Phase (check one)	Type (check one)
☒ Initial Site Investigation ☐ Corrective Action Feasibility Investigation ☐ Corrective Action Plan ☐ Corrective Action Summary Report ☐ Operations & Monitoring Report	☐ Work Scope ☒ Technical Report ☐ PCF Reimbursement Request ☐ General Correspondence

INITIAL SITE INVESTIGATION

Coca Cola Facility
Rutland, VT 05701

SMS Site #97-2190

A Facility Owned By:
A.L. Griggs Industries, Inc.
Adams Road
Greenfield, MA 01301
(413) 772-2041
Contact: William Manewich

Prepared By:
Dufresne-Henry, Inc.
Precision Park
North Springfield, VT 05150
(802) 886-2261
Contact: Bruce H. Cox, P.E.

September 29, 1997

EXECUTIVE SUMMARY

An Initial Site Investigation has been completed at the Coca Cola facility in Rutland, Vermont. The investigation was in response to the discovery of a petroleum product release during a Tank Closure Assessment in June 1997. Contamination of soil was confirmed, contamination of groundwater was judged likely. Per discussions with the Underground Storage Tank Program, all soil excavated from the tank beds was backfilled pending additional investigation.

Three shallow groundwater monitoring wells were installed on the site in September 1997. The monitoring wells were sampled and analyzed for BTEX and MTBE by EPA Method 602(mod). Low level concentrations of Benzene, Toluene, Ethylbenzene, Xylenes, and MTBE were found in the well immediately adjacent to the former fuel tanks. The Benzene concentration equaled the Vermont Enforcement Standard. All of the other compounds were well below the Standard.

Soil on the site is relatively dense and silty. The permeability is judged to be relatively low. The depth to bedrock on the site varies from being at the surface to greater than 13 feet. The overall slope of the bedrock surface appears to be to the southwest. Based on a single round of sounding, the direction of groundwater flow is to the northwest.

Minimal evidence of petroleum contaminated soil was found in the immediate downgradient vicinity of the former fuel UST's. The limits of contamination may extend under the building, but the extent is likely to be limited.

All of the properties in the immediate vicinity of the site are on the municipal water supply system. All properties in the City of Rutland are expected to be on the municipal supply. Several private water wells appear to exist in Rutland Town within a half-mile radius of the subject property. The nearest surface waters are Mussey Brook and Eddy Pond approximately 750 feet and 1,100 feet to the northeast and north respectively. The building on the subject property has a slab on grade foundation. Given the observed shallowness of bedrock, it is presumed that the other buildings in the area are of similar construction. It is not expected that any of these receptors have been, or will be, impacted. The pavement disturbed by the fuel tank removal is scheduled for replacement. Although a few sites on the Vermont Hazardous Waste Sites list appear to be within one-half mile of the site, none are expected to have any impact on it.

Based on these findings, the site does not meet the SMS criteria for corrective actions. At this time site monitoring is recommended. It is recommended that the three (3) monitoring wells be sampled in 1988 following spring runoff. If BTEX exceeds the Vermont Enforcement Standard, it is recommended that monitoring continue on an annual basis. If BTEX in the spring sampling round meets the Enforcement Standard, a request will be forwarded to the State to consider the site for a Sites Management Activity Complete (SMAC) designation.

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INITIAL SITE INVESTIGATION
A.L. GRIGGS, INC.
RUTLAND, VERMONT

Introduction

The Coca Cola facility in Rutland, Vermont is located on Quality Lane. The property is owned by A.L. Griggs Industries, Inc of Greenfield, Massachusetts. A site location map is included as Appendix A.

Dufresne-Henry, Inc., in conjunction with Great Northern Environmental Services, performed a Tank Closure Assessment at the site on June 2, 1997. Initially only two (2) tanks were scheduled for closure. Ultimately, five (5) UST's were removed at the request of the Vermont Underground Storage Tank Program (VUSTP), and with the approval of the owner. The tanks were one 6,000 gallon gasoline, one 10,000 gallon gasoline, one 10,000 gallon diesel fuel, and two 275 gallon waste oil UST's. Evidence of soil contamination was observed at the cluster that included the gasoline and diesel tanks. Soil sample headspace PID readings of 2,500 ppm were observed. A low concentration of Xylenes were found in a soil sample from one of the waste oil tanks. A low concentration of Xylenes was found in a water sample from the other waste oil tank. The excavations were backfilled with the permission of the VUSTP. The owner opted not to participate in the "Expressway Program".

Work and Health and Safety Plans

As a result of the findings of the Tank Closure Assessment, the Sites Management Section (SMS) requested additional investigation at the property in a letter dated August 4, 1997. Dufresne-Henry prepared a Work Plan and a Health and Safety Plan for the proposed activities at the site. A copy of the proposed work plan was forwarded to the Hazardous Materials Management Division (HMMD) for review on August 15, 1997. The work plan was approved, with several minor modifications, in a letter dated August 28, 1997. Copies of these documents will be found in Appendix B. The remainder of this report describes the on-site activities and subsequent findings based on that work plan.

Site Description

The Coca Cola facility is located in an industrial park on the west side of Quality Lane in Rutland, VT. The property, comprising approximately 3.0 acres, consists of a single story Butler building, two separate paved driveways/parking areas, and grassed areas. The building contains office space, a loading dock area, a vehicle servicing area, and a large amount of space for product storage and vehicle parking. The property is served by the municipal water and wastewater disposal systems. The site is located near the crest of a small knoll, and slopes gently to the west. Surrounding land to the north, east and south is commercial. Active railroad tracks bound the site to the west.

The former gasoline and diesel UST's were in a cluster east of the southeast corner of the building. A pump island, removed at the same time as the tanks, was located north of the UST's. Automotive waste oil UST's were located adjacent to the building northwest of the fuel tanks, and just west of the southwest corner of the building. The ages of the gasoline, diesel, and the southwestern waste oil tanks are not known, but are estimated by a site representative as 10± years. The age of the other waste oil tank is completely unknown. The fuel UST's contained 1" - 2" of product and sludge. The tanks were found to be in good condition. The western waste oil tank contained 4" of product and sludge, and the eastern waste oil tank was full to within 4" of the top. Both tanks were in poor to fair condition, although no holes were observed in either. The contamination observed appears to have been the result of spills or overfills.

Site History

The history of the site is not known. Available information suggests the building is approximately 22 years old. The surrounding properties in the industrial park appear to be of a similar age. The property is currently used as an office, a warehouse and distribution facility for soft drinks, and for vehicle maintenance.

No other UST's are known to exist on the property. The building is heated by propane. Small quantities of automotive fluids, tools and other repair equipment, and a parts washer were observed in the vehicle maintenance area. No other hazardous materials are known to be stored on the property.

The most recent (July 1997) Vermont Hazardous Waste Sites List maintained by the HMMD contains 56 other sites in Rutland. A few of the sites may be within a one-half mile radius of the site, and several are within a one mile radius. None of the sites within a half-mile radius of the subject property are judged to have any impact on the property.

Monitoring Well Installation

Three (3) shallow groundwater monitoring wells were installed on August 12, 1997 by M & W Soils Engineering, Inc. of Charlestown, New Hampshire. All borings and well installations were under the field observation of Dufresne-Henry personnel. The wells are designated MW-1 through MW-3. Well MW-1 is located just northwest of the former gasoline and diesel UST's in soil undisturbed by the removal. Well MW-2 is located just south of the southwest corner of the building. Siting the boring nearer the former waste oil tank was precluded by an inoperative delivery truck parked over the tank location. Well MW-3 is located adjacent to the east side of the building, north of the former gasoline and diesel UST's. While a fourth monitoring well was planned east or southeast of the former fuel tanks, shallow bedrock without a water table was encountered in two widely spaced locations. A site sketch showing the well and boring locations is included as Appendix C. Logs of the borings and monitoring well installation reports are included in Appendix D.

During boring advancement split spoon soil samples were taken at various intervals as determined by the Dufresne-Henry inspector. All soil samples were screened for the presence of Volatile Organic Compounds (VOC's) with a Photovac MicroTIP HL-2000 photoionization detector (10.6 eV lamp, calibrated with 100 ppm Isobutylene). The screening was done at ambient temperature.

Due to its' proximity to the former fuel UST's, continuous split spoon soil sampling was done at MW-1. Soil with a faint oily odor was encountered from approximately 2'6" to 9'. PID readings ranged from less than 50 ppm to 460 ppm. In borings MW-2, MW-3, TB-1, and TB-2 no evidence of contamination by visual or olfactory sense was observed in the samples or on the drilling tools. PID readings at MW-2, MW-3, and TB-1 were 0 ppm. Due to the shallow refusal at TB-2 no soil samples were obtained. The general geologic column in all locations was silty, occasionally gravelly sand. The soil has a till-like appearance in the deeper sections of some of

the borings. It appears that portions of the site have been filled approximately 5'. Probable bedrock was encountered in all of the borings with the exception of MW-2. The overall slope of the bedrock surface is to the southwest. The depth to the water table ranged from approximately 4' to 8'.

Two-inch diameter PVC monitoring wells were installed in the borings where the water table was encountered. Each well was constructed from .010" machine slotted screen. The screened intervals were 7'6", 10', and 7'6" for wells MW-1 though MW-3 respectively. Each well was backfilled with clean silica sand to a point above the screen and a bentonite seal installed. The wells were protected at the ground surface by grouting in watertight monitoring well boxes. Excess clean soil was spread near the well locations. Potentially contaminated soil was spread at the fuel UST excavation.

Site Geology

Surficial geology at the site is published as lacustrine sands and gravels. The borings generally corroborated that information. Portions of the site have been filled on the order of 5'. The native soils are quite silty, and organic in places. Deeper sections of the borings typically were silty, gravelly sands, occasionally displaying a till-like character.

Published mapping indicates bedrock on the site is likely to be the Monkton Quartzite. The Monkton is generally described as red quartzite interbedded with buff and white quartzite and relatively thick sections of dolomite. The contact with the Dunham Dolomite is a short distance to the north and west, and the contact with the Winooski Dolomite is a short distance to the south. Bedrock exposures on and near the site suggest the presence of white quartzite. The inability to penetrate the rock without great difficulty also suggests quartzite. Given the hardness and brittleness of each of these rocks, fractures expressed as joint sets are quite possible. Depths to refusal suggest that the bedrock surface is generally sloping to the southwest. The age of each of the rock types is Middle Cambrian.

Site Hydrogeology

At the time the monitoring wells were sampled on September 16, 1997, the depth to the water table ranged from approximately 5.0' to approximately 6.7'. Based on this single sounding, the direction of groundwater flow is generally to the northwest. This direction is approximately 90° to the apparent slope of the bedrock surface (southwest). The gradient is relatively shallow at approximately 2.3%. A site plan showing the groundwater contours on September 16, 1997 is included as Appendix E.

Potential Receptors

All of the properties in the immediate vicinity of the site are on the municipal water supply system. It is also expected that all properties within the Rutland City limits are on the municipal system. Information from the Water Supply Division indicates in excess of 10 private water supply wells may exist in Rutland Town within a one-half mile radius of the site. In some instances these wells are at higher topographic elevation, and in others they are separated from the site by surface water. The nearest surface waters are Mussey Brook and Eddy Pond approximately 750 feet and 1,100 feet to the northeast and north respectively. The building on the subject property has a slab on grade foundation. Given the observed shallowness of bedrock, it is presumed that the other buildings in the area are of similar construction. It is not expected that any of these receptors have been, or will be, impacted. As of the date of the sampling for this investigation, the excavations at the various former UST locations were backfilled, but unpaved. The owner has made arrangements to have the area at the former fuel tanks repaved. This will prevent direct human contact with any contaminated soil, and help prevent the mobilization of any product in the soil.

