ATTACHMENT IV

to

FINAL RFA REPORT

ENVIRONMENTAL SITE SURVEY

HAZELTINE CORPORATION

500 Commack Road

Commack, New York

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ENVIRONMENTAL SITE SURVEY

Hazeltine Corporation, Commack, New York

INTRODUCTION

An environmental site survey was performed by Radian Corporation at Hazeltine Corporation facility in Commack, New York on 21 June 1989. The site survey was performed by Carla Schultz, Richard Church, and James Zimmerman along with Mr. Tony Germinario, Environmental Manager, Hazeltine Corporation. Mr. Ed Weinarski of Hazeltine's maintenance department also was interviewed during the visit. The purpose of the survey is to assess current and past hazardous waste generation and management practices that may have resulted in potential releases of hazardous materials into the environment and to identify any gross surficial contamination based on visual inspection, limited sampling and analysis, and investigation of the site history.

BACKGROUND

The facility is located at 500 Commack Road in Commack, New York in Suffolk County on Long Island. The property consists of approximately 20 acres with one main building approximately 150,000 square feet in size. The other structures on the site are a small garage just behind the loading docks in the rear of the building and a guard house on the southern end of the building. A plot plan prepared by Donnelly Engineering for Hazeltine Corporation is attached as Figure 1. The property is bordered by residential areas to the north, south, and southeast. The eastern border of the property is adjacent to a highway and the northeast border of the property is across a highway from a country club. None of the surrounding properties are industrial facilities and, therefore, are not likely to use chemicals similar to those used by Hazeltine. The only reported incident on adjacent property was a drum of hydrofluoric acid found on a homeowner's property which was subsequently removed. It should be noted that Deutsch Relays, located approximately one mile west of the site, has been cited for contaminating ground water in the area with volatile organic compounds.

The main building on the property was constructed in 1960. Lily Tulip Cups operated the facility from 1960 until 1979 producing "Dixie Cups." Lily Tulips' operations included metal finishing, grinding, and a chemistry laboratory. The materials in use at the plant include cutting oils and solvents for degreasing and epoxy glues.

Hazeltine has owned and operated the facility since 1979. Until recently, the primary plant operation was building landing systems for airports. This process included parts assembly, painting, and circuit board cleaning and repair.

Operations are generally non-chemical in nature.

Low volumes of organic solvents (approximately two 55 gallon drums per year) are used for parts cleaning, circuit board repair, and as paint solvents. No lead, chromium, cadmium or other metals are generated during Hazeltine's operations. Organic solvents, acids, and base also are stored at the facility for use by other Hazeltine facilities in the area. Current plant operations are changing from airport landing system construction to other similar endeavors.

SITE GEOLOGY/HYDROGEOLOGY

The geology of Long Island is composed of several distinct formations of unconsolidated sand, gravel, and clay which form a complex system of aquifers overlying crystalline bedrock. The Cretaceous age formations include, from oldest to youngest: the Raritan Formation consisting of the Lloyd sand and the Raritan clay members, and the Magothy Formation. The unconsolidated formations were deposited conformably, and like the crystalline bedrock, dip gently in a southeasterly direction. Overlying the Magothy Formation and found on the surface are Pleistocene glacial deposits of the Wisconsinan glacial period comprised of glacial till and glacial outwash (NYSDEC, 1972).

According to the New York State Department of Environmental Conservation (1972), the glacial outwash present on Long Island consists of stratified, well-sorted, highly permeable, deposits of sand and gravel.

The Magothy Formation is a moderately permeable aquifer composed of irregular lens shaped beds of gravel, sand, sandy clay, and clay. Most of the sediments are fine grained and contain mica and lignite (NYSDEC, 1972).

Ground water for public water supply in Nassau and Queens counties of New York is withdrawn mostly from the Magothy aquifer. In Suffolk County, public water supplies are drawn from the outwash layer as well as from the Magothy (NYSDEC, undated). Ground water in the Magothy and outwash layer aquifers is recharged through infiltration of precipitation. The Hazeltine property is located over a deep flow recharge area where ground-water recharge enters through the land surface and generally flows downward into the deeper aquifers, including the Magothy (NYSDEC, undated).

Ground water beneath the Hazeltine property is anticipated to occur 60 feet to 100 feet below grade. The ground water flows in a north to east direction beneath the Hazeltine property according to ground water and contour maps.

WASTE GENERATION AND HANDLING PRACTICES/OBSERVATIONS

Currently the only wastes generated at Hazeltine are small volumes of organic solvents used for cleaning, degreasing, and as paint solvent. Solid paint waste also is generated. Waste material is collected in 5-gallon cans and stored in drums in the facility's Toxic and Corrosive Chemical Storage Area and/or the Chemical and Ignitable Materials Storage Room. These storage areas are used to store both waste and new chemicals. The facility is used to store new chemicals for other Hazeltine facilities in the area. Only waste chemicals generated within this plant are stored here prior to disposal. Flammable materials are disposed of by contract with Chemical Pollution Control Company. Chlorinated solvents and other materials are disposed of by contract with Baron-Blakesdale and Chemical Management. Compounds stored in the facility include freon, sodium hydroxide, xylene, isopropanol, perchloroethylene, 1,1,1,-trichloroethane, ammonia, toluene, methyl ethyl ketone, toluene, and acetone. Both storage areas were bermed on all sides and no visible floor stains were evident. No floor drains are located in either storage area. No spills have been reported in either area. Absorbent materials, neutralizing agents, and other spill control equipment are kept inside the storage area to handle potential spills. An application has been submitted to the New York State Department of Environmental Control (NYSDEC) to permit the storage areas as TSD Facilities. A RCRA Facility Assessment Site Inspection had recently been performed by NYSDEC with no significant problems noted with the storage areas or the remainder of the facility.

General plant waste and refuse is hauled by contract to the East Northport Landfill on Long Island.

Since taking over operation of the facility, Hazeltine has closed off most of the floor drains and sinks within the facility to minimize the likelihood of improper disposal of chemicals.

The electrical transformers currently located in the building do not contain PCBs. In the past, Lily Tulip operated two PCB-containing transformers which were removed by Hazeltine in July 1979. A floor drain opening was noted in this area. Although Mr. Germinario did not know where it goes.

While Lily Tulip operated the plant, a process drain system was utilized to collect plant waste and transfer it to a concrete underground storage tank outside the facility (see Figure 1). The drain system is a series of pipes located in trenches leading from the chemical laboratory and the old glue room to a collection point underneath the old air conditioning room. Waste was then pumped from a sump at the collection point to an underground storage tank outside the facility. This system consists of 2 inch wrought iron pipe in the old Chemical Laboratory trenches, 4 inch wrought iron pipe in the main tunnel under the floor, and 4 inch cast iron underground pipe in the old glue room, all draining to a concrete sump at the east end of the tunnel under the old air conditioning room. Two Deming sump pumps (one standby) automatically pumped the effluent through a 3 inch overhead pipe to a (approximately) 5,000-gallon concrete underground storage tank. Plans for a submerged combustion unit to pretreat solvent waste were drawn but was never built as far as Lily Tulips' records show. Dried sludge was found remaining in the sump pit and a sample was obtained. The concrete underground storage tank has been emptied in 1983 and filled with sand. No sample of the sand was obtained. A hand augered soil boring was taken just downgradient and at the depth of the bottom of the tank for chemical analysis.

CESSPOOLS

All of the sanitary waste and liquids from sinks and floor drains are discharged to three different sets of cesspool systems located outside the plant to the north, south, and west. There are no discharges from the plant to publicly owned treatment works or permitted under NPDES. Sludge and liquid samples were obtained from each of these systems to assess whether any discharges of industrial waste had occurred.

- Two cesspools are located on the south end of the plant. These were installed by Hazeltine in 1979. Samples of sludge and water were obtained from this location.

- A series of nine cesspools are located in the front (west) of the building. These are arranged in a semi circular pattern with one central distribution pool. A sludge and water sample were obtained from the central distribution pool.

- Three cesspools with one central distribution point are located on the north side of the building. A sludge sample was obtained from the distribution point. No standing liquid was found in this cesspool so only a sludge sample was collected at this location.

RECHARGE BASIN/OLD STORAGE FACILITY

A recharge basin with a capacity of approximately 330,000 cubic feet is located in the back of the facility at the southeast corner of the property. The basin is used to catch storm water and roof drain runoff. A water sample was obtained from this basin for chemical analysis. No evidence of waste being or having been discharged to this basin was evident upon visual inspection. Mr. Germinario knew of no discharges of waste to this basin.

