

MAR 08 1995



March 7, 1995

Mr. Dennis Boise  
Champlain Oil Company  
PO Box 2126  
South Burlington, VT 05407

RE: Report on the Investigation of Subsurface Petroleum Contamination at  
Speedi Lube, Rutland, Vermont (VTDEC Site # 94-1705)

Dear Mr. Boise:

Enclosed, please find the report on the Investigation of Subsurface Petroleum Contamination at the above referenced site.

Griffin is pleased to have conducted this work for you. If you have any questions regarding the report or if we can be of assistance to you, please call.

Sincerely,

A handwritten signature in cursive script that reads "Laurie T. Reed".

Laurie T. Reed,  
Project Geologist

c. Richard Spiese, VTDEC

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

**AT**

**SPEEDI LUBE  
NORTH MAIN STREET  
RUTLAND, VERMONT**

**VTDEC SITE #94-1705**

**March, 1995**

**PREPARED FOR:**

**Champlain Oil Company  
PO Box 2126  
South Burlington, Vermont**



**Griffin International Inc.  
PO Box 943 / 19 Commerce Street  
Williston, VT 05495  
(802) 865-4288**

**Griffin Project #10944595**

## TABLE OF CONTENTS

<u>SECTION</u>	<u>Page</u>
I. INTRODUCTION	1
II. SITE DESCRIPTION	1
III. INVESTIGATIVE PROCEDURES	1
A. Monitoring Well Installation	
B. Soil Boring and Screening	
C. Water Table Measurements and Groundwater Flow	
D. Groundwater Sampling and Analysis	
IV. RECEPTOR SURVEY AND RISK ASSESSMENT	4
V. CONCLUSIONS	4
VI. RECOMMENDATIONS	5
APPENDIX A:	Location Map Area Map Site Map Groundwater Contour Map
APPENDIX B:	Drilling Logs
APPENDIX C:	Water Level Data
APPENDIX D:	Laboratory Results

## **I. INTRODUCTION**

This report describes the investigation of subsurface petroleum contamination at Speedi Lube located on North Main Street at the corner of Woodstock Avenue in the City of Rutland, Vermont. This investigation was conducted by Griffin International Inc. (Griffin) for Champlain Oil Company (COCO) of South Burlington, Vermont.

This investigation was initiated by COCO after the presence of subsurface petroleum contamination was identified at the site during the removal of an underground storage tank (UST) on August 24, 1994. The UST appeared to be in good condition. Groundwater was encountered in the excavation, but no free phase product was evident. On the day of the UST removal, peak volatile organic compound (VOC) concentrations measured by photo ionization detector (PID) near the top of the former UST were over 2,000 parts per million (ppm). Peak VOC concentrations measured near the bottom of the former UST were over 600 ppm. All contaminated soils encountered during the UST closure were backfilled.

This investigation was requested by the State of Vermont Department of Environmental Conservation (VTDEC) in a letter (dated November 30, 1994) to Tony Cairns, COCO, from Richard Spiese, VTDEC. A Site Investigation Expressway Notification was submitted by Griffin to VTDEC on December 20, 1994. Griffin prepared a Work Plan and Cost Estimate detailing the work performed in this assessment which was submitted to COCO on December 22, 1994 and was approved by COCO on December 29, 1994.

## **II. SITE DESCRIPTION**

The site is located in a mainly commercial area at the corner of North Main Street and Woodstock Avenue (Route 7 and Route 4) in the City of Rutland, Vermont (See Site Location Map in Appendix A.). The site is at an approximate elevation of 650 feet above sea level. The site and surrounding area are gently sloping towards the west. Surface runoff at the site drains to storm drains located on North Main Street and Woodstock Avenue. The general area of Rutland City drains into the East Creek and the Otter Creek, the confluence of which is approximately one mile west-southwest of Speedi Lube. The site is abutted to the north by Aldous Funeral Home and to the east by a residence. The site is abutted to the south by Woodstock Avenue (Route 4). Across Woodstock Avenue is the Short Stop gasoline station and convenient store. The site is abutted to the west by North Main Street (Route 7). Across North Main Street is the Hearthside Restaurant. The relative area is shown on the Area Map in Appendix A. The site and surrounding area are supplied by a municipal water system. The site is served by municipal sewer.

## **III. INVESTIGATIVE PROCEDURES**

Six monitoring wells had been formerly installed at the site. MW1 and MW2 are located respectively north and south of the pump island. MW3 was located near the southwest corner of the lot. These wells were inspected and found to be unusable because they are full of soil. Well MW4 and MW5 were previously located near the UST field and were likely destroyed during the

UST removal. MW6 is located near the southwest corner of the building, near the UST field. MW6 was observed to be a 4 inch diameter well constructed entirely of screen. The bottom of MW6 was gauged at 4 feet below grade; 1 foot of water was gauged in the well. MW6 appears unusable for environmental sampling.

