

ROSS ENVIRONMENTAL ASSOCIATES, INC.

Hydrogeology, Water Quality,
Contaminant Fate & Transport, Remediation,
& Regulatory Compliance and Permitting



Initial Site Investigation Report

**Adrien's Irving
319 Main Street
Newport, Vermont**

SMS Site #: 87-0080

28 February, 2001

Prepared For:

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Adrien's Irving
319 Main Street
Newport, Vermont 05855**

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**R.E.A. Project No. 20-045
R.E.A. Document #: 20045ISI**

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Executive Summary

Ross Environmental Associates, Inc. (*R.E.A.*) has conducted an initial site investigation at Adrien's Irving owned by Maurice Pouliot, located on the corner of Third and Main Streets in Newport, Vermont. Field investigation included: installation of four soil borings/monitoring wells; field screening of subsurface soil samples for the possible presence of volatile organic compounds (VOCs); sampling and analysis of ground water from four on-site monitoring wells; and a receptor survey to identify potential risks to the environment and human health.

Available information indicates that groundwater beneath the site has been impacted by petroleum compounds, which are characteristic of diesel fuel. Current information indicates the possibility of two source areas including the former diesel UST, which was closed in-place in 1986, and the pump-island located along Third Street. At this time, subsurface petroleum contamination appears to extend off-site in the direction of Main Street toward the northeast; however no sensitive receptors appear to be impacted or threatened. Based on available information, active remediation at the site is not likely to be required by the VT DEC.

On the basis of the results of this investigation and the conclusions stated above, *R.E.A.* makes the following recommendations.

1. Ground water samples should be collected from the on-site monitoring wells to confirm findings of the initial sampling event. All samples should be analyzed for the possible presence of volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) in accordance with U.S. EPA Methods 8021B and 8015DRO, respectively.
2. A summary report should be completed following the completion of the next ground water sampling event, which should include recommendations for long-term monitoring.

Site Profile

Site Information

Site Name: Adrien's Irving
SMS Site #: 87-0080
Site Address: 319 Main Street Newport, VT
Mailing Address: 319 Main Street Newport, VT 05855
Telephone: (802) 334-7790
Contact/Owner: Mr. Maurice Pouliot

Coordinates: latitude 44° 56' 4.7" N and longitude 72° 12' 45.0" W

Contaminants of Concern: Petroleum, characteristic of diesel

Source: Suspected release from former piping system. Elevated PID readings were noted during piping upgrade in October 1998.

Aquifer Characteristics

Soil Type: The soils at the site consisted primarily of fill (poorly sorted sand, gravel and silt) overlying light brown fine sand with intermittent layers of coarse to medium sand.

Effective Porosity: 0.3
Hydraulic conductivity: 2.8 to 57 ft/day
Ground-water flow direction: northeast (1/24/01)
Horizontal hydraulic gradient: 4% (1/24/01)
Average ground water velocity: 0.37 and 7.6 ft/day
Ground-water depth bgs: 15 - 16 feet
Saturated thickness: > 10 feet
Depth to Bedrock: > 25 feet

Receptors

Drinking water: The site and adjacent properties are served by a municipal system.
Ground water: Impacted by petroleum contamination; see Table 2, Appendix A.
Surface water: Lake Memphremagog is located approximately 800 feet north of the property.
Buildings: On-site building constructed on at-grade slab foundation.
Underground utilities: Municipal water and storm-water lines are located in the area downgradient of contamination.

1.0 INTRODUCTION

R.E.A. was retained by Mr. Maurice Pouliot to complete an initial site investigation (ISI) at Adrien's Irving located on the corner of Third and Main Streets in Newport, Vermont in accordance with Vermont Department of Environmental Conservation (VT DEC) guidelines. The site investigation was initiated at the request of the VT DEC, as outlined in the letter dated 28 November 2000. This report has been prepared by *R.E.A.* under the direction of Mr. Maurice Pouliot; unauthorized use or reproduction of this report is prohibited, without written authorization from *R.E.A.*, or Mr. Pouliot.

1.1 Site Location and Setting

The subject property, which is currently owned by Maurice Pouliot, is an automotive service station and motor fuel retail outlet. The property is located at 319 Main Street, within the downtown area of the City of Newport (Figure 1, Appendix A). The site encompasses approximately 0.17 acres, on the corner of Third and Main Streets. One building, consisting of an office with a three-bay garage, is located on the southern portion of the property. Four USTs are currently located on site; three gasoline USTs located on the northwestern corner of the building and a 2,000-gallon diesel UST located on the eastern side of the building. Two pump-islands are located on-site, one on the northern portion of the property parallel West Main Street and the other on the eastern portion of the property parallel Third Street.

The ground surface is generally flat, with an average elevation of 650 feet above mean sea level (Maptech, 1998). Lake Memphremagog is located approximately 800 feet north of the property. The geographic coordinates of the site are: latitude 44° 56' 4.7" N, and longitude 72° 12' 45.0" W.

Electricity is supplied by the Citizens Utilities Company. Drinking water and sewer services for the site are provided by municipal systems. Floor drains in the service garage are connected to the municipal sewer system. One catch basin and two sewer manholes were identified adjacent to the property; the storm-water catch basin is located on Third Street approximately 20 feet northeast of the diesel fuel pump island, and the sewer manholes are located on the corner of Third and Main Streets. The sewer line for the property crosses through the central portion of the site entering on the north side of the building. Available information indicates that the waterline serving the property also enters the northern side of the building from West Main Street.

The surficial geology in the vicinity of the site is mapped as Lacustrine silty clay or silt deposits (Stewart and MacClintock, 1970). Bedrock in the Newport area is mapped as the Ayers Cliff

limestone of the Waits River Formation, which consists of siliceous crystalline limestone of lower Devonian age (Doll, 1961). No bedrock outcrops were observed on site or adjacent properties.

Figure 2 in Appendix A shows the approximate locations of various site features. A copy of the orthophotograph of the site from 1982 and photographs of the site and surrounding area taken in January 2001 are included in Appendix B.

1.2 Site History

Maurice Pouliot has owned the property since the late 1970's and has operated a service station on site since that time. According to Mr. Pouliot, the property was occupied by an apartment building in the 1940s. Review of the VT DEC UST database indicates that four USTs were previously located on site; one 5,000-gallon gasoline tank, one 3,000-gallon gasoline tank, one 6,000-gallon gasoline tank, and one 500-gallon fuel-oil tank. Available information indicates that three of USTs were removed in 1986, and that the 500-gallon fuel-oil tank was closed in place due to its close proximity to electrical conduits. No information was available regarding the condition of the tanks at the time of the 1986 closure/removal.

On 14 October 1998, the piping system for four USTs at the Adrien's Irving property was upgraded and on 22 October 1998 one 3,000-gallon gasoline tank (UST #2) was removed and replaced with a 5,000-gallon tank. The former piping system was noted to be in good condition upon removal. Minor pitting was observed on the exterior of the 3,000-gallon UST that was removed, but no visible holes were identified. PID readings on soil samples collected from the piping excavation were all 0.0 ppm, except for four samples which were reported to be 10.8, 12.7, 68.1, and 1,275 ppm.

In December 2000, Mr. Maurice Pouliot retained the services of Ross Environmental Associates, Inc. (R.E.A.) to complete an initial site investigation at the site to address concerns of the VT DEC as outlined in the letter to Mr. Pouliot dated 28 November 2000.

1.3 Land Use and Adjacent Property Ownership

The subject property is located on the corner of Third and Main Streets, in a "Commercial Business District" area of Newport, which includes commercial and residential uses. Main Street forms the northern property boundary and Third Street forms the eastern property boundary. Residential apartment buildings occupy the adjacent property to the south and west. A copy of the tax map for the area is included in Appendix C. All of the adjacent properties in the area are connected to the municipal water and sewer systems.

2.0 FIELD INVESTIGATION RESULTS AND PROCEDURES

R.E.A.'s field investigation included: the installation of four soil borings/monitoring wells (MW-1, MW-2, MW-3, and MW-4); field screening of subsurface soil samples for the possible presence of volatile organic compounds (VOCs); collection and analysis of water samples from four on-site monitoring wells; and a receptor survey to identify potential risks to the environment and human health. Approximate monitoring well locations and significant site features are shown on Figure 2 in Appendix A.

The objectives of this initial site investigation were to:

- Evaluate the degree and extent of petroleum contamination in soil and ground water;
- Qualitatively assess the risks to environmental and public health via relevant sensitive receptors and potential contaminant migration pathways; and
- Identify the need for further site characterization, appropriate monitoring, and/or remedial actions based on the site conditions.

2.1 Contaminants of Concern

Based on available information, the contaminants of concern (COC) at Adrien's Irving appear to include: 1,3,5-trimethyl benzene, 1,2,4-trimethyl benzene, and naphthalene. All of these contaminants are typically associated with petroleum products such as gasoline and diesel fuel. MTBE, a gasoline additive used since the early 1980's to improve combustion and reduce carbon monoxide emissions, was not detected in any of the groundwater samples collected at the site.

2.2 Source Area Evaluation

Current information suggests that the former diesel UST and/or the diesel pump-island are possible sources of petroleum contamination discovered at the site. This is based on the contaminant distribution relative to the former diesel UST and pump island and the fact that benzene, toluene, and MTBE were not detected in any of the ground water samples collected at the site in January 2001. Other possible sources include: the four USTs removed from the site in 1986, presumably from the same area as the existing tanks, the piping system for four USTs that was upgraded in October 1998, or the 3,000-gallon gasoline tank was removed in October 1998. No other petroleum release sites are located upgradient of the site; however, the One-Stop Mini-Mart (SMS Site # 91-1071), located on the east side of Third Street directly opposite Adrien's Irving, is included on the "Closed" Sites List.

2.3 Soil Boring and Monitoring Well Installation

On 17 January 2001, *R.E.A.* provided oversight during the installation of four soil borings/monitoring wells; MW-1 was installed adjacent to the gasoline USTs on the western side of the property, MW-2 was installed downgradient of the Main Street pump-island, MW-3 was installed downgradient of the Third street pump-island and diesel UST, and MW-4 was installed downgradient of the former diesel UST. The soils at the site consisted primarily of fill (poorly sorted sand, gravel and silt) overlying light brown fine sand with intermittent layers of coarse to medium sand. The borings extended at least five feet below the water table, which was encountered between 14 and 16 feet bgs at the time of drilling. The soil borings for MW-1, MW-3, and MW-4 extended to 23 feet bgs, and the soil boring for MW-2 was completed to 25 feet bgs.

