

NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

M E M O R A N D U M

DATE: October 28, 1985

TO: File

FROM: Steven F. Lewis 

SUBJECT: Telecom with Wright-Malta Corp. on 10/28/85

I received a telephone communication from Mr. R. Kazayaka this date. He informed me of the location and incineration of a waste drum by a subcontractor to GE who is performing construction on certain Wright-Malta Corp. property on behalf of GE. This event occurred late last week.

According to Kazayaka, the GE subcontractor was excavating with a backhoe when he punctured a buried drum containing Triethyl aluminum which, upon puncturing, was set on fire. Kazayaka was called to the scene and personally supervised the further puncturing of the drum and incineration of the drum's contents.

Kazayaka informed me that the chemical contained in the drum was a waste product associated with previous rocket fuel research at the site. Further, he stated that since the chemical was so volatile, he would not have expected any to have been buried; his experience was that all such chemicals were burned off as they were collected by the then site operator. He stated that the markings on the barrel indicated that burial occurred in 1964. He stated that the gentleman responsible for that area of the site died last year. Kazayaka further stated that he (Kazayaka) knew of no other buried drums in the area where this discovery occurred.

Kazayaka informed me that he was planning on informing regional representatives of the DEC of the discovery and his subsequent actions. I thanked him for his notifying me.

SFL/lm

INVESTIGATION OF
GROUND-WATER CONDITIONS AT THE
WRIGHT MALTA TEST FACILITY
MALTA, NEW YORK

INTRODUCTION

In February 1985, Geraghty & Miller, Inc. was retained by the General Electric Company to investigate ground-water and soil quality conditions at the Wright Malta Test Facility in Malta, New York. The purpose of the investigation was to determine whether hazardous chemicals that may have been associated with prior rocket engine testing and site usage in and about the Berth 24 test pad are presently found in the soil and/or ground water.

Phase I of the study consisted of analyzing soil from two borings located in the area most likely to have contacted the chemicals (Figure 1). A monitoring well was installed in one of these borings so that ground water under the site could also be analyzed for the presence of the suspected chemicals. If positive results were obtained additional investigations to describe the nature and extent of the chemicals were planned. However, as none of the chemicals were found, only Phase I was completed.

In addition to the studies at Berth 24, water samples from the two existing shallow supply wells serving the Wright Malta test facility were also collected to determine the quality of the plant drinking water. A complementary air quality study was conducted in four separate locations inside, and in the vicinity of Berth 24 to determine the air quality in the

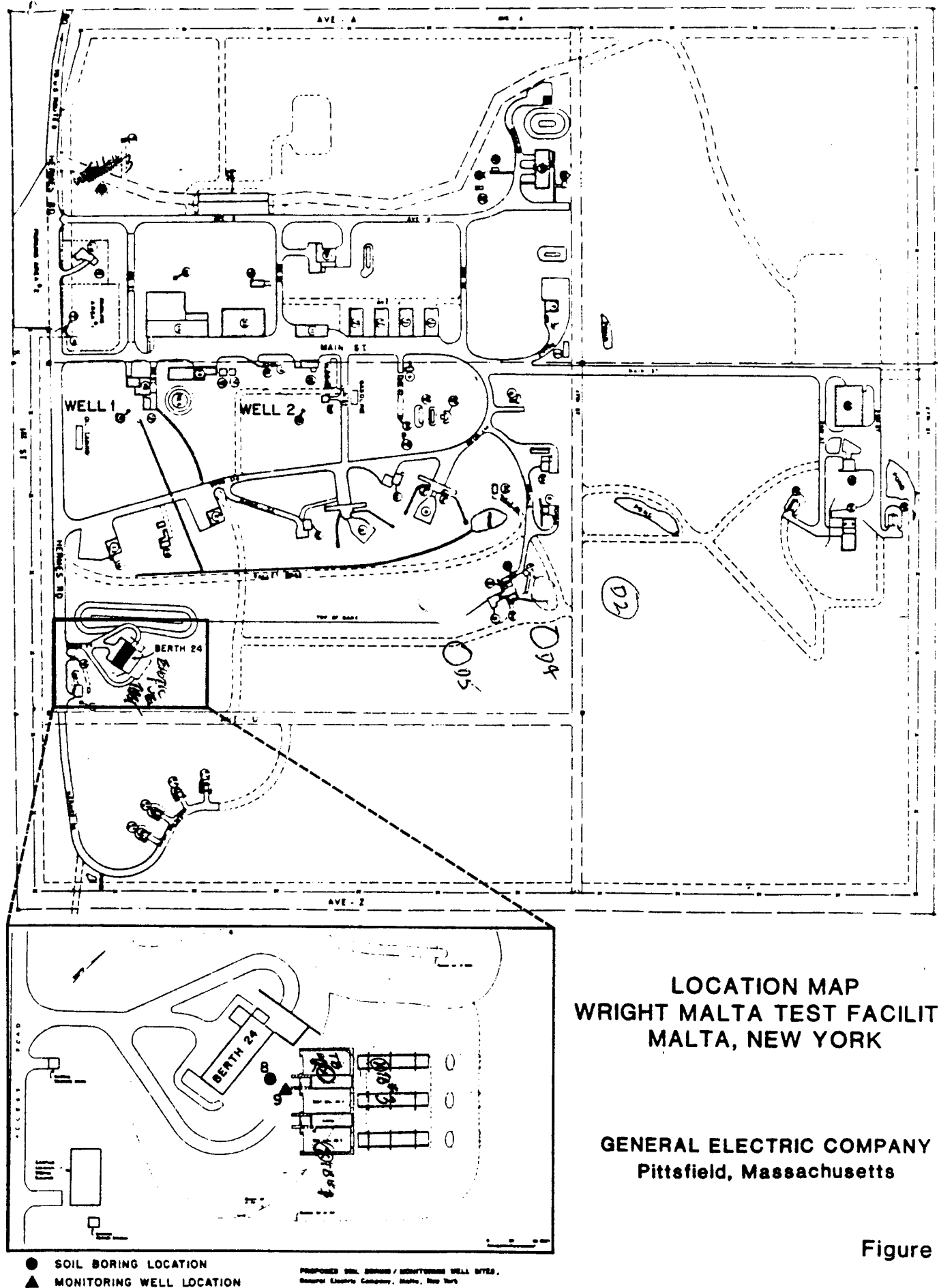


Figure 1

interior work areas. In addition, PW Engineering conducted an engineering investigation of the soil at the proposed new construction site adjacent to Berth 24. This investigation was carried out in accordance with specifications furnished by the General Electric Company.

The field investigation is summarized in Appendix A and the geologic and well construction data are in Appendix B. The laboratory reports provided by IT Analytical Services (Knoxville, Tennessee), Cambridge Analytical Associates, Inc. (Boston, Massachusetts), and Gollob Analytical Service (Berkeley Heights, New Jersey) are in Appendix C. The PW Engineering soil investigation report is in Appendix D.

DATA AND ANALYSIS

Geology

The Wright Malta Test Facility is located on glacial deposits that consist predominantly of stratified fine to coarse sand and gravel usually less than 50 feet thick. However, in the study area these deposits may be as much as 120 feet thick.¹⁾

Fine-grained stratified deposits consisting chiefly of clay with some silt underlie the surficial layer of sand and gravel. These sediments were deposited in lakes that occupied the area near the end of the last ice age and are generally referred to as lake-bottom deposits.

Chemical Data

Chemical analyses of water and soil samples from the vicinity of the site were performed for the 113 chemicals on the U.S. Environmental Protection Agency (USEPA) Priority Pollutant List to determine if byproducts from the testing operations at Berth 24 had entered either the soil or groundwater systems. In addition, samples of the potable water supply at the test facility, which is provided by wells tapping the shallow aquifer, were also analyzed for dissolved volatile organic chemicals and metals.

1) Heath, R.C., F.K. Mack, and J.A. Tannenbaum, Ground-Water Studies in Saratoga County, New York, U.S. Geological Survey, Bulletin GW-49, 1963.

Table 1. Summary of Analytical Results for Water Samples Collected at General Electric's Test Facility, Malta, New York. a)

Parameter	Volatile Organic Compounds (ug/L)												Replicate				Field Blank	Trip Blank	Field Blank	Trip Blank
	Well 1 3-19-85	Well 2 3-19-85	Well 9 ^{b)} 2-12-85	Well 9 ^{c)} 2-12-85	Well 9 3-19-85	Well 9 ^{c)} 2-12-85	Well 9 3-19-85	Well 9 ^{c)} 2-12-85	Field Blank	Trip Blank	Field Blank	Trip Blank								
Carbon tetrachloride	23	1,100	12	12	8	7	ND ^{d)}	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Chloroform	2	59	ND	ND	ND	ND	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Dichlorobromomethane	ND	ND	ND	ND	ND	ND	<10	ND	ND	ND	ND	<10	ND	ND	ND	ND	ND			
Methylene chloride	ND	ND	320	180	ND	ND	410	ND	ND	230	ND	<10	ND	ND	ND	ND	ND			
Toluene	ND	ND	ND	ND	ND	ND	<10	ND	ND	ND	ND	<10	ND	ND	ND	ND	ND			
Trichloroethylene	10	240	<10	<10	2	1	ND	2	1	ND	ND	ND	ND	ND	ND	ND	ND			
Metals (mg/L)																				
Antimony	<0.005	NA ^{e)}	<0.001	NA	<0.005	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Arsenic	<0.005	NA	0.05	NA	<0.005	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Beryllium	<0.010	NA	0.004	NA	<0.010	NA	NA	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Cadmium	<0.001	NA	0.004	NA	0.001	NA	NA	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Chromium	<0.025	NA	0.05	NA	<0.025	NA	NA	<0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Copper	<0.025	NA	0.320	NA	<0.025	NA	NA	<0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Lead	<0.005	NA	0.05	NA	<0.005	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Mercury	<0.0002	NA	<0.001	NA	<0.0002	NA	NA	<0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Nickel	<0.050	NA	0.17	NA	<0.050	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Selenium	<0.005	NA	<0.03	NA	<0.005	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Silver	<0.010	NA	<0.002	NA	<0.010	NA	NA	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Thallium	<0.005	NA	<0.02	NA	<0.005	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Zinc	0.060	NA	0.60	NA	0.010	NA	NA	0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA			

a) This data represents only those compounds which were detected. See Appendix C for the entire list of chemical constituents that was examined for each ground-water sample.

b) This sample was also analyzed for base/neutral extractable organic compounds, acid extractable organic compounds, pesticides/PCBs, cyanide, and phenol. All results were reported below detection limits (Appendix C).

c) Replicate analysis.

d) None detected.

e) Not analyzed.

Ground-Water Quality

Water samples were collected from Well 9 on February 12, 1985 after the well was constructed and developed (Figure 1). For quality control purposes, a replicate sample for volatile organic compound (VOC) analysis was collected to check on the laboratory's precision; a field blank was prepared from distilled water to provide chemical data related to the sampling operations; and a trip blank was included to determine if the ground-water samples had become contaminated during shipment and/or storage. The results of the February sampling are listed in Table 1.

Base-neutral extractable organics, acid extractable organics and pesticide/PCBs were not detected in the sample from Well 9. Cyanide and phenols were below the detection limit and metal content was at acceptable levels. As this sample was not filtered prior to acidification and the results for arsenic, chromium, and lead were at the recommended drinking water standard, a second filtered sample was collected on March 19, 1985 to determine the dissolved trace metal content. The results for the second sample showed that the dissolved trace metal contents were all below the drinking water limits.