In order to better define the extent of subsurface petroleum contamination at the site, Griffin installed three new monitoring wells. Well MW7 was placed north-northeast of the tank field, upgradient from the former 6,000 gallon UST, to determine upgradient groundwater conditions. MW8 was placed down gradient from the tank field in the exact location occupied by MW3. MW9 was installed down-gradient and directly west of the tank field to determine the degree of contamination in this area. MW9 would have ideally been located further to the south (directly down-gradient from the former 6,000 gallon UST), but the presence of high voltage overhead primary power transmission lines in this area prevented placement of the well further to the south. The locations of the wells are indicated on the Site Map in Appendix A.

Depths to groundwater were measured in all three new on-site wells and in MW6. Groundwater samples were collected from the new monitoring wells for laboratory analysis. Soil samples collected from boreholes were screened for VOCs with a PID.

#### A. Monitoring Well Installation

Monitoring wells (MW7, MW8, and MW9) were installed on January 31, 1995 by Tri State Drilling and Boring of West Burke, Vermont under the direct supervision of Griffin. The wells were installed using a truck mounted 4 1/4" hollow stem auger. The wells are constructed of two inch diameter, 0.010" slot, PVC well screen and attached solid PVC riser. The annulus between the borehole wall and the screened section of each well is filled with sand pack to filter fine sediments in groundwater from entering the well. Approximately one foot above the screened section of each well, the annulus between the borehole wall and the riser is filled with a bentonite clay seal to prevent surface water from entering the borehole. Each well is protected at the surface by a flush mounted steel well head protective casing and a bolt down cover. Each well head protection casing is set in cement. Well construction details are listed on the well logs in Appendix B.

#### B. Soil Boring and Screening

Undisturbed soil samples were collected at five foot intervals from the borings using a split spoon sampling device. Samples were screened for VOCs using an HNU Model PI-101 PID and were logged by the supervising Geologist. Prior to screening, the PID was calibrated with isobutylene with reference made to benzene. Detailed lithologic descriptions and VOC concentrations are listed on the well logs in Appendix B.

Subsurface materials encountered in the boring of MW7 consisted of sand and gravel fill underlain by silt and subsequently by silt with sand and by fine sand with some coarse sand. VOC concentrations recorded in samples collected from MW7 ranged from 0.1 to 0.2 ppm.

MW8 is located in the exact location of former MW3. The boring of MW8 intersected old well materials and filter sand to approximately eight feet below grade. From 8.0 to 12.0 feet, The boring of MW8 intersected silty fine sand with some angular coarse sand and rounded pebbles. VOC concentrations recorded in samples collected from MW8 ranged from 0.1 to 0.2 ppm.

MW9 is located near the tank field. The boring of MW9 intersected sand and gravel fill underlain by silty fine sand with some coarse angular sand and small rounded pebbles and subsequently by slightly silty fine sand with angular coarse sand and small pebbles. VOC concentrations recorded in samples collected from MW9 ranged from 125 ppm to 175 ppm from samples collected from just below grade to 7.0 feet below grade. VOC concentrations decreased to 8.0 ppm from 10.0 to 12.0 feet below grade.

### C. Water Table Measurements And Groundwater Flow

The water table elevation in each monitoring well was measured on February 9, 1995. Water table elevations are plotted on the Groundwater Contour Map in Appendix A. The map indicates that groundwater in the vicinity of the site flows southwest. The average hydraulic gradient in the vicinity of the monitoring wells is calculated to be approximately 8.0 percent.

No free product was detected in any of the monitoring wells. All groundwater level data are recorded on the Liquid Level Table in Appendix C.

### D. Groundwater Sampling and Analysis

On February 9, 1994, Griffin collected groundwater samples from the three new monitoring wells. Laboratory results are summarized below in Table 1. Laboratory report forms are presented in Appendix D. All samples collected were analyzed according to EPA Method 602 which tests for the presence of VOCs including the petroleum compounds benzene, toluene, ethyl benzene, xylenes, and methyl tertiary butyl ether (MTBE) which is an octane boosting additive. All samples were collected according to Griffin's groundwater sampling protocol. Duplicate, trip blank, and equipment blank samples collected during the sampling indicate that adequate quality assurance/quality control was maintained during sample collection and analysis.

Analysis of the groundwater sample collected from MW7, located upgradient from the tank field, indicates the presence of MTBE in concentration of 367 micrograms per liter (ug/l) which is above the Vermont Groundwater Enforcement Standard (VGES) Health Advisory Level of 40 ug/l for the compound.

Analysis of the groundwater sample collected from MW8, located down-gradient from the tank field, indicates the presence of MTBE in concentration of 28.0 ug/l and a trace of benzene both detected in concentrations below VGES.

Analysis of the groundwater sample collected from MW7, located near the tank field, indicate the presence of benzene (123 ug/l), ethyl benzene (736 ug/l), toluene (519 ug/l), xylenes

TABLE 1.

