LETTER OF TRANSMITTAL

DUFRESNE-HENRY, INC.
Precision Park
NORTH SPRINGFIELD, VERMONT 05150

(802) 886-2261

DATE Oct. 9, 1990 | JOB NO. 160005

ATTENTION Marcia Stadel - Mayer

RE: Town of Hartford
Well Site Evaluation

OCT 10 1990

TO State of Vermont
Agency of Natural Resources
103 So. Main Street
Waterbury, Vermont 05676

GENTLEMEN:

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	10/9/90		Final Report

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☑ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☑ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO _____

SIGNED: Ted Reuss

If enclosures are not as noted, kindly notify us at once.

WILDER TEST WELL SITE

PHASE I SITE EVALUATION

Prepared for
TOWN OF HARTFORD
15 Bridge Street
White River Junction, VT 05001

OCTOBER • 1990

Dufresne-Henry

TOWN OF HARTFORD, VERMONT

TEST WELL SITE EVALUATION

Executive Summary

In May 1990, Dufresne-Henry, Inc. was awarded a contract for a site evaluation at the Town of Hartford Test Well Site in Wilder, Vermont. As part of this evaluation, six monitoring wells were installed in July, 1990. Groundwater samples were collected from each well in early August, 1990, and analyzed for volatile organic compounds (VOC's), and Total Petroleum Hydrocarbons (TPH). The analysis completed failed to indicate any materials above detection limits.

Conclusions established by the project methodology, monitoring well installation, groundwater sampling, and analysis are as follows:

1. No minimum contaminant levels for VOC's were exceeded.

2. Since the DNAPL has not been demonstrated to be mobile in the soil strata, it is not likely that the DNAPL can be drawn from it's current location.

3. The DNAPL may have been present on the observation well materials during installation.

As a result of work completed under the scope of this project, Dufresne-Henry recommends the following work be completed on this site:

1. Install a minimum of two additional monitoring well around the municipal wells to monitor for DNAPL. Groundwater sampling and analysis should be included.

2. Remove at least one of the observation wells and inspect for DNAPL. We recommend removing any or all of observation wells #7, #11, #14.

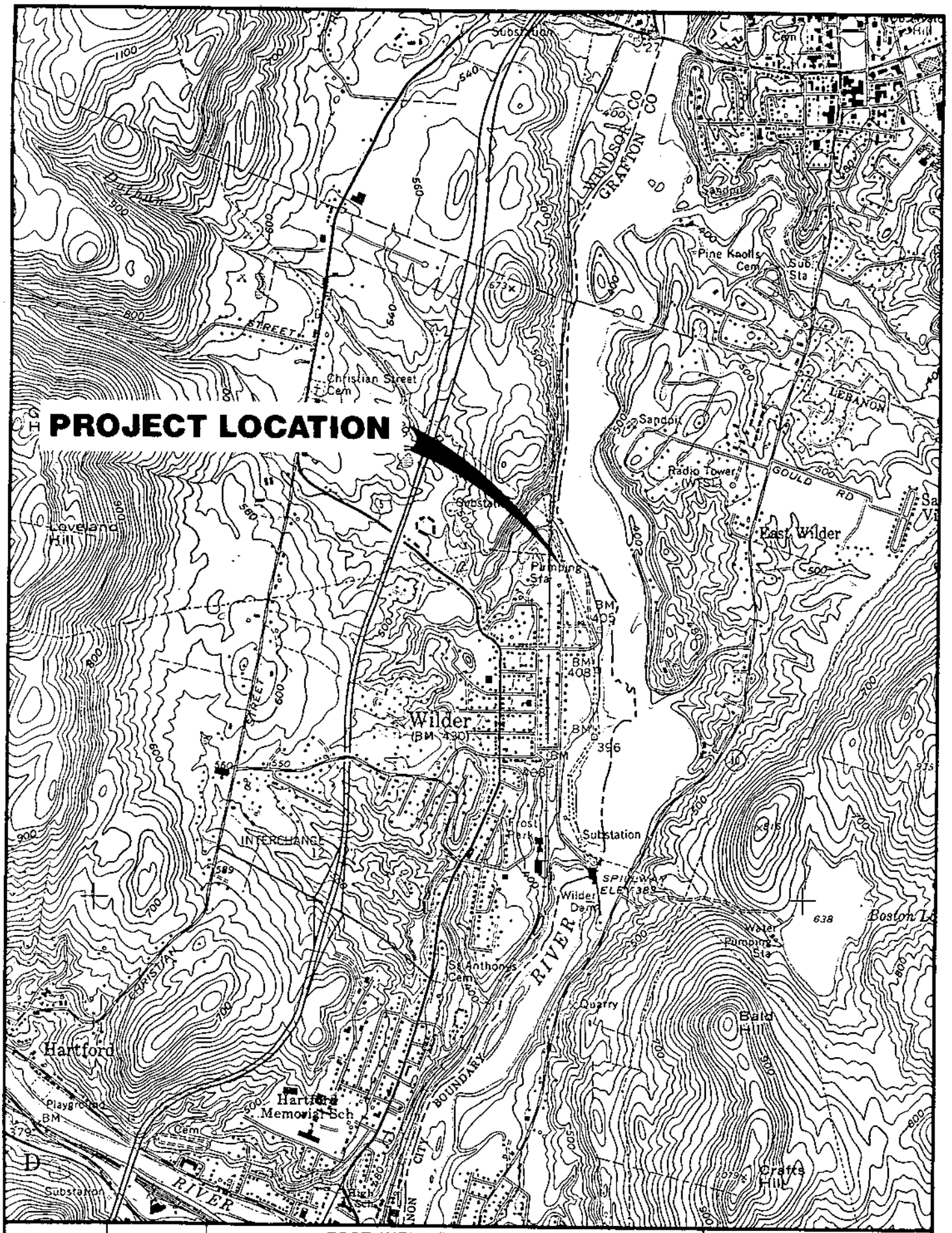
Introduction

In the Fall of 1989, Dufresne-Henry, Inc., began a test well program on property owned by New England Power Company. This property is located in the Village of Wilder, in the Town of Hartford, Vermont. The project was undertaken to locate an additional source of drinking water for the Town of Hartford.

During the 72 hour pump test of the well, a black tarry compound was found in one of the two-and-a-half inch observation wells installed by the contractor, R.E. Chapman, Inc. This substance, a dense non-aqueous phase liquid (DNAPL), was subsequently found in twelve of seventeen observation wells on the site. Because of the DNAPL the pump test was suspended after approximately six hours.

In the following days, the State of Vermont Agency of Natural Resources, Petroleum Sites Management Section, and The Vermont Department of Health became involved in the project. The concern of both parties was the impact on health should the DNAPL reach the existing water supply well located approximately 660 lineal feet west-southwest of the test well (see Figure #1, next page).

Several observation wells were sounded and sampled. Out of these wells, a composite sample of DNAPL removed from the wells was analyzed for a variety of parameters. These included volatile organic compounds (VOC's), pesticides, PCB's, and semi-volatile organic compounds. All analytes were below detection limits. Copies of the analysis results are attached as Appendix D.



Client No.	160005
Proj. Mgr.	T.S.R.
Date	09 90

TEST WELL SITE INVESTIGATION

FIGURE # 1 - LOCUS PLAN

HARTFORD, VERMONT

Dufresne-Henry Inc

A

A sample of the DNAPL was sent to Aquatech Environmental Services, Burlington, Vermont, with a request for identification. Aquatech offered this description for the material:

> "....a mixture of aliphatic hydrocarbons ranging in molecular weight between 250 and 500. The material is asphaltic in nature and shows evidence of oxidation. An infrared analysis suggests the presence of silicate and sulfate along with alkyl oxygen compounds. No prominent component is present but there are traces of phthalate esters in the material. Traces of iron are in the organic insoluble residue."

In March 1990, the Petroleum Sites Management Section (PSMS) issued a Request for Proposals for the evaluation of the site to identify the source and extent of the DNAPL.

In May 1990, Dufresne-Henry, Inc. was awarded the contract to proceed with the site evaluation. Permission to enter the site was granted by a letter dated July 6, 1990 from New England Power Company. The installation of six monitoring wells began on July 9, 1990 and was completed on July 26, 1990.

Note: for the duration of this report, wells referred to as "observation wells" are two-and-a-half inch steel wells installed by R. E. Chapman, Inc. to determine water table levels during the 72 hour pump test. "Monitoring wells" are two inch diameter PVC wells installed during this site evaluation to determine the extent of the DNAPL, and groundwater quality.

Site Description

The test well site is located on a parcel of land located in the Village of Wilder, Vermont (Figure #1). This property is owned by New England Power Company (NEPCO). The site is located on a point of land which juts into the Connecticut River. The River forms the eastern boundary, and has a set back that forms part of the north and west

boundaries of the site. The NEPCO property is bounded on the west by Passumpsic Avenue and a Boston and Maine railroad right-of-way. NEPCO owns land to the south of the subject site, extending to the Wilder Station hydro-electric dam approximately one mile south. To the west of the railroad is an old gravel pit, which is now Seery's Mobile Home Park. The existing municipal water supply well is located in the center of Seery's Mobile Home Park. Please see the attached site plan for reference. (Appendix A)

On the eastern portion of the NEPCO property, adjacent to the river, is a picnic and recreation area. The area under study in this project is in a power line right-of-way between the picnic area and the railroad right-of-way. This area has been cleared, and only small trees and low ground growth are present. Observation wells, and monitoring wells were also installed on NEPCO land near Bomhower Oil Company at the end of Passumpsic Avenue to the south, and in the picnic area to the east.

Site History:

Research of the site was begun at the Hartford Historical Society. Mrs. Priscilla Gadzinski of the Hartford Historical Society said that she was unaware of any "unusual" happenings on the NEPCO site. Mrs. Gadzinski said, prior to construction of the Wilder Dam, the Olcott Falls Paper Mill was located south of the subject site. The mill site is now underwater. She recommended that we contact other local historical societies, and gave us the names of several long time Wilder residents who might be of assistance.

Contact with other local historical societies provided little new information. Mr. Robert Leavitt, the Lebanon City Historian, confirmed the existence of a pulp mill operated in conjunction with the paper mill on the New Hampshire side of the Connecticut River. Mr. Allen King, President of the Hanover, New Hampshire Historical Society, echoed the comments of Mr. Leavitt and knew of no other industries which existed along the Connecticut or adjoining tributaries in this area. Mr. William Fitshue, of

the Norwich, Vermont Historical Society, said that he knew of no industry on the Connecticut or adjoining brooks and streams in his community. He did point out that there was an oil storage facility on Route 5 along the Connecticut River in Norwich. This facility, currently owned by Dartmouth College, is leased to Johnson and Dix Fuel Corporation, and was previously owned by Bomhower Oil.

Research of the libraries in Hartford, Norwich and Hanover yielded one reference; The Historical Highlights of Hartford by John W. St. Croix. This reference listed the years of operation of the Olcott Falls Paper Mill as beginning in 1883 and continuing until 1927 when a new dam was built. From 1927 until 1942 the mill was used as a power generating plant, at which time it was purchased by Bellows Falls Electric Company (now New England Power). Bellows Falls Electric Company then constructed a new hydro-electric dam and generating facility at that site. The location of the paper mill and the hydro-electric dam are located south of the project site by approximately one mile.

Town of Hartford Land Records were used to establish a chain of possession for the site and surrounding land. All of the site and most of the surrounding land is now owned by New England Power. Exceptions are Seery's Trailer Park on the west, property of Harold Bomhower on the southwest, and a right-of-way for the Boston and Maine Rail Road which runs across the land, north to south.

There are no references in the land records to indicate any uses of the subject or adjacent properties that may have had a significant environmental impact. The trailer park was previously used as a gravel pit, and prior to that was farmland. The property owned by "Red" Bomhower is the previous home of Bomhower Oil, and has three (3) underground storage tanks on site. This property is now in various use, including an auto body shop. There are no records of the tanks in the Hartford Town Office, which

would indicate that they are unregistered. The remaining land owned by New England Power was purchased from the Olcott Falls Company. Before the existence of the Paper Mill, there is no record of any industrial or commercial use on the subject property, or adjacent properties.

Conversations with the Wilder residents recommended by Mrs. Gadzinski (Herb Adams, Harold "Red" Bomhower, Bud Paul, and Ralph Roberts) all revealed one common recollection; that the location of the paper mill was down river and down gradient from the subject site, and is now underwater. Mr. Adams said that to his knowledge there are two buildings of the paper mill complex that would still be above water today, but the office building and the "barker shed" were burnt to the ground in 1927 when paper production ceased. None of the men have any knowledge of any train or barge wrecks or other "catastrophes" which could have impacted the site.

Site Inspection

The initial site inspection under the Scope of Services for this project was carried out on June 28, 1990. The site inspection was completed by F. David Deane, and Theodore S. Reeves. At this time, the locations for the monitoring well installation were set. A walkover of the site did not reveal any surface "clues" as to the source, or extent of the DNAPL.

During the walkover, the site was characterized as being generally undeveloped land, with features as described above. Areas of concern identified were the railroad, the power line right-of-way, and the Bomhower property.

There are two hydrogeologic influences on the site. These are the existing municipal water supply well, and the Connecticut River. As a result of the river influence, the groundwater table on the site exhibits a general gradient from the north to the south. Groundwater in the area

around the existing municipal well dips toward that well. An additional break in the groundwater contours occurs nearer the bank of the river, where the level tends to dip to the river.

Monitoring Wells

As part of this investigation six new groundwater monitoring wells were installed on the site. The intent of these monitoring wells was to determine the extent of the DNAPL "plume" and provide additional information regarding groundwater elevations and quality. The monitoring wells were located based on work carried out during the test well project, and site reconnaissance. The monitoring wells were located on two radials from the existing test well. The existing test well was selected as the focal point since DNAPL was found in several of the observation wells surrounding the existing test well. The new monitoring wells were located along two radials extending from the existing test well to the north parallel to the river and to the west toward the existing municipal well.

At the request of the Town of Hartford, no subsurface exploration was to take place on the western side of the railroad tracks (in Seery's Mobile Home Park). The well locations were discussed with the PSMS prior to installation, and their approval of the locations was secured prior to the well installation.

The monitoring well installation followed accepted protocols established by the State of Vermont, and the U.S. Environmental Protection Agency. Each well was installed using hollow stem augers, and by driving and washing casing. Split spoon samples were taken at five-foot intervals as the augers and casing were advanced. During installation of the wells, an HNU PI101 photoionization detector was employed to scan the recovered samples for the presence of VOC's. Well installation was monitored by Dufresne-Henry staff geologist Bruce Cox. All of the tools employed during well installation, wash water and the samples recovered from the split spoons were carefully observed for the presence of the DNAPL. None was noted.

All tools used during monitoring well installation were decontaminated prior to starting and between set-ups to prevent possible cross contamination of wells. Decontamination measures included steam cleaning the boring rig off-site.

The observation wells are constructed of 2" diameter PVC flush joint well screens and solid risers. The screen is factory slotted with 0.010" slots. The wells were backfilled with silica sand, and two bentonite clay seals were installed to prevent surface water migration into the wells. The well installation was completed using flush mounted water service caps grouted into the ground. The flush mounted caps were requested by NEPCO.

Monitoring well installation was completed during the period of July 9, 1990 through July 26, 1990. Boring logs for installation of the monitoring wells and the geologists field log are included as Appendix B.

Groundwater Sampling

On August 1, 1990, groundwater samples were collected from the six monitoring wells. These samples were collected according to the field protocol included as Appendix C.

After collection, the samples were shipped in a container filled with ice packs to Eastern Analytical, Inc., an EPA-certified contract laboratory in Concord, New Hampshire.

Analysis

The groundwater samples were analyzed for volatile organic compounds (VOC's) and total petroleum hydrocarbons (TPH) by EPA method 601/602 and 418.1 respectively.

Analysis for both volatile organic compounds (VOC) and total petroleum hydrocarbons (TPH) was necessary to try and determine the parent material of the DNAPL. If gasoline was present, then gasoline constituents such as

benzene, toluene, ethylbenzene, and xylene would show up on the VOC scan. However, if heavier oil was the parent material, then the TPH test would indicate only a presence of hydrocarbons, but little or no VOC's would appear on the VOC scan.

Results

For all six new monitoring wells, no VOC's and TPH's were detected in any sample. Therefore, based on these tests the DNAPL is not contributing a contaminant to the groundwater. Copies of the analysis results are attached as Appendix D.

Discussion

From the time that the DNAPL was discovered on the site, many questions have been raised regarding the source. This raised concerns about the development of a new well on the subject site as well as what potential impact that it may have on the existing Town of Hartford water supply well 660 feet to the southwest. Extensive analysis was completed on a sample of the DNAPL prior to this site evaluation. All of the analyses completed indicated that the material was not a volatile compound, pesticide or PCB, and did not possess properties that could be demonstrated as being harmful.

Since completion of the new monitoring wells, Dufresne-Henry has repeatedly sounded each monitoring well to determine the presence of DNAPL. To date, DNAPL has not been found in any of the new monitoring wells. Although DNAPL is still present in the observation wells, it does not appear to be increasing. It is not likely that a material as dense, viscous and immiscible as this material would move through the soil strata and enter a monitoring well through a sand pack and well screen. It is also highly unlikely that a pump test run for six hours would create a hydraulic gradient substantial enough to pull the DNAPL into an observation well 200 feet away (#15).

It is our opinion that there are three possibilities for the source of the DNAPL that explain the presence in the observation wells. First is the natural presence of DNAPL in the soil strata. Second is the introduction of the DNAPL during installation of the observation wells. Third is introduction by vandalism.