Soil and Monitoring Well Sampling

The three (3) Dufresne-Henry monitoring wells were sampled on September 16, 1997 following the standard protocols which are on file with the HMMD. In addition to the labeled samples, two blind duplicates were also obtained. The sampling was performed by Dufresne-Henry personnel. Three well volumes were purged from the monitoring wells prior to drawing

a sample. No odors were observed upon opening any of the wells. No sheens were observed in any of the wells. The refrigerated samples were shipped to Eastern Analytical, Inc. of Concord, New Hampshire on September 16, 1997 via overnight carrier. The samples were analyzed for the VOC's BTEX and MTBE by EPA Method 602(mod).

Benzene, Toluene, Ethylbenzene, Total Xylenes, and MTBE were found in MW-1. Only Benzene was at or very near the Enforcement Standard. All of the other compounds were well below the Standard. A summary of the analytical results for the Site Investigation water samples is presented in Table 1 below.

Table 1
Summary of Analytical Results - Site Investigation

Compound	ES[1] µg/L	ES[2] µg/L	MW-1 µg/L	MW-2 µg/L	MW-3 µg/L	MW-A µg/L	MW-B µg/L
Benzene	5	5	4	<1	<1	**5**	<1
Toluene	2,420	1,000	1	<1	<1	1	<1
Ethylbenzene	680	700	4	<1	<1	5	<1
Total Xylenes	400	10,000	22	<1	<1	27	<1
Total BTEX			31	<1	<1	38	<1
MTBE	N/E	40	30	<20	<20	30	<20

ES[1] Current State of Vermont Enforcement Standard
ES[2] Proposed State of Vermont Enforcement Standard
N/E Standard Not Established
MW-A was a blind lab duplicate for MW-1
MW-B was a blind lab duplicate for MW-2

Four (4) soil samples and one (1) groundwater sample were collected and analyzed at the time of the UST Closure Assessment. In compliance with State of Vermont regulations these samples were obtained at the former waste oil UST's. Soil samples WO#1A and WO#1B are from the tank on the west side of the building. Water sample WO#2, and soil samples WO#2A

and WO#2B are from the tank on the east side of the building. The "A" samples were composited from the tank beds, and the "B" samples were composited from the excavation walls. All of the samples were analyzed for VOC's by EPA 8240 and for Total Petroleum Hydrocarbons by EPA Method 8100(mod). At the western tank, Total Xylenes were found in a soil sample at a concentration of 60 μg/kg. Total Xylenes in the water sample from the eastern tank were 200 μg/L. This concentration is below the Vermont Enforcement Standard. No compounds above method detection limits were found in the soil samples from the eastern tank. None of the samples had TPH in the C9-C40 range above method detection limits. A copy of all of the contract laboratory analytical reports is included as Appendix F.

Summary and Recommendations

In summary, three (3) shallow groundwater monitoring wells were installed on the site, and four (4) shallow test borings completed. The monitoring wells were sampled once. The only evidence of soil contamination found during the boring program was in MW-1 just northwest of the former gasoline and diesel UST's. PID readings of soil samples were up to 460 ppm, although only a faint oil odor was noted. The dense, silty nature of the soil appears to have limited the lateral migration of contamination. Overall, the limits of soil contamination appear to be in the immediate vicinity of the former full tank cluster.

Analysis of groundwater samples from the three monitoring wells found BTEX and MTBE in detectable levels only in MW-1. The Benzene concentration equals the Vermont Enforcement Standard. Total Xylenes were found in one soil sample and in one water sample at the waste oil tanks. The samples were collected at the time of the UST Closure Assessment. The water sample concentration was below the Enforcement Standard. The direction of groundwater flow is generally to the northwest. The results indicate the limits of impacted groundwater may extend under the building, but are likely to be limited in extent.

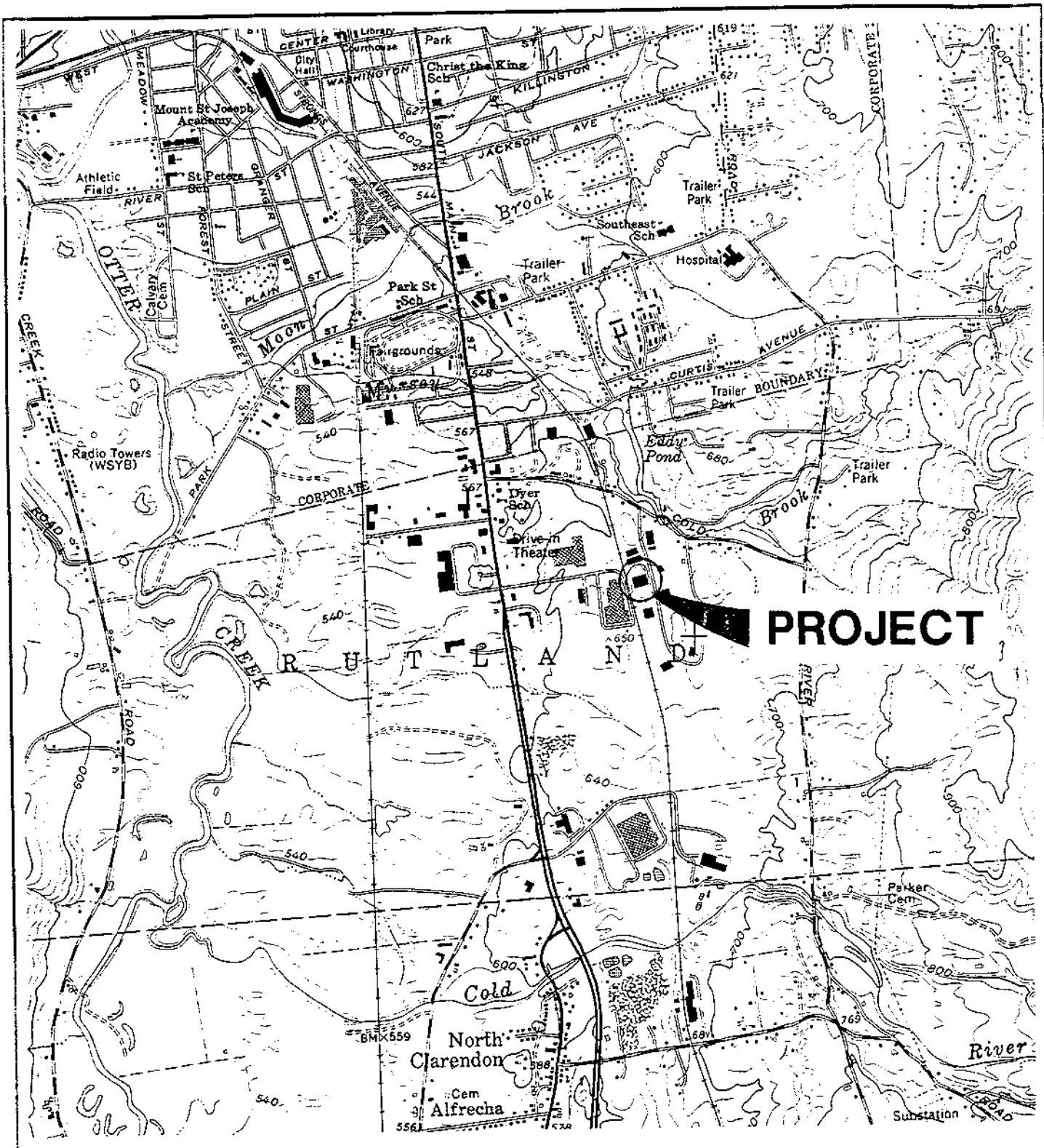
Several sites on the Vermont Hazardous Waste Sites list are within a one-half mile radius of the subject property. None are expected to have an impact on the property. Properties in the immediate vicinity of the site are connected to the municipal water system. Available mapping indicates 10+ private water wells may exist in Rutland Town within a one-half mile radius of the site. The nearest surface waters are Mussey Brook and Eddy Pond approximately 50 feet and

1,100 feet to the northeast and north respectively. The building on the subject property has a slab on grade foundation. Given the observed shallowness of bedrock, it is presumed that the other buildings in the area are of similar construction. It is not expected that any of these receptors have been, or will be, impacted. The disturbed area at the former fuel tanks is scheduled to be paved. This will prevent direct human contact with any contaminated soil, and help prevent mobilization of any product in the soil.

Based on these findings, the site does not meet the SMS criteria for corrective actions. At this time site monitoring is recommended. It is recommended that the three (3) monitoring wells be sampled in 1988 following spring runoff. If BTEX exceeds the Vermont Enforcement Standard, it is recommended that monitoring continue on an annual basis. If BTEX in the spring sampling round meets the Enforcement Standard, a request will be forwarded to the State to consider the site for a Sites Management Activity Complete (SMAC) designation.

APPENDIX A

SITE LOCATION MAP



SCALE
1:24,000

TAKEN FROM A USGS QUAD. SHEET FOR RUTLAND, VT
PHOTOREVISED IN 1988

Dufresne-Henry, Inc.
A DH Company
Precision Park
No. Springfield,
Vermont 05150
Tel. (802)886-2261 Fax (802)886-2260

SITE LOCATION PLAN
PREPARED FOR
A. L. GRIGGS INDUSTRIES, INC.
RUTLAND, VERMONT

Project No.	4170063
Proj. Mgr.	F.D.D.
Date	SEPT. '97
B	SLP-1

APPENDIX B

SITE INVESTIGATION REQUEST, WORK PLAN, SITE HEALTH AND SAFETY PLAN

State of Vermont

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Waste Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404
(802) 241-3888
FAX (802) 241-3296

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD

August 4, 1997

RECEIVED
AUG - 6 1997

William Manewich
A.L. Griggs Industries
Adams Road
Greenfield MA 01301

RE: Petroleum contamination at Coca Cola, Rutland (Site #97-2190)

Dear Mr. Manewich:

The Sites Management Section (SMS) has received a site assessment report outlining the subsurface conditions for the above referenced site, conducted by Oscar Garcia of Dufresne-Henry, Inc. on June 2, 1997. The report summarizes the degree and extent of contamination encountered during the assessment. The five underground storage tanks (USTs) removed included: a 6,000-gallon and a 10,000-gallon gasoline tank, a 10,000-gallon diesel tank, and two 275-gallon waste oil tanks; the first three tanks were all within one excavation pit, whereas the two waste oil USTs had separate excavation pits. At least three of the USTs had been out-of-service for approximately five years. According to the Vermont UST Regulations §8-605, these tanks should have been removed within one year of having been taken out-of-service. In addition, at least one waste oil UST was being operated without a permit. Failure to obtain a permit for an UST in accordance with 10 VSA §1927 and Vermont UST Regulation §8-602 is considered a "significant violation."

During the tank excavations, soils screened in the gasoline/diesel UST excavation had peak volatile organic compound (VOC) concentrations exceeding 2,500 ppm, as measured by a photoionization detector (PID). Average PID readings within this excavation were 1,100 ppm. Elevated PID readings were present at the groundwater table which was located only 3.5 feet below ground surface (bgs). A petroleum sheen was noted on the water table, and apparent visual and olfactory evidence of contamination was noted throughout the excavation.

Two soil samples were collected from each waste oil UST excavation for analysis of total petroleum hydrocarbons (TPH) using modified EPA Method 8100 and for VOCs using EPA Method 8240. One "grab" groundwater sample was also collected from beneath one of the waste oil USTs. With the exception of low levels of xylenes, no contaminants were identified in the laboratory analyses.

All soil excavated during the UST removals was backfilled since the full extent of contamination was unknown. According to Dufresne-Henry, Inc., there are no public or private drinking water wells within 0.5 miles of the site. Since a detailed potential sensitive receptor survey was not performed, it is unclear whether there are any potential human or environmental receptors (streams, basements, sewers, utility corridors, etc.) threatened by the contamination.

Based on the above information, the SMS has determined that additional work is necessary at the site in order to determine the severity of contamination present from the diesel and gasoline USTs. Due to the possibility of contaminant impact to nearby receptors, the SMS is requesting that A.L. Griggs Industries retain the services of a qualified environmental consultant to perform the following:

(over)

- Further define the degree and extent of contamination to the soil. This may be accomplished by obtaining soil borings, digging test pits, performing a soil gas survey or by another method approved by the SMS.