Monitoring wells were constructed using 2.0-inch-diameter schedule 40 polyvinyl chloride (PVC), with flush-threaded joints. Ten-foot sections of factory-slotted well screens (0.01-inch) were installed at the bottom of each boring, with solid PVC riser extending to ground surface. A clean sand pack was placed around the screened section of each monitoring well extending one to two feet above the top of the screen, with a bentonite seal placed above the sand pack. Flush-mounted road-box protective casings were installed over each monitoring well. Each well was developed after installation using a peristaltic pump, by removing eight to ten standing volumes of water. Soil descriptions and monitoring well construction details are included on the soil boring logs in Appendix D. M & W Soils Engineering of Charlestown, New Hampshire installed the soil borings and monitoring wells under direct supervision of an *R.E.A.* hydrogeologist.

After installation of the monitoring wells, *R.E.A.* surveyed the locations of the new wells in relation to existing site features and roadways. Each well was located in azimuth to an accuracy of ± 1.0 feet, and in elevation with an accuracy of ± 0.01 feet relative to an on-site benchmark of 100.00 feet for the top of casing at MW-1.

Photoionization detector (PID) readings on soil samples collected during soil boring for monitoring well installation were all 0.0 ppm. Also, no petroleum odors or staining characteristic of a petroleum release were noted during the completion of the soil borings. PID screening results are included on the soil boring logs in Appendix D. *R.E.A.*'s hydrogeologist screened soil samples from each soil boring for the possible presence of volatile organic compounds (VOCs) using a PE PhotoVac model 2020 portable PID. The PID was calibrated with an isobutylene standard gas to a benzene reference.

2.4 Ground Water Elevations and Flow Direction

On 24 January 2001, ground-water flow in the unconfined surficial aquifer at the site was toward the northeast, with an estimated hydraulic gradient of approximately four (4) percent. Water-level measurements and elevation calculations for 24 January 2001 are presented in Table 1 and the ground-water contour map prepared using this data is presented as Figure 3, Appendix A.

No petroleum odors or indications of free-phase petroleum were observed in any of the monitoring wells. Static water-table elevations were computed for each monitoring well by subtracting the corrected or measured depth-to-water readings from the surveyed top-of-casing (TOC) elevations, which are relative to an arbitrary site datum of 100.00 feet (MW-1).

The effective porosity of the predominantly fine sands encountered below the water-table is presumably around 0.3, with hydraulic conductivities ranging between 2.8 and 57 feet per day (Freeze & Cherry, 1979). Assuming Darcian flow, these estimates combine with the calculated horizontal gradient of four percent to yield an estimated range of ground-water flow velocities of between 0.37 and 7.6 feet per day. Contaminant migration would be less accounting for retardation and dispersion of the contaminants.

2.5 Ground-Water and Surface Water Sampling and Analysis

Available information indicates that the subsurface petroleum contamination discovered on the Adrien's Irving property, is characteristic of diesel fuel. Contaminant distribution indicates the possibility of two source areas including the former diesel UST, which was closed in place in 1986, and the diesel pump-island. Currently, the downgradient extent of subsurface petroleum contamination has not been determined; however, no downgradient sensitive receptors appear to be impacted or threatened by residual petroleum contamination at this time.

The Vermont Groundwater Enforcement Standards (VGESs)¹ for three volatile petroleum compounds; naphthalene, 1,3,5-trimethyl benzene, and 1,2,4-trimethyl benzene; were exceeded in the ground water sample collected from MW-3. Also, the total VOC concentration for the MW-3 sample was the highest detected on-site (691.8 micrograms per liter - ug/L). The sample collected from MW-4 was the only other sample to contain low concentrations of VOCs; n-butyl benzene, sec-butyl benzene, and isopropyl toluene were detected at 1.7 ug/L or less. No VOCs were detected in the samples collected

¹The Vermont DEC has established groundwater enforcement standards for eight petroleum related VOCs, as follows: benzene - 5 ug/L; toluene - 1,000 ug/L; ethylbenzene - 700 ug/L; xylenes - 10,000 ug/L; MTBE - 40 ug/L; 1,3,5-trimethyl benzene - 4 ug/L; 1,2,4-trimethyl benzene - 5 ug/L; and naphthalene - 20 ug/L.

from MW-1 and MW-2. Benzene, toluene, and MTBE were not detected in any of the ground water sample, which suggests the petroleum contamination is related to diesel fuel.

Total petroleum hydrocarbons (TPH) were detected in the ground-water samples collected from MW-3 and MW-4 at 3.24 and 0.64 milligrams per liter (mg/L), respectively. TPH was not detected above the detection limit of 0.10 mg/L in the other samples collected at the site.

No petroleum compounds were detected in the trip-blank sample, and analytical results for the blind field duplicate, collected from MW-2, were the same as the original sample results. The analytical results are summarized on Table 2, and copies of the laboratory analytical reports are included as Appendix E. Contaminant distribution based on water samples collected on 24 January 2001 is shown on Figure 4 in Appendix A.

Immediately after sample collection, field measurements were obtained for pH, specific conductivity, temperature, total dissolved solids (TDS), and oxygen reduction potential (ORP). Review of field indicator parameters indicate that the measurements were within typical ranges expected for ground water. A summary of the field measurement data is included on Table 3, in Appendix A.

All of the ground-water samples were analyzed for the possible presence of volatile organic compounds and (VOCs) total petroleum hydrocarbons (TPH) in accordance with U.S. EPA Methods 8260B and 8015GRO, respectively. All samples were transported under chain-of-custody in an ice-filled cooler to Endyne, Inc. of Williston, Vermont for laboratory analysis.

2.6 Investigation Procedures

The procedures used during the initial site investigation at Adrien's Irving are consistent with the following guidance documents:

- "Underground Storage Tank Closure and Site Assessment Requirements." Vermont Agency of Natural Resources, Waste Management Division. November 1997.
- "Site Investigation Guidance." Vermont Agency of Natural Resources, Waste Management Division. August 1996.
- "Corrective Action Guidance." Vermont Agency of Natural Resources, Waste Management Division. November 1997.
- "Agency Guidelines for Petroleum Contaminated Soil and Debris." Vermont Agency of Natural Resources, Waste Management Division. August 1996.
- ASTM D 2488-93. "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)." American Society for Testing and Materials.
- ASTM D 5092-90. "Standard Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers." American Society for Testing and Materials.
- ASTM D 4750-87. "Standard Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well." American Society for Testing and Materials.
- ASTM D 4448-85a. "Standard Guide for Sampling Ground Water Monitoring Wells." American Society for Testing and Materials.

3.0 SENSITIVE RECEPTOR IDENTIFICATION AND RISK ASSESSMENT

At this time, none of the identified sensitive receptors in the general vicinity of Adrien's Irving appear to be impacted or threatened by residual petroleum contamination at the site.

3.1 Receptor Identification

The following sensitive receptors were identified in the vicinity of the Adrien's Irving property:

- Lake Memphremagog, which is located approximately 800 feet downgradient of the site to the north and northwest.
- Underground utility lines, which pass through the site or which are located in the roadways adjacent to the site.

3.2 Risk Assessment

On the basis of the information obtained during this investigation, *R.E.A.* has qualitatively assessed the risks that the subsurface contamination poses to human health and the environment. The findings are summarized as follows:

- Available data indicates that it is unlikely that Lake Memphremagog will be impacted by contaminant migration from the site.
- At this time, underground utilities in the vicinity of the site do not appear to be impacted or threatened.

4.0 DATA EVALUATION AND REGULATORY STATUS

Available information indicates that groundwater beneath the site has been impacted by petroleum compounds, which are characteristic of diesel fuel. Current information indicates the possibility of two source areas including the former diesel UST, which was closed in-place in 1986, and the pump-island located along Third Street. At this time, subsurface petroleum contamination appears to extend off-site in the direction of Main Street toward the northeast; however no sensitive receptors appear to be impacted or threatened.

Based on available information, active remediation at the site is not likely to be required by the VT DEC. Generally the VT DEC requires active remediation when greater than an 1/8" of free-product is present, or when human health or a sensitive receptor is impacted or threatened by contamination. The VT DEC may require periodic monitoring of ground water beneath the site; however the frequency of future sampling events should be determined after confirmation of the initial results.

A summary of the significant findings are outlined below:

- The Vermont Ground Water Enforcement Standards (VGESs) for three volatile petroleum compounds were exceeded in the ground water sample collected from MW-3; no other exceedance were detected during the 24 January 2001 sampling event.
- Total petroleum hydrocarbons (TPH) were detected in samples collected from MW-3 and MW-4 at 3.24 and 0.64 milligrams per liter (mg/L), respectively.
- Benzene, toluene, and MTBE were not detected in any of the ground water samples collected at the site, suggesting that the petroleum contamination is related to diesel fuel.
- No VOCs or TPH were detected in the samples collected from MW-1 or MW-2.
- Photo-ionization detector (PID) readings on soil samples collected during soil boring for monitoring well installation were all 0.0 ppm.
- Ground water flow in the shallow overburden formation appears to flow to the northeast toward Lake Memphremagog.

5.0 RECOMMENDATIONS

On the basis of the results of this investigation and the conclusions stated above, *R.E.A.* makes the following recommendations.

1. Ground water samples should be collected from the on-site monitoring wells to confirm the findings of the initial sampling event. All samples should be analyzed for the possible presence of volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) in accordance with U.S. EPA Methods 8021B and 8015DRO, respectively.
2. A summary report should be completed following the completion of the next ground water sampling event, which should include recommendations for long-term monitoring.