During installation of the new monitoring wells, consideration was given to removing one of the DNAPL contaminated observation wells, and examine the casing and screen in order to determine how the DNAPL is distributed within the well (i.e., does it occur at the bottom of the well, along one side, etc.). This idea was "tabled" since we felt that the act of removing one of the wells could scour all traces of the DNAPL from the well.

Conclusions and Recommendations

If Dufresne-Henry had been asked to complete a site assessment on this site, without the knowledge of the DNAPL gained during the test well phase, the conclusions of this report would be that the groundwater on this site is not currently impacted by EPA Hazardous Substance List VOC contamination. This conclusion would be based upon the groundwater analysis completed. An HNU photoionization detector was used during and after monitoring well installation. No VOC's were noted during scans with the HNU. The analysis completed on the six groundwater samples collected from the monitoring wells all came back at "below detection limits."

It is our opinion that the DNAPL does not present an impact to health, based upon the analysis completed to date, since no minimum contaminant levels (MCL's) were exceeded. Data supporting the source of the DNAPL is still inconclusive. However, we believe that it is not a widespread phenomenon.

Conclusions established by the above project methodology, monitoring well installation, groundwater sampling, and analysis are as follows:

1. No minimum contaminant levels for VOC's were exceeded.

2. Since the DNAPL has not been demonstrated to be mobile in the soil strata, it is not likely that the DNAPL can be drawn from it's current location.

3. The DNAPL may have been present on the observation well materials during installation.

As a result of work completed under the scope of this project, Dufresne-Henry recommends the following work be completed on this site:

1. Install a minimum of two additional monitoring wells around the municipal well to monitor for DNAPL. Groundwater sampling and analysis should be included.

2. Remove at least one of the observation wells and inspect for DNAPL. We recommend removing any or all of observation wells #7, #11, #14.

Limitations

This report represents the observations of the subject property with regard to environmental conditions. It is based solely on the scope of services as outlined in the executed Professional Services Agreement, and amendments to that agreement, and not on any scientific tasks or other procedures and technologies beyond the Scope of that Agreement. The services completed were based upon the time and economic constraints imposed by the client.

The preparation of this report was based in part on information provided by State and Local officials, and other individuals associated with and/or familiar with the site. Much of this information has not or can not be independently verified. Information contained within this report in most cases has been corroborated by another source.

Observations made on the subject property, structures, and experimental techniques, were based upon the condition of that item at the time of the evaluation/assessment, and the dates that Dufresne-Henry personnel were on site. Where access could not be gained to buildings or portions of the site, no judgement, characterization or opinion is offered or implied as to that portion of the property.

It is beyond the Scope of this report to offer opinions as to the presence of radon, asbestos, or PCB's. This assessment is not intended to offer opinion or judgement regarding worker health and safety, or code conformance.

Shallow groundwater monitoring wells only represent the soil conditions, probable or potential soil contamination, or groundwater qualities at that specific location, and the specific depths as indicated in this report. It is not unreasonable to expect that soil and groundwater characteristics may change within a short distance horizontally and vertically from the point of inspection at a specific monitoring well.

This report does not offer any opinion to the quality of title for this property, nor does it attempt to verify the boundaries of this property on record or in the field.

This report was commissioned by the Town of Hartford, Vermont. Dufresne-Henry does acknowledge and agree that the report may be conveyed in whole to the State of Vermont Department of Health, the State of Vermont Petroleum Sites Management Section, New England Power Company, Inc., and other interested parties.

APPENDIX A

SITE PLAN

APPENDIX B

BORING LOGS

Wilder Monitoring Wells
Hartford, Vermont

7/9/90

Checked HNU calibration at 8:30 am. OK.
Called Earl Hodgdon at New England Power Company (NEPCO) to tell them we would be starting today. He said to come to the Wilder Dam office prior to drilling. 8:30 am±.
Called Cedric Sanborn at the State of Vermont to tell him we were starting today. He was not there - left a message. 8:30 am±.
T. Reeves to call Mike Lavalla.
On site at 11:00 am±. Dufresne-Henry, Inc. - Bruce Cox. Soils Engineering, Inc.(SEI) - Myron Domingue, John Dano.
Arranged with Town to steam clean equipment at the public works garage.
Got steam cleaner.
Steam cleaned equipment at the public works garage, 1:00 pm - 2:10 pm.
Got permission from NEPCO to do boring [redacted] at staked location from Earl H. and Reg ?. We must contact then prior to starting each boring. 2:40 pm.
Started drilling at 2:45 pm.
MW - N3: Drilled with hollow stem augers (HSA) taking split spoon soil samples at 5 foot intervals. All samples screened with HNU (10.2 eV probe). No contamination (visual or odor) observed in the samples or on the tools. Total depth, 36 feet.
Stopped drilling at 4:25 pm.
Left site at 4:35 pm.
Weather - Sunny, 80's, humid.
Visitors - Earl H. and Reg ? (NEPCO).

7/10/90

BHC on site at 7:50 am.
SEI on site at 8:15 am. M.D., J.D.
Started drilling at 8:30 am.
[redacted] Water encountered between 36' and 39.5'. Flowing sand below water table. At 56' telescoped 3" casing in 4 1/4' HSA. Drove and washed casing to 75'. Wash water was recycled. All water was obtained from the Hartford public works garage. Split spoon soil samples were taken at 5 foot intervals. All samples screened with HNU (10.2 eV probe). No HNU readings from soil samples. No contamination (visual or odor) was observed in the samples or on the tools.
Left site at 4:20 pm.
Weather - Sunny, 75 - 80, dry, breezy.
Visitors - none.

7/11/90

BHC on site at 8:00 am.
SEI on site at 8:20 am. M.D., J.D.
Started drilling at 8:25 am.
[redacted] Boring continued to [redacted] Drove and washed 3" casing. Wash water was recycled. All water was obtained from the Hartford public works garage. Used Crisco for pipe dope. Split spoon

soil samples were taken at 5 foot intervals. All samples screened with HNU (10.2 eV probe). HNU reading of 7 ppm (with SEI instrument) from sample at 80' - 82.5'. Lab sample for Total Petroleum Hydrocarbons (TPH) taken at 10:25 am. No odor or discoloration was observed in the soil. No contamination (visual or odor) observed in the samples or on the tools. Installed 2", .010"slot, threaded, flush joint, SCHD 40 PVC well at 100'. All pipe came out of factory sealed plastic bags. Well run in at 3:00 pm. Started pulling casing at 3:15 pm. No contamination (visual or odor) observed on casing after removal from the hole. Stopped work at 4:25 pm. All casing out of hole, HSA still in hole.
Left site at 4:35 pm.
Weather - Overcast, 65 - 70 am, sunny 75 pm.
Visitors: T. Reeves (D-H).

7/12/90

BHC on site at 7:52 am.
SEI on site at 8:00 am. M.D., J.D., Mark Clark
Called Maria [redacted] at the State of Vermont (returned her call) to apprise her of work to date. She will be on site sometime next week.
Started work at 8:15 am.
MW - N3: Completed installation of monitoring well. Well set at 100'. Top of sand at 25'. Bentonite seals at 24' - 25' and 2' - 3'. Grouted in flush Buffalo box.
Materials:

- 70' of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
- 30' of 2", solid wall, threaded, flush joint, Schd 40 PVC.
- 500 lb of sand.
- 25 lb of bentonite pellets.
- 10 lb of cement.
- 1 PVC cap.
- 1 Econocap.
- 1 Buffalo box.

MW - N2: Steam cleaned equipment at the Hartford public works garage 10:05 am - 10:40 am.
Earl Hodgdon (NEPCO) approved location at 11:30 am.
Started drilling at 11:30 am.
Drilled with HSA to 40'. Split spoon soil samples taken at 5 foot intervals. All samples were screened with HNU (10.2 eV probe). Used Crisco as pipe dope. Encountered water table at about 35'. Telescoped 3" casing in 4/14" HSA at 42'. Wash water was recycled. All water was obtained from the Hartford public works garage. Sampled to 62.5'. Drove casing to 60.5'. No contamination (visual or odor) was observed in the samples or on the tools.
Left site at 4:38 pm.
Weather - Overcast, 65, occasional light sprinkles.
Visitors: Earl Hodgdon (NEPCO).

7/13/90

BHC on site at 7:56 am.
SEI on site at 8:20 am. M.D., J.D., M.C.
MW - N2: Continued boring to a final depth of 101'. Used Crisco as pipe dope. Split spoon soil samples taken at 5 foot intervals. All

samples screened with HNU (10.2 eV probe). Wash water was recycled. All water was obtained from the Hartford public works garage. No HNU readings obtained from soil samples. No contamination (visual or odor) was observed in the samples or on the tools. Ran in well at 4:25 pm. Installed 2", .010"slot, threaded, flush joint, SCHD 40 PVC well at 100'. All pipe came out of factory sealed plastic bags. Started pulling casing at 4:30 pm. Pulled 15'of casing and stopped work at 4:30 pm.

Checked well MW - N3 with T. Reeves 11:00 am - 11:10 am. HNU reading when well uncapped: .2 ppm. Water at 38.35' from top of Buffalo box. Bailed sample from top of water table. No HNU reading obtained, no visual or olfactory evidence of contamination. No evidence of contamination on plunker from 54'. No evidence of contamination on plunker from bottom of well. Approx 2' of sediment on bottom.

Left site at 4:50 pm.
Weather - Mostly sunny, 65 - 70 am, 70 - 75 pm. Very light wind.
Visitors: T. Reeves (D-H) 9:55 am - 11:13 am.

7/16/90

BHC on site at 8:00 am.
SEI on site at 8:04 am. M.D., J.D., M.C.

MW - N2: Finished pulling casing at 8:40 am. No contamination (visual or odor) was observed on the casing. Pulled HSA (done at 9:15 am). Sand backfill to 22.5'. Bentonite seals at 22.5' and 2.5'. Grouted in flush Buffalo box.

Materials:

- 70' of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
- 30' of 2", solid wall, threaded, flush joint, Schd 40 PVC.
- 350 lb sand.
- 15 lb bentonite pellets.
- 10 lb cement.
- 1 PVC cap.
- 1 Econocap.
- 1 Buffalo box.

MW - W3: Steam cleaned equipment at the Hartford public works garage 10:00 am - 10:30 am. Permission from Earl Hodgdon (NEPCO) at 11:05 am. Started drilling at 11:05 am. Drilled with 4 1/4" HSA taking split spoon soil samples at 5 foot intervals. All samples screened with HNU (10.2 eV probe). Low HNU readings (up to 4ppm) were observed from samples 5' - 7' and 10' - 12'. A TPH sample for lab analysis was taken at 11:30 am. Used Crisco as pipe dope. Water was encountered at approx 40'. At 45', 3" casing was telescoped in the HSA. Wash water was recycled. All water was obtained from the Hartford public works garage. Boring was continued to 70'. Occasional trace readings were seen on the HNU. No contamination (visual or odor) was observed in the samples or on the tools. At 70' the casing was washed, the steel pulled, and the top of the casing plugged with the rig to prevent tampering.

Left site at 4:38 pm.
Weather - Mostly sunny, 80's
Visitors: Earl Hodgdon and ? (NEPCO) 12:50 pm - 12:55 pm.

7/17/90

BHC on site at 7:58 am.
SEI on site at 8:15 am. M.D., J.D., M.C.
MW - W3: Boring continued to final depth of 100.5'. Used Crisco as pipe dope. Split spoon soil samples were taken at 5 foot intervals. All samples were screened with HNU (10.2 eV probe). Wash water was recycled. All water was obtained from the Hartford public works garage. Occasional trace readings were observed. Ran in well at 3:05 pm. Well set at 100'. All pipe came out of factory sealed plastic bags. Sand backfill to 22.5'. Bentonite seals at 22.5' and 3'. No contamination (visual or odor) was observed on the casing, augers, or tools upon removal. Spoon left in cuttings bucket turned greenish. No odor observed, material not oily.

Materials:

70' of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
30' of 2", solid wall, threaded, flush joint, Schd 40 PVC.
500 lb of sand.
20 lb of bentonite pellets.
10 lb of cement.
1 PVC cap.
1 Econocap.
1 Buffalo box.

Left site at 4:50 pm.
Weather - Mostly sunny, 70's am, 80's pm, breezy.
Visitors: T. Reeves (D-H) 11:08 am - 11:53 am.
G. Constantine (D-H) 11:08 am - 11:20 am.

7/18/90

BHC on site at 8:02 am.
SEI on site at 7:50 am+. M.D., J.D.
MW - W2: Steam cleaned equipment at Hartford public works garage 8:25 am - 8:45am. Rig down for repairs 9:15 am - 11:50 am. Went to notify NEPCO of new location at 12:00. Started drilling at 12:35 pm. Someone from NEPCO on site at 12:55 pm. Drilled with hollow stem augers. Used Crisco as pipe dope. Split spoon soil samples taken at 5 foot intervals. All samples screened with HNU (10.2 eV probe). Water encountered at 41'±. Telescoped 3" casing in HSA. Drove and washed casing to 60'. Wash water was recycled. All water obtained from the Hartford public works garage. No contamination (visual or odor) was observed in the samples or on the tools. The top of the casing was plugged with the rig to prevent tampering.
Left site at 4:30 pm.
Weather: Sunny, 70's am, 80's pm, breezy.
Visitors: Someone from NEPCO at 12:55 pm.

7/19/90

BHC on site at 7:54 am.
SEI on site at 8:08 am. M.D., J.D., M.C.
MW - W2: Drove and washed casing continuing boring to a final depth of 101.5'. Wash water was recycled. All water was obtained from the Hartford public works garage. Split spoon samples were taken at 5 foot intervals. All samples were screened with HNU (10.2 eV probe). Ran in

well at 3:52 pm. Well set at 100'. All pipe came out of factory sealed plastic bags. Started pulling casing at 4:08 pm. Pulled 40'. The top of the casing was plugged with the rig to prevent tampering.
Left site at 4:32 pm.
Weather: Sunny, 80's, breezy.
Visitors: Someone from NEPCO 10:18 am - 10:22 am.

7/20/90

BHC on site at 7:52 am.
SEI on site at 8:00 am. M.D., J.D., M.C.
MW - W2: Completed installation of monitoring well MW - W2. Well set at 100'. Sand backfill to 23'. Bentonite seals at 23' and 3'. Grouted in flush Buffalo box.
Materials:
70' of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
30' of 2", solid wall, threaded, flush joint, Schd 40 PVC.
225 lb of sand.
15 lb of bentonite pellets.
10 lb of cement.
1 PVC cap.
1 Econocap.
1 Buffalo box.

MW - W1: Contacted NEPCO about move at 9:48 am.
Steam cleaned equipment at the Hartford public works garage 9:55 am± - 10: 15 am±.
Permission from NEPCO at 10:18 am.
Started drilling at 10:32 am. Drilled with 4 1/4" HSA. Crisco used as pipe dope. Split spoon samples taken at 5 foot intervals. All samples were screened with HNU (10.2 eV probe). No contamination (visual or odor) was observed in the samples or on the tools. Water encountered at about 31'. At 42' telescope 3" casing in HSA. Drove and washed casing to 55'. Sampled to 57'. Wash water was recycled. All water was obtained from the Hartford public works garage. At 3:00 pm a thunderstorm came through the area with nearby lightning strikes and heavy rain. Work was abandoned. Drilling logs were caught up until 3:30 pm.
Left site at 3:30 pm.
Weather: Partly - mostly cloudy, 70's. Thunderstorm late pm.
Visitors: Someone from NEPCO at 10:18 am.

7/23/90

BHC on site at 7:56 am.
SEI on site at 8:15 am. M.D., M.C.
MW - W1: Continued boring to a depth of 95'. Crisco used as pipe dope. Split spoon samples were taken at 5 foot intervals. All samples were screened with HNU (10.2 eV probe). No contamination (visual or odor) was observed in the samples or on the tools. Wash water was recycled. All wash water was obtained from the Hartford public works garage.
Left site at 4:29 pm.
Weather: Partly sunny, 80's.
Visitors: Mr. Bomhower, adjoining property owner (garage at end of Passumpsic Ave). I discussed our desire to locate a boring on NEPCO

property near his property line. He said he had no problem with that and offered to show me the boundary (immediately behind the garage). 10:53 am - 11:45 am.

7/24/90

BHC on site at 7:55 am.
SEI on site at 8:12 am. M.D., J.D., M.C.
MW - W1: Continued boring to final depth of 111.5'. Crisco used as pipe dope. Split spoon samples were taken at 5 foot intervals. All samples were screened with HNU (10.2 eV probe). No contamination (visual or odor) was observed in the samples or on the tools. Wash water was recycled. All water was obtained from the Hartford public works garage. Ran in well at 12:16 pm. Set at approx 108'. All pipe came out of factory sealed plastic bags. Started pulling casing at 12:32 pm. All casing and augers out of hole at 2:45 pm. No contamination was observed. Sand backfill to 12.5'. Bentonite seals at 12.5' and 2.5'. Grouted in flush Buffalo box.
Installation complete at 2:55 pm.
Materials:

- 90' of 2", .010" slot, threaded, flush joint, SCHD 40 PVC.
- 18' of 2", solid wall, threaded, flush joint, SCHD 40 PVC.
- 485 lb of sand.
- 10 lb of bentonite pellets.
- 10 lb of cement.
- 1 PVC cap.
- 1 Econocap.
- 1 Buffalo box.