- Determine the degree and extent of contamination to groundwater. Since evidence of contamination to groundwater was found, a sufficient number of monitoring wells should be installed in locations which will adequately define the severity of contamination at the site. All groundwater samples collected should be analyzed for BTEX and MTBE compounds.

- Perform an assessment of the site to determine the potential for sensitive receptors to be impacted by the contamination. This should include basements of adjacent buildings, nearby surface water, and any public or private drinking water wells which are located within the vicinity of the site. If any water supplies appear at risk from this contamination, they should be sampled and analyzed for BTEX and MTBE compounds.

- Determine the need for a long term treatment and/or monitoring plan which addresses the contamination present at the site. The need for such a plan should be based on the results of the above investigations.

- Submit to the SMS a summary report which outlines the work performed, as well as provides conclusions and recommendations. Included should be detailed well logs, analytical data, a detailed site map showing the location of any potential sensitive receptors, an area map, and a groundwater contour map.

Please have your consultant submit a preliminary work plan and cost estimate or a site investigation expressway notification form within fifteen days of your receipt of this letter so that it may be approved prior to the initiation of onsite work. Enclosed please find a list of consultants who perform this type of work in the area as well as the brochure "Selecting Your UST Cleanup Contractor," which will help you in choosing an environmental consultant.

Based on current information, the underground storage tanks at Coca Cola-Rutland are eligible for participation in the Petroleum Cleanup Fund (PCF) as set forth in 10 V.S.A. §1941. An owner or permittee of an underground storage tank that does not hold private insurance that would otherwise provide coverage for this situation, is eligible for reimbursement from the fund for certain expenses. You must provide written proof to the SMS that you hold no other applicable insurance in order to receive reimbursement from the PCF. The owner or permittee must pay for the removal and/or repair of the failed tank(s), and for the initial $10,000.00 of the cleanup. The fund will reimburse the tank owner or permittee for additional eligible cleanup costs of up to $1 million. All expenditures must be pre-approved by the Agency or performed in accordance with the "Site Investigation Guidance" expressway program in order for reimbursement to occur. Please refer to the enclosed guidance document titled, "Procedures for Reimbursement from the Petroleum Cleanup Fund" for additional information concerning the PCF. The Secretary of the Agency of Natural Resources reserves the right to seek cost recovery of fund monies spent at the Coca Cola-Rutland site if the Secretary concludes that A.L. Griggs Industries is in significant violation of the Vermont Underground Storage Tank Regulations or the Underground Storage Tank statute (10 V.S.A., Chapter 59). If you have any questions, please feel free to call me at (802) 241-3243.

Sincerely,

Matthew Moran, Project Manager
Sites Management Section

cc: Rutland Selectboard
Rutland Health Officer
DEC Regional Office
Oscar Garcia, Dufresne-Henry, Inc.
Robert Blake, Coca Cola Bottling Company

mm/wp/972190

Proposed Work Plan
Site Investigation

COCA COLA FACILITY
RUTLAND, VERMONT

This work plan outlines the tasks to be completed for a Site Investigation at the Coca Cola facility in Rutland, Vermont. This plan has been prepared as a result of a petroleum product release discovered during a UST Closure Assessment. The UST's closed were (1) 6,000 gallon gasoline, (1) 10,000 gallon gasoline, (1) 10,000 gallon diesel, and (2) 275 gallon waste oil tanks. Soil sample headspace PID readings of up 2,500 ppm were observed. Petroleum sheens were also observed on ground water in the excavations.

The purpose of the investigation is to determine the existence and extent of subsurface petroleum contamination at the site. The proposed monitoring wells will be used to help ascertain the extent of a contamination plume and provide basic hydrogeologic data. At this time it is anticipated that four (4) shallow groundwater monitoring wells will be installed. The wells will be arrayed such that one is in the presumed upgradient direction, with the remaining three downgradient of the former UST's. All field personnel are OSHA certified for hazardous site operations under 29 CFR part 1910.120.

BORINGS

It is anticipated that the borings for the monitoring wells will be done using 4 1/4" hollow stem augers. Monitoring well borings will be taken a minimum of five (5) feet into the prevailing water table. It is anticipated that well depth will not exceed 15 feet. Petroleum based pipe dope for use on drill rods, tools, or casing will not be allowed. No type of drilling mud, including polymers, will be used. Should flowing sands be encountered, clean water obtained locally will be used to increase hydraulic head. If flowing sands are particularly problematic, casing will be used. All borings and monitoring well installations will be performed by M & W Soils Engineering, Inc. of Charlestown, New Hampshire under the field supervision of Dufresne-Henry personnel.

SOIL SAMPLING

Soil samples will typically be taken at 5 foot intervals using a split spoon sampler. Sampling at other intervals may occur and will be a field decision of the Dufresne-Henry inspector. Possible reasons include abrupt changes in drill rate and suspected zones of contamination. It is likely that continuous sampling will be done where the high PID readings were observed during the UST Closure Assessment. The split spoon sampler allows retrieval of relatively undisturbed soil samples from a known depth for classification and Volatile Organic

Compound (VOC) screening. All soil samples and material from the auger flights will be screened for VOC's by headspace analysis with a Photovac MicroTIP HL-2000 photoionization detector (10.6 eV lamp, calibrated with Isobutylene). The act of driving the sampler (Standard Penetration Test) also gives an indication of the density or degree of compaction of the soil. Representative samples from each spoon will be placed in glass jars and retained by Dufresne-Henry. These are for project records only and are not intended for chemical analysis. Detailed logs of geology, drilling data, PID readings, and monitoring well installation will be prepared for each boring. At this time it is not anticipated that analytical soil samples will be collected.

MONITORING WELLS

Monitoring wells will be constructed from 2", 0.010" machine slotted, threaded, flush joint, Schedule 40 PVC. Assuming no refusal, each monitoring well will consist of approximately 10' of screen with sufficient riser to reach approximately 2" below the surface grade. The bottom of the well will be set such that approximately 5 feet of screen extends below the water table observed at the time of installation. For wells with shallow depth to the water table, the screened interval will be a decision of the Dufresne-Henry inspector. The bottom of all wells will be provided with a PVC cap or point, or a plug with an expanding gasket. The annular space between the auger and the screen will be carefully backfilled with clean silica sand to create a filter pack around the well. The filter pack will extend from the bottom of the well to approximately 2 feet above the screen. A bentonite seal will be installed above the filter pack, and the remainder of the hole will be backfilled with native soil. A protective monitoring well box will be grouted in flush at the surface or a stick-up steel casing installed depending on the location. All wells will have removable top caps for sampling and sounding.

DECONTAMINATION

The borings may, or may not, be completed within the zone of contamination. However, to prevent cross contamination between the borings, strict decontamination procedures will be followed. All in-ground tools and equipment will be decontaminated by steam cleaning prior to the start of work and between borings. All decontamination will be done on-site at a designated location. Within the known contaminated area, routine cleaning of equipment, such as split spoons, will use water obtained at the site and a product such as ALCONOX. Disposal of spent cleaning solution will be at the site. Excess contaminated soil will be stored in a polyencapsulated stockpile.

WATER SAMPLING

Water quality samples will be obtained from the Dufresne-Henry installed monitoring wells following a period of stabilization. The samples will be taken by Dufresne-Henry personnel. Protocols for the sampling have been previously forwarded and are on file with the WMD.

Samples will be obtained with disposable bailers which will be left in the wells to facilitate future sampling. Samples will not be obtained from any well exhibiting free product. The samples will be analyzed for BTEX and MTBE by EPA Method 8015 by Eastern Analytical, Inc. of Concord, New Hampshire.

SITE SURVEY

The relative locations and elevations of the monitoring wells will be determined. Sufficient additional surveying will be performed to update any existing site plan or prepare a new site plan.

RECEPTOR ASSESSMENT

A receptor assessment will be conducted to identify potential receptors including nearby water supply wells and surface water. The basements of any nearby buildings, if any, will be screened with the PID as deemed necessary.

REPORTING

A report will be prepared summarizing the findings and recommendations of the investigation including the monitoring well installation, groundwater quality and overall characterization of shallow subsurface conditions, and the likely impacts on potential receptors. Conclusions and recommendations regarding the need for long term treatment and/or monitoring will be included. The report will be submitted within 30 days of the monitoring well installation.

A summary breakdown of estimated costs to complete the work will be found attached.

State of Vermont

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Waste Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404
(802) 241-3888
FAX (802) 241-3296

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD

August 28, 1997

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SEP - 2 1997

BRUCE COX
DUFRESNE-HENRY INC
PRECISION PARK
NORTH SPRINGFIELD VERMONT 05150

RE: Work Plan and Cost Estimate for Coca Cola, Rutland, Vermont (Site #97-2190)

Dear Mr. Cox:

The Sites Management Section (SMS) has reviewed the Dufresne-Henry, Inc. work plan dated August 15, 1997, for the above referenced site. The proposed work plan includes:

- installing four groundwater monitoring wells with periodic split spoon soil sample screening during the boring advancement ($3,700.00);
- gauging and subsequently sampling each monitoring well for analysis of BTEX and MTBE compounds ($550.00);
- performing a receptor survey and a general site survey ($250.00); and
- preparing a summary report that includes analytical data, conclusions, and recommendations ($1,100.00).

In addition to the above, please ensure that at least two (2) quality assurance/quality control (QA/QC) samples are analyzed by the laboratory. Also, please ensure that the summary report includes a groundwater contour map and detailed well logs. For future work plan submittals, please include a site map that includes the proposed monitoring well locations.

For the above work, the SMS considers costs not to exceed $5,610.00 as being eligible towards the Petroleum Cleanup Fund's $10,000.00 spending requirement. A total of $100.00 was deducted from your estimate for reporting costs, as a maximum of $1,000.00 is eligible for reimbursement as specified by the SMS Consultant Fee Schedule. An additional $110.00 was added to your laboratory estimate for analyzing six (6) samples for BTEX and MTBE at a maximum rate of $60.00 per sample. In addition to the above approved costs, the $300.00 estimate for the work plan preparation is acceptable. Please initiate the work as soon as you are able. The SMS anticipates the receipt of a summary report within 60 days of your receipt of this letter. The SMS looks forward to the completion of this work. If you have any questions or comments, please feel free to call me at 802-241-3243.

Sincerely,

Matthew Moran, Site Project Manager
Sites Management Section

cc: William Manewich, A.L. Griggs Ind.

mattm/wp/972190.wp

TABLE OF CONTENTS

Description	Page

PROJECT: COCA COLA FACILITY SITE INVESTIGATION
JOB NO.: 4170063

HEALTH AND SAFETY PLAN
FOR

SITE INVESTIGATION

COCA COLA FACILITY

RUTLAND, VERMONT

This Health and Safety Plan applies only to Dufresne-Henry, Inc. employees.

PROPOSED ON-SITE ACTIVITIES:

Installation of four (4) shallow groundwater monitoring wells, groundwater sampling, and decontamination.

PROPOSED DATE(S) OF WORK: Wells: September 12, 1997
Sampling: The week of September 15, 1997

ANTICIPATED WEATHER CONDITIONS: temperatures in the 60's - 80's, possible rain.

PROPOSED SITE INVESTIGATION TEAM:

Personnel		Responsibilities
Bruce Cox		Project Manager
Bruce Cox		Site Safety Officer
Bruce Cox/Oscar Garcia		Field Team Leader (Monitoring Wells/Sampling)
William Manewich	(413) 772 - 2041	Site Representative
Matthew Moran	(802) 241 - 3243	ANR Representative

All Dufresne-Henry, Inc. personnel arriving or departing the Site should check in and out with the Site Safety Officer. All Dufresne-Henry activities on-Site must be cleared through the Field Team Leader or Project Manager.