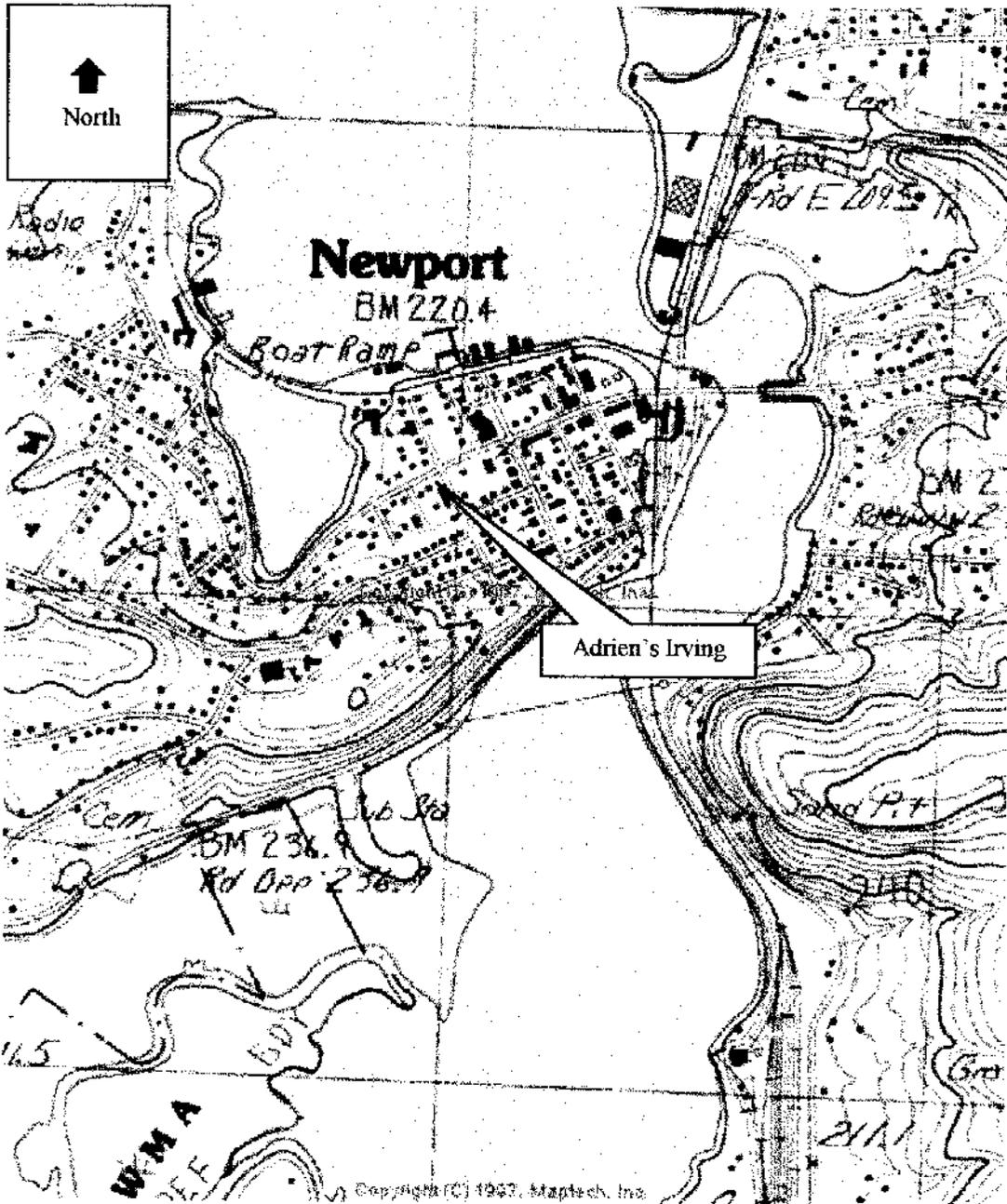
6.0 REFERENCES

- Doll, C.G. and others, 1961. "*Geologic Map of Vermont*", Office of the State Geologist.
- Freeze, R. A., and Cherry, J.A., 1976. *Groundwater*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 29 p.
- Fetter, C.W., 1994. *Applied Hydrogeology, 3rd Ed.*, Prentice Hall, Englewood Cliffs, New Jersey, 691 p.
- Stewart, D.P. and MacClintock, P., 1970. "*Surficial Geologic Map of Vermont*", Office of the State Geologist.
- Maptech, 1998. Newport Quadrangle Vermont. U.S. Geological Survey. 7.5 minute series (topographic). Provisional Edition, 1986. Maptech, Inc. Greenland, NH. 1998.

**A
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FIGURES AND TABLES



Approximate Scale: 1 inch = 1,200 feet

Site Coordinates: 44° 56' 4.7" N, 72° 12' 45.0" W

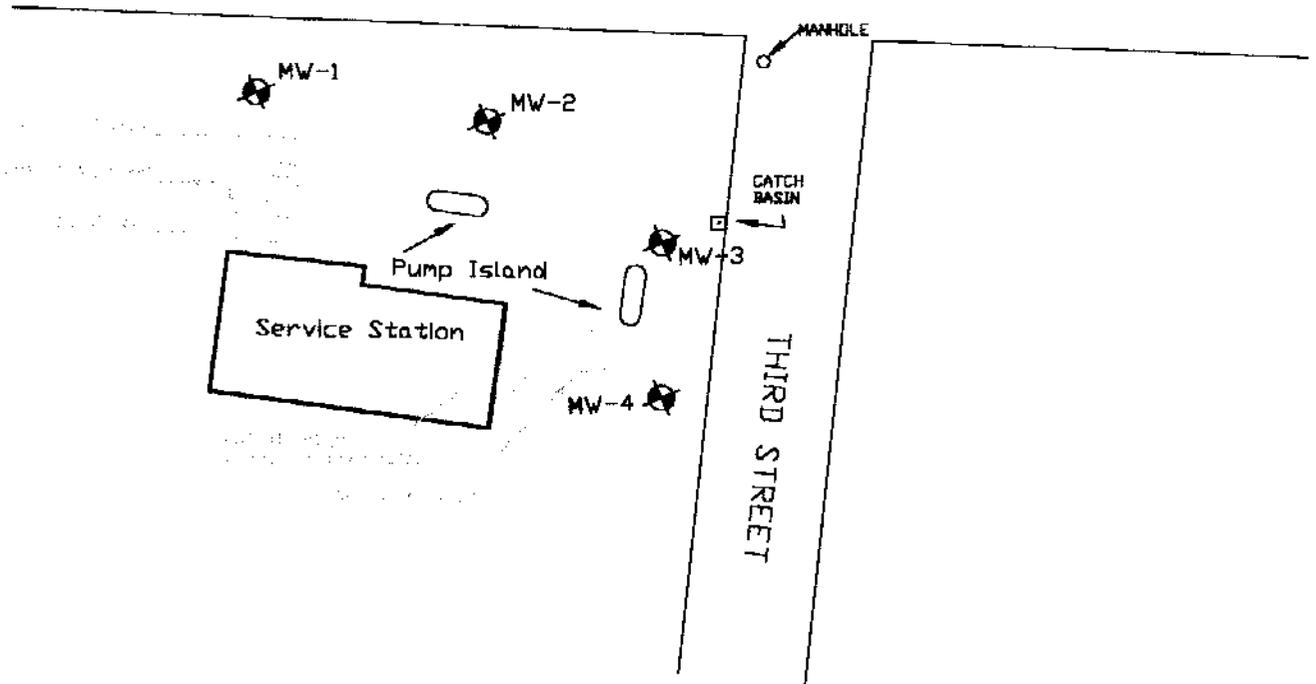
Source: USGS 1986. Newport Quadrangle, VT.
 Provisional Edition 1986. Topographic map
 (7.5 minute series). Maptech, Inc. 1998.
 R.E.A. Project No. 20-045
 SMS Site # 87-0080

Figure 1
 Site Location Map
 Adrien's Irving
 Newport, Vermont



LAKE MEMPHREMAGOG
(APPROX. 800 FEET)

MAIN STREET



Legend

Monitoring Well Location

Water/Sewer Line
All locations are approximate



SITE PLAN
(with monitoring well locations)
Adrien's Irving
Newport, Vermont

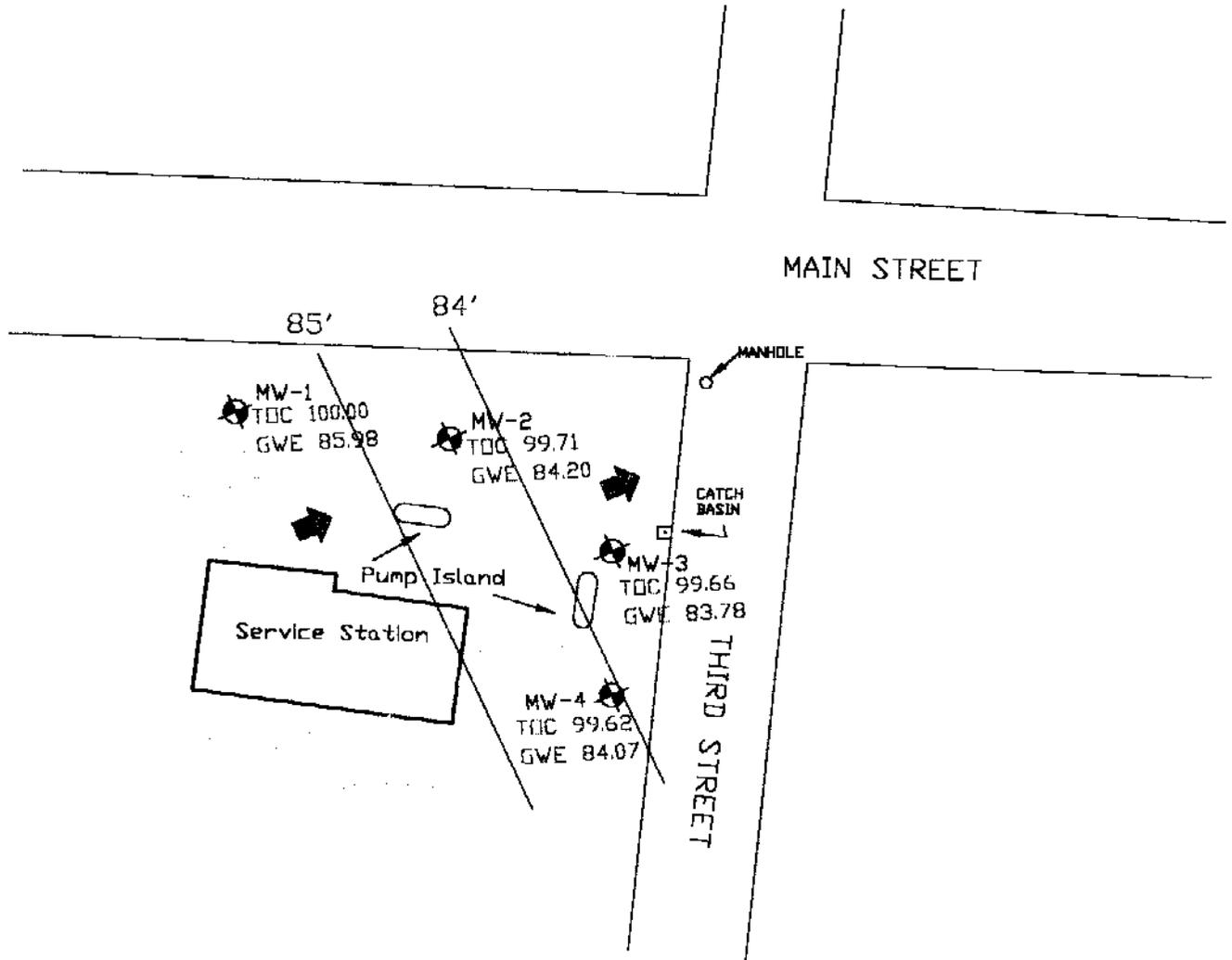
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| Scale 1" = 40'-0" | Date FEB. 20, 2001 | Drawn By T.F.M.D. |
| File Name 20-045 | Approved By | |

