SNIEDZE ASSOCIATES Consulting Engineers

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September 19, 2003

Gregory B. MacLean
Environmental Engineer I
Division of Environmental Remediation
NYS Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414-9519

Re: Village of Manchester, New York
Brownfields Project, Frederick Property
Environmental Restoration Project (B00131-8)

Dear Mr. MacLean:

As you suggested, we are enclosing a preliminary copy of the Site Investigation/Remedial Alternatives Report for your review and comment.

All field work has been completed. However, the hydraulic conductivity tests have not been analyzed by our subconsultant Walter Lanik, Consulting Geologist. This analysis is required to complete Sections 3.3. Hydrogeology, 5.2. Contaminant Persistence, 5.3. Contaminant Migration and Section 6. Baseline Risk Assessment.

We will continue to make every effort to encourage Walter Lanik to complete the remaining portions of the Report. After we receive the required information from Mr. Lanik, we will forward it for your review and comment. If we have not received the required information by October 15, 2003, we will discuss alternatives with you to obtain the data and complete the Report.

By copy of this letter, we are also transmitting one copy of the preliminary Report to Joe Crua with New York State Department of Health and to the Village of Manchester.

Very truly yours,

SNIEDZE ASSOCIATES

Robert H. Raeman
Project Manager

RHR/djbv
Enc: As noted.
xc: Philip J. D'Arduini, Mayor
Angela M. D'Arduini, Clerk/Treasurer w/enclosure
Joe Crua, NYSDOH, Troy Office w/enclosure
Walter Lanik, Consulting Geologist

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NYSDEC

1996 CLEAN WATER/CLEAN AIR BOND ACT

ENVIRONMENTAL RESTORATION PROJECTS
TITLE 5

SITE INVESTIGATION/ REMEDIAL ALTERNATIVES REPORT

FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT
147 STATE STREET

NYSDEC SITE B00131-8

MANCHESTER, NEW YORK

Submitted To:

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
AND
NYS DEPARTMENT OF HEALTH

Submitted By:

VILLAGE OF MANCHESTER, NEW YORK

SEPTEMBER 2003

VILLAGE OF MANCHESTER, NEW YORK

SITE INVESTIGATION/ REMEDIAL ALTERNATIVES REPORT

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VILLAGE OF MANCHESTER, NEW YORK

SITE INVESTIGATION/ REMEDIAL ALTERNATIVES REPORT

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1. INTRODUCTION

1.1. PURPOSE.

This document constitutes a Report of the Site Investigation and Remedial Alternatives for New York State Department of Environmental Conservation (NYSDEC) Environmental Restoration Project B00131-8, hereafter referred to as the Frederick Property Site.

This Report summarizes the investigation undertaken in accordance with the Site Investigation Work Plan and remedial alternatives.

1.2. SITE BACKGROUND.

1.2.1. Site Description.

The site is located at 147 State Street in the Village of Manchester, New York. The neighborhood is a mixture of commercial/industrial and residential uses. The project location is shown in Figure 1 - Project Location Map. The property is approximately ½ acre in size and has a 30' x 40' one story block building. The site is bounded by private residences on the east, a commercial property on the west, State Street to the north, and a former railroad right-of-way to the south. Between the building and street right-of-way a concrete island marks the former location of the gas pumps. The remainder of the site consists of gravel driveway north and west of the building and lawn to the south.

1.2.2. Site History.

The Village of Manchester is the current owner of the site. The Village has used the building for storage in the past. Currently it is empty. Previously, the property owner operated the site as a gas station from the 1930's to the 1960's. The gas station ceased operation in the 1960's and the Village eventually took possession of the property for back taxes.

1.2. SITE BACKGROUND. (continued)

1.2.3. Previous Investigations.

As noted in the Site Investigation Work Plan, there were underground storage tanks on the site. It is not known if any spills or gasoline leaks occurred at the Frederick Property Site. No records or reports of spills were discovered in publically available information databases.

1.3. REPORT ORGANIZATION.

This Report consists of a narrative section which reviews the findings of the Site Investigation, tables which summarize contaminants found during testing, figures and drawings which locate sampling locations for both soil and groundwater, provides groundwater elevations, and shows the location and extent of contamination.

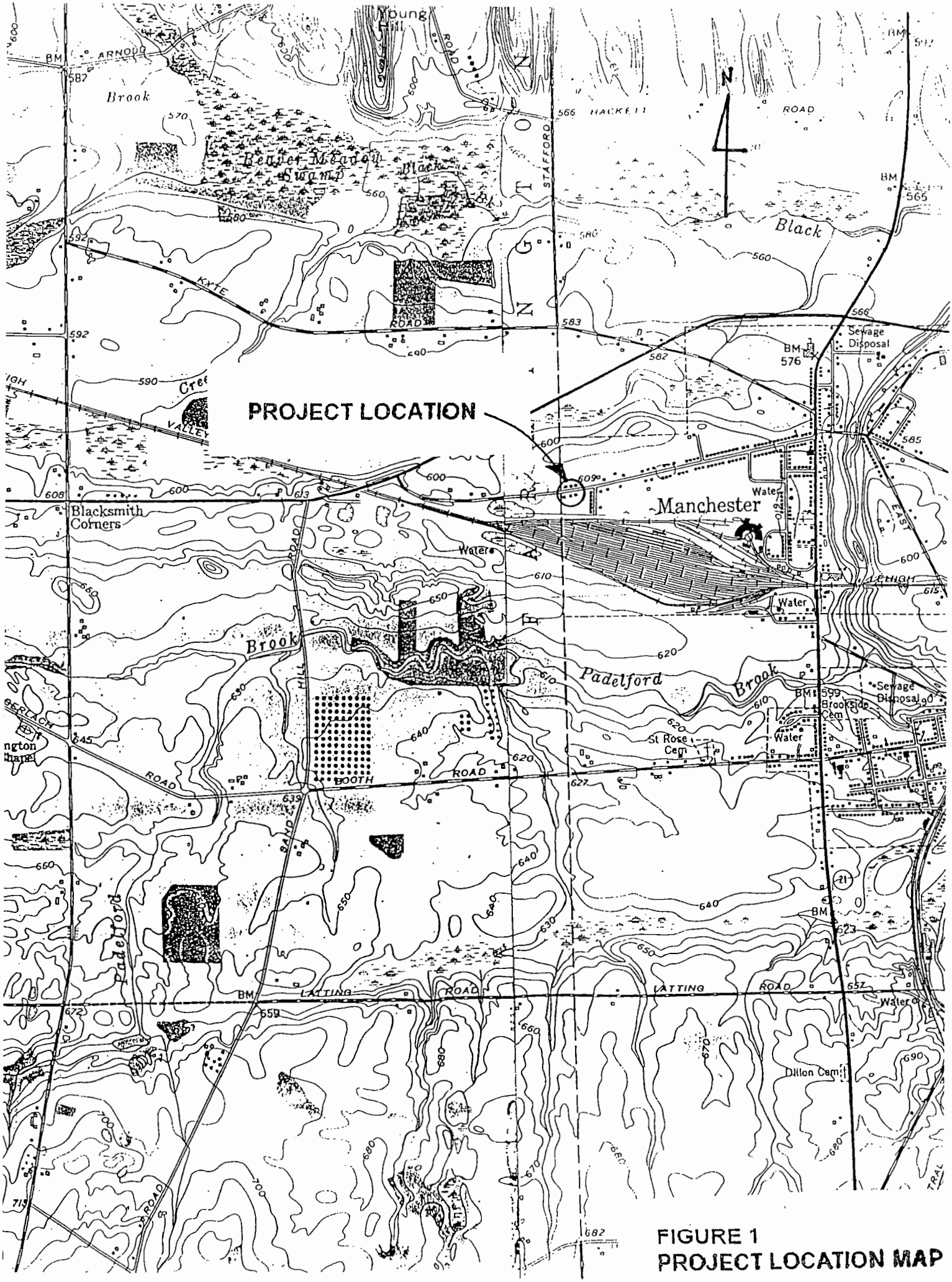


FIGURE 1
PROJECT LOCATION MAP

2. SITE INVESTIGATION

2.1. GENERAL.

Based on the past use of the site and the presence of underground storage tanks, a site investigation was performed to evaluate which media (soil, water, air) have been impacted and to what extent.

2.2. TANK REMOVAL.

The known underground storage tanks were registered with the NYSDEC, Petroleum Bulk Storage Section and removed from the site by Piedmont Equipment, Inc. in November of 2000. During survey of the site for removal of the first two tanks and piping, a third waste oil tank was discovered. All three tanks and their piping were removed. Removal of the tanks was in accordance with 6 NYCRR Part 613.9, the NYSDEC guidance entitled "Permanent Closure of Petroleum Storage Tanks," March 1987, SPOTS Memo #14, and STARS Memo #1 Petroleum-Contaminated Soil Guidance Policy, August 1992.

Liquid contained in the tanks was pumped to a storage tank and samples were collected. Paradigm Environmental Services, Inc. performed testing of the liquid. After testing, the liquid was discharged for treatment at the local wastewater treatment facility. Results of testing are discussed in Section 4. NATURE AND EXTENT OF CONTAMINATION of this Report.

Excavated soil was screened for the presence of volatile organic compounds (VOC's) using an instrument with a photo-ionization detector (PID). Field observations and VOC screening indicated that the soil around the tanks might be contaminated and the soil was staged on plastic sheeting as required by the work plan.

Soil samples were collected to assess petroleum contamination from the side walls at approximately one third up from the bottom. No samples were taken from the bottom of the excavation for the two larger tanks as the excavation went to bedrock. Paradigm Environmental Services, Inc. performed testing of soil around the tanks and liquid contained in the tanks. Discussion of the testing can be found in Section 4. NATURE AND EXTENT OF CONTAMINATION of this Report.

Following completion of testing of the soil samples, the material was determined to be commercial/industrial waste and transported to the Ontario County Landfill for disposal.

2.3. LITERATURE REVIEW AND MAGNETOMETER SURVEY.

As noted previously, review of available literature regarding the site revealed no information regarding spills. The investigation then proceeded to physical characterization of the property.

After the tanks were removed, an electromagnetic survey of the property was performed by Buck Engineering LLC on December 4, 2000. The survey was performed using a Geonics, Ltd. Model EM-61 High Resolution Magnetometer. The survey report is included as Appendix A. Magnetic anomalies were noted at the west property line.

As requested by NYSDEC, the property was surveyed by Freeland-Parrinello Land Surveyors to determine if anomalies found during the magnetometer survey were on or off the site. Results of the survey showed that the anomalies were off the site.

Following considerable discussion of legal and liability issues, an agreement was reached with the property owner to the west of the Frederick Property and three (3) 500 gallon underground storage tanks were removed. Paradigm Environmental Services, Inc. performed testing of soil around and under the tanks as outlined in the work plan. Discussion of the sampling can be found in Section 4. NATURE AND EXTENT OF CONTAMINATION.

Following completion of testing of the soil samples, the material was determined to be commercial/industrial waste and transported to the Ontario County Landfill for disposal.

2.4. GEOPROBE, TEST PIT AND SURFACE SOIL INVESTIGATION.

Zebra Environmental Corporation performed geoprobe soil sampling on August 21, 2002. Ten (10) boreholes were installed as shown on Drawing No. 4360-4. Boring logs from the geoprobe sampling are included in Appendix B. Discussion of the soil profile is located in Section 3.2. Geology. Soil samples were screened for VOC's using an instrument with a PID. The samples with the highest reading were submitted for analysis. If no VOC's are detected, the sample from the vadose zone will be submitted.

Five (5) surface soil samples were also collected on the property. Locations are shown on Drawing No. 4360-4, Soil Sampling. All surface soil samples were submitted for testing.

In addition, two (2) test pits were excavated near the former pump island. Soil samples were screened for VOC's using an instrument with a PID. One sample was submitted for testing from each test pit based on visual observation and screening.

All samples taken from the geoprobe boreholes, surface soil and test pits were analyzed by Columbia Analytical Services, Inc. and are discussed in Section 4. NATURE AND EXTENT OF CONTAMINATION.

2.5. GROUNDWATER INVESTIGATION.

Geologic, Inc. installed rock wells and monitoring wells between April 15 and April 19, 2002 to supplement the geoprobe wells. A total of five (5) additional monitoring wells and three (3) rock wells were installed. Boring logs are included in Appendix B. Drawing No. 4360-5 shows the location of the wells.

Groundwater contours were established and are shown on Drawings No. 4360-3A, 4360-3B and 4360-3C.

Two (2) rounds of groundwater sampling were performed. The first round was within two (2) weeks of well installation (May 2002) and the second round was performed three (3) months or more after the first round (October 2002). Information recorded during sampling is included as Appendix C. Samples taken from these boreholes were analyzed by Columbia Analytical Services, Inc. and are discussed in Section 4. NATURE AND EXTENT OF CONTAMINATION.

3. PHYSICAL CHARACTERISTICS OF THE SITE

3.1. SURFACE FEATURES.

The existing ground surface slopes gently from north to south with approximately three (3) feet of elevation difference in 300 feet. The only other surface features are manmade and include the gas station building and the concrete island for the former service island.

3.2. GEOLOGY.

Information for description of the soils and bedrock were obtained from the geoprobe investigation and the installation of monitoring and rock wells. This information is included in Appendix B. A soil sampling plan is included as Drawing No. 4360-4 and a groundwater monitoring well location plan is included as Drawing No. 4360-5. A geologic cross section is provided as Drawing No. 4360-2.

In general, the site has four (4) soil types overlaying limestone bedrock at a depth of approximately 10 feet. The soil layers include a 6 inch to 1 foot thick layer of topsoil or fill depending on the location. The second layer is dark brown clayey silt which varies from 18 inches to 3 feet in thickness. This overlays a 6 inch to 18 inch layer of brown medium sand. The fourth layer is glacial till which overlays the bedrock. The glacial till is gray brown sandy silt with traces of gravel. The top of rock varies from 8.5 to 11.5 feet deep and is gray limestone.

3.3. HYDROGEOLOGY.

Groundwater elevations were taken on September 26, 2001, October 24, 2001 and January 21, 2002. These elevations are shown on Drawings No. 4360-3A, 4360-3B and 4360-3C. In general, the groundwater is 4 to 7 feet below the surface. The gradient of the groundwater is to the south.

Hydraulic conductivity tests were performed on April 14 and 15, 2003. Information on these tests will be provided by Walter Lanik, Consulting Geologist, when available.

4. NATURE AND EXTENT OF CONTAMINATION

4.1. SOURCE.

The existing underground storage tanks are an identified potential source of contaminants. The two (2) known tanks and a third waste oil storage tank identified during a site survey were removed in November 2000. All three (3) tanks were pumped out and properly disposed of, soil excavated and staged on plastic and sampling performed. Contaminated soil was removed at the direction of NYSDEC. Testing of the samples was performed by Paradigm Environmental Services, Inc.

The test reports show the presence of volatile and semi-volatile organic compounds associated with gasoline contaminated soils. One compound, m,p xylene at 1.65 ppm was above the applicable standards, criteria or guidance values (SCG). The results of the soil analysis for the tank removals are provided in Table 1.

The magnetometer survey of the property showed the presence of a magnetic anomaly on the west property line. The anomaly was located on the adjacent property. Three (3) 500 gallon tanks were found on the adjacent property. All three (3) tanks were pumped out and properly disposed of, soil excavated and staged on plastic and sampling performed. Contaminated soil was removed at the direction of NYSDEC. Testing of the samples was performed by Paradigm Environmental Services, Inc.

Test reports indicate the presence of volatile compounds associated with gasoline contaminated soils. None of the compounds were detected at a level above the applicable SCG. Test information is included as Appendix D.

4.2. SOILS AND VADOSE ZONE.

Soil samples were taken in August of 2001. Soil samples taken during the geoprobe borings, test pits and surface soil samples were analyzed by Columbia Analytical Laboratories. A number of VOC's and semi-VOC's were identified. Three (3) compounds exceeded the applicable standards, criteria or guidance values (SCG). These compounds were all found at the same location, Test Pit 101, sample taken at a depth of 6 feet which is in the vadose zone. The compounds were 1,3,5 trimethylbenzene, 1,2,4 trimethylbenzene and m,p Xylene. Results from the soil samples are shown in Tables 2A and 2B. The location of the samples is shown on Drawing No. 4360-6, Soil Contamination.

A Data Usability Summary Report was prepared by Environmental Data Validation, Inc. (EDV Inc.) on April 1, 2003. Evaluation of the data package determined that results for the VOC's and PCB's were acceptable as the laboratory reported. Results for the semi-VOC's and metal analysis were qualified by the data validator and these validations are noted in Tables 2A and 2B.

The Data Summary Usability Report is included as Appendix E.

4.3. GROUNDWATER.

Two (2) sets of groundwater samples were taken, one in May of 2002 and the second in October of 2002. Sampling reports are included in Appendix C. Samples were taken from both microwells installed by the geoprobe and monitoring wells installed by the drilling rig as required by the work plan. Groundwater samples were obtained first from the wells considered least impacted, followed by those considered most impacted.

Samples were collected in 40 ml headspace free containers and the proper chain of custody procedures were followed.

4.3. GROUNDWATER. (continued)

Results from the samples are presented in Tables 3A and 3B. The following compounds exceeded the applicable standards, criteria or guidance values (SCG):

Benzene
Ethylbenzene
Isopropyl benzene
p-Isopropyltoluene
Naphthalene
n-Propylbenzene
Toluene
1,3,5 Trimethylbenzene
1,2,4 Trimethylbenzene
O-Xylene
m,p Xylene
Bis(2-Ehthylhexyl)Phthalate
4-Methylphenol
CIS-1,2-Dichloroethene
Tetrachloroethene
Trichloroethene
Bis(2-Ethyhexyl)Phthalate
4-Methyphenol

Location of the samples is shown on Drawing No. 4360-7, Groundwater Contamination.