The data for the VOC replicates collected on February 12, 1985 show that the precision of the laboratory was acceptable as the data for both samples generally agree. The results indicated that low levels of carbon tetrachloride, trace levels of trichloroethylene (TCE), and between 320 and 180 ug/L (micrograms per liter) methylene chloride were in the samples. The data for the field and trip blanks shows that the samples had been con-

taminated by several organic chemicals including methylene chloride. Therefore, the methylene chloride in the Well 9 sample for this date is attributed to external contamination and is not considered dissolved in the ground water.

This conclusion was verified by the data from a second set of samples collected on March 19, 1985. The March results repeated the presence of carbon tetrachloride and TCE at very low levels (<10 ug/L). However, methylene chloride was not detected in any of the samples and the field and trip blanks indicated that cross-contamination had not occurred.

The ground water under Berth 24 is, therefore, generally free of dissolved organic chemicals on the USEPA Priority Pollutant protocol and also those associated with the engine testing, except for carbon tetrachloride and TCE, which were found at levels approaching the detection limit.

The chemical results for the water samples from the potable water supply wells show that high levels of TCE and carbon tetrachloride were found in Well 2 with lesser quantities detected in Well 1. Chloroform was also found but it may have been introduced during the chlorination process of the water supply. The dissolved trace metal content of the sample from Well 1 does not contain any constituent in concentrations exceeding the USEPA standards.

Soil Quality

In order to characterize the quality of the shallow soil in the vicinity of the Berth 24 test site, soil samples were collected from the upper 4 feet at the Boring 8 and Well 9 locations shown on Figure 1. The samples at each location were composited and analyzed for the 113 USEPA priority pollutant compounds. The results of these analyses, listed in Table 2, indicate that methylene chloride was the only organic compound found above detection limits (Boring 8 - 72 ppb and Well 9 - 140 ppb). It is likely that these results are due to laboratory contamination similar to the water samples that were collected during the same sampling round.

The trace metal contents of the soil samples are within the ranges expected for soil and do not indicate contamination is present from the testing at Berth 24.²⁾ Mean background concentrations for metals in soil (Shocklette and Boerngen, 1984) are presented in Table 2 for comparative purposes.

Air Quality

Air in the Berth 24 Test Pad was sampled at the basement, main level, pipe bay, and outside cell (Bay 6). The samples were collected during a 3.5 to 4 hour period by pumping air through activated charcoal filters. Non-methane organic contaminants, if present, would become trapped on the activated charcoal. Contamination was not detected in either of the four

2) Shocklette, H.T. and J.G. Boerngen, Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States, U.S. Geological Survey, Professional paper 1270, U.S. Government Printing Office, 1984.

Table 2. Summary of Analytical Results for Soil Samples Collected at General Electric's Test Facility, Malta, New York (concentrations are in micrograms per gram (ppm) unless indicated otherwise).^{a)}

Parameter	Boring 8 ^{b)} 2/11/85	Well 9 ^{b)} 2/11/85	Mean Background Concentrations
<u>Volatile Organic Compounds^{c)}</u>			
Methylene chloride	72	140	-
<u>Base/Neutral Extractable Organic Compounds</u>			
bis(2-Ethylhexyl) phthalate	<1	<1	-
<u>Acid Extractable Organic Compounds</u>			
	ND ^{d)}	ND	-
<u>Pesticides/PCBs</u>			
	ND	ND	-
<u>Metals</u>			
Antimony	<0.1	<0.1	0.48
Arsenic	6.7	8.3	5.2
Beryllium	0.2	0.3	0.63
Cadmium	0.186	0.287	NA ^{e)}
Chromium	6.8	9.2	37
Copper	14	16	17
Lead	4.1	11	16
Mercury	0.61	<0.1	0.058
Nickel	8.7	10	13
Selenium	<2	<2	0.26
Silver	<0.2	<0.2	NA
Thallium	<2	<2	NA
Zinc	57	70	48

a) This data represents only those compounds which were detected. See Appendix C for the entire list of chemical constituents that was examined for each soil sample.

b) Soil samples from locations at Boring 8 and Well 9 were composited from a depth of 0 to 4 feet below land surface.

c) Concentrations are in micrograms per kilogram or parts per billion.

d) None detected

e) Not analyzed

sampling locations (Table 3). Fuels that would have been detected, if present, are: gasoline, kerosene, diesel, JP4 and JP5. Other distillates that would have been detected, if present, are: paint thinner, naphtha, mineral spirits, and stoddard solvent.

Table 3. Summary of Analytical Results for Air Samples
Collected at General Electric's Test Facility,
Malta, New York.

<u>Sample Location</u>	<u>Date</u>	<u>Constituents Detected</u>
Basement	2/20/85	None ^{a)}
Main Level	2/20/85	None
Pipe Bay	2/20/85	None
Outside Cell (Ray 6)	2/20/85	None

a) Fuels that would have been detected, if present, are:
gasoline, kerosene, diesel JP4 and JP5. Other dis-
tillates that would have been detected, if present,
are: paint thinner, naphtha, mineral spirits and
stoddard solvent.

CONCLUSIONS

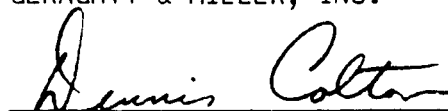
Chemical data describing soil, ground-water, and air quality at the Wright-Malta Test Facility, Berth 24 site and two potable water supply wells were collected in February and March 1985. The data were used to determine if concentrations of hazardous rocket fuel constituents, that may have been associated with prior testing, exist in either the soil or ground water. The results of the study are:

?
PRIORITY
POLLUTANTS

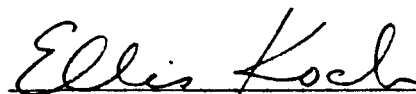
1. None of the USEPA priority pollutant organic chemicals were detected in the soil.
2. The trace metal content of the soil is within background concentrations.
3. Ground water under Berth 24 only contains two of the 113 organic priority pollutants analyzed for and these are at very low concentrations of less than 10 ug/L.
4. The dissolved trace metal content in ground water is below drinking water standards.
5. Potable water Supply Well 1 (tested for purgeable organics and metals) contained carbon tetrachloride, trichloroethylene, and chloroform at low levels; however, Supply Well 2 exceeded the recommended drinking-water limits for the same three organic compounds.

Respectfully submitted,

GERAGHTY & MILLER, INC.



Dennis Colton
Senior Scientist



Ellis Koch
Associate

June 25, 1985

APPENDIX A

Field Investigation

APPENDIX A
FIELD INVESTIGATION

The field investigation began on January 24, 1985 and was concluded on March 19, 1985. One monitoring well (Well 9) was installed adjacent to Berth 24, ~~several borings were completed~~, the monitoring well and both of the research center supply wells were sampled and a magnetometer survey was performed in the area of all proposed and completed drilling locations. The geologic logs collected during the drilling program are in Appendix B.

Monitoring Well Installation

Parratt-Wolff, Inc., East Syracuse, New York, installed Monitoring Well 9 using a power auger drilling rig under Geraghty & Miller, Inc.'s direction. An 8-inch diameter hole was drilled 5 feet into the saturated zone and soil samples were collected using a split-spoon sampler at the 0 to 2 and 2 to 4 foot intervals and every 5 feet thereafter to 27 feet below land surface. Each sample was described and stored in jars. A 10-foot length of 2-inch diameter, .010-inch slot PVC well screen was threaded onto 2-inch flush joint PVC casing and installed through the auger flytes to a depth of 25 feet below land surface. The annulus was sand packed to 1-foot above the screen zone and a 1-foot thick bentonite seal was set above the sand pack. The remainder of the annulus was backfilled to 2 feet below land surface and a 4-inch diameter steel protective casing with a locking cap was set over the well and cemented in place. Construction details for Well 9 are provided in Appendix B. The well was developed with a centrifugal pump to ensure that the well was open to the aquifer.

Soil Borings

One soil boring (shown as Location 8 on Figure 1) was completed adjacent to Berth 24. Three additional borings were completed in the same general area to obtain the necessary geologic data for the engineering study (Appendix D). Composite soil samples were collected from the material obtained from the first 4 feet at Boring 8 and Well 9 and placed in 40 ml sample bottles having teflon septa and stored on ice. The soil samples were shipped to the laboratory in an ice-filled cooler.

Water-Sample Collection

Samples were collected in a manner that minimized the possibility of cross-contamination and/or the volatilization of organic compounds. Prior to sampling at least five casing volumes of water were removed from each well so that representative water samples could be collected. Samples obtained for VOC analysis were collected with a Teflon bailer and poured into air-tight 40 ml vials with teflon septa in a manner to exclude bubbles. Samples were preserved according to the protocol provided by the analytical laboratories (It Analytical Services, Knoxville, Tennessee, and Cambridge Analytical Associates, Inc., Boston, Massachusetts).

In order to verify that the laboratory results are valid, replicate samples and field blanks were collected during each sampling round and travel blanks were provided by both analytical laboratories. The field blanks were collected by pouring distilled water from a cleaned bailer into the sample bottles. Proper chain-of-custody documentation was also ob-

tained and will be kept on permanent file.

Air Sample Collection

Air samples were collected from four specific locations at Berth 24 to determine the quality of the air. Inside Berth 24, air samples were collected from each of the three levels, the basement, the main level, and the pipe bay. A fourth sample was collected outside Berth 24 in an area identified as Bay 6. Each sample was collected over a 3.5- to 4-hour period by pumping air through an activated charcoal filter that would adsorb the chemicals of concern if they were present. The samples were preserved according to the protocol provided by Gollob Analytical Service, Berkeley Heights, New Jersey.

APPENDIX B

Geologic Logs

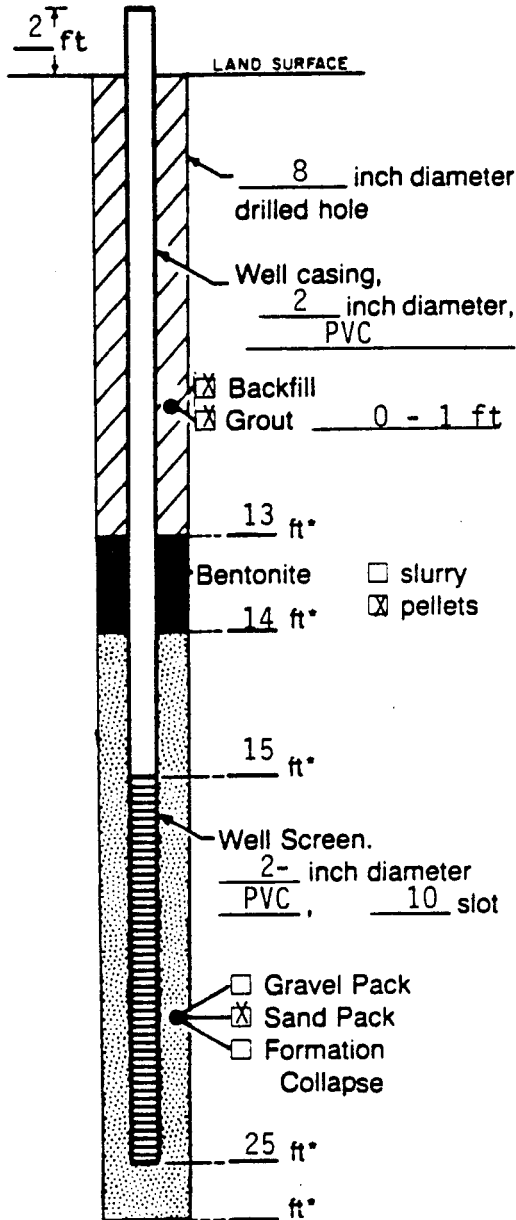
Well Construction Data

SAMPLE/CORE LOG

Boring (Well) 9 Project/No. N360MA1 Page 1 of 1
 Site Location Wright Malta Test Facility Drilling Started 2-11-85 Drilling Completed 2-12-85
 Total Depth Drilled 27 (feet)
 Hole Diameter 8 (inches) Type of Sample/ Coring Device split spoon
 Length and Diameter of Coring Device 2 ft Sampling Interval 0-2, 2-4, then every 5 feet
 Drilling Fluid Used none Drilling Method auger
 Drilling Contractor Parratt-Wolff Driller Butch Helper Mark
 Prepared By Robert Graham Hammer Weight 145 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
From	To			
0	1	1	80 - 75	Sand, fine, silty, dark brown; some 1/8" - 1" gravel, rock fragments, dense, moist (frozen)
1	2	1	12 - 10	Sand, fine to medium, brown; some 1/8" - 1" gravel, rock fragments, moist (frozen)
2	4	2	25 - 37 - 11 - 11	Sand, fine to medium, brown; moist (frozen)
5	7	2	2 - 2 - 5 - 7	As above.
10	12	2	2 - 2 - 2 - 5	As above.
15	17	2	3 - 3 - 4 - 5	As above.
20	22	2	5 - 11 - 12 - 12	As above; moist to wet, water table at 20 to 20.5 feet
25	27	2	9 - 12 - 14 - 17	Sand, fine to medium, brown; some silt, trace coarse sand, 1/8" - 1/4" gravel, wet