**Groundwater Quality Summary  
Speedi Lube  
Rutland, Vermont**

Monitoring Date: 2/9/95  
All Values Reported in ug/L (ppb)

PARAMETER	Date of Sample Collection			VGES
	MW7	MW8	MW9	
Benzene	ND > 5	TBQ < 1	123.	5.0*
Chlorobenzene	ND > 5	ND > 1	ND > 50	100**
1,2-DCB	ND > 5	ND > 1	ND > 50	600*
1,3-DCB	ND > 5	ND > 1	ND > 50	600**
1,4-DCB	ND > 5	ND > 1	ND > 50	75*
Ethylbenzene	ND > 5	ND > 1	736.	700** 680 - No. 4 HHA - don't use MCL
Toluene	ND > 5	ND > 1	519.	1,000**
Xylenes	ND > 5	ND > 1	3,890.	10,000** 400 - not VHA or MCL
Total BTEX		TBQ < 1	5,268.	
MTBE	367.	28.0	1,310.	40**
BTEX + MTBE	367.	28.0	6,578.	

VGES - Vermont Groundwater Enforcement Standards

\* - EPA Maximum Contaminant Level

ND > - None Detected Above Stated Limits

\*\* - VT Health Advisory Level

TBQ - Trace, below quantitation limits

ANALYSIS BY EPA METHOD 602

(3,890 ug/l), and MTBE (1,310 ug/l). Benzene, ethyl benzene, and MTBE were detected in concentrations exceeding VGES, Toluene and xylenes were detected in concentrations below VGES.

#### **IV. RECEPTOR SURVEY AND RISK ASSESSMENT**

Griffin conducted a visual survey of the site to identify local potential receptors of subsurface petroleum contaminants. The most likely receptors in the vicinity of this site appear to be storm sewers located on North Main Street and Woodstock Avenue down-gradient from the tank field. Storm drains connected to these sewers were screened for VOCs on January 31, 1994. No elevated VOCs were detected.

The Speedi Lube building is of concrete slab construction. Retail shops located in a small mall and Burger King are the nearest buildings down-gradient from the site. Both of these buildings are of concrete slab construction and are located more than 400 feet from the tank field. The risk of VOC vapor impact to the buildings does not appear to be significant. Buildings directly west, east, and north of the site do have basements, but the buildings are not down-gradient from the site. No reported occurrences of vapor impact in the area of Speedi Lube are known.

Municipal water serves the area including the subject property. The water source is not at risk of impact from subsurface petroleum contamination at the subject property. No supply wells were identified in the vicinity of the site.

#### **V. CONCLUSIONS**

On the basis of this investigation, Griffin has concluded the following:

- 1) There has been a release or releases of petroleum (gasoline) at this site. The amounts and duration of the release(s) are unknown.
- 2) The PID and other data collected during the closure of the 6,000 gallon UST on August 24, 1994 suggest that a source of petroleum contamination was at or near the top of the removed UST, possibly from piping leaks and/or tank overfills.
- 3) Soils at the site consist generally of a fining-up sequence of silt with fine sand, silty sands, and sand with silt, coarse sand, and pebbles. The water table is relatively shallow at the site, ranging in depth from approximately three to six feet below grade. Groundwater apparently flows southwest at a average hydraulic gradient of 8.0 percent.
- 4) No significantly contaminated soil was identified in the areas of MW7, located upgradient from the tank field, or in MW8, located downgradient from the tank field. The degree of soil contamination identified in the area of MW9 was observed to decrease with depth.

5) Groundwater in the vicinity of the tank field is impacted by petroleum compounds in concentration above VGES. Significant groundwater contamination was not detected west of the tank field in MW8. No monitoring wells are located directly down-gradient from the area of the former 6,000 gallon UST. It is likely that down-gradient groundwater contamination extends under Woodstock Avenue and to the intersection of Woodstock Avenue and North Main Street. Future drilling in this area directly down-gradient from the tank field is possible but may likely be impractical due traffic and the presence of densely concentrated underground and overhead utilities. Significant concentrations of MTBE were detected in MW7, located up-gradient from the tank field. The source of contaminants in this well is not known.

6) No sensitive receptors were found to have been impacted from subsurface contamination at Speedi-Lube.

## **VI RECOMMENDATIONS**

On the basis of the above conclusions, Griffin recommends the following:

- 1) Since no sensitive receptors appear to be impacted, and since there does not appear to be any significant impact to human health or the environment from the subsurface petroleum contamination at Speedi-Lube, active remediation is not recommended at the site.
- 2) Because of the presence of petroleum compounds which exceed VGES in monitoring wells at the site, the newly installed monitoring wells at the site should be sampled on a bi-annual basis to establish a trend towards groundwater quality improvement at Speedi Lube. Griffin recommends sampling in the Spring and Fall of 1995.