PROJECT: FORMER COCA COLA FACILITY SITE INVESTIGATION
JOB NO.: 4170063

Background Information

Site Status: _X_ Active ___ Inactive ___ Unknown

Site Description (Topography, on-site structures, vegetation, surrounding population, contaminated areas (if known)...Attach site plan)

The Coca Cola facility is located on the west side of Quality Lane in Rutland, VT. Grades on the site are slight. Known utilities include municipal water and sewer service.

Dig Safe was contacted on 9/8/97. The site is clear after 9:00 am on 9/10/97. The Dig Safe number is 973700622. The Town of Rutland was contacted on 9/9/97. The Town does not mark sites. The available sewer and water maps will be examined in the Town Office the morning of 9/12/97 prior to the start of the borings.

Site History:

The history of the site is not known. It was owned and operated for many years by the Coca Cola Company as a distribution facility.

Monitoring or Sampling Data From Previous Site work:

Five (5) UST's were removed during a Closure Assessment performed by Dufresne-Henry on June 2, 1997. The UST's were (1) 6,00 gallon gasoline, (1) 10,000 gallon gasoline, (1) 10,000 gallon diesel fuel, and (2) 275 gallon waste oil tanks. Evidence of soil and groundwater contamination was observed at the gasoline and diesel tanks. PID readings up to 2,500 ppm were observed. The water table was at a depth of approximately 3.5 feet.

No other monitoring or sampling data specific to the site is known to exist.

PROJECT: COCA COLA FACILITY SITE INVESTIGATION
JOB NO.: 4170063

HAZARD REFERENCE

Waste Types:

_X_ Liquid _X_ Solid (soil) ___ Sludge _X_ Vapor ___ Unknown

Waste Characteristics:

___ Corrosive _X_ Ignitable ___ Radioactive

_X_ Volatile ___ Toxic ___ Reactive

___ Unknown ___ Other ___ Persistent

Specific Substances of Greatest Concern (if known): gasoline, diesel fuel, automotive crankcase waste oil.

Hazard Evaluation:

Task: Mon. Well Install. _X_ Low ___ Medium ___ High

Identification of Hazards: gasoline, diesel fuel, automotive crankcase waste oil.

Task: Decontamination _X_ Low ___ Medium ___ High

Identification of Hazards: gasoline, diesel fuel, automotive crankcase waste oil.

Task: Sampling _X_ Low ___ Medium ___ High

Identification of Hazards: gasoline, diesel fuel, automotive crankcase waste oil.

Task: ___ Low ___ Medium ___ High

Identification of Hazards:

Other Physical Hazards: (weather, heavy equipment, site structures...)
Drill rig, traffic, weather.

PROJECT: COCA COLA FACILITY SITE INVESTIGATION
JOB NO.: 4170063

Hazard Assessment:

OVERALL HAZARD: ___ Serious ___ Moderate _X_ Low ___ Unknown

On-Site Control

Site control is necessary to minimize potential exposure of workers to hazardous waste/materials, protect the public from the Site's chemical and physical hazards, and to facilitate work activity. The procedures to be followed involve the establishment of Site work zones, Site security, and safe work practices.

The on-Site staging area and support zone has been established at:

The grass area northeast of the former UST's.

The personal contamination reduction zone (decon area) has been established at:

The location of the former gasoline and diesel UST's.

During the intrusive work, the exclusion area will be defined as follows:

A 15 radius around the drill rig.

The decontamination of sampling and/or heavy equipment will be conducted:

The location of the former gasoline and diesel UST's.

These sub-regions of on-Site control have been established in order to reduce the potential cross contamination and proliferation of contamination by potentially contaminated equipment and personal protective equipment.

PROJECT: COCA COLA FACILITY SITE INVESTIGATION
JOB NO.: 4170063

SITE ACTIVITIES

Required Personal Protective Equipment (PPE)

Task	Entry Level of Protection	Monitoring Equipment	Upgrade/Downgrade Contingency
Well Install.	D	Photovac HL-2000 Eplosimeter 0_2 meter H_2S meter	Upgrade to Level C with PID readings over 10 ppm for 5 minutes in breathing space.
Decon.	D	"	"
Sampling	D	"	"

Note: Breathing space PID readings of 50 ppm, explosimeter readings over 10% of the LEL, O_2 deficiency or enrichment, or H_2S readings will result in shutting down the job and consulting with State officials and the client.

PROJECT: COCA COLA FACILITY SITE INVESTIGATION
JOB NO.: 4170063

Specific protective equipment for each level of protection is as follows:

Level C: Full Face Respirator w/appropriate cartridge (Willson T45)
Chemically Resistant Suit (Tyvek®)
Outer Rubber Slush Boots
Outer Chemically Resistant Gloves
Surgical Gloves
Hard Hat
Steel Toe/Shank Work Boots

Modified Level D: Chemically Resistant Suit (Tyvek®)
Outer Rubber Slush Boots
Outer Chemically Resistant Gloves
Surgical Gloves
Hard Hat
Steel Toe/Shank Work Boots
Safety Glasses or Face Shield

Level D: Work Clothes
Steel Toe/Shank Work Boots
Surgical Gloves
Hard Hat

Rationale for change in level of protection:

Upgrade to Level C with PID readings of 10 ppm or more for 5 minutes in the breathing space. PID readings over 50 ppm in the breathing space, explosimeter readings of over 10% of the LEL, O_2 deficiency or enrichment, or H_2S readings will result in shutting down the job and consulting with State officials and the client.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER OR PROJECT MANAGER.

Monitoring Procedures

Site Monitoring Equipment:

_X_ Photovac MicroTIP (Model HL-2000, 10.6 eV lamp)
_X_ Explosimeter
___ Draeger Tube & Pump
_X_ 0_2 Meter
_X_ Other: H_2S meter

Methods and Frequency of Monitoring:
Air space and soil samples: Photovac MicroTIP HL-2000.
Air space: explosimeter/O_2 meter/H_2S meter.
Frequency: Soil samples; as obtained.
Air; not to exceed every 15 minutes.

PROJECT: COCA COLA FACILITY SITE INVESTIGATION
JOB NO.: 4170063

Decontamination and Disposal

Personnel Decontamination Procedure:

_X_ Level C: Slush boot and glove wash, slush boot and glove rinse, tape removal, outer glove removal, (cartridge change), slush boot removal, suit removal, inner glove removal.

_X_ Modified Level D: Slush boot and glove wash, slush boot and glove rinse, slush boot removal, suit removal, glove removal.

Equipment Decontamination:

The drill rig and tools will be decontaminated by steam cleaning prior to the start of work and between borings. The use of clean augers (not previously used on the job) will be permitted with washing of the bit in ALCONOX. All decontamination will be done on-site. Routine washing of split spoon samplers, etc will use water obtained at the site. Disposal of spent cleaning liquid will be on site.

Disposal Procedure for Investigation-Derived Materials:
(decon waste, disposables)

All decon waste and disposables will remain on-site.

SITE OPERATING PROCEDURES/SAFETY GUIDELINES

** Always observe the buddy system. Never enter or exit site alone, and never work alone in an isolated area. Never wander off by yourself.

** Always maintain a line-of-sight.

** Practice contamination avoidance. Never sit down or kneel, never lay equipment on the ground, avoid obvious sources of contamination such as puddles, and avoid unnecessary contact with on-site objects

** No eating, drinking, or smoking outside the designated "clean" zone.

** In the event PPE is ripped or torn, work shall stop and PPE shall be removed and replaced as soon as possible.

** Be alert to any unusual changes in your own condition; never ignore warning signs. Notify Health and Safety Coordinator as to suspected exposures or accidents.

** A vehicle will be readily available exclusively for emergency use. All personnel going on-site shall be familiar with the most direct route to the nearest hospital.

** In the event of direct skin contact, the affected area shall be washed immediately with soap and water.

** Copies of the Health and Safety Plan shall be readily accessible at the command post.

** Note wind direction. Personnel shall remain upwind whenever possible during on-site activities.

** Never climb over or under refuse or obstacles. Use safety harness/safety lines when sampling lagoons, stream beds, and ravines with steep banks.

** Hands and face must be thoroughly washed before eating, drinking, etc.

** Any modifications to this safety plan MUST be approved by the Site Safety Officer.

Special Procedures:
Confined Space Entry

_X_ No attempt will be made to enter abandoned buildings, manholes, tanks, or any other confined areas.

___ Other:

Personnel Monitoring: (If applicable: Heat stress, frostbite, air sampling of individual breathing zone)

Monitoring of individual breathing space will be monitored by a Photovac MicroTIP HL-2000, explosimeter, and O_2 meter as outlined in monitoring procedures. Monitoring of weather related hazards will be dictated by existing conditions.

EMERGENCY SITUATIONS

The following standard emergency procedures will be used by Dufresne-Henry on-site personnel. The Site Safety Officer (SSO) shall be notified of any on-site emergencies and be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury to Dufresne-Henry Employees in the Exclusion Zone

Upon notification of an injury to a Dufresne-Henry employee in the exclusion zone, a rescue team will enter the zone (if required) to remove the injured person to the hotline. The SSO and Project Manager should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the support zone. The SSO shall arrange for appropriate first aid, and contact should be made for an ambulance and with the designated medical facility (if required). No Dufresne-Henry personnel shall re-enter the exclusion zone until the cause of the injury or symptoms are determined.

Personnel Injury to Dufresne-Henry Employees in the Support Zone

Upon notification of an injury to a Dufresne-Henry employee in the support zone, the Project Manager and SSO will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the on-site Field Team Leader initiating the appropriate first aid and necessary follow-up as stated above. If the injury increases the risk to others, all Dufresne-Henry personnel shall move to the decon line for further instructions. Dufresne-Henry activities on-site will cease until the added risk is removed or minimized.

Fire/Explosion

Upon notification of a fire or explosion on-site, all Dufresne-Henry personnel will assemble at the decon line. The fire department shall be alerted and all Dufresne-Henry personnel moved to a safe distance from the involved area.

Personal Protective Equipment Failure

If any Dufresne-Henry site personnel experience a failure or alteration of protective equipment that effects the protection factor, that person and his/her buddy shall immediately leave the exclusion zone. Re-entry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure

If any other equipment on-site fails to operate properly, the Project Manager and SSO shall be notified and then determine the effect of this failure on continuing operations on-site. If the failure affects the safety of on-site Dufresne-Henry personnel or prevents the completion of the tasks, all Dufresne-Henry personnel shall leave the exclusion zone until the situation is evaluated and appropriate actions taken.

In all situations, when an on-site emergency results in evacuation of the exclusion zone, Dufresne-Henry personnel shall not re-enter until:

1. The conditions resulting in the emergency have been corrected.
2. The hazards have been reassessed.
3. The Site Safety Plan has been reviewed.
4. Dufresne-Henry personnel have been briefed on any changes in the Site Safety Plan.

PROJECT: COCA COLA FACILITY SITE INVESTIGATION
JOB NO.: 4170063

EMERGENCY INFORMATION

AMBULANCE:	Rutland Town	Phone:	(802) 773 - 1700
HOSPITAL:	Rutland Regional Med Ctr 160 Allen Road Rutland, VT (see attached map)	Phone:	(802) 775 - 7111
POLICE:	Rutland Town	Phone:	(802) 773 - 9101
FIRE DEPARTMENT:	Rutland Town	Phone:	(802) 773 - 2565
POISON CENTER:		Phone:	(603) 650 - 5000
ANR INCIDENT RESPONSE:	Office	Phone:	(802) 241 - 3888
OWNER:	A.L. Griggs, Inc. William Manewich	Phone:	(413) 772 - 2041
CORPORATE:			
	Dufresne-Henry N. Springfield, VT	Phone:	(802) 886 - 2261
	Project Manager: Bruce Cox		

NEAREST PHONE: On site

LOCATION OF ON-SITE FIRST AID KIT: Boring contractors vehicle or on site

EMERGENCY VEHICLE:

PROJECT: COCA COLA FACILITY SITE INVESTIGATION
JOB NO.: 4170063

The following individuals have read this safety document and are familiar with its contents, site conditions, and on-site safety procedures (please sign below):

Name	Company
Bruce Cox	Dufresne-Henry, Inc.
Oscar Garcia	Dufresne-Henry, Inc.
Michael Hitchcock	M & W Soils Engineering, Inc.
Todd Merrill	M & W Soils Engineering, Inc.
Myron Domingue	M & W Soils Engineering, Inc.