WELL CONSTRUCTION LOG



Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N360MA1 Well 9

Town/City Malta

County Saratoga State New York

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

☐ surveyed

☐ estimated

Installation Date(s) 2-12-85

Drilling Method Auger

Drilling Contractor Parratt-Wolff

Drilling Fluid None

Development Techniques(s) and Date(s)

Fluid Loss During Drilling _____ gallons

Water Removed During Development _____ gallons

Static Depth to Water 22.69 feet below M.P.

Pumping Depth to Water _____ feet below M.P.

Pumping Duration _____ hours

Yield _____ gpm

Date _____

Specific Capacity _____ gpm/ft

Well Purpose Monitoring

Remarks _____

Prepared by Robert Graham



IT CORPORATION

IT ANALYTICAL SERVICES

5815 Middlebrook Pike • Knoxville, Tennessee 37921 • 615 588-6411



CERTIFICATE OF ANALYSIS

TO General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECF 19533
ORDER NUMBER Project #N360MA1

Sample Description: GE Malta, Well #9, 2/12/85, SLL 115

PESTICIDES AND PCB's - PRIORITY POLLUTANT ANALYSIS

Compound	Concentration ppm	Compound	Concentration ppm
aldrin	ND	endrin aldehyde	ND
α -BHC	ND	heptachlor	ND
β -BHC	ND	heptachlor epoxide	ND
γ -BHC (lindane)	ND	PCB-(Aroclor)-1242	ND
δ -BHC	ND	PCB-(Aroclor)-1254	ND
chlordane	ND	PCB-(Aroclor)-1221	ND
4,4'-DDT	ND	PCB-(Aroclor)-1232	ND
4,4'-DDE	ND	PCB-(Aroclor)-1248	ND
4,4'-DDD	ND	PCB-(Aroclor)-1260	ND
dieldrin	ND	PCB-(Aroclor)-1016	ND
α -endosulfan	ND	toxaphene	ND
β -endosulfan	ND		
endosulfan sulfate	ND		
endrin	ND		

Remarks: ND = Not detected

<10. = Detected but at a level less than 10. ppm (parts per million)

Sworn to and subscribed before me this 13th
day of March, 1985
My commission expires January 16, 1988

James E. Atwell
Notary Public

Alvin L. Moore
Approved by
Laboratory Manager
Title



Accredited by the American Association of Laboratory Accreditation in the chemical



IT ANALYTICAL SERVICES

5815 Middlebrook Pike • Knoxville Tennessee 37921 • 615-588-6401



CERTIFICATE OF ANALYSIS

TO: General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

Sample Description: One (1) water sample received February 13, 1985

Concentration units are mg/liter (ppm)

GE Malta,
Well #9,
2/12/85, SLL 118

Antimony	<0.001
Arsenic	0.120
Beryllium	0.004
Cadmium	0.004
Chromium	0.08
Copper	0.320
Lead	0.1
Mercury	<0.001
Nickel	0.17
Selenium	<0.03
Silver	<0.002
Thallium	<0.02
Zinc	0.60

Sworn to and subscribed before me this 13th
day of March, 1985
My commission expires January 16, 1988

James E. Atwater
Notary Public

Alvin H. Moore
Approved:

Laboratory Manager

Title





IT CORPORATION

IT ANALYTICAL SERVICES

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CERTIFICATE OF ANALYSIS

TO General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

Sample Description: One (1) water sample received February 14, 1985

Concentration units are mg/liter (ppm)

Cyanide

GE Malta, Well #9, 2/12/85, SLL 116

<0.01

Phenols

GE Malta, Well #9, 2/12/85, SLL 117

<0.01

Sworn to and subscribed before me this 13th
day of March, 1985
My commission expires January 16, 1988

James S. Bennett
Notary Public

Alger S. Moore
Approved by
Laboratory Manager
Title



Accredited by the American Association for Laboratory Accreditation in the chemical analysis of water.



IT ANALYTICAL SERVICES

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CERTIFICATE OF ANALYSIS

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ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

VOLATILE ORGANIC PRIORITY POLLUTANT ANALYSIS

Sample Description: W 4757, GE Malta, Field Blank, 2/12/85, SLL 120

<u>Compound</u>	<u>Concentration</u> <u>ppb</u>	<u>Compound</u>	<u>Concentration</u> <u>ppb</u>
acrolein	ND	trans-1,3-dichloropropylene	ND
acrylonitrile	ND	ethyl benzene	ND
benzene	ND	methyl bromide	ND
bromoform	ND	methyl chloride	ND
carbon tetrachloride	ND	methylene chloride	410.
chlorobenzene	ND	1,1,2,2-tetrachloroethane	ND
chlorodibromomethane	ND	tetrachloroethylene	ND
chloroethane	ND	toluene	<10.
2-chloroethyl vinyl ether	ND	trans-1,2-dichloroethylene	ND
chloroform	29.	1,1,1-trichloroethane	ND
dichlorobromomethane	<10.	1,1,2-trichloroethane	ND
dichlorodifluoromethane	ND	trichloroethylene	ND
1,1-dichloroethane	ND	trichlorofluoromethane	ND
1,2-dichloroethane	ND	vinyl chloride	ND
1,1-dichloroethylene	ND		
1,2-dichloropropane	ND		
cis-1,3-dichloropropylene	ND		

Remarks: ND = Not detected

<10. = Detected but at a level less than 10. ppb (parts per billion)

Sworn to and subscribed before me this 13th
day of March, 1985
My commission expires January 16, 1988

Notary Public

Approved
Laboratory Manager





IT ANALYTICAL SERVICES

5815 Middlebrook Pike • Knoxville, Tennessee 37921 • 615-588-6401



CERTIFICATE OF ANALYSIS

TO General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
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Pittsfield, MA 01201

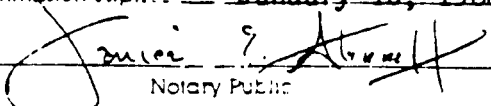
DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

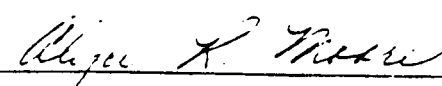
VOLATILE ORGANIC PRIORITY POLLUTANT ANALYSIS

Sample Description: Travel Blank

<u>Compound</u>	<u>Concentration</u> <u>ppb</u>	<u>Compound</u>	<u>Concentration</u> <u>ppb</u>
acrolein	ND	trans-1,3-dichloropropylene	ND
acrylonitrile	ND	ethyl benzene	ND
benzene	ND	methyl bromide	ND
bromoform	ND	methyl chloride	ND
carbon tetrachloride	ND	methylene chloride	230.
chlorobenzene	ND	1,1,2,2-tetrachloroethane	ND
chlorodibromomethane	ND	tetrachloroethylene	ND
chloroethane	ND	toluene	ND
2-chloroethyl vinyl ether	ND	trans-1,2-dichloroethylene	ND
chloroform	ND	1,1,1-trichloroethane	ND
dichlorobromomethane	ND	1,1,2-trichloroethane	ND
dichlorodifluoromethane	ND	trichloroethylene	ND
1,1-dichloroethane	ND	trichlorofluoromethane	ND
1,2-dichloroethane	ND	vinyl chloride	ND
1,1-dichloroethylene	ND		
1,2-dichloropropane	ND		
cis-1,3-dichloropropylene	ND		

Remarks: ND = Not detected
<10. = Detected but at a level less than 10. ppb (parts per billion)

Sworn to and subscribed before me this 13th
day of March, 1985
My commission expires January 16, 1988

Notary Public


Approved by _____
Laboratory Manager
Title _____





IT CORPORATION

IT ANALYTICAL SERVICES

5815 Middlebrook Pike • Knoxville Tennessee 37921 • 615-585-6401



CERTIFICATE OF ANALYSIS

TO General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

VOLATILE ORGANIC PRIORITY POLLUTANT ANALYSIS

Sample Description: W 4759, GE Malta, Boring #8, 0-4', 2/12/85, SLL 112

<u>Compound</u>	<u>Concentration</u> <u>ppb</u>	<u>Compound</u>	<u>Concentration</u> <u>ppb</u>
acrolein	ND	trans-1,3-dichloropropylene	ND
acrylonitrile	ND	ethyl benzene	ND
benzene	ND	methyl bromide	ND
bromoform	ND	methyl chloride	ND
carbon tetrachloride	ND	methylene chloride	72.
chlorobenzene	ND	1,1,2,2-tetrachloroethane	ND
chlorodibromomethane	ND	tetrachloroethylene	ND
chloroethane	ND	toluene	ND
2-chloroethyl vinyl ether	ND	trans-1,2-dichloroethylene	ND
chloroform	ND	1,1,1-trichloroethane	ND
dichlorobromomethane	ND	1,1,2-trichloroethane	ND
dichlorodifluoromethane	ND	trichloroethylene	ND
1,1-dichloroethane	ND	trichlorofluoromethane	ND
1,2-dichloroethane	ND	vinyl chloride	ND
1,1-dichloroethylene	ND		
1,2-dichloropropane	ND		
cis-1,3-dichloropropylene	ND		

Remarks: ND = Not detected

<10. = Detected but at a level less than 10. ppb (parts per billion)

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Approved:

Laboratory Manager

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analysis of test material used in the current AALA Directory of Accredited Laboratories



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Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

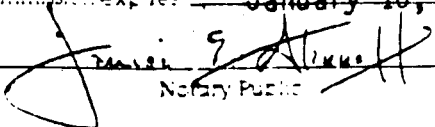
Sample Description: W 4760, GE Malta, Boring #8, 0-4', 2/12/85, SLL 113

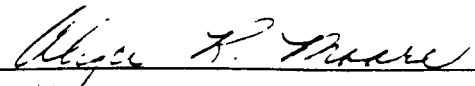
ACID EXTRACTABLE ORGANICS - PRIORITY POLLUTANT ANALYSIS

<u>Compound</u>	<u>Concentration</u> ppm	<u>Compound</u>	<u>Concentration</u> ppm
2-chlorophenol	ND	4-nitrophenol	ND
2,4-dichlorophenol	ND	p-chloro-m-cresol	ND
2,4-dimethylphenol (m-xlenol)	ND	pentachlorophenol	ND
4,6-dinitro-O-cresol	ND	phenol	ND
2,4-dinitrophenol	ND	2,4,6-trichlorophenol	ND
2-nitrophenol	ND		