A Data Usability Summary Report was prepared by EDV Inc. on April 1, 2003. Evaluation of the data package determined that results for the VOC's and PCB's were acceptable as the laboratory reported. Results for the semi-VOC's and metal analysis were qualified by the data validator and these validations are noted in Tables 3A and 3B. The Data Usability Summary Reports are included as Appendix E.

5. CONTAMINANT FATE AND TRANSPORT

5.1. POTENTIAL ROUTES OF MIGRATION.

Contaminant presence at the site is apparently a result of operational activities of the former gas station and associated underground storage tanks. Results of sampling of soil and groundwater by Sniedze Associates in 2000, 2001 and 2002 have indicated that contaminants associated with gasoline products are present in the soil immediately adjacent to the tank locations and in groundwater samples. These constituents were not present in surface soil samples.

As indicated by the sampling results, potential routes for migration at the Frederick Property site is principally through groundwater transport. If there is excavation at the site, such as occurred when the tanks were excavated and removed, there is the possibility for volatilization of the compounds, but the chance of further excavation for any reason is remote.

5.2. CONTAMINANT PERSISTENCE.

Information to be provided by Walter Lanik, Consulting Geologist, when available.

5.3. CONTAMINANT MIGRATION.

Information to be provided by Walter Lanik, Consulting Geologist, when available.

6. BASELINE RISK ASSESSMENT

Information to be provided by Walter Lanik, Consulting Geologist, when available.

TABLE 1

SOIL ANALYTICAL SUMMARY - TANK REMOVAL
FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT
NYSDEC Project No. (B00131-8)

Village of Manchester, New York

Tanks Removed November 2000			
Detected Compound	Location Sample Number	Results(ppm)	Recommended Soil Cleanup objective (ppm)
Isophrone	9236, gas tank exc, west wall-south	0.8010	4.4000
Ethylbenzene	9239, gas tank exc., east wall-north	0.2170	5.5000
m,p - Xylene	9239, gas tank exc., east wall-north	1.6500	1.2000
o - Xylene	9239, gas tank exc., east wall-north	0.2780	1.2000
Isopropylbenzene	9239, gas tank exc., east wall-north	0.1210	2.3000
n - Propylbenzene	9239, gas tank exc., east wall-north	0.3040	3.7000
1,3,5 - Trimethylbenzene	9239, gas tank exc., east wall-north	1.1400	3.3000
tert - Butylbenzene	9239, gas tank exc., east wall-north	0.3370	10.00 *
1,2,4 Trimethylbenzene	9239, gas tank exc., east wall-north	3.2700	10.00 *
	9240, gas tank exc., north wall	0.2630	10.00 *
sec - Butylbenzene	9239, gas tank exc.,east wall-north	0.6840	10.00 *
p - Isopropyltoluene	9239, gas tank exc.,east wall-north	0.2010	10.00 *
Naphthalene	9239, gas tank exc.,east wall-north	0.2750	13.0000
		1.4320	13.0000
2 - Methylnaphthalene	9239, gas tank exc.,east wall-north	1.6040	50.00 **

Tanks Removed September 2001			
Detected Compound	Location Sample Number	Results(ppm)	TAGM 4046 (ppm)
Ethylbenzene	9209, bottom north tank	0.0123	5.5000
m,p - Xylene	9209, bottom north tank	0.0375	1.2000

* - As per TAGM 4046, individual VOC's $\leq$ 10 ppm

** - As per TAGM 4046, individual semi VOC's $\leq$ 50 ppm

Exceeds soil cleanup objective

TABLE 2A

SOIL ANALYTICAL SUMMARY
FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT
NYSDEC Project No. (B00131-8)

Village of Manchester, New York

Detected Compound	Trip Blank	Field Blank	Cooler Blank	SS 101	SS 102	SS 103	SS 104	SS 105	TP 101 6 ft.	TP 102 7-8 ft.	Recommended Soil Cleanup Objective (ppm)
Acetone	<0.2	<0.2	<0.2	0.0290	U	U	0.0450	<0.2	<0.2	<0.2	0.2000
2-Butanone (MEK)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3000
sec - Butylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	0.400 J	1.0000	10.0 *
Carbon Disulfide	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	2.7000
Ethylbenzene	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	4.5000	<5.5	5.5000
Isopropyl Benzene	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	0.9700	<2.3	2.3000
P-Isopropylbenzene									0.2700 J	0.4400 J	
Methylene Chloride	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1000
Naphthalene	<13	<13	<13	U	<13	<13	<13	<13	3.4000	<13	13.0000
n-Propylbenzene	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	3.2000	1.2000	3.7000
1,3,5 - Trimethybenzene	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	8.4000	<3.3	3.3000
1,2,4 - Trimethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	20.0000	3.9000	10.0000
o- Xylene	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	1.0000	<1.2	1.2000
m,p - Xylene	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	10.0000	<1.2	1.2000

Concentrations are in parts per million (ppm), J = Below Quantitation limit, JB = Estimated below contract detection limit,
E = Estimated because of presence of interference

U Revised per DUSR

Exceeds soil cleanup objective

TABLE 2B

GROUNDWATER ANALYTICAL SUMMARY
FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT
NYSDEC Project No. (B00131-8)

Village of Manchester, New York

Detected Compound	GP 101	GP 102	GP 103	GP 104	GP 105	GP 106	GP 107	GP 108	GP 109	GP 110	GP 111	Recommended Soil Cleanup Objective (ppm)
Acetone	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.0460 J	0.2000
2-Butanone (MEK)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.0170 J	0.3000
n – Butylbenzene	<10	0.0190 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	10.0 *
sec - Butylbenzene	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	2.7000
Carbon Disulfide	0.0200J	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	5.5000
Ethylbenzene	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	5.5000
Isopropyl Benzene	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	2.3000
P-Isopropylbenzene												
Methylene Chloride	U	<0.1	<0.1	U	<0.1	<0.1	U	U	U	<0.1		0.1000
Naphthalene	<13	<13	<13	<13	U	<13	<13	<13	<13	<13	0.0076	13.0000
n-Propylbenzene	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	3.7000
1,3,5 - Trimethylbenzene	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	3.3000
1,2,4 - Trimethylbenzene	<10	0.0021 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	10.0 *
o- Xylene	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	1.2000
m,p - Xylene	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	1.2000

Concentrations are in parts per million (ppm), J = Below Quantitation limit, JB = Estimated below contract detection limit,
E = Estimated because of presence of interference

U Revised per DUSR

Exceeds soil cleanup objective

TABLE 3A

GROUNDWATER ANALYTICAL SUMMARY
FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT
NYSDEC Project No. (B00131-8)

Village of Manchester, New York

R2212157 (May 2002) Detected Compound	Trip Blank	Cooler Blank	Field/Rinse Blank	Field Duplicate	MW-1	RW-1	MW-2	RW-2	MW-5	MW-2	RW-3	MW-3	MW-4	MW-6	MW-7	Maximum Allowable Concentation (ppb)
Volatile Organics																
Acetone	<50	<50	<50	<50	<50	<50	<50	<50	9.5 J	<50	<50	<50	<50	<50	5.4 J	50
Benzene	<1	<1	<1	[illegible]	<1	<1	<1	[illegible]	1.4 J	<1	<1	<1	<1	<1	<1	1
2-Butanone (MEK)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	50
N-Butylbenzene	<5	<5	<5	3.4 J	<5	<5	<5	4.0 J	1.6 J	<5	<5	<5	<5	<5	<5	5
CIS-1,2-Dichloroethene	<5	<5	<5	[illegible]	<5	[illegible]	<5	[illegible]	<5	<5	[illegible]	<5	<5	<5	<5	5
Ethylbenzene	<5	<5	<5	[illegible]	<5	<5	<5	[illegible]	<5	<5	<5	<5	<5	<5	<5	5
Isopropyl Benzene	<5	<5	<5	[illegible]	<5	<5	<5	[illegible]	<5	<5	<5	<5	<5	<5	<5	5
P-Isopropyltoluene	<5	<5	<5	[illegible]	<5	<5	<5	2.3 J	<5	<5	<5	<5	<5	<5	<5	5
Napthalene	<10	<10	<10	[illegible]	<10	<10	<10	[illegible]	<10	<10	<10	<10	<10	<10	<10	10
N-Propylbenzene	<5	<5	<5	[illegible]	<5	<5	<5	[illegible]	<5	<5	<5	<5	<5	<5	<5	5
Tetrachloroethene	<5	<5	<5	[illegible]	<5	[illegible]	<5	[illegible]	<5	<5	2.0 J	<5	<5	<5	<5	5
Toluene	<5	<5	<5	[illegible]	<5	<5	<5	[illegible]	1.4 J	<5	<5	<5	<5	<5	<5	5
Trichloroethene	<5	<5	<5	[illegible]	<5	[illegible]	<5	[illegible]	<5	<5	<5	<5	<5	<5	<5	5
1,3,5-Trimethylbenzene	<5	<5	<5	[illegible]	<5	<5	<5	[illegible]	<5	<5	<5	<5	<5	<5	<5	5
1,2,4 - Trimethylbenzene	<5	<5	<5	[illegible]	<5	<5	<5	[illegible]	<5	<5	<5	<5	<5	<5	<5	5
O-Xylene	<5	<5	<5	[illegible]	<5	<5	<5	[illegible]	<5	<5	<5	<5	<5	<5	<5	5
M+P Xylene	<5	<5	<5	[illegible]	<5	<5	<5	260	<5	<5	<5	<5	<5	<5	<5	5
SemiVolatile Organics																
Di-n-Butylphthalate	<50	<50	<50	U	U	U	<50	U	U	<50	3 JB	<50	3 JB	<50	U	50
Napthalene	<10	<10	<10	[illegible]	<10	<10	<10	[illegible]	<10	<10	<10	<10	<10	<10	<10	10
Bis(2-Ethylhexyl)Phthalate	<5	<5	<5	<5	[illegible]	<5	<5	<5	<5	2 J	<5	<5	[illegible]	<5	U	5
4-Methylphenol	<2	<2	<2	<2	<2	<2	<2	<2	[illegible]	<2	<2	<2	<2	<2	1 J	2
Acetophenone									2 J				2 J			
Phenol	<2	<2	<2	1	<2	<2	<2	<2	<2	<2	<2	<2	1 J	<2	2 J	2
2-Methylnapthalene	<10	<10	<10	4 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10
Diethylphthalate							6 J									

Concentrations are in ug/kg or parts per billion (ppb), ND = non detect, J = Below Quantitation Limit, JB = Estimated below contract detection limit, E = Estimated because of presence of interference

Groundwater sampling performed in May and October of 2002.

U Revised per DUSR

[illegible] Exceeds groundwater standards

TABLE 3 B

GROUNDWATER ANALYTICAL SUMMARY
FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT
NYSDEC Project No. (B00131-8)

Village of Manchester, New York

R2214213 (Oct. 2002) Detected Compound	Trip Blank		Field Blank	Duplicate	MW-1	RW-1	MW-2	RW-2	MW-5	MW-2	RW-3	MW-3	MW-4	MW-6	MW-7	Maximum Allowable concentration (ppb)
Volatile Organics																
Acetone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	50
Benzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1
2-Butanone (MEK)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	50
N-Butylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5
CIS-1,2-Dichloroethene	<5	<5	<5	11	<5	13	<5	11	<5	<5	5.6	<5	<5	<5	<5	5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5
Isopropyl Benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5
P-Isopropyltoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10
Napthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5
N-Propylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5
Tetrachloroethene	<5	<5	<5	13	<5	59	<5	48	<5	<5	11	<5	<5	<5	<5	5
Toluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5
Trichloroethene	<5	<5	<5	5.1	<5	14	<5	13	<5	<5	<5	<5	<5	<5	<5	5
1,3,5-Trimethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5
1,2,4 - Trimethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5
O-Xylene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5
M+P Xylene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5
SemiVolatile Organics																
Di-n-Butylphthalate	<50	<50	<50	2 JB	<50	2 JB	2 JB	2 JB	2 JB	<50	3 JB	<50	<50	2 JB	<50	50
Napthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10
Bis(2-Ethylhexyl)Phthalate	<5	<5	<5	8 JB	<5	<5	<5	2 JB	<5	<5	<5	<5	<5	<5	<5	5
4-Methylphenol	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	51	<2	<2	13	<2	2
Acetophenone														1 J		
Phenol	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2
2-Methylnapthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10
Diethylphthalate							6 J									

Concentrations are in ug/kg or parts per billion (ppb), ND = non detect, J = Below Quantitation Limit, JB = Estimated below contract detection limit, E = Estimated because of presence of interference

Groundwater sampling performed in May and October of 2002.

U Revised per DUSR

Exceeds groundwater standards

APPENDIX A - ELECTROMAGNETIC SURVEY

BUCK
ENGINEERING, LLC
consulting environmental engineers

December 18, 2000

The Honorable Philip J. D'Arduini
Mayor
Village of Manchester
8 Clifton Street
Manchester, NY 14504

Re: Electromagnetic Survey
147 State Street
Manchester, Ontario County, New York

Dear Mr. D'Arduini:

This letter describes the findings of an electromagnetic survey performed by Buck Engineering personnel at the subject site on December 4, 2000.

The electromagnetic survey was performed using a Geonics, Ltd. model EM-61 High Resolution Magnetometer. The unit consists of three major components which include a coil assembly (antenna), a backpack with a battery and processing electronics, and a digital data recorder. Data collection was performed with the wheel-mounted antenna by traversing the survey areas in uniform swaths. The antenna was pulled behind the individual operating the EM-61 and information collected by the antenna was stored on a data logger. Data collected on the data logger was later downloaded to a personal computer for data interpretation and mapping.

The EM-61 magnetometer is capable of detecting metallic anomalies to a depth of approximately 10 feet beneath the instrument. For maximum coverage, data collection swaths were spaced three feet apart. Due to the variables encountered in collecting data, and subsequently transferring plot information to field maps, plotting inaccuracies of up to plus or minus 5 feet may have occurred.

The field conditions encountered during the survey were marginal as the site was snow-covered at the time the survey was performed. However, there were no surface objects encountered of significant size that prevented the survey from being performed in an accurate manner.

Enclosed is a map of the property that shows a plot of each of the four (4) surveyed areas. (Note: The interior of the former gasoline service station building was not surveyed.) Individual contour maps of each of the surveyed areas have also been provided. The four surveyed areas are as follows:

AREA 1	This survey area consists of the northern portion of the property, north of the building.
AREA 2	This survey area consists of the area along the east side of the building.
AREA 3	This survey area consists of the area along the west side of the building.
AREA 4	This survey area consists of the southern portion of the property, south of the building.

TABLES

In reviewing the data and plot for AREA 1, a sewer manhole cover was identified and a portion of an off-property anomaly. The sewer manhole is readily observed in the field. The identification of the off-property anomaly is not known and is not believed to be of significance due to its apparent location off-site.

The data and plot for AREA 2 indicates the recording of building interference caused by exterior pipes and other metallic objects readily observed along the building, and interference, though not as pronounced, from a metal fence located along the eastern property boundary.

The data and plot for AREA 3 also recorded the off-property anomaly identified in the AREA 1 survey. Again, the anomaly is not believed to be of significance due to its apparent location off the subject property.

In reviewing the data and plot for AREA 4, the presence of numerous anomalies and metallic objects were recorded. Three anomalies of significance were encountered in the performance of the survey of this area. These anomalies include a relatively small object along the southeastern side of the building, another object discovered in the area previously used for on-site sewage disposal, and the last object in the southeast corner of the property.

As noted on the individual contour and survey maps, other objects detected during the electromagnetic survey included surface metal, sewer manhole, an iron property stake, and off-property interference from metal fencing.

