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August 17, 1995

Mr. Matthew Moran
State of Vermont
Department of Environmental Conservation
Hazardous Materials Management Division
103 South Main Street
Waterbury, VT 05671-0404

RE: Summary Report on the Investigation at Poultney Mobil Station, Poultney, Vermont
(VTDEC Site #94-1557)

Dear Mr. Moran:

Enclosed please find the summary report on the investigation of potential petroleum contamination at the Poultney Mobil Station in Poultney, Vermont.

If you have any questions regarding this investigation, please do not hesitate to call.

Sincerely,

A handwritten signature in cursive script that reads "Kevin McGraw".

Kevin McGraw
Hydrogeologist

enclosure

**SUMMARY REPORT ON THE
INVESTIGATION OF POTENTIAL
PETROLEUM CONTAMINATION**

AT

**POULTNEY MOBIL
POULTNEY, VERMONT**

JULY 1995

Prepared by:



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

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I. INTRODUCTION

The following report summarizes the limited subsurface site assessment for potential petroleum contamination at the Poultney Mobil site, located at the intersection of Routes 30 and 140 in Poultney, Vermont (see Site Location Map, Appendix A). This assessment is a follow-on action to the discovery of petroleum-contaminated soils at the site during the late 1993 site construction efforts. Griffin International, Inc. (Griffin) has conducted this investigation for Midway Oil Corporation. The assessment has been conducted in accordance with Griffin's work plan and cost estimate, dated January 26, 1995.

II. SITE INVESTIGATION

Under the original scope of work for this project, two existing groundwater monitoring wells were to be sampled if they could be located. On April 25, 1995, Griffin attempted to locate these wells using a magnetometer. Several locations with positive magnetometer readings were checked for the presence of a well road box. The pavement was removed in these areas, however, no wells were found.

The approach to the investigation at this site was therefore revised to include advancing of one soil boring using a hand auger in the vicinity of where the contaminated soils were excavated.

On May 25, 1995, the boring was advanced near the southeast corner of the on-site building, approximately 5 feet away from the original area of contaminated soils (see Site Map, Appendix A). Soils from this boring were screened for volatile organic compounds (VOCs) using a photoionization device (PID). This boring (SB-1) was advanced to approximately six feet below grade. The soils encountered consisted primarily of brown, fine sand and gravel with a trace of silt. Few cobbles were also present also. At six feet, there was auger refusal due to gravel or possibly a cobble. From grade to five feet below grade, the soils were dry. The soil sample collected from between 5 and 6 feet below grade was damp, indicating that the water table may have been within several feet of this depth. Soils from the bottom of this boring were collected for laboratory analysis. Petroleum contamination was not observed in any of the soils from this boring; all PID readings were 0.0 parts per million (ppm).

A second boring (SB-2) was attempted four feet east of SB-1 in an attempt to advance the boring further below grade or to the water table. Auger refusal was met at 1.8 feet below grade, again due to gravel or cobbles. All soils from both borings were backfilled upon completion of the assessment of the soils.

III. SOIL SAMPLING RESULTS

The soil sample from the base of SB-1 was submitted to the laboratory to be analyzed for petroleum compounds (including BTEX and MTBE) by EPA Method 8020, polyaromatic hydrocarbons (PAHs) by EPA Method 8100, and lead by EPA Method 7421.

No petroleum compounds were detected in the soil sample from SB-1 using Method 8020.

Low levels of contamination were detected in the analysis for PAHs. Contaminant concentrations ranged from 90.4 to 326. ug/kg (parts per billion) in the eight compounds that were quantifiable. Nine compounds were not detected; for two of the compounds, a trace was detected below the quantitation limit of 50 ug/kg.

Lead was detected at 51.4 mg/kg, much less than the concentration detected in the soil samples from the original stockpile of excavated contaminated soil. In the sample obtained on December 29, 1993, the lead concentration was 1,310 mg/kg.

According to the Vermont Hazardous Waste Management Regulations (Section 7-207), wastes are considered hazardous by the characteristic of toxicity if the waste contains contaminants at or above EPA Maximum Contaminant Concentrations. These characteristics are based on the Toxicity Characteristic Leaching Procedure (TCLP). The lead analysis performed on the subject soils were by a direct method which means the reported concentration reflects the concentration of lead in the soils themselves, while the TCLP would report the concentration extracted into a buffer solution. Therefore, a conversion was performed, which reports the contaminant concentration of lead equivalent to that which would have resulted from a TCLP analysis. The proper conversion factor to obtain results comparable to a TCLP analysis was provided by Harry Locker, Ph.D., the laboratory director at Endyne Laboratories in Williston, Vermont.