At 3:15 pm crew went to the Hartford public works garage to steam clean the equipment. It was close to quitting time and they would not allow the work to be done.
At 3:20 pm I corroborated the location of Mr. Bomhowers property line with him and staked the location of MW - SW1.
At 3:30 pm I tried to get permission from NEPCO for the location but all personnel in charge were gone.
Set up the rig on the location of MW - SW1.
Left the site at 4:03 pm.
Weather: Overcast, 70's, calm.
Visitors: Mr. Bomhower at various times.

7/25/90

BHC on site at 8:01 am (NEPCO office).
SEI on site at 8:00± am. M.D., J.D., M.C.
Permission to do MW - SW1 from Dick Brock (NEPCO) at 8:28 am.
MW - SW1: Started drilling at 9:04 am. Drilled with HSA. Crisco used as pipe dope. Split spoon samples were taken at 5 foot intervals. All samples screened with HNU (10.2 eV probe). No contamination (visual or odor) was observed in the samples on the tools. At 10:15± am Mark Clark (Soils Engineering, Inc.) injured hand on 140 lb safety hammer. BHC drove him to Mary Hitchcock emergency room. SEI continued boring to 45' then came to the hospital. We left the hospital at approx 11:30 am. BHC returned to site, SEI got water. Started drilling again at 12:06 pm. At 47' telescoped 3" casing in HSA. At 1:38 pm M.D. goes to get

M.C. Back at 2:19 pm. Continued to 70'.
Left site at 4:24 pm.
Weather: Mostly sunny, 70's, light breeze.
Visitors: Mr. Bomhower at various times.
Maria S[redacted]meyer and Bob [redacted] from the state of Vermont. I gave them a tour of the site and well locations. Discussed the observations to date. No conclusions drawn or offered. 12:53 pm - 1:13 pm.

7/26/90

BHC on site at 7:53 am.
SEI on site at 8:04 am. M.D., J.D.
MW - SW1: Boring continued to a total depth of 97'. Crisco used as pipe dope. Split spoon samples were taken at 5 foot intervals. All samples were screened with HNU (10.2 eV probe). No contamination (visual or odor) was observed in the samples or on the tools. Wash water was recycled. All wash water was obtained from the Hartford public works garage. Ran in well at 1:58 pm. Set at 95'. All pipe came out of factory sealed plastic bags. Sand backfill to 19'. Bentonite seals at 19' and 2.5'. Grouted in flush Buffalo box. All casing and augers out of the hole at 3:28 pm. No staining or odor observed on casing or augers.
Materials:
70' of 2", .010" slot, threaded, flush joint, SCHD 40 PVC.
25' of 2", solid wall, threaded, flush joint, SCHD 40 PVC.
550 lb of sand.
15 lb of bentonite pellets.
10 lb of cement.
1 PVC cap.
1 Econocap.
1 Buffalo box.

Left site at 4:48 pm. SEI to be on site tomorrow to clean up and move rig off site.
Weather: Sunny, 70's am, 80's pm.
Visitors: Mr. Bomhower at various times.

7/30/90

Called Dick Brock (NEPCO) at 9:17 am. He was not there so I left a message that the borings were complete and we were off site. Sampling scheduled for 8/1/90 and/or 8/2/90.

BORING LOCATION MW - N2 INCLINATION V BEARING DATE START/FINISH 7/12/90 / 7/16/90

CASING ID 3" CORE SIZE TOTAL DEPTH 101 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 413.5 DEPTH TO WATER/DATE 33.76 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
408.5	5						4" SSA		0" - 4"± Medium - dark brown organic soil. 4" - 5' Light - medium brown silty SAND.
406.5	7	SS 1	3 8 8 5	2	16	24			5' - 6' Medium orange brown, loose - medium dense silty SAND. Very fine - fine grained sand. 20%± non plastic fines. Dry. 0 ppm. 6' - 7' Medium brown gravelly SAND. Fine - medium grained sand. 10% - 20% non plastic fines. 20%± fine rounded gravel to 1/2". Dry. No staining or odor. 0 ppm.
403.5	10						4 1/4" HSA	8"/CCH	Gravelly sand with cobbles.
402.0	11.5	SS 2	10 15 15	2	12	18			Medium brown, medium dense gravelly SAND as above. Dry. No staining or odor. 0 ppm.
398.5	15						4 1/4" HSA	8"/CCH	Layered sands and gravels. Gravel 1" - 3".
397.0	16.5	SS 3	8 12 10	2	6	18			Medium brown and gray, medium dense, very gravelly SAND. Fine - occasionally coarse grained sand. 40%± fine gravel to 1/2". Dry. No staining or odor. 0 ppm.
393.5	20						4 1/4" HSA	8"/CCH	Gravelly 15' - 18.5'. Sandy 18.5' - 20'.
391.5	22	SS 4	8 8 9 10	2	10	24			Medium brown gray and orange, medium dense, sandy GRAVEL similar to above. 10% - 20% non plastic fines. 50%+ fine gravel. Dry. No staining or odor. 0 ppm.
388.5	25						4 1/4" HSA	8"/CCH	
386.5	27	SS 5	9 12 12 12	2	14	24			Medium brown and orange brown, medium dense, gravelly SAND. 10%± non plastic fines. 30%± fine gravel to 1/2". Dry. No staining or odor. 0 ppm.
383.5	30						4 1/4" HSA	8"/CCH	
382.0	31.5	SS 6	13 15 15	2	14	18			Medium brown and orange brown, medium dense, gravelly SAND similar to above. 10%+ non plastic fines. 20% gravel to 3/8". Dry. No staining or odor. 0 ppm.
378.5	35						4 1/4" HSA	8"/CCH	
377.0	36.5	SS 7	11 20 20	2	18	18			35' - 35'6" Medium brown, fine - predominately medium grained SAND. 20%± non plastic fines. 35'6" - 36'6" Medium brown gray, medium dense - dense, gravelly SAND. Medium - predominately coarse grained sand. 10%± non plastic fines. 20%± fine gravel to 1/4". Saturated. No staining or odor. 0 ppm.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

SSA = Solid Stem Auger
HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm: Refers to HNU reading (10.2 eV probe)

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/16/90 PROJECT: 160005

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - N2 INCLINATION V BEARING DATE START/FINISH 7/12/90 / 7/16/90

CASING ID 3" CORE SIZE TOTAL DEPTH 101 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 413.5 DEPTH TO WATER/DATE 33.76 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL	SAMPLE			SAMP OD	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
	DEPTH	TYPE AND NO.	B		REC	PENETRATION			
FT	FT			IN	IN	IN			
373.5	40						4 1/4" HSA	8"/CCH	
371.5	42	SS 8	7 18 13 15	2	24	24			Medium brown, medium dense, gravelly SAND. Medium - predominately coarse and very coarse grained sand. 10%± non plastic fines. 20% fine gravel to 1/4". No staining or odor. 0 ppm.
368.5	45						4 1/4" HSA	8"/CCH	
366.5	47	SS 9	14 16 18 16	2	13	24			Medium gray brown, dense - very dense, gravelly SAND as above. 20% - 30% gravel to 1". No staining or odor. 0 ppm.
363.5	50						3" CSG		Casing blows: 24 - 31 - 43 - 51 - 56 Lost 2 - 3 gallons of wash water at bottom.
361.5	52	SS 10	10 13 13 15	2	16	24			Medium brown and medium brown orange, loose - medium dense, gravelly SAND. Predominately medium - very coarse grained sand. 10%± non plastic fines. 20%± fine gravel to 1/4". No staining or odor. 0 ppm.
358.5	55						3" CSG		Casing blows: 24 - 37 - 37 - 56 - 63 Lost approx 2 gallons of wash water at bottom.
356.8	56.75	SS 11	14 16 41 32*	2	13	21	* 32/3"		55' - 56' Gravelly SAND as above. 0 ppm. 56' - 56'9" Medium cream gray, SAND and GRAVEL. Very fine - medium grained sand. 10% - 20% non plastic fines. 30% fine gravel. 0 ppm.
353.5	60						3" CSG		Casing blows: 27 - 51 - 223 - 133 - 105 Lost approx 2 gallons of wash water at bottom.
351.0	62.5	SS 12	100 97 61 33 26	2	12	30			Medium - dark gray, silty, gravelly SAND. Predominately fine - medium grained sand. 10%± non plastic fines. 10% - 20% fine gravel (with cobbles). Occasional thin (1/8"±) layers of mafic minerals. No staining or odor. 0 ppm.
348.5	65						7/13/90 3" CSG		Casing blows: 127 - 270 - 177 - 121 - 114 Lost approx 7 gallons of wash water at bottom.
346.5	67	SS 13	17 37 189 23	2	9	24			Medium brown and medium gray SAND and GRAVEL as above. 10%+ non plastic fines. 30%+ gravel to 1". Cobbley. No staining or odor. 0 ppm.
343.5	70						3" CSG		Casing blows: 31 - 173 - 366 - 92 - 80 Lost 4 - 5 gallons of wash water at bottom.
		SS 14	26 34 36	2	9	24			Medium gray brown and brown gray, dense, gravelly SAND similar to above but sandier. No staining or odor. 0 ppm.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

HSA = Hollow Stem Auger
CSG = Casing
CCH = Conical Cutter Head
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/16/90 PROJECT: 160005

BORING LOCATION MW - N2 INCLINATION V BEARING DATE START/FINISH 7/12/90 / 7/16/90

CASING ID 3" CORE SIZE TOTAL DEPTH 101 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 413.5 DEPTH TO WATER/DATE 33.76 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
341.5	72		36						
338.5	75						3" CSG		Casing blows: 61 - 75 - 84 - 146 - 159 Lost approx 2 gallons of wash water at bottom.
336.0	77.5	SS 15	18 38 43 27 23	2	9	30			Medium brown gray, dense - very dense, gravelly SAND as above. No staining or odor. 0 ppm.
333.5	80						3" CSG		Casing blows: 56 - 72 - 72 - 70 - 130 Lost approx 5 gallons of wash water roller bitting through cobble.
331.5	82	SS 16	25 32 34 39	2	6	24			Medium gray - medium orange gray, dense - very dense, silty SAND and GRAVEL. Very fine - occasionally coarse grained sand. 10%+ non plastic fines. 30% fine gravel to 1/4". No staining or odor. 0 ppm.
328.5	85						3" CSG		Casing blows: 86 - 72 - 97 - 87 - 105 Lost 1 - 2 gallons of wash water at bottom.
326.5	87	SS 17	24 23 26 31	2	6	24			Medium brown and medium brown gray, silty gravelly SAND as above. Occasional medium gray silty lenses. No staining or odor. 0 ppm.
323.5	90						3" CSG		Casing blows: 76 - 87 - 113 - 141 - 127 Lost approx 5 gallons of wash water at bottom.
321.5	92	SS 18	24 19 28 26	2	6	24			Medium brown - medium orange brown, silty, gravelly SAND as above. Slightly less gravel. Damp. No staining or odor. 0 ppm.
318.5	95						3" CSG		Casing blows: 51 - 63 - 117 - 136 - 153 Lost approx 25 gallons of wash water at bottom.
316.5	97	SS 19	21 25 24 34	2	6	24			Medium brown and gray, silty, gravelly SAND as above. Occasional silty lenses. Moist. No staining or odor. 0 ppm.
313.5	100						3" CSG		Casing blows: 80 - 84 - 104 - 118 - 104 Lost 1 - 2 gallons of wash water at bottom.
312.5	101	SS 20	69 97	2	7	12			Medium gray SAND and GRAVEL similar to above. Coarser gravel and cobbles. No staining or odor. 0 ppm.
									No refusal to depth.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/16/90 PROJECT: 160005

BORING LOCATION MW - N2 INCLINATION V BEARING DATE START/FINISH 7/12/90 / 7/16/90

CASING ID 3" CORE SIZE TOTAL DEPTH 101 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 413.5 DEPTH TO WATER/DATE 33.76 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
							7/16/90		Set 70' of 2", .010" slot, threaded, flush joint, SCHD 40 PVC at 100', Sand backfill to 22.5', Bentonite seals at 22.5' and 2.5'. Grouted in flush Buffalo 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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/16/90 PROJECT: 160005

LOG OF BORING: N2

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - N3 INCLINATION V BEARING DATE START/FINISH 7/9/90 / 7/12/90

CASING ID 3" CORE SIZE TOTAL DEPTH 102 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 417.7 DEPTH TO WATER/DATE 37.87 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
412.7	5						4" SSA		0" - 4" Medium - dark brown organic soil. 4" - 5' Medium brown silty SAND.
410.7	7	SS 1	5 6 6 15	2	20	24			Light - medium brown, medium dense, silty SAND. Very fine - occasionally medium grained sand. 20% - 30% non plastic fines. Occasional thin (1/8"±) dark brown - brown gray silt and silty sand layers. Dry. No staining or odor. 0 ppm.
408.2	9.5						4 1/4" HSA	8"/CCH	Cobbley.
406.7	11	SS 2	12 24 26	2	18	18			9.5' - 10' Medium brown silty SAND as above. 10' - 11' Medium brown, dense, gravelly SAND. Very fine - coarse grained rounded sand. 10%± non plastic fines. 40%± fine rounded gravel to 1". Dry. No staining or odor. 0 ppm.
403.2	14.5						4 1/4" HSA	8"/CCH	Cobbley 11' - 12'.
401.7	16	SS 3	10 13 17	2	11	18			14.5' - 15' Medium brown - medium orange brown SAND. Dry. 15' - 16' Medium brown - medium orange brown, medium dense - dense, gravelly SAND as above. 20% - 30% fine rounded gravel to 1". Dry. No staining or odor. 0 ppm.
398.2	19.5						4 1/4" HSA	8"/CCH	
396.7	21	SS 4	9 13 20	2	16	18			Medium brown - medium orange brown, medium dense - dense, gravelly SAND as above. 20%± fine gravel. Dry. No staining or odor. Tr ppm.
393.2	24.5						4 1/4" HSA	8"/CCH	
391.7	26	SS 5	22 22 16	2	13	18			Medium gray (orange top 3"), dense, gravelly SAND. Fine - coarse grained rounded sand. 10% - 20% non plastic fines. 20% - 30% rounded gravel 1/4"-1". Dry. No staining or odor. 0 ppm.
388.2	29.5						4 1/4" HSA	8"/CCH	
386.7	31	SS 6	9 11 10	2	18	18			Light - medium white gray, medium dense, SAND. Predominately medium - coarse grained quartz and gray schist sand. 10%± non plastic fines. 10%± fine gravel to 1/4". Trace mica. Dry - slightly moist. No staining or odor. 0 ppm.
383.2	34.5						4 1/4" HSA	8"/CCH	
381.7	36	SS 7	7 8 9	2	15	18	7/10/90		Medium dense SAND as above. Whiter and finer grained top 6". Browner and coarser bottom 1'. Dry. No staining or odor. 0 ppm.
378.2	39.5						4 1/4" HSA	8"/CCH	

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

SSA = Solid Stem Auger
HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm: Refers to HNU reading (10.2 eV probe).

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/12/90 PROJECT: 160005

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - N3 INCLINATION V BEARING DATE START/FINISH 7/9/90 / 7/12/90

CASING ID 3" CORE SIZE TOTAL DEPTH 102 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 417.7 DEPTH TO WATER/DATE 37.87 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
376.7	41	SS 8	5 9 9	2	18	18			39'6" - 40'2" Medium brown, medium grained SAND. 10%± non plastic fines. Saturated. 0 ppm. 40'2" - 40'10" Medium brown silty SAND. 10% - 20% non plastic fines. 0 ppm. 40'10" - 41' Medium brown, medium grained SAND as above. 0 ppm.
373.2	44.5						4 1/4" HSA	8"/CCH	
371.7	46	SS 9	6 9 15	2	18	18			Medium- dark gray brown, medium dense, SAND. Predominately medium - coarse grained sand of quartz and gray schist. Gets slightly coarser with depth. 30% rounded gravel to 1" bottom 2" - 3". Saturated. No staining or odor. 0 ppm.
368.2	49.5						4 1/4" HSA	8"/CCH	
366.7	51	SS 10	12 11 11	2	18	18			Medium brown, medium dense, gravelly SAND. Sand as above. 20% rounded gravel to 3/4". No staining or odor. 0 ppm.
363.2	54.5						4 1/4" HSA	8"/CCH	
361.7	56	SS 11	12 17 11	2	18	18			Medium gray, medium dense, SAND and GRAVEL. Black sand bottom 2". No staining or odor. 0 ppm.
357.7	60						3" CSG		Casing blows: 30 - 36 - 29 - 62 - 59 Lost circulation at bottom. Drove casing ahead.
352.7	65						3" CSG		Casing blows: 30 - 42 - 46 - 37 - 57
351.2	66.5	SS 12	22 21 25	2	12	18			Medium gray brown, dense, silty SAND. Very fine - fine grained sand. 30%± non plastic fines. No staining or odor. 0 ppm.
347.7	70						3" CSG		Casing blows: 19 - 43 - 68 - 86 - 157 Lost 2 - 3 gallons of wash water at bottom.
345.7	72	SS 13	13 45 58 32	2	13	24			70' - 70'6" Brown silty SAND as above. 70'6" - 72' Medium - dark gray, dense - very dense, gravelly SAND. Fine - coarse grained sand. 10%+ non plastic fines. 30%± fine rounded gravel to 1/2". Dryer than above. No staining or odor. 0 ppm.
342.7	75						7/11/90 3" CSG		Casing blows: 61 - 95 - 103 - 92 - 85 Lost 2 - 3 gallons of wash water at bottom.
340.7	77	SS 14	19 24 24 28	2	3	24			Medium brown, dense, silty SAND. Very fine - medium grained sand. 10%+ non plastic fines. Trace mica. Saturated. No staining or odor. 0 ppm.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