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FIGURE 2



LAKE MEMPHREMGOG
(APPROX. 800 FEET)



Legend

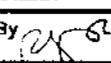
-  Monitoring Well Location
-  Ground Water Contour
-  Water/Sewer Line
- All locations are approximate



GROUND WATER CONTOUR MAP

(Monitoring Date: 24 Jan. 2001)

**Adrien's Irving
Newport, Vermont**

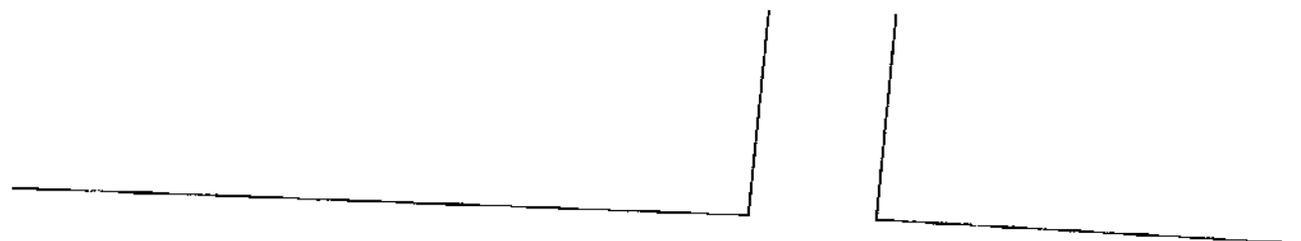
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| Scale 1" = 40'-0" | Date FEB. 20, 2001 | Drawn By T.F.M.D. |
| File Name 20-045 | Approved By  | |

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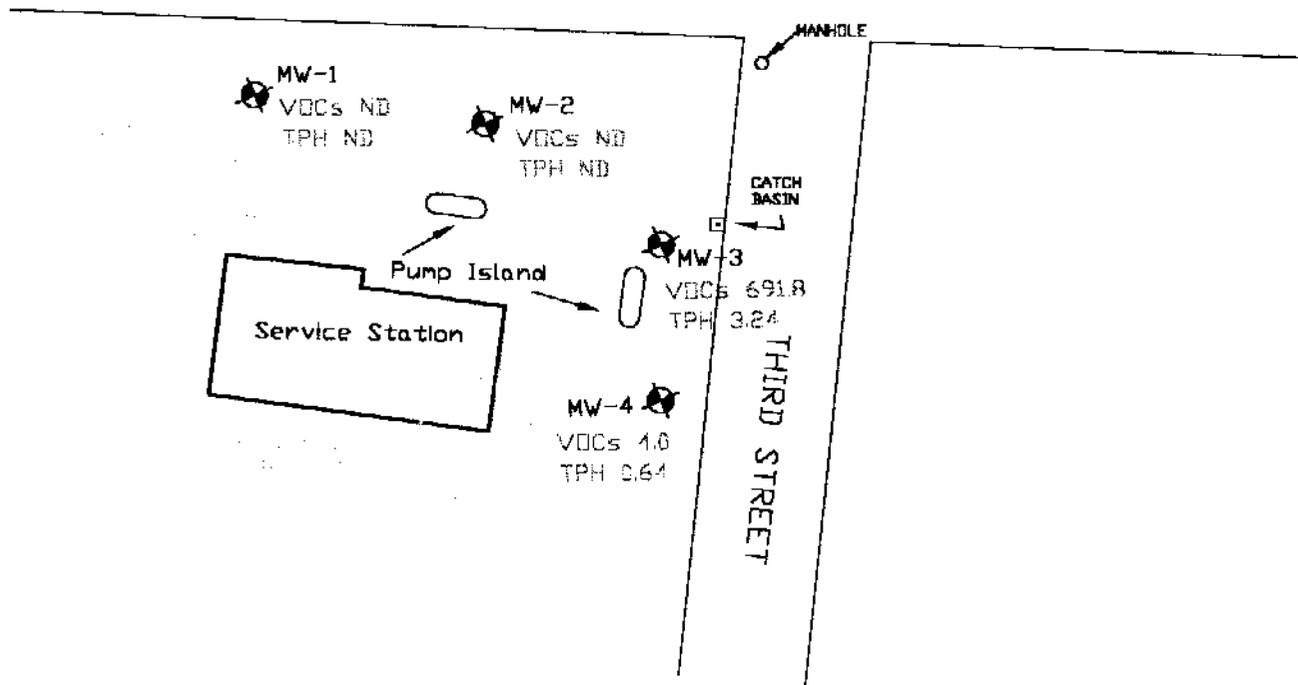
FIGURE 3



LAKE MEMPHREMAGOG
(APPROX. 800 FEET)



MAIN STREET



VOCs — total volatile organic compounds, reported as micrograms per liter (ug/l).
TPH — total petroleum hydrocarbons, reported as milligrams per liter (mg/l).

Legend

Monitoring Well Location

Water/Sewer Line
All locations are approximate



CONTAMINANT DISTRIBUTION

(Monitoring Date: 24 Jan. 2001)

Adrien's Irving
Newport, Vermont

| | | |
|--------------------|---------------------|--------------------|
| Scale: 1" = 40'-0" | Date: FEB. 20, 2001 | Drawn By: T.F.M.D. |
| File Name: 20-046 | Approved By: | |

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FIGURE 4

TABLE 1
GROUND WATER ELEVATION CALCULATIONS

Arien's Irving
Main Street
Newport, Vermont

Monitoring Date: 24 January 2001

| Well I.D. | Top of Casing Elevation (ft) | Depth to Water (feet, TOC) | Water Table Elevation (ft) |
|-----------|---------------------------------|-------------------------------|-------------------------------|
| MW-1 | 100.00 | 14.02 | 85.98 |
| MW-2 | 99.71 | 15.51 | 84.20 |
| MW-3 | 99.66 | 15.88 | 83.78 |
| MW-4 | 99.62 | 15.55 | 84.07 |

All values reported in feet relative to arbitrary site datum of 100.00 feet

**TABLE 2
GROUND-WATER ANALYTICAL RESULTS**

Adrien's Irving
Main Street
Newport, Vermont

Monitoring Date: 24 January 2001

| Sample ID | MTBE | Benzene | Toluene | Ethyl benzene | Total Xylenes | 1,3,5 TMB | 1,2,4 TMB | n-butyl benzene | sec-butyl benzene | n-propyl benzene | isopropyl benzene | p-isopropyl toluene | Napthalene | Total VOCs | TPH (mg/L) |
|-------------|-----------|------------|--------------|---------------|---------------|------------|------------|-----------------|-------------------|------------------|-------------------|---------------------|------------|------------|------------|
| MW-1 | ND <2 | ND <1 | ND <1 | ND <1 | ND <2 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <5 | ND <5 | ND <0.10 |
| MW-2 | ND <2 | ND <1 | ND <1 | ND <1 | ND <2 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <5 | ND <5 | ND <0.10 |
| MW-3 | ND <8 | ND <4 | ND <4 | ND <4 | 21.9 | 173 | 350 | 13.0 | 11.2 | 33.4 | 25.7 | 8.0 | 55.6 | 691.8 | 3.24 |
| MW-4 | ND <2 | ND <1 | ND <1 | ND <1 | ND <2 | ND <1 | ND <1 | 1.1 | 1.7 | ND <1 | 1.2 | ND <1 | ND <5 | 4.0 | 0.64 |
| Dup, MW-2 | ND <2 | ND <1 | ND <1 | ND <1 | ND <2 | ND <2 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <5 | ND <5 | ND <0.10 |
| Blank | ND <2 | ND <1 | ND <1 | ND <1 | ND <2 | ND <2 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <1 | ND <5 | ND <5 | — |
| VGES | 40 | 5.0 | 1,000 | 700 | 10,000 | 4.0 | 6.0 | — | — | — | — | — | 20 | — | — |

Notes: All results reported as micrograms per liter (ug/L).
 ND: None detected at indicated detection limit
 TBQ: Trace below quantitation limit
 UIP: Unidentified Peaks.
 Shaded values indicate exceedance of Vermont Groundwater Enforcement Standards (VGESs).
 1,3,5-TMB = 1,3,5-trimethylbenzene and 1,2,4-TMB = 1,2,4-trimethylbenzene.

TABLE 3
Field Measurement Data

Adrien's Irving
Newport, Vermont

Monitoring Date: 24 January 2001

| Well ID | pH (su) | temperature (°C) | Specific conductivity (µS) | ORP (mV) | TDS (ppm) | Collection Time | Comments |
|---------|---------|------------------|----------------------------|----------|-----------|-----------------|----------|
| MW-1 | 7.61 | 7.4 | 1,971 | 89 | 1,453 | 15:58 | no odors |
| MW-2 | 7.45 | 7.6 | 1,095 | 86 | 774 | 16:10 | no odors |
| MW-3 | 7.33 | 9.0 | 370 | 92 | 249 | 16:28 | no odors |
| MW-4 | 7.33 | 8.6 | 437 | 85 | 296 | 16:20 | no odors |

pH reported in standard units (s.u.)