Remarks: ND = Not detected

<1.0 = Detected but at a level less than 1.0 ppm (parts per million)

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day of March, 1985
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Notary Public


Approved by
Laboratory Manager
Title



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100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

Sample Description: W 4760, GE Malta, Boring #8, 0-4', 2/12/85, SLL 113

BASE-NEUTRAL EXTRACTABLE ORGANICS - PRIORITY POLLUTANT ANALYSIS

<u>Compound</u>	<u>Concentration</u> <u>ppm</u>	<u>Compound</u>	<u>Concentration</u> <u>ppm</u>
acenaphthene	ND	dimethylphthalate	ND
acenaphthylene	ND	di-n-butylphthalate	ND
anthracene	ND	2,4-dinitrotoluene	ND
benzidine	ND	2,6-dinitrotoluene	ND
benzo(a)anthracene	ND	di-n-octylphthalate	ND
benzo(a)pyrene	ND	1,2-diphenylhydrazine ¹	ND
3,4-benzofluoranthene and/or		fluoranthene	ND
benzo(k)fluoranthene ³	ND	fluorene	ND
benzo(ghi)perylene	ND	hexachlorobenzene	ND
bis(2-chloroethoxy)methane	ND	hexachlorobutadiene	ND
bis(2-chloroethyl)ether	ND	hexachlorocyclopentadiene	ND
bis(2-chloroisopropyl)ether	ND	hexachloroethane	ND
bis(2-ethylhexyl)phthalate	<1.0	indeno(1,2,3-cd)pyrene	ND
4-bromophenyl phenyl ether	ND	isophorone	ND
butyl benzylphthalate	ND	naphthalene	ND
2-chloronaphthalene	ND	nitrobenzene	ND
4-chloro-phenyl phenyl ether	ND	N-nitrosodimethylamine	ND
chrysene	ND	N-nitrosodi-n-propylamine	ND
dibenzo(a,h)anthracene	ND	N-nitrosodiphenylamine ²	ND
1,2-dichlorobenzene	ND	phenanthrene	ND
1,3-dichlorobenzene	ND	pyrene	ND
1,4-dichlorobenzene	ND	1,2,4-trichlorobenzene	ND
3,3'-dichlorobenzidine	ND	2,3,7,8-tetrachlorodibenzo-p-dioxin	ND
diethylphthalate	ND		

Remarks: ND = Not detected

¹ Detected as azobenzene ² Detected as diphenylamine ³ Isomeric Pairs
<1.0 = Detected but at a level less than 1.0 ppm (parts per million)

Sworn to and subscribed before me this 13th

day of March, 1985

My commission expires January 16, 1988

Notary Public

Approved by

Laboratory Manager

Title



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TO General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

Sample Description: W 4760, GE Malta Boring #8, 0-4', 2/12/85, SLL 113

PESTICIDES AND PCB's - PRIORITY POLLUTANT ANALYSIS

<u>Compound</u>	<u>Concentration</u> <u>ppm</u>	<u>Compound</u>	<u>Concentration</u> <u>ppm</u>
aldrin	ND	endrin aldehyde	ND
α -BHC	ND	heptachlor	ND
β -BHC	ND	heptachlor epoxide	ND
γ -BHC (lindane)	ND	PCB-(Aroclor)-1242	ND
δ -BHC	ND	PCB-(Aroclor)-1254	ND
chlordane	ND	PCB-(Aroclor)-1221	ND
4,4'-DDT	ND	PCB-(Aroclor)-1232	ND
4,4'-DDE	ND	PCB-(Aroclor)-1248	ND
4,4'-DDD	ND	PCB-(Aroclor)-1260	ND
dieldrin	ND	PCB-(Aroclor)-1016	ND
α -endosulfan	ND	toxaphene	ND
β -endosulfan	ND		
endosulfan sulfate	ND		
endrin	ND		

Remarks: ND = Not detected

<10. = Detected but at a level less than 10. ppm (parts per million)

Sworn to and subscribed before me this 13th
day of March, 1985
My commission expires January 16, 1988

James S. Atwater
Notary Public

Alfred E. Thayer
Approved by
Laboratory Manager
Title





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TO General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

Sample Description: Two (2) soil samples received February 13, 1985

Concentration units are $\mu\text{g}/\text{gram}$ (ppm)

	<u>W 4760, GE Malta,</u> <u>Boring #8, 0-4',</u> <u>2/12/85, SLL 113</u>	<u>W 4761, GE Malta,</u> <u>Well #9, 0-4',</u> <u>2/11/85, SLL 111</u>
Antimony	<0.1	<0.1
Arsenic	6.7	8.3
Beryllium	0.2	0.3
Cadmium	0.186	0.287
Chromium	6.8	9.2
Copper	14.	16.
Lead	4.1	11.
Mercury	0.61	<0.1
Nickel	8.7	10.
Selenium	<2.	<2.
Silver	<0.2	<0.2
Thallium	<2.	<2.
Zinc	57.	70.

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Notary Public

Approved by

Laboratory Manager

Title



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TO: General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

VOLATILE ORGANIC PRIORITY POLLUTANT ANALYSIS

Sample Description: W 4755, GE Malta, Well #9, 0-4', 2/11/85, SLL 110

<u>Compound</u>	<u>Concentration</u> <u>ppb</u>	<u>Compound</u>	<u>Concentration</u> <u>ppb</u>
acrolein	ND	trans-1,3-dichloropropylene	ND
acrylonitrile	ND	ethyl benzene	ND
benzene	ND	methyl bromide	ND
bromoform	ND	methyl chloride	ND
carbon tetrachloride	ND	methylene chloride	140.
chlorobenzene	ND	1,1,2,2-tetrachloroethane	ND
chlorodibromomethane	ND	tetrachloroethylene	ND
chloroethane	ND	toluene	ND
2-chloroethyl vinyl ether	ND	trans-1,2-dichloroethylene	ND
chloroform	ND	1,1,1-trichloroethane	ND
dichlorobromomethane	ND	1,1,2-trichloroethane	ND
dichlorodifluoromethane	ND	trichloroethylene	ND
1,1-dichloroethane	ND	trichlorofluoromethane	ND
1,2-dichloroethane	ND	vinyl chloride	ND
1,1-dichloroethylene	ND		
1,2-dichloropropane	ND		
cis-1,3-dichloropropylene	ND		

Remarks: ND = Not detected

<10. = Detected but at a level less than 10. ppb (parts per billion)

Sworn to and subscribed before me this 13th

day of March, 1985

My commission expires January 16, 1988

James S. Atwell
Notary Public

Alfred R. Miller
Approved:
Laboratory Manager





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Pittsfield, MA 01201

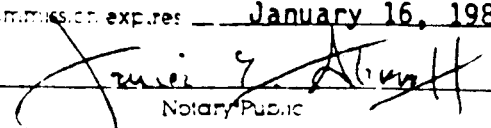
DATE REPORTED March 13, 1985
PROJECT CODE GECF 19533
ORDER NUMBER Project #N360MA1

Sample Description: W 4761, GE Malta, Well #9, 0-4', 2/11/85, SLL 111

ACID EXTRACTABLE ORGANICS - PRIORITY POLLUTANT ANALYSIS

<u>Compound</u>	<u>Concentration ppm</u>	<u>Compound</u>	<u>Concentration ppm</u>
2-chlorophenol	ND	4-nitrophenol	ND
2,4-dichlorophenol	ND	p-chloro-m-cresol	ND
2,4-dimethylphenol (m-xyleneol)	ND	pentachlorophenol	ND
4,6-dinitro-0-cresol	ND	phenol	ND
2,4-dinitrophenol	ND	2,4,6-trichlorophenol	ND
2-nitrophenol	ND		

Remarks: ND = Not detected
<1.0 = Detected but at a level less than 1.0 ppm (parts per million)

Sworn to and subscribed before me this 13th
day of March, 1985
My commission expires January 16, 1988

Notary Public


Approved by
Laboratory Manager
Title





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TO General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

Sample Description: W 4761, GE Malta, Well #9, 0-4', 2/11/85, SLL 111

BASE-NEUTRAL EXTRACTABLE ORGANICS - PRIORITY POLLUTANT ANALYSIS

<u>Compound</u>	<u>Concentration</u> ppm	<u>Compound</u>	<u>Concentration</u> ppm
acenaphthene	ND	dimethylphthalate	ND
acenaphthylene	ND	di-n-butylphthalate	ND
anthracene	ND	2,4-dinitrotoluene	ND
benzidine	ND	2,6-dinitrotoluene	ND
benzo(a)anthracene	ND	di-n-octylphthalate	ND
benzo(a)pyrene	ND	1,2-diphenylhydrazine ¹	ND
3,4-benzofluoranthene and/or		fluoranthene	ND
benzo(k)fluoranthene ³	ND	fluorene	ND
benzo(ghi)perylene	ND	hexachlorobenzene	ND
bis(2-chloroethoxy)methane	ND	hexachlorobutadiene	ND
bis(2-chloroethyl)ether	ND	hexachlorocyclopentadiene	ND
bis(2-chloroisopropyl)ether	ND	hexachloroethane	ND
bis(2-ethylhexyl)phthalate	<1.0	indeno(1,2,3-cd)pyrene	ND
4-bromophenyl phenyl ether	ND	isophorone	ND
butyl benzylphthalate	ND	naphthalene	ND
2-chloronaphthalene	ND	nitrobenzene	ND
4-chloro-phenyl phenyl ether	ND	N-nitrosodimethylamine	ND
chrysene	ND	N-nitrosodi-n-propylamine	ND
dibenzo(a,h)anthracene	ND	N-nitrosodiphenylamine ²	ND
1,2-dichlorobenzene	ND	phenanthrene	ND
1,3-dichlorobenzene	ND	pyrene	ND
1,4-dichlorobenzene	ND	1,2,4-trichlorobenzene	ND
3,3'-dichlorobenzidine	ND	2,3,7,8-tetrachlorodibenzo-p-dioxin	ND
diethylphthalate	ND		

Remarks: ND = Not detected

¹ Detected as azobenzene

² Detected as diphenylamine

³ Isomeric Pairs

<1.0 = Detected but at a level less than 1.0 ppm (parts per million)

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day of March, 1985

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Laboratory Manager



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TO General Electric Company
ATTN: Jim Thayer
100 Woodlawn Avenue
Building OP-42; Room 306
Pittsfield, MA 01201

DATE REPORTED March 13, 1985
PROJECT CODE GECP 19533
ORDER NUMBER Project #N360MA1

Sample Description: GE Malta Well #9, 0-4', 2/11/85, SLL 111

PESTICIDES AND PCB's - PRIORITY POLLUTANT ANALYSIS

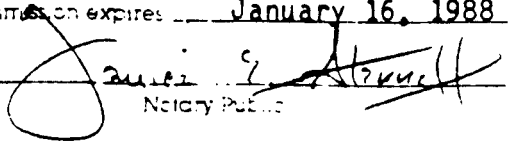
Compound	Concentration ppm	Compound	Concentration ppm
aldrin	ND	endrin aldehyde	ND
α -BHC	ND	heptachlor	ND
β -BHC	ND	heptachlor epoxide	ND
γ -BHC (lindane)	ND	PCB-(Aroclor)-1242	ND
δ -BHC	ND	PCB-(Aroclor)-1254	ND
chlordane	ND	PCB-(Aroclor)-1221	ND
4,4'-DDT	ND	PCB-(Aroclor)-1232	ND
4,4'-DDE	ND	PCB-(Aroclor)-1248	ND
4,4'-DDD	ND	PCB-(Aroclor)-1260	ND
dieldrin	ND	PCB-(Aroclor)-1016	ND
α -endosulfan	ND	toxaphene	ND
β -endosulfan	ND		
endosulfan sulfate	ND		
endrin	ND		

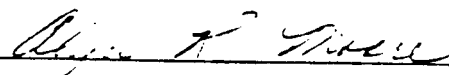
Remarks: ND = Not detected

<10. = Detected but at a level less than 10. ppm (parts per million)

Sworn to and subscribed before me this 13th
day of March, 1985

My commission expires January 16, 1988


Notary Public


Approved

Laboratory Manager

Title



Cambridge Analytical Associates

1106 Commonwealth Avenue / Boston, Massachusetts 02215 / (617) 232-2207

FINAL REPORT

Geraghty & Miller, Inc.
6800 Jericho Turnpike
Syosset, NY 11791
Attn: Mr. Dennis Colton

PROJECT: G.E./Malta, NY

CUSTOMER ORDER NUMBER: N360MA1

REPORT NUMBER: 85-227

PREPARED BY:

A handwritten signature in cursive script, reading 'Edward A. Lawler', written over a horizontal line.