HSA = Hollow Stem Auger
CCH = Conical Cutter Head
CSG = Casing
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/12/90 PROJECT: 160005

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - N3 INCLINATION V BEARING DATE START/FINISH 7/9/90 / 7/12/90

CASING ID 3" CORE SIZE TOTAL DEPTH 102 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 417.7 DEPTH TO WATER/DATE 37.87 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL	SAMPLE			SAMP OD	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
	DEPTH	TYPE AND NO.	B		REC	PENETRATION			
FT	FT			IN	IN	IN			
337.7	80						3" CSG		Casing blows: 71 - 92 - 119 - 134 - 113 Lost 5+ gallons of wash water at bottom.
335.7	82	SS 15	22 20 20 15	2	12	24			Medium brown and gray, dense, SAND and GRAVEL. No staining, slight unidentified odor. 7 ppm.
332.7	85						3" CSG		Casing blows: 52 - 64 - 74 - 86 - 84 No observable loss of wash water.
330.7	87	SS 16	8 10 12 15	2	9	24			Medium gray brown, medium dense, SAND. Fine - coarse grained sand. 10%± non plastic fines. 10%± fine gravel to 1/4". No staining or odor. 0 ppm.
327.7	90						3" CSG		Casing blows: 57 - 59 - 94 - 134 - 168 No observable loss of wash water.
325.7	92	SS 17	29 18 19 28	2	5	24			Medium brown gray, dense, SAND similar to above. 10% - 20% non plastic fines. 10% - 20% fine gravel to 1/4". No staining or odor. 0 ppm.
322.7	95						3" CSG		Casing blows: 124 - 105 - 102 - 111 - 115 No observable loss of wash water.
320.7	97	SS 18	23 20 22 22	2	4	24			Medium gray, dense, gravelly SAND. Fine - coarse grained sand. 10%+ non plastic fines. 30%± fine gravel. No staining or odor. 0 ppm.
317.7	100						3" CSG		Casing blows: 130 - 94 - 98 - 100 - 94 Lost 2 - 3 gallons of wash water at bottom.
315.7	102	SS 19	40 28 47 42	2	5	24			Medium brown and gray SAND and GRAVEL similar to above. No staining or odor. Moderately dry. 0 ppm.
							7/12/90		No refusal to depth. Set 70' of 2", .010" slot, threaded, flush joint, SCHD 40 PVC pipe at 100'. Sand backfill to 25'. Bentonite seals at 25' and 3'. Grouted in flush Buffalo 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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/12/90 PROJECT: 160005

PAGE 3 OF 3 LOG OF BORING: N3

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - SW1 INCLINATION V BEARING DATE START/FINISH 7/25/90 / 7/26/90

CASING ID 3" CORE SIZE TOTAL DEPTH 97 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 418.6 DEPTH TO WATER/DATE 40.48 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
414.6	4						4" SSA		0' - 4"± Medium - dark brown organic soil. 4" - 4' Tan silty SAND.
412.6	6	SS 1	3 3 6 6	2	24	24			Tan - medium brown, loose - medium dense, silty SAND. Very fine - fine grained sand. 40%± non plastic fines. Occasional thin (to 1/4") medium gray silty layers. Abundant very thin (1/32") medium orange mottles. Dry. No staining or odor. 0 ppm.
408.6	10						4 1/4" HSA	8"/CCH	Gravelly at 6.5'±.
406.6	12	SS 2	10 9 10 10	2	11	24			Medium brown (occasionally orange brown) gravelly SAND. Fine - coarse (predominately medium - coarse) grained sand. 10%± non plastic fines. 20% - 30% rounded gravel to 3/4". 2" damp - wet layer from somewhere above. No staining or odor. 0 ppm.
403.6	15						4 1/4" HSA	8"/CCH	
401.6	17	SS 3	6 8 11 15	2	16	24			Medium - dark brown (occasionally orange), medium dense, gravelly SAND similar to above. Sand and gravel fractions slightly coarser. Dry. No staining or odor. 0 ppm.
398.6	20						4 1/4" HSA	8"/CCH	
396.6	22	SS 4	9 9 9 9	2	13	24			Medium - dark brown, medium dense, gravelly SAND as above. Thin (to 1/4") faint orange mottles. Slightly moist. No staining or odor. 0 ppm.
393.6	25						4 1/4" HSA	8"/CCH	
391.6	27	SS 5	10 12 11 11	2	16	24			Medium orange brown, medium dense, SAND. Predominately fine - medium grained sand. 10% - 20% non plastic fines. 10%± fine gravel to 1/4". Dry - slightly moist. No staining or odor. 0 ppm.
388.6	30						4 1/4" HSA	8"/CCH	
386.6	32	SS 6	12 16 12 11	2	11	24			Dark orange brown, medium dense, gravelly SAND similar to above. More gravel (40% - 50%) to 1" bottom 1'±. Dry. No staining or odor. 0 ppm.
383.6	35						4 1/4" HSA	8"/CCH	
		SS 7	12 25 26	2	15	24			35' - 36'± Dark orange brown gravelly SAND as above. Dry. 0 ppm. 36' - 37' Light - medium gray and brown, dense, SAND and GRAVEL. Predominately fine - coarse grained sand. 10% - 20% non plastic fines.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

SSA = Solid Stem Auger
HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm: Refers to HNU reading (10.2 eV probe).

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/26/90 PROJECT: 160005

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - SW1 INCLINATION V BEARING DATE START/FINISH 7/25/90 / 7/26/90

CASING ID 3" CORE SIZE TOTAL DEPTH 97 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 418.6 DEPTH TO WATER/DATE 40.48 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
381.6	37		21						50%± gravel 1/8" - 1"+. Dry. No staining or odor. 0 ppm.
378.6	40						4 1/4" HSA	8"/CCH	
376.6	42	SS 8	15 22 24 25	2	8	24			Medium - dark brown and orange brown SAND and GRAVEL similar to above. Bottom browner and more orange. Wet at bottom. No staining or odor. 0 ppm.
373.6	45						4 1/4" HSA	8"/CCH	
371.6	47	SS 9	10 17 19 21	2	11	24			Medium - dark brown, dense, gravelly SAND. Predominately medium - very coarse grained sand. 10%± non plastic fines. 20%+ fine gravel 1/8" - 1" (rare). Saturated. No staining or odor. 0 ppm.
368.6	50						3" CSG		Casing blows: 94 - 45 - 55 - 44 - 47 Lost 2 - 3 gallons of wash water at bottom.
366.6	52	SS 10	17 20 21 21	2	6	24			Medium - dark gray brown, dense, SAND. Predominately fine - medium grained sand. 10% - 20% non plastic fines. 10%± fine gravel to 1/4" (mostly at bottom). No staining or odor. 0 ppm.
363.6	55						3" CSG		Casing blows: 19 - 24 - 33 - 51 - 60 Lost approx 3 gallons of wash water at bottom.
361.6	57	SS 11	18 21 20 21	2	6	24			Medium - dark gray brown, dense, SAND similar to above. Sand finer (very fine - medium grained). 20%± non plastic fines. No staining or odor. 0 ppm.
358.6	60						3" CSG		Casing blows: 28 - 35 - 48 - 68 - 89 Lost approx 2 gallons of wash water at bottom.
356.6	62	SS 12	17 20 42 61	2	12	24			Medium gray brown, dense - very dense, gravelly SAND. Predominately medium - coarse grained sand. 10% - 20% non plastic fines. 20% - 30% fine gravel to 3/4". No staining or odor. 0 ppm.
353.6	65						3" CSG		Casing blows: 31 - 49 - 74 - 80 - 104 Lost 3 - 4 gallons of wash water at bottom.
352.1	66.5	SS 13	34 45 70	2	3	18			Medium gray, very dense, SAND and GRAVEL. No staining or odor. 0 ppm.
348.6	70						3" CSG		Casing blows: 43 - 54 - 62 - 56 - 64 Lost 2 - 3 gallons of wash water at bottom.
			25 26				7/26/90		Medium - dark slightly reddish brown, very dense, SAND. Predominately medium - coarse grained sand.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/26/90 PROJECT: 160005

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - SW1 INCLINATION V BEARING DATE START/FINISH 7/25/90 / 7/26/90

CASING ID 3" CORE SIZE TOTAL DEPTH 97 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 418.6 DEPTH TO WATER/DATE 40.48 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
346.6	72	SS 14	30 28	2	8	24			10%± non plastic fines. 10%± fine gravel to 1/8". No staining or odor. 0 ppm.
343.6	75						3" CSG		Casing blows: 33 - 54 - 58 - 59 - 77 Lost approx 2 gallons of wash water at bottom.
341.6	77	SS 15	16 28 32 40	2	9	24			75' - 76' Medium brown, dense, fine - medium grained SAND. 10% - 20% non plastic fines. 0 ppm 76' - 77' Medium brown, dense - very dense, silty SAND. Very fine - occasionally medium grained sand. 20% - 30% non plastic fines. At interface is a 1/2" layer of dark red brown fine - medium grained sand. No staining or odor. 0 ppm.
338.6	80						3" CSG		Casing blows: 33 - 48 - 87 - 86 - 173 Lost approx 3 gallons of wash water at bottom.
336.6	82	SS 16	28 36 52 42	2	10	24			Medium brown gray, cobbley GRAVEL and SAND. Medium - coarse grained sand. 10%+ non plastic fines. Occasional silty lenses. No staining or odor. 0 ppm.
333.6	85						3" CSG		Casing blows: 23 - 71 - 95 - 96 - 132 Lost 15+ gallons of wash water at bottom.
331.6	87	SS 17	34 45 55 65	2	11	24			Medium brown and gray, very dense, sandy GRAVEL. Cobbley. Occasional weathered rock. Dryer than above. No staining or odor. 0 ppm.
328.6	90						3" CSG		Casing blows: 56 - 78 - 171 - 129 - 105 Lost approx 2 gallons of wash water at bottom.
326.7	91.92	SS 18	37 57 45 100*	2	11	23	* 100/5"		Medium brown and orange brown, very dense, gravelly SAND. Cobbley. No staining or odor. 0 ppm.
323.6	95						3" CSG		Casing blows: 49 - 93 - 135 - 119 - 185 No observable loss of wash water.
321.6	97	SS 19	63 72 61 57	2	13	24			Medium brown gray, very dense, SAND and GRAVEL. Very fine - very coarse grained sand. 10%± non plastic fines. 50%+ gravel. No staining or odor. 0 ppm.
									No refusal to depth. Set 70' of 2", .010" slot, threaded, flush joint SCHD 40 PVC pipe at 95'. Sand backfill to 19'. Bentonite seals at 19' and 2.5'. Grouted in flush Buffalo 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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/26/90 PROJECT: 160005

PAGE 3 OF 3 LOG OF BORING: SW1

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - W1 INCLINATION V BEARING DATE START/FINISH 7/20/90 / 7/24/90

CASING ID 3" CORE SIZE TOTAL DEPTH 111.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 409.7 DEPTH TO WATER/DATE 39.06 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL	SAMPLE			SAMP OD	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
	DEPTH	TYPE AND NO.	B		REC	PENETRATION			
FT	FT			IN	IN	IN			
404.7	5						4" SSA		0" - 3"± Medium brown organic soil. 3" - 5' Light - medium brown silty SAND.
403.2	6.5	SS 1	7 20 23	2	18	18			Light - medium brown, medium dense, silty SAND. Very fine - fine grained sand. 20% - 30% non plastic fines. Gravelly at bottom. Dry. No staining or odor. 2 ppm.
399.7	10						4 1/4" HSA	8"/CCH	Gravelly to 7', then sandy.
397.7	12	SS 2	6 12 5 6	2	13	24			10' - 11' Medium brown, medium dense, gravelly fine - medium grained SAND. 10% - 20% non plastic fines. 20% fine gravel to 3/4". 0 ppm. 11' - 12' Light gray and medium brown SAND. Very fine - fine grained sand. 20%± non plastic fines. Occasional thin poorly defined faint orange layers. Occasional medium - dark brown thin (1/8"±) silty layers. Dry. No staining or odor. 0 ppm.
394.7	15						4 1/4" HSA	8"/CCH	
392.7	17	SS 3	4 18 15 14	2	11	24			Medium brown - medium gray brown, medium dense, gravelly SAND. Very fine - occasionally medium grained sand. 10% - 20% non plastic fines. 30% fine gravel to 1". Dry. No staining or odor. 0 ppm.
389.7	20						4 1/4" HSA	8"/CCH	
387.7	22	SS 4	7 9 8 9	2	17	24			Medium - dark brown and orange brown, loose - medium dense, gravelly SAND. Predominately medium - coarse grained sand. 10%± non plastic fines. 10% - 20% fine gravel to 1/4". Gravel often tabular gray schist. Dry. No staining or odor. 0 ppm.
384.7	25						4 1/4" HSA	8"/CCH	
382.7	27	SS 5	8 10 10 8	2	17	24			Medium gray brown, medium dense, gravelly SAND similar to above but slightly finer. Dry. No staining or odor. 0 ppm.
379.7	30						4 1/4" HSA	8"/CCH	
377.7	32	SS 6	8 10 12 12	2	19	24			30' - 30'6" Medium gray fine - medium grained SAND with 10% non plastic fines. 30'6" - 31' Dark orange brown predominately fine grained SAND with 20%± non plastic fines. 31' - 32' Medium gray brown very fine - fine grained SAND with 20% - 30% non plastic fines. Saturated. No staining or odor. 2 ppm.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

SSA = Solid Stem Auger
HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm: Refers to HNU reading (10.2 eV probe).

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/24/90 PROJECT: 160005

BORING LOCATION MW - W1 INCLINATION V BEARING DATE START/FINISH 7/20/90 / 7/24/90

CASING ID 3" CORE SIZE TOTAL DEPTH 111.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 409.7 DEPTH TO WATER/DATE 39.06 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
374.7	35						4 1/4" HSA	8"/CCH	
373.2	36.5	SS 7	11 14 19	2	18	18			Medium brown gray, medium dense, silty SAND similar to above. Grayer and finer grained. 30%± non plastic fines. No staining or odor. 0 ppm.
369.7	40						4 1/4" HSA	8"/CCH	
367.7	42	SS 8	9 14 14 18	2	16	24			Medium gray, medium dense - dense SAND. Predominately medium - coarse grained sand. 10%+ non plastic fines. 10% - 20% fine gravel to 1/8". No staining or odor. 0 ppm.
364.7	45						3" CSG		Casing blows: 12 - 16 - 35 - 55 - 73 Lost 1 - 2 gallons of wash water at bottom.
362.7	47	SS 9	24 24 21 21	2	12	24			Medium - dark brown gray gravelly SAND. Predominately medium - very coarse grained sand. 10% - 20% non plastic fines. 20% - 30% fine rounded gravel to 3/4". No staining or odor. 1 ppm.
359.7	50						3" CSG		Casing blows: 36 - 60 - 72 - 67 - 110 Lost approx 15 gallons of wash water roller bitting through cobble.
357.7	52	SS 10	28 23 21 19	2	7	24			Medium gray brown SAND and GRAVEL. Fine - coarse grained sand. 10%+ non plastic fines. 40%± fine gravel to 3/4". No staining or odor. 0 ppm.
354.7	55						3" CSG		Casing blows: 38 - 46 - 37 - 41 - 44 Lost 5+ gallons of wash water at bottom.
352.7	57	SS 11	9 15 16 15	2	3	24			Medium brown, medium dense SAND. Very fine - occasionally very coarse grained sand. 10% - 20% non plastic fines. 20%± fine tabular gravel to 1/4". No staining or odor. 0 ppm.
349.7	60						7/23/90 3" CSG		Casing blows: 27 - 38 - 62 - 81 - 92 Lost approx 1 - 2 gallons of wash water at bottom.
347.7	62	SS 12	16 19 20 22	2	13	24			60' - 61' Medium gray, dense SAND. Medium - coarse grained sand. 10%± non plastic fines. 1 - 2 ppm. 61' - 62' Medium gray, dense SAND. Very fine - occasionally medium grained (finer with depth) sand. 20% - 30% non plastic fines. 1 - 2 ppm.
344.7	65						3" CSG		Casing blows: 33 - 53 - 66 - 82 - 103 Lost 1 - 2 gallons of wash water at bottom.
		SS 13	20 32 20	2	12	24			Medium gray, dense, gravelly SAND. Predominately medium - coarse grained sand. 10%± non plastic fines. 40%± fine gravel to 1/2". No staining or

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

HSA = Hollow Stem Auger
CSG = Casing
CCH = Conical Cutter Head
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/24/90 PROJECT: 160005

