQ <1	<1	TBQ <1	<1
Ethylbenzene	<1	<1	<1	<1	<1
Xylenes	<1	<1	<1	<1	<1
1,3,5 Trimethyl Benzene	<1	<1	<1	<1	<1
1,2,4 Trimethyl Benzene	<1	<1	<1	<1	<1
Naphthalene	<1	<1	<1	<1	<1

Ref. #:	134,944	134,945			
Site:	Supply Well	MW #3			
Date Sampled:	2/19/99	2/19/99			
Time Sampled:	12:50	1:02			
Sampler:	D. Tourangeau	D. Tourangeau			
Date Analyzed:	2/24/99	2/24/99			
UIP Count:	0	1			
Dil. Factor (%):	100	100			
Surr % Rec. (%):	95	91			
Parameter	Conc. (ug/L)	Conc. (ug/L)			
MTBE	<10	<10			
Benzene	<1	<1			
Toluene	2.3	TBQ <1			
Ethylbenzene	<1	<1			
Xylenes	<1	<1			
1,3,5 Trimethyl Benzene	<1	<1			
1,2,4 Trimethyl Benzene	<1	<1			
Naphthalene	<1	<1			

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

CHAIN-OF-CUSTODY RECORD

32234

J-OR6

Project Name: <u>L4 B TRUCK STOP</u>	Reporting Address: <u>WINTHURST</u>	Billing Address: <u>WINTHURST</u>
Site Location: <u>WINTHURST</u>	Company: <u>ENDYNE</u>	Sampler Name: <u>TEN TON TANK FILL</u>
Endyne Project Number: <u>1417</u>	Contact Name/Phone #: <u>Tom Kelly</u>	Phone #: <u></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				
134939	TRIP BLANK	H ₂ O	X		2-19-99 07:03	2	40mL		80213	HCC	
134940	DUPLICATE				11:57	2	40mL		80213		
134941	MW #1				11:30	3	40mL		80213.30		
134942	MW #1				11:57						
134943	MW #2				12:30						
134944	SUPPLY WELL				12:50						
134945	MW #3				13:02						

Relinquished by: Signature <u>Tom Kelly</u>	Received by: Signature <u>Tom Desrochers</u>	Date/Time <u>2-22-99 11:00</u>
Relinquished by: Signature <u>Tom Desrochers</u>	Received by: Signature <u>Alison Flower</u>	Date/Time <u>2-22-99 11:00</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): <u>NO15 DRO</u>										

129841145

CHAIN-OF-CUSTODY RECORD

Project Name: <u>L & B TRUCK STOP</u>	Reporting Address: <u>GRIFFIN</u>	Billing Address: <u>GRIFFIN</u>
Site Location: <u>WESTMINSTER</u>	Company: <u>THIN KELLY</u>	Sampler Name: <u>DEAN TOORMAN BAW</u>
Endyne Project Number:	Contact Name/Phone #: <u>THIN KELLY</u>	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				
	<u>TRUCK BANK</u>	<u>H₂O</u>	<u>X</u>		<u>07:05</u>	<u>2</u>	<u>40 mL</u>		<u>401B</u>	<u>HCC</u>	
	<u>INDICATE</u>				<u>11:57</u>	<u>2</u>	<u>40 mL</u>		<u>401B</u>		
	<u>TRUCK #1</u>				<u>11:30</u>	<u>3</u>	<u>40 mL</u>		<u>501B 30</u>		
	<u>TRUCK #1</u>				<u>11:57</u>						
	<u>TRUCK #2</u>				<u>12:30</u>						
	<u>SUPPLY WELL</u>				<u>12:50</u>						
	<u>TRUCK #3</u>				<u>13:02</u>						

Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>[Signature]</u>	Date/Time <u>11-2-04 11:00</u>
Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>[Signature]</u>	Date/Time <u>11-2-04 11:00</u>

New York State Project: Yes No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	FSS	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): <u>XOIS DRO</u>										



ENDYNE, INC.

129841445

Laboratory Services

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

LABORATORY REPORT

CLIENT: Griffin International

ORDER ID: 1417

PROJECT: L&B Truck Stop/#129841445

DATE RECEIVED: February 22, 1999

REPORT DATE: March 2, 1999

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Different groups of analyses may be reported under separate cover.

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.

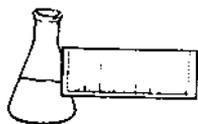
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy 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, unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures



LABORATORY REPORT

CLIENT: Griffin International
PROJECT: L&B Truck Stop/#129841445
REPORT DATE: March 2, 1999

ORDER ID: 1417
DATE RECEIVED: February 22, 1999
SAMPLER: DT
ANALYST: 820

Ref. Number: 134941 Site: MW #4 Date Sampled: February 19, 1999 Time: 11:30 AM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.4	mg/L	SW 8015B	2/26/99

Ref. Number: 134942 Site: MW #1 Date Sampled: February 19, 1999 Time: 11:57 AM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.4	mg/L	SW 8015B	2/26/99

Ref. Number: 134943 Site: MW #2 Date Sampled: February 19, 1999 Time: 12:30 PM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.4	mg/L	SW 8015B	2/26/99

Ref. Number: 134944 Site: Supply Well Date Sampled: February 19, 1999 Time: 12:50 PM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.4	mg/L	SW 8015B	2/26/99

Ref. Number: 134945 Site: MW #3 Date Sampled: February 19, 1999 Time: 1:02 PM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.4	mg/L	SW 8015B	2/26/99

#129841445

CHAIN-OF-CUSTODY RECORD

2-OR6

Project Name: L & B TRUCK STOP	Reporting Address: GRIFFIN	Billing Address: GRIFFIN
Site Location: WESTMINSTER	Company: GRIFFIN	Sampler Name: DON TOURANGEAU
Endyne Project Number: 1417	Contact Name/Phone #: TIM KELLY	Phone #:

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time 2-19-99	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
134939	TRIP BLANK	H ₂ O	X		07:05	2	40mL		8021B	ACC	
134940	Duplicate				11:51	2	40mL		8021B		
134941	mw #4				11:30	3	40mL		8021B, 30		
134942	mw #1				11:57						
134943	mw #2				12:30						
134944	SUPPLY WELL				12:50						
134945	mw #3				13:02						

Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 2-19-99 11:00
Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 2-22-99 11:00

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	Coliforms (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): 8015 DRO										