**APPENDIX A**

SITE LOCATION MAP  
AREA MAP  
SITE MAP  
GROUNDWATER CONTOUR MAP



JOB #: 10944595  
 SOURCE: USGS- RUTLAND, VERMONT QUADRANGLE



**SPEEDI-LUBE**

RUTLAND,

VERMONT

SITE LOCATION MAP

DATE: 2/1/95

DWG.#:1

SCALE: 1:24000

DRN.:SB

APP.:LR

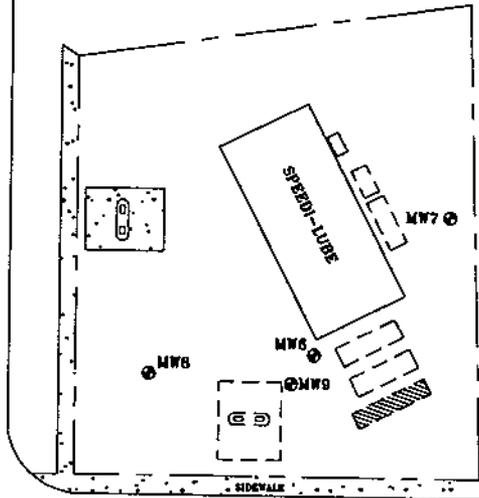


ASHBEL'S RESTAURANT

HEARTHSIDE RESTAURANT

ALDOUS FUNERAL HOME

GARAGE

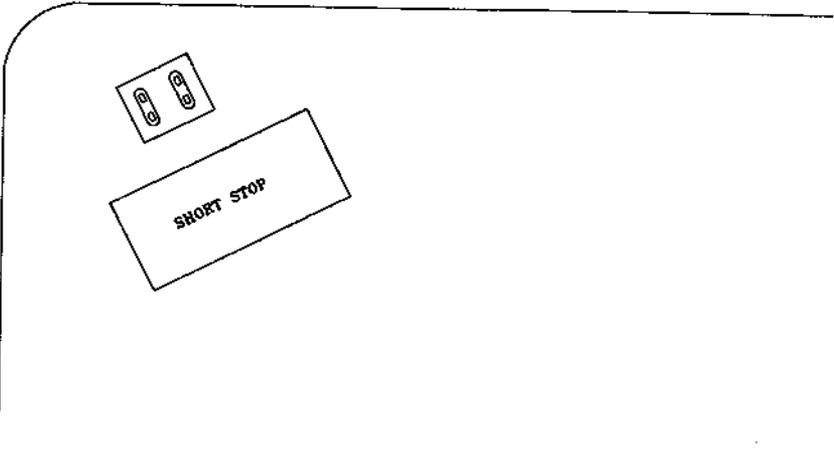


RESIDENCE

U.S. ROUTE 7

WOODSTOCK AVE. (U.S. ROUTE 4)

SHOPS



BURGER KING

JOB #: 10944595  
AREA MAP DRAWN FROM FIELD NOTES TAKEN BY L. REED ON 1/31/95.