BORING LOCATION MW - W1 INCLINATION V BEARING DATE START/FINISH 7/20/90 / 7/24/90

CASING ID 3" CORE SIZE TOTAL DEPTH 111.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 409.7 DEPTH TO WATER/DATE 39.06 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
342.7	67		11						odor. Tr ppm.
339.7	70						3" CSG		Casing blows: 61 - 86 - 85 - 86 - 70 Lost approx 2 gallons of wash water at bottom.
338.2	71.5	SS 14	21 25 23	2	4	18			Medium - dark gray, dense, SAND and GRAVEL. Fine-very coarse grained sand. 10%± non plastic fines. 30%± gravel to 1/2". No staining or odor. Tr ppm
334.7	75						3" CSG		Casing blows: 66 - 87 - 103 - 84 - 93 Lost 2 - 3 gallons of wash water at bottom.
333.2	76.5	SS 15	18 28 36	2	5	18			Medium brown, dense - very dense, SAND. Predominately fine - medium grained sand. 10% - 20% non plastic fines. 10%+ fine gravel to 1/4". No staining or odor. Tr ppm.
329.7	80						3" CSG		Casing blows: 68 - 84 - 115 - 113 - 125 Lost approx 2 gallons of wash water at bottom.
327.7	82	SS 16	23 30 30 23	2	11	24			Medium - dark brown, dense - very dense, sandy SILT. Very fine - fine grained sand. 50%+ non plastic fines. Occasional very thin medium gray silty layers. No staining or odor. 0 ppm.
324.7	85						3" CSG		Casing blows: 108 - 93 - 112 - 118 - 146 Lost approx 1 - 2 gallons of wash water at bottom.
322.7	87	SS 17	18 24 29 28	2	11	24			Medium brown and gray, dense - very dense, gravelly SAND. Fine - occasionally coarse grained sand. 10%+ non plastic fines. 30%± fine gravel to 1/4". No staining or odor. 0 ppm.
319.7	90						3" CSG		Casing blows: 93 - 86 - 90 - 117 - 120 Lost approx 2 gallons of wash water at bottom.
317.7	92	SS 18	30 29 32 37	2	10	24			Medium gray brown, dense - very dense, gravelly SAND similar to above. 30% - 40% gravel to 1/4". No staining or odor. 0 ppm.
314.7	95						3" CSG		Casing blows: 94 - 118 - 159 - 160 - 220 No observable loss of wash water.
313.7	96.5	SS 19	63 54 51	2	2	18	7/24/90		Brown and gray SAND and GRAVEL. No staining or odor. 0 ppm.
309.7	100						3" CSG		Casing blows: 105 - 108 - 154 - 162 - 193 No observable loss of wash water.
			25 34						100' - 101'± Medium - dark brown, very dense, SAND. Fine - medium grained sand. 10%± non plastic fines. No staining or odor. 0ppm.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/24/90 PROJECT: 160005

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - W1 INCLINATION V BEARING DATE START/FINISH 7/20/90 / 7/24/90

CASING ID 3" CORE SIZE TOTAL DEPTH 111.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 409.7 DEPTH TO WATER/DATE 39.06 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
307.7	102	SS 20	47 51	2	8	24			101'± - 102' Medium - dark brown, very dense, SAND similar to above but with very fine - fine grained sand and 20% non plastic fines. No staining or odor. 0 ppm.
304.7	105						3" CSG		Casing blows: 113 - 108 - 152 - 206 - 241 No observable loss of wash water.
302.7	107	SS 21	28 31 36 41	2	11	24			Medium brown, very dense, silty SAND. Very fine - medium grained sand. 10% - 20% non plastic fines. No staining or odor. 0 ppm.
299.7	110						3" CSG		Casing blows: 146 - 139 - 142 - 170 - 213 Lost 1 - 2 gallons of wash water at bottom.
298.2	111.5	SS 22	31 70 81	2	11	18			110' - 110'6" Medium brown SAND. Fine - predominately medium grained sand. 10% - 20% non plastic fines. 0 ppm. 110'6" - 111'6" Medium - dark orange brown and medium gray SAND and GRAVEL. Very fine - coarse grained sand. 50%± gravel. Slight till-like appearance. No staining or odor. 0 ppm.
									No refusal to depth. Set 90' of 2", .010" slot, threaded, flush joint, SCHD 40 PVC pipe at 108'. Sand backfill to 12.5'. Bentonite seals at 12.5' and 2.5'. Grouted in flush Buffalo 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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/24/90 PROJECT: 160005

PAGE 4 OF 4 LOG OF BORING: W1

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - W2 INCLINATION V BEARING DATE START/FINISH 7/18/90 / 7/20/90

CASING ID 3" CORE SIZE TOTAL DEPTH 101.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 419.1 DEPTH TO WATER/DATE 40.20 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
415.1	4						4" SSA		0" - 4"± Medium - dark brown organic soil. 4" - 4' Light - medium brown silty SAND.
413.1	6	SS 1	6 26 30 22	2	9	24			4' - 5' Tan - medium brown, dense, silty SAND. Very fine - fine grained sand. 40%± non plastic fines. 0 ppm. 5' - 6' Silty SAND as above but with 20% fine rounded gravel. Dry. No staining or odor. 0 ppm.
409.1	10						4 1/4" HSA	8"/CCH	Gravelly.
407.1	12	SS 2	7 8 7 7	2	13	24			Medium brown, medium dense, gravelly SAND. Very fine - coarse (predominately medium - coarse) grained sand. 20%± non plastic fines. 20%± fine gravel. Dry. No staining or odor. 2 ppm.
404.1	15						4 1/4" HSA	8"/CCH	
402.1	17	SS 3	17 12 8 6	2	14	24			15' - 16' Gravelly SAND as above. 16' - 17' Medium brown, medium orange, and medium gray, medium dense, silty SAND. Predominately very fine - fine grained sand. 20%± non plastic fines. Occasional thin (1/4") layers and lenses of medium gray clayey silt. Dry. No staining or odor. Tr ppm.
399.1	20						4 1/4" HSA	8"/CCH	
397.1	22	SS 4	6 8 10 10	2	19	24			20' - 20'6" Silty SAND as above with abundant thin medium orange mottles. 1 ppm. 20'6" - 22' Medium white gray, medium dense SAND. Predominately fine - medium grained sand of quartz and gray schist fragments. 10% - 20% non plastic fines. 10%± fine gravel to 1/8". Dry. No staining or odor. 1 ppm.
394.1	25						4 1/4" HSA	8"/CCH	
392.1	27	SS 5	13 24 23 24	2	13	24			Medium gray, dense, gravelly SAND. Predominately medium - very coarse grained sand. 10%± non plastic fines. 20% - 30% gravel to 3/4". Dry. No staining or odor. 1 ppm.
389.1	30						4 1/4" HSA	8"/CCH	
387.6	31.5	SS 6	29 39 31	2	13	18			Medium gray gravelly SAND as above. Dry. No staining or odor. Tr ppm.
384.1	35						4 1/4" HSA	8" CCH	Cobbley gravel.
382.6	36.5	SS 7	38 31 28	2	11	18			Medium gray - medium brown gray SAND and GRAVEL as above. 10% - 20% non plastic fines. 30% gravel. Dry. No staining or odor. Tr ppm.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

SSA = Solid Stem Auger
HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm: Refers to HNU reading (10.2 eV probe).

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/20/90 PROJECT: 160005

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - W2 INCLINATION V BEARING DATE START/FINISH 7/18/90 / 7/20/90

CASING ID 3" CORE SIZE TOTAL DEPTH 101.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 419.1 DEPTH TO WATER/DATE 40.20 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
379.1	40						4 1/4" HSA	8"/CCH	
377.1	42	SS 8	13 13 18 19	2	16	24			Medium - dark brown, medium dense - dense SAND. Predominately medium - coarse grained sand. 10%± non plastic fines. Trace fine gravel. Saturated below 41'±. No staining or odor. 5 ppm.
374.1	45						4 1/4" HSA	8"/CCH	
372.1	47	SS 9	10 16 23 25	2	24	24			Medium - dark brown, dense SAND as above. Bottom 6" slightly finer and grayer. Saturated. No staining or odor. 0 ppm.
369.1	50						3" CSG		Casing blows: 10 - 9 - 20 - 33 - 71 Lost approx 5 gallons of wash water at bottom.
367.1	52	SS 10	17 22 41 67	2	12	24			Medium gray and brown, dense - very dense, SAND and GRAVEL. Very fine - very coarse grained sand. Rounded gravel to 1". No staining or odor. 3 ppm
364.1	55						3" CSG		Casing blows: 22 - 44 - 70 - 65 - 49 No observable loss of wash water.
362.1	57	SS 11	19 15 16 41	2	13	24			Medium brown and gray, silty, gravelly SAND similar to above. No staining or odor. 2 - 3 ppm.
359.1	60						3" CSG		Casing blows: 16 - 24 - 69 - 63 - 56 Lost approx 2 gallons of wash water at bottom.
357.5	61.5	SS 12	27 34 29	2	11	18	7/19/90		Medium - dark brown gray, dense, SAND and GRAVEL similar to above. Fine - coarse grained sand. 10%± non plastic fines. 40%± rounded gravel to 1/2". No staining or odor. 0 ppm.
354.1	65						3" CSG		Casing blows: 26 - 47 - 54 - 52 - 66 Lost 2 - 3 gallons of wash water at bottom.
352.1	67	SS 13	23 22 28 24	2	10	24			Medium - dark brown, dense SAND. Predominately medium - coarse grained sand. 10%± non plastic fines. 10%± fine gravel to 3/8". No staining or odor. 0 ppm.
349.1	70						3" CSG		Casing blows: 28 - 36 - 43 - 56 - 89 Lost 2 - 3 gallons of wash water at bottom.
347.1	72	SS 14	17 24 24 27	2	12	24			Medium - dark gray brown, dense SAND as above. Decreased gravel content. No staining or odor. 0 ppm.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

HSA = Hollow Stem Auger
CSG = Casing
CCH = Conical Cutter Head
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/20/90 PROJECT: 160005

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - W2 INCLINATION V BEARING DATE START/FINISH 7/18/90 / 7/20/90

CASING ID 3" CORE SIZE TOTAL DEPTH 101.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 419.1 DEPTH TO WATER/DATE 40.20 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
344.1	75						3" CSG		Casing blows: 30 - 55 - 71 - 93 - 101 Lost approx 2 gallons of wash water at bottom.
342.1	77	SS 15	10 19 20 32	2	13	24			Medium brown and gray brown, medium dense SAND. Fine - medium grained sand top foot with 10%± non plastic fines. Slightly browner and finer bottom foot with 20%± non plastic fines. No staining or odor. 0 ppm.
339.1	80						3" CSG		Casing blows: 67 - 50 - 91 - 117 - 116 Lost approx 2 gallons of wash water at bottom.
337.1	82	SS 16	21 27 30 43	2	10	24			Medium gray brown, dense - very dense, gravelly SAND. Fine - coarse grained sand. 10% - 20% non plastic fines. 20% - 30% fine gravel. No staining or odor. 0 ppm.
334.1	85						3" CSG		Casing blows: 81 - 71 - 97 - 132 - 149 Lost approx 2 gallons of wash water at bottom.
332.1	87	SS 17	35 35 37 36	2	10	24			Medium brown and medium gray brown SAND and GRAVEL Predominately medium - coarse grained sand. 10%± non plastic fines. 40%± subangular - subrounded gravel to 1". No staining or odor. 0 ppm.
329.1	90						3" CSG		Casing blows: 120 - 101 - 109 - 116 - 112 Lost approx 1 gallon of wash water at bottom.
327.1	92	SS 18	27 46 55 59	2	11	24			Medium gray brown, very dense, silty SAND. Very fine - fine grained sand. 20% - 30% non plastic fines. Top 6"± medium - dark orange brown medium-coarse grained sand. No staining or odor. 1 ppm.
324.1	95						3" CSG		Casing blows: 78 - 72 - 107 - 143 - 195 Lost approx 2 gallons of wash water at bottom.
322.1	97	SS 19	29 32 48 51	2	10	24			Medium gray brown, very dense, silty SAND as above 20%± non plastic fines. No staining or odor. 1 ppm.
319.1	100						3" CSG		Casing blows: 175 - 91 - 116 - 153 - 159 Lost 2 - 3 gallons of wash water at bottom.
317.6	101.5	SS 20	36 35 34	2	4	18			Sandy GRAVEL. No staining or odor. 1 ppm.
							7/20/90		No refusal to depth. Set 70' of 2", .010" slot, threaded, flush joint, SCHD 40 PVC pipe at 100'. Sand backfill to 23'. Bentonite seals at 23' and 3'. Grouted in flush Buffalo 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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/20/90 PROJECT: 160005

PAGE 3 OF 3 LOG OF BORING: W2

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - W3 INCLINATION V BEARING DATE START/FINISH 7/16/90 / 7/17/90

CASING ID 3" CORE SIZE TOTAL DEPTH 100.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 419.5 DEPTH TO WATER/DATE 40.91 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
414.5	5						4" SSA		0" - 5"± Medium - dark brown organic soil. 5" - 5' Medium brown silty SAND.
412.5	7	SS 1	4 5 5 10	2	24	24			5' - 6' Medium orange brown silty SAND. Very fine - occasionally fine grained sand. 40%+ non plastic fines. 6' - 7' Medium brown SAND and GRAVEL. Dry. No staining or odor. 4 ppm.
409.5	10						4 1/4" HSA	8"/CCH	
407.5	12	SS 2	8 23 14 12	2	24	24			10' - 10.5' Medium orange brown silty SAND as above. Dry. 10.5' - 12' Medium brown, medium dense, sandy GRAVEL. Very fine - medium grained sand. 10%+ non plastic fines. 50%+ gravel to 1/2". Dry. No staining or odor. 2 ppm.
404.5	15						4 1/4" HSA	8"/CCH	
403.0	16.5		6 21 30	2	0	18			No sample recovery.
401.0	18.5	SS 3							Medium gray brown (occasionally orange) gravelly SAND. Medium - occasionally very coarse grained sand. 10%+ non plastic fines. 20%± fine gravel to 1/4". Dry. No staining or odor. 0 ppm.
399.5	20						4 1/4" HSA	8"/CCH	
398.0	21.5	SS 4	13 12 13	2	13	18			Medium gray brown, medium dense, gravelly SAND as above. Slight increase in gravel size and quantity. No staining or odor. Dry. Tr ppm.
394.5	25						4 1/4" HSA	8"/CCH	
392.5	27	SS 5	9 10 8 9	2	18	24			25' - 26'2" Gravelly SAND as above. 26'2" - 27' Light - medium brown, loose - medium dense, silty SAND. Very fine - predominately medium grained sand. 10% - 20% non plastic fines. Trace of fine tabular schist fragments. Dry. No staining or odor. 0 ppm.
389.5	30						4 1/4" HSA	8"/CCH	
387.5	32	SS 6	8 8 8 9	2	20	24			30' - 30'2" Dark brown sandy SILT. 30'2" - 31'9" Light - medium brown, loose - medium dense, silty SAND. Very fine - fine grained sand (predominately quartz). 20% - 30% non plastic fines. Abundant very thin (1/32"±) orange sand layers, possibly cross bedded. 0 ppm. 31'9" - 32' Light gray brown silty fine - medium grained SAND.

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

SSA = Solid Stem Auger
HSA = Hollow Stem Auger
CCH = Conical Cutter Head
ppm: Refers to HNU reading (10.2 eV probe).

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/17/90 PROJECT: 160005

LOG OF BORING: W3

DH DUFRESNE-HENRY, INC.

BORING LOCATION MW - W3 INCLINATION V BEARING DATE START/FINISH 7/16/90 / 7/17/90

CASING ID 3" CORE SIZE TOTAL DEPTH 100.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 419.5 DEPTH TO WATER/DATE 40.91 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
384.5	35						4 1/4" HSA	8"/CCH	
382.5	37	SS 7	8 10 15 18	2	17	24			Medium gray white, medium dense, SAND. Fine - predominately medium grained quartz sand. 10% - 20% non plastic fines. 10% - 20% fine gravel to 1/4". Dry. No staining or odor. 0 ppm.
379.5	40						4 1/4" HSA	8"/CCH	
377.5	42	SS 8	15 24 18 15	2	18	24			Medium gray, medium dense, gravelly SAND. Very fine - occasionally coarse grained sand. Bottom 3" darker and saturated. No staining or odor. 1 ppm.
374.5	45						4 1/4" HSA	8"/CCH	
372.5	47	SS 9	8 22 22 14	2	24	24			45' - 46'8" Medium brown, medium dense SAND. Medium - predominately coarse grained sand. 10%± non plastic fines. 10%± fine tabular gravel. Saturated. No staining or odor. 0 ppm. 46'8" - 47' 2" dark gray silty very fine grained SAND over gravelly sand.
369.5	50						3" CSG		Casing blows: 77 - 43 - 27 - 33 - 39 Lost approx 2 gallons of wash water at bottom.
367.5	52	SS 10	8 11 17 17	2	15	24			Medium brown, medium dense - dense, silty SAND. Very fine - fine grained sand. 30%± non plastic fines. Occasional 1"± layers of fine - medium grained sand. Saturated. No staining or odor. 2 - 4 ppm.
364.5	55						3" CSG		Casing blows: 11 - 29 - 35 - 39 - 45 Lost approx 2 gallons of wash water at bottom.
362.6	56.92	SS 11	8 13 33 37*	2	15	23	* 37/5"		Medium gray brown, dense, silty SAND. Very fine - predominately medium grained sand. 20%± non plastic fines. Trace fine gravel to 1/8" Gravel with cobbles bottom 5". No staining or odor. 1 ppm.
359.5	60						3" CSG		Casing blows: 20 - 40 - 85 - 127 - 103 Lost approx 2 gallons of wash water.
357.5	62	SS 12	14 16 18 16	2	16	24			Medium - dark brown, medium dense - dense, gravelly SAND. Fine - very coarse (predominately medium - coarse) grained sand. 10%+ non plastic fines. 20% - 30% gravel to 1/4" with occasional cobbles. Saturated. No staining or odor. 1 - 2 ppm.
354.5	65						3"CSG		Casing blows: 34 - 51 - 39 - 28 - 34 Lost 15 - 20 gallons of wash water at bottom.
			14 42						Medium gray brown, dense, gravelly SAND similar to above. Occasional medium orange oxidation. No

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing
ppm: Refers to HNU reading (10.2 eV probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/17/90 PROJECT: 160005

BORING LOCATION MW - W3 INCLINATION V BEARING DATE START/FINISH 7/16/90 / 7/17/90

CASING ID 3" CORE SIZE TOTAL DEPTH 100.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 419.5 DEPTH TO WATER/DATE 40.91 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
352.5	67	SS 13	37 24	2	14	24			staining or odor. 1 - 2 ppm.
349.5	70						3" CSG		Casing blows: 39 - 77 - 61 - 68 - 87 Lost 2 - 3 gallons of wash water at bottom.
347.5	72	SS 14	25 45 54 29	2	14	24	7/17/90		Medium brown, dense - very dense, gravelly SAND similar to above. Gravel slightly coarser, to 1". No staining or odor. 0 ppm.
344.5	75						3" CSG		Casing blows: 22 - 55 - 79 - 97 - 57 Lost approx 2 gallons of wash water at bottom.
342.5	77	SS 15	29 38 31 29	2	12	24			Medium brown, dense - very dense, gravelly SAND as above. Occasionally silty. Occasional weathered schist. No staining or odor. Tr ppm.
339.5	80						3" CSG		Casing blows: 34 - 78 - 91 - 139 - 149 Lost 2 - 3 gallons of wash water at bottom.
337.5	82	SS 16	31 89 28 24	2	11	24			80' - 81' Medium gray gravelly SAND. Predominately coarse - very coarse grained sand. 10%± non plastic fines. 20% - 30% gravel 1/4" - 1/2". Tr ppm. 81' - 82' Medium brown silty gravelly SAND as above. Tr ppm.
334.5	85						3" CSG		Casing blows: 52 - 188 - 255 - 242 - 232 Lost approx 40 gallons of wash water roller biting boulder. Almost total loss of returns.
332.5	87	SS 17	34 56 43 54	2	12	24			Medium - dark gray brown gravelly SAND. Predominately medium - very coarse grained sand. 10%+ non plastic fines. 20%± gravel to 3/4". No staining or odor. 0 ppm.
329.5	90						3" CSG		Casing blows: 69 - 59 - 130 - 70 - 82 Lost approx 2 gallons of wash water at bottom.
328.0	91.5	SS 18	15 43 109	2	7	18			Medium brown gray gravelly SAND as above. No staining or odor. Tr ppm.
324.5	95						3" CSG		Casing blows: 72 - 121 - 166 - 121 - 190 Lost approx 15 gallons of wash water at bottom.
322.0	97.5	SS 19	36 100 137 23 21	2	10	30			Medium gray brown, dense - very dense, SAND and GRAVEL. Occasional weathered rock. No staining or odor. Tr ppm

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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing
ppm: Refers to HNU reading (10.2 ev probe).