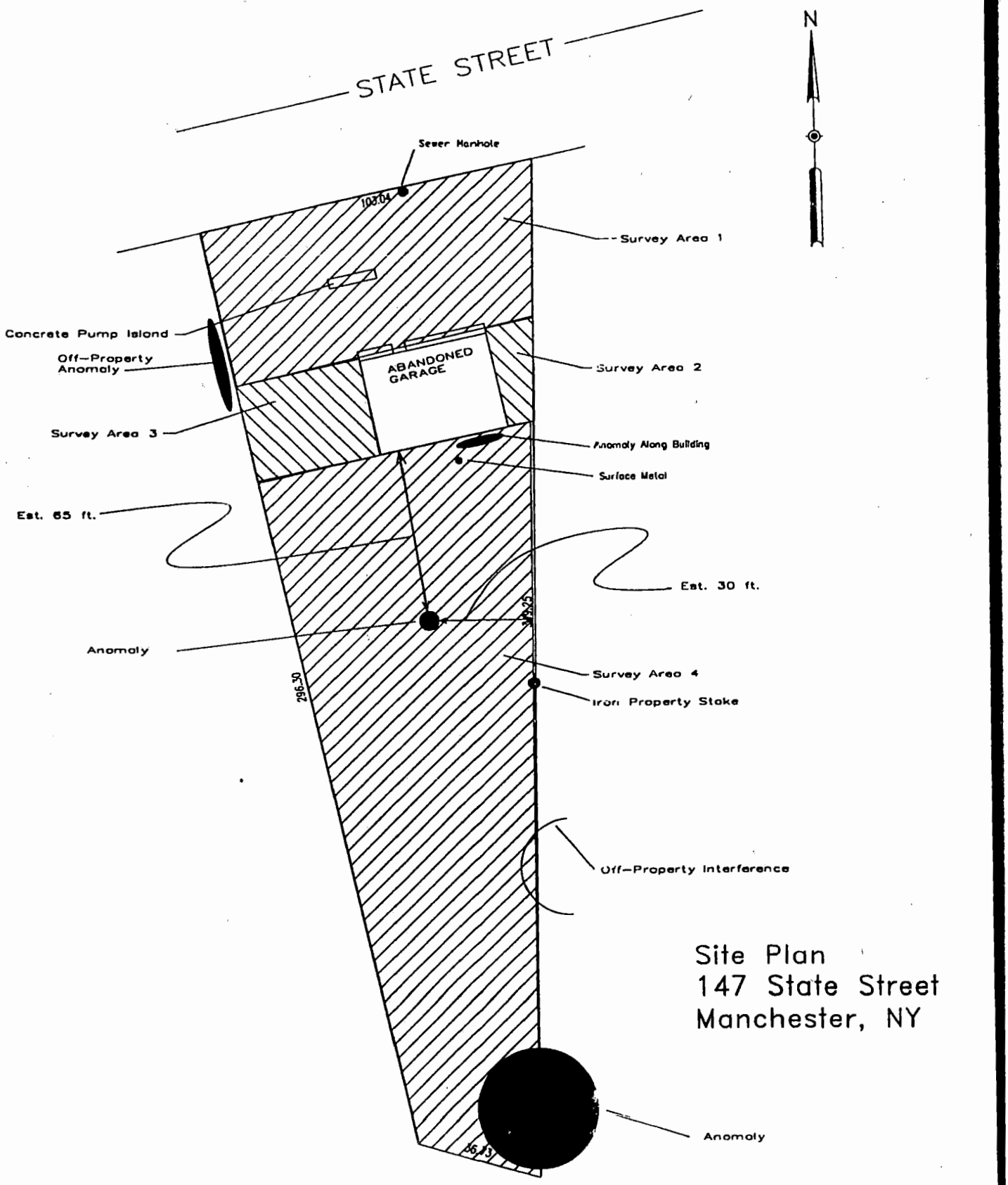
It is recommended that backhoe test pits be performed in the area of the anomalies identified in AREA 4 to determine their identity. None of the other surveyed areas contained anomalies on the subject property requiring further investigation.

If you have any questions regarding the information presented herein, please don't hesitate to call.