Copies of this SSP have been given to:

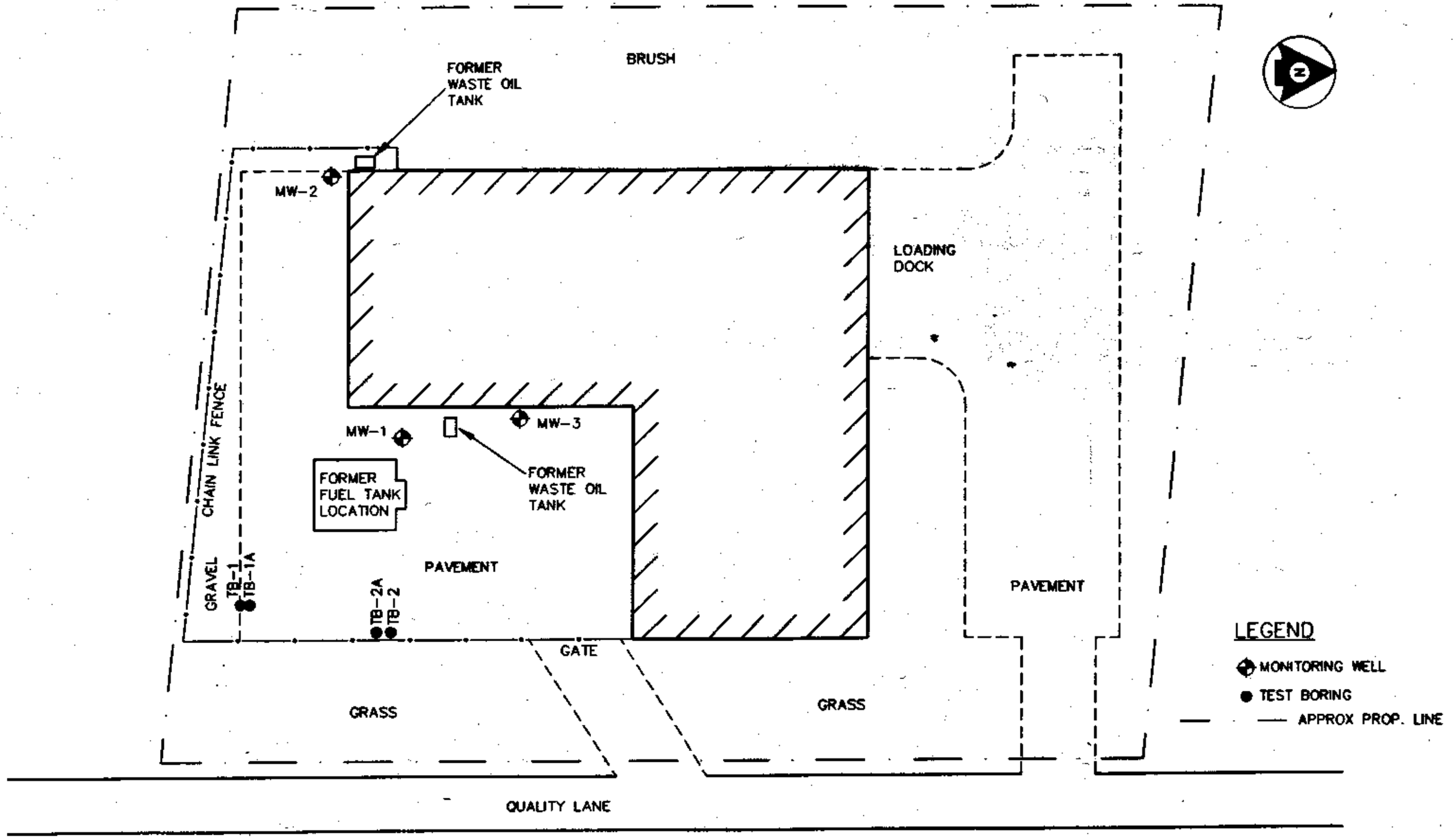
Approval Signatures:

PM _____

Div. Dir. _____

APPENDIX C

SITE PLAN



SCALE
1" = 40'

Dufresne-Henry Inc.
A DH Company
Precision Park
No. Springfield,
Vermont 05150
Tel. (802)886-2261 Fax (802)886-2280

SITE PLAN
AT
A. L. GRIGGS INDUSTRIES, INC.
RUTLAND, VERMONT

Project No.	4170063
Proj. Mgr.	B.H.C.
Date	SEPT. '97
A	SK1

APPENDIX D

BORING LOGS
AND
MONITORING WELL INSTALLATION REPORT

BORING LOCATION MW-1 | INCLINATION V | BEARING | DATE START/FINISH 9/12/97 / 9/12/97

CASING ID | CORE SIZE | TOTAL DEPTH 9.83 FT | DRILLED BY: M & W SOILS ENGINEERING, INC. (M.H.)

GROUND EL (AD) 499.73 | DEPTH TO WATER / DATE 4± FT/ IMMED. | LOGGED BY: B. COX

ELEV	SAMPLE				LENGTH				
AD FT	DEPTH FT	TYPE AND NO.	B	SAMP OD IN	REC IN	PENE-TRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO AD-VANCE BORING	SOIL AND ROCK DESCRIPTION
498.73	1						4 1/4" HSA	8"/CCH	0" - 2.5" Bituminous concrete pavement. 2.5" - 1' Brown, sandy GRAVEL.
496.73	3	SS-1	7 8 6 4	2	14	24			1' - 2'6" Medium brown, medium dense, sandy GRAVEL. Fine - medium grained, moderately well sorted sand. 60%+ fine, rounded gravel 1/4" - 3/4". 10% non plastic fines. Dry - slightly moist. 2'6" - 3' Medium - dark brown and gray, silty ORGANIC SOIL. Very fine - fine grained sand. 50%+ non plastic fines. Trace of sticks and roots. Moist. Faint oil odor. 460 ppm.
494.73	5	SS-2	4 6 8 10	2	18	24			Light - medium brown gray, medium dense, silty SAND. Very fine - fine grained, well sorted sand. 40%± non plastic fines. Trace of mica and matic minerals. Moist - wet. Faint oil odor. 230 ppm.
492.73	7	SS-3	11 8 9 16	2	15	24			Medium gray and orange, medium dense, silty SAND similar to above. Orange color due to extensive mottling with a large scale splotchy or marbled appearance. Saturated. Very faint oil odor (?). 180 ppm.
490.73	9	SS-4	14 11 11 12	2	15	24			Medium brown, dense, gravelly, silty SAND with a till-like appearance. Very fine - occasionally very coarse grained, poorly sorted sand. 30%+ fine gravel to 1/2". 10%+ non plastic fines. Saturated. Faint oil odor. 150 ppm.
489.90	9.83	SS-5	12 50*	2	10	10	* 50/4"		Medium brown, dense, gravelly silty SAND similar to above but with occasional light gray lenses. Saturated. No odor or staining. 47 ppm.
									Refusal on probable bedrock at 9'10". Refusal on HSA at 9'6". Installed 7'6" of 2" dia, .010" slot, threaded, flush joint, Schd 40 PVC at 9'6". Sand backfill to 2'. Bentonite seal 1'9" - 2'. Grouted in flush monitoring well box.

B - Penetration resistance. Blows/6" of a 140 lb hammer falling 30 in to drive a split spoon sampler.
REC - Length of sample recovered.
SS - Split spoon sample.
U - Undisturbed samples
S - Shelby tube D - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm Refers to PID reading (10.6 eV lamp)

Top of PVC elev = 499.34

A.L. GRIGGS INDUSTRIES, INC.
INITIAL SITE INVESTIGATION

RUTLAND, VERMONT

DATE: 9/12/97 PROJECT: 4170063

PAGE 1 OF 1 | LOG OF BORING: MW-1

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW-2 | INCLINATION V | BEARING | DATE START/FINISH 9/12/97 / 9/12/97

CASING ID | CORE SIZE | TOTAL DEPTH FT | DRILLED BY: M & W SOILS ENGINEERING, INC. (M.H.)

GROUND EL (AD) 499.42 | DEPTH TO WATER / DATE 8± FT/ IMMED. | LOGGED BY: B. COX

ELEV	SAMPLE				LENGTH				
AD FT	DEPTH FT	TYPE AND NO.	B	SAMP OD IN	REC IN	PENE-TRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO AD-VANCE BORING	SOIL AND ROCK DESCRIPTION
494.42	5						4 1/4" HSA	8"/CCH	0" - 2.5" Bituminous concrete pavement. 2.5" - 5' Brown, sandy GRAVEL with cobbles or boulders from 3' - 4.5' ±.
492.42	7	SS-1	6 6 9 14	2	16	24			Light - medium gray, medium dense, silty SAND (fill-like). Very fine - fine grained, well sorted sand. 40%± non plastic fines. Occasional organic matter. One small pocket of fine - medium grained, pinkish red sand. Moist - wet at bottom. Slight organic odor. 0 ppm.
489.42	10						4 1/4" HSA	8"/CCH	Probable silty SAND similar to above.
487.42	12	SS-2	2 5 7 13	2	8	24			10' - 11'6" Medium brown, loose - medium dense, silty SAND. Predominately medium grained, well sorted sand. 10%+ non plastic fines. Saturated. No odor or staining. 0 ppm. 11'6" - 12' Medium brown, medium dense - dense, sandy GRAVEL. Very fine - medium grained, moderately well sorted sand. 60%+ fine gravel to 3/4". 10%+ non plastic fines. Saturated. No odor or staining. 0 ppm.
486.42	13						4 1/4" HSA	8"/CCH	Probable sandy GRAVEL similar to above.
									No refusal to depth. Installed 10' of 2" dia, .010" slot, threaded, flush joint, Schd 40 PVC at 13'. Sand backfill to 2'. Bentonite seal 1'9" - 2'. Grouted in flush monitoring well box.

B - Penetration resistance, Blows/6" of a 140 lb hammer falling 30 in to drive a split spoon sampler.
REC - Length of sample recovered.
SS - Split spoon sample.
U - Undisturbed samples
S - Shelby tube D - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm Refers to PID reading (10.6 eV lamp)

Top of PVC elev = 499.09

A.L. GRIGGS INDUSTRIES, INC.
INITIAL SITE INVESTIGATION

RUTLAND, VERMONT

DATE: 9/12/97 PROJECT: 4170063

PAGE 1 OF 1 | LOG OF BORING: MW-2

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW-3 | INCLINATION V | BEARING | DATE START/FINISH 9/12/97 / 9/12/97

CASING ID | CORE SIZE | TOTAL DEPTH 9.67 FT | DRILLED BY: M & W SOILS ENGINEERING, INC. (M.H.)

GROUND EL (AD) 499.60 | DEPTH TO WATER / DATE 8± FT/ IMMED. | LOGGED BY: B. COX

ELEV	SAMPLE			SAMP OD IN	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
AD FT	DEPTH FT	TYPE AND NO.	B		REC IN	PENETRATION IN			
494.60	5						4 1/4" HSA	8"/CCH	0" - 2.5" Bituminous concrete pavement. 2.5" - 2'± Brown, sandy GRAVEL. 2' - 5' Silty SAND with occasional gravel.
492.60	7	SS-1	4 3 3 4	2	17	24			Light - medium gray and orange, loose, silty SAND. Very fine - fine grained, well sorted sand. 40%± non plastic fines. Trace of roots or twigs. Orange color from abundant mottles with a splotchy or marbled appearance. Wet. No odor or staining. 0 ppm.
489.93	9.67						4 1/4" HSA	8"/CCH	Probable silty SAND similar to above.