Edward A. Lawler
Senior Scientist

DATE PREPARED: April 17, 1985



Cambridge Analytical Associates

TABLE OF CONTENTS

1. INTRODUCTION

2. ANALYTICAL METHODS

3. RESULTS

4. QUALITY ASSURANCE DOCUMENTATION

4.1 Quality Control Data

4.2 Certification

1. INTRODUCTION

This report summarizes results of chemical analyses performed on samples received by CAA on March 21, 1985. Analytical methods employed for these analyses are described in Section 2 and results are presented in Section 3. The last section contains quality control data and certifications supporting the analytical results.

2. ANALYTICAL METHODS

Analytical methods utilized for sample analysis are summarized in Tables 1A and 1B.

3. RESULTS

Results of analyses are presented in Tables 2 and 3.

Table 1A. Summary of Inorganic Analytical Methods

Constituent	Method Reference	Method Description
Instrumental Analysis		
Antimony (Sb)	Method 204.2 (1)	GFAAS
Arsenic (As)	Method 206.2 (1)	GFAAS
Beryllium (Be)	Method 200.7 (1)	ICP
Cadmium (Cd)	Method 213.2 (1)	GFAAS
Chromium (Cr)	Method 200.7 (1)	ICP
Copper (Cu)	Method 200.7 (1)	ICP
Lead (Pb)	Method 239.1 (1)	FAAS
Mercury (Hg)	Method 245.5 (1)	Cold-vapor AAS
Nickel (Ni)	Method 200.7 (1)	ICP
Selenium (Se)	Method 270.2 (1)	GFAAS
Silver (Ag)	Method 200.7 (1)	ICP
Thallium (Tl)	Method 279.2 (1)	GFAAS
Zinc (Zn)	Method 200.7 (1)	ICP

(1) U.S. EPA. 1979. Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL, Cincinnati, Ohio.

GFAAS - Graphite Furnace Atomic Absorption Spectrophotometry
 ICP - Inductively Coupled Argon Plasma Emission Spectroscopy
 FAAS - Flame Atomic Absorption Spectrometry
 AAS - Atomic Absorption Spectrophotometry

Table 1R. Summary of Organic Analytical Methods

Constituent	Method Reference	Method Description
Volatile Organic Compounds	Method 624 (1)	Purge and trap, gas chromatography/mass spectrometry

(1) U.S. EPA. 1984. Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A. 40CFR Part 136. Federal Register, Vol. 49, No. 209, 1984.

Subsurface Conditions (Continued)

Relative density of the subgrade soils is somewhat variable across the site. TB-1 penetrated loose sands to a depth close to 20 feet, below which the soil became consistently medium dense. TB-3 exhibited loose sand to a depth of ten feet, and the sand appeared medium dense below this to a boring termination depth of 31.5 feet.

Boring TB-2 penetrated medium dense sand throughout its depth. A previously drilled boring within about 25 feet of TB-2 penetrated loose sand to an approximate depth of twenty feet before encountering medium dense soil.

Groundwater was observed at an approximate depth of 20.5 feet at TB-2 during drilling on February 12, 1985. TB-1 and TB-3 did not encounter groundwater within the 31.5 foot depth tested. Surface elevations at TB-1 and TB-3 were estimated to be approximately 15 feet higher than that at TB-2.

Engineering Observations and Recommendations

Subgrade soils may be classified as SP-SM soils according to the Unified Soil Classification System. These soils should provide good foundation support and are suitable for all types of construction operations including excavation and fill.

The following properties may be estimated for design purposes:

Property	Relative Density		
	Loose	Med. Dense	Dense
Dry Unit Weight (pcf)	95	101	105
Angle of Internal Friction	29°	32°	35°
Allowable Side Slope (V:H)	1:2	1:1.75	1:1.5
Active Earth Pressure Coefficient (KA)	0.347	0.307	0.271
Passive Earth Pressure Coefficient (KP)	2.88	3.25	3.69
Coefficient of Sliding Friction	0.26	0.33	0.40

Shallow spread footing foundations may be used for structural support at the site. Allowable bearing pressure is a function of actual footing size and depth of bearing, but design bearing pressures in the range of 3400psf to 5300psf are reasonable for small and large footings, respectively. All footings must bear at frost protected depths of at least 4.5 feet below final grades. Subgrade beneath footings must be compacted to a density equal to or greater than 95 percent of maximum according to ASTM D-1557. Total settlements under design loads can be expected to be less than 1 inch.

Engineering Observations and Recommendations (Continued)



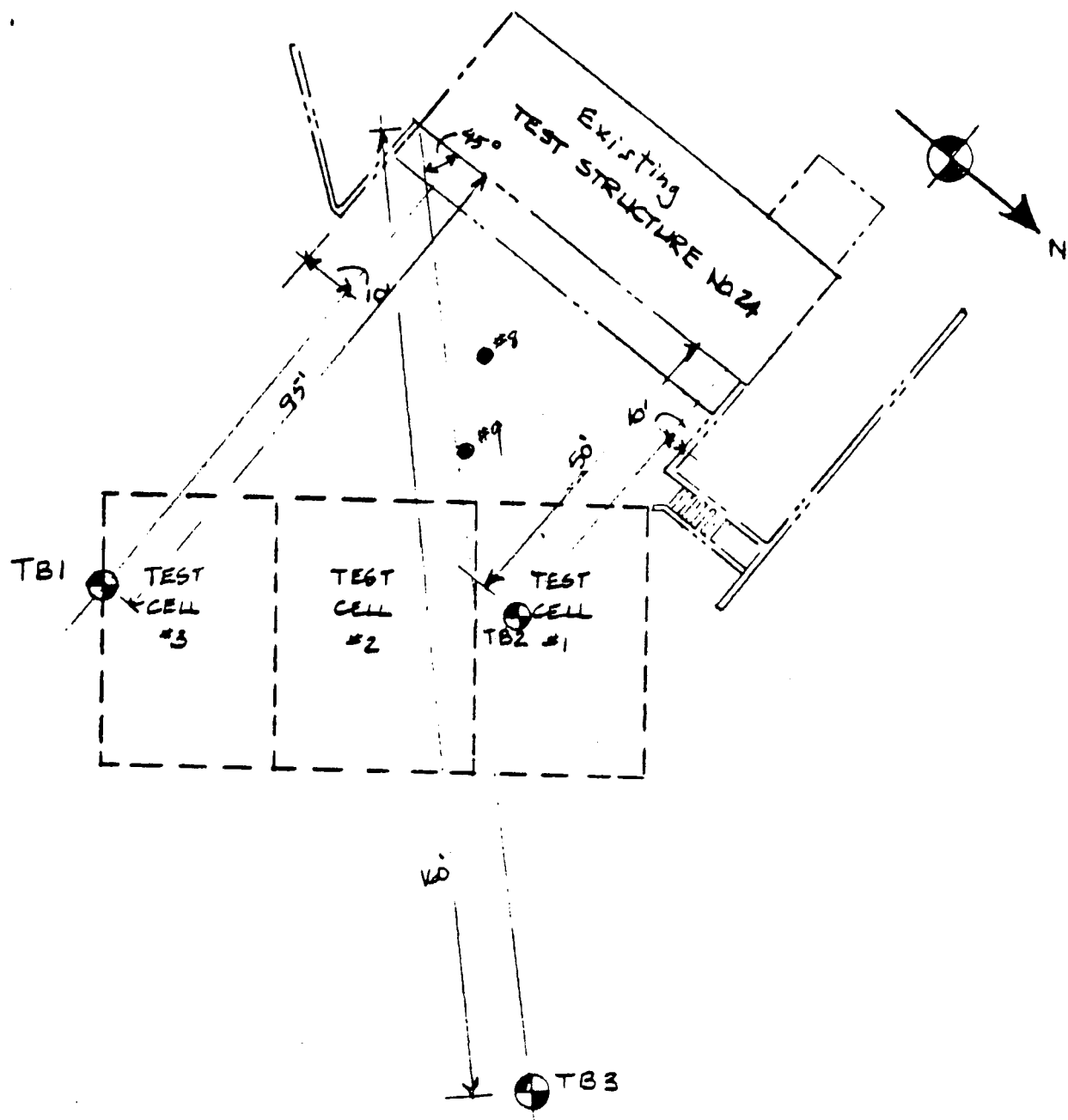
On site soils are suitable for use as fill. Fill must be properly placed and compacted to provide for strength and low compressibility. The sand fill must be placed in compacted lift thicknesses not exceeding 10 inches per lift. Compaction must be provided to densify the soil to densities equal to or greater than 95 percent of maximum in accordance with ASTM D-1557. Suitable compaction equipment for these relatively clean sands include rubber tire rollers, vibratory rollers or crawler tractors.

If rubber tire rollers are used, rollers should have a minimum of four wheels with pneumatic tires. The tires shall be of such size and ply as can be maintained at tire pressures between 80 and 100 pounds per square inch. The roller wheels shall be located abreast and be so designed that each wheel will carry approximately equal load in traversing uneven ground. The spacing of the wheels shall be such that the distance between the nearest edges of adjacent tires will not be greater than 50 percent of the width of a single tire. The roller shall be provided with a body suitable for ballast loading such that the load per wheel may be varied from 18,000 to 25,000 pounds. The roller shall be towed at speeds not to exceed five miles per hour. A minimum of five complete coverages must be made over each lift placed. The character and efficiency of this equipment shall be subject to the approval of the project engineer or his representative.

Vibratory rollers shall have a total static weight of not less than 18,000 pounds with at least 90 percent of the weight transmitted to the ground through a single smooth drum when the roller is standing in a level position hitched to a towing vehicle. The diameter of the drum shall be between 5 and 5.5 feet and the width between 6 and 6.5 feet. The frequency of vibration during operation shall be between 1000 and 1600vpm, and the dynamic force shall not be less than 40,000 lb. at 1400 vpm. The roller shall be operated at speeds not to exceed 1.5 miles per hour. A minimum of five complete coverages shall be made over each lift placed.

Track-type crawler tractors may be used for granular soil compaction. No smaller than a D8 tractor weighing at least 34,500 pounds shall be used for compaction of clean sands. A minimum of four complete coverages must be made over each lift placed.

All fill operations must be continuously observed by qualified geotechnical engineering personnel to assure uniform compaction. In-place density tests must be performed on every lift placed and compacted. A minimum of three tests per lift must be performed to document actual compaction levels being attained during construction. Densities equal to or greater than 95% of maximum according to ASTM D-1557 must be uniformly obtained throughout the fill.