Sincerely,

Wayne C. Matteson, Jr., P.E.
Project Engineer

attachments

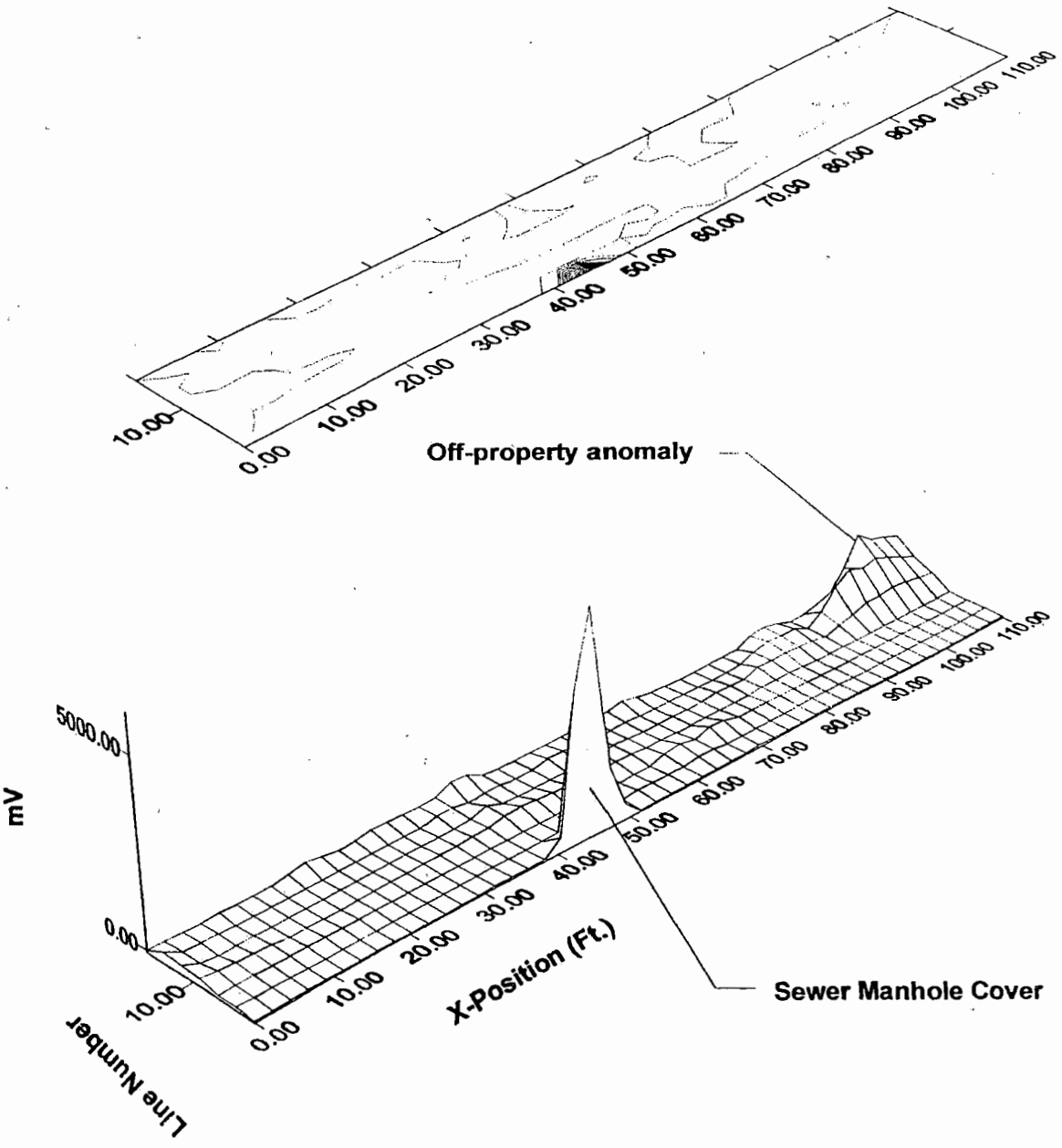


Site Plan
147 State Street
Manchester, NY

MAGNETOMETER SURVEY
147 State Street
Manchester, NY

Survey Plot: Area 1

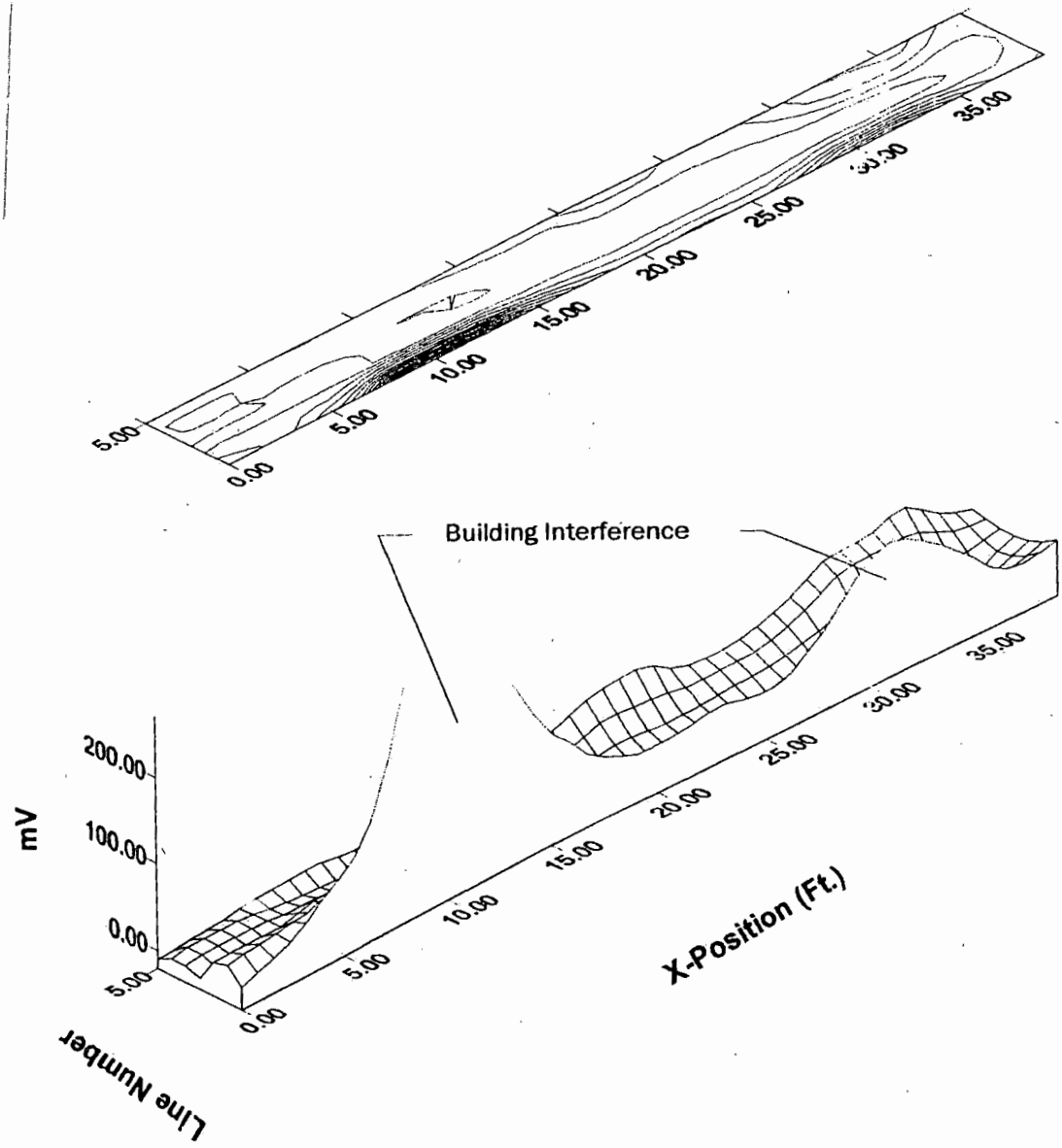
Survey Date: 12/4/00



MAGNETOMETER SURVEY
147 State Street
Manchester, NY

Survey Plot: Area 2

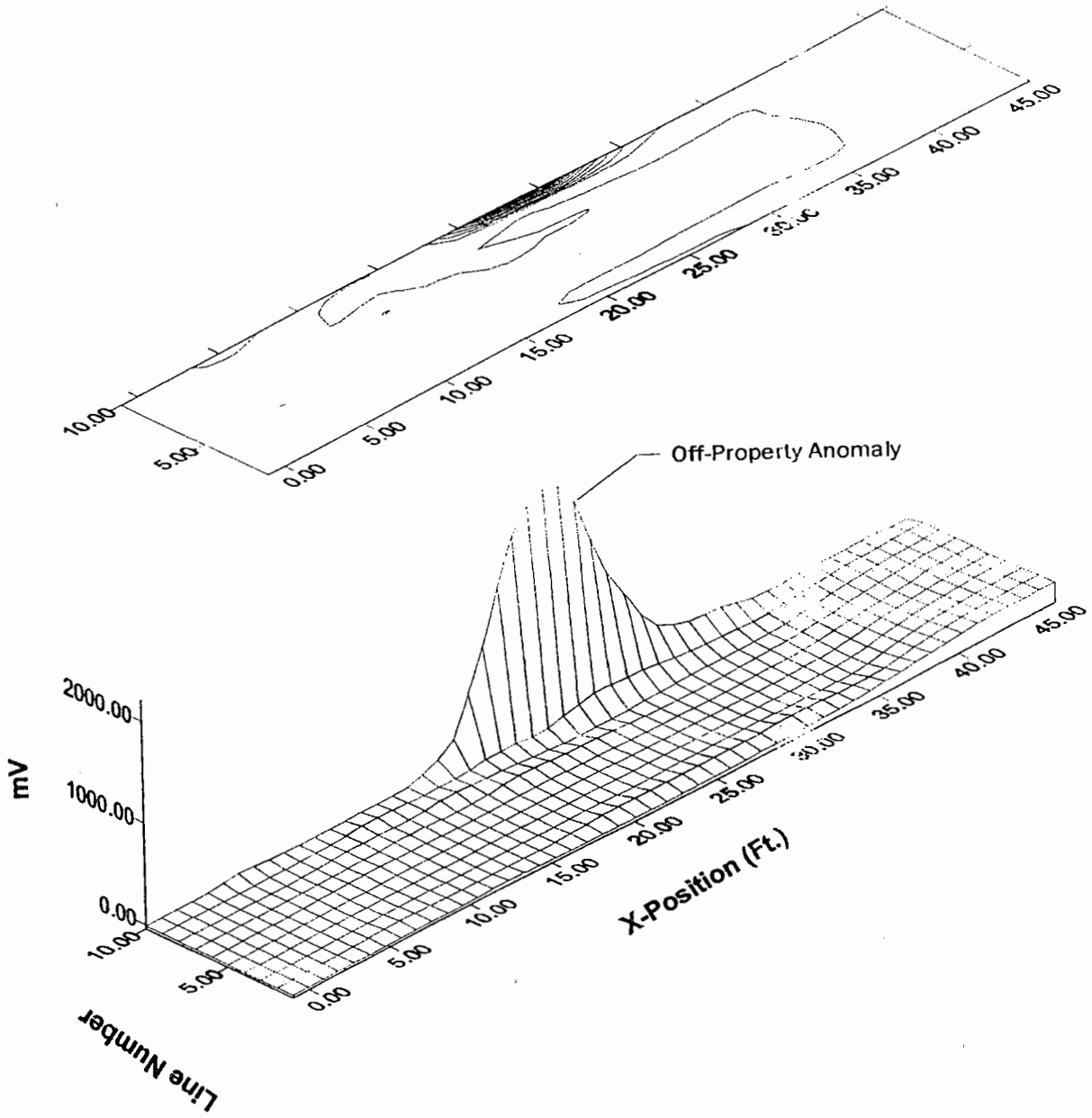
Survey Date: 12/4/00



MAGNETOMETER SURVEY
147 State Street
Manchester, NY

Survey Plot: Area 3

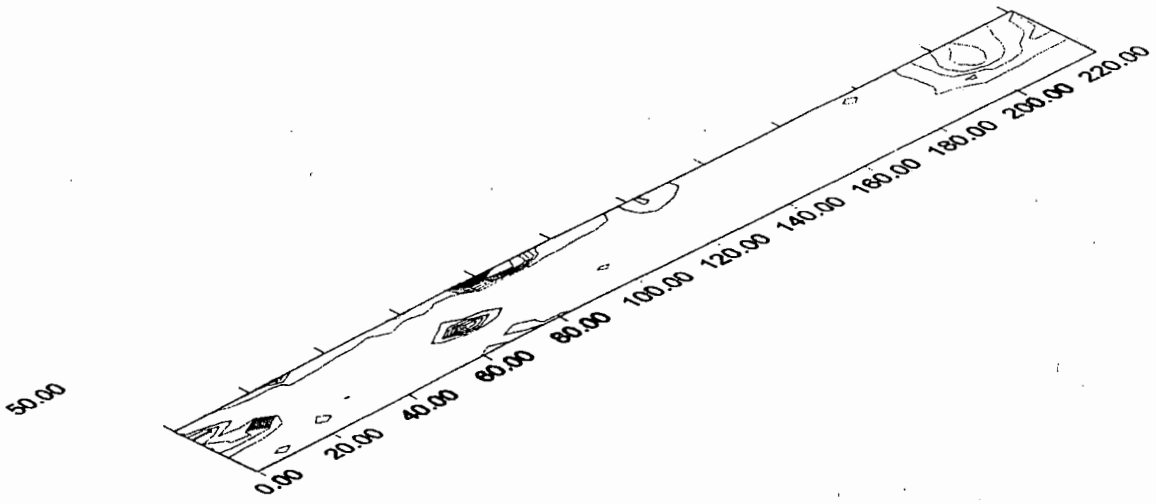
Survey Date: 12/4/00

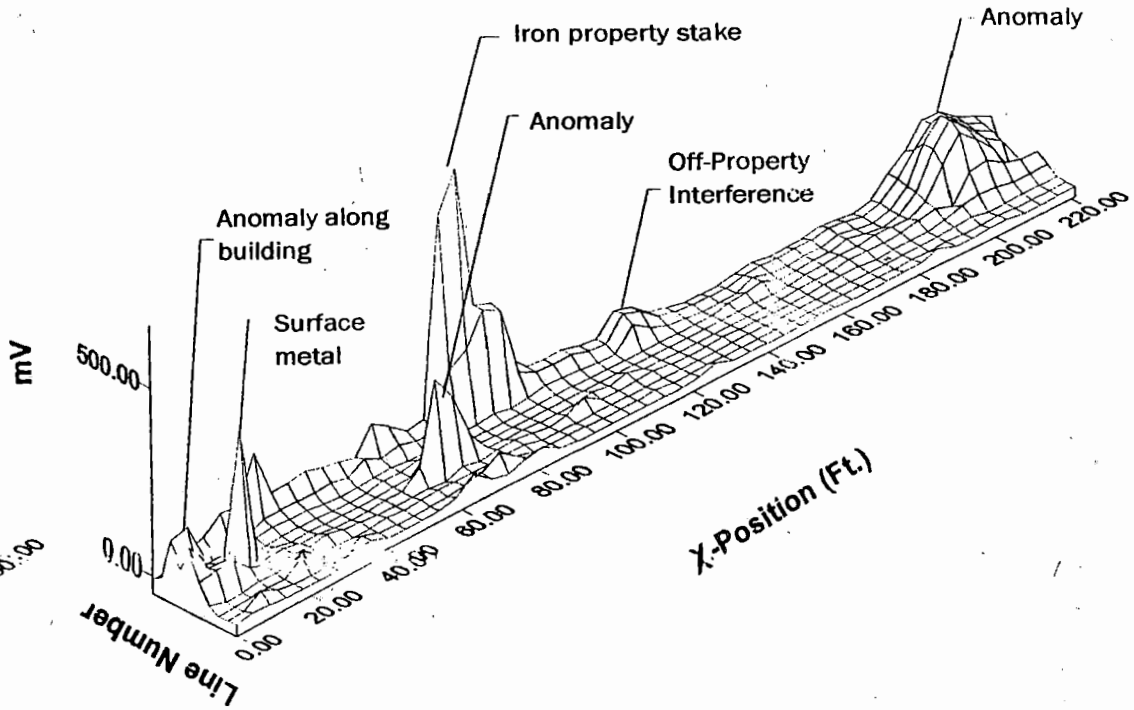


MAGNETOMETER SURVEY
147 State Street
Manchester, NY

Survey Plot: Area 4

Survey Date: 12/4/00





3-2-2003

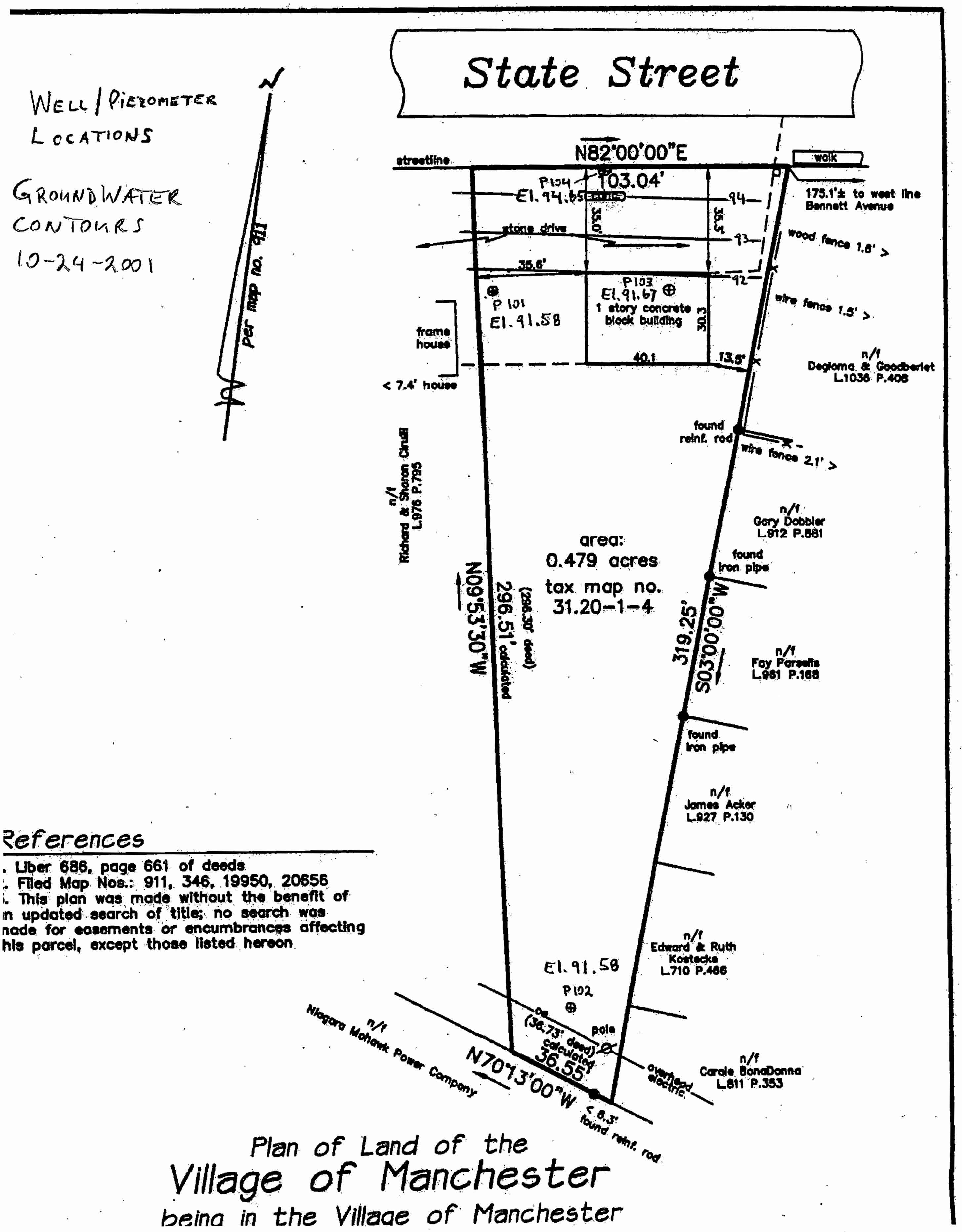
WATER LEVELS (IN FT.) FROM TOP OF RISER (INNER CASING)

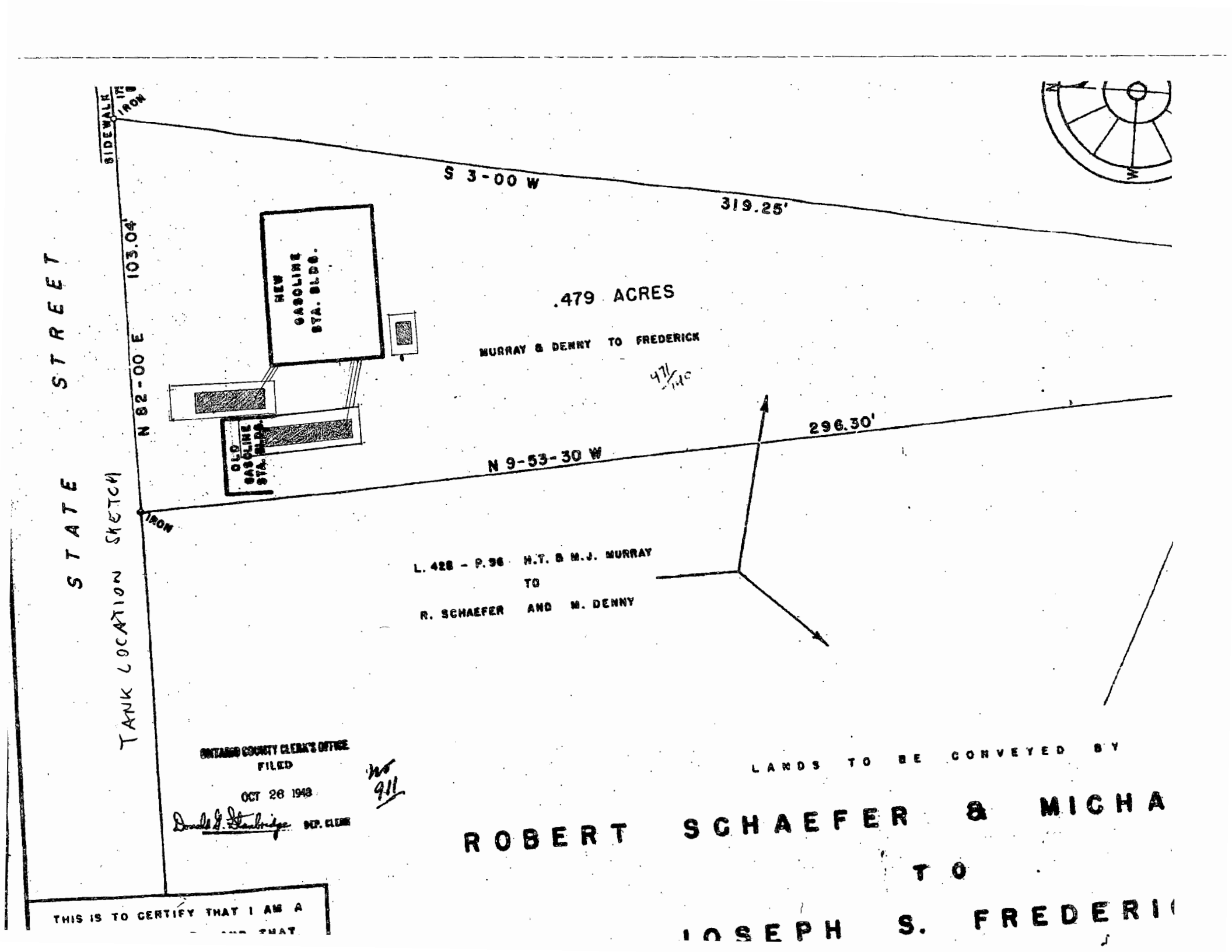
WELL	5/24/02	10/12/02
MW-1	4.65	5.31
MW-2	4.97	8.42
MW-3	4.34	7.86
MW-4	4.52	8.27
MW-5	5.70	9.13
MW-6	4.22	7.63
MW-7	2.75	6.46
P103	7.34	DRY
RW-1	5.22	9.08
RW-2	5.08	8.60
RW-3	4.45	7.70

Attached are:

- BORING/WELL LOGS
- SAMPLING LOGS
- GROUNDWATER CONTOUR MAP 10-24-2001
- TANK LOCATION SKETCH

LL


State Street
WELL / PIEZOMETER LOCATIONS
GROUNDWATER CONTOURS
10-24-2001
N
per map no. 911
streetline
N82°00'00"E
walk
103.04'
P104
El. 94.65
94
93
92
35.0'
35.5'
175.1'± to west line Bennett Avenue
stone drive
wood fence 1.8' >
35.6'
P103
El. 91.67
1 story concrete block building
30.3
40.1
13.8'
wire fence 1.5' >
P 101
El. 91.58
frame house
< 7.4' house
n/f Degioma & Goodberlet L.1036 P.408
found reinf. rod
wire fence 2.1' >
n/f Richard & Sharon Cirulli L.976 P.795
n/f Gary Dobbler L.912 P.881
area: 0.479 acres
tax map no. 31.20-1-4
found iron pipe
N09°53'30"W
296.51' calculated
(296.30' deed)
319.25'
S03°00'00"W
n/f Fay Parsells L.981 P.168
found iron pipe
n/f James Acker L.927 P.130
References
. Liber 686, page 661 of deeds
. Filed Map Nos.: 911, 346, 19950, 20656
. This plan was made without the benefit of
n updated search of title; no search was
nade for easements or encumbrances affecting
his parcel, except those listed hereon
El. 91.58
P102
n/f Edward & Ruth Kostecka L.710 P.466
oe
(36.73' deed)
calculated
36.55'
pole
overhead electric
n/f Carole BonaDonna L.811 P.353
n/f Niagara Mohawk Power Company
N70°13'00"W
< 6.3' found reinf. rod
Plan of Land of the
Village of Manchester
being in the Village of Manchester


STATE STREET
TANK LOCATION SKETCH
SIDEWALK
IRON
S 3-00 W
319.25'
103.04'
N 82-00 E
NEW GASOLINE STA. BLDG.
OLD GASOLINE STA. BLDG.
.479 ACRES
MURRAY & DENNY TO FREDERICK
N 9-53-30 W
296.30'
IRON
L. 428 - P. 96 H.T. & M.J. MURRAY
TO
R. SCHAEFER AND M. DENNY
ONTARIO COUNTY CLERK'S OFFICE
FILED
OCT 26 1948
Donald G. Stanbridge DEP. CLERK
LANDS TO BE CONVEYED BY
ROBERT SCHAEFER & MICHA
TO
JOSEPH S. FREDERI
THIS IS TO CERTIFY THAT I AM A

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well GP101 / P101 / MW-4	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN		Drilling	Date	Time
Drill Method: GEO PROBE		Started	8-21-01	09:00
Sample Method: MACRO CORE		Finished	8-21-01	09:30
Borehole Diameter: 3"	Water Level:	Logged By: WL		Checked By:

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	47/48"	—	0 0 0 1	1 2 3 4		Dark brown silty SAND, with cinders, dry -FILL-	CONCR. Bent.
					2.0		2.0'
					3.5	Brown sandy SILT, little to trace gravel, moist	
					5.0	Brown medium to fine SAND, moist.	
S2	36/48		3-4 0 0	5 6 7		Gray-brown sandy SILT, little gravel, moist to wet -GLACIAL TILL-	QUARTZ SAND (#00)
S3	46/36		15 0 0	8 9 10 11		Same, wet	
				12		Bottom of Boring at 12.0 ft.	12.0'
				13			2" PVC well
				14		S3 submitted for Lab analysis (9:15)	
				15			
				16			
				17		PVC well (10 slot)	
				18		10 ft. screen, 2 ft. riser	
				19		flush mount box	
				20			

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of ~~Well~~ BORING GP 102	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN	Drilling	Date	Time
Drill Method: GEOPROBE	Started	8-21-01	10:10
Sample Method: MACR. CORE	Finished	8-21-01	10:35
Borehole Diameter: 3"	Water Level:	Logged By: WL	Checked By:

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	46/48		0 0 0 0	1 2 3 4	1.5 3.0	Brown sandy GRAVEL, little fines, dry – FILL – Brown sandy SILT, trace gravel Brown coarse to fine SAND, dry	
S2	34/48		1 30-50 0	5 6 7 8	5.0	Gray brown sandy SILT, little to trace gravel, moist to wet GLACIAL TILL	No Well
S3	30/30		0 0	9 10			
				11 12 13 14 15 16 17 18 19 20		Refusal at 10.5 ft submit S2 (10:20) for analysis	

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of ~~Well~~ BORING GP103	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN	Drilling	Date	Time
Drill Method: GEOPROBE	Started	8-21-01	10:35
Sample Method: MACROCORE	Finished	8-21-01	12:50
Borehole Diameter: 3" Water Level:	Logged By: WL	Checked By:	

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	36/48		0 0 0 0	1 2 3 4	0.5	FILL Brown sandy SILT, trace Gravel, damp.	no well
S2	24/24		0 0	5 6	4.5	GRAY-BROWN sandy SILT, little gravel, damp TILL Refusal at 6.0 ft.	
				7 8 9 10 11 12 13 14 15 16 17 18 19 20		Sn Smit S2 (10:40) to Lab.	

Walter Lanik, Inc. *Consulting Geologist* P.O Box 16 Webster, New York 14580-0016	Log of ~~Well~~ BORING GP 104	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN	Drilling	Date	Time
Drill Method: GEOPROBE	Started	8-21-01	15:10
Sample Method: MACRO CORE	Finished	8-21-01	15:35
Borehole Diameter: 3" Water Level:	Logged By: WL	Checked By:	

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	35/48		0 0 0 0	1 2 3 4	2.0	Dark brown silty SAND, with cinders, dry Brown sandy SILT, little to trace gravel, damp.	No Well
S2	24/36		2 2 0	5 6 7	4.0	Grey brown TILL GLACIAL TILL	
				8 9 10 11 12 13 14 15 16 17 18 19 20		Refusal at 7.0 ft. Sub Smpl: S2(15:25) to lab	

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well BORING GP 105	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN	Drilling	Date	Time
Drill Method: GEOPROBE	Started		11:10
Sample Method: MACRO CORE	Finished		11:20
Borehole Diameter: 3" Water Level:	Logged By: WL	Checked By:	

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	32/48	—	0 0 0 0	1 2 3 4		Brown sandy SILT, w:H cinders, moist. - FILL - SAME	No well
S2	32/36		0 0	5 6 7	5.0	Gray brown sandy SILT, trace gravel, wet. GLACIAL TILL Refusal at 7.0ft.	
				8 9 10 11 12 13 14 15 16 17 18 19 20		Sub: S2 (11:20) to lab	

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of ~~Well~~ BORING GP 106	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN	Drilling	Date	Time
Drill Method: GEOPROBE	Started	8-21-01	11:20
Sample Method: MACRO CORE	Finished	8-21-01	18:00
Borehole Diameter: 3" Water Level:	Logged By: WL	Checked By:	

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
			0	1	0.5	TOPSOIL	
S1	47/48		0	2	2.0	Brown sandy SILT, trace gravel, dry	
			0	3		Dark brown sandy SILT, little gravel, moist	
			0	4			No Well
			0	5			
S2	48/48		0	6	6.0		
			0	7		Gray-brown sandy SILT, trace gravel, wet	
			0	8		TILL	
S3	12/12		0	9		Stone.	
				10		Refusal at 9.0 ft	
				11			
				12		Submit S2 (11:20) to lab	
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of ~~Well~~ BORING GP107	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN		**Drilling**	**Date**	**Time**
Drill Method: GEOPROBE		**Started**	8-21-01	13:00
Sample Method: MACRO CORE		**Finished**	8-21-01	13:30
Borehole Diameter: 3"	**Water Level:**	**Logged By:** WL		**Checked By:**

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	33/48		0 0 0 0	1 2 3 4	0.5 2.0 4.0	TOP SOIL Brown sandy SILT, dry Dark brown clayey SILT, moist.	No well
S2	36/36		0 0 0	5 6 7	5.0	Brown coarse to medium SAND dry. Grey brown sandy SILT, trace gravel, wet – TILL – Refusal at 7.0 ft.	
				8 9 10 11 12 13 14 15 16 17 18 19 20		Submit S2 (13:15) to lab.	