# SPEEDI-LUBE

RUTLAND,

VERMONT

## AREA MAP

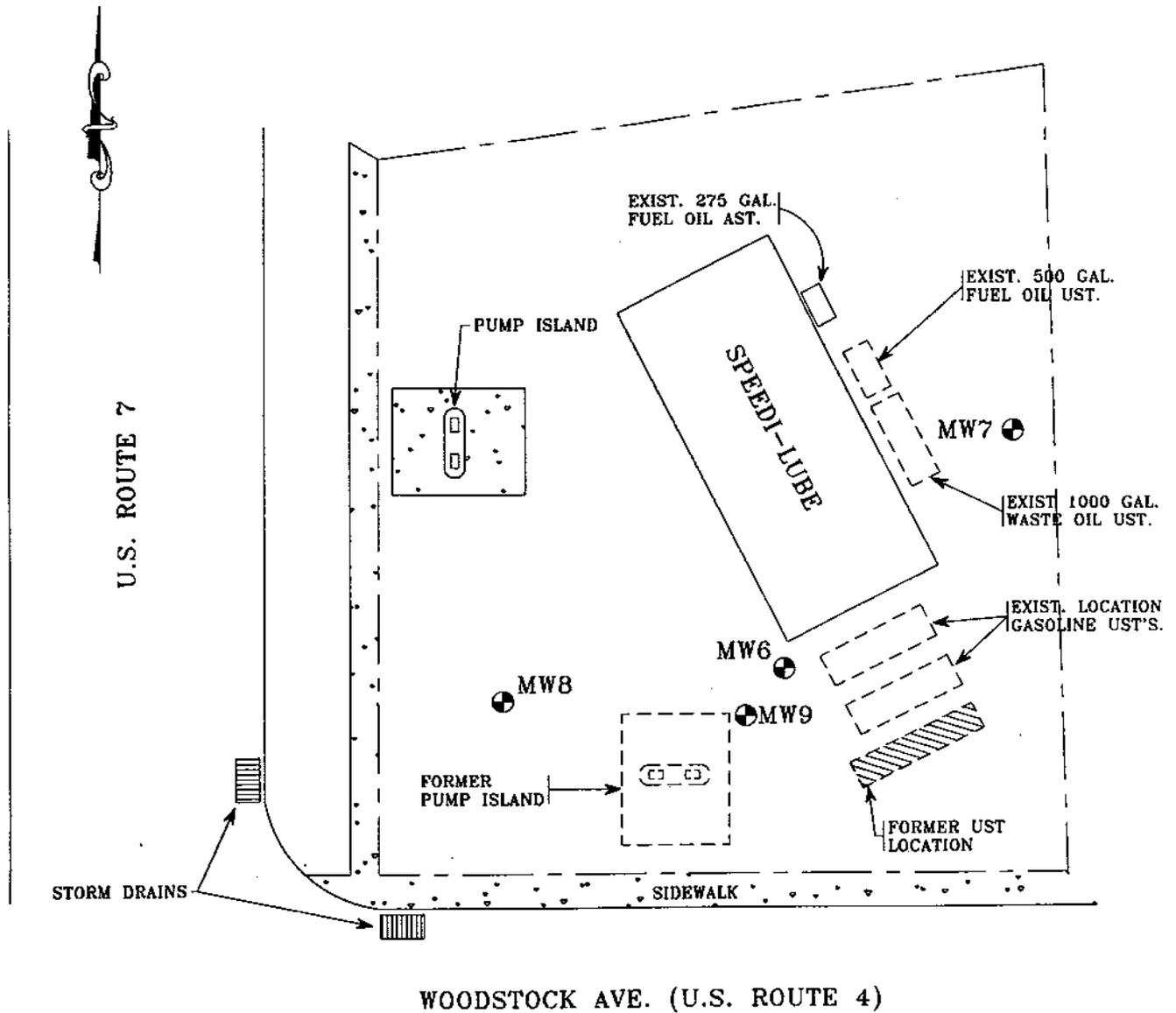
DATE: 2/1/95

DWG.#: 3

SCALE: NONE

DRN.:SB

APP.:LR



**LEGEND**

-  MW2 MONITORING WELL
-  PROPERTY LINE

JOB #: 10944595  
 SITE MAP DRAWN FROM SURVEY DATA AND FIELD NOTES TAKEN BY L. REED ON 1/31/95.