SYN

WDN BY DTB 1-22-65	CHECKED BY	TITLE BORING LOCATION PLAN	GENERAL ELECTRIC PROJECTS ENGINEERING OPERATION ENGINEERING SERVICES AND PROJECTS DEPARTMENT SCHENECTADY, N.Y., U.S.A.			
	REVIEW ENGR.					
NO.	PEO JOB NO.					
SUBJECT MALTA TEST PIT # 24		MADE FOR GENERAL ELECTRIC COMPANY ORDNANCE SYSTEMS DIVISION PITTSFIELD, MASS.	PEO IDENT. NO. 50P4862A	DRAWING NO. 550P4862	SH. B-1 CONT. ON SH.	REV. 0



TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT General Electric
LOCATION Malta, New York

DATE STARTED 2/12/85 DATE COMPLETED 2/12/85

HOLE NO. TB-1

SURF. EL.

JOB NO. 8513/K8503

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING
30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
"/OR — % CORE RECOVERY

GROUND WATER DEPTH
WHILE DRILLING Dry

BEFORE CASING
REMOVED Dry

AFTER CASING
REMOVED Dry

CASING TYPE - HOLLOW STEM AUGER

SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
5.0	0.0'- 2.0'	1		Auger Sample		Brown moist loose fine to medium SAND, trace silt	
10.0	5.0'- 6.5'	2		2/2 3	5		
15.0	10.0'- 11.5'	3		3/4 4	8	Brown moist medium stiff clayey SILT Brown moist loose fine to medium SAND, trace silt	10.0' 10.5'
20.0	15.0'- 16.5'	4		1/2 3	5		
25.0	20.0'- 21.5'	5		11/12 7	19	Brown moist medium dense fine to coarse SAND, trace fine to medium gravel, trace silt Brown moist medium dense fine to medium SAND, trace silt	20.0' 21.0'
30.0	25.0'- 26.5'	6		6/7 9	16		
35.0	30.0'- 31.5'	7		6/7 13	20	Bottom of Boring	
							31.5'

PROJECT General Electric
LOCATION Malta, New York

HOLE NO. TB-2
SURF. EL.

DATE STARTED 2/12/85 DATE COMPLETED 2/12/85

JOB NO. 8513/K8503

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING
30" — ASTM D-1586, STANDARD PENETRATION TEST

GROUND WATER DEPTH
WHILE DRILLING 20.5'

C — NO. OF BLOWS TO DRIVE CASING 12" W/
" / OR — % CORE RECOVERY # HAMMER FALLING

BEFORE CASING Sand blew in
REMOVED at 35.0'

AFTER CASING Hole caved at
REMOVED 18.0' - Dry

CASING TYPE - HOLLOW STEM AUGER

SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
5.0	0.0'-	1		Auger		Gray-brown moist dense fine to medium SAND, some fine to coarse gravel, few cobbles, little silt	2.0'
	2.0'			Sample			
	2.0'-	2		9/10			
	4.0'			10/10	20		
	4.0'-	3		5/5			
10.0	6.0'			6/11	11	Brown moist medium dense fine to medium SAND, trace silt	
	6.0'-	4		11/10			
	8.0'			10/9	20		
	8.0'-	5		9/10			
	10.0'			10/11	20		
15.0	10.0'-	6		9/10			
	12.0'			12/12	22		
20.0	15.0'-	7		6/9			
	16.5'			10	19		
25.0	20.0'-	8		9/12		Brown wet medium dense fine to medium SAND, trace to little silt	20.5'
	21.5'			17	29		
30.0	25.0'-	9		6/8			
	26.5'			6	14		
35.0	30.0'-	10		4/9			
	31.5'			13	22		
40.0	35.0'-	11		11/10		Bottom of Boring	36.5'
	36.5'			11	21		

PROJECT General Electric
 LOCATION Malta, New York

HOLE NO. TB-3

SURF. EL.

DATE STARTED 2/13/85 DATE COMPLETED 2/13/85

JOB NO. 8513/K8503

 GROUND WATER DEPTH
 WHILE DRILLING Dry

 N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING
 30" — ASTM D-1586, STANDARD PENETRATION TEST

 BEFORE CASING
 REMOVED Dry

 C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
 "/OR — % CORE RECOVERY

 AFTER CASING
 REMOVED Dry

CASING TYPE - HOLLOW STEM AUGER

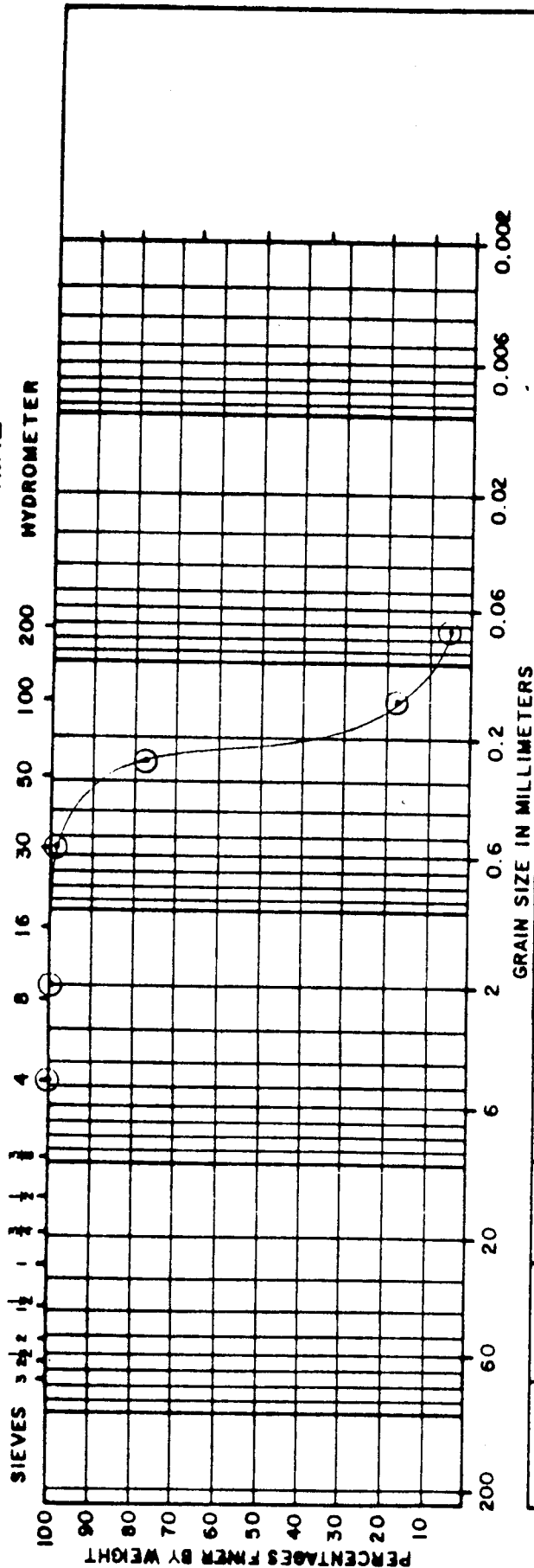
SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
5.0	0.0'- 2.0'	1		Auger Sample		Brown moist loose fine to medium SAND, little silt	
10.0	5.0'- 6.5'	2		3/3 4	7		
15.0	10.0'- 11.5'	3		3/5 6	11	Brown moist medium stiff CLAY and SILT	10.0' 10.4'
20.0	15.0'- 16.5'	4		5/6 6	12		
25.0	20.0'- 21.5'	5		9/14 15	29		
30.0	25.0'- 26.5'	6		5/6 9	15		
35.0	30.0'- 31.5'	7		5/6 7	13	Bottom of Boring	31.5'



JOB NO. K-8503
REPORT NO. 1

CLASSIFICATION OF BORROW MATERIAL



GRAIN SIZE IN MILLIMETERS									
BOULDERS COBBLES		GRAVEL		SAND		SILT-CLAY SOIL			
C	M	F	C	M	F	C	M	F	
76.2	25.4	9.52	2.0	0.59	0.25	0.074	MM.	OPENING	
3 in.	1 in.	3/8 in.	Nos. 10	30	60	200		SIEVE	
K-8503									
G.E. Test Pit Building									
Malta, N.Y.									
Sieve Percent									
Size Passing Sieve									
# 4 100									
# 10 99.9									
# 30 98.7									
# 60 77.6									
# 100 17.8									
# 200 4.8									
CONTRACT NO.									
CLIENT Geraghty & Miller, Inc.									
BORROW MATERIAL FOR									
INSPECTOR									
TESTED BY PJD									
DATE 2-19-85									
CLASSIFICATION F.C SAND Trace Silt									
REMARKS									
Natural Moisture - 13.4%									

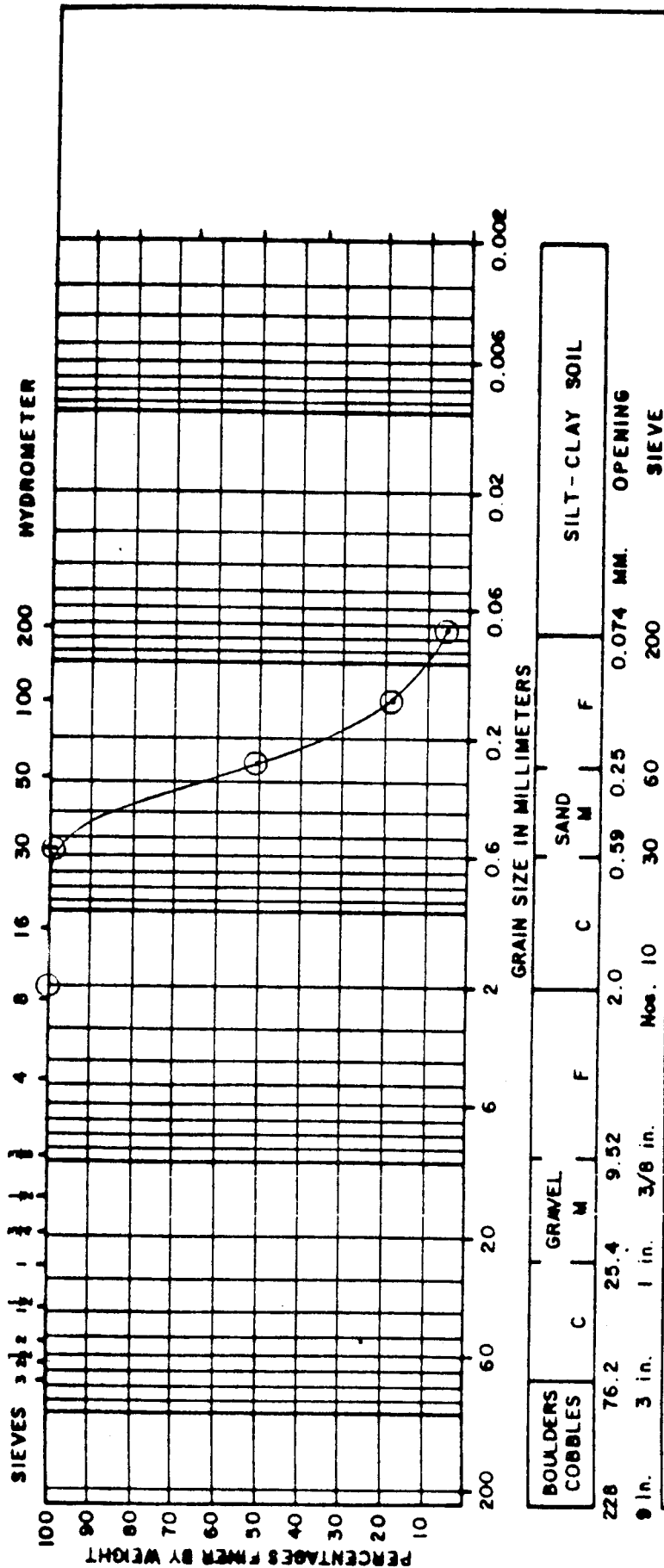


**parratt
wolff inc**

FISHER RD. EAST SYRACUSE, N.Y. 13057
TELEPHONE AREA CODE 315/437 1429

JOB NO. K-8503
REPORT NO. 2

GRAIN SIZE ANALYSIS



K-8503

GE Test Pit Building
Malta, N.Y.