The equivalent lead concentration of the soil sample from SB-1 by the TCLP analysis is 2.57 mg/L, which is less than the EPA Maximum Concentration for lead of 5.0 mg/L. This value of 2.57 mg/L is a worst-case scenario and indicates the concentration in the buffer solution if all lead is leached from the soil sample. The actual TCLP concentration for lead would actually be some fraction of this number. Therefore, the soil would not be considered a hazardous waste by the characteristic of toxicity, based on the concentration of lead.

All soil analytical results are presented in Appendix B.

IV. SENSITIVE RECEPTOR ASSESSMENT

The entire area is reportedly served by the municipal water supply system. According to Mr. Bob Wells, Poultney Town Manager, the nearest private supply well is located approximately 1/4-mile south of the Mobil Station on the opposite side of the Poultney River. This well is not at risk due to its location relative to the site. The public water supply system utilizes two drilled wells located west of Green Mountain College near the banks of the Poultney River. These wells are not at risk either.

The nearest basement in the area is approximately 40 feet south of the Mobil Station building (see Area Map, Appendix A). Groundwater flow is likely to the west in this area, and the risk to the basement to the south is low. Moreover, the risk of petroleum vapor impact to any of the

basements in the area is deemed to be negligible, especially since the contaminants detected in the soils originally excavated from the site are primarily "heavier" compounds which have low volatilities.

The nearest surface water is an unnamed stream located approximately 200 feet west of the site. This unnamed stream flows generally southwest through the center of Poultney for approximately 2,000 feet where it flows into the Poultney River. The unnamed stream flows for about 300 feet through a large concrete culvert underneath the intersection of Routes 30 and 140. At the southwest corner of this intersection, behind the town offices, the stream emerges. During Griffin's site visit in May, the stream was surveyed for any signs of petroleum contamination. No adverse impacts were observed. Based on the soil sampling results from this investigation, and the significant distance from the Poultney Mobil Station to this stream, the risk of impact to this stream is deemed to be low.

No other potential sensitive receptors were identified in the vicinity of the Poultney Mobil Station.

V. PLAN TO MONITOR STOCKPILED SOILS

Approximately 24 cubic yards of soils were stockpiled at another Midway Oil site, a BP Station located about 1/4 mile to the west on Main Street. The soils are currently on plastic sheeting and are completely covered with plastic sheeting to prevent leaching of contaminants into the surrounding soils. The stockpile was inspected in May of 1995, and it was determined that the soils were not ready to be spread at that time. The soils will remain in their current location, allowing the soils to be passively remediated by natural processes. The plastic sheeting should be maintained during the entire process.

VI. CONCLUSIONS

Based on the site investigation, Griffin has reached the following conclusions:

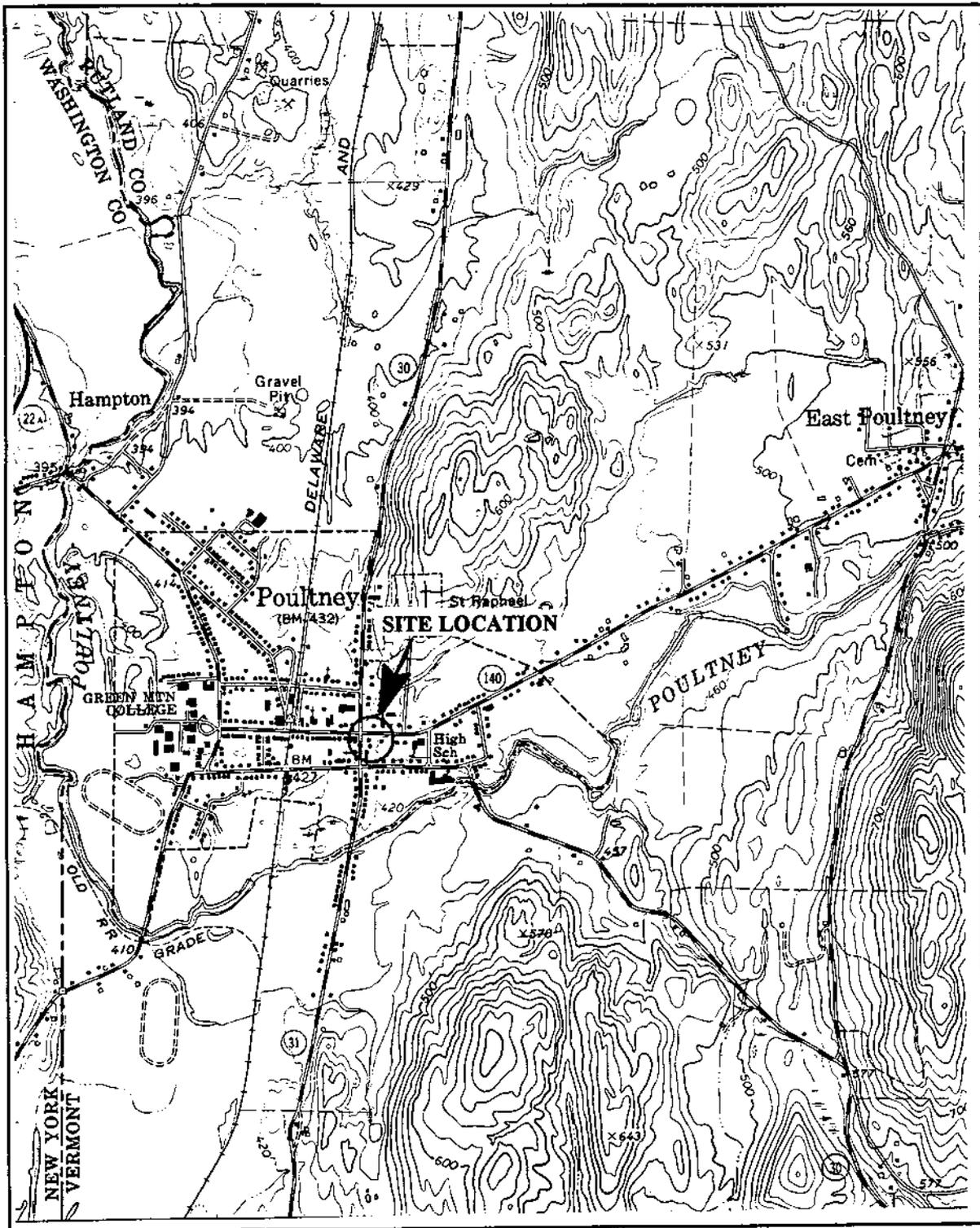
1. Contaminant concentrations detected in the soil during the investigation in May of 1995 were significantly less than the concentrations of these same compounds in the stockpile soil sample collected in December of 1993. These results suggest that the significantly contaminated soils may have been removed during the construction of the new on-site building.
2. The low concentrations of lead and polyaromatic hydrocarbons detected in the soil sample from SB-1 do not exceed any known standards for these compounds.
3. The only significant potential receptor of the residual contamination remaining at the site is the unnamed stream located approximately 200 feet away from the site. Based on the soil sampling results from this investigation, and the significant distance from the Poultney Mobil Station to this stream, the risk of impact to the stream is deemed to be low.

VII. RECOMMENDATIONS

Based on the above conclusions, Griffin does not recommend any additional investigation at this site. However, the stockpiled soils should be rechecked in one year to determine if they have been fully remediated.