A small garage located just outside the materials storage facility was previously used by Lily Tulip as a storage area for chemicals. No evidence of spills or leakage was apparent within the garage upon inspection.

ENVIRONMENTAL PERMIT STATUS

Hazeltine is in the process of obtaining permits to operate a TSD facility for their material storage area. They are currently in compliance and close to obtaining a permit. A copy of a recent RCRA Facility Assessment by NYSDEC is included as Attachment A.

Hazeltine abandoned the concrete underground storage tank in December 1988. The application to abandon the tank as well as the tank notification documentation is included as Attachment B.

A water well system is used to provide water for fire protection purposes at the facility. A copy of Lily Tulips' permit to operate this well is included as Attachment C.

No air pollution permits are held by Hazeltine.

No other environmental permits have been held according to Mr. Geminario.

ANALYTICAL RESULTS

Samples of soil, water, and sludge were obtained from the three sets of cesspools, the sump pit, recharge basin, and underneath the concrete underground storage tank. Analyses, results, and sample locations are summarized in the attached Tables 1 and 2. The full analytical report prepared by NET/Mid Atlantic Laboratories is available upon request. Samples were analyzed for total metals (EPA 6010), volatile organic compounds (EPA 601,602), oil and grease (EPA 9070), and PCBs (EPA 608). All method-specified sampling, preservation, and quality assurance/quality control protocols were followed.

Lead, chromium, cadmium, and other metals were detected in the sludge samples from the sump pit and from the north and west cesspools. Over 4,000 parts per million lead was detected in the sump pit sludge from inside the facility. Three hundred ninety-two parts per million lead was detected in the west cesspool sludge and 26.7 parts per million lead was detected in the north cesspool sludge. The same general list of metals found in the sump pit was detected in the cesspool sludge samples. Low levels of volatile organic compounds were detected in the water samples collected from the recharge basin, cesspool waters, and sludges. None of the compounds detected were above Maximum Contaminant Levels (MCLs) where they apply. Greater than 5 parts per million toluene was detected in sludge and water samples from all three cesspool samples. No metals or volatile compounds were detected above background levels in the soil sample from near the concrete underground tank or the recharge basin. Slightly over seven parts per million total Aroclors (PCBs) were detected in the sludge sample from the west cesspools.

CONCLUSIONS AND RECOMMENDATIONS

In general, it appears that Hazeltine is currently utilizing sound waste handling practices. The analytical results obtained as part of this study indicate that there may have been some past release of waste chemicals to the cesspool systems at the plant. It does not appear to be as a result of any current practices employed by Hazeltine based on observations and interview with employees.

In order to address the issues cited above and further assess any release of chemicals that may have occurred, we recommend the following:

- Remove the dried sludge from the sump pit and remove the concrete underground storage tank.
- Investigate and sample the floor drain located in the Compressor Room where the old PCB transformers were located.
- Install monitoring wells and take more samples to more fully assess the extent of any chemical releases that may have occurred to contamination to the cesspools and to assess whether any of these chemicals have migrated to the surrounding soils and ground water.

Radian will be submitting a separate proposal to perform the additional work recommended above with full details of a work plan and cost estimates.
The work performed for this project was conducted using accepted and standard site reconnaissance techniques and practices. There is no guarantee as to the absence of environmental hazards in the subsurface as a consequence of those conditions observed at the surface, nor to the presence of surface hazards which may be found by non-visual techniques.

REFERENCES

New York State Department of Environmental Conservation, "The Long Island Ground Water Pollution Study," 1972.

New York State Department of Environmental Conservation, "Draft Long Island Groundwater Management Program," Executive Summary.

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ATTACHMENT D

SITE ASSESSMENT REPORT

HAZELTINE CORPORATION

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1.0 INTRODUCTION AND PURPOSE

1.1 Introduction

This report presents a summary of the site assessment activities performed by Radian Corporation during the first two weeks of August 1989 at Hazeltine Corporation's facility in Commack, New York. The site assessment was performed subsequent to an environmental site survey conducted by Radian Corporation on 21 June 1989 (please refer to Radian's report dated 3 July 1989 for further details of that preliminary site survey). Background information concerning site geology, prior ownership, and past and current operations at the Hazeltine facility are described in the site survey report; however, analytical data from the preliminary site survey are included in this report for clarity.

1.2 Purpose

The purpose of this site assessment was to evaluate in more detail than the site survey the impact that past waste handling and disposal practices at this facility may have had on the surrounding environment. The areas of concern addressed in this assessment included the following: the extent of any discharge of industrial waste that may have occurred to the sanitary cesspool systems surrounding the facility; any discharges which may have occurred to the recharge basin; past releases from the abandoned concrete underground waste storage tank; and the impact of a release of fuel oil due to an overfill of the underground fuel oil tank by approximately 1,000 gallons in 1984.

2.0 WELL INSTALLATION AND SOIL BORINGS

2.1 Location and Description of Wells

Five monitoring wells were installed during the first two weeks of August by Radian's subcontractor, East Coast Drilling, in the following locations:

Monitoring Well 1	Installed as an upgradient well on the southwestern corner of the property.
Monitoring Well 2	Installed downgradient to the system of cesspools in the front (western) portion of the property.
Monitoring Well 3	Installed downgradient of the system of cesspools on the northern end of the property.
Monitoring Well 4	Installed downgradient of the concrete underground storage tank and the former chemical storage area in the back (east) of the main building.
Monitoring Well 5	Installed downgradient of the fuel underground storage tank on the southeast portion of the property.

The attached Figure 1 shows the approximate location of the wells superimposed on a plot plan prepared for Hazeltine by Donnely Engineering. Ground water was encountered at 20 feet, 57 feet, 41 feet, 53 feet, and 51 feet below ground surface, respectively, in the five wells. The water in well 1 may be perched on a clayey aquitard just below the water level and not representative of the aquifer encountered in the deeper wells (2-5). Boring logs for the wells and soil borings at this facility are attached as Appendix A.