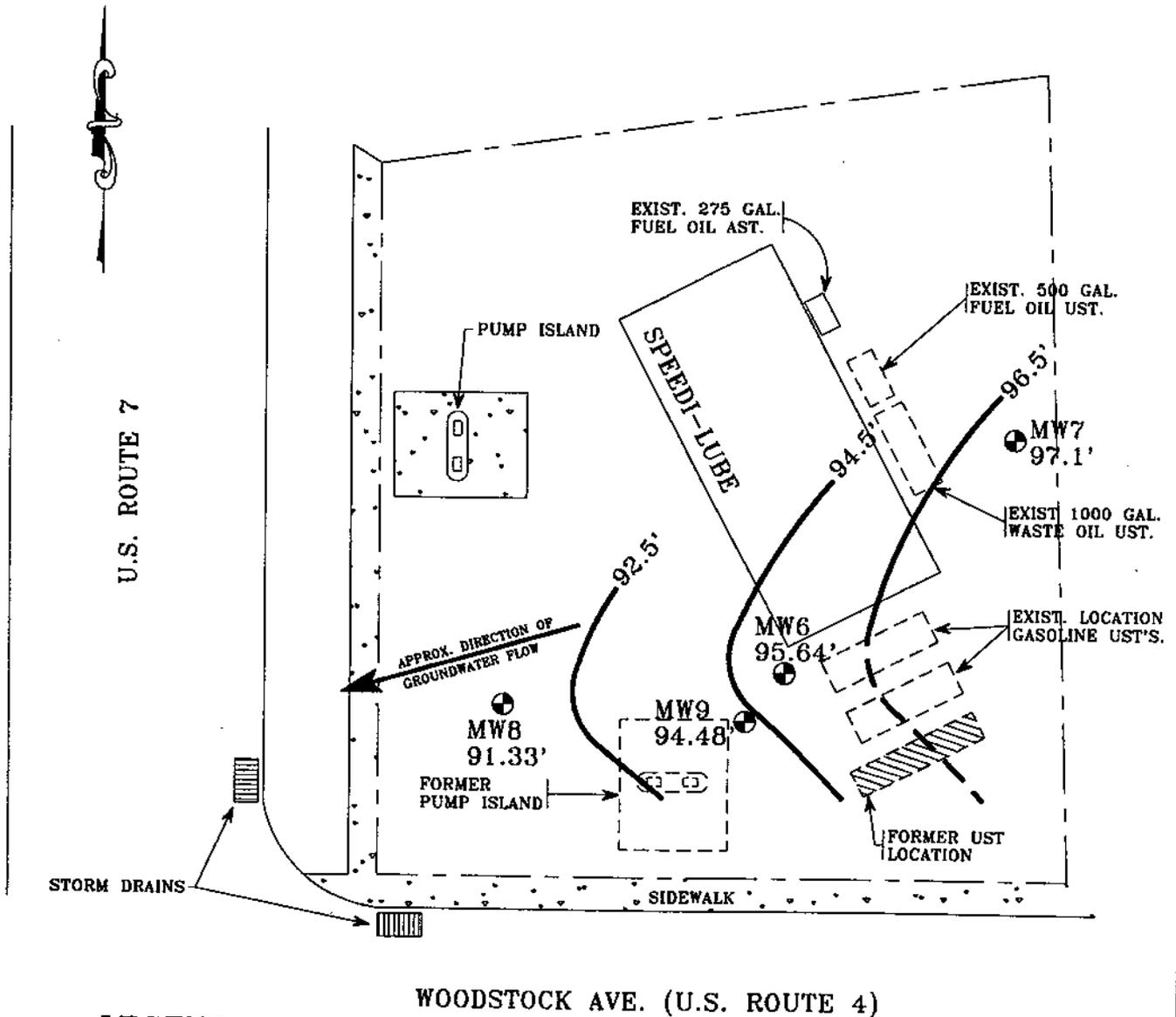
**SPEEDI-LUBE**

RUTLAND,

VERMONT

**SITE MAP**

DATE: 2/14/95	DWG.#: 2	SCALE: 1"=30'	DRN.:SB	APP.:LR
---------------	----------	---------------	---------	---------



**LEGEND**

- MW7 97.1' MONITORING WELL AND WATER TABLE ELEVATION IN FEET
- 92.5' GROUNDWATER CONTOUR IN FEET (DASHED WHERE INFERRED)
- - - PROPERTY LINE

JOB #: 10944595  
 MEASUREMENT DATE: 2/9/95  
 SITE MAP DRAWN FROM SURVEY DATA AND FIELD NOTES TAKEN BY L. REED ON 1/31/95.



**SPEEDI-LUBE**

RUTLAND, VERMONT  
 GROUNDWATER CONTOUR MAP

DATE: 2/14/95	DWG.#: 2	SCALE: 1"=30'	DRN.:SB	APP.:LR
---------------	----------	---------------	---------	---------

**APPENDIX B**

DRILLING LOGS

PROJECT SPEEDI LUBE

LOCATION RUTLAND, VERMONT

DATE DRILLED 1/31/95 TOTAL DEPTH OF HOLE 12.0'

DIAMETER 4.25"

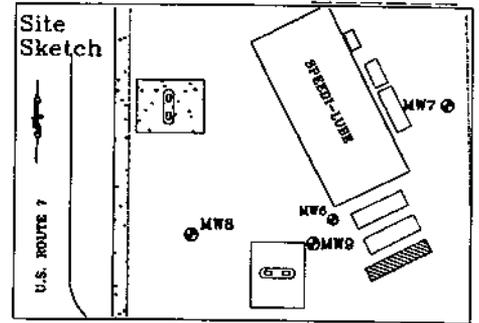
SCREEN DIA. 2" LENGTH 10' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 1.75' TYPE sch 40 pvc

DRILLING CO. TRI-STATE DRILLING METHOD HSA

DRILLER RAY/STORM LOG BY L. REED

WELL NUMBER MW7



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		Asphalt	0
1		CONCRETE		Gray GRAVEL FILL	1
2		BENTONITE		2.8' WATER TABLE	2
2		WELL RISER		Dark gray FILL, - SILT and GRAVEL, moist, trace of brick.	3
3				Light brown SILT, moist.	5
5		SAND PACK		SILT, wet with light brown fine to coarse angular SAND.	6
6			5'-7'- 3/4/5/13 0.2 ppm		7
7		WELL SCREEN			8
8					9
9					10
10					10
11		BOTTOM CAP	10'-12'- 22/24/28/28 0.1 ppm	Light brown fine SAND with 10% coarse SAND, damp.	11
12		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 12' END OF EXPLORATION AT 12'	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

WELL NUMBER MW8

PROJECT SPEEDI LUBE

LOCATION RUTLAND, VERMONT

DATE DRILLED 1/31/95 TOTAL DEPTH OF HOLE 10.0'

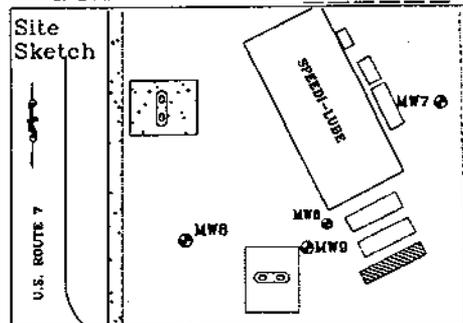
DIAMETER 4.25"

SCREEN DIA. 2" LENGTH 8' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 1.75' TYPE sch 40 pvc