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well GP 108 / P 102	Sheet 1 of 1 Job Number: Elevation:

Driller: K. CAGAN		**Drilling**	**Date**	**Time**
Drill Method: GEOPROBE		**Started**	8-21-01	13:30
Sample Method: MACRO CORE		**Finished**	8-21-01	14:00
Borehole Diameter: 3"	**Water Level:**	**Logged By:** WL	**Checked By:**	

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	40/48		0 0 0 0	1 2 3 4	0.5	TOPSOIL Dark brown clayey SILT, trace gravel, moist	CONCRETE BENTONITE 2.0' QUARTZ SAND (#00)
S2	28/36		0 0 0	5 6 7	4.0 6.0	Brown coarse to fine SAND, trace gravel Gray, sandy SILT, wet -TILL-	7.0'
				8 9 10 11 12 13 14 15 16 17 18 19 20		Refusal at 7.0 ft. Submit S2 (13:40) to lab.	3/4" PVC well 3' stickup

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of ~~Well~~ BORING GP109	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN		Drilling	Date	Time
Drill Method: GEOPROBE		Started	8-21-01	14:15
Sample Method: MACROCORE		Finished	8-21-01	14:35
Borehole Diameter: 3"	Water Level:	Logged By: WL		Checked By:

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	36/48		0 0 0 0	1 2 3 4	0.5	CONCRETE Brown medium to fine SAND. - FILL -	no well
S2	42/42		0 0 0	5 6 7	5.0 6.0	clayey SILT. Gray sandy SILT, wet. - TILL -	
				8 9 10 11 12 13 14 15 16 17 18 19 20		Refusal at 7.5 ft. submit S2 (14:35) to lab	

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well GP 110/P103	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN		**Drilling**	**Date**	**Time**	
Drill Method: GEOPROBE		**Started**	8-21-01	14:35	
Sample Method: MACROCORE		**Finished**	8-21-01	15:10	
Borehole Diameter: 3"	**Water Level:**	**Logged By:** WL	**Checked By:**		

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
				0.5		CONCRETE	
S1	16/48		0	1		Brown clayey SILT, trace gravel	BENTONITE *
			0	2			
				3			
				4			4.0'
			0	5			QUARTZ SAND (#00)
S2	48/48		1-2	6	6.0	Grey brown sandy SILT trace gravel. moist to wet	
			0	7			
			0	8			
S3	12/12		0	9		same	9.0'
				10		Refusal at 9.0 ft.	3/4" PVC well
				11		submit S2 (14:45) to lab (VOC/SVOC + lead)	
				12			
				13			
				14		* INSIDE LOCATION - NO PROTECTIVE BOX	
				15			
				16			
				17			
				18			
				19			
				20			

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well GP 111 / P104 / MW-1	Sheet 1 of 1 Job Number: Elevation:

Driller: K. EAGAN	Drilling	Date	Time
Drill Method: GEOPROBE	Started	8-21-01	15:35
Sample Method: MACRO CORE	Finished	8-21-01	16:00
Borehole Diameter: 3"	Water Level:	Logged By: WL	Checked By:

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
			1-2	1		Brown SILTY SAND, with cinders FILL	CONCR.
S1	40/48		2	2	1.5	Dark brown clayey SILT	BENT.
			2	3	3.0	Brown med. fine sand, trace gravel.	2.5'
			2	4		5.5ft black stained wet sand	QUARTZ SAND (#00)
S2	34/42		50	5			
			0	6	5.5	Grey brown sandy SILT, trace gravel, wet FILL	
			0	7			7.5'
				8		Refusal at 7.5 ft.	
				9		Submit S2 (15:45) to lab (VOA/SVOC + Lead)	2" PVC Well
				10			
				11			Flush-Mount PROTECTIVE WELL BOX
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well RW-1	Sheet 1 of 1 Job Number: Elevation:

Driller: STEVE LARANCE	Drilling	Date	Time
Drill Method: FLUSH JOINT CASING TO ROCK	Started	4-19-02	10:00
Sample Method: MX CORE BARREL	Finished	4-19-02	15:30
Borehole Diameter: 4"	Water Level:	Logged By: WL	Checked By:

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
				1		See GP III for soil description	
				2			
				3			
				4			
				5			
				6			CEMENT GROUT
				7			
				8		Top of Rock @ 8.5ft.	
				9		Roller bit to 15.0ft.	
				10			
				11			
				12			BENTONITE
				13		Loss of drilling water at 13.0ft.	
				14			14.4'
				15			#0 MORIE SAND
R1	46/60 63%	3 3 3 3 3	NA	16		GRAY LIME STONE	
				17			
				18			
				19			19.4'
				20		Bottom of boring @ 20.0 ft.	2" PVC WELL FLUSH COVER

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well RW-2	Sheet 1 of 1 Job Number: Elevation:

Driller: STEVE LAMMER	Drilling	Date	Time
Drill Method: FLUSH JOINT CASING TO TOP OF ROCK	Started	4-18-02	11:00
Sample Method: HX CORE BARREL	Finished	4-18-02	17:00
Borehole Diameter: 4"	Water Level:	Logged By: WL	Checked By:

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
		-		1		See MW-2 for soil description.	
				2			
				3			
				4			
				5			
				6			CEMENT GROUT
				7			
				8			
				9			
				10			
				11		TOP OF ROCK @ 11.5 ft.	
				12		Rollerbit from 11.5 to 12.0 ft.	
R1	21/24 2%	8 8	NA	13		GRAY LIMESTONE	BENTONITE
				14		Coreblock from 13 to 14 ft. Rollerbit from 14.0 to 15.0 ft.	14.0'
				15			#0 MORIE SAND
R2	55/60 63%	4 5 3 3 4	NA	16			
				17			
				18		soft drilling from 18-19 ft.	
				19			19.0'
				20		Bottom of borehole @ 20.0 ft from ground surface.	2" PVC well FLUSH cover

Walter Lanik, Inc. *Consulting Geologist* P.O. Box 16 Webster, New York 14580-0016	Log of Well RW-3	Sheet 1 of 1 Job Number: Elevation:

Driller: Steve Laramee		**Drilling**	**Date**	**Time**
Drill Method: Flush Joint Casing to top of rock		**Started**	4-17-02	12:45
Sample Method: HX Coreberrel		**Finished**	4-19-02	09:40
Borehole Diameter: 4"	**Water Level:**	**Logged By:** WL	**Checked By:**	

Sample No.	Recovery (in.) RQD	Core Rate ~~Blow Counts~~ (MIN/FT)	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
				1–10		See MW-3 for soil Description	CEMENT GROUT
R1	12/24 0%	3 3	NA	11–12		Gray Limestone	
R2	56/48 85%	4 4 4 4	NA	13–16		Loss of drill water at 13.0 ft. (partial) Soft zone 15.0–15.2 ft.	BENTONITE #0 MORIE SAND 14.4'
R3	56/48 84%	4 4 4 4	NA	17–20		Soft zone 18.5 ft & 19.0 ft.	19.4'
						BOTTOM OF BORING AT 20.0 FT.	2" PVC WELL FLUSH COVER

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well MW-2	Sheet 1 of 1 Job Number: Elevation:

Driller: STEVE LAMAREE	**Drilling**	**Date**	**Time**
Drill Method: HSA - 4-1/4" ID	**Started**	4-17-02	09:00
Sample Method: 2" Split Spoon	**Finished**	4-17-02	10:45
Borehole Diameter: 8-1/4" **Water Level:**	**Logged By:** WL	**Checked By:**	

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
NR*	0/24	4 4 3 3	--	1		*No Recovery (installed in back fill from tank excavation)	CONCRETE
				2			BENTONITE
NR*	0/24	1 1 1 1	--	3		- FILL -	3.0'
S1	5/24	1/1.0' -- 9 3	ND	4 5		Brown coarse to medium SAND, trace gravel, wet	#0 MORIE SAND
				6			
S2	24/24	3 7 6 12	ND	7		Gray-brown sandy SILT, trace gravel, wet - GLACIAC TILL -	
				8			
S3	11/24	14 7 12 14	ND	9		Same, except some gravel.	
				10		Same, except bedrock fragment in Tip.	10.5'
S4	14/24	12 16 14 20	ND	11		Augered to 10.5 ft below ground surface. SAMPLED to 12.0 ft.	2" PVC WELL Flush mount well Box
NR*	0/1	50/1	--	12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well MW-3	Sheet 1 of 1 Job Number: Elevation:

Driller: STEVE LARAMEE		**Drilling**	**Date**	**Time**
Drill Method: HSA 4 1/4" ID		**Started**	4-16-02	13:20
Sample Method: 2" SPLIT SPOON		**Finished**	4-16-02	16:10
Borehole Diameter: 8-1/4"	**Water Level:**	**Logged By:** WL		**Checked By:**

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	16/24	7 6 5 5	5-10	1–2		Dark brown sandy SILT, trace gravel, with asphalt pieces, oily odor.	CONCRETE BENTONITE
S2	5/24	7 6 6 5	ND	3–4		Brown sandy SILT, some gravel, moist. - FILL -	2.8'
S3	16/24	5 6 5 9	ND	5–6		Brown gravelly sand, trace silt, moist	#0 MORIE SAND
S4	13/24	10 17 20 18	ND	7–8		Brown sandy SILT, some gravel, wet, with layer of c-m sand from 6-6.3 ft.	
S5	19/24	8 17 20 50	ND	9–10		Same. - GLACIAL TILL -	9.3'
				11–20		Augen to 9.5 ft. below ground surface SAMPLE to 10.0 FT.	2" PVC WELL FLUSH MOUNT WELL BOX

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	**Log of Well** MW-5	**Sheet 1 of 1** **Job Number:** **Elevation:**

Driller: STEVE LARAMEE	**Drilling**	**Date**	**Time**
Drill Method: HSA - 4 1/4" ID	**Started**	4-15-02	10:30
Sample Method: 2" SPLIT SPOON	**Finished**	4-15-02	14:30
Borehole Diameter: 8-1/4" **Water Level:** 4.7'	**Logged By:** W. Lanik	**Checked By:**	

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	8/24	1, 7, 6, 4	ND	1		Brown sandy SILT, roots. -TOPSOIL-	CEMENT
S2	2/24	2, 2, 1, 1	ND	2–3		Brown clayey SILT, with cinders -FILL-	BENTONITE
S3	9/24	4, 10, 20, 19	ND	4–5		Gray-brown sandy SILT, some gravel, damp.	2.5'
S4	11/11	10, 50/.4	ND	6		Same, except wet. -GLACIAL TILL-	#0 MORIE SAND
S5	22/24	8, 10, 14, 10	ND	7–8		Same, except trace gravel.	
S6	15/20	16, 22, 36, 50/.2	ND	9–10		Same	
				11		Auger to 11.0 ft. below ground surface. SAMPLE to 11.2ft.	10.5'
				12–20			2" PVC WELL FLUSH-MOUNT WELL BOX

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well MW-6	Sheet 1 of 1 Job Number: Elevation:

Driller: STEVE LARAMEE		**Drilling**	**Date**	**Time**
Drill Method: HSA - CME-45C 4-1/4" ID		**Started**	4-15-02	14:30
Sample Method: Split Spoon 2"		**Finished**	4-18-02	9:20
Borehole Diameter: 8-1/4"	**Water Level:** 3.25'	**Logged By:** WL		**Checked By:**

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
S1	17/24	1 1 3 4	ND	1		Brown sandy SILT, trace roots at top. -TOPSOIL-	CONCRETE
S2	18/24	2 2 3 4	ND	2 3		Brown sandy SILT, trace gravel, moist.	BENTONITE
S3	6/24	1 4 12 15	ND	4 5		Brown sandy SILTY, some gravel, wet	#0 MORIE SAND
S4	24/24	8 16 21 18	ND	6 7		Brown coarse to med. SAND, wet. Brown sandy SILT, some gravel, wet.	3.0'
S5	18/24	14 20 20 24	ND	8 9		Brown silty fine SAND, some gravel, wet	
S6	17/17	25 28 50/.4	ND	10 11		Same, pieces of bedrock at tip. Auger to 10.5 ft. below ground surface. SAMPLE TO 11.4 ft.	10.0'
				12 13 14 15 16 17 18 19 20			2" PVC well FLUSH-MOUNT WELL BOX

Walter Lanik, Inc. *Consulting Geologist* PO Box 16 Webster, New York 14580-0016	Log of Well * MW-7	Sheet 1 of 1 Job Number: Elevation:

Driller: STEVE LARAMEE	Drilling	Date	Time
Drill Method: HSA 4-1/4" ID	Started	4-16-02	10:20
Sample Method: 2" SPLIT SPOON	Finished	4-16-02	13:20
Borehole Diameter: 8-1/4" Water Level:	Logged By: WL	Checked By:	

Sample No.	Recovery (in.)	Blow Counts	PID/FID	Depth (feet)	Graphic Log	Materials Description	Well Completion
				1		Auger to 6.0 ft. without sampling. (for soil description see GP108) *	CONCRETE
				2			BENTONITE
				3			2.5'
				4			#0 MORIE SAND
				5			
				6			
S1	18/24	9 9 10 18	ND	7		Brown coarse to medium SAND, trace gravel, wet Brown sandy SILT, trace gravel, wet. - GLACIAL TILL -	7.5'
S2	8/8	17 50.2	ND	8		Same, with bedrock fragments in tip of spoon.	2" PVC well
				9		Auger to 8.0 ft below ground surface.	FLUSH MOUNT
				10		SAMPLE to 8.2 ft.	WELL BOX
				11		* Replacement well for P102	
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

EXAMPLE (Minimum Requirements)
Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) FREDERICK SITE
Well Number MW-1 Date 5-24-02 | 10-12-02
Field Personnel WL
Sampling Organization WALTON CLARK INC.
Identify MP

Depth to 2.5 / 7.5 of screen (below MP) top bottom
Pump Intake at (ft. below MP) 6.5
Purging Device; (pump type) Peristaltic Pump

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
12:38	6.14	4.3	60	≈3.0	13.7	0.92	6.75	—	1.20	500	
12:48	6.20	4.3	60	~4.0	13.6	0.88	6.76	—	1.07	490	
12:53	6.26	4.3	70	~4.5	12.6	0.87	6.79	—	2.09	470	
13:03	6.28	4.0	60	~5.0	13.6	0.87	6.80	—	2.36	430	
13:08	6.30	4.0	60	~5.0	13.6	0.87	6.81	—	2.55	390	
10/2/02									TDS		
1800	6ft		160		18.2	1294	6.6	45	913		Purged Dry
19:20					17.4	1333	6.16	7	944		

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

EXAMPLE (Minimum Requirements)
Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) FREDERICK SITE
Well Number RW-1 Date 5/24/02 | 10-12-02
Field Personnel WL
Sampling Organization WALTER CANIK INC.
Identify MP

Depth to (below MP) 14.2 / 19.2 of screen (top / bottom)
Pump Intake at (ft. below MP) 15.0
Purging Device; (pump type)

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
15:30	5.27	10	170	0	11.4	1.01	6.68	—	1.63	6	
15:40	5.27	10	170	4	11.4	1.03	6.71	—	1.34	2	
15:45	5.27	10	170	5	11.4	1.03	6.72		1.29	2	
15:55	5.27	10	170	7	11.4	1.03	6.73		1.25	2	
10/12	02								TDS		
		10	120								Start @ 14:30
17:35	9.1		320	-	16.6	886	6.9	198	618		Start Purging
18:05				9	15.4	888	6.9	121	619		Sampleing

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm (same as µmhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

EXAMPLE (Minimum Requirements) Page 3 of 10

Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) FREDERICK SITE
Well Number RW-2 Date 5-24-02 | 10-12-02
Field Personnel WC
Sampling Organization WATER CANIK INC.
Identify MP

Depth to (below MP) 13.4 / 18.4 of screen (top / bottom)
Pump Intake at (ft. below MP) 14.6
Purging Device; (pump type)

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
17:13	5.10	10	250	0.1	10.8	1.69	6.74	—	-0.13	3	Water has sheen & petr.
17:23	5.10	10	250	6.0	10.5	1.68	6.78	—	-0.14	2	odor
17:28	5.10	10	250	8.0	10.5	1.67	6.80	—	-0.37	2	
17:31	5.10	10	250	9.0	10.5	1.65	6.80	—	-0.39	2	
10/12/2002									TDS		
14:53	8.61	10	120		17.6	900	6.94	120	631	—	14:30 start
~~STOP~~					18.3	911	7.03	61	634		Sampled

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm (same as µmhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

EXAMPLE (Minimum Requirements)
Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) Frederick Site
Well Number MW-5 Date 5-25-02 | 10-12-02
Field Personnel WL
Sampling Organization WALTON LANIK ENG.
Identify MP

Depth to (below MP) 8.7 top / 10.7 bottom of screen
Pump Intake at (ft. below MP) 10.2 ft
Purging Device; (pump type)

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
9445	8.0	10	120	1.0	12.8	0.855	7.26	—	0.42	6	Turb. Meter plugged
9:55	8.8	10	100	2.0	13.0	0.849	7.27	—	0.11	5	
10:05	8.95	5	30	3.0	15.4	0.825	7.28	—	0.15	8	sun rising - heating
10:15	8.98	5.2	35	3.3	17.9	0.771	7.32	—	0.40	950	Flow through cell
10:25	8.98	5.2	33	3.6	19.0	0.746	7.33	—	0.48	>1000	water cloudy
10:30	9.00	5.2	32	3.8	19.5	0.736	7.33	—	0.44	>1000	
10:40	9.08	5.2	35	4.0	19.7	0.774	7.33	—	0.46	>1000	
10/12/02									TDS		
11:36	9.70	Low	40	0.050	17.2	930		50	650		
11:50	10.25	Low	40		17.1	930	7.03	9	647		
15:20	9.4				16.7	808	6.97	-56	559		

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

EXAMPLE (Minimum Requirements)

Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) FREDERICK SITE
Well Number MW-2 Date 5-25-02 | 10-12-02
Field Personnel WC
Sampling Organization WALTON CLARK INC
Identify MP

Depth to (below MP) 3.0 / 10.5 top / bottom of screen
Pump Intake at (ft. below MP) 8.0
Purging Device; (pump type)

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
12:30	5.10	—	0	0	—	—	—	—	—	—	Start
12:55	5.25	10	150	3	13.9	1.53	6.87	—	0.75	20	
13:00	5.25	10	150	4	13.8	1.52	6.86	—	0.94	10	
13:05	5.25	10	200	5	13.0	1.57	6.85	—	1.24	5	
13:15	5.28	10	200	8	12.0	1.62	6.84	—	1.10	4	
13:20	5.33	10	200	10	11.9	1.63	6.85	—	1.05	14	
13:25	5.32	10	200	12	12.0	1.62	6.86		0.99	16	
10/12/02									TDS		
14:53	8.81	10	40		19	2414	6.65	-25	1740		
14:58	9.1										
15:04					18.5	2440	6.8	-83	1811		

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm (same as µmhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

EXAMPLE (Minimum Requirements)
Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) FREDERICK SITE
Well Number RW-3 Date 5-25-02 | 10-2-02
Field Personnel WC
Sampling Organization WATER LINK INC.
Identify MP

Depth to (below MP) 13.9 / 18.9 of screen (top / bottom)
Pump Intake at (ft. below MP) 15.0 ft
Purging Device; (pump type)

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
14:10	4.55	—	0	0	—	—	—	—	—	—	start
14:20	4.55	10	200	2	11.4	0.894	7.07	—	3.35	3	
14:25	4.55	10	200	3	11.5	0.897	7.08	—	3.06	5	
14:30	4.55	10	200	4	11.4	0.898	7.05	—	2.80	4	
14:35	4.55	10	200	5	11.3	0.900	7.05	—	3.09	3	
14:40	4.55	10	200	6	11.5	0.899	7.04		3.02	3	end
10	12/02								TDS		
14:52	7.71	10	60		18.9	872	6.9	90	604		start @ 14:30
16:28					18.7	882	7.0	153	611		

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm (same as µmhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

EXAMPLE (Minimum Requirements)

Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) FREDERICK, SITE
Well Number MW-3 Date 5-25-02 | 10-12-02
Field Personnel WL
Sampling Organization WATER BANK INC.
Identify MP

Depth to (below MP) 3.0 / 9.0 of screen (top / bottom)
Pump Intake at (ft. below MP) 8.0
Purging Device; (pump type)

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
13:15	4.45	[redacted] –	0	0	—	—	—	—	—	—	stand
13:25	4.95	10	200	2	12.1	0.93	6.77	—	3.06	4	
13:30	5.00	10	200	3	12.0	0.94	6.78	—	2.86	8	
13:35	5.02	8	150	4	12.2	0.94	6.81	—	2.38	11	
13:40	5.04	8	150	5	12.2	0.95	6.81	—	2.61	13	
13:45	5.05	8	150	6	12.2	0.95	6.82	—	2.31	12	end
10/1[redacted]02								—	TDS		
~~13:48~~	~~9.3~~				~~17.4~~	~~1043~~	~~6.5~~	~~110~~	~~766~~		~~Purged Only~~ me
~~15:38~~											~~Sampled~~ me
16:57	8.1				17.4	1382	6.6	173	980		~~Sam~~ + Purged
18:32	[redacted]2				[redacted]	1367	6.63	162	964		sample

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm (same as µmhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

EXAMPLE (Minimum Requirements)

Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) FREDERICK SITE
Well Number MW-4 Date 5-25-02 | 10-12-02
Field Personnel WL
Sampling Organization WALTER LANIK ENC.
Identify MP

Depth to (below MP) 1.7 / 11.7 (top / bottom) of screen
Pump Intake at (ft. below MP) 10.5
Purging Device; (pump type)

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
16:25	4.60	—	0	0	—	—	—	—	—	—	Start
16:45	6.90	7	100	2	12.7	0.93	6.67	—	0.91	6	
16:50	7.40	7	100	2.5	14.3	0.877	6.63	—	0.79	1	
16:55	8.00	4.5	30	2.8	14.4	0.803	6.69	—	0.77	1	
17:00	8.05	4.7	30	3.0	14.6	0.805	6.70	—	0.86	1	
17:05	8.25	4.7	30	3.1	14.9	0.822	6.70	—	0.81	1	
17:10	8.30	4.7	30	3.2	15.0	0.825	6.71	—	0.65	1	
10/12/02									TDS		
12:48	9.3				17.9	1093	6.5	110	766		Purged Dry
15:38	10.1			2L	17.6	1121	6.5	-26	784		Sampled

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

EXAMPLE (Minimum Requirements)
Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) FREDERICK SITE
Well Number MW-6 Date 5-25-02 | 10-12-02
Field Personnel WL
Sampling Organization WALTON LANK ENC
Identify MP

Depth to (below MP) 3.0 / 9.5 of screen (top / bottom)
Pump Intake at (ft. below MP) 8.0
Purging Device; (pump type)

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
19:30	4.37	0	0	0	—	—	—	—	—	—	start
19:40	4.67	10	700	2	10.9	0.607	7.33		7.62	53	
19:45	4.70	10	700	3	10.9	0.603	7.33		7.45	55	
19:50	4.70	10	700	4	10.9	0.598	7.34		7.37	32	end
10 | 12 | 2002									TDS		
12:20	8.0		60 ml/min	—	17.7	738	7.15	16	5.09	—	start purging
12:35	8.25		60	0.800	16.9	718	7.1	34	4.94	—	
13:46	8.1		35	4.5	16.9	680	7.1	106	4.67	—	
15:08	8.0		40	7.5	16.9	677	7.1	1	4.65	—	SAMPLE

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm (same as µmhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

EXAMPLE (Minimum Requirements)
Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) FREDERICK SITE
Well Number MW-7 Date 5-25-02 | 10-12-02
Field Personnel WL
Sampling Organization WALTER LANIK ENG.
Identify MP

Depth to (below MP) 2.5 / 7.5 of screen (top / bottom)
Pump Intake at (ft. below MP) 6.8
Purging Device; (pump type)

Clock Time 24 HR	Water Depth below MP ft	Pump Dial [1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond. [2] µS/cm	pH	ORP/ Eh [3] mv	DO mg/L	Turb-idity NTU	Comments
20:15	3.00	—	0	0	—	—	—	—	—	—	Start
20:20	3.55	10	200	2	10.6	0.513	7.41	—	0.41	10	
20:25	3.97	10	200	3	10.7	0.514	7.44	—	0.97	220	
20:30	4.40	5.7	120	4	11.2	0.513	7.46	—	0.89	256	
20:33	4.45	5.7	120	5	11.4	0.515	7.46	—	0.57	279	
10/12/02	Depth water		6.46, bottom	7.45	Pump Intake		at	7.2 Ft			PURGED DRY

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm (same as µmhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

APPENDIX C - GROUNDWATER SAMPLING LOGS

APPENDIX D - TANK REMOVAL TEST REPORTS

PARADIGM

ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

SEMI-VOLATILES LABORATORY REPORT FOR BASE/NEUTRAL FRACTION

Client:	**Piedmont Equipment**	**Lab Project No.:**	00-2598
		Lab Sample No.:	9239
Client Job Site:	Frederick Site Manchester, NY	**Sample Type:**	Soil
Client Job No.:	N/A		
		Sample Date:	11/03/00
Field Location:	Gas Tank Exc, East Wall - North	**Date Received:**	11/03/00
Field ID No.:	N/A	**Date Analyzed:**	11/11/00

COMPOUND	RESULT (ug/Kg)	COMPOUND	RESULT (ug/Kg)
Benzyl alcohol	ND< 949	Fluorene	ND< 380
Bis (2-chloroethyl) ether	ND< 380	Hexachlorocyclopentadiene	ND< 380
Bis (2-chloroisopropyl) ether	ND< 380	2-Nitroaniline	ND< 949
1,3-Dichlorobenzene	ND< 380	3-Nitroaniline	ND< 949
1,4-Dichlorobenzene	ND< 380	4-Nitroaniline	ND< 949
1,2-Dichlorobenzene	ND< 380	4-Bromophenyl phenyl ether	ND< 380
Hexachloroethane	ND< 380	Di-n-butyl phthalate	ND< 380
N-Nitrosodimethylamine	ND< 380	Fluoranthene	ND< 380
N-Nitroso-di-n-propylamine	ND< 380	Hexachlorobenzene	ND< 380
Bis (2-chloroethoxy) methane	ND< 380	N-Nitrosodiphenylamine	ND< 380
4-Chloroaniline	ND< 380	Anthracene	ND< 380
Hexachlorobutadiene	ND< 380	Phenanthrene	ND< 380
Isophorone	ND< 380	Benzidine	ND< 949
2-Methylnapthalene	1604	Benzo (a) anthracene	ND< 380
Naphthalene	1432	Bis (2-ethylhexyl) phthalate	ND< 380
Nitrobenzene	ND< 380	Butylbenzylphthalate	ND< 380
1,2,4-Trichlorobenzene	ND< 380	Chrysene	ND< 380
2-Chloronaphthalene	ND< 380	3,3'-Dichlorobenzidine	ND< 380
Acenaphthene	ND< 380	Pyrene	ND< 380
Acenapthylene	ND< 380	Benzo (b) fluoranthene	ND< 380
4-Chlorophenyl phenyl ether	ND< 380	Benzo (k) fluoranthene	ND< 380
Dibenzofuran	ND< 380	Benzo (g,h,i) perylene	ND< 380
Diethyl phthalate	ND< 380	Benzo (a) pyrene	ND< 380
Dimethyl phthalate	ND< 949	Dibenz (a,h) anthracene	ND< 380
2,4-Dinitrotoluene	ND< 380	Di-n-octylphthalate	ND< 380
2,6-Dinitrotoluene	ND< 380	Indeno (1,2,3-cd) pyrene	ND< 380

ELAP ID No: 10958

Analytical Method: EPA 8270

Comments: ND denotes Not Detected

Approved By: _____
Laboratory Director

002598S6.XLS

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Organic Compound Laboratory Analysis Report For Soil/Sludge

Client:	**Piedmont Equipment**	**Lab Project No:**	00-2598
		Lab Sample No:	9239
Client Job Site:	Frederick Site Manchester, NY	**Sample Type:**	Soil
Client Job No:	N/A		
		Date Sampled:	11/03/2000
Field Location:	Gas Tank Exc., East Wall - North	**Date Received:**	11/03/2000
Field ID No:	N/A	**Date Analyzed:**	11/10/2000

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromodichloromethane	ND< 59.0	Benzene	ND< 59.0
Bromomethane	ND< 59.0	Chlorobenzene	ND< 59.0
Bromoform	ND< 59.0	Ethylbenzene	217
Carbon tetrachloride	ND< 59.0	Toluene	ND< 59.0
Chloroethane	ND< 59.0	m,p - Xylene	1,650
Chloromethane	ND< 59.0	o - Xylene	278
2-Chloroethyl vinyl ether	ND< 59.0	Styrene	ND< 59.0
Chloroform	ND< 59.0		
Dibromochloromethane	ND< 59.0		
1,1-Dichloroethane	ND< 59.0		
1,2-Dichloroethane	ND< 59.0		
1,1-Dichloroethene	ND< 59.0		
cis-1,2-Dichloroethene	ND< 59.0		
trans-1,2-Dichloroethene	ND< 59.0	Ketones & Misc.	
1,2-Dichloropropane	ND< 59.0	Acetone	ND< 285
cis-1,3-Dichloropropene	ND< 59.0	Vinyl acetate	ND< 148
trans-1,3-Dichloropropene	ND< 59.0	2-Butanone	ND< 148
Methylene chloride	ND< 148	4-Methyl-2-pentanone	ND< 148
1,1,2,2-Tetrachloroethane	ND< 59.0	2-Hexanone	ND< 148
Tetrachloroethene	ND< 59.0	Carbon disulfide	ND< 148
1,1,1-Trichloroethane	ND< 59.0		
1,1,2-Trichloroethane	ND< 59.0		
Trichloroethene	ND< 59.0		
Vinyl Chloride	ND< 59.0		

Analytical Method: EPA 8260 ELAP ID No: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Organic Compound Laboratory Analysis Report For Soil/Sludge

Client:	**Piedmont Equipment**	**Lab Project No:**	01-2516
		Lab Sample No:	9209
Client Job Site:	Manchester		
		Sample Type:	Soil
Client Job No:	N/A		
		Date Sampled:	09/26/01
Field Location:	Bottom North Tank	**Date Received:**	10/04/01
Field ID No:	N/A	**Date Analyzed:**	10/10/01

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromodichloromethane	ND< 11.7	Benzene	ND< 11.7
Bromomethane	ND< 11.7	Chlorobenzene	ND< 11.7
Bromoform	ND< 11.7	Ethylbenzene	12.3
Carbon tetrachloride	ND< 11.7	Toluene	ND< 11.7
Chloroethane	ND< 11.7	m,p - Xylene	37.5
Chloromethane	ND< 11.7	o - Xylene	ND< 11.7
2-Chloroethyl vinyl ether	ND< 11.7	Styrene	ND< 11.7
Chloroform	ND< 11.7		
Dibromochloromethane	ND< 11.7		
1,1-Dichloroethane	ND< 11.7		
1,2-Dichloroethane	ND< 11.7		
1,1-Dichloroethene	ND< 11.7		
cis-1,2-Dichloroethene	ND< 11.7		
trans-1,2-Dichloroethene	ND< 11.7	**Ketones & Misc.**	
1,2-Dichloropropane	ND< 11.7	Acetone	ND< 58.3
cis-1,3-Dichloropropene	ND< 11.7	Vinyl acetate	ND< 29.1
trans-1,3-Dichloropropene	ND< 11.7	2-Butanone	ND< 29.1
Methylene chloride	ND< 29.1	4-Methyl-2-pentanone	ND< 29.1
1,1,2,2-Tetrachloroethane	ND< 11.7	2-Hexanone	ND< 29.1
Tetrachloroethene	ND< 11.7	Carbon disulfide	ND< 29.1
1,1,1-Trichloroethane	ND< 11.7		
1,1,2-Trichloroethane	ND< 11.7		
Trichloroethene	ND< 11.7		
Vinyl Chloride	ND< 11.7		

Analytical Method: EPA 8260 ELAP ID No: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

012516V5.XLS

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Soil/Sludge

(Additional 8260 Compounds)

Client:	Piedmont Equipment	**Lab Project No.:**	00-2598
		Lab Sample No.:	9239
Client Job Site:	Frederick Site Manchester, NY	**Sample Type:**	Soil
Client Job No.:	N/A	**Date Sampled:**	11/03/00
Field Location:	Gas Tank Exc, East Wall - North	**Date Received:**	11/03/00
Field ID No.:	N/A	**Date Analyzed:**	11/10/00

VOLATILE AROMATICS	RESULTS (ug/Kg)
Methyl tert-Butyl Ether	ND< 59.0
Isopropylbenzene	121
n-Propylbenzene	304
1,3,5-Trimethylbenzene	1,140
tert-Butylbenzene	337
1,2,4-Trimethylbenzene	3,270
sec-Butylbenzene	68.4
p-Isopropyltoluene	201
n-Butylbenzene	ND< 59.0
Naphthalene	275

Analytical Method: EPA 8260 NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: _____
Laboratory Director

PARADIGM

ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

SEMI-VOLATILES LABORATORY REPORT FOR BASE/NEUTRAL FRACTION

Client: Piedmont Equipment

Client Job Site: Frederick Site, Manchester, NY

Client Job No.: N/A

Field Location: Gas Tank Exc, West Wall - South

Field ID No.: N/A

Lab Project No.: 00-2598

Lab Sample No.: 9236

Sample Type: Soil

Sample Date: 11/02/00

Date Received: 11/03/00

Date Analyzed: 11/11/00

COMPOUND	RESULT (ug/Kg)	COMPOUND	RESULT (ug/Kg)
Benzyl alcohol	ND< 977	Fluorene	ND< 391
Bis (2-chloroethyl) ether	ND< 391	Hexachlorocyclopentadiene	ND< 391
Bis (2-chloroisopropyl) ether	ND< 391	2-Nitroaniline	ND< 977
1,3-Dichlorobenzene	ND< 391	3-Nitroaniline	ND< 977
1,4-Dichlorobenzene	ND< 391	4-Nitroaniline	ND< 977
1,2-Dichlorobenzene	ND< 391	4-Bromophenyl phenyl ether	ND< 391
Hexachloroethane	ND< 391	Di-n-butyl phthalate	ND< 391
N-Nitrosodimethylamine	ND< 391	Fluoranthene	ND< 391
N-Nitroso-di-n-propylamine	ND< 391	Hexachlorobenzene	ND< 391
Bis (2-chloroethoxy) methane	ND< 391	N-Nitrosodiphenylamine	ND< 391
4-Chloroaniline	ND< 391	Anthracene	ND< 391
Hexachlorobutadiene	ND< 391	Phenanthrene	ND< 391
Isophorone	801	Benzidine	ND< 977
2-Methylnapthalene	ND< 391	Benzo (a) anthracene	ND< 391
Naphthalene	ND< 391	Bis (2-ethylhexyl) phthalate	ND< 391
Nitrobenzene	ND< 391	Butylbenzylphthalate	ND< 391
1,2,4-Trichlorobenzene	ND< 391	Chrysene	ND< 391
2-Chloronaphthalene	ND< 391	3,3'-Dichlorobenzidine	ND< 391
Acenaphthene	ND< 391	Pyrene	ND< 391
Acenapthylene	ND< 391	Benzo (b) fluoranthene	ND< 391
4-Chlorophenyl phenyl ether	ND< 391	Benzo (k) fluoranthene	ND< 391
Dibenzofuran	ND< 391	Benzo (g,h,i) perylene	ND< 391
Diethyl phthalate	ND< 391	Benzo (a) pyrene	ND< 391
Dimethyl phthalate	ND< 977	Dibenz (a,h) anthracene	ND< 391
2,4-Dinitrotoluene	ND< 391	Di-n-octylphthalate	ND< 391
2,6-Dinitrotoluene	ND< 391	Indeno (1,2,3-cd) pyrene	ND< 391