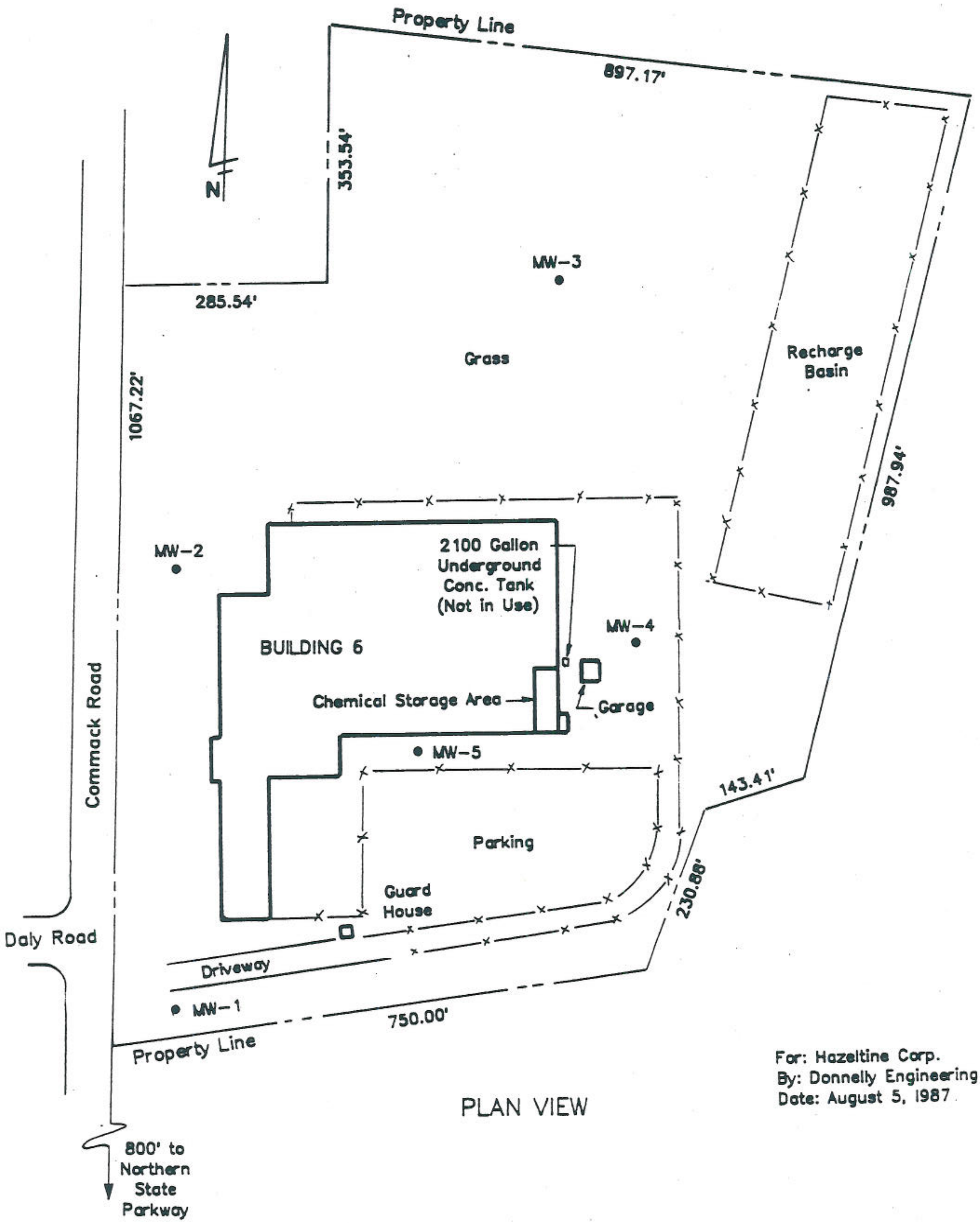

Figure 1. Location of Monitoring Wells at Hazeltine Corporation 500 Commack Road, Commack, New York

2.2 Location of Soil Borings

Two soil borings were taken next to the concrete underground storage tank in the rear of the building. The two borings were to a depth of 12 feet, and 17 feet, respectively.

Soil samples were also collected from the borehole created while installing monitoring well 5.

3.0 TERRAIN CONDUCTIVITY INVESTIGATION

3.1 Introduction

A terrain conductivity investigation was performed on 26 and 27 July 1989 in an attempt to locate three buried concrete structures associated with the distribution box of a septic tank system located on the NW side of the property. Company personnel reported several failed attempts by local firms to locate these structures by driving a metal probe into the ground at locations based on apparently inaccurate engineering drawings. The terrain conductivity investigation revealed two anomalies, with a high level of confidence that these anomalies were indicative of underground structures. A third anomaly was located, with a lower level of confidence that it represented an underground structure.

3.2 Background

Terrain conductivity instruments sense contrasts in subsurface conductivity, generally at a fixed depth below the land surface, and may be used to provide an indication of the lateral or geographic variability of subsurface conductivity.

3.3 Results and Interpretation

Terrain conductivity data were obtained at specific locations at 5-foot spacings along parallel lines oriented perpendicular to a portion of the fence parallel to the northwestern building wall. The parallel lines are spaced 5 feet apart. Data values obtained range from 0 to 890 millimhos per meter (Figure 2). The data can be grouped into three categories: background, interference, and anomalies.

3.3.1 Background Data

Most of the data form a uniform geographic pattern ranging between 10 and 80 millimhos/meter (mm/m). Because these data are uniformly distributed, they probably constitute background terrain conductivity.

3.3.2 Interference

Data within 10 feet of the fence are in excess of 48 mm/m. Because these data form a geometric pattern of relatively high conductive values adjacent to the fence, they probably constitute electrical interference from the fence.

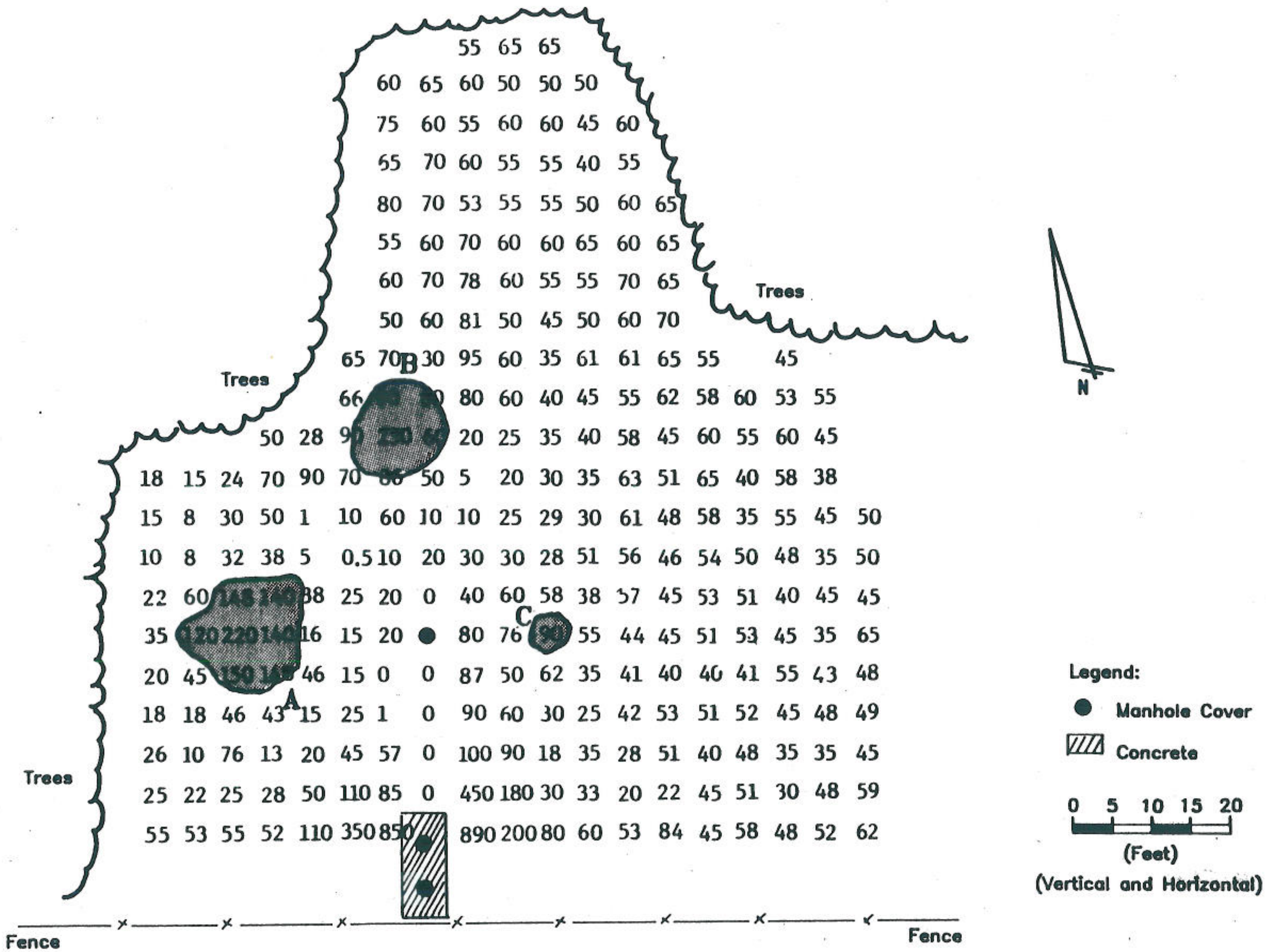

Figure 2. Terrain Conductivity Investigation on a Portion of Hazeltine Property

3.3.3 Anomalies

Three areas have elevated terrain conductivity values that form a discernible geometric pattern. Two of these areas, Anomalies A and B, are approximately the same size and shape and have similar magnitude of terrain conductivity values. Because these anomalies are easily discernible from background, there is a high level of confidence that they represent buried structures. The third anomaly is poorly discernible from the background values, and thus there is less confidence that this anomaly represents a buried structure.

Anomalies A and B are each marked by elevated terrain conductivity values ranging between 90 and 230 mm/m. They are roughly circular in shape, approximately 15 feet in diameter, and between 15 and 20 feet from the manhole cover marking the septic distribution box. Furthermore, the lines connecting these two anomalies to the septic distribution box manhole cover and the septic tank manhole cover form a right angle, which conforms to the pipeline configuration shown on the engineering drawing of the septic system.