Temperature reported in degrees celcius (°C)

Specific conductivity reported in microsiemens (µS)

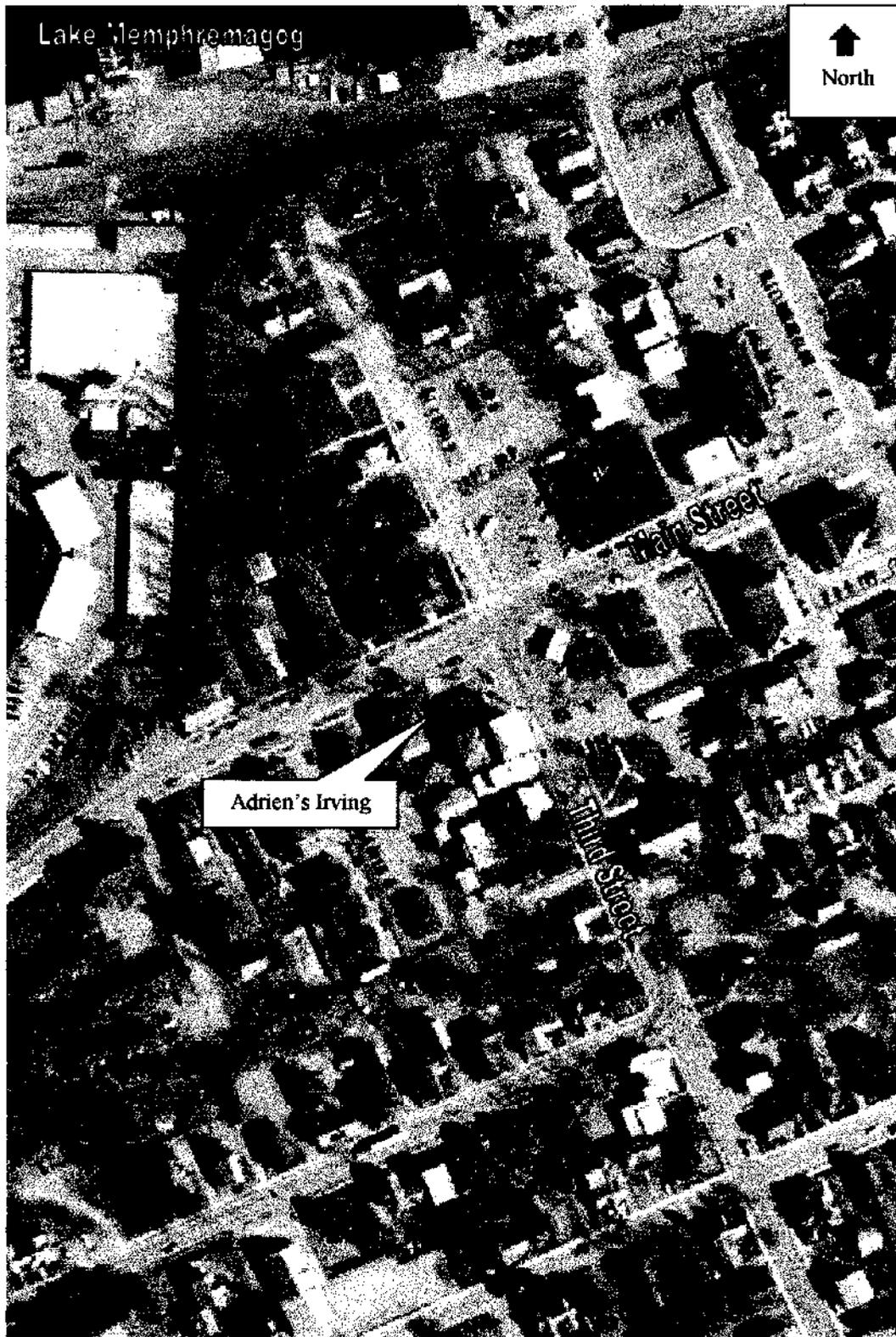
Oxidation-reduction potential (ORP) reported in millivolts (mV)

Total dissolved solids (TDS) reported in parts per million (ppm)

SITE PHOTOGRAPHS

**A
P
P
E
N
D
I
X

B**



All locations are approximate.
Source: Orthophotograph – Series 5000, No. 172268
REA Project No. 20-045

Adrien's Irving
Newport, Vermont



ADRIEN'S IRVING – NEWPORT, VT
(Site Overview - View Toward South)



ADRIEN'S IRVING – NEWPORT, VT
(Site Overview - View Toward Southwest)



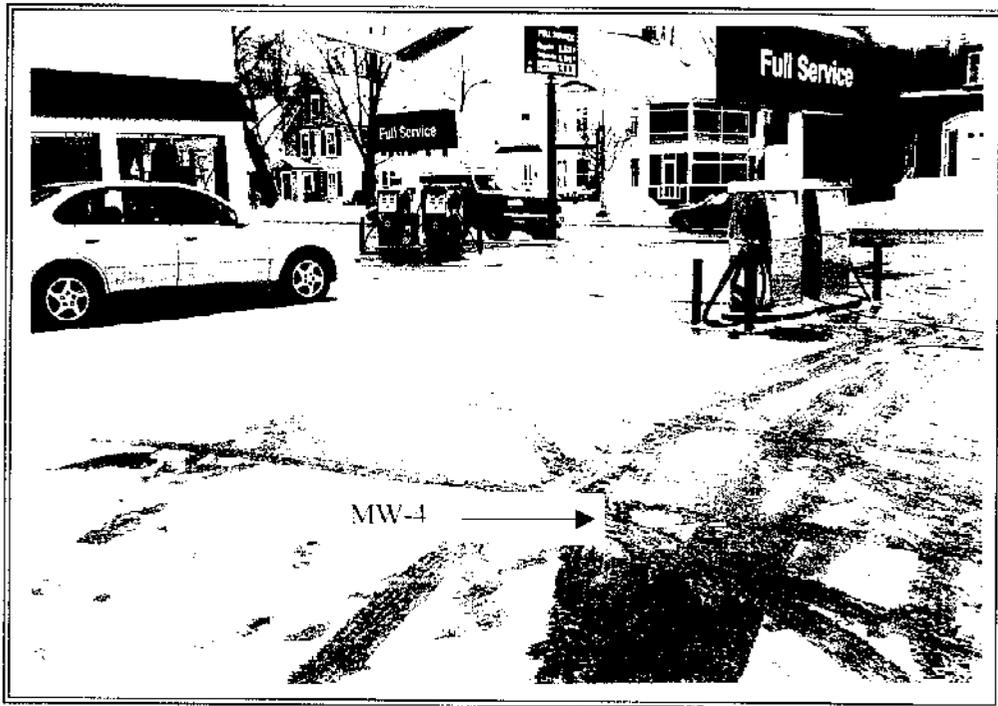
ADRIEN'S IRVING - NEWPORT, VT
(MW-1 - View Toward South)



ADRIEN'S IRVING - NEWPORT, VT
(MW-2 - View Toward South)



ADRIEN'S IRVING NEWPORT, VT
(MW-3 - View Toward Southwest)



ADRIEN'S IRVING NEWPORT, VT
(MW-4 - View Toward Northwest)

**TAX MAP and PROPERTY
OWNERSHIP INFORMATION**

**A
P
P
E
N
D
I
X

C**

134-177

M.L.

126-13

M.L.

M.L.



Adrien's Irving

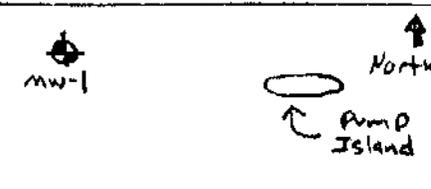
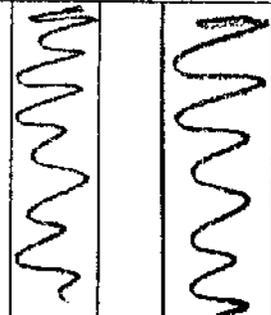
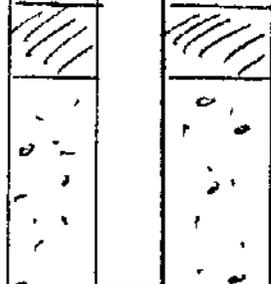
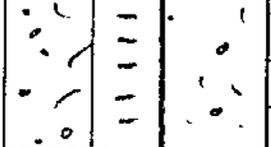
City of Newport
Map No. 133

**SOIL BORING
MONITORING WELL LOGS**

**A
P
P
E
N
D
I
X

D**

Monitoring Well Log

| | | | | | | | | | | |
|---|------------|---|---|--|----|-------|--|---|-------------|----------|
| SITE NAME: Adrien's Irving | | WELL No: MW-1 | | main St  | | | | | | |
| ADDRESS: Newport, VT | | TOTAL DEPTH: 23 feet | | | | | | | | |
| JOB NO: 20-045 | | DEPTH TO WATER: 16 ft ATD | | Service Station Boring/Well Location not to scale | | | | | | |
| DATE: 17 January 2000 | | DEPTH TO BEDROCK: > 23 feet | | | | | | | | |
| WEATHER: cold, 10 - 15 °F - overcast | | FIELD SUPERVISOR: Bob Ross | | | | | | | | |
| DRILLING METHOD/BORING DIAMETER: 4 1/4" H.S.A. | | CONTRACTOR: M & W Soils Engineering Mike & Jim | | | | | | | | |
| Depth (ft) | Sample No. | BLOW COUNTS PER 6" | | | | | Rec. (ft) | SAMPLE DESCRIPTION | WELL DETAIL | PH (ppm) |
| | | 0 | 6 | 12 | 18 | 24 | | | | |
| 5' | S-1 | 5 | 3 | 4 | 3 | 4/24 | Fill - pebbles with SAND & GRAVEL |  | 0.0 | |
| 10' | S-2 | 8 | 8 | 8 | 9 | 16/24 | lt brown fine SAND (oxidized horizontal bedding) |  | 0.0 | |
| 15' | S-3 | 5 | 3 | 4 | 7 | 18/24 | brown silt, some fine SAND, trace clay = ~16 ft ATD |  | 0.0 | |
| 20' | S-4 | 3 | 3 | 2 | 3 | 10/24 | brown coarse to fine SAND |  | 0.0 | |
| 23' | | | | | | | BoB @ 23' | | | |

| | | | | | | | | | |
|--------|--------|------------|------------|-------------------|--|--------------------|---------------------------------|----------|--|
| | | BLOW COUNT | | MATERIALS USED | | SIZE/TYPE/QUANTITY | | COMMENTS | |
| AND | 33-50% | 0 - 4 | VERY LOOSE | WELL SCREEN | | Sch 40 PVC | developed with Peristaltic pump | | |
| SOME | 20-33% | 4 - 10 | LOOSE | SLOT SIZE | | 10 slot | | | |
| LITTLE | 10-20% | 10 - 30 | MEDIUM | RISER | | Sch 40 PVC | | | |
| TRACE | 0-10% | 30 - 50 | DENSE | GRADED SAND | | yes | | | |
| | | > 50 | VERY DENSE | BENTONITE PELLETS | | yes | | | |
| | | | | BENTONITE GROUT | | | | | |