○ Sieve Analysis

Boring 1
Sample 2

Natural Moisture Content 6.7%

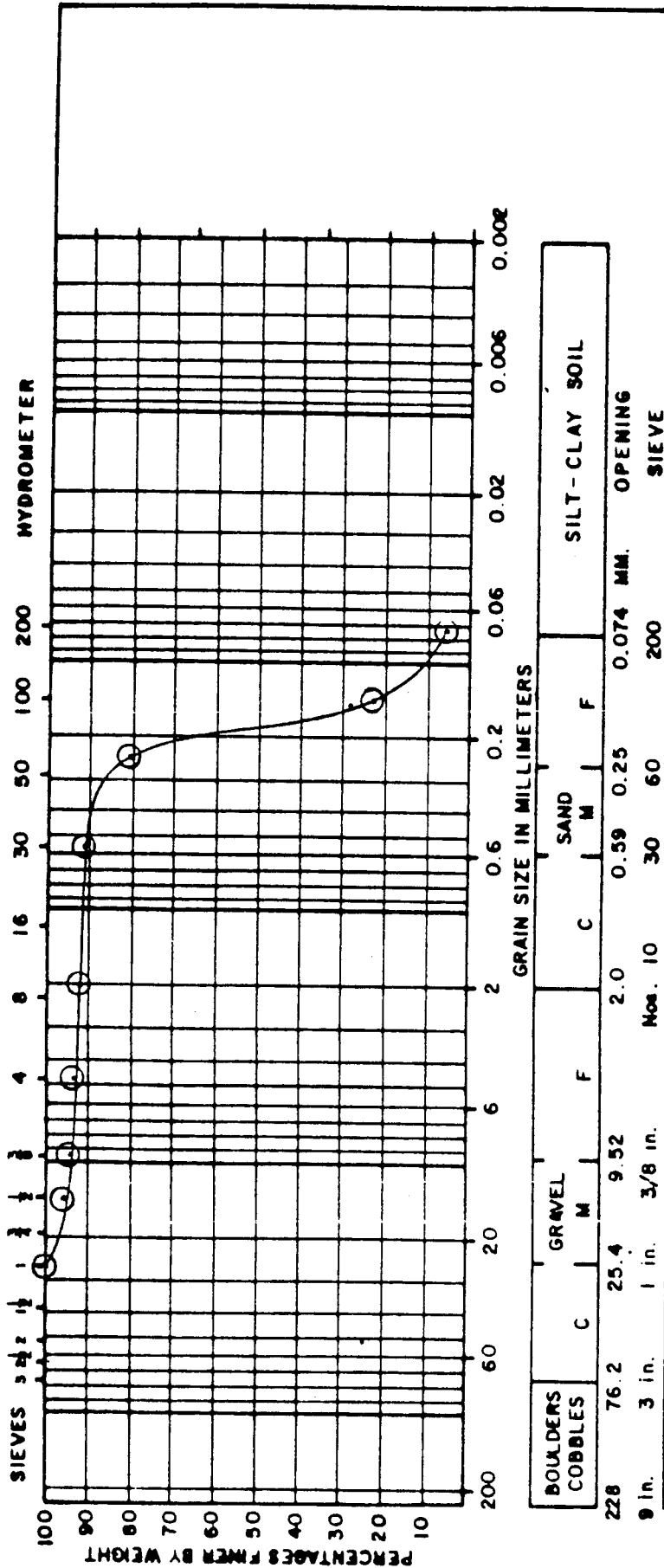


**parratt
wolff inc**

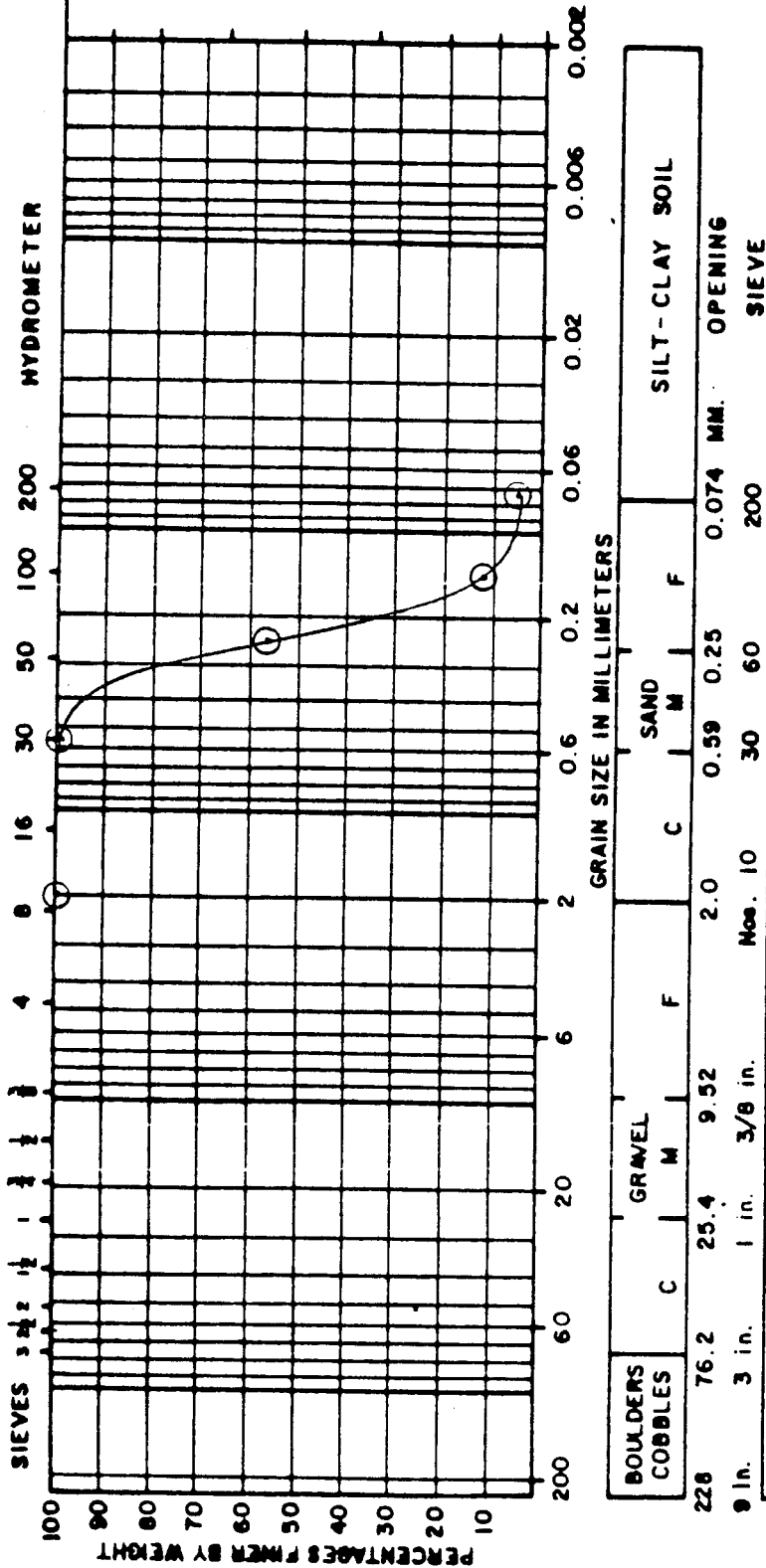
FISHER RD. EAST SYRACUSE, N.Y. 13057
TELEPHONE AREA CODE 315-437-1429

JOB NO. K-8503
REPORT NO. 3

GRAIN SIZE ANALYSIS



GRAIN SIZE ANALYSIS



K-85C3

GE Test Pit Building
Malta, N.Y.

○ Sieve Analysis

Boring 2
Sample 4

Natural Moisture Content 60%

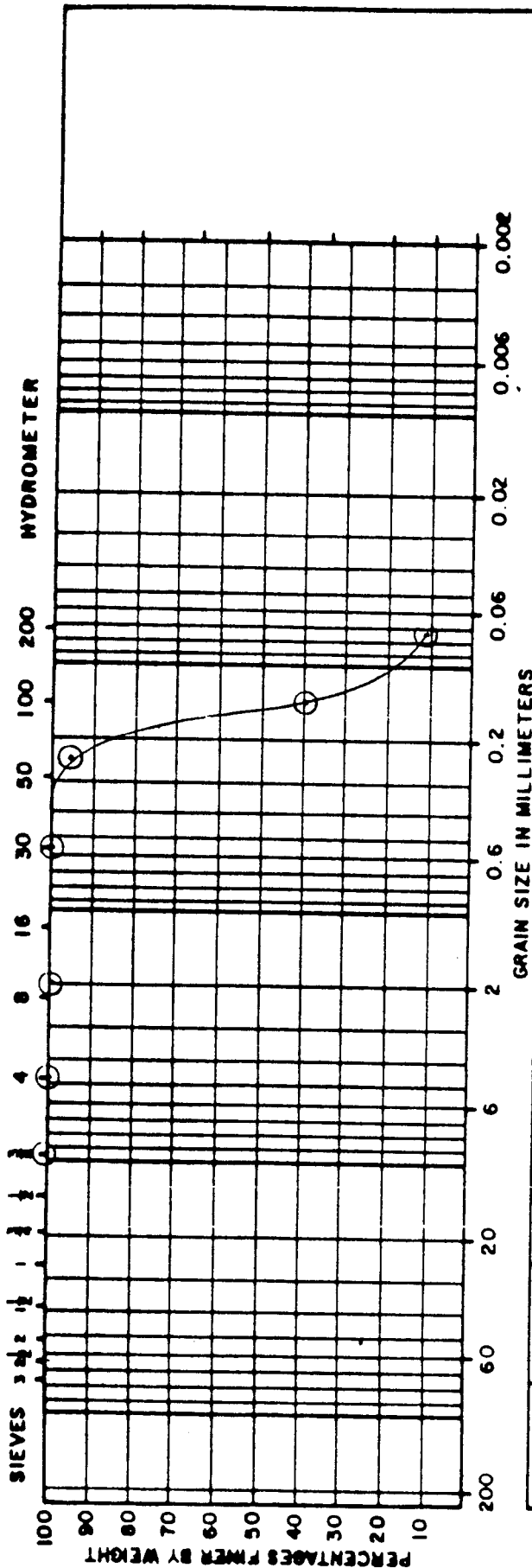


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FIS: ER RD. EAST SYRACUSE N.Y. 13057
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JOB NO. K-8503
REPORT NO. 5