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/17/90 PROJECT: 160005

BORING LOCATION MW - W3 INCLINATION V BEARING DATE START/FINISH 7/16/90 / 7/17/90

CASING ID 3" CORE SIZE TOTAL DEPTH 100.5 FT DRILLED BY: SOILS ENGINEERING, INC. (M.D.)

GROUND EL (MSL) 419.5 DEPTH TO WATER/DATE 40.91 FT/ 8/1/90 LOGGED BY: B. COX

ELEV MSL FT	SAMPLE DEPTH FT	SAMPLE TYPE AND NO.	SAMPLE B	SAMP OD IN	LENGTH REC IN	LENGTH PENETRATION IN	REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
319.5	100						3" CSG		Casing blows: 73 - 121 - 86 - 203 - 145 Lost approx 5 gallons of wash water at bottom.
319.0	100.5		67	2	0	6			No sample recovery (stone in nose). Probable GRAVEL.
									No refusal to depth. Set 70' of 2", .010" slot, threaded, flush joint, SCHD 40 PVC pipe at 100'. Sand backfill to 22.5. Bentonite seals at 22.5' and 3'. Grouted in flush Buffalo 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 N - Denison
F - Fixed piston P - Pitcher
O - Osterberg
SAMP OD - Outside diameter of sampling spoon

NOTES

CSG = Casing

Wash water was recycled.

Wilder Monitoring Wells

Hartford, Vermont

DATE: 7/17/90 PROJECT: 160005

DH DUFRESNE-HENRY, INC.

APPENDIX C

SAMPLING PROTOCOL

WATER QUALITY SAMPLING TECHNIQUES

INTRODUCTION

Sample collection for groundwater monitoring wells is performed with polyvinyl chloride (PVC) bailers for samples which are analyzed for inorganic parameters and by Teflon bailers for organic parameters. All samples are collected in suitable containers and refrigerated and/or field preserved as appropriate until delivered to a certified laboratory for analysis. Samples are delivered to the laboratory as soon as possible and in all circumstances within the recommended delivery time for specific parameters. A Chain of Custody record is kept for each sample location.

MONITORING WELLS

Static water level measurement are recorded to the nearest 0.02 foot from the top of the protective steel casing or monitoring well casing. The PVC bailers are washed with a non-ionic phosphate free detergent and rinsed with distilled water between sampling locations. The Teflon bailers are washed with detergent, rinsed with distilled water, methanol, and again with distilled water between sampling locations. A Teflon coated wire is used to lower the bailer into the well. This wire is cleansed with distilled water prior to sampling. When not in use, it is coiled and protected from contamination. The static water in the well is flushed by removing three times the volume of water in the well. Temperature, pH and conductivity measurements are taken from the first sample obtained. This sample is discarded.

Samples for volatile organic compounds are obtained immediately after the well has been flushed. Samples are placed in containers provided by the certified laboratory and labeled with an identification number, date and method of preservation.

QUALITY ASSURANCE AND CONTROL

To check the integrity of field sampling and equipment cleaning techniques, the following field quality control procedures are used.

A "field blank" is collected after sampling a well that previously indicated high concentrations of leachate or contaminant. The sampling equipment is cleansed and a sample of the distilled water is obtained using the sampling equipment. The distilled water sample is then used to prepare the field blank.

APPENDIX D

ANALYSIS RESULTS - DNAPL AND GROUNDWATER SAMPLES

OCTOBER AND NOVEMBER 1989

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Dufresne-Henry Engineering
Precision Park
North Springfield, VT 05150

Attn: Lynn Herbert

Date: 11/21/89
Project No: 89000
ETR No: 19055
Sample(s) Received On: 11/10/89

Lab No.	Sample Description
106800	Test Wells 7, 9, 11, 13, 14: 11/08/89 at 1600

Analytical Results

Qualitative Gas Chromatography/Mass Spectrometry (GC/MS) and Infrared Spectroscopic techniques were performed to determine the identity of an unknown black material present in the sample referenced above. The results of analyses indicate that the black material is a mixture of aliphatic hydrocarbons ranging in molecular weight between 250 and 500. The material is asphaltic in nature and shows evidence of oxidation. An infrared analysis suggests the presence of silicate and sulfate along with alkyl oxygen compounds. No prominent component is present but there are traces of phthalate esters in the material. Traces of iron are in the organic insoluble residue.

Submitted by: Joseph Comer

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 12 December 1989
Aquatec Lab No.: 107873
ETR No.: 19270, Project 89000
Sample Received On: 10 November 1989
Sample Identification: Dufresne-Henry Engineering, liquid sample labeled test wells 7, 9, 11, 13 and 14, 11/8/89.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/l
EPA Method 625

acenaphthene	10 U	benzyl butylphthalate	10 U
1,2,4-trichlorobenzene	10 U	di-n-butyl phthalate	10 U
hexachlorobenzene	10 U	di-n-octyl phthalate	10 U
hexachloroethane	10 U	diethyl phthalate	10 U
bis (2-chloroethyl) ether	10 U	dimethyl phthalate	10 U
2-chloronaphthalene	10 U	benzo(a)anthracene	10 U
1,2-dichlorobenzene	10 U	benzo(a)pyrene	10 U
1,3-dichlorobenzene	10 U	benzo(b)fluoranthene	10 U
1,4-dichlorobenzene	10 U	benzo(k)fluoranthene	10 U
3,3'-dichlorobenzidine	20 U	chrysene	10 U
2,4-dinitrotoluene	10 U	acenaphthylene	10 U
2,6-dinitrotoluene	10 U	anthracene	10 U
fluoranthene	10 U	benzo(ghi)perylene	10 U
4-chlorophenyl phenyl ether	10 U	fluorene	10 U
4-bromophenyl phenyl ether	10 U	phenanthrene	10 U
bis (2-chloroisopropyl) ether	10 U	dibenzo(ah)anthracene	10 U
bis (2-chloroethoxy)methane	10 U	indeno(1,2,3-cd)pyrene	10 U
hexachlorobutadiene	10 U	pyrene	10 U
hexachlorocyclopentadiene	10 U	benzyl alcohol	10 U
isophorone	10 U	4-chloroaniline	10 U
naphthalene	10 U	dibenzofuran	10 U
nitrobenzene	10 U	2-methylnaphthalene	10 U
N-nitrosodiphenylamine+	10 U	2-nitroaniline	50 U
N-nitrosodipropylamine	10 U	3-nitroaniline	50 U
bis (2-ethylhexyl) phthalate	10 U	4-nitroaniline	50 U

No other semivolatile organic compounds were found in reportable concentrations.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.

C - The result has been corrected for the presence of the compound in the blank.

+ Cannot be separated from diphenylamine.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 12 December 1989
Aquatec Lab No.: 107873
ETR No.: 19270, Project 89000
Sample Received On: 10 November 1989
Sample Identification: Dufresne-Henry Engineering, liquid sample labeled test wells 7, 9, 11, 13 and 14, 11/8/89.

Acid Extractable Semivolatile Organic Compounds in ug/l
EPA Method 625

2,4,6-trichlorophenol	10 U
p-chloro-m-cresol	10 U
2-chlorophenol	10 U
2,4-dichlorophenol	10 U
2,4-dimethylphenol	10 U
2-nitrophenol	10 U
4-nitrophenol	50 U
2,4-dinitrophenol	50 U
4,6-dinitro-2-methylphenol	50 U
pentachlorophenol	50 U
phenol	10 U
benzoic acid	50 U
2-methylphenol	10 U
4-methylphenol	10 U
U2,4,5-trichlorophenol	50 U

No other semivolatile organic compounds were found in reportable concentrations.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.

C - The result has been corrected for the presence of the compound in the blank.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 12 December 1989
Aquatec Lab No.: 107872
ETR No.: 19270, Project 89000
Sample Received On: 29 November 1989
Sample Identification: Dufresne-Henry Engineering, water sample labeled Hartford, VT well, 11/28/89.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/l
EPA Method 625

acenaphthene	10 U	benzyl butylphthalate	10 U
1,2,4-trichlorobenzene	10 U	di-n-butyl phthalate	10 U
hexachlorobenzene	10 U	di-n-octyl phthalate	10 U
hexachloroethane	10 U	diethyl phthalate	10 U
bis (2-chloroethyl) ether	10 U	dimethyl phthalate	10 U
2-chloronaphthalene	10 U	benzo(a)anthracene	10 U
1,2-dichlorobenzene	10 U	benzo(a)pyrene	10 U
1,3-dichlorobenzene	10 U	benzo(b)fluoranthene	10 U
1,4-dichlorobenzene	10 U	benzo(k)fluoranthene	10 U
3,3'-dichlorobenzidine	20 U	chrysene	10 U
2,4-dinitrotoluene	10 U	acenaphthylene	10 U
2,6-dinitrotoluene	10 U	anthracene	10 U
fluoranthene	10 U	benzo(ghi)perylene	10 U
4-chlorophenyl phenyl ether	10 U	fluorene	10 U
4-bromophenyl phenyl ether	10 U	phenanthrene	10 U
bis (2-chloroisopropyl) ether	10 U	dibenzo(ah)anthracene	10 U
bis (2-chloroethoxy)methane	10 U	indeno(1,2,3-cd)pyrene	10 U
hexachlorobutadiene	10 U	pyrene	10 U
hexachlorocyclopentadiene	10 U	benzyl alcohol	10 U
isophorone	10 U	4-chloroaniline	10 U
naphthalene	10 U	dibenzofuran	10 U
nitrobenzene	10 U	2-methylnaphthalene	10 U
N-nitrosodiphenylamine+	10 U	2-nitroaniline	50 U
N-nitrosodipropylamine	10 U	3-nitroaniline	50 U
bis (2-ethylhexyl) phthalate	10 U	4-nitroaniline	50 U

No other semivolatile organic compounds were found in reportable concentrations.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.

C - The result has been corrected for the presence of the compound in the blank.

+ Cannot be separated from diphenylamine.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

aquatec INC. ENVIRONMENTAL SERVICES

75 GREEN MOUNTAIN DRIVE, SOUTH BURLINGTON, VERMONT 05403, TELEPHONE (802) 658-1074

November 21, 1989

Ms. Lynn Herbert
Dufresne-Henry Engineering
Precision Park
North Springfield, VT 05150

Re: Aquatec Project No. 89000
ETR No. 19055, Lab No. 106800

Dear Ms. Herbert:

The result of analyses performed on the unknown black material received on November 10, 1989 is enclosed.

We suggest analyzing the water portion of the sample containing this material and a sample from the town water supply for semi-volatile organics if you wish to determine what components are leached into water and if any of these components have migrated off site. The cost for this quantitative GC/MS analysis (Method 8270) is $500.00 per sample. Semivolatile peak identification of non-hazardous substance listed compounds can be performed at a rate of $100.00 per hour.

Sincerely,

Joseph Comeau

Joseph K. Comeau, Ph.D.
Vice President
Laboratory Director

JKC/lam

Enclosure

89000B21NOV89

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 12 December 1989
Aquatec Lab No.: 107872
ETR No.: 19270, Project 89000
Sample Received On: 29 November 1989
Sample Identification: Dufresne-Henry Engineering, water sample labeled Hartford, VT well, 11/28/89.

Acid Extractable Semivolatile Organic Compounds in ug/l
EPA Method 625

2,4,6-trichlorophenol	10 U
p-chloro-m-cresol	10 U
2-chlorophenol	10 U
2,4-dichlorophenol	10 U
2,4-dimethylphenol	10 U
2-nitrophenol	10 U
4-nitrophenol	50 U
2,4-dinitrophenol	50 U
4,6-dinitro-2-methylphenol	50 U
pentachlorophenol	50 U
phenol	10 U
benzoic acid	50 U
2-methylphenol	10 U
4-methylphenol	10 U
U2,4,5-trichlorophenol	50 U

No other semivolatile organic compounds were found in reportable concentrations.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.

C - The result has been corrected for the presence of the compound in the blank.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

LABORATORY REPORT

Eastern Analytical, Inc. Designation: 8101* DUF

Client: Dufresne-Henry
Sample Qty/Type: 3 water

Client Designation: Hartford, VT
Date Received: October 31, 1989

Hazardous Substance List (HSL) Volatile Organic Compounds

Sample ID:	Raw Water	Treated Water	Test Well #5
Matrix:	Aqueous	Aqueous	Aqueous
Date of Analysis:	10/31/89	10/31/89	10/31/89
Units:	µg/L	µg/L	µg/L
Analyst:	JC	JC	JC
Method:	EPA 524	EPA 524	EPA 524
Benzene	<0.5	<0.5	<0.5
Bromobenzene	<0.5	<0.5	<0.5
Bromochloromethane	<0.5	<0.5	<0.5
Bromodichloromethane	<0.5	<0.5	<0.5
Bromoform	<0.5	<0.5	<0.5
Bromomethane	<0.5	<0.5	<0.5
n-Butylbenzene	<0.5	<0.5	<0.5
sec-Butylbenzene	<0.5	<0.5	<0.5
tert-Butylbenzene	<0.5	<0.5	<0.5
Carbon tetrachloride	<0.5	<0.5	<0.5
Chlorobenzene	<0.5	<0.5	<0.5
Chloroethane	<0.5	<0.5	<0.5
Chloroform	<0.5	<0.5	<0.5
Chloromethane	<0.5	<0.5	<0.5
2-Chlorotoluene	<0.5	<0.5	<0.5
4-Chlorotoluene	<0.5	<0.5	<0.5
Dibromochloromethane	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane	<0.5	<0.5	<0.5
1,2-Dibromoethane	<0.5	<0.5	<0.5
Dibromomethane	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	<0.5	<0.5	<0.5
Dichlorodifluoromethane	<0.5	<0.5	<0.5
1,1-Dichloroethane	<0.5	<0.5	<0.5
1,2-Dichloroethane	<0.5	<0.5	<0.5
1,1-Dichloroethene	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5
1,2-Dichloropropane	<0.5	<0.5	<0.5
1,3-Dichloropropane	<0.5	<0.5	<0.5
2,2-Dichloropropane	<0.5	<0.5	<0.5
1,1-Dichloropropene	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5
Hexachlorobutadiene	<0.5	<0.5	<0.5

Approved By : Joseph Camanzo

Joseph Camanzo, Organics Supervisor

LABORATORY REPORT

Eastern Analytical, Inc. Designation: 8101* DUF

Client: Dufresne-Henry
Sample Qty/Type: 3 water

Client Designation: Hartford, VT
Date Received: October 31, 1989

Hazardous Substance List (HSL) Volatile Organic Compounds

Sample ID:	Raw Water	Treated Water	Test Well #5
Matrix:	Aqueous	Aqueous	Aqueous
Date of Analysis:	10/31/89	10/31/89	10/31/89
Units:	µg/L	µg/L	µg/L
Analyst:	JC	JC	JC
Method:	EPA 524	EPA 524	EPA 524
Isopropylbenzene	<0.5	<0.5	<0.5
p-Isopropyltoluene	<0.5	<0.5	<0.5
Methylene chloride	<0.5	<0.5	<0.5
Naphthalene	<0.5	<0.5	<0.5
n-Propylbenzene	<0.5	<0.5	<0.5
Styrene	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	<0.5	<0.5	<0.5
Trichloroethene	<0.5	<0.5	<0.5
Trichlorofluoromethane	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	<0.5	<0.5	<0.5
Vinyl chloride	<0.5	<0.5	<0.5
o-Xylene	<0.5	<0.5	<0.5
m-Xylene	<0.5	<0.5	<0.5
p-Xylene	<0.5	<0.5	<0.5