Monitoring Well Log

| | | | | | |
|---|--|---|--|--|--|
| SITE NAME: Adrien's Irving | | WELL No: MW-2 | | Main St | |
| ADDRESS: Newport, VT | | TOTAL DEPTH: 25 feet | | | |
| JOB NO.: 20-045 | | DEPTH TO WATER: 16 R ATD | | | |
| DATE: 17 January 2000 | | DEPTH TO BEDROCK: > 25 feet | | Service Station | |
| WEATHER: cold, 10 - 15 °F overcast | | FIELD SUPERVISOR: Bob Ross | | | |
| DRILLING METHOD/BORING DIAMETER: 4 1/4" H.S.A. | | CONTRACTOR: M & W Soils Engineering Mike & Jim | | Boring/Well Location not to scale | |
| DRILLERS: | | | | | |

| Depth (ft) | Sample No | BLOW COUNTS PER 6" | | | | | Rec. (ft) | SAMPLE DESCRIPTION | WELL DETAIL | | PID (ppm) |
|------------|-----------|--------------------|------|-------|-------|-------|---|--------------------|-------------|-----|-----------|
| | | 0-6 | 6-12 | 12-18 | 18-24 | | | | | | |
| 5' | S-1 | 3 | 2 | 3 | 3 | 18/24 | Fill - brown fine SAND & SILT, trace Gravel | | | 0.0 | |
| 10' | S-2 | 3 | 4 | 4 | 4 | 18/24 | brown med to fine SAND, trace coarse Sand & silt | | | 0.0 | |
| 15' | S-3 | 4 | 3 | 3 | 3 | 18/24 | silty SAND brown med to coarse SAND ▽ ~ 16' ATD | | | 0.0 | |
| 20' | S-4 | 1 | 3 | 3 | 3 | 20/24 | fine brown SAND trace silt | | | 0.0 | |
| 25' | S-5 | 3 | 5 | 6 | 5 | 12/24 | BOB @ 25' | | | 0.0 | |

| | | BLOW COUNT | | MATERIALS USED | | SIZE/TYPE/QUANTITY | | COMMENTS | |
|--------|--------|------------|------------|--------------------|----------|------------------------------------|--|----------|--|
| AND | 31-50% | 0-4 | VERY LOOSE | WELL SCREEN | 4x40 PVC | developed with peristaltic PUMP | | | |
| SOME | 20-33% | 4-10 | LOOSE | SLOT SIZE | 10 Slot | | | | |
| LITTLE | 10-20% | 10-30 | MEDIUM | RIBB | 4x40 PVC | | | | |
| TRACE | 0-10% | 30-50 | DENSE | GRADED SAND | YES | | | | |
| | | > 50 | VERY DENSE | BENTONITE PELLET'S | YES | | | | |
| | | | | BENTONITE GROUT | | | | | |

Monitoring Well Log

| | | | | | | | | | | | |
|---|-----------|---|------------|-----------------------------------|------------|----------------|------------------------------------|--------------------|----------------------|-------------|-----------|
| SITE NAME: Adrien's Irving | | WELL No: MW-3 | | | | | | | | | |
| ADDRESS: Newport, VT | | TOTAL DEPTH: 23 feet | | | | | | | | | |
| JOB NO: 20-045 | | DEPTH TO WATER: 16 ft ATD | | | | | | | | | |
| DATE: 17 January 2000 | | DEPTH TO BEDROCK: > 23 feet | | | | | | | | | |
| WEATHER: cold, 10 - 15 °F - overcast | | FIELD SUPERVISOR: Bob Ross | | not to scale 15' 5" 1/4" | | | | | | | |
| DRILLING METHOD/BORING DIAMETER: 4 1/4" H.S.A. | | CONTRACTOR: M & W Soils Engineering Mike & Jim | | | | | | | | | |
| Depth (ft) | Sample No | BLOW COUNTS PER 6" | | | | DRILLERS | Rec (ft) | SAMPLE DESCRIPTION | Horing/Well Location | WELL DETAIL | PTD (ppm) |
| | | 0-6 | 6-12 | 12-18 | 18-24 | | | | | | |
| 5' | S-1 | 7 | 11 | 9 | 5 | 4/24 | brown fine SAND, Some silt | | | 0.0 | |
| 10' | S-2 | 4 | 4 | 4 | 3 | 18/24 | brown coarse to med SAND | | | 0.0 | |
| 15' | S-3 | 5 | 4 | 4 | 5 | 18/24 | $\nabla \sim 16$ ft ATD | | | 0.0 | |
| 20' | S-4 | 5 | 6 | 7 | 8 | 0/24 | No Recovery | | | — | |
| 25' | | | | | | | BOB @ 23' | | | | |
| | | BLOW COUNT | | | | MATERIALS USED | | SIZE/TYPE/QUANTITY | | COMMENTS | |
| AND | 33-50% | 0-4 | VERY LOSE | WELL SCREEN | Sch 40 PVC | | developed with Peristaltic pump | | | | |
| SOME | 20-33% | 4-10 | LOOSE | SLOT SIZE | 10 Slot | | | | | | |
| LITTLE | 10-20% | 10-50 | MEDIUM | RISER | Sch 40 PVC | | | | | | |
| TRACE | 0-10% | 50-50 | DENSE | GRADED SAND | YES | | | | | | |
| | | > 50 | VERY DENSE | PORTLAND CEMENT EMULSION GROUT | YES | | | | | | |

Monitoring Well Log

| SITE NAME: Adrien's Irving | | WELL No: MW-4 | | North ↑ | | | Third ST | | | | | |
|--|------------|-------------------------------------|------------|-------------------|------------|--------------------|-------------|--------------------|--------------------|----------------------|--|--------------|
| ADDRESS: Newport, VT | | TOTAL DEPTH: 23 feet | | | | | | | | | | |
| JOB NO.: 20-045 | | DEPTH TO WATER: 16 ft ATD | | | | | | | | | | |
| DATE: 17 January 2000 | | DEPTH TO BEDROCK: > 23 feet | | | | | | | | | | |
| WEATHER: cold, 10 - 15 °F - overcast | | FIELD SUPERVISOR: Bob Ross | | | | | | | | | | |
| DRILLING METHOD/BORING DIAMETER: 4 1/4" H.S.A. | | CONTRACTOR: M & W Soils Engineering | | | | | | | | | | |
| | | DRILLERS: Mike & Jim | | | | | | | | | | |
| Depth (ft) | Sample No. | BLOW COUNTS PER 6" | | | | | | Rec. (ft) | SAMPLE DESCRIPTION | Boring/Well Location | | not to scale |
| | | 0 | 6 | 12 | 18 | 24 | WELL DETAIL | | | TD (ppm) | | |
| 5' | | | | | | | | Fill Sand & gravel | | | | |
| 10' | | | | | | | | Fine Brown SAND | | | | |
| 15' | | | | | | | | ~ 16 ft ATD | | | | |
| 20' | | | | | | | | | | | | |
| 25' | | | | | | | | Bob @ 23' | | | | |
| | | BLOW COUNT | | MATERIALS USED | | SIZE/TYPE/QUANTITY | | COMMENTS | | | | |
| AND | 33-50% | 0-4 | VERY LOSE | WELL SCREEN | SCH 40 PVC | | | | | | | |
| SOMR | 20-33% | 4-10 | LOOSE | SLOT SIZE | 1/2 slot | | | | | | | |
| LITTLE | 10-20% | 10-30 | MEDIUM | RISER | SCH 40 PVC | | | | | | | |
| TRACE | 0-10% | 30-50 | DENSE | GRADED SAND | yes | | | | | | | |
| | | > 50 | VERY DENSE | BENTONITE PELLETS | yes | | | | | | | |
| | | | | BENTONITE GROUT | | | | | | | | |

**LABORATORY
ANALYTICAL REPORTS**

**A
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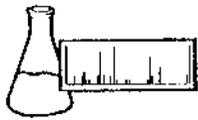
LABORATORY REPORT

SW 8260

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Adriens Irving/REA 20-045
SITE: MW-1
DATE RECEIVED: January 25, 2001
REPORT DATE: February 12, 2001
ANALYSIS DATE: February 1, 2001

ORDER ID: 11080
REFERENCE NUMBER: 168430
DATE SAMPLED: January 24, 2001
TIME SAMPLED: 3:58 PM
SAMPLER: BR
ANALYST: 725

| Parameter | Result | Parameter | Result |
|-----------------------------|--------|---------------------------|--------|
| Benzene | < 1.0 | 1,1-Dichloropropene | < 1.0 |
| Bromobenzene | < 1.0 | cis-1,3-Dichloropropene | < 1.0 |
| Bromochloromethane | < 2.0 | trans-1,3-Dichloropropene | < 1.0 |
| Bromodichloromethane | < 1.0 | Ethylbenzene | < 1.0 |
| Bromoform | < 1.0 | Hexachlorobutadiene | < 5.0 |
| Bromomethane | < 5.0 | Isopropylbenzene | < 1.0 |
| n-Butylbenzene | < 1.0 | p-Isopropyltoluene | < 1.0 |
| sec-Butylbenzene | < 1.0 | Methylene Chloride | < 5.0 |
| tert-Butylbenzene | < 1.0 | MTBE | < 2.0 |
| Carbon Tetrachloride | < 1.0 | Naphthalene | < 5.0 |
| Chlorobenzene | < 1.0 | n-Propylbenzene | < 1.0 |
| Chloroethane | < 5.0 | Styrene | < 1.0 |
| Chloroform | < 1.0 | 1,1,1,2-Tetrachloroethane | < 2.0 |
| Chloromethane | < 10.0 | 1,1,2,2-Tetrachloroethane | < 2.0 |
| 2-Chlorotoluene | < 1.0 | Tetrachloroethene | < 1.0 |
| 4-Chlorotoluene | < 1.0 | Toluene | < 1.0 |
| Dibromochloromethane | < 1.0 | 1,2,3-Trichlorobenzene | < 2.0 |
| 1,2-Dibromo-3-Chloropropane | < 2.0 | 1,2,4-Trichlorobenzene | < 2.0 |
| 1,2-Dibromoethane | < 2.0 | 1,1,1-Trichloroethane | < 1.0 |
| Dibromomethane | < 2.0 | 1,1,2-Trichloroethane | < 1.0 |
| 1,2-Dichlorobenzene | < 1.0 | Trichloroethene | < 1.0 |
| 1,3-Dichlorobenzene | < 1.0 | Trichlorofluoromethane | < 2.0 |
| 1,4-Dichlorobenzene | < 1.0 | 1,2,3-Trichloropropane | < 2.0 |
| Dichlorodifluoromethane | < 10.0 | 1,2,4-Trimethylbenzene | < 1.0 |
| 1,1-Dichloroethane | < 1.0 | 1,3,5-Trimethylbenzene | < 1.0 |
| 1,2-Dichloroethane | < 1.0 | Vinyl Chloride | < 2.0 |
| 1,1-Dichloroethene | < 1.0 | Xylenes, Total | < 2.0 |
| cis-1,2-Dichloroethene | < 1.0 | Surrogate 1 | 98.0% |
| trans-1,2-Dichloroethene | < 1.0 | Surrogate 2 | 96.0% |
| 1,2-Dichloropropane | < 1.0 | Surrogate 3 | 97.0% |
| 1,3-Dichloropropane | < 1.0 | UIP's | 0.0 |
| 2,2-Dichloropropane | < 1.0 | | |