Refusal on probable bedrock at 9'8".

Installed 7'6" of 2" dia, .010" slot, threaded, flush joint, Schd 40 PVC at 9'6". Sand backfill to 2'. Bentonite seal 1'9" - 2'. Grouted in flush monitoring well box.

B - Penetration resistance, Blows/6" of a 140 lb hammer falling 30 in to drive a split spoon sampler.
REC - Length of sample recovered.
SS - Split spoon sample.
U - Undisturbed samples
S - Shelby tube D - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm Refers to PID reading (10.6 eV lamp)

Top of PVC elev = 499.11

A.L. GRIGGS INDUSTRIES, INC.
INITIAL SITE INVESTIGATION

RUTLAND, VERMONT

DATE: 9/12/97 PROJECT: 4170063

DH DUFRESNE-HENRY, INC.

BORING LOCATION TB-1/TB-1A | INCLINATION V | BEARING | DATE START/FINISH 9/12/97 / 9/12/97

CASING ID | CORE SIZE | TOTAL DEPTH FT | DRILLED BY: M & W SOILS ENGINEERING, INC. (M.H.)

GROUND EL (AD) | DEPTH TO WATER / DATE DRY FT/ IMMED. | LOGGED BY: B. COX

ELEV	SAMPLE			SAMP	LENGTH		REMARKS ON	SIZE/TYPE	SOIL AND ROCK DESCRIPTION
AD FT	DEPTH FT	TYPE AND NO.	B	OD IN	REC IN	PENE-TRATION IN	ADVANCE OF BORING	BIT USED TO ADVANCE	
497.38	2	SS-1	4 8 7 8	2	4	24			Medium brown, medium dense, sandy GRAVEL. Very fine - occasionally very coarse grained (predominately fine - medium grained), poorly sorted sand. 50%+ fine gravel to 3/4". 10%+ non plastic fines. Dry. No odor or staining. 0 ppm.
495.38	4	SS-2	11 16 18 22	2	5	24			Medium gold brown, medium dense - dense, gravelly, silty SAND. Very fine - medium grained, moderately well sorted sand. 20% fine gravel, 20% non plastic fines. Occasional light orange mottles. Moist. No odor or staining. 0 ppm.
493.88	5.5						4 1/4" HSA	8"/CCH	Probable SAND similar to above.
493.38	6	SS-3	50	2	6	6			Medium orange brown, very dense, silty, gravelly SAND (till-like). Very fine - fine grained sand. 30%+ fine gravel. 20%+ non plastic fines. Saturated. No odor or staining. 0 ppm.

Refusal on probable bedrock at 6' (elev 493.38).

Offset 4' to the north.

TB-1A Refusal on probable bedrock at 5'6"± (elev 493.87).

B - Penetration resistance, Blows/6" of a 140 lb hammer falling 30 in to drive a split spoon sampler.
REC - Length of sample recovered.
SS - Split spoon sample.
U - Undisturbed samples
S - Shelby tube D - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm Refers to PID reading (10.6 eV lamp)

A.L. GRIGGS INDUSTRIES, INC.
INITIAL SITE INVESTIGATION

RUTLAND, VERMONT

DATE: 9/12/97 PROJECT: 4170063

PAGE 1 OF 1 | LOG OF BORING: TB-1

DH DUFRESNE-HENRY, INC.

BORING LOCATION TB-1/TB-1A INCLINATION V BEARING DATE START/FINISH 9/12/97 / 9/12/97

CASING ID CORE SIZE TOTAL DEPTH FT DRILLED BY: M & W SOILS ENGINEERING, INC. (M.H.)

GROUND EL (AD) DEPTH TO WATER / DATE DRY FT/ IMMED. LOGGED BY: B. COX

ELEV	SAMPLE				LENGTH				
AD FT	DEPTH FT	TYPE AND NO.	B	SAMP OD IN	REC IN	PENE-TRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO AD-VANCE BORING	SOIL AND ROCK DESCRIPTION

TB-2

Refusal on probable bedrock at 18" (elev 499.03).

TB-2A

Refusal on probable bedrock at 14" (elev 499.37).

B - Penetration resistance, Blows/6" of a 140 lb hammer falling 30 in to drive a split spoon sampler.
REC - Length of sample recovered.
SS - Split spoon sample.
U - Undisturbed samples
S - Shelby tube D - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

A.L. GRIGGS INDUSTRIES, INC.
INITIAL SITE INVESTIGATION

RUTLAND, VERMONT

DATE: 9/12/97 PROJECT: 4170063

PAGE 1 OF 1 LOG OF BORING: TB-2

DH DUFRESNE-HENRY, INC.

M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

SHEET 1 OF 1
DATE 9/12/97
HOLE NO. MW-1
LINE & STA.
OFFSET

TO DUFRESNE-HENRY, INC. ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME A.L. GRIGGS, INC. LOCATION RUTLAND, VT
REPORT SENT TO BRUCE COX PROJ. NO.
SAMPLES RETAINED BY DUFRESNE-HENRY, INC. OUR JOB NO. 7191-97

GROUND WATER OBSERVATIONS
AT 3'6" AT IMMEDIATELY HOURS
AT _____ AT _____ HOURS

	CASING	SAMPLER	CORE BAR.
Type	HSA	SS	
Size I. D.	4 /4"	1 1/2"	
Hammer Wt.		140#	BIT
Hammer Fall		30"	

SURFACE ELEV.
DATE STARTED 9/12/97
DATE COMPL. 9/12/97
BORING FORMAN M.H. & T.M.
INSPECTOR B. COX
SOILS ENGR.

LOCATION OF BORING JUST OFF NORTHWEST END OF TANK EXCAVATION

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE NO.	PEN	REC
						2 3/4"	ASPHALT			
	1' - 3'	SS	7	8				1	24"	14"
			6	4	MED. DENSE MOIST		BROWN FINE GRAVEL			
						2'6"				
	3' - 5'	SS	4	6				2	24"	18"
			8	10	MED. DENSE WET		BROWN SILTY SAND			
5'	5' - 7'	SS	11	8				3	24"	15"
			9	16						
							SAME MATERIAL			
	7' - 9'	SS	14	11		7'		4	24"	15"
			11	12	DENSE - MOIST		BROWN FINE SAND WITH SOME FINE GRAVELS - TRACE OF SILT			
	9' - 9'10"	SS	12	50/4"				5	10"	10"
10'						9'10"				
							REFUSAL TO AUGER - BEDROCK OR BOULDER			
							SET 2" PVC WELL AT 9'6"			
							TOP OF SCREEN AT 2'6"			
							SAND TO 1'10"			
							BENTONITE TO 1'4"			
							MATERIALS USED:			
							10' OF 2" PVC 0.010" SLOT SCREEN			
							5' OF 2" PVC SOLID			
							10# OF BENTONITE CHIPS			
							200# OF SAND			
							40# OF CEMENT MIX			
							1 2" EXPANSION CAP			
							1 2" PVC CAP			
							1 6" CAST IRON MANHOLE			

GROUND SURFACE TO 9'10" USED HSA CASING THEN DROVE SS 10"

Sample Type
O-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary
EARTH BORING 9'10"
ROCK CORING
SAMPLES 5
HOLE NO. MW-1

M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

SHEET 1 OF 1
DATE 9/12/97
HOLE NO. MW-2
LINE & STA.
OFFSET

TO DUFRESNE-HENRY, INC. ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME A.L. GRIGGS, INC. LOCATION RUTLAND, VT
REPORT SENT TO BRUCE COX PROJ. NO.
SAMPLES RETAINED BY DUFRESNE-HENRY, INC. OUR JOB NO. 7191-97

GROUND WATER OBSERVATIONS
AT 7'4" AT IMMEDIATELY HOURS
AT ____ AT ____ HOURS

	CASING	SAMPLER	CORE BAR.
Type	HSA	SS	
Size I. D.	4 /4"	1 1/2"	
Hammer Wt.		140#	BIT
Hammer Fall		30"	

SURFACE ELEV.
DATE STARTED 9/12/97
DATE COMPL. 9/12/97
BORING FORMAN M.H. & T.M.
INSPECTOR B. COX
SOILS ENGR.

LOCATION OF BORING JUST OFF SOUTHEAST CORNER OF MAINTENANCE DEPARTMENT

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE NO.	PEN	REC
						2 3/4"	ASPHALT			
					DENSE		BROWN FINE GRAVEL			
						3'				
					MED. DENSE		BROWN SILT AND FINE SAND WITH A FEW COBBLES AND SOME FINE GRAVEL			
5'	5' - 7'	SS	6	6				1	24"	16"
			9	14						
							SAME MATERIAL			
10'	10' - 12'	SS	2	5				2	24"	8"
			7	13						
						13'	SAME MATERIAL			
							NO BEDROCK TO DEPTH			
15'							SET 2" PVC WELL AT 13' TOP OF SCREEN AT 3' SAND TO 2' BENTONITE TO 1'2"			
							MATERIALS USED: 10' OF 2" PVC 0.010" SLOT SCREEN 5' OF 2" PVC SOLID 25# OF BENTONITE CHIPS 250# OF SAND 40# OF CEMENT MIX 1 2" EXPANSION CAP 1 2" PVC CAP, 1 6" CAST IRON MANHOLE			

GROUND SURFACE TO 13' USED HSA CASING THEN

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler

Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary
EARTH BORING 13'
ROCK CORING
SAMPLES 2
HOLE NO. MW-2

M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

SHEET 1 OF 1
DATE 9/12/97
HOLE NO. MW-3
LINE & STA.
OFFSET

TO DUFRESNE-HENRY, INC. ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME A.L. GRIGGS, INC. LOCATION RUTLAND, VT
REPORT SENT TO BRUCE COX PROJ. NO.
SAMPLES RETAINED BY DUFRESNE-HENRY, INC. OUR JOB NO. 7191-97

GROUND WATER OBSERVATIONS
AT 9'3" AT IMMEDIATELY HOURS
AT ____ AT ____ HOURS

	CASING	SAMPLER	CORE BAR.
Type	HSA	SS	
Size i. D.	4 /4"	1 1/2"	
Hammer Wt.		140#	BIT
Hammer Fall		30"	

SURFACE ELEV.
DATE STARTED 9/12/97
DATE COMPL. 9/12/97
BORING FORMAN M.H. & T.M.
INSPECTOR B. COX
SOILS ENGR.

LOCATION OF BORING 50' NORTH OF MW-1, 8' OFF SIDE OF BUILDING

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE NO.	PEN	REC
						2 7/8"	ASPHALT			
					MED. DENSE MOIST		BROWN FINE GRAVELS			
						3'2"				
					MED. DENSE		BROWN SILTY FINE SAND WITH SOME COBBLES			
5'	5' - 7'	SS	4	3				1	24"	17"
			3	4						
							(WET AT 7')			
						8'	SAME MATERIAL			
					MED. DENSE		BROWN FINE GRAVEL			
						9'8"				
10'							REFUSAL TO AUGER - BEDROCK OR BOULDER			
							SET 2" PVC WELL AT 9'6"			
							TOP OF SCREEN AT 2'6"			
							SAND TO 2'			
							BENTONITE TO 1'2"			
							MATERIALS USED:			
							10' OF 2" PVC 0.010" SLOT SCREEN			
							5' OF 2" PVC SOLID			
							25# OF BENTONITE CHIPS			
							200# OF SAND			
							40# OF CEMENT MIX			
							1 2" EXPANSION CAP			
							1 2" PVC CAP			
							1 6" CAST IRON MANHOLE			

GROUND SURFACE TO 9'8" USED HSA CASING THEN

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary
EARTH BORING 9'8"
ROCK CORING
SAMPLES 1
HOLE NO. MW-3

M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

SHEET 1 OF 1
DATE 9/12/97
HOLE NO. TB-1/1A
LINE & STA.
OFFSET

TO DUFRESNE-HENRY, INC. ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME A.L. GRIGGS, INC. LOCATION RUTLAND, VT
REPORT SENT TO BRUCE COX PROJ. NO.
SAMPLES RETAINED BY DUFRESNE-HENRY, INC. OUR JOB NO. 7191-97

GROUND WATER OBSERVATIONS
AT DRY AT 1 HOURS
AT AT HOURS

	CASING	SAMPLER	CORE BAR
Type	HSA	SS	
Size I. D.	4 /4"	1 1/2"	
Hammer Wt.		140#	BIT
Hammer Fall		30"	

SURFACE ELEV.
DATE STARTED 9/12/97
DATE COMPL. 9/12/97
BORING FORMAN M.H. & T.M.
INSPECTOR B. COX
SOILS ENGR.