ELAP ID No. 10956

Analytical Method: EPA 8270

Comments: ND denotes Not Detected

Approved By: _____
Laboratory Director

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Non-Potable Water

Client:	Piedmont Equipment	**Lab Project No.:**	00-2598
		Lab Sample No.:	9243
Client Job Site:	Frederick Site Manchester,NY	**Sample Type:**	Water
Client Job No.:	N/A	**Date Sampled:**	11/03/00
		Date Received:	11/03/00
Field Location:	Tank Water	**Date Analyzed:**	11/08/00
Field ID No.:	N/A		

VOLATILE AROMATICS	RESULTS (ug/L)	
Benzene		12.7
Chlorobenzene	ND<	2.00
1,2-Dichlorobenzene	ND<	2.00
1,3-Dichlorobenzene	ND<	2.00
1,4-Dichlorobenzene	ND<	2.00
Ethylbenzene	ND<	2.00
Toluene		47.1

EPA Analytical Method: 602

ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

002598V0.XLS

APPENDIX E - DATA USABILITY SUMMARY REPORTS

DATA USABILITY SUMMARY REPORT

FOR ENVIRONMENTAL RESTORATION PROJECT

VILLAGE OF MANCHESTER

SDG NO. MW-1

Volatiles, Semi-volatiles, PCBs

and

Metals

Sampling Date: May 24-25, 2002

Submitted to:

Sniedze Associates
482 North Main Street
Canandaigua, New York 14424
585-394-2630

Prepared by:

EDV, Inc.
1326 Orangewood Avenue
Pittsburgh, PA 15216
412-341-5281

April 1, 2003

APPENDIX B - BORING LOGS

TABLE OF CONTENTS

DATA USABILITY SUMMARY REPORT
FOR ENVIRONMENTAL RESTORATION PROJECT
FREDERICK PROPERTY
VILLAGE OF MANCHESTER
SDG NO. MW-1

This analytical data package was for the Environmental Restoration project conducted by Sniedze Associates, for the Frederick Property in the Village of Manchester, New York. It consists of ten groundwater samples (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, RW-1, RW-2, RW-3 and P103), a field blank, a field duplicate and a trip blank. The samples were analyzed for Target Compound List (TCL) volatile organic compounds (ASP 95-1), Target Compound List (TCL) semi-volatile organic compounds (ASP 95-2), Total PCBs (ASP-95-3) Target Analyte List (TAL ASP-95) metals. A matrix spike and matrix spike duplicate analysis for each parameter was performed.

The following four sets of data presented by Columbia Analytical, Inc., 1 Mustard Street, Rochester NY 14609, were reviewed and were the basis for this Data Usability Summary Report:

- Sample Data Summary Package, June 2002, Analytical Data Package for Frederick Property, Groundwater samples, Received: May 28, 2002.
- Volatile Organics Data, June 2002, Analytical Data Package for Frederick Property, Groundwater samples, Received: May 28, 2002.
- Semi-Volatile Organics Data, June 2002, Analytical Data Package for Frederick Property, Groundwater samples, Received: May 28, 2002.
- PCB Data, June 2002, Analytical Data Package for Frederick Property, Groundwater samples, Received: May 28, 2002.
- Metals Data, June 2002, Analytical Data Package for Frederick Property, Groundwater samples, Received: May 28, 2002.

The data package was evaluated for their usability as defined by the Guidance for the Development of Data Usability Summary Reports (NYSDEC, 08/2001). USEPA Region II CLP checklist was used as a guidance document.

1.0 Completeness and Holding Times

The data package as provided is complete according to CLP requirements. All holding times were met.

2.0 Quality Control Data

The QC data are critical to any data package, and are used to determine whether results presented by the laboratory are accepted or rejected. This data package as presented encountered some problems with its QC data.

According to the NYSDEC Guidance for the Development of Data Usability Summary Reports, the following QC data were evaluated: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data. All QC data were within quality control limits except the following issues:

Semi-volatiles: The method blank was contaminated with Di-n-butylphthalate at a concentration of 1.0 µg/L. This resulted in this compound in some samples being qualified as non-detect (U). See Section 7.0.

Bis (2-ethylhexyl) phthalate exceeded the calibration range in three samples MW-4, MW-5 and MW-7; they were diluted and reanalyzed. Results of reanalysis were acceptable. Results for samples MW-5 and MW-7 were presented as a hybrid of original and diluted analyses. MW-4 was presented a diluted analysis.

Metals: Two of the continuing calibration blanks reported contaminated results (12.8ug/L, 13.5ug/L & 11.0ug/L) for aluminum. Thus, undetected aluminum results in some samples were qualified as estimated. See Section 7.0.

3.0 Analytical Protocol

Based on the information presented in the data package, it was established that the data were generated using the NYSDEC ASP protocols ASP 95-1, ASP95-2, ASP 95-3 and ASP95-5.

4.0 Raw Data Evaluation

Volatiles: For VOA analysis Relative Retention Times (RRTs) for target analytes were within the allowed 0.06RRT units of the Standard RRT. Quantitation reports were provided for all identified target compounds. Mass spectra of identified target compounds and mass spectra of the associated calibration standard matched according to EPA CLP data validation criteria. There were no false negatives identified.

The correct internal standards, quantitation ion and Relative Response Factor (RRFs) were used to quantitate target compounds. During the quantitation of tentatively identified compounds (TICs) coelutions of internal standard and TIC compounds were observed; TIC results for those samples were qualified by the laboratory as estimated.

All TICs were correctly identified and qualified by the laboratory. No transcription errors were observed from raw data to summary forms and data analysis sheets (FORM 1s)

Metals: All metals raw data were presented by the laboratory for graphite furnace, atomic absorption cold vapor and ICP analysis. All instruments data print out and run logs were evaluated and found to be compliant with CLP method criteria. All raw data were accurately transcribed to summary forms.

Evaluation of all of the above raw data confirmed results presented by the laboratory on the data summary sheets and QC verification forms.

5.0 Data Qualifiers

The data qualifiers as presented by the laboratory are correct based on the laboratory definitions. However, some qualifiers were changed based on data qualifiers established by the USEPA for CLP data validation, as discussed earlier.

Specifically, di-n-butylphthalate results flagged by the laboratory as estimated were qualified as a non-detect, due to minute concentration of di-n-butylphthalate in samples compared to method blank.

Aluminum results presented by the laboratory as detects were qualified as non-detects due to calibration blank problems.

Therefore, upon data validation of this package, the following data qualifiers were modified: Di-n-butylphthalate (from detect to U) for SVOA, and aluminum (from detect to U) for metals.

6.0 Summary

As a result of the evaluation of the data package (MW-1), it is determined that results for volatile organics and PCBs analyses are acceptable as the laboratory reported. All results for semi-volatiles and metals analyses (laboratory reported and validator flagged) are acceptable.

7.0 Data Qualifier Table

Sample ID	Compound/ Analyte	Qualifier
Semi-volatile		
MW-1, RW-1, RW-2, MW-5, MW-7, field dup	Di-n-butylphthalate	U
MW-5	Bis(2-ethyl hexyl) phthalate*	
MW-7	Bis(2-ethyl hexyl) phthalate**	
Metals		
Field dup, MW-1, MW-2, MW-3, MW-4, MW-5, RW-2, RW-3	Aluminum	U

*@ a concentration of 110ug/L at 2X dilution

**@ a concentration of 260ug/L at 5X dilution

DATA USABILITY SUMMARY REPORT

FOR ENVIRONMENTAL RESTORATION PROJECT

VILLAGE OF MANCHESTER

SDG NO. SS101

Volatiles, Semi-volatiles, PCBs

and

Metals

Sampling Date: August 21, 2001

Submitted to:

Sniedze Associates
482 North Main Street
Canandaigua, New York 14424
585-394-2630

Prepared by:

EDV, Inc.
1326 Orangewood Avenue
Pittsburgh, PA 15216
412-341-5281

April 1, 2003

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DATA USABILITY SUMMARY REPORT
FOR ENVIRONMENTAL RESTORATION PROJECT
FREDERICK PROPERTY
VILLAGE OF MANCHESTER
SDG NO. SS101

This analytical data package was for the Environmental Restoration project conducted by Sniedze Associates, for the Frederick Property in the Village of Manchester, NY. It consists of eighteen soil samples (SS101, SS102, SS103, SS104, SS105, GP103-S52, GP105-S2, GP106-S2, GP107-S2, GP108-S2, GP109-S2, GP104-S2, GP101-S2, GP102-S2, TP101-6FT, GP110-S2, GP111-S2, TP102-7-8FT), a field blank, a cooler blank and a trip blank. The samples were analyzed for Target Compound List (TCL) volatile organic compounds (ASP 95-1), Target Compound List (TCL) semi-volatile organic compounds (ASP 95-2), Total PCBs (ASP 95-3) Target Analyte List (TAL ASP-95) metals. A matrix spike and matrix spike duplicate analysis for each parameter was performed.

The following four sets of data presented by Columbia Analytical, Inc., 1 Mustard Street, Rochester NY 14609, were reviewed and were the basis for this Data Usability Summary Report:

- Sample Data Summary Package, September 2001, Analytical Data Package for Frederick Property soil samples, Received: August 22, 2001.
- Volatile Organics Data, September 2001, Analytical Data Package for Frederick Property, soil samples, Received: August 22, 2001.
- Semi-Volatile Organics Data, September 2001, Analytical Data Package for Frederick Property, soil samples, Received: August 22, 2001.
- PCB Data, September 2001, Analytical Data Package for Frederick Property, soil samples, Received: August 22, 2001.
- Metals Data, September 2001, Analytical Data Package for Frederick Property, Soil samples, Received: August 22, 2001.

The data package was evaluated for their usability as defined by the Guidance for the Development of Data Usability Summary Reports (NYSDEC, 08/2001). USEPA Region II CLP checklist was used as a guidance document.

1.0 Completeness and Holding Times.

The data package as provided is complete according to CLP requirements. All holding times were met.

2.0 Quality Control Data

The QC data are critical to any data package, and are used to determine whether results presented by the laboratory are accepted or rejected. This data package as presented encountered some problems with its QC data.

According to the NYSDEC Guidance for the Development of Data Usability Summary Reports, the following QC data were evaluated: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data. All QC data were within quality control limits except the following issues:

Volatile: Method blank #1 was contaminated with 7.7ug/L of acetone1.9ug/L MEK and 1.0ug/L of naphthalene. As a result naphthalene results in samples SS01 and SS02 were flagged as non-detects (U) and acetone result in sample SS02 was flagged as non-detect (U).

Method blank #2 was contaminated with methylene chloride at 1.2ug/L and naphthalene at 1.6ug/L. As a result of this contamination detected methylene chloride results in samples GP105-S2, GP108-S2, GP109-S2, GP104-S2 and GP101-S-3 were flagged as non-detects (U). Naphthalene in sample GP107-S2 was also flagged as non-detect (U) due to this contamination.

Semi-volatiles: Surrogate recoveries is the method blank was below the required QC limits. However, based on professional judgment and technical information, the validator deemed that this was an isolated occurrence and associated samples were not affected. The method blank #1 was contaminated with di-n-butylphthalate at a concentration of 1.0 µg/L. This resulted in di-n-butylphthalate results in some samples being qualified as non-detects (U).

For the continuing calibration performed on 9/21/02, 2,4-dinitrophenol and 4,6-dinitromethylphenol exceeded required 25% difference. This resulted in these compounds being qualified as estimated (UJ) in samples SS01, SS02, GP103-S2, GP105-S2, GP106-S2, GP107-S2 and GP108-S2.

Results for naphthalene and 2-Methylnaphthatlene exceed the calibration range in sample TP101-6ft. The sample was reanalyzed at a 5x dilution. The diluted results are being reported.

Metals: The preparation blank reported cadmium contamination (0.489ug/L) which affected sample results. Some detected cadmium results were qualified as non-detects (U). Please note that these samples had RPD criteria exceeded on the duplicate and so these results were further qualified as estimated (UJ). See below

For the duplicate analysis, RPD for; cadmium 14.8 exceeded the QC limits of ± 5, chromium 25.8 exceeded the ±10 QC limits and lead-54.9 exceed the ±3 QC limits. This resulted in all chromium and lead results being flagged as estimated (J) and all cadmium results being flagged as estimated "UJ/J." See Section 7.0.

For serial dilution, the percent difference of ±10 was exceeded for copper (11.4), thus, all associated copper results were qualified as estimated (J).

3.0 Analytical Protocol

Based on the information presented in the data package, it was established that the data were generated using the NYSDEC ASP protocols ASP95-2, ASP 95-3 and ASP95-5.

4.0 Raw Data Evaluation

Volatiles: For VOA analysis Relative Retention Times (RRTs) for target analytes were within the allowed 0.06RRT units of the Standard RRT. Quantitation reports were provided for all identified target compounds. Mass spectra of identified target compounds and mass spectra of the associated calibration standard matched according to EPA CLP data validation criteria. There were no false negatives identified.

The correct internal standards, quantitation ion and Relative Response Factor (RRFs) were used to quantitate target compounds. During the quantitation of tentatively identified compounds (TICs) coelutions of internal standard and TIC compounds were observed; TIC results for those samples were qualified by the laboratory as estimated.

All TICs were correctly identified and qualified by the laboratory. No transcription errors were observed from raw data to summary forms and data analysis sheets (FORM 1s).

Metals: All metals raw data were presented by the laboratory for graphite furnace, atomic absorption cold vapor and ICP analysis. All instruments data print out and run logs were evaluated and found to be compliant with CLP method criteria. All raw data were accurately transcribed to summary forms.

Evaluation of all of the above raw data confirmed results presented by the laboratory on the data summary sheets and QC verification forms.

5.0 Data Qualifiers

The data qualifiers as presented by the laboratory are correct based on the laboratory definitions. However, some qualifiers were changed based on data qualifiers established by the USEPA for CLP data validation, as discussed earlier.

Specifically, acetone, naphthalene and methylene chloride results flagged by the laboratory as detects were qualified as a non-detect, due to contamination in samples compared to method blank.

2,4-dinitrophenol and 4,6-dinitromethylphenol were flagged as non-detect by the laboratory but were qualified as estimated by the validator due to calibration issues.

Antimony and cadmium results flagged by the laboratory as detects were qualified as estimated. Chromium, copper and lead results qualified by the laboratory as detects were flagged as estimated. See Section 7.0.

6.0 Summary

As a result of the evaluation of the data package (SS101), it is determined that results for volatile organics and PCBs are acceptable as the laboratory reported. All results of semi-volatiles and metals analyses (laboratory reported and validator flagged) are acceptable.

7.0 Data Qualifier Table

Sample ID	Compound/Analyte	Qualifier
Volatile		
SS101	Naphthalene	U
SS102	Acetone, naphthalene	U
SS103	Acetone	U
GP105-S2	Naphthalene	U
GP107-S2, GP108-S2, GP109-S2, GP104-S2, GP101-S3	Methylene chloride	U
Semi-volatile		
SS101, SS102, SS103, GP103-S2, GP105-S2, GP106-S2, GP107-S2, GP108-S2	2,4-dinitrophenol, 4,6-dinitro-2-methylphenol	UJ
Metals		
GP101-S3, GP102-S2, GP103-S2, GP104-S2, GP105-S2, GP106-S2, GP107-S2, GP109-S2	Antimony, cadmium	UJ
	Chromium, copper, lead	J
GP108-S2, SS101, SS102, SS103, SS104, SS105, TP101-6ft	Antimony	UJ
	Cadmium Chromium, copper, lead	J

DATA USABILITY SUMMARY REPORT

FOR ENVIRONMENTAL RESTORATION PROJECT

VILLAGE OF MANCHESTER

SDG NO. RW-2

Volatiles, Semi-volatiles, PCBs

and

Metals

Sampling Date: October 11- 12, 2002

Submitted to:

Sniedze Associates
482 North Main Street
Canandaigua, New York 14424
585-394-2630

Prepared by:

EDV, Inc.
1326 Orangewood Avenue
Pittsburgh, PA 15216
412-341-5281

April 1, 2003

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DATA USABILITY SUMMARY REPORT
FOR ENVIRONMENTAL RESTORATION PROJECT
FREDERICK PROPERTY
VILLAGE OF MANCHESTER
SDG NO. RW-2

This analytical data package was for the Environmental Restoration project conducted by Sniedze Associates, for the Frederick Property in the Village of Manchester, NY. It consists of ten groundwater samples (RW-1, MW-6, RW-3, RW-2, MW-5, MW-2, MW-4, MW-7, MW-3, MW-1), a field blank, a field duplicate and a trip blank. The samples were analyzed for Target Compound List (TCL volatile organic compounds (ASP 95-1), Target Compound List (TCL) semi-volatile organic compounds (ASP 95-2), Total PCBs (ASP 95-3) Target Analyte List (TAL ASP-95) metals. A matrix spike and matrix spike duplicate analysis for each parameter was performed.