LABORATORY REPORT

SW 8260

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Adriens Irving/REA 20-045
SITE: MW-2
DATE RECEIVED: January 25, 2001
REPORT DATE: February 12, 2001
ANALYSIS DATE: February 1, 2001

ORDER ID: 11080
REFERENCE NUMBER: 168431
DATE SAMPLED: January 24, 2001
TIME SAMPLED: 4:10 PM
SAMPLER: BR
ANALYST: 725

| Parameter | Result ug/L | Parameter | Result ug/L |
|-----------------------------|----------------|---------------------------|----------------|
| Benzene | < 1.0 | 1,1-Dichloropropene | < 1.0 |
| Bromobenzene | < 1.0 | cis-1,3-Dichloropropene | < 1.0 |
| Bromochloromethane | < 2.0 | trans-1,3-Dichloropropene | < 1.0 |
| Bromodichloromethane | < 1.0 | Ethylbenzene | < 1.0 |
| Bromoform | < 1.0 | Hexachlorobutadiene | < 5.0 |
| Bromomethane | < 5.0 | Isopropylbenzene | < 1.0 |
| n-Butylbenzene | < 1.0 | p-Isopropyltoluene | < 1.0 |
| sec-Butylbenzene | < 1.0 | Methylene Chloride | < 5.0 |
| tert-Butylbenzene | < 1.0 | MTBE | < 2.0 |
| Carbon Tetrachloride | < 1.0 | Naphthalene | < 5.0 |
| Chlorobenzene | < 1.0 | n-Propylbenzene | < 1.0 |
| Chloroethane | < 5.0 | Styrene | < 1.0 |
| Chloroform | < 1.0 | 1,1,1,2-Tetrachloroethane | < 2.0 |
| Chloromethane | < 10.0 | 1,1,2,2-Tetrachloroethane | < 2.0 |
| 4-Chlorotoluene | < 1.0 | Tetrachloroethene | < 1.0 |
| 2-Chlorotoluene | < 1.0 | Toluene | < 1.0 |
| Dibromochloromethane | < 1.0 | 1,2,3-Trichlorobenzene | < 2.0 |
| 1,2-Dibromo-3-Chloropropane | < 2.0 | 1,2,4-Trichlorobenzene | < 2.0 |
| 1,2-Dibromoethane | < 2.0 | 1,1,1-Trichloroethane | < 1.0 |
| Dibromomethane | < 2.0 | 1,1,2-Trichloroethane | < 1.0 |
| 1,2-Dichlorobenzene | < 1.0 | Trichloroethene | < 1.0 |
| 1,3-Dichlorobenzene | < 1.0 | Trichlorofluoromethane | < 2.0 |
| 1,4-Dichlorobenzene | < 1.0 | 1,2,3-Trichloropropane | < 2.0 |
| Dichlorodifluoromethane | < 10.0 | 1,2,4-Trimethylbenzene | < 1.0 |
| 1,1-Dichloroethane | < 1.0 | 1,3,5-Trimethylbenzene | < 1.0 |
| 1,2-Dichloroethane | < 1.0 | Vinyl Chloride | < 2.0 |
| 1,1-Dichloroethene | < 1.0 | Xylenes, Total | < 2.0 |
| cis-1,2-Dichloroethene | < 1.0 | Surrogate 1 | 100.0% |
| trans-1,2-Dichloroethene | < 1.0 | Surrogate 2 | 99.0% |
| 1,2-Dichloropropane | < 1.0 | Surrogate 3 | 95.0% |
| 1,3-Dichloropropane | < 1.0 | UIP's | 0. |
| 2,2-Dichloropropane | < 1.0 | | |



LABORATORY REPORT

SW 8260

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Adrians Irving/REA 20-045
SITE: MW-3
DATE RECEIVED: January 25, 2001
REPORT DATE: February 12, 2001
ANALYSIS DATE: February 7, 2001

ORDER ID: 11080
REFERENCE NUMBER: 168432
DATE SAMPLED: January 24, 2001
TIME SAMPLED: 4:28 PM
SAMPLER: BR
ANALYST: 725

| <u>Parameter</u> | <u>Result</u> <u>ug/L</u> | <u>Parameter</u> | <u>Result</u> <u>ug/L</u> |
|-----------------------------|------------------------------|---------------------------|------------------------------|
| Benzene | < 4.0 | 1,1-Dichloropropene | < 4.0 |
| Bromobenzene | < 4.0 | cis-1,3-Dichloropropene | < 4.0 |
| Bromochloromethane | < 8.0 | trans-1,3-Dichloropropene | < 4.0 |
| Bromodichloromethane | < 4.0 | Ethylbenzene | < 4.0 |
| Bromoform | < 4.0 | Hexachlorobutadiene | < 20.0 |
| Bromomethane | < 20.0 | Isopropylbenzene | 25.7 |
| n-Butylbenzene | 13.0 | p-Isopropyltoluene | 8.0 |
| sec-Butylbenzene | 11.2 | Methylene Chloride | < 20.0 |
| tert-Butylbenzene | < 4.0 | MTBE | < 8.0 |
| Carbon Tetrachloride | < 4.0 | Naphthalene | 55.6 |
| Chlorobenzene | < 4.0 | n-Propylbenzene | 33.4 |
| Chloroethane | < 20.0 | Styrene | < 4.0 |
| Chloroform | < 4.0 | 1,1,1,2-Tetrachloroethane | < 8.0 |
| Chloromethane | < 40.0 | 1,1,2,2-Tetrachloroethane | < 8.0 |
| 2-Chlorotoluene | < 4.0 | Tetrachloroethene | < 4.0 |
| 4-Chlorotoluene | < 4.0 | Toluene | < 4.0 |
| Dibromochloromethane | < 4.0 | 1,2,3-Trichlorobenzene | < 8.0 |
| 1,2-Dibromo-3-Chloropropane | < 8.0 | 1,2,4-Trichlorobenzene | < 8.0 |
| 1,2-Dibromoethane | < 8.0 | 1,1,1-Trichloroethane | < 4.0 |
| Dibromomethane | < 8.0 | 1,1,2-Trichloroethane | < 4.0 |
| 1,2-Dichlorobenzene | < 4.0 | Trichloroethene | < 4.0 |
| 1,3-Dichlorobenzene | < 4.0 | Trichlorofluoromethane | < 8.0 |
| 1,4-Dichlorobenzene | < 4.0 | 1,2,3-Trichloropropane | < 8.0 |
| Dichlorodifluoromethane | < 40.0 | 1,2,4-Trimethylbenzene | 350. |
| 1,1-Dichloroethane | < 4.0 | 1,3,5-Trimethylbenzene | 173. |
| 1,2-Dichloroethane | < 4.0 | Vinyl Chloride | < 8.0 |
| 1,1-Dichloroethene | < 4.0 | Xylenes, Total | 21.9 |
| cis-1,2-Dichloroethene | < 4.0 | Surrogate 1 | 99.0% |
| trans-1,2-Dichloroethene | < 4.0 | Surrogate 2 | 100.0% |
| 1,2-Dichloropropane | < 4.0 | Surrogate 3 | 99.0% |
| 1,3-Dichloropropane | < 4.0 | UIP's | > 10. |
| 2,2-Dichloropropane | < 4.0 | | |



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

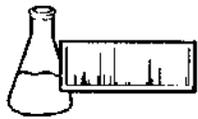
LABORATORY REPORT

SW 8260

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Adriens Irving/REA 20-045
SITE: MW-4
DATE RECEIVED: January 25, 2001
REPORT DATE: February 12, 2001
ANALYSIS DATE: February 1, 2001

ORDER ID: 11080
REFERENCE NUMBER: 168433
DATE SAMPLED: January 24, 2001
TIME SAMPLED: 4:20 PM
SAMPLER: BR
ANALYST: 725

| Parameter | Result ug/L | Parameter | Result ug/L |
|-----------------------------|----------------|---------------------------|----------------|
| Benzene | < 1.0 | 1,1-Dichloropropene | < 1.0 |
| Bromobenzene | < 1.0 | cis-1,3-Dichloropropene | < 1.0 |
| Bromochloromethane | < 2.0 | trans-1,3-Dichloropropene | < 1.0 |
| Bromodichloromethane | < 1.0 | Ethylbenzene | < 1.0 |
| Bromoform | < 1.0 | Hexachlorobutadiene | < 5.0 |
| Bromomethane | < 5.0 | Isopropylbenzene | 1.2 |
| n-Butylbenzene | 1.1 | p-Isopropyltoluene | < 1.0 |
| sec-Butylbenzene | 1.7 | Methylene Chloride | < 5.0 |
| tert-Butylbenzene | < 1.0 | MTBE | < 2.0 |
| Carbon Tetrachloride | < 1.0 | Naphthalene | < 5.0 |
| Chlorobenzene | < 1.0 | n-Propylbenzene | < 1.0 |
| Chloroethane | < 5.0 | Styrene | < 1.0 |
| Chloroform | < 1.0 | 1,1,1,2-Tetrachloroethane | < 2.0 |
| Chloromethane | < 10.0 | 1,1,2,2-Tetrachloroethane | < 2.0 |
| 2-Chlorotoluene | < 1.0 | Tetrachloroethene | < 1.0 |
| 4-Chlorotoluene | < 1.0 | Toluene | < 1.0 |
| Dibromochloromethane | < 1.0 | 1,2,3-Trichlorobenzene | < 2.0 |
| 1,2-Dibromo-3-Chloropropane | < 2.0 | 1,2,4-Trichlorobenzene | < 2.0 |
| 1,2-Dibromoethane | < 2.0 | 1,1,1-Trichloroethane | < 1.0 |
| Dibromomethane | < 2.0 | 1,1,2-Trichloroethane | < 1.0 |
| 1,2-Dichlorobenzene | < 1.0 | Trichloroethene | < 1.0 |
| 1,3-Dichlorobenzene | < 1.0 | Trichlorofluoromethane | < 2.0 |
| 1,4-Dichlorobenzene | < 1.0 | 1,2,3-Trichloropropane | < 2.0 |
| Dichlorodifluoromethane | < 10.0 | 1,2,4-Trimethylbenzene | < 1.0 |
| 1,1-Dichloroethane | < 1.0 | 1,3,5-Trimethylbenzene | < 1.0 |
| 1,2-Dichloroethane | < 1.0 | Vinyl Chloride | < 2.0 |
| 1,1-Dichloroethene | < 1.0 | Xylenes, Total | < 2.0 |
| cis-1,2-Dichloroethene | < 1.0 | Surrogate 1 | 99.9% |
| trans-1,2-Dichloroethene | < 1.0 | Surrogate 2 | 99.9% |
| 1,2-Dichloropropane | < 1.0 | Surrogate 3 | 92.0% |
| 1,3-Dichloropropane | < 1.0 | UIP's | > 10. |
| 2,2-Dichloropropane | < 1.0 | | |