Approved By : _____
Joseph Camanzo, Organics Supervisor

LABORATORY REPORT

Eastern Analytical, Inc. Designation: 7901* DUF

Client: Dufresne-Henry
Sample Qty/Type: 2 water

Client Designation: Hartford, VT
Date Received: September 26, 1989

Hazardous Substance List (HSL) Volatile Organic Compounds

Sample ID:	MW 16	MW 17
Matrix:	Aqueous	Aqueous
Date of Analysis:	10/10/89	10/10/89
Units:	µg/L	µg/L
Analyst:	JC	JC
Method:	EPA 524	EPA 524
Benzene	<0.5	<0.5
Bromobenzene	<0.5	<0.5
Bromochloromethane	<0.5	<0.5
Bromodichloromethane	<0.5	<0.5
Bromoform	<0.5	<0.5
Bromomethane	<0.5	<0.5
n-Butylbenzene	<0.5	<0.5
sec-Butylbenzene	<0.5	<0.5
tert-Butylbenzene	<0.5	<0.5
Carbon tetrachloride	<0.5	<0.5
Chlorobenzene	<0.5	<0.5
Chloroethane	<0.5	<0.5
Chloroform	<0.5	<0.5
Chloromethane	<0.5	<0.5
2-Chlorotoluene	<0.5	<0.5
4-Chlorotoluene	<0.5	<0.5
Dibromochloromethane	<0.5	<0.5
1,2-Dibromo-3-chloropropane	<0.5	<0.5
1,2-Dibromoethane	<0.5	<0.5
Dibromomethane	<0.5	<0.5
1,2-Dichlorobenzene	<0.5	<0.5
1,3-Dichlorobenzene	<0.5	<0.5
1,4-Dichlorobenzene	<0.5	<0.5
Dichlorodifluoromethane	<0.5	<0.5
1,1-Dichloroethane	<0.5	<0.5
1,2-Dichloroethane	<0.5	<0.5
1,1-Dichloroethene	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5
1,2-Dichloropropane	<0.5	<0.5
1,3-Dichloropropane	<0.5	<0.5
2,2-Dichloropropane	<0.5	<0.5
1,1-Dichloropropene	<0.5	<0.5
Ethylbenzene	<0.5	<0.5
Hexachlorobutadiene	<0.5	<0.5

Approved By : Joseph Camanzo

Joseph Camanzo, Organics Supervisor

LABORATORY REPORT

Eastern Analytical, Inc. Designation: 7901* DUF

Client: Dufresne-Henry
Sample Qty/Type: 2 water

Client Designation: Hartford, VT
Date Received: September 26, 1989

Hazardous Substance List (HSL) Volatile Organic Compounds

Sample ID:	MW 16	MW 17
Matrix:	Aqueous	Aqueous
Date of Analysis:	10/10/89	10/10/89
Units:	µg/L	µg/L
Analyst:	JC	JC
Method:	EPA 524	EPA 524
Isopropylbenzene	<0.5	<0.5
p-Isopropyltoluene	<0.5	<0.5
Methylene chloride	<0.5	<0.5
Naphthalene	<0.5	<0.5
n-Propylbenzene	<0.5	<0.5
Styrene	<0.5	<0.5
1,1,1,2-Tetrachloroethane	<0.5	<0.5
1,1,2,2-Tetrachloroethane	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5
Toluene	<0.5	<0.5
1,2,3-Trichlorobenzene	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.5	<0.5
1,1,1-Trichloroethane	<0.5	<0.5
1,1,2-Trichloroethane	<0.5	<0.5
Trichloroethene	<0.5	<0.5
Trichlorofluoromethane	<0.5	<0.5
1,2,3-Trichloropropane	<0.5	<0.5
1,2,4-Trimethylbenzene	<0.5	<0.5
1,3,5-Trimethylbenzene	<0.5	<0.5
Vinyl chloride	<0.5	<0.5
o-Xylene	<0.5	<0.5
m-Xylene	<0.5	<0.5
p-Xylene	<0.5	<0.5

Approved By : Joseph Camanzo, Organics Supervisor

WaterTest
CORPORATION OF AMERICA

33 South Commercial Street
Manchester, NH 03101
603-623-7400

Cat. # H037 : Selenium

CUSTOMER	SOURCE
DUFRESNE & HENRY	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
N SPRINGFIELD VT 05150	HARTFORD VT

PHONE # : 8028862261
Date Sampled : 27-oct-1989
Date Reported : 18-NOV-1989
Sample Number : 109185

ANALYTE	MCL	RESULT
Selenium	0.010	Less than 0.002

DUFRESNE-HENRY, INC.

MCL means Maximum Contaminant Level as set or proposed by the Safe Drinking Water Act (SDWA), the US EPA, or as recommended by WaterTest.
The number following the words "Less than" refers to the lowest reportable measurement for that analyte.

All results in milligram/liter except Radon (pCi/L), pH (pH units) and Total coliform counts (CFU/100 mls, Colony Forming Units/100 milliliters). Analytes greater than MCL are marked with double asterisks on either side of the results.

WaterTest
CORPORATION OF AMERICA
33 South Commercial Street
Manchester, NH 03101
603-623-7400

Cat. £ H006 : Super Test Profile

CUSTOMER	SOURCE
DUFRESNE HENRY INC	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
NO SPRINGFIELD VT 05150	HARTFORD VT

PHONE £ : 8028862261
Date Sampled : 27-oct-1989
Date Reported : 7-NOV-1989 Sample Number : 052612

ANALYTE	MCL		RESULT	
Arsenic	0.050	Less than	0.002	
Barium	1.000		0.013	-
Cadmium	0.010	Less than	0.002	
Calcium	NO MCL SET		47.655	
Chromium	0.050	Less than	0.002	
Copper	1.000	Less than	0.005	
Iron	0.300		0.012	-
Lead	0.050	Less than	0.010	
Manganese	0.050	**	0.985	**
Magnesium	NO MCL SET		2.514	
Mercury	0.002	Less than	0.00020	
Nickel	NO MCL SET	Less than	0.050	
Silver	0.050	Less than	0.002	
Sodium	NO MCL SET		3.966	
Zinc	5.000	Less than	0.010	
Nitrate	10.000	Less than	0.500	
Fluoride	4.000		0.120	-
Alkalinity	NO MCL SET		112.900	
Chloride	250.000	Less than	10.000	
Hardness	250.000		129.346	
pH	8.500		7.540	
Corrosivity	NO MCL SET	-	0.202	
Sulfate	250.000	Less than	5.000	
Specific Conductance	700.000		222.000	
Total Coliform	1.000	**	3.000	**
Total Non Coliform	200.000	Less than	200.000	

MCL means Maximum Contaminant Level as set or proposed by the Safe Drinking Water Act (SDWA), the US EPA, or as recommended by WaterTest.
The number following the words 'Less than' refers to the lowest reportable measurement for that analyte.

All results in milligram/liter except Radon (pCi/L), pH (pH units) and Total coliform counts (CFU/100 mls, Colony Forming Units/100 milliliters). Analytes greater than MCL are marked with double asterisks on either side of the results.

WaterTest
CORPORATION OF AMERICA
33 South Commercial Street
Manchester, NH 03101
603-623-7400

CUSTOMER	SOURCE
DUFRESNE HENRY INC	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
NO SPRINGFIELD VT 05150	HARTFORD VT

PHONE £ : 8028862261

DATE REPORTED : 7-NOV-1989 KIT SERIAL £ : 052612

ANALYTE	MCL	RESULT	
Chloroform	0.1000	Less than	0.0001
Bromodichloromethane	0.1000	Less than	0.0001
Dibromochloromethane	0.1000	Less than	0.0005
Bromoform	0.1000	Less than	0.0001
Benzene	0.0050	Less than	0.0001
Bromobenzene	0.0000	Less than	0.0005
Bromochlormethane	0.0000	Less than	0.0002
Bromomethane	0.0000	Less than	0.0005
n-Butylbenzene	0.0000	Less than	0.0003
sec-Butylbenzene	0.0000	Less than	0.0001
tert-Butylbenzene	0.0000	Less than	0.0002
Carbon Tetrachloride	0.0050	Less than	0.0005
Chlorobenzene	0.4880	Less than	0.0001
Chloroethane	0.0000	Less than	0.0005
Chloromethane	0.0000	Less than	0.0005
2-Chlorotoluene	0.0000	Less than	0.0002
4-Chlorotoluene	0.0000	Less than	0.0002
1,2-Dibromo-3-chloropropane	0.0000	Less than	0.0005
1,2-Dibromoethane	0.0000	Less than	0.0005
Dibromomethane	0.0000	Less than	0.0001
1,2-Dichlorobenzene	0.0620	Less than	0.0002
1,3-Dichlorobenzene	0.0000	Less than	0.0002
1,4-Dichlorobenzene	0.0750	Less than	0.0001
Dichlorodifluoromethane	0.0000	Less than	0.0005
1,1-Dichloroethane	0.0000	Less than	0.0002
1,2-Dichloroethane	0.0050	Less than	0.0001
1,1-Dichloroethylene	0.0070	Less than	0.0001
trans-1,2-Dichloroethylene	0.0000	Less than	0.0001
cis-1,2-Dichloroethylene	0.0000	Less than	0.0001

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The number following the words 'Less than' refers to the lowest reportable measurement for that analyte.

All results in milligram/liter except Radon (pCi/L), pH (pH units) and Total coliform counts (CFU/100 mls, Colony Forming Units/100 milliliters). Analytes greater than MCL are marked with double asterisks on either side of the results.

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Manchester, NH 03101
603-623-7400

CUSTOMER	SOURCE
DUFRESNE HENRY INC	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
NO SPRINGFIELD VT 05150	HARTFORD VT

PHONE £ : 8028862261

DATE REPORTED : 7-NOV-1989 KIT SERIAL £ : 052612

ANALYTE	MCL	RESULT	
1,2-Dichloropropane	0.0060	Less than	0.0004
1,3-Dichloropropane	0.0000	Less than	0.0002
2,2-Dichloropropane	0.0000	Less than	0.0002
1,1-Dichloropropane	0.0000	Less than	0.0005
Ethylbenzene	0.0680	Less than	0.0002
Hexachlorobutadiene	0.0000	Less than	0.0003
Isopropylbenzene	0.0000	Less than	0.0001
p-Isopropyltoluene	0.0000	Less than	0.0002
Methylene Chloride	0.0000	Less than	0.0005
Napthalene	0.0000	Less than	0.0005
n-Propylbenzene	0.0000	Less than	0.0002
Styrene	0.0000	Less than	0.0002
1,1,1,2-Tetrachloroethane	0.0000	Less than	0.0001
1,1,2,2-Tetrachloroethane	0.0000	Less than	0.0001
Tetrachloroethylene	0.0000	Less than	0.0008
Toluene	2.0000	Less than	0.0003
1,2,3-Trichlorobenzene	0.0000	Less than	0.0002
1,2,4-Trichlorobenzene	0.0000	Less than	0.0002
1,1,1-Trichloroethane	0.2000	Less than	0.0005
1,1,2-Trichloroethane	0.0000	Less than	0.0003
Trichloroethylene	0.0050	Less than	0.0002
Trichlorofluoromethane	0.0000	Less than	0.0003
1,2,3-Trichloropropane	0.0000	Less than	0.0002
1,2,4-Trimethylbenzene	0.0000	Less than	0.0002
1,3,5-Trimethylbenzene	0.0000	Less than	0.0005
Vinyl Chloride	0.0020	Less than	0.0005
o-Xylene	0.0000	Less than	0.0002
m,p-Xylenes	0.0000	Less than	0.0004
cis-1,3-Dichloropropene	0.0000	Less than	0.0001

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All results in milligram/liter except Radon (pCi/L), pH (pH units) and Total coliform counts (CFU/100 mls, Colony Forming Units/100 milliliters). Analytes greater than MCL are marked with double asterisks on either side of the results.

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CUSTOMER	SOURCE
DUFRESNE HENRY INC	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
NO SPRINGFIELD VT 05150	HARTFORD VT

PHONE £ : 8028862261

DATE REPORTED : 7-NOV-1989 KIT SERIAL £ : 052612

ANALYTE	MCL	RESULT	
trans-1,3-Dichloropropene	0.0000	Less than	0.0001
Atrazine	0.0000	Less than	0.0003
Alachlor	0.0000	Less than	0.0004
Aldrin	0.0000	Less than	0.0001
Chlordane	0.0000	Less than	0.0004
Dieldrin	0.0000	Less than	0.0002
Endrin	0.0020	Less than	0.0002
Heptachlor	0.0000	Less than	0.0004
Heptachlor Epoxide	0.0000	Less than	0.0002
Hexachlorobenzene	0.0000	Less than	0.0003
Lindane	0.0040	Less than	0.0002
Methoxychlor	0.1000	Less than	0.0002
Toxaphene	0.0050	Less than	0.0020
Aroclor 1016	0.0000	Less than	0.0006
Aroclor 1221	0.0000	Less than	0.0020
Aroclor 1232	0.0000	Less than	0.0020
Aroclor 1242	0.0000	Less than	0.0006
Aroclor 1248	0.0000	Less than	0.0007
Aroclor 1254	0.0000	Less than	0.0005
Aroclor 1260	0.0000	Less than	0.0010

MCL means Maximum Contaminant Level as set or proposed by the Safe Drinking Water Act (SDWA), the US EPA, or as recommended by WaterTest.

The number following the words "Less than" refers to the lowest reportable measurement for that analyte.

All results in milligram/liter except Radon (pCi/L), pH (pH units) and Total coliform counts (CFU/100 mls, Colony Forming Units/100 milliliters). Analytes greater than MCL are marked with double asterisks on either side of the results.

WaterTest
CORPORATION OF AMERICA
33 South Commercial Street
Manchester, NH 03101
603-623-7400

Cat. £ H011 : Radon Water Screen

CUSTOMER	SOURCE
DUFRESNE & HENRY	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
N SPRINGFIELD VT 05150	HARTFORD VT

PHONE £ : 8028862261
Date Sampled : 27-oct-1989
Date Reported : 3-NOV-1989

Sample Number : 109182

ANALYTE	MCL	RESULT
Radon Water	10000.000	422.300

MCL means Maximum Contaminant Level as set or proposed by the Safe Drinking Water Act (SDWA), the US EPA, or as recommended by WaterTest.
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WaterTest
CORPORATION OF AMERICA
33 South Commercial Street
Manchester, NH 03101
603-623-7400

RECEIVED
NOV - 6 1989

Cst. £ H006 : Super Test Plus

DUFRESNE-HENRY, INC.

CUSTOMER	SOURCE
DUFRESNE HENRY INC	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
NO SPRINGFIELD VT 05150	HARTFORD VT

PHONE £ : 8028862261
Date Sampled : 27-oct-1989
Date Reported : 3-NOV-1989
Sample Number : 052612

ANALYTE	MCL	RESULT		
Arsenic	0.050	Less than	0.002	
Barium	1.000		0.013	
Cadmium	0.010	Less than	0.002	
Calcium	NO MCL SET		47.655	
Chromium	0.050	Less than	0.002	
Copper	1.000	Less than	0.005	
Iron	0.300		0.012	
Lead	0.050	Less than	0.010	
Manganese	0.050	**	0.985	**
Magnesium	NO MCL SET		2.514	
Nickel	NO MCL SET	Less than	0.050	
Silver	0.050	Less than	0.002	
Sodium	NO MCL SET		3.966	
Zinc	5.000	Less than	0.010	
Nitrate	10.000	Less than	0.500	
Fluoride	4.000		0.120	
Alkalinity	NO MCL SET		112.900	
Chloride	250.000	Less than	10.000	
Hardness	250.000		129.346	
pH	8.500		7.540	
Corrosivity	NO MCL SET	-	0.202	
Sulfate	250.000	Less than	5.000	
Specific Conductance	700.000		222.000	
Chloroform	0.1000	Less than	0.0001	
Bromodichloromethane	0.1000	Less than	0.0001	
Dibromochloromethane	0.1000	Less than	0.0005	

MCL means Maximum Contaminant Level as set or proposed by the Safe Drinking Water Act (SDWA), the US EPA, or as recommended by WaterTest.
The number following the words 'Less than' refers to the lowest reportable measurement for that analyte.

All results in milligram/liter except Radon (pCi/L), pH (pH units) and Total coliform counts (CFU/100 mls, Colony Forming Units/100 milliliters). Analytes greater than MCL are marked with double asterisks on either side of the results.