GRAIN SIZE ANALYSIS



BOULDERS		COBBLES		GRAVEL		SAND		SILT-CLAY SOIL	
C	M	F	C	M	F	C	M	F	

228 76.2 25.4 9.52 2.0 0.59 0.25 0.074 MM. 200 0.002

9 in. 3 in. 1 in. 3/8 in. Nos. 10 30 60 200 SIEVE

K-8503 Sieve Percent Passing

GE Test Pit Building Sieve

Malta, N.Y. 3/8" 100

#4 99.8

#10 99.8

#30 99.7

#60 96.3

#100 39.4

#200 11.1

○ Sieve Analysis

Boring 2

Sample 10

Natural Moisture Content 24.2 %

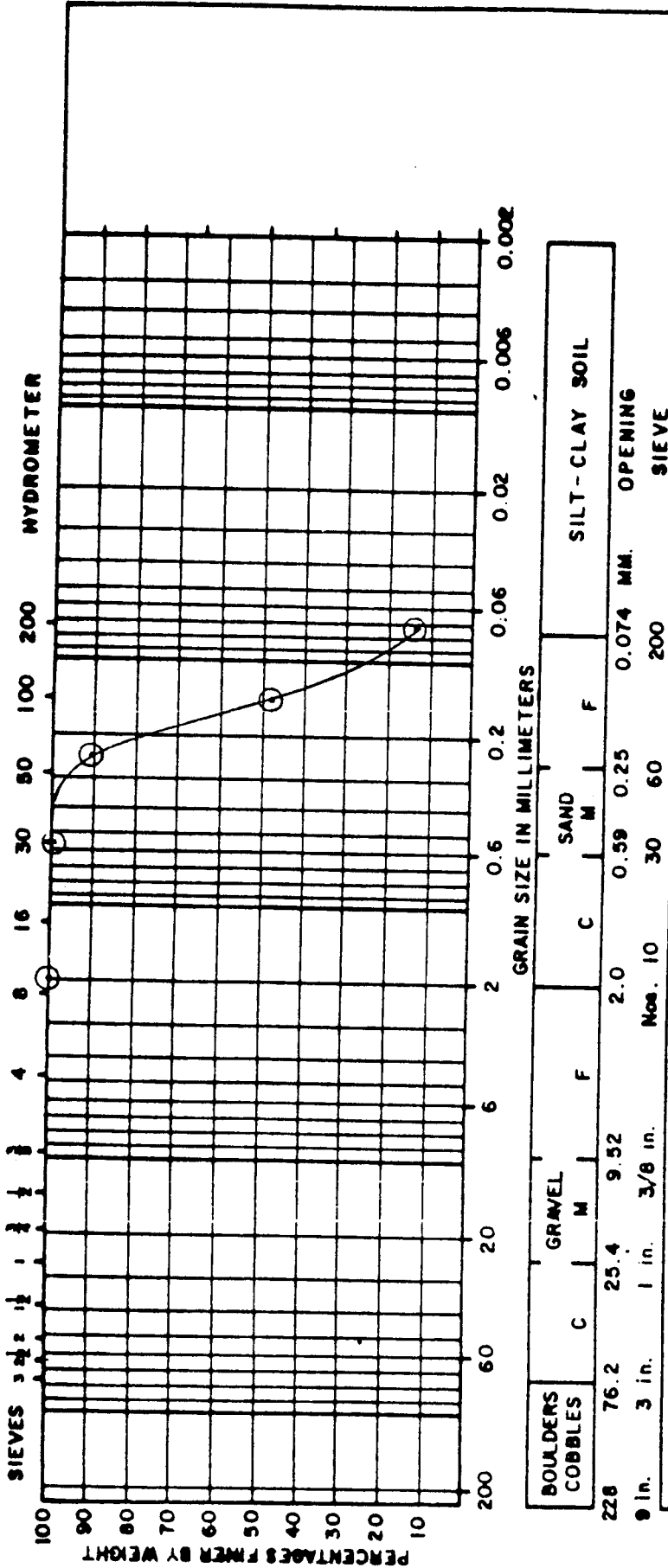


**parratt
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TELEPHONE AREA CODE 315/437 1429

JOB NO. K-8503
REPORT NO. 6

GRAIN SIZE ANALYSIS



K-8503

GE Test Pit Building
Malta, N.Y.

○ Sieve Analysis

Boring 3
Sample 2

Sieve	Percent Passing
#10	100
#30	99.7
#60	90.7
#100	48.0
#200	13.7

Natural Moisture Content 12.3%

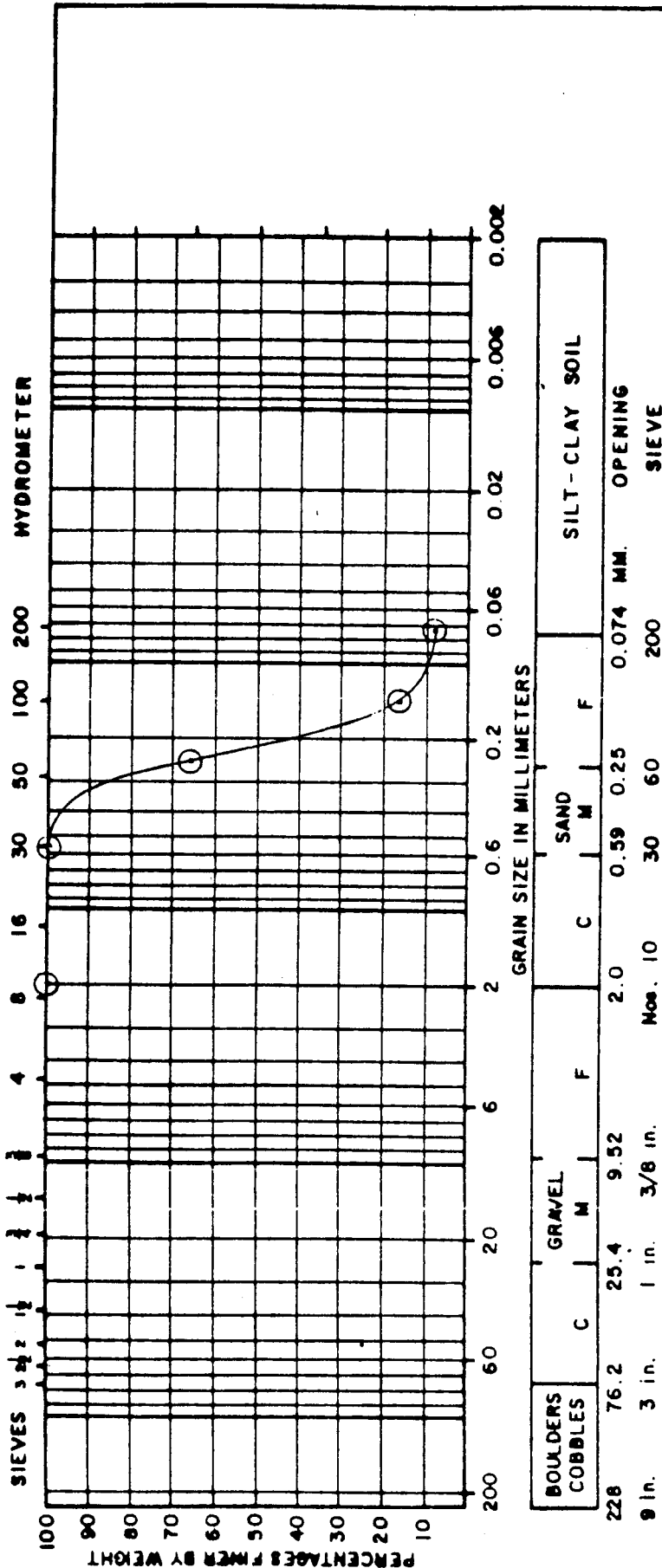


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JOB NO. K-8503
REPORT NO. 7

GRAIN SIZE ANALYSIS



COMPACTION TEST REPORT

STANDARD ☐ MODIFIED ☒

METHOD A ☒ B ☐

C ☐ D ☐

MAXIMUM DRY DENSITY

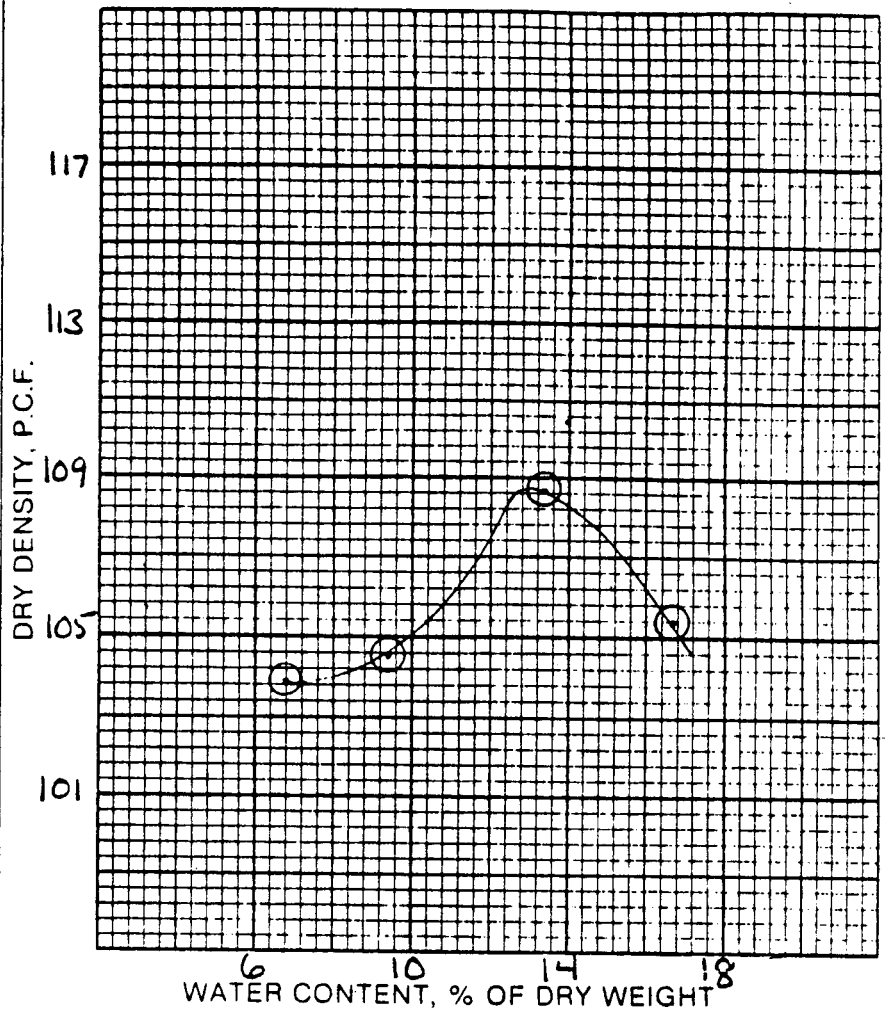
108.8 P.C.F.

OPTIMUM MOISTURE CONTENT

13.0 %

PERFORMED IN ACCORDANCE WITH

ASTM D-1557



SAMPLE NO.	1	2	3	4			
MOLD + SAMPLE WT.	13.63	13.74	14.04	14.13			
MOLD WEIGHT	9.93	9.93	9.93	10.03			
WET SAMPLE WT.	3.70	3.81	4.11	4.10			
WET DENSITY, P.C.F.	111.0	114.3	123.3	123.0			
MOISTURE CONTENT	6.8	9.4	13.4	16.7			
DRY DENSITY, P.C.F.	103.9	104.5	108.7	105.4			

SOIL LOCATION

Test Boring #2

Auger Sample

DATE 2-19-85 TESTED BY PJD

CHECKED BY DP Blasland

JOB NO. K-8503

REPORT NO. 1

CLIENT Geraghty & Miller, Inc.

PROJECT G.E. Test Pit Building
Malta, N.Y.



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