DRILLING CO. TRI-STATE DRILLING METHOD HSA

DRILLER RAY/STORM LOG BY L. REED

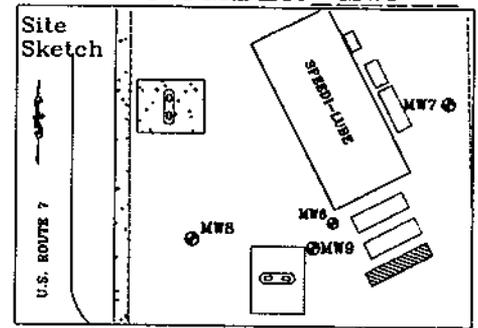


GRIFFIN INTERNATIONAL, INC

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			Old roadbox.	1
2	BENTONITE WELL RISER		0'-4' 0.0 ppm	Miscellaneous debris/fill, damp, no odor.	2
3					3
4					4
5	SAND PACK				5
6			4'-8' 0.4 ppm	Sandpacking, wet, no odor.	6
7	WELL SCREEN				7
8					8
9	BOTTOM CAP		8'-10' 0.1 ppm	Brown silty fine SAND with 10% coarse angular SAND and PEBBLES.	9
10					10
11			10'-12'- 18/22/67 0.4 ppm	Brown slightly silty fine SAND with 10% angular coarse SAND and PEBBLES, dry.	11
12	UNDISTURBED NATIVE SOIL			BASE OF WELL AT 10' END OF EXPLORATION AT 12'	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT SPEEDI LUBE  
 LOCATION RUTLAND, VERMONT  
 DATE DRILLED 1/31/95 TOTAL DEPTH OF HOLE 10.0'  
 DIAMETER 4.25"  
 SCREEN DIA. 2" LENGTH 8' SLOT SIZE 0.010"  
 CASING DIA. 2" LENGTH 1.75' TYPE sch 40 pvc  
 DRILLING CO. TRI-STATE DRILLING METHOD HSA  
 DRILLER RAY/STORM LOG BY L. REED

WELL NUMBER MW9



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		Asphalt	0
1	CONCRETE		1.0' 133 ppm	Sand and gravel FILL, stained, pet. odor.	1
2	BENTONITE	WELL RISER			2
3			3.0' 175 ppm	Silty fine SAND with coarse angular SAND and PEBBLES, pet. stained.	3
4					4
5	SAND PACK				5
6			5'-7'- 5/3/6/12 125 ppm	Brown silty fine SAND with 10% angular coarse SAND, & 5% rounded small pebbles, damp, slight pet. staining, strong odor.	6
7	WELL SCREEN				7
8					8
9	BOTTOM CAP				9
10					10
11			10'-12'- 23/31/23/39 8.0 ppm	Brown slightly silty fine SAND with 5-10% angular coarse SAND and angular PEBBLES dry to damp, no odor.	11
12	UNDISTURBED NATIVE SOIL			BASE OF WELL AT 10' END OF EXPLORATION AT 12'	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

APPENDIX C

WATER LEVEL DATA

**Liquid Level Monitoring Data**  
**Speedi Lube**  
**Rutland, Vermont**

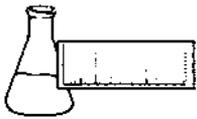
Monitoring Date: 2/9/95

Well I.D.	Well Depth	Top of Casing Elevation	Depth To Product	Depth To Water	Corrected Water Table Elevation
MW-6	4.00	99.25		3.61	95.64
MW-7	12.00	100.00	-	2.9	97.10
MW-8	10.00	97.24	-	5.91	91.33
MW-9	10.00	98.72	-	4.24	94.48

All Values Reported in feet  
Elevations are based on Arbitrary Datum

**APPENDIX D**

LABORATORY RESULTS



**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: Speedi-Lube  
REPORT DATE: February 23, 1995  
DATE SAMPLED: February 9, 1995

PROJECT CODE: GISP1385  
REF.#: 70,665 - 70,670

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated samples were preserved 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.

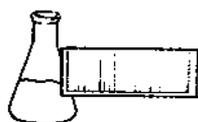
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

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

**LABORATORY REPORT**

**EPA METHOD 602--PURGEABLE AROMATICS**

CLIENT: Griffin International  
PROJECT NAME: Speedi-Lube  
REPORT DATE: February 23, 1995  
DATE SAMPLED: February 9, 1995  
DATE RECEIVED: February 9, 1995  
DATE ANALYZED: February 18, 1995

PROJECT CODE: GISP1385  
REF.#: 70,665  
STATION: Trip Blank  
TIME SAMPLED: 7:50  
SAMPLER: Becca Schuyler

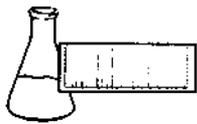
<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND <sup>1</sup>
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 100%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



**ENDYNE, INC.**

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International  
PROJECT NAME: Speedi-Lube  
REPORT DATE: February 23, 1995  
DATE SAMPLED: February 9, 1995  
DATE RECEIVED: February 9, 1995  
DATE ANALYZED: February 20, 1995

PROJECT CODE: GISP1385  
REF.#: 70,666  
STATION: MW 7  
TIME SAMPLED: 10:40  
SAMPLER: Becca Schuyler

<u>Parameter</u>	<u>Detection Limit (ug/L)<sup>1</sup></u>	<u>Concentration (ug/L)</u>
Benzene	5	ND <sup>2</sup>
Chlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,3-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Ethylbenzene	5	ND
Toluene	5	ND
Xylenes	5	ND
MTBE	50	367.