Anomaly C is marked by elevated terrain conductivity values in range of 90 mm/m, which nearly blend in with the background values. This anomaly is therefore difficult to accurately describe and has a lower level of confidence associated with it. However, it is located along a line connecting with the septic distribution box manhole cover that is oriented at right angles to a line between the manhole cover and the septic tank. This conforms to the geometry shown on the engineering drawing of the septic system.

At the end of this investigation, all three anomalies were confirmed as cesspools, through the use of a backhoe.

4.0 WASTE SUMP CLEANOUT

Radian's subcontractor, Marine Pollution Control, removed and drummed the waste material from the former waste collection sump inside the building for disposal by Hazeltine. After the material was removed, the interior of the sump was cleaned using high pressure steam until the structure was visibly free of contamination.

5.0 SAMPLING AND ANALYSIS

The following sections summarize the samples taken and analyses performed during the site survey and site assessment. The attached tables, 5-1 through 5-7, present a summary of all compounds detected. Hard copies of the raw analytical data are available upon request.

All samples were collected, preserved, and analyzed by method protocols specified in SW-846, 3rd edition. All method-specified quality assurance and quality control procedures were followed.

5.1 Ground-Water Samples

Ground-water samples were collected from all five monitoring wells and analyzed for volatile organic compounds and total metals to assess the extent or existence of ground-water contamination.

5.2 Cesspools and Associated Structures

Liquid and sludge samples were collected from each of the structures in the three sets of cesspools and associated structures on the property. Samples were analyzed for total metals, PCBs, volatile organic compounds, and oil and grease. Selected sludge samples also were analyzed for EP Toxicity - metals. Ten structures were sampled in the west system, four in the north system, and two in the south system.

TABLE 5-1: TOTAL METAL ANALYSIS (EPA METHOD 6010)
SUMMARY OF DETECTED METALS
WEST CESSPOOL SYSTEM - LIQUIDS
HAZELTINE CORPORATION, COMMACK, NEW YORK
RESULTS LISTED IN MILLIGRAMS PER LITER

Compounds	Septic Tank	Dist. Box (#1)	Cesspool #2	Cesspool #3	Cesspool #4	Cesspool #5	Cesspool #6	Cesspool #7	Cesspool #8	Groundwater Protection Concentration mg/L
Silver	0.066	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	0.038	0.027 *	0.057	0.050
Aluminum	0.82	< 0.045	0.36	0.44	0.34	0.35	0.49	0.48	0.52	—
Arsenic	< 0.053	< 0.053	< 0.053	< 0.053	< 0.053	< 0.053	< 0.053	< 0.053	< 0.053	0.025
Boron	0.65	< 0.006	0.75	0.71	0.49	0.53	0.59	0.73	0.73	1.000
Barium	0.038	< 0.002	0.04	0.055	0.044	0.034	0.033	0.030	0.032	1.000
Beryllium	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.003
Calcium	34	< 0.01	37	35	37	38	34	35	37	—
Cadmium	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.005
Cobalt	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	—
Chromium	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	0.005
Copper	0.11	0.036	0.072	0.067	0.046	0.037	0.050	0.044	0.049	0.200
Iron	1.7	< 0.007	1.3	1.5	1.5	1.6	2.1	2.1	2.0	0.300*
Potassium	34	< 3.0	25	20	26	29	34	33	36	
Magnesium	7.3	< 0.03	6.3	5.4	6.3	7.1	7.1	7.2	7.4	35.000
Manganese	0.063	< 0.002	0.049	0.050	0.048	0.057	0.054	0.056	0.059	0.300*
Molybdenum	< 0.008	< 0.008	< 0.008	< 0.008	0.014 *	0.014 *	< 0.008	0.016 *	0.013 *	0.002
Sodium	46	< 0.029	41	35	41	46	48	48	48	20,000
Nickel	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	0.700
Lead	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	0.050 EPA MCL
Antimony	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	0.003
Selenium	< 0.075	< 0.075	< 0.075	0.1 *	< 0.075	< 0.075	< 0.075	< 0.075	< 0.075	0.010
Silicon	8.5	< 0.058	8.1	7.8	8.0	8.9	8.8	9.2	9.1	—
Thallium	< 0.051	< 0.051	< 0.051	< 0.051	< 0.051	0.056 *	0.056 *	0.085 *	< 0.051	0.003
Vanadium	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	0.250
Zinc	0.40	0.25	0.22	0.19	0.26	0.18	0.18	0.17	0.22	0.300
Mercury	0.0034	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.13	0.002

* Compound detected at less than five times the detection limit.

TABLE 5-2: TOTAL METAL ANALYSIS (EPA METHOD 6010)
SUMMARY OF DETECTED METALS
WEST CESSPOOL SYSTEM - SLUDGES
HAZELTINE CORPORATION, COMMACK, NEW YORK
RESULTS LISTED IN MILLIGRAMS PER KILOGRAM

Compounds	Dist. Box (#1)	Cesspool #2	Cesspool #3	Cesspool #4	Cesspool #5	Cesspool #6	Cesspool #7	Cesspool #8	Soil Ingestion Concentration mg/kg
Silver	2.06	< 0.7	< 0.7	1.25	0.74 *	0.79 *	< 0.7	7.4	200
Aluminum	< 5.0	1,800	1,100	25,000	1,400	670	360	1,400	—
Arsenic	10.4	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	80
Boron	< 0.60	34	45	15	28	29	30	26	7000
Barium	< 0.20	73	61	77	53	70	3.8	60	4000
Beryllium	< 0.92	0.11 *	0.092 *	0.48	< 0.10	< 0.10	< 0.10	< 0.10	0.11
Calcium	< 1.0	1,100	980	1,100	1,400	950	360	1,200	—
Cadmium	37	1.7 *	1.3 *	1.5 *	2.4	1.0 *	< 0.40	1.6 *	80
Cobalt	< 0.70	1.3 *	2.1 *	1.5 *	1.9 *	0.79 *	< 0.70	0.89 *	—
Chromium	424	7.8	12	85	20	8.7	0.69 *	42	400
Copper	2,520	120	190	150	220	190	3.0	290	—
Iron	< 0.70	2,800	11,000	3,500	7,400	1,300	450	2,000	—
Potassium	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	—
Magnesium	< 3.0	460	290	1,700	440	210	120	450	—
Manganese	< 0.20	16	35	38	43	8.4	6.7	13	20000
Molybdenum	< 0.80	< 0.80	< 0.80	1.6 *	< 0.80	1.1 *	< 0.80	< 0.80	300
Sodium	< 2.9	250	240	140	150	170	130	160	—
Nickel	61.6	2.4 *	3.6 *	3.8 *	3.9 *	2.3 *	< 1.5	3.5 *	2000
Lead	392	18 *	27	50	40	20 *	< 4.2	50	250
Antimony	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	30
Selenium	3.33	< 7.5	< 7.5	11 *	< 7.5	< 7.5	9.9	9.6 *	—
Silicon	< 5.8	280	740	890.0	840	600	320	750	—
Thallium	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	6.0
Vanadium	< 0.80	4.4	5.6	6.6	4.8	1.7 *	< 0.80	3.2 *	600
Zinc	19,600	210	130	300	220	150	8.4	410	20,000
Mercury	< 0.10	0.28	0.36	0.23	0.22	0.32	< 0.10	0.13	20

* Compound detected at less than five times the detection limit.