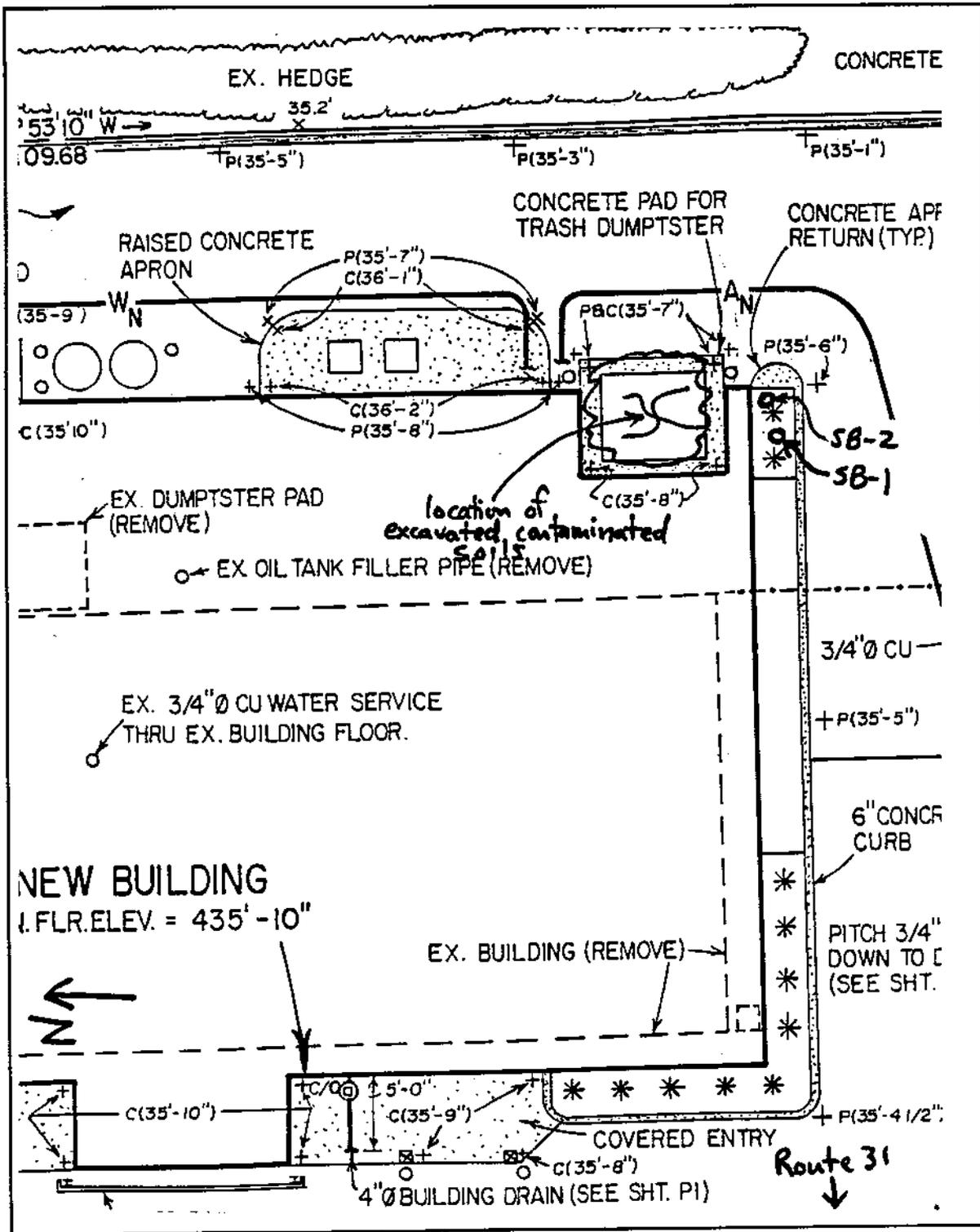
APPENDIX A - MAPS

Site Location Map
Site Map
Area Map



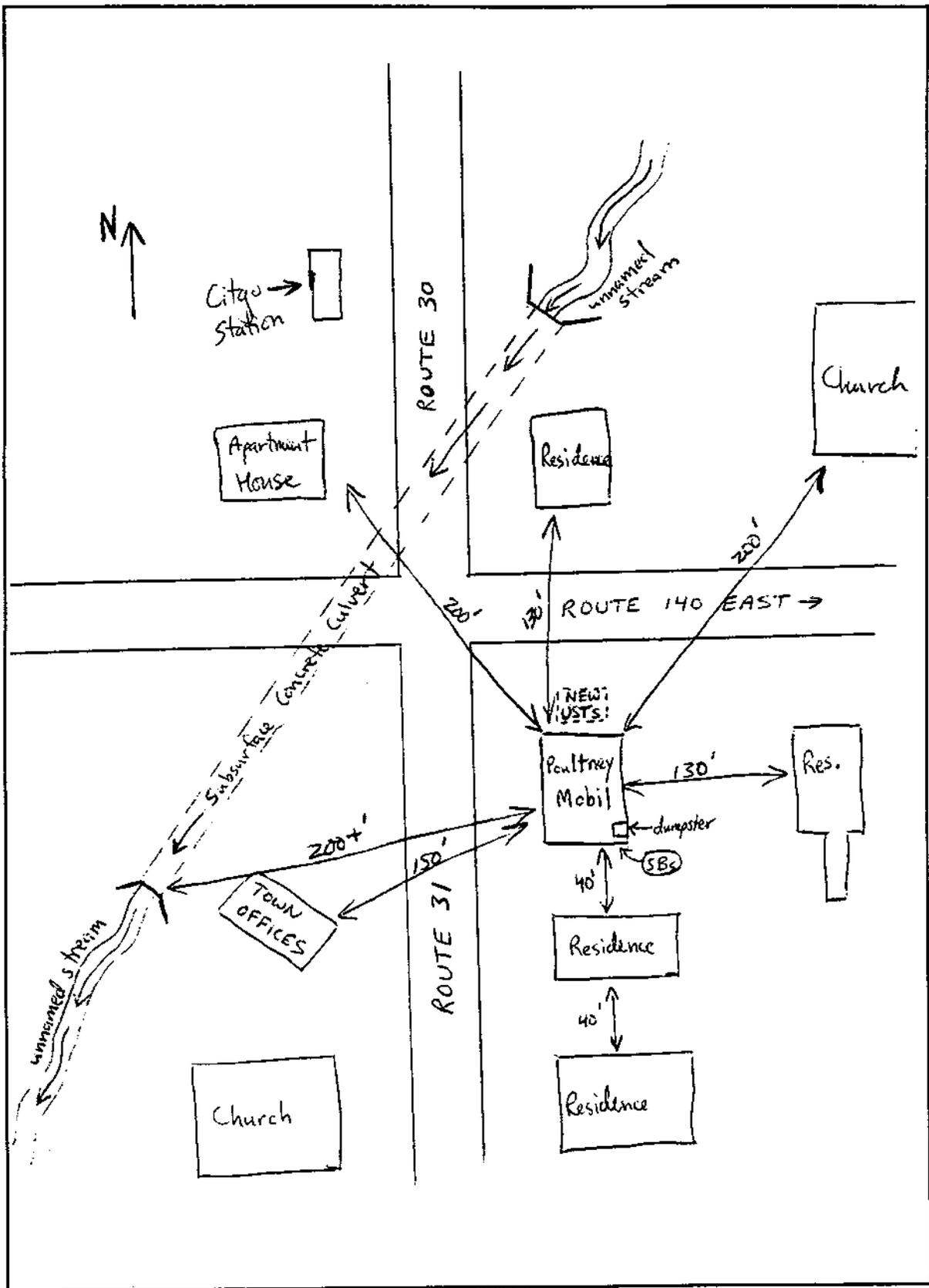
SITE LOCATION MAP
Poulney Mobil Station

SOURCES: U.S.G.S. - POULTNEY, VT-NY (1972)
SCALE 1:24,000



SITE MAP
Poultney Mobil Station

SOURCE: Roberts & Franzoni, Inc. Grading/Utilities Plan
 SCALE 1"=10'

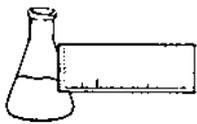


AREA MAP
Poultney Mobil Station

NOT TO SCALE

APPENDIX B

Laboratory Reports



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: Poultney Mobil
DATE REPORTED: June 6, 1995
DATE SAMPLED: May 25, 1995

PROJECT CODE: GIPM1244
REF. #: 75,158

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

Chain of custody indicated correct 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.

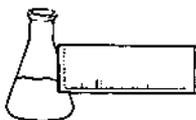
Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 8020 COMPOUNDS BY EPA METHOD 8260

CLIENT: Griffin International
PROJECT NAME: Poultney Mobil
REPORT DATE: June 6, 1995
SAMPLER: Kevin McGraw
DATE SAMPLED: May 25, 1995
DATE RECEIVED: May 30, 1995

PROJECT CODE: GIPM1244
ANALYSIS DATE: June 5, 1995
STATION: SB-1-6
REF.#: 75,158
TIME SAMPLED: 12:20

<u>Parameter</u>	<u>Detection Limit (ug/kg)</u>	<u>Concentration As Received (ug/kg)</u>
Benzene	10	ND ¹
Chlorobenzene	20	ND
1,2-Dichlorobenzene	20	ND
1,3-Dichlorobenzene	20	ND
1,4-Dichlorobenzene	20	ND
Ethylbenzene	10	ND
Toluene	10	ND
Total Xylenes	30	ND
MTBE	30	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

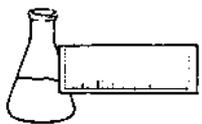
Dibromofluoromethane: 85%
Toluene-d8: 106%
4-Bromofluorobenzene: 107%

PERCENT SOLIDS: 91%

NOTES:

1 None detected

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REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International
PROJECT NAME: Poultney Mobil
DATE REPORTED: June 12, 1995
DATE SAMPLED: May 25, 1995

PROJECT CODE: GIPM1243
REF. #: 75,157

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

Chain of custody indicated correct 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.