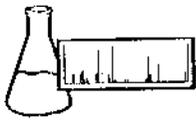
LABORATORY REPORT

SW 8260

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Adrians Irving/REA 20-045
SITE: Dup-01
DATE RECEIVED: January 25, 2001
REPORT DATE: February 12, 2001
ANALYSIS DATE: February 1, 2001

ORDER ID: 11080
REFERENCE NUMBER: 168434
DATE SAMPLED: January 24, 2001
TIME SAMPLED: NI
SAMPLER: BR
ANALYST: 725

| <u>Parameter</u> | <u>Result</u> ug/L | <u>Parameter</u> | <u>Result</u> ug/L |
|-----------------------------|-----------------------|---------------------------|-----------------------|
| Benzene | < 1.0 | 1,1-Dichloropropene | < 1.0 |
| Bromobenzene | < 1.0 | cis-1,3-Dichloropropene | < 1.0 |
| Bromochloromethane | < 2.0 | trans-1,3-Dichloropropene | < 1.0 |
| Bromodichloromethane | < 1.0 | Ethylbenzene | < 1.0 |
| Bromoform | < 1.0 | Hexachlorobutadiene | < 5.0 |
| Bromomethane | < 5.0 | Isopropylbenzene | < 1.0 |
| n-Butylbenzene | < 1.0 | p-Isopropyltoluene | < 1.0 |
| sec-Butylbenzene | < 1.0 | Methylene Chloride | < 5.0 |
| tert-Butylbenzene | < 1.0 | MTBE | < 2.0 |
| Carbon Tetrachloride | < 1.0 | Naphthalene | < 5.0 |
| Chlorobenzene | < 1.0 | n-Propylbenzene | < 1.0 |
| Chloroethane | < 5.0 | Styrene | < 1.0 |
| Chloroform | < 1.0 | 1,1,1,2-Tetrachloroethane | < 2.0 |
| Chloromethane | < 10.0 | 1,1,2,2-Tetrachloroethane | < 2.0 |
| 2-Chlorotoluene | < 1.0 | Tetrachloroethene | < 1.0 |
| 4-Chlorotoluene | < 1.0 | Toluene | < 1.0 |
| Dibromochloromethane | < 1.0 | 1,2,3-Trichlorobenzene | < 2.0 |
| 1,2-Dibromo-3-Chloropropane | < 2.0 | 1,2,4-Trichlorobenzene | < 2.0 |
| 1,2-Dibromoethane | < 2.0 | 1,1,1-Trichloroethane | < 1.0 |
| Dibromomethane | < 2.0 | 1,1,2-Trichloroethane | < 1.0 |
| 1,2-Dichlorobenzene | < 1.0 | Trichloroethene | < 1.0 |
| 1,3-Dichlorobenzene | < 1.0 | Trichlorofluoromethane | < 2.0 |
| 1,4-Dichlorobenzene | < 1.0 | 1,2,3-Trichloropropane | < 2.0 |
| Dichlorodifluoromethane | < 10.0 | 1,2,4-Trimethylbenzene | < 1.0 |
| 1,1-Dichloroethane | < 1.0 | 1,3,5-Trimethylbenzene | < 1.0 |
| 1,2-Dichloroethane | < 1.0 | Vinyl Chloride | < 2.0 |
| 1,1-Dichloroethene | < 1.0 | Xylenes, Total | < 2.0 |
| cis-1,2-Dichloroethene | < 1.0 | Surrogate 1 | 107.0% |
| trans-1,2-Dichloroethene | < 1.0 | Surrogate 2 | 101.0% |
| 1,2-Dichloropropane | < 1.0 | Surrogate 3 | 96.0% |
| 1,3-Dichloropropane | < 1.0 | UIP's | 0.0% |
| 2,2-Dichloropropane | < 1.0 | | |



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LABORATORY REPORT

SW 8260

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Jimmy's Kwik Store/REA 99-026
SITE: TB-01
DATE RECEIVED: January 25, 2001
REPORT DATE: February 6, 2001
ANALYSIS DATE: January 27, 2001

ORDER ID: 11079
REFERENCE NUMBER: 168420
DATE SAMPLED: January 24, 2001
TIME SAMPLED: 7:20 AM
SAMPLER: BR
ANALYST: 725

| Parameter | Result ug/L | Parameter | Result ug/L |
|-----------------------------|----------------|---------------------------|----------------|
| Benzene | < 1.0 | 1,1-Dichloropropene | < 1.0 |
| Bromobenzene | < 1.0 | cis-1,3-Dichloropropene | < 1.0 |
| Bromochloromethane | < 2.0 | trans-1,3-Dichloropropene | < 1.0 |
| Bromodichloromethane | < 1.0 | Ethylbenzene | < 1.0 |
| Bromoform | < 1.0 | Hexachlorobutadiene | < 5.0 |
| Bromomethane | < 5.0 | Isopropylbenzene | < 1.0 |
| n-Butylbenzene | < 1.0 | p-Isopropyltoluene | < 1.0 |
| sec-Butylbenzene | < 1.0 | Methylene Chloride | < 5.0 |
| tert-Butylbenzene | < 1.0 | MIBK | < 2.0 |
| Carbon Tetrachloride | < 1.0 | Naphthalene | < 5.0 |
| Chlorobenzene | < 1.0 | n-Propylbenzene | < 1.0 |
| Chloroethane | < 5.0 | Styrene | < 1.0 |
| Chloroform | < 1.0 | 1,1,1,2-Tetrachloroethane | < 2.0 |
| Chloromethane | < 10.0 | 1,1,2,2-Tetrachloroethane | < 2.0 |
| 4-Chlorotoluene | < 1.0 | Tetrachloroethene | < 1.0 |
| 2-Chlorotoluene | < 1.0 | Toluene | < 1.0 |
| Dibromochloromethane | < 1.0 | 1,2,3-Trichlorobenzene | < 2.0 |
| 1,2-Dibromo-3-Chloropropane | < 2.0 | 1,2,4-Trichlorobenzene | < 2.0 |
| 1,2-Dibromoethane | < 2.0 | 1,1,1-Trichloroethane | < 1.0 |
| Dibromomethane | < 2.0 | 1,1,2-Trichloroethane | < 1.0 |
| 1,2-Dichlorobenzene | < 1.0 | Trichloroethene | < 1.0 |
| 1,3-Dichlorobenzene | < 1.0 | Trichlorofluoromethane | < 2.0 |
| 1,4-Dichlorobenzene | < 1.0 | 1,2,3-Trichloropropane | < 2.0 |
| Dichlorodifluoromethane | < 10.0 | 1,2,4-Trimethylbenzene | < 1.0 |
| 1,1-Dichloroethane | < 1.0 | 1,3,5-Trimethylbenzene | < 1.0 |
| 1,2-Dichloroethane | < 1.0 | Vinyl Chloride | < 2.0 |
| 1,1-Dichloroethene | < 1.0 | Xylenes, Total | < 2.0 |
| cis-1,2-Dichloroethene | < 1.0 | Surrogate 1 | 108.% |
| trans-1,2-Dichloroethene | < 1.0 | Surrogate 2 | 97.% |
| 1,2-Dichloropropane | < 1.0 | Surrogate 3 | 97.% |
| 1,3-Dichloropropane | < 1.0 | UIP's | 0. |
| 2,2-Dichloropropane | < 1.0 | | |



ENDYNE, INC.

Laboratory Services

160 James Brown Drive
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LABORATORY REPORT

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Adriens Irving/REA 20-045
REPORT DATE: February 12, 2001

ORDER ID: 11080
DATE RECEIVED: January 25, 2001
SAMPLER: BR
ANALYST: 725

Ref. Number: 168430 Site: MW-1 Date Sampled: January 24, 2001 Time: 3:58 PM

| <u>Parameter</u> | <u>Result</u> | <u>Unit</u> | <u>Method</u> | <u>Analysis Date</u> |
|------------------|---------------|-------------|---------------|----------------------|
| TPH 8015 GRO | < 0.10 | mg/L | SW 8015B | 2/1/01 |

Ref. Number: 168431 Site: MW-2 Date Sampled: January 24, 2001 Time: 4:10 PM

| <u>Parameter</u> | <u>Result</u> | <u>Unit</u> | <u>Method</u> | <u>Analysis Date</u> |
|------------------|---------------|-------------|---------------|----------------------|
| TPH 8015 GRO | < 0.10 | mg/L | SW 8015B | 2/1/01 |

Ref. Number: 168432 Site: MW-3 Date Sampled: January 24, 2001 Time: 4:28 PM

| <u>Parameter</u> | <u>Result</u> | <u>Unit</u> | <u>Method</u> | <u>Analysis Date</u> |
|------------------|---------------|-------------|---------------|----------------------|
| TPH 8015 GRO | 3.24 | mg/L | SW 8015B | 2/1/01 |

Ref. Number: 168433 Site: MW-4 Date Sampled: January 24, 2001 Time: 4:20 PM

| <u>Parameter</u> | <u>Result</u> | <u>Unit</u> | <u>Method</u> | <u>Analysis Date</u> |
|------------------|---------------|-------------|---------------|----------------------|
| TPH 8015 GRO | 0.64 | mg/L | SW 8015B | 2/1/01 |

Ref. Number: 168434 Site: Dup-01 Date Sampled: January 24, 2001 Time: NI

| <u>Parameter</u> | <u>Result</u> | <u>Unit</u> | <u>Method</u> | <u>Analysis Date</u> |
|------------------|---------------|-------------|---------------|----------------------|
| TPH 8015 GRO | < 0.10 | mg/L | SW 8015B | 2/1/01 |