TABLE 5-3: TOTAL METAL ANALYSIS (EPA METHOD 6010) SUMMARY OF DETECTED METALS
NORTH CESSPOOL SYSTEM - SLUDGES & LIQUIDS HAZELTINE CORPORATION, COMMACK, NEW YORK
RESULTS LISTED IN MILLIGRAMS PER KILOGRAM (SLUDGES) OR MILLIGRAMS PER LITER (LIQUIDS)

Compounds	North Septic Tank Liquid	North Cesspool #9 Liquid	North Cesspool #10 Liquid	North Septic Tank Sludge	North Cesspool #9 Sludge	North Cesspool #10 Sludge	North Dist. Box Sludge	South Cesspool Water	South Cesspool Sludge
Silver	< 0.007	< 0.007	< 0.007	110 *	2.0 *	< 0.77	< 0.75	< 0.007	< 0.75
Aluminum	< 0.045	0.70 *	7.4	470	420	570	< 4.5	< 0.045	2.27
Arsenic	< 0.053	< 0.053	< 0.053	< 5.3	< 26	< 23	3.34	< 0.053	< 5.3
Boron	< 0.006	< 0.006	< 0.006	< 0.60	< 53	< 46	< 0.60	< 0.006	< 0.60
Barium	0.029 *	0.036 *	0.064	23	30	48	< 0.20	< 0.002	< 0.20
Beryllium	< 0.001	< 0.001	< 0.001	< 0.10	< 0.18	< 0.15	< 0.36	< 0.001	< 0.36
Calcium	26	27	28	7,200	220 *	290 *	< 1.0	< 0.01	< 1.0
Cadmium	< 0.004	< 0.004	< 0.004	< 0.40	15	13	0.67	< 0.004	< 0.40
Cobalt	< 0.007	< 0.007	< 0.007	3.2 *	3.0 *	3.0 *	< 0.70	< 0.007	< 0.70
Chromium	< 0.007	< 0.007	< 0.007	6.8	17	19	8.7	< 0.007	3.96
Copper	< 0.006	< 0.006	< 0.006	65	190	140	40.8	< 0.006	17.5
Iron	0.57	2.3	9.1	7,000	770	870	< 0.70	< 0.007	< 0.70
Potassium	17	19	19	< 300	< 260	< 230	< 300	< 3.0	< 300
Magnesium	< 3.0	< 0.03	< 0.03	< 3.0	< 88	87 *	< 3.0	< 0.03	< 310
Manganese	4.7 *	< 0.002	< 0.002	30	3.3 *	12	< 0.20	< 0.002	< 8.20
Molybdenum	0.052	< 0.008	< 0.008	4.0 *	6.4 *	4.2 *	< 0.80	< 0.008	< 6.80
Sodium	48	42	33	77 *	< 88	78 *	< 2.9	< 0.029	< 2.9
Nickel	< 0.015	< 0.015	< 0.015	6.0 *	5.1 *	5.1 *	3.36	< 0.015	< 1.5
Lead	< 0.042	< 0.042	< 0.042	< 4.2	220	150	26.7	0.023	4.09
Antimony	< 0.034	< 0.034	< 0.034	< 3.4	< 18	< 15	< 3.4	< 0.034	< 3.4
Selenium	< 0.075	< 0.075	< 0.075	29 *	< 26	< 23	< 0.30	< 0.075	1.82
Silicon	< 0.058	7.2	14	< 5.8	180 *	180 *	5.9	< 0.058	< 5.8
Thallium	< 0.051	< 0.051	< 0.051	< 5.1	< 8.8	< 7.7	< 0.36	< 0.051	< 5.1
Vanadium	< 0.008	< 0.008	0.021 *	4.9 *	8.6 *	2.5 *	< 0.80	< 0.008	< 0.80
Zinc	0.12	0.10	0.012	230	4800	2300	158	0.22	16.8
Mercury	< 0.002	0.055 *	< 0.002	< 0.10	0.25	0.22 *	< 0.10	< 0.10	< 0.10

* Compound detected at less than five times the detection limit.

TABLE 5-4: TOTAL METAL ANALYSIS (EPA METHOD 6010) SUMMARY OF DETECTED METALS
SOUTH CESSPOOL SYSTEM, RECHARGE BASIN, TANK SAND, TANK SOIL BORINGS, AND WASTE SUMP
HAZELTINE CORPORATION, COMMACK, NEW YORK
RESULTS LISTED IN MILLIGRAMS PER LITER (LIQUIDS) AND MILLIGRAMS PER KILOGRAM (SOLIDS)

Compounds	South Cesspool Sludge	South Cesspool Liquid	Recharge Basin Liquid	Recharge Basin Sediment	Tank Sand	Tank Soil Boring 10'-12'	Tank Soil Boring 15'-17'	MW-1	MW-2	MW-3	MW-4	MW-5	Waste Sump Sludge
Silver	2.27	< 0.007	< 0.01	< 0.7	< 0.7	< 0.7	< 0.7	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	22.3
Aluminum	< 0.045	< 0.045	< 0.045	2,800	2,800	6,400	4,400	100	6.7	40	88	37	< 5.0
Arsenic	< 0.053	< 0.053	< 0.004	29 *	27 *	58 *	42 *	0.82 *	< 0.05	33 *	0.77 *	< 5.3	6.89
Boron	< 0.006	< 0.006	< 0.006	< 0.60	< 0.60	< 0.60	< 0.60	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.60
Barium	< 0.002	< 0.002	< 0.002	15	9.8	15	25	1.0	0.24	0.35	0.66	0.33	< 0.60
Beryllium	< 0.001	< 0.001	< 0.005	0.25 *	< 0.10	0.29 *	0.31 *	0.010	< 0.001	0.003 *	0.007 *	0.002 *	< 1.01
Calcium	< 0.01	< 0.01	< 0.01	780	270 *	1,400	180 *	62	38	24	46	16	< 1.0
Cadmium	< 0.004	< 0.004	< 0.005	< 0.4	< 0.4	< 0.4	< 0.4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	40.10
Cobalt	< 0.007	< 0.007	< 0.007	2.2 *	2.0 *	3.6	2.6	0.084	0.021 *	0.038 *	0.12	0.032 *	< 0.70
Chromium	2.96	< 0.007	< 0.01	4.6 *	3.83 *	10	5.9	0.090	0.016 *	0.060	0.17	0.059	4,011
Copper	17.5	< 0.006	< 0.006	12	4.4 *	7,600	6,900	0.11	0.041 *	0.069 *	0.16	0.085 *	995
Iron	< 0.07	< 0.007	< 0.007	4,000	420	< 0.7	< 0.7	97	14	84	160	60	< 0.7
Potassium	< 3.0	< 3.0	< 3.0	240 *	< 300	440	390 *	10 *	7.5 *	9.6 *	20	6.0 *	< 300
Magnesium	< 0.03	< 0.03	< 0.03	860	490	1,400	940	18	13	13	46	10	< 3.0
Manganese	< 0.002	< 0.002	< 0.002	42	74	100	1,000	4.6	2.6	3.7	6.0	2.3	< 0.20
Molybdenum	< 0.008	< 0.008	< 0.008	< 0.80	< 0.80	7.8 *	6.3 *	0.10 *	< 0.80	1,060 *	0.14 *	0.057 *	< 0.80
Sodium	< 0.029	< 0.029	< 0.029	130 *	83 *	93 *	98 *	6.7	26	14	22	10	< 2.9
Nickel	< 0.015	< 0.015	< 0.02	4.7 *	2.8 *	5.5 *	5.9 *	0.080 *	0.027 *	0.059 *	0.18	0.055 *	26.4
Lead	4.09	0.023	0.013	32	13 *	16	9.4	0.26	0.05	0.077 *	0.19 *	0.12 *	4,640
Antimony	< 0.034	< 0.034	< 0.005	< 3.4	< 3.4	< 3.4	< 3.4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	268
Selenium	1.82	< 0.075	0.004	36 *	32 *	64 *	57 *	0.89 *	< 7.5	0.54 *	1.3 *	0.45 *	< 0.81
Silicon	< 0.058	< 0.058	< 0.058	220 *	210 *	220	140 *	76	13	55	92	44	< 5.8
Thallium	< 0.05	< 0.05	< 0.005	< 5.1	< 5.1	< 5.1	< 5.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1.01
Vanadium	< 0.008	< 0.008	< 0.008	13	6.8 *	13	9.8	0.15	0.008	0.085 *	0.25	0.085 *	< 0.80
Zinc	16.8	0.22	0.10	26	11	22	16	0.35	0.26	0.30	0.57	0.19	23,056
Mercury	< 0.002	< 0.002	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.1

* Compound detected at less than five times the detection limit.