WaterTest
CORPORATION OF AMERICA
33 South Commercial Street
Manchester, NH 03101
603-623-7400

CUSTOMER	SOURCE
DUFRESNE HENRY INC	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
NO SPRINGFIELD VT 05150	HARTFORD VT

PHONE £ : 8028862261

DATE REPORTED : 3-NOV-1989 KIT SERIAL £ : 052612

ANALYTE	MCL	RESULT	
Bromoform	0.1000	Less than	0.0001
Benzene	0.0050	Less than	0.0001
Bromobenzene	0.0000	Less than	0.0005
Bromochlormethane	0.0000	Less than	0.0002
Bromomethane	0.0000	Less than	0.0005
n-Butylbenzene	0.0000	Less than	0.0003
sec-Butylbenzene	0.0000	Less than	0.0001
tert-Butylbenzene	0.0000	Less than	0.0002
Carbon Tetrachloride	0.0050	Less than	0.0005
Chlorobenzene	0.4880	Less than	0.0001
Chloroethane	0.0000	Less than	0.0005
Chloromethane	0.0000	Less than	0.0005
2-Chlorotoluene	0.0000	Less than	0.0002
4-Chlorotoluene	0.0000	Less than	0.0002
1,2-Dibromo-3-chloropropane	0.0000	Less than	0.0005
1,2-Dibromoethane	0.0000	Less than	0.0005
Dibromomethane	0.0000	Less than	0.0001
1,2-Dichlorobenzene	0.0620	Less than	0.0002
1,3-Dichlorobenzene	0.0000	Less than	0.0002
1,4-Dichlorobenzene	0.0750	Less than	0.0001
Dichlorodifluoromethane	0.0000	Less than	0.0005
1,1-Dichloroethane	0.0000	Less than	0.0002
1,2-Dichloroethane	0.0050	Less than	0.0001
1,1-Dichloroethylene	0.0070	Less than	0.0001
trans-1,2-Dichloroethylene	0.0000	Less than	0.0001
cis-1,2-Dichloroethylene	0.0000	Less than	0.0001
1,2-Dichloropropane	0.0060	Less than	0.0004
1,3-Dichloropropane	0.0000	Less than	0.0002
2,2-Dichloropropane	0.0000	Less than	0.0002

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The number following the words 'Less than' refers to the lowest reportable measurement for that analyte.

All results in milligram/liter except Radon (pCi/L), pH (pH units) and Total coliform counts (CFU/100 mls, Colony Forming Units/100 milliliters). Analytes greater than MCL are marked with double asterisks on either side of the results.

WaterTest
CORPORATION OF AMERICA
33 South Commercial Street
Manchester, NH 03101
603-623-7400

CUSTOMER	SOURCE
DUFRESNE HENRY INC	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
NO SPRINGFIELD VT 05150	HARTFORD VT

PHONE £ : 8028862261

DATE REPORTED : 3-NOV-1989 KIT SERIAL £ : 052612

ANALYTE	MCL	RESULT	
1,1-Dichloropropane	0.0000	Less than	0.0005
Ethylbenzene	0.0680	Less than	0.0002
Hexachlorobutadiene	0.0000	Less than	0.0003
Isopropylbenzene	0.0000	Less than	0.0001
p-Isopropyltoluene	0.0000	Less than	0.0002
Methylene Chloride	0.0000	Less than	0.0005
Napthalene	0.0000	Less than	0.0005
n-Propylbenzene	0.0000	Less than	0.0002
Styrene	0.0000	Less than	0.0002
1,1,1,2-Tetrachloroethane	0.0000	Less than	0.0001
1,1,2,2-Tetrachloroethane	0.0000	Less than	0.0001
Tetrachloroethylene	0.0000	Less than	0.0008
Toluene	2.0000	Less than	0.0003
1,2,3-Trichlorobenzene	0.0000	Less than	0.0002
1,2,4-Trichlorobenzene	0.0000	Less than	0.0002
1,1,1-Trichloroethane	0.2000	Less than	0.0005
1,1,2-Trichloroethane	0.0000	Less than	0.0003
Trichloroethylene	0.0050	Less than	0.0002
Trichlorofluoromethane	0.0000	Less than	0.0003
1,2,3-Trichloropropane	0.0000	Less than	0.0002
1,2,4-Trimethylbenzene	0.0000	Less than	0.0002
1,3,5-Trimethylbenzene	0.0000	Less than	0.0005
Vinyl Chloride	0.0020	Less than	0.0005
o-Xylene	0.0000	Less than	0.0002
m,p-Xylenes	0.0000	Less than	0.0004
cis-1,3-Dichloropropene	0.0000	Less than	0.0001
trans-1,3-Dichloropropene	0.0000	Less than	0.0001
Atrazine	0.0000	Less than	0.0003
Alachlor	0.0000	Less than	0.0004

MCL means Maximum Contaminant Level as set or proposed by the Safe Drinking Water Act (SDWA), the US EPA, or as recommended by WaterTest.

The number following the words 'Less than' refers to the lowest reportable measurement for that analyte.

All results in milligram/liter except Radon (pCi/L), pH (pH units) and Total coliform counts (CFU/100 mls, Colony Forming Units/100 milliliters). Analytes greater than MCL are marked with double asterisks on either side of the results.

WaterTest
CORPORATION OF AMERICA
33 South Commercial Street
Manchester, NH 03101
603-623-7400

CUSTOMER	SOURCE
DUFRESNE HENRY INC	HARTFORD TEST WELL 5
LYNNE HERBERT	
PRECISION PARK	
NO SPRINGFIELD VT 05150	HARTFORD VT

PHONE £ : 8028862261

DATE REPORTED : 3-NOV-1989 KIT SERIAL £ : 052612

ANALYTE	MCL	RESULT
Aldrin	0.0000	Less than 0.0001
Chlordane	0.0000	Less than 0.0004
Dieldrin	0.0000	Less than 0.0002
Endrin	0.0020	Less than 0.0002
Heptachlor	0.0000	Less than 0.0004
Heptachlor Epoxide	0.0000	Less than 0.0002
Hexachlorobenzene	0.0000	Less than 0.0003
Lindane	0.0040	Less than 0.0002
Methoxychlor	0.1000	Less than 0.0002
Toxaphene	0.0050	Less than 0.0020
Aroclor 1016	0.0000	Less than 0.0006
Aroclor 1221	0.0000	Less than 0.0020
Aroclor 1232	0.0000	Less than 0.0020
Aroclor 1242	0.0000	Less than 0.0006
Aroclor 1248	0.0000	Less than 0.0007
Aroclor 1254	0.0000	Less than 0.0005
Aroclor 1260	0.0000	Less than 0.0010

MCL means Maximum Contaminant Level as set or proposed by the Safe Drinking Water Act (SDWA), the US EPA, or as recommended by WaterTest.

The number following the words "Less than" refers to the lowest reportable measurement for that analyte.

All results in milligram/liter except Radon (pCi/L), pH (pH units) and Total coliform counts (CFU/100 mls, Colony Forming Units/100 milliliters). Analytes greater than MCL are marked with double asterisks on either side of the results.

CleanHarbors

Client: WaterTest
Sample ID: 109171
Sample Type: Drinking Water

CHAS Lab #: 89X11013-01M
Date Received: 11/02/89

Parameter	MDL	Result	Units	Analysis Date	Method Number and Reference
Detergents (LAS Surfactants)	0.025	ND	mg/l	11/03/89	512B (a)

Notes:

ND = Below minimum detectable level (MDL)

CleanHarbors

Client: WaterTest
Sample ID: 109173
Sample Type: Drinking Water

CHAS Lab #: 89X11013-02M
Date Received: 11/02/89

Parameter	Result*	Units	Analysis Date	Method Number and Reference
Gross Alpha Particle	0.1 +/- 0.6	pCi/l	11/17/89	900.0 (h)
Gross Beta Particle	1.4 +/- 0.7	pCi/l	11/17/89	900.0 (h)

Notes:

* Error = 2 standard deviations

CleanHarbors

Client: WaterTest
Sample ID: 109176
Sample Type: Drinking Water

CHAS Lab #: 89X11013-04M
Date Received: 11/02/89

Chlorinated Phenoxy Acid Herbicides
by Method 509B (ref.b)

Extraction Date: 11/03/89
Analysis Date: 11/10/89

Parameter	MDL	Concentration	Units
2,4-D	1.0	ND	ug/l
Silvex(2,4,5-TP)	1.0	ND	ug/l

Notes:

ND = Below minimum detectable level (MDL)

CleanHarbors

Client: WaterTest
Sample ID: 109177
Sample Type: Drinking water

CHAS Lab #: 89X11013-05M
Date Received: 11/02/89

Parameter	Result	Units	Analysis Date	Method Number and Reference
Radium - 226	0.3 +/- 0.3	pCi/l	11/21/89	903.1 (h)

Notes:

* Error = 2 standard deviations

CleanHarbors

Client: WaterTest
Sample ID: 109179
Sample Type: Drinking water

CHAS Lab #: 89X11013-06M
Date Received: 11/02/89

Parameter	Result	Units	Analysis Date	Method Number and Reference
Radium - 228	0.1 +/- 0.8	pCi/l	11/17/89	E-Ra-4 (i)

Notes:

* Error = 2 standard deviations

LABORATORY REPORT

Eastern Analytical, Inc. Designation: 7901* DUF

Client: Dufresne-Henry
Sample Qty/Type: 2 water

Client Designation: **Hartford, VT**
Date Received: September 26, 1989

Hazardous Substance List (HSL) Volatile Organic Compounds

Sample ID:	MW 16	MW 17
Matrix:	Aqueous	Aqueous
Date of Analysis:	10/10/89	10/10/89
Units:	µg/L	µg/L
Analyst:	JC	JC
Method:	EPA 524	EPA 524
Benzene	<0.5	<0.5
Bromobenzene	<0.5	<0.5
Bromochloromethane	<0.5	<0.5
Bromodichloromethane	<0.5	<0.5
Bromoform	<0.5	<0.5
Bromomethane	<0.5	<0.5
n-Butylbenzene	<0.5	<0.5
sec-Butylbenzene	<0.5	<0.5
tert-Butylbenzene	<0.5	<0.5
Carbon tetrachloride	<0.5	<0.5
Chlorobenzene	<0.5	<0.5
Chloroethane	<0.5	<0.5
Chloroform	<0.5	<0.5
Chloromethane	<0.5	<0.5
2-Chlorotoluene	<0.5	<0.5
4-Chlorotoluene	<0.5	<0.5
Dibromochloromethane	<0.5	<0.5
1,2-Dibromo-3-chloropropane	<0.5	<0.5
1,2-Dibromoethane	<0.5	<0.5
Dibromomethane	<0.5	<0.5
1,2-Dichlorobenzene	<0.5	<0.5
1,3-Dichlorobenzene	<0.5	<0.5
1,4-Dichlorobenzene	<0.5	<0.5
Dichlorodifluoromethane	<0.5	<0.5
1,1-Dichloroethane	<0.5	<0.5
1,2-Dichloroethane	<0.5	<0.5
1,1-Dichloroethene	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5
1,2-Dichloropropane	<0.5	<0.5
1,3-Dichloropropane	<0.5	<0.5
2,2-Dichloropropane	<0.5	<0.5
1,1-Dichloropropene	<0.5	<0.5
Ethylbenzene	<0.5	<0.5
Hexachlorobutadiene	<0.5	<0.5

Approved By : Joseph Camanzo

Joseph Camanzo, Organics Supervisor

LABORATORY REPORT

Eastern Analytical, Inc. Designation: 7901* DUF

Client: Dufresne-Henry
Sample Qty/Type: 2 water

Client Designation: Hartford, VT
Date Received: September 26, 1989

Hazardous Substance List (HSL) Volatile Organic Compounds

Sample ID:	MW 16	MW 17
Matrix:	Aqueous	Aqueous
Date of Analysis:	10/10/89	10/10/89
Units:	µg/L	µg/L
Analyst:	JC	JC
Method:	EPA 524	EPA 524
Isopropylbenzene	<0.5	<0.5
p-Isopropyltoluene	<0.5	<0.5
Methylene chloride	<0.5	<0.5
Naphthalene	<0.5	<0.5
n-Propylbenzene	<0.5	<0.5
Styrene	<0.5	<0.5
1,1,1,2-Tetrachloroethane	<0.5	<0.5
1,1,2,2-Tetrachloroethane	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5
Toluene	<0.5	<0.5
1,2,3-Trichlorobenzene	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.5	<0.5
1,1,1-Trichloroethane	<0.5	<0.5
1,1,2-Trichloroethane	<0.5	<0.5
Trichloroethene	<0.5	<0.5
Trichlorofluoromethane	<0.5	<0.5
1,2,3-Trichloropropane	<0.5	<0.5
1,2,4-Trimethylbenzene	<0.5	<0.5
1,3,5-Trimethylbenzene	<0.5	<0.5
Vinyl chloride	<0.5	<0.5
o-Xylene	<0.5	<0.5
m-Xylene	<0.5	<0.5
p-Xylene	<0.5	<0.5

Approved By : Joseph Camanzo

Joseph Camanzo, Organics Supervisor

APPENDIX E

ANALYSIS RESULTS - GROUNDWATER SAMPLES

AUGUST 1990

Eastern Analytical, Inc. 130 Hall St., Concord, NH 03301 (603) 228-0525

August 16, 1990

Ted Reeves
Dufresne-Henry
Precision Park
N. Springfield, VT 05150

Sample Identification:
Client ID: 160005/Town of Hartford
Sample Qty/Type: 7 aqueous
Date Recv'd: August 2, 1990
EAI ID: 9507 DUF

Dear Mr. Reeves:

Enclosed, please find the results of the analysis of the sample(s) identified above. This report contains the following sections:

ANALYSIS TYPE	NO OF PAGES
• Hazardous Substance List (HSL) VOCs	1
• Organics	1

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 limits

If you have any questions regarding the results contained within, feel free to directly contact the chemist who performed the analysis. We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

William Brunkhorst
QA/QC Coordinator

LABORATORY REPORT

Eastern Analytical, Inc. Designation: 9507 DUF

Client: Dufresne-Henry
Sample Qty/Type: 7 aqueous

Client Designation: **160005/Town of Hartford**
Date Received: August 2, 1990

Hazardous Substance List Volatile Organic Compounds

Sample ID:	MW-N2	MW-N3	MW-SW1	MW-W1	MW-W2	MW-W3	Blank	
Matrix:	Aqu.	Aqu.	Aqu.	Aqu.	Aqu.	Aqu.	Aqu.	
Date of Analysis:	8/9/90	8/9/90	8/9/90	8/9/90	8/9/90	8/9/90	8/9/90	
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	EPA
Analyst:	JC	JC	JC	JC	JC	JC	JC	Method
Chloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	601
Bromomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	601
Vinyl Chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	601
Chloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	601
Methylene Chloride	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Acetone	< 10	< 10	< 10	< 10	< 10	< 10	< 10	8015
Carbon Disulfide	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
1,1-Dichloroethene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
1,1-Dichloroethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Trans-1,2-Dichloroethene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Cis-1,2-Dichloroethene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Chloroform	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
1,2-Dichloroethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
2-Butanone (MEK)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	8015
1,1,1-Trichloroethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Carbon Tetrachloride	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Vinyl Acetate	< 10	< 10	< 10	< 10	< 10	< 10	< 10	8015
Bromodichloromethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
1,2-Dichloropropane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Trans-1,3-Dichloropropene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Trichloroethene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Dibromochloromethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
1,1,2-Trichloroethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Benzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1	602
Cis-1,3-Dichloropropene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
2-Chloroethylvinylether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Bromoform	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
4-Methyl-2-Pentanone (MIBK)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	8015
2-Hexanone	< 10	< 10	< 10	< 10	< 10	< 10	< 10	8015
Tetrachloroethene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
1,1,2,2-Tetrachloroethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	601
Toluene	< 1	< 1	< 1	< 1	< 1	< 1	< 1	602
Chlorobenzene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	602
Ethylbenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1	602
Styrene	< 1	< 1	< 1	< 1	< 1	< 1	< 1	602
Total Xylenes	< 1	< 1	< 1	< 1	< 1	< 1	< 1	602
Volatile Petroleum Hydrocarbons	< 20	< 20	< 20	< 20	< 20	< 20	< 20	8015

Approved By : _____
Joseph Camanzo, Organics Supervisor

LABORATORY REPORT

Eastern Analytical, Inc. Designation: 9507 DUF

Client: Dufresne-Henry
Sample Qty/Type: 7 aqueous

Client Designation: **160005/Town of Hartford**
Date Received: August 2, 1990

Organics

Sample ID: / Matrix:	MW-N2 Aqueous	MW-N3 Aqueous	MW-SW1 Aqueous	MW-W1 Aqueous	Date of Analysis	Analyst	EPA Method
Organics: (mg/L)							
Total Petroleum Hydrocarbons	< 5	< 5	< 5	< 5	8/10/90	LB	418.1

Sample ID: / Matrix:	MW-W2 Aqueous	MW-W3 Aqueous	Blank Aqueous	Date of Analysis	Analyst	EPA Method
Organics: (mg/L)						
Total Petroleum Hydrocarbons	< 5	< 5	< 5	8/10/90	LB	418.1

Approved By : Lorraine Olashaw

Lorraine Olashaw, Inorganics Supervisor

~~REDACTED~~

M S-M

RE: REPORT

CONCLUSIONS (PAGE 2)

#2- I DO NOT SEE ANY DATA TO SUPPORT THIS CONCLUSION. WELL FLUID IS NOT A CURRENTLY BEING PUMPED

i) THE WELL FLUID IS NOT A BEING PUMPED

ii) INSUFFICIENT TIME HAS PASSED TO SEE IF THE MATERIAL WILL MOVE INTO THE MONITORING WELLS.

#3- I BELIEVE THAT D-H INSTALLED THE OBSERVATION WELL- THEY SHOULD KNOW BEYOND A DOUBT WHETHER OR NOT THIS MATERIAL WAS ON THE WELL MATERIALS WHEN THEY WERE INSTALLED. IF THEY WERE, THE BIG QUESTION IS WHY? & FOR WHAT REASON? & WHY DID D-H ALLOW THEM TO BE PUT IN THE GROUND?

OTHER: WHY WAS NO EXPLANATION GIVEN AS TO ABSENCE OF CONTAMINANT DURING MONITORING WELL INSTALLATION?