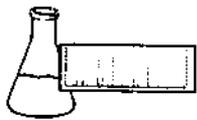
Bromobenzene Surrogate Recovery: 123%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at 20% dilution.

2 None detected



**ENDYNE, INC.**

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International  
PROJECT NAME: Speedi-Lube  
REPORT DATE: February 23, 1995  
DATE SAMPLED: February 9, 1995  
DATE RECEIVED: February 9, 1995  
DATE ANALYZED: February 20, 1995

PROJECT CODE: GISP1385  
REF.#: 70,669  
STATION: MW 8  
TIME SAMPLED: 11:20  
SAMPLER: Becca Schuyler

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	TBQ <sup>1</sup>
Chlorobenzene	1	ND <sup>2</sup>
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	28.0

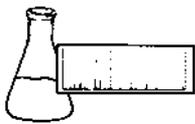
Bromobenzene Surrogate Recovery: 96%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 3

NOTES:

1 Trace below quantitation limit

2 None detected



**ENDYNE, INC.**

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International  
PROJECT NAME: Speedi-Lube  
REPORT DATE: February 23, 1995  
DATE SAMPLED: February 9, 1995  
DATE RECEIVED: February 9, 1995  
DATE ANALYZED: February 20, 1995

PROJECT CODE: GISP1385  
REF.#: 70,667  
STATION: MW 9  
TIME SAMPLED: 11:00  
SAMPLER: Becca Schuyler

<u>Parameter</u>	<u>Detection Limit (ug/L)<sup>1</sup></u>	<u>Concentration (ug/L)</u>
Benzene	50	123.
Chlorobenzene	50	ND <sup>2</sup>
1,2-Dichlorobenzene	50	ND
1,3-Dichlorobenzene	50	ND
1,4-Dichlorobenzene	50	ND
Ethylbenzene	50	736.
Toluene	50	519.
Xylenes	50	3,890.
MTBE	500	1,310.

Bromobenzene Surrogate Recovery: 97%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at 2% dilution.

2 None detected



**ENDYNE, INC.**

**Laboratory Services**

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

**LABORATORY REPORT**

**EPA METHOD 602--PURGEABLE AROMATICS**

CLIENT: Griffin International  
PROJECT NAME: Speedi-Lube  
REPORT DATE: February 23, 1995  
DATE SAMPLED: February 9, 1995  
DATE RECEIVED: February 9, 1995  
DATE ANALYZED: February 22, 1995

PROJECT CODE: GISP1385  
REF.#: 70,668  
STATION: Duplicate of MW 9  
TIME SAMPLED: 11:00  
SAMPLER: Becca Schuyler

<u>Parameter</u>	<u>Detection Limit (ug/L)<sup>1</sup></u>	<u>Concentration (ug/L)</u>
Benzene	50	101.
Chlorobenzene	50	ND <sup>2</sup>
1,2-Dichlorobenzene	50	ND
1,3-Dichlorobenzene	50	ND
1,4-Dichlorobenzene	50	ND
Ethylbenzene	50	611.
Toluene	50	409.
Xylenes	50	3,260.
MTBE	500	1,280.

Bromobenzene Surrogate Recovery: 98%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

**NOTES:**

1 Detection limit raised due to high levels of contaminants. Sample run at 2% dilution.

2 None detected



**ENDYNE, INC.**

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International  
PROJECT NAME: Speedi-Lube  
REPORT DATE: February 23, 1995  
DATE SAMPLED: February 9, 1995  
DATE RECEIVED: February 9, 1995  
DATE ANALYZED: February 18, 1995

PROJECT CODE: GISP1385  
REF.#: 70,670  
STATION: Equipment Blank  
TIME SAMPLED: 11:25  
SAMPLER: Becca Schuyler

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND <sup>1</sup>
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 99%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

0944595

**CHAIN-OF-CUSTODY RECORD**

RECEIVED FEB 23 1995

@ 5:00pm

13493

Project Name: Speedi-Lube Site Location: Rutland, VT	Reporting Address: Griffin	Billing Address: Griffin
Endyne Project Number: <u>GISP1385</u>	Company: Griffin Contact Name/Phone #:	Sampler Name: Becca Schuyler Phone #: 865-4288

Lab #	Sample Location	Matrix	C R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
70665	Trip Blank (NEW)	H <sub>2</sub> O	X		2-9-95 7:50	2	40 mL		602	HCl	
70666	MW 7	↓	↓		10:40	↓	↓		↓	↓	
70667	MW 9	↓	↓		11:00	↓	↓		↓	↓	
70668	Duplicate of MW 9	↓	↓		11:00	↓	↓	2	↓	↓	
70669	MW 8	↓	↓		11:20	↓	↓		↓	↓	
70670	Equipment Blank	↓	↓		11:25	↓	↓		↓	↓	

Relinquished by: Signature <i>Becca Schuyler</i>	Received by: Signature <i>Jm Wetmore</i>	Date/Time 2/9/95 2:50pm
Relinquished by: Signature	Received by: Signature	Date/Time

**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 <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										