TABLE 5-5: VOLATILE ORGANIC COMPOUNDS AND PCBs (EPA METHODS 8010, 8020, & 8080) IN LIQUIDS
RECHARGE BASIN, GROUND WATER SAMPLES AND CESSPOOL LIQUIDS
HAZELTINE CORPORATION, COMMACK, NEW YORK
RESULTS LISTED IN MICROGRAMS PER LITER

	PCBs (Total Aroclors)	Chloro-form	Tetra-chloro-ethene	Benzene	Chloro-benzene	1,4-Di-chloro-benzene	1,1-Di-chloro-ethene	Ethyl-benzene	Methylene chloride	Toluene	1,1,1-Trichloro-ethane	Total Xylenes
Recharge Basin Water	< 1.0	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	<0.30	<0.20	<0.20
MW-1	<0.80	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	<0.30	<0.20	<0.20
MW-2	<0.80	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	<0.30	<0.20	<0.20
MW-3	<0.80	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	<0.30	<0.20	<0.20
MW-4	<0.80	<0.10	1.7	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	<0.30	1.2	<0.20
MW-5	<0.80	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	1.6	0.48	<0.20
South Cesspool	NA	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	9.5	<0.20	<0.20
West Septic Tank	< 52	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	78	<0.20	<0.20
West Dist. Box	NA	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	15	<0.20	<0.20
West Cesspool #2	< 10	<0.10	<0.10	<0.10	<0.10	0.37	<0.10	<0.10	<0.40	23	<0.20	0.78
West Cesspool #3	< 10	<0.10	<0.10	<0.10	<0.10	<0.20	0.15	<0.10	<0.40	19	<0.20	0.67
West Cesspool #4	< 42	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	36	<0.20	0.64
West Cesspool #5	< 44	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	28	<0.20	0.47
West Cesspool #6	< 42	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	69	<0.20	<0.20
West Cesspool #7	< 46	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	50	<0.20	<0.20
West Cesspool #8	< 48	<0.10	<0.10	<0.10	<0.10	<0.20	2.6	<0.10	<0.40	40	<0.20	<0.20
North Septic Tank	< 4.8	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	5.9	<0.20	<0.20
North Cesspool #9	< 4.2	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.40	29	<0.20	2.1
North Cesspool #10	< 4.0	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	0.20	<0.40	<0.30	<0.20	<0.20
GW std (ppb)	0.1	8	5	5 ND	5	4.7	5	5	5	5	5	15

NA - Not analyzed.

TABLE 5-6: VOLATILE ORGANIC COMPOUNDS AND PCBs (EPA METHODS 8010, 8020, & 8080) SOLID MATRICES
HAZELTINE CORPORATION, COMMACK, NEW YORK
RESULTS LISTED IN MICROGRAMS PER KILOGRAM

	PCBs (Total Aroclors)	Chloro-form	Tetra-chloro-ethene	Benzene	Chloro-benzene	1,4-Di-chloro-benzene	1,1-Di-chloro-ethene	Ethyl-benzene	Methylene chloride	Toluene	1,1,1-Trichloro-ethane	Total Xylenes
Concrete Tank Sand	< 220	98	1,200	95	< 13	< 25	< 13	< 13	180	240	490	< 25
Recharge Basin Sediment	NA	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	51	< 25	< 25
MW-5 Soil Boring (10'-12')	NA	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	310	< 25	< 25
MW-5 Soil Boring (30'-32')	NA	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	< 40	< 25	< 25
Concrete Tank Soil Boring (10'-12')	< 22	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	306	< 25	< 25
Concrete Tank Soil Boring (15'-17')	< 190	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	< 40	< 25	< 25
South Cesspool Sludge	< 100	< 13	< 13	38	< 13	< 25	< 18	< 28	268	< 85	< 25	< 25
West Dist. Box Sludge	7,100	< 13	< 13	237	< 13	< 25	< 13	340	100	< 60	< 25	< 25
West Cesspool #2 Sludge	< 4,400	< 13	< 13	< 13	< 13	12 CE	< 13	< 13	< 50	9.0	< 25	< 25
West Cesspool #3 Sludge	< 3,000	< 13	< 13	< 13	< 13	4,000	< 13	< 13	< 50	8.3	< 25	< 25
West Cesspool #4 Sludge	< 3,200	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	1,500	170	< 25
West Cesspool #5 Sludge	< 1,700	< 13	< 13	< 13	< 13	2,600	< 13	< 13	< 50	1,100	< 25	< 25
West Cesspool #6 Sludge	< 2,600	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	970	< 25	< 25
West Cesspool #7 Sludge	< 480	< 13	< 13	< 13	< 13	390	< 13	< 13	< 50	< 40	< 25	< 25
West Cesspool #8 Sludge	<16,000	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	1,100	< 25	< 25
North Septic Tank Sludge	<10,000	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	< 40	< 25	< 25
North Dist. Box Sludge	< 200	< 13	< 13	17	< 13	< 25	< 13	< 13	30	6,600	< 25	< 25
North Cesspool #9 Sludge	<10,000	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 50	< 40	< 25	< 25
North Cesspool #10 Sludge	<15,000	< 13	< 13	< 13	< 13	1,000	< 13	< 13	< 50	< 40	< 25	< 25
RFI #'s ug/kg	91	110,000	140,000	24,000	2000000	—	12,000	8000000	93,000	20,000,000	7000000	200,000,000

NA - Not analyzed.
C - Second Column Confirmation.
E - Estimated value due to interference.

TABLE 5-7: EP TOXICITY (METALS) AND TOTAL PETROLEUM HYDROCARBONS (EPA METHOD 418.1)
HAZELTINE CORPORATION, COMMACK, NEW YORK

	Regulatory Limits	Waste Sump Sludge	West Dist. Box Sludge	West Cesspool #4 Sludge	North Dist. Box Sludge
EP Toxicity - Metals (mg/l)					
Arsenic	5.0	< 0.005	< 0.005	< 0.005	0.007
Barium	100.0	0.11	0.48	0.33	0.26
Cadmium	1.0	0.14	0.007	< 0.005	< 0.005
Chromium	5.0	0.27	< 0.01	< 0.01	< 0.01
Lead	5.0	1.96	< 1.00	< 0.10	< 0.10
Mercury	0.2	0.0002	0.0003	<0.0002	0.0003
Selenium	5.0	< 0.002	< 0.002	< 0.002	< 0.002
Silver	1.0	< 0.01	< 0.01	< 0.01	< 0.01
Total Petroleum Hydrocarbons (mg/kg)					
MW-5 Soil Boring (10'-12')	810				
NW-5 Soil Boring (30'-32')	< 20				

5.3 Soil Borings

Two soil samples (from 10 to 12 feet and 30 to 32 feet) were collected from borings near the underground fuel oil tank. These samples were analyzed for total petroleum hydrocarbons and volatile organic compounds to assess whether any fuel oil had been released from the tank.

Two soil samples (composited from 10 to 12 feet and 15 to 17 feet) were collected from borings next to the concrete underground storage tank. These samples were analyzed for total metals and volatile organic compounds to evaluate the extent or existence of any past releases from the tank.

During well installation and borehole drilling, soils from the holes were continuously monitored with a portable photo-ionization detector for volatile organic compounds.

5.4 Concrete Tank Fill and Waste Sump

Sand from inside the concrete underground storage tank was collected from the bottom of the tank and analyzed for total metals and volatile organic compounds. Dried sludge from the waste collection sump inside the building was collected and analyzed for total metals, PCBs, and EP Toxicity for metals in order to obtain data sufficient to make recommendations for its disposal.

5.5 Recharge Basin

Surface water and sediment samples were collected from the northern end of the recharge basin located on the eastern border of the property. Samples were analyzed for total metals, PCBs, and volatile organic compounds to see if there was any evidence of waste constituents in the basin.

6.0 ANALYTICAL RESULTS

All samples were analyzed by Radian Corporation's laboratories or National Environmental Testing (NET) of Thorofare, New Jersey. Both laboratories are certified by the New York State Department of Health.

6.1 Cesspool Samples

6.1.1 West Cesspool System

Approximately 400 parts per million (PPM) of both lead and chromium as well as 7,100 parts per billion (PPB) of PCBs were detected in the sludge from the distribution box for the west cesspool system. No PCBs were detected in any of the other structures. Lower levels of lead and chromium, ranging from 7 to 50 PPM lead and chromium were detected in sludges from six of the other structures in the system. Toluene was detected at levels ranging from 970 to 1,500 PPB in sludges from four of the structures. ~~1,1-Dichloroethene~~ 1,4-Dichlorobenzene was detected in sludges from three of the sludges at concentrations of 390 to 4,000 PPB. One hundred seventy (170) PPB of 1,1,1-trichloroethane also was detected in one of the sludges.

Significant levels of metals were not detected in the liquids from the cesspools. No metals were detected above maximum contaminant levels (MCLs), where applicable. Toluene, ranging in concentration from 20 to 70 PPB, was detected in liquids from eight of the pools.

EP Toxicity for metals was performed on two of the sludge samples which showed the highest levels of lead and chromium. The concentrations of metals found in the extract were less than the regulatory total limits in all cases, which means that the sludge is not a hazardous waste based upon its EP toxicity characteristics for lead and chromium.