LOCATION OF BORING 15' OFF SOUTHEAST CORNER OF CHAIN LINK FENCE

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect.	SAMPLE NO.	PEN	REC
	0' - 2'	SS	4	8	TB-1:	2"	TOPSOIL	1	24"	4"
			7	8						
					MED. DENSE		BROWN FINE GRAVELS			
	2' - 4'	SS	11	16				2	24"	5"
			18	22						
						3'				
					DENSE - MOIST		BROWN SILT AND FINE SAND			
5'	5'6" - 6'	SS	52			5'6"		3	6"	6"
							REFUSAL TO SPLIT SPOON AND AUGER - BEDROCK OR BOULDER			
10'										
					TB-1A:		**********5' NORTH OF TB-1********** SAME MATERIAL AS TB-1 REFUSAL AT 6' - BEDROCK OR BOULDER			

GROUND SURFACE TO 6' USED HSA CASING THEN

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary
EARTH BORING 6'
ROCK CORING
SAMPLES 3
HOLE NO. TB-1/1A

M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

SHEET 1 OF 1
DATE 9/12/97
HOLE NO. TB-2/2A
LINE & STA.
OFFSET

TO DUFRESNE-HENRY, INC. ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME A.L. GRIGGS, INC. LOCATION RUTLAND, VT
REPORT SENT TO BRUCE COX PROJ. NO.
SAMPLES RETAINED BY DUFRESNE-HENRY, INC. OUR JOB NO. 7191-97

GROUND WATER OBSERVATIONS
AT DRY AT HOURS
AT AT HOURS

	CASING	SAMPLER	CORE BAR.
Type	HSA	SS	
Size I. D.	4 /4"	1 1/2"	
Hammer Wt.		140#	BIT
Hammer Fall		30"	

SURFACE ELEV.
DATE STARTED 9/12/97
DATE COMPL. 9/12/97
BORING FORMAN M.H. & T.M.
INSPECTOR B. COX
SOILS ENGR.

LOCATION OF BORING 40' EAST OF CENTER OF TANK EXCAVATION, NEAR FENCE

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect.	SAMPLE NO.	PEN	REC
				TB-2: MED. DENSE	3"	ASPHALT			
					1'6"	BROWN FINE GRAVEL			
						REFUSAL TO AUGER - BEDROCK OR BOULDER			
5'									
						**********10' SOUTH OF TB-2**********			
				TB-2A: MED. DENSE	2 7/8"	ASPHALT			
					1'2"	BROWN FINE GRAVEL			
						REFUSAL TO AUGER - BEDROCK OR BOULDER			
5'									

GROUND SURFACE TO 1'6" USED HSA CASING THEN

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary
EARTH BORING 1'6"
ROCK CORING
SAMPLES 0
HOLE NO. TB-2/2A

A.L. GRIGGS, INC.
INITIAL SITE INVESTIGATION
RUTLAND, VERMONT

September 12, 1997

I met with Joe Zingale, Rutland Town Manager, in his office to obtain information on water and sewer services on the site at 8:15 am.
Dufresne-Henry, Inc. - Bruce Cox on site at 8:55 am.
M & W Soils Engineering, Inc. - Michael Hitchcock, Todd Merrill already on site.

MW-1

MW-1 was located just to the northwest of the former gasoline and diesel UST's in soil undisturbed by the removal. The boring was started at 9:10 am. The rig and other equipment had been steam cleaned prior to arrival on site. All water used for cleaning split spoons and other tools was obtained at the site. Drilled with 4 1/4" hollow stem augers taking continuous split spoon samples starting at 1'. All samples were screened for VOC's with a Photovac MicroTIP HL-2000 (10.6 eV lamp, calibrated with 100 ppm Isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. No analytical soil samples were collected. Total depth of the boring was 9'10" with refusal on probable bedrock (refusal on the hollow stem augers was at 9'6"). The general geologic column is sandy gravel fill to approximately 2'6", followed by silty, occasionally gravelly, sand to the limit of the boring. Faint petroleum odors were noted between 2.5' and 9'. PID readings ranged from 47 ppm to 460 ppm. The water table was encountered at approximately 4'. Installed a 7'6" long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 9'6". All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 2'. A bentonite seal was installed from 1'9" - 2'. A watertight monitoring well box was grouted in at the surface.

Materials: 7'6" of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
1'9" of 2", solid wall, threaded, flush joint, Schd 40 PVC.
200 lb of silica sand.
10 lb± of bentonite chips.
40 lb of concrete mix.
1 2" push-on PVC cap.
1 2" expanding gasket cap.
1 6" monitoring well box.

MW-2

MW-2 was located just south of the southwest corner of the building. The boring was started at

12:25 pm. All water used for cleaning split spoons and other tools was obtained at the site. The bit was washed with ALCONOX prior to being put on new augers. Drilled with 4 1/4" hollow stem augers taking split spoon samples at five foot intervals starting at 5'. All samples were screened for VOC's with a Photovac MicroTIP HL-2000 (10.6 eV lamp, calibrated with 100 ppm Isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. No analytical soil samples were collected. Total depth of the boring was 13' with no refusal to depth. The general geologic column is probable sandy fill to approximately 7', followed by sand to 11'6", and sandy gravel to the limit of the boring. No evidence of contamination was observed in the samples or on the tools. All PID readings were 0 ppm. The water table was encountered at approximately 8'. Installed a 10' long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 13'. All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 2'. A bentonite seal was installed from 1'9" - 2'. A watertight monitoring well box was grouted in at the surface.

Materials: 10' of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
2'9" of 2", solid wall, threaded, flush joint, Schd 40 PVC.
250 lb of silica sand.
25 lb± of bentonite chips.
40 lb of concrete mix.
1 2" push-on PVC cap.
1 2" expanding gasket cap.
1 6" monitoring well box.

MW-3

MW-3 was located on the east side of the building, north of the former gasoline and diesel UST's. The boring was started at 1:55 pm. All water used for cleaning split spoons and other tools was obtained at the site. The bit was washed with ALCONOX prior to being put on new augers. Drilled with 4 1/4" hollow stem augers taking split spoon samples at five foot intervals starting at 5'. All samples were screened for VOC's with a Photovac MicroTIP HL-2000 (10.6 eV lamp, calibrated with 100 ppm Isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. No analytical soil samples were collected. Total depth of the boring was 9'8" with refusal on probable bedrock. The general geologic column is silty sand with some gravel from below the pavement subbase to the limit of the boring. No evidence of contamination was observed in the samples or on the tools. All PID readings were 0 ppm. The water table was encountered at approximately 7'. Installed a 7'6" long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 9'6". All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 2'. A bentonite seal was installed from 1'9" - 2'. A watertight monitoring well box was grouted in at the surface.

Materials: 7'6" of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
1'9" of 2", solid wall, threaded, flush joint, Schd 40 PVC.
200 lb of silica sand.
25 lb± of bentonite chips.

40 lb of concrete mix.
1 2" push-on PVC cap.
1 2" expanding gasket cap.
1 6" monitoring well box.

TB-1 and TB-1A

TB-1 was located on the building side of the southeast corner of the property fence. The boring was started at 11:00 am. All water used for cleaning split spoons and other tools was obtained at the site. The bit was washed with ALCONOX prior to being put on new augers. Drilled with 4 1/4" hollow stem augers attempting to take semi-continuous split spoon samples starting at the surface. All samples were screened for VOC's with a Photovac MicroTIP HL-2000 (10.6 eV lamp, calibrated with 100 ppm Isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. No analytical soil samples were collected. Total depth of the boring was 6' with refusal on probable bedrock. The general geologic column is sandy gravel to 2', silty sand to approximately 4', and silty, gravelly sand to the limit of the boring. No evidence of contamination was observed in the samples or on the tools. All PID readings were 0 ppm. The water table was encountered at approximately 5'6". Due to the extremely thin saturated zone, no monitoring well was installed.

Offset 4' to the north. Refusal on probable bedrock was encountered at approximately 5'6". As no water was observed, a monitoring well was not installed. No further attempts were made in the area.

TB-2 and TB-2A

TB-2 was located on the building side of the property fence, to the east of the former gasoline and diesel UST's. The boring was started at approximately 3:00 pm. Drilled with 4" solid stem augers. No soil samples were obtained. Total depth of the boring was approximately 18" with refusal on probable bedrock.

Offset 4' to the south. Refusal on probable bedrock was encountered at approximately 14". No further attempts were made in the area.

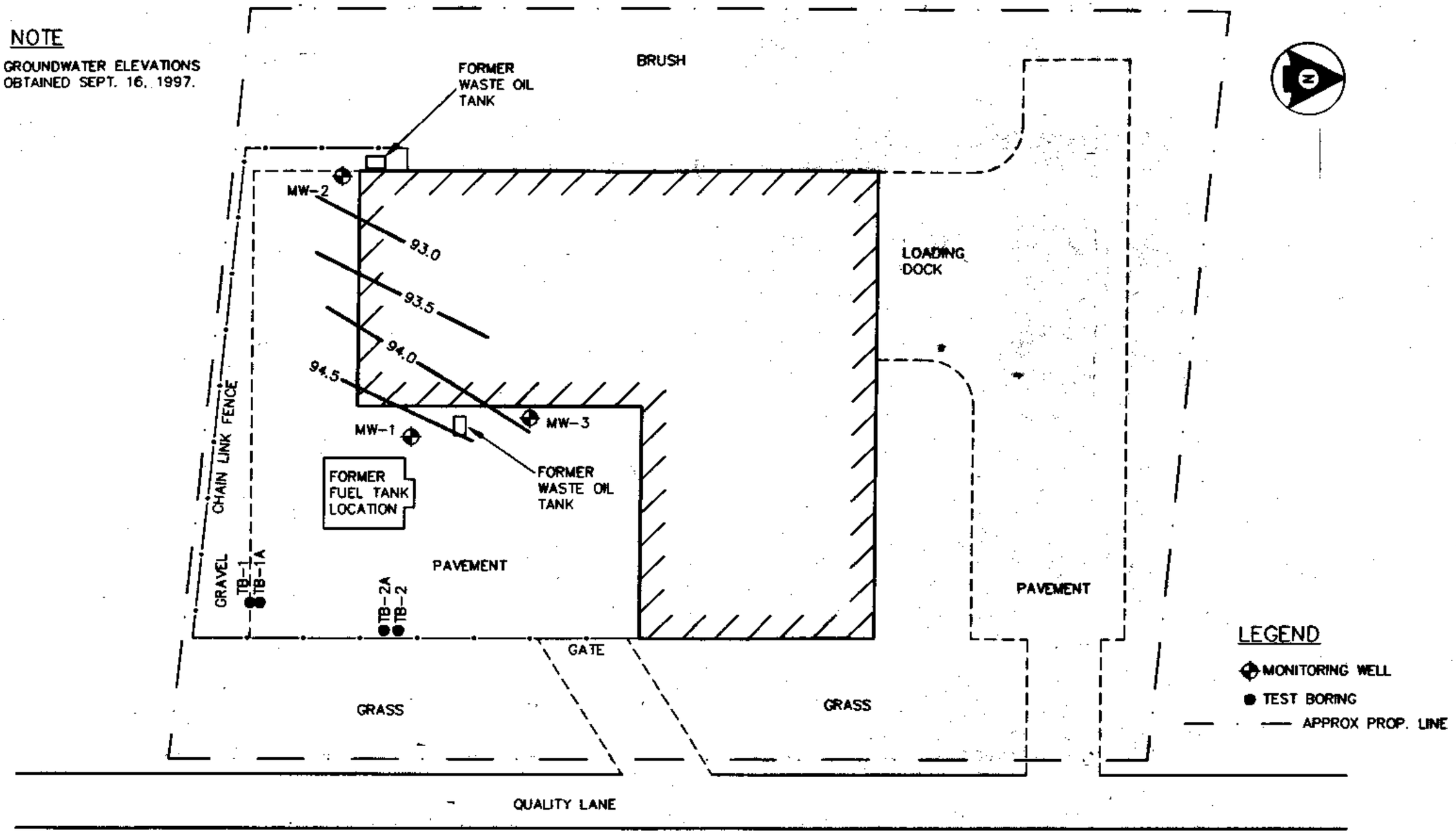
Visitors: Frank Glenowicz (A.L. Griggs, Inc.)
Weather: Overcast - mostly sunny, shower am, then clearing with decreasing humidity, 60's, light wind.
Off site at 3:40 pm.