The following four sets of data presented by Columbia Analytical, Inc., 1 Mustard Street, Rochester NY 14609, were reviewed and were the basis for this Data Usability Summary Report:

- Sample Data Summary Package, November 2002, Analytical Data Package for Frederick Property groundwater samples, Received: October 14,, 2002.
- Volatile Organics Data, November 2002, Analytical Data Package for Frederick Property, groundwater samples, Received: October 14, 2002.
- Semi-Volatile Organics Data, November 2002, Analytical Data Package for Frederick Property, groundwater samples, Received: October 14, 2002.
- PCB Data, November 2002, Analytical Data Package for Frederick Property, soil samples, Received: October 14, 2002.
- Metals Data, November 2002, Analytical Data Package for Frederick Property, Soil samples, Received: October 14, 2002.

The data package was evaluated for its usability as defined by the Guidance for the Development of Data Usability Summary Reports (NYSDEC, 08/2001). USEPA Region II CLP checklist was used as a guidance document.

1.0 Completeness and Holding Times.

The data package as provided is complete according to CLP requirements. All holding times were met.

2.0 Quality Control Data

The QC data are critical to any data package, and are used to determine whether results presented by the laboratory are accepted or rejected. This data package as presented encountered some problems with its QC data.

According to the NYSDEC Guidance for the Development of Data Usability Summary Reports, the following QC data were evaluated: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data. All QC data were within quality control limits except the following issues:

Semi-volatiles: The method blank **#1** was contaminated with Di-n-butylphthalate at a concentration of 3.0 µg/L and bis (2-ethylhexyl)phthalate at 1.0ug/L. This resulted in both these compounds being qualified as non-detects in RW-2 and duplicate. Di-n-buylphthalate was qualified as non-detect (U) in samples MW-6, RW-3, MW-5, MW-2 and RW-1.

Metals: The preparation blank reported iron and thallium contamination (39.1ug/L and 1.6ug/L respectively). This resulted in iron in sample RW-2 being flagged as a non-detect (U) and thallium in sample RW-3 being flagged as non-detects (U).

3.0 Analytical Protocol

Based on the information presented in the data package, it was established that the data were generated using the NYSDEC ASP protocols ASP 95-1, ASP 95-2, ASP 95-3 and ASP 95-5.

4.0 Raw Data Evaluation

Volatiles: For VOA analysis Relative Retention Times (RRTs) for target analytes were within the allowed 0.06RRT units of the Standard RRT. Quantitation reports were provided for all identified target compounds. Mass spectra of identified target compounds and mass spectra of the associated calibration standard matched according to EPA CLP data validation criteria. There were no false negatives identified.

The correct internal standards, quantitation ion and Relative Response Factor (RRFs) were used to quantitate target compounds. During the quantitation of tentatively identified compounds (TICs) coelutions of internal standard and TIC compounds were observed; TIC results for those samples were qualified by the laboratory as estimated.

All TICs were correctly identified and qualified by the laboratory. No transcription errors were observed from raw data to summary forms and data analysis sheets (FORM 1s)

Metals: All metals raw data were presented by the laboratory for graphite furnace, atomic absorption cold vapor and ICP analysis. All instruments data print out and run logs were evaluated and found to be compliant with CLP method criteria. All raw data were accurately transcribed to summary forms.

Evaluation of all of the above raw data confirmed results presented by the laboratory on the data summary sheets and QC verification forms.

5.0 Data Qualifiers

The data qualifiers as presented by the laboratory are correct based on the laboratory definitions. However, some qualifiers were changed based on data qualifiers established by the USEPA for CLP data validation, as discussed earlier.

Specifically, di-n-butylphthalate and bis(2-ethyl hexyl) phthalate results flagged by the laboratory as estimated were qualified as a non-detect, due to minute concentration of di-n-butylphthalate in samples compared to method blank.

One iron and one thallium result presented by the laboratory as detects were qualified as non-detects due to calibration blank problems.

Therefore, upon data validation of this package, the following data qualifiers were modified: Di-n-butylphthalate and bis (2-ethyl hexyl) phthalate (from detect to U) for SVOA, and iron and thallium (from detect to U) for metals. See Section 7.0.

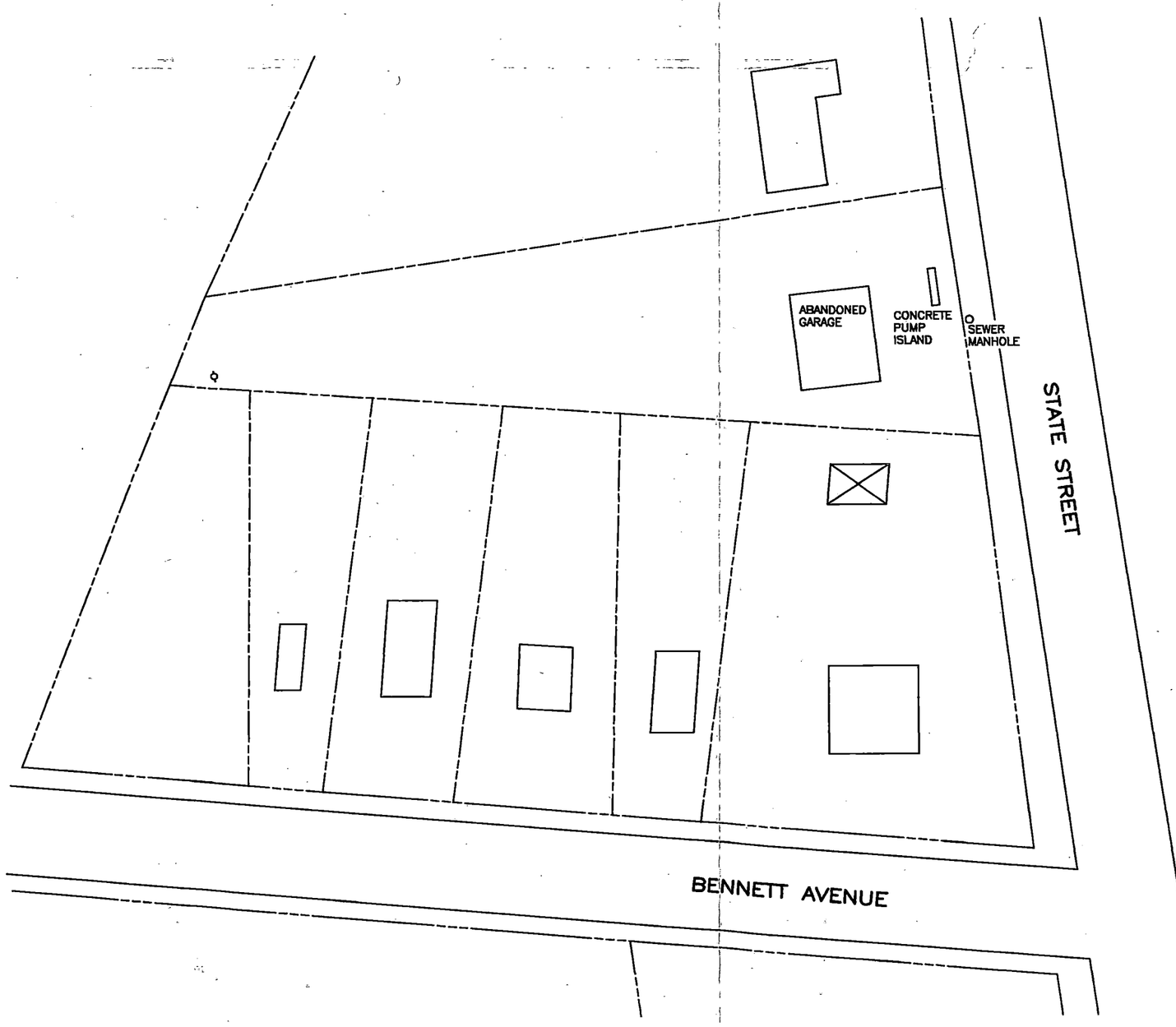
6.0 Summary

As a result of the evaluation of the data package (RW-2), it is determined that results for volatile organics and PCBs analyses are acceptable as the laboratory reported. All results of semi-volatiles and metals analyses (laboratory reported and validator flagged) are acceptable.

7.0 Data Qualifier Table

Sample ID	Compound/Analyte	Qualifier
Volatile		
Semi-volatile		
RW-2 , duplicate	Di-n-butylphthalate, bis(2ethylhexyl)phthalate	U
MW-6, RW-3, RW-1, MW-5, MW-2	Di-n-butylphthalate	U
Metals		
RW-2	Iron	U
RW-3	Thallium	U

DRAWINGS



N

LEGEND

PROPERTY LINE

RIGHT OF WAY

UTILITY POLE

BUILDING

American Consulting Engineers Council Member

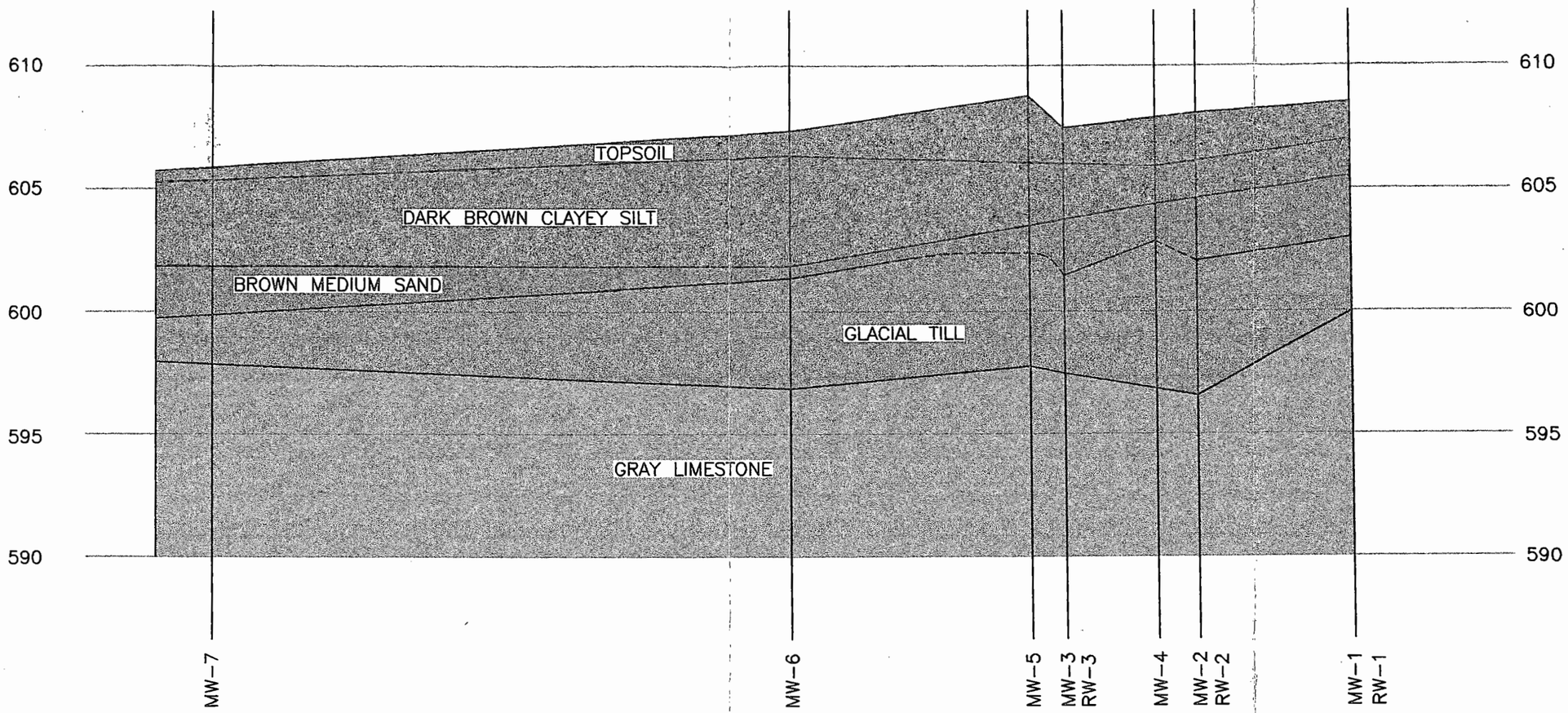
Supporting Excellence in Engineering

VILLAGE OF MANCHESTER, NEW YORK

FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT NYSDEC PROJECT NO. (B00131-8) SITE PLAN

SNIEDZE ASSOCIATES, CONSULTING ENGINEERS
CANANDAIGUA, NEW YORK

SCALE: 1"=50'	HLH RCR	APRIL 2002	4360-1



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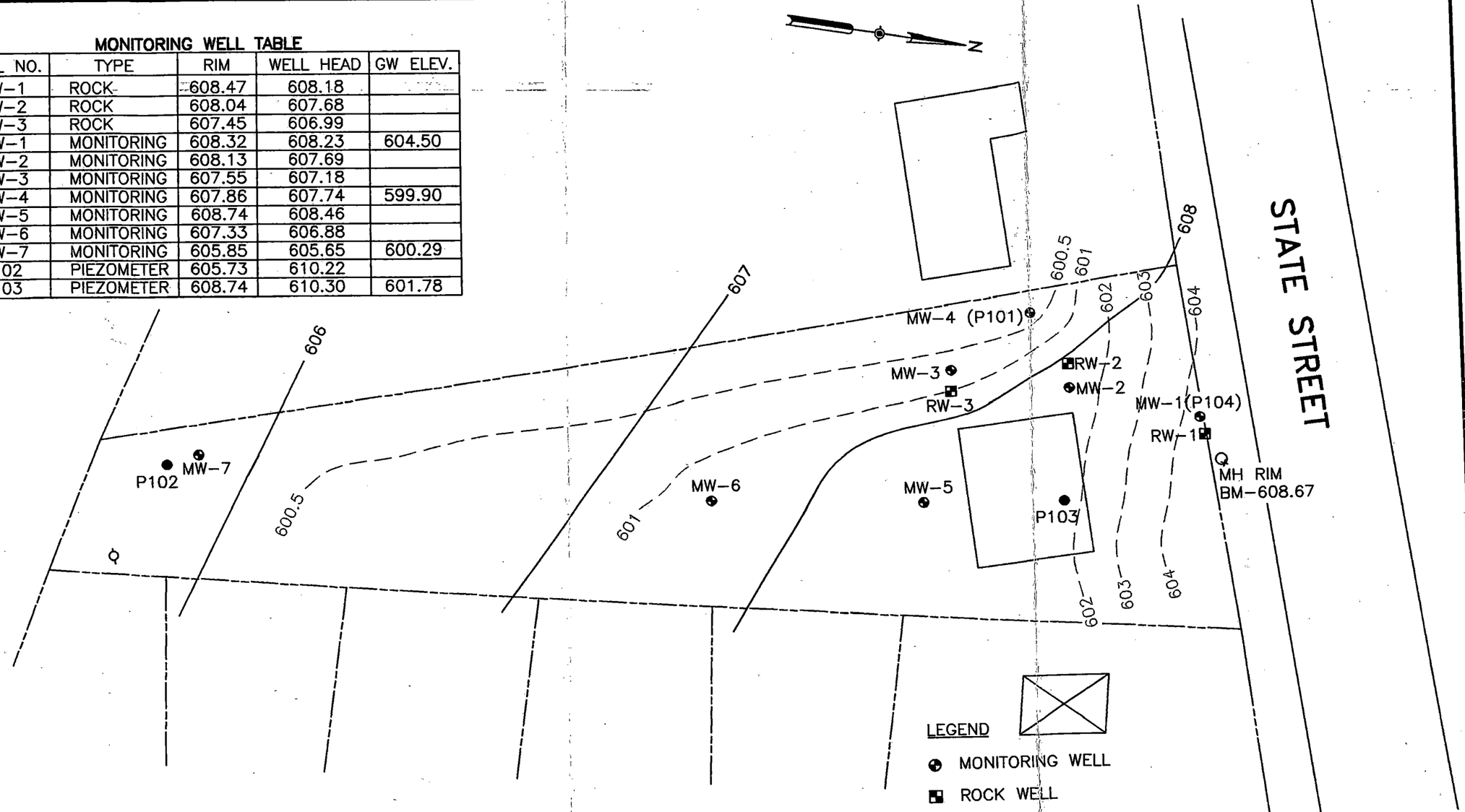
FREDERICK PROPERTY
ENVIRONMENTAL RESTORATION PROJECT
NYSDEC PROJECT NO. (B00131-8)
GEOLOGIC CROSS SECTION

SNIEDZE ASSOCIATES, CONSULTING ENGINEERS
CANANDAIGUA, NEW YORK

SCALE AS NOTED	HLH RCR	MARCH 2003	4360-2

MONITORING WELL TABLE

WELL NO.	TYPE	RIM	WELL HEAD	GW ELEV.
RW-1	ROCK	608.47	608.18	
RW-2	ROCK	608.04	607.68	
RW-3	ROCK	607.45	606.99	
MW-1	MONITORING	608.32	608.23	604.50
MW-2	MONITORING	608.13	607.69	
MW-3	MONITORING	607.55	607.18	
MW-4	MONITORING	607.86	607.74	599.90
MW-5	MONITORING	608.74	608.46	
MW-6	MONITORING	607.33	606.88	
MW-7	MONITORING	605.85	605.65	600.29
P102	PIEZOMETER	605.73	610.22	
P103	PIEZOMETER	608.74	610.30	601.78



LEGEND

- MONITORING WELL
- ROCK WELL
- PIEZOMETER
- BM BENCH MARK

NOTE:
ELEVATIONS BASED ON USGS ELEVATION OF 609.00 AT THE INTERSECTION OF THE CENTERLINES OF BENNETT AVE. AND STATE STREET.

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VILLAGE OF MANCHESTER, NEW YORK