6.1.2 North Cesspool System

Lead was detected in sludge from four of the five structures in the north cesspool system ranging from 26.7 ppm to 220 ppm. Toluene was detected in the sludge from the distribution box at 6,600 PPB.

Levels of metals or volatile organics were not detected in the liquids from these cesspools above MCLs.

EP Toxicity for metals was performed on the sludge sample containing the highest levels of total lead and chromium. No metals were detected in the extract above the regulatory limits.

6.1.3 South Cesspool System

Low levels of lead and chromium (4.09 PPM and 2.96 PPM, respectively) were detected in sludge from the south cesspools.

No levels of metals or volatile organic compounds were detected in the liquid from these cesspools above MCLs.

6.2 Ground-Water Samples

Chromium and lead were detected in the ground-water samples from wells 1, 3, 4, and 5 at levels slightly above the MCLs for both (0.05 PPM). Tetrachloroethene at 1.7 PPB and 1,1,1-trichloroethane at 1.2 PPB were detected in well 4. Toluene and 1,1,1-trichloroethane were detected in well 5 at 1.6 PPB and 0.48 PPB, respectively. The concentrations of these volatile organic compounds are only slightly elevated above the detection limits.

6.3 Soil Borings and Tank Fill Material

In the 10- to 12-foot boring sample from near the fuel oil tank, 810 PPM total petroleum hydrocarbons (TPH) were detected along with 310 PPB toluene. No TPH or volatile organics were detected in the 30- to 32-foot sample.

Copper was detected in both soil borings near the concrete underground storage tank (7,600 PPM in the 10- to 12-foot sample and 6,900 PPM in the 15- to 17-foot sample). Toluene was detected in the 10- to 12-foot sample at 306 PPB.

The fill material in the concrete underground storage tank was found to contain several volatile organic compounds. Tetrachloroethene was detected at 1,200 PPB, 1,1,1-trichloroethane at 490 PPB, toluene at 240 PPB, methylene chloride at 180 PPB, and chloroform and benzene at approximately 100 PPB.

6.4 Waste Sump Sludge

The dried sludge from the waste sump was found to contain approximately 4,000 PPM total chromium and lead. An EP Toxicity test for metals was performed on this sample and no metals were detected above the regulatory limits.

6.5 Recharge Basin

Lead and toluene were detected in the recharge basin sediment sample obtained at 32 PPM and 51 PPB, respectively. Levels of metals, PCBs, or volatile organic compounds significantly above background levels were not detected in the water samples collected.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The analytical results obtained during the site survey and site assessment do not present any evidence of significant impact to the surrounding environment due to past waste disposal and handling practices at the facility. Where organic volatile constituents were detected in the ground water, they were only slightly elevated above method detection limits and were below MCLs. Concentrations of metals found in the ground water were only slightly elevated above applicable maximum contaminant levels, where applicable. Similar concentrations were detected in the background well, MW 1. These low levels, found consistently across the site in two different aquifers, suggest the levels are indicative of background water quality. The following paragraphs present a summary of the findings in the areas of concern identified at the facility along with recommendations for future action.

7.1 Cesspool Systems

The cesspools and related structures contain only relatively low levels of waste constituents. The materials currently contained in these cesspools will be removed even though the potential for migration of waste materials into the subsurface is low. Ground-water samples collected downgradient of each system show no evidence of waste constituent migration from these systems.

7.2 Concrete Underground Storage Tank

The soil borings and ground-water samples obtained from the areas around this tank show no evidence of significant subsurface impacts. Although copper is not considered a hazardous waste constituent, it was detected at concentrations significantly above background (7,600 and 6,900 ppm) and may be indicative of leakage. Only very low levels of volatile organic compounds were detected in the ground water near this location.

The fill material within the tank does show evidence of contamination from past use of the tank. This material should be removed and properly disposed of, and the tank interior should then be cleaned to remove any remaining waste constituents. The soils beneath the tank should be sampled further to confirm that the subsurface impact has been minimal.

7.3 Fuel Oil Underground Storage Tank

The ground-water sample collected and the soil boring collected at 30 feet below grade show no evidence of contamination due to the past fuel oil release. The soil sample collected at 10 feet below the surface showed evidence of fuel oil contamination, considering the total petroleum hydrocarbon and toluene detected. A clayey aquitard layer exists beneath this level which would most probably prevent or retard the migration of fuel oil to the ground water. This is supported by the analytical results obtained from the 30-foot boring and the ground-water sample. The fuel oil tank has been petro-tight tested recently and is in compliance with federal and state regulations for underground tanks. No further action is recommended at this location, although reporting this release to the state should be considered. The state may require some action at this location, but the environmental impact of this release does not appear to be significant or widespread.

7.4 Recharge Basin

Although the recharge basin sediments exhibited slightly elevated concentrations of materials that may be attributed to activities at the plant, there is no evidence of industrial discharge to this recharge basin.

8.0 FURTHER ACTION

A work plan will be prepared to perform the tasks outlined in the paragraphs in Section 7.0.

Appendix A

BORING WELL # MW-1 PROJECT Hazeltine Corporation

LOCATION Upgradient of property (SW corner) BEGINNING 7/27/89 AND END 7/27/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
0.0					
-					
-					
-					
-					
5.0	5.0 - 7.0	3 7 11 16		GRAVELLY SAND: medium to coarse grained, tan, medium dense, dry.	HNu = 0.0
-					
-					
-				(glacial outwash)	
-				------------------------------	Gravelly sand to 9.0 ft.
10.0	10.0 - 12.0	8 5 10 10		SAND: medium to coarse grained, tan, trace fine gravel, medium dense, dry.	HNu = 0.0 ppm
-					
-					
-					
-					
15.0	15.0 - 17.0	4 6 9 9		SAND: medium to coarse grained, tan, trace fine gravel, medium dense, dry to moist. (glacial outwash)	HNu = 0.0 ppm
-					
-					
20.0					Ground water encountered at 20.0 ft.

BORING WELL # MW-1 PROJECT Hazeltine Corporation

LOCATION Upgradient of property (SW corner) BEGINNING 7/27/89 AND END 7/27/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
20.0					
-					
-					
-					
-					
25.0	25.0 - 27.0	4 4 8 16		SAND: medium to coarse grained, tan, trace fine gravel, medium dense, wet. (glacial outwash)	HNu = 0.0 ppm
-					
-					
-					
-					
30.0	30.0 - 32.0	4 5 7 8		SAND: as above to 30.5 ft. ---------------------------- CLAYEY SAND: at 30.5 ft. fine grained, grey with red horizontal layers 1 mm thick, moist to wet.	Sand to 30.5 ft. HNu = 0.0 ppm
-					
-					
-					
-					
35.0	35.0 - 37.0	5 6 8 8		CLAYEY SAND: as above but damp. (glacial outwash)	HNu = 0.0 ppm
-					
-					
-					
-				----------------------------	Clayey sand to 39.0 ft.
40.0					

BORING WELL # MW-1 PROJECT Hazeltine Corporation

LOCATION Upgradient of property (SW corner) BEGINNING 7/27/89 AND END 7/27/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
40.0					
-	40.0 - 42.0	8 16 4 12		GRAVELLY SAND: medium to coarse grained, tan, medium dense, dry to damp.	HNu = 0.0 ppm
-					
45				Bottom of borehole 42.0 ft. Upper water bearing zone is perched. fill bottom 3.5 ft. of borehole with bentonite. Set 10 ft. of screen from 20.0 ft. to 30.0 ft.	
-					
-					
-					
-					
50					
-					
-					
-					
-					
55					
-					
-					
-					
-					
60					
-					
-					
-					

BORING WELL # MW-2 PROJECT Hazeltine Corporation

LOCATION 20 ft. east of west cesspool system BEGINNING 7/28/89 AND END 7/28/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
0.0					
-					
-					
-					
-					
5.0	5.0 - 7.0	9 13 13 18		GRAVELLY SAND: medium to coarse grained, tan, medium dense, dry.	HNu = 0.0
-					
-					
-				(glacial outwash)	
-				--------------------------	Gravelly sand to 9.0 ft.
10.0	10.0 - 12.0	7 9 11 17		SAND: medium grained, tan with brown horizon from 9.8 to 10.1, trace fine gravel, medium dense, damp.	HNu = 0.0 ppm
-					
-					
-					
-					
15.0	15.0 - 17.0	6 6 11 10		SAND: medium to coarse grained, tan, gravel from 16.6' to 16.8', medium dense, damp.	HNu = 0.0 ppm
-					
-					
-				(glacial outwash)	
20.0					