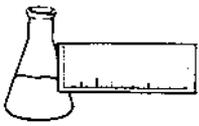
Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

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

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ENDYNE, INC.

Xylene - Sol - Insoluble
Benzene - Sol - 0.07%
Ethylbenzene - Sol - 0.0120
Toluene - Sol - 0.05%

LABORATORY REPORT
EPA METHOD 8100 BY GC/MS

Laboratory Services

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

CLIENT: Griffin International
 PROJECT NAME: Poultney Mobil
 REPORT DATE: June 12, 1995
 DATE SAMPLED: May 25, 1995
 DATE RECEIVED: May 30, 1995
 DATE EXTRACTED: June 1, 1995

PROJECT CODE: GIPM1243
 ANALYSIS DATE: June 6, 1995
 STATION: SB-1-6
 REF. #: 75,157
 TIME SAMPLED: 12:20
 SAMPLER: Kevin McGraw

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/kg)</u>	<u>Concentration</u> <u>as received(ug/kg)</u>
Acenaphthene	50	ND ¹
Acenaphthylene	50	TBQ ²
Anthracene	50	TBQ
Benzo(a)anthracene	50	90.4
Benzo(b,k)fluoranthene	50	326.
Benzo(a)pyrene	50	100.
Benzo(g,h,i)perylene	50	ND
Chrysene	50	128. <i>insoluble in water</i>
Dibenzo(a,h)anthracene	50	ND
Dibenz(a,j)acridine	50	ND
7,12-Dimethylbenz(a)anthracene	50	ND
Fluoranthene	50	197. <i>VHA - 280</i>
Fluorene	50	ND
Indeno(1,2,3-cd)pyrene	50	110.
3-Methylcholanthrene	50	ND
2-Methylnaphthalene	50	ND
Naphthalene	50	ND
Phenanthrene	50	113.
Pyrene	50	149.

NUMBER OF UNIDENTIFIED PEAKS: >10

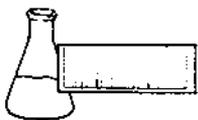
Analytical Surrogate Recovery:

Nitrobenzene-d 5: 11.0%
 2-Fluorobiphenyl: 12.0%
 Terphenyl-d 14: 14.0%

PERCENT SOLIDS: 91.0%

NOTES:

1 None detected



ENDYNE, INC.

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REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International
PROJECT NAME: Poultney Mobil
REPORT DATE: June 29, 1995
DATE SAMPLED: May 25, 1995

PROJECT CODE: GIPM3245
REF.#: 75,159

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

Samples were not preserved.

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.

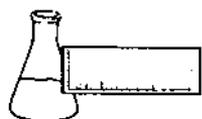
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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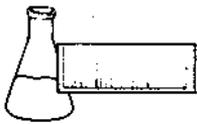
LABORATORY REPORT

CLIENT: Griffin International
PROJECT NAME: Poultney Mobil
REPORT DATE: June 29, 1995
DATE SAMPLED: May 25, 1995
DATE RECEIVED: May 30, 1995

PROJECT CODE: GIPM3245
REF. #: 75,159
STATION: SB-1-6
TIME SAMPLED: 12:20
SAMPLER: K. McGraw

Digestion was performed by EPA Method 3050.

<u>Parameter</u>	<u>Concentration</u> <u>(mg/kg, dry wt.)</u>	<u>Reporting Limit</u> <u>(mg/kg, dry wt.)</u>	<u>EPA Method</u>	<u>Analysis Date</u>
Total Lead	51.4	0.100	7421	6/23/95



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
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FAX 879-7103

METALS LABORATORY REPORT

DUPLICATE CONTROL DATA

CLIENT: Griffin International
PROJECT NAME: Poultney Mobil
REPORT DATE: June 29, 1995
DATE SAMPLED: May 25, 1995
DATE RECEIVED: May 30, 1995

PROJECT CODE: GIPM3245
REF. #: 75,159
STATION: SB-1-6
TIME SAMPLED: 12:20
SAMPLER: K. McGraw

<u>Parameter</u>	<u>Dup 1</u> <u>(mg/kg)</u>	<u>Dup 2</u> <u>(mg/kg)</u>	<u>Avg. % Diff.</u>
Total Lead	50.1	52.7	3