APPENDIX E

GROUNDWATER CONTOUR MAP

NOTE

GROUNDWATER ELEVATIONS
OBTAINED SEPT. 16, 1997.



SCALE
1" = 40'

Dufresne-Henry Inc.
A DH Company
Precision Park
No. Springfield,
Vermont 05150
Tel. (802)886-2261 Fax (802)886-2280

GROUNDWATER CONTOURS
AT
A. L. GRIGGS INDUSTRIES, INC.
RUTLAND, VERMONT

Project No.	4170063
Proj. Mgr.	B.H.C.
Date	SEPT. '97
A	SK1

APPENDIX F

CONTRACT LABORATORY ANALYTICAL REPORTS

eastern analytical

professional laboratory services

Oscar Garcia
Dufresne-Henry
Precision Park
N. Springfield, VT 05150

SEP 29 1997

Subject: Laboratory Report

Eastern Analytical, Inc. ID:	9991 DUFVT
Client Identification:	4170063
Date Received:	09/18/97
Sample Quantity/Type:	5 aqueous

Dear Mr. Garcia:

Enclosed please find the laboratory report for the above identified project. All analyses were subjected to rigorous quality control measures to assure data accuracy. Unless otherwise stated, all holding times, preservation techniques, container types and sample condition adhered to EPA protocol.

The following standard abbreviations and conventions apply throughout all Eastern Analytical, Inc. reports:

- < = "less than" followed by the detection limit
- TNR = Testing Not Requested
- ND = None Detected, no established detection limit
- BRL = Below Reporting Limits

If you have any questions regarding the results contained within, please feel free to directly contact me, the department supervisor, or the analytical chemist who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Will Brunkhorst (BH)
Will Brunkhorst, President

9/24/97
Date

LABORATORY REPORT

Eastern Analytical, Inc. ID#: 9991

Client: Dufresne-Henry

Client Designation: 4170063

Volatile Organic Compounds

Sample ID:	MW-1	MW-2	MW-3	MW-A	MW-B
Matrix:	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Date Received:	9/18/97	9/18/97	9/18/97	9/18/97	9/18/97
Units:	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Analysis:	9/23/97	9/23/97	9/23/97	9/23/97	9/23/97
Analyst:	TML	TML	TML	TML	TML
Method:	602 mod	602 mod	602 mod	602 mod	602 mod
MTBE	**30**	< 20	< 20	**30**	< 20
Benzene	**4**	< 1	< 1	**5**	< 1
Toluene	**1**	< 1	< 1	1	< 1
Ethylbenzene	**4**	< 1	< 1	**5**	< 1
m,p-Xylene	**11**	< 1	< 1	**14**	< 1
o-Xylene	**11**	< 1	< 1	**13**	< 1

mod: MTBE included in compound calibrations.

Approved By: Clifford Chase, Volatile Organics Supervisor

9991

CHAIN OF CUSTODY FORM

DH Dufresne–Henry, Inc.
Precision Park
N. Springfield, VT 05150–(802)886–2261

Generator: AL Briggs
Page 1 of 1
Facility #:
DH #: 41700X3
Return To: Scot
Client:
Client #:
Address:
Sampled By: Scot Simon
State Sampled: VT

Sample Identification	Date Start	Date Stop	Time Start	Time Stop	Comp. Desc.	Water Liquid	Solid	# / Size Containers	Field Preserved Y / N	Field Filtered Y / N	Analysis Requested	Est. Lab Cost ($)
MW-1	9/9/97		FW		L	W		2-40ml	HCL	N	BTEX & MTBE	
MW-2												
MW-3												
MW-4												
MW-12												

Generator Rep. Authorization:
Estimated Lab Analysis Total

Relinquished By Generator: Scot Simon	Date: 9/10/97 Time: 4:00	Received By: UPS	Date: Time:
Relinquished By: UPS	Date: Time:	Received By: Lynn Mc	Date: 9/10/97 Time: 7:25

PLEASE RETURN COMPLETED CHAIN OF CUSTODY WITH ANALYTICAL RESULTS

WEWCUST.WK1

eastern analytical

professional laboratory services

Oscar Garcia
Dufresne-Henry
Precision Park
N. Springfield, VT 05150

RECEIVED
JUN 18 1997

Subject: Laboratory Report

Eastern Analytical, Inc. ID:	8947 DUFVT
Client Identification:	4170038
Date Received:	6/4/97
Sample Quantity/Type:	4 soil
	1 aqueous

Dear Mr. Garcia:

Enclosed please find the laboratory report for the above identified project. All analyses were subjected to rigorous quality control measures to assure data accuracy. Unless otherwise stated, all holding times, preservation techniques, container types and sample condition adhered to EPA protocol.

The following standard abbreviations and conventions apply throughout all Eastern Analytical, Inc. reports:

- < = "less than" followed by the detection limit
- TNR = Testing Not Requested
- ND = None Detected, no established detection limit
- BRL = Below Reporting Limits

If you have any questions regarding the results contained within, please feel free to directly contact me, the department supervisor, or the analytical chemist who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Will Brunkhorst (WB)
Will Brunkhorst, President

6/13/97
Date

LABORATORY REPORT

Eastern Analytical, Inc. ID#: 8947 DUFVT

Client: Dufresne-Henry

Client Designation: **4170038**

Total Petroleum Hydrocarbons

Sample ID:	WO #1 A	WO #1 B	WO #2 A	WO #2 B	WO #2
Matrix:	Soil	Soil	Soil	Soil	Aqueous
Date Received:	6/4/97	6/4/97	6/4/97	6/4/97	6/4/97
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/L
Date of Extraction:	6/9/97	6/9/97	6/9/97	6/9/97	6/5/97
Date of Analysis:	6/9/97	6/9/97	6/9/97	6/9/97	6/6/97
Analyst:	DJS	DJS	DJS	DJS	DJS
EPA Method:	8100(mod)	8100(mod)	8100(mod)	8100(mod)	8100(mod)
Carbon Range:	C9-C40*	C9-C40*	C9-C40*	C9-C40*	C9-C40*
Total Petroleum Hydrocarbons	< 50	< 50	< 50	< 50	< 0.5

* Fuel (Diesel) and Lubricating Oil Range Organics.

Approved By: Timothy Schaper, Organics Supervisor Timothy C. Schaper

LABORATORY REPORT

Eastern Analytical, Inc. ID#: 8947

Client: Dufresne-Henry Client Designation: **4170038**

Volatile Organic Compounds

Sample ID:	WO#1A	WO#1B	WO#2A	WO#2B	WO#2
Matrix:	Soil	Soil	Soil	Soil	Aqueous
Date Received:	6/4/97	6/4/97	6/4/97	6/4/97	6/4/97
Units:	µg/kg	µg/kg	µg/kg	µg/kg	µg/L
Date of Analysis:	6/10/97	6/10/97	6/10/97	6/10/97	6/9/97
Analyst:	JDS	JDS	JDS	JDS	JDS
EPA Method:	8240	8240	8240	8240	8240
Chloromethane	< 100	< 100	< 100	< 100	< 10
Bromomethane	< 10	< 10	< 10	< 10	< 2
Vinyl Chloride	< 10	< 10	< 10	< 10	< 2
Chloroethane	< 100	< 100	< 100	< 100	< 10
Methylene Chloride	< 10	< 10	< 10	< 10	< 2
1,1-Dichloroethene	< 10	< 10	< 10	< 10	< 2
1,1-Dichloroethane	< 10	< 10	< 10	< 10	< 2
Trans-1,2-Dichloroethene	< 10	< 10	< 10	< 10	< 2
Cis-1,2-Dichloroethene	< 10	< 10	< 10	< 10	< 2
Chloroform	< 10	< 10	< 10	< 10	< 2
1,2-Dichloroethane	< 10	< 10	< 10	< 10	< 2
1,1,1-Trichloroethane	< 10	< 10	< 10	< 10	< 2
Carbon Tetrachloride	< 10	< 10	< 10	< 10	< 2
Bromodichloromethane	< 10	< 10	< 10	< 10	< 2
1,2-Dichloropropane	< 10	< 10	< 10	< 10	< 2
Trans-1,3-Dichloropropene	< 10	< 10	< 10	< 10	< 2
Trichloroethene	< 10	< 10	< 10	< 10	< 2
Dibromochloromethane	< 10	< 10	< 10	< 10	< 2
1,1,2-Trichloroethane	< 10	< 10	< 10	< 10	< 2
Cis-1,3-Dichloropropene	< 10	< 10	< 10	< 10	< 2
Bromoform	< 10	< 10	< 10	< 10	< 2
Tetrachloroethene	< 10	< 10	< 10	< 10	< 2
1,1,2,2-Tetrachloroethane	< 10	< 10	< 10	< 10	< 2
Acetone	< 500	< 500	< 500	< 500	< 50
2-Butanone (MEK)	< 100	< 100	< 100	< 100	< 10
Vinyl Acetate	< 100	< 100	< 100	< 100	< 10
4-Methyl-2-Pentanone (MIBK)	< 100	< 100	< 100	< 100	< 10
2-Hexanone	< 100	< 100	< 100	< 100	< 10
Methyl t-Butyl Ether (MTBE)	< 200	< 200	< 200	< 200	< 20
Benzene	< 10	< 10	< 10	< 10	< 1
Toluene	< 10	< 10	< 10	< 10	< 1
Ethylbenzene	< 10	< 10	< 10	< 10	< 1
Total Xylenes	< 10	**60**	< 10	< 10	**200**
Chlorobenzene	< 10	< 10	< 10	< 10	< 1
Styrene	< 10	< 10	< 10	< 10	< 1

Approved By: Clifford Chase, Volatile Organics Supervisor

8947

CHAIN OF CUSTODY FORM

DH Dufresne-Henry, Inc.
Precision Park
N. Springfield, VT 05150 (802)886-2261

Generator: N. Springfield

Facility #: 7732768

Client:

Sampled By:

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DH #: 4176028

Client #:

State Sampled: VT

Return To:

Address:

Sample Identification	Date Start	Date Stop	Time Start	Time Stop	Comp. Desc.	Water Liquid	Solid	# / Size Containers	Field Preserved Y / N	Field Filtered Y / N	Analysis Requested	Est. Lab Cost ($)
LOO #1 A+B	6/2/97		PM				S	4/40ml	N	N	8240+8100 LL	
LOO #2 A+B							S	"	"			
LOO #2							W	1 liter 2-40ml	N			

Generator Rep. Authorization: Frank J. Flanagan

Estimated Lab Analysis Total

Relinquished By Generator: [signature] Date: 6/3/97 Time: 4:10

Received By: [signature] Date: 6/4/97 Time: 400

Relinquished By: Date: Time:

Received By: Date: Time:

PLEASE RETURN COMPLETED CHAIN OF CUSTODY WITH ANALYTICAL RESULTS

WEWOLIST.WK1