BORING WELL # MW-2 PROJECT Hazeltine Corporation

LOCATION 20 ft. east of west cesspool system BEGINNING 7/28/89 AND END 7/28/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
20.0					
	20.0 -	3		SAND:	
-	22.0	7		medium to coarse grained,	HNu = 0.0 ppm
		9		tan, trace fine gravel,	
-		11		medium dense, damp.	
-					
-					
				----------------------------	Sand to 24.0 ft
25.0	25.0 -	3		GRAVELLY SAND:	HNu = 0.0 ppm
	27.0	6		medium to coarse grained,	
-		9		tan, medium dense, damp.	
		10			
-					
-					
				(glacial outwash)	
-					
30.0	30.0 -	5		GRAVELLY SAND:	
	32.0	6		as above	HNu = 0.0 ppm
-		9			
		12			
-					
-					
-					
				----------------------------	Gravelly sand
35.0	35.0 -	2		CLAY:	to 35.0 ft.
	37.0	3		brown, sand stringer	HNu = 0.0 ppm
-		9		36.5' to 36.6', medium	
		8		stiff, dry.	
-					
-					
-				(glacial outwash)	
40.0					

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BORING WELL # MW-2 PROJECT Hazeltine Corporation

LOCATION 20 ft. east of west cesspool system BEGINNING 7/28/89 AND END 7/28/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
40.0					
	40.0 - 42.0	3 5 6 7		CLAY: brown, micaceous, trace silt, medium stiff, dry. (glacial outwash)	HNu = 0.0 ppm
45.0	45.0 - 47.0	6 7 8 13		CLAY: brown, micaceous, sandy silt stringers (5 mm thick) from 46.2' to 47.0', medium stiff, moist.	HNu = 0.0 ppm
				----------------------------	Clay to 49.0 ft.
50.0	50.0 - 52.0	12 18 23 24		SAND: medium to coarse grained, tan, trace fine gravel, medium dense, dry. (glacial outwash)	HNu = 0.0 ppm
				----------------------------	Sand to 53.5 ft.
55.0	55.0 - 57.0	7 11 16 18		CLAY: to 56.2 ft., brown micaceous, trace silt, damp.	
				----------------------------	Clay to 56.2 ft.
				SAND: 56.2' to 57.0', medium grained, tan to brown, medium dense, moist. (glacial outwash)	Ground water Encountered at 57 ft.
60.0					

BORING WELL # MW-2 PROJECT Hazeltine Corporation

LOCATION 20 ft. east of west cesspool system BEGINNING 7/28/89 AND END 7/28/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
60.0					
-	60.0 - 62.0	3 5 11 11		GRAVELLY SAND: medium to coarse grained, tan, medium dense, wet. (glacial outwash)	HNu = 0.0
-	63.0 65.0	6 6 7 8		GRAVELLY SAND: as above.	
65.0				Bottom of borehole 65.0 ft. Set 10 ft. of screen from 55.0 ft. to 65.0 ft.	
-					
-					
-					
-					
-					
70.0					
-					
-					
-					
-					
-					
80.0					
-					
-					

BORING WELL # MW-3 PROJECT Hazeltine Corporation

LOCATION 20 ft. east of north cesspool system BEGINNING 7/31/89 AND END 7/31/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
0.0					
-					
-					
-					
-					
5.0	5.0 - 7.0	7 10 10 7		GRAVELLY SAND: medium to coarse grained, medium dense, dry. (glacial outwash)	HNu = 0.0
-					
-					
-					
-				--------------------------	Gravelly sand to 10.1 ft.
10.0	10.0 - 12.0	6 6 8 12		SANDY CLAY: brown to tan, sand is medium to coarse grained, fine gravel from 10.0' to 10.1', medium stiff, moist.	
-					
-					
-					
-					
15.0	15.0 - 17.0	4 4 3 6		SANDY CLAY: as above (glacial outwash)	HNu = 0.0 ppm
-					
-					
-					
20.0					

BORING WELL # MW-3 PROJECT Hazeltine Corporation

LOCATION 20 ft. east of north cesspool system BEGINNING 7/31/89 AND END 7/31/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
20.0					
	20.0 - 22.0	1, 4, 4, 10		SANDY CLAY to 21.5 ft.: grey to red, fine grained sand, medium stiff moist.	HNu = 0.0 ppm
-				---------------------------	Sandy clay to 21.5 ft.
-				SAND at 21.5 ft.: medium to coarse grained, tan, medium dense, damp.	
-					
25.0	25.0 - 27.0	3, 7, 7, 10		SAND: medium to coarse grained, tan, trace fine gravel, medium dense, dry.	HNu = 0.0 ppm
-					
-				(glacial outwash)	
-					
30.0	30.0 - 32.0	8, 8, 12, 15		SAND: as above to 31.5 ft. at 31.5 ft., fine to medium grained with clay stringer from 31.5' to 31.7', dry.	HNu = 0.0 ppm
-				---------------------------	Sand to 31.5 ft.
-				(glacial outwash)	
35.0	35.0 - 37.0	10, 10, 9, 10		SAND: fine to medium grained, tan, some silt and clay, dense, dry.	HNu = 0.0 ppm
-					
-				---------------------------	Sand w/clay to 38.5 ft.
40.0					

BORING WELL # MW-3 PROJECT Hazeltine Corporation

LOCATION 20 ft. east of north cesspool system BEGINNING 7/31/89 AND END 7/31/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
40.0					
	40.0 - 42.0	9 8 7 12		GRAVELLY SAND: medium to coarse grained, tan, medium dense, moist.	HNu = 0.0 ppm Ground water in borehole up to 40.5 ft.
45.0	45.0 - 47.0	3 6 15 17		GRAVELLY SAND: as above, wet. (glacial outwash)	HNu = 0.0 ppm
50.0					
55.0	55.0 - 57.0	1 3 5 12		GRAVELLY SAND: as above, wet.	HNu = 0.0 ppm
				Bottom of borehole 57.0 ft. Fill bottom of borehole with 3.5 ft. bentonite. Set 10 ft. screen from 38.5 ft. to 48.5 ft.	
60.0					

BORING WELL # MW-4 PROJECT Hazeltine Corporation

LOCATION 50 ft. east of concrete storage tank BEGINNING 8/1/89 AND END 8/1/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
0.0					
				Asphalt and Gravel	
				---------------------------	1.0 ft.
-					
-					
-					
-					
5.0	5.0 - 7.0	11 6 11 12		GRAVELLY SAND: medium to coarse grained, tan, medium dense, dry.	HNu = 0.0
-					
-					
-				(glacial outwash)	
-					
10.0	10.0 - 12.0	13 15 18 19		GRAVELLY SAND: as above	HNu = 0.0 ppm
-					
-					
-					
-					
15.0	15.0 - 17.0	6 11 12 17		GRAVELLY SAND: as above	HNu = 0.0 ppm
-					
-					
-				(glacial outwash)	
20.0					

BORING WELL # MW-4 PROJECT Hazeltine Corporation

LOCATION 50 ft. east of concrete storage tank BEGINNING 8/1/89 AND END 8/1/89 OF DRILLING OPERATION

LOG RECORDED BY R.T. Church SAMPLING INTERVAL (ESTIMATED) 5.0 (ft)

TYPE DRILL RIG AND OPERATOR CME-55 East Coast Drilling

Depth	Sampling Interval	Blow Counts	Type of Sample Taken	Stratigraphy	Remarks
20.0					
	20.0 - 22.0	6 7 14 14		GRAVELLY SAND: medium to coarse grained, tan, medium dense, dry.	HNu = 0.0 ppm
-					
-					
-				(glacial outwash)	
-					
25.0	25.0 - 27.0	8 8 10 10		GRAVELLY SAND: as above	HNu = 0.0 ppm
-					
-					
-					
-					
30.0	30.0 - 32.0	3 6 10 10		GRAVELLY SAND: as above	HNu = 0.0 ppm
-					
-				(glacial outwash)	
				---------------------------	Gravelly sand to 33.0 ft.
-					
-					
35.0	35.0 - 37.0	6 9 11 14		SAND: medium grained, tan, medium dense, dry.	
-					
-					
-				(glacial outwash)	
-				---------------------------	Sand to 39.0 ft.
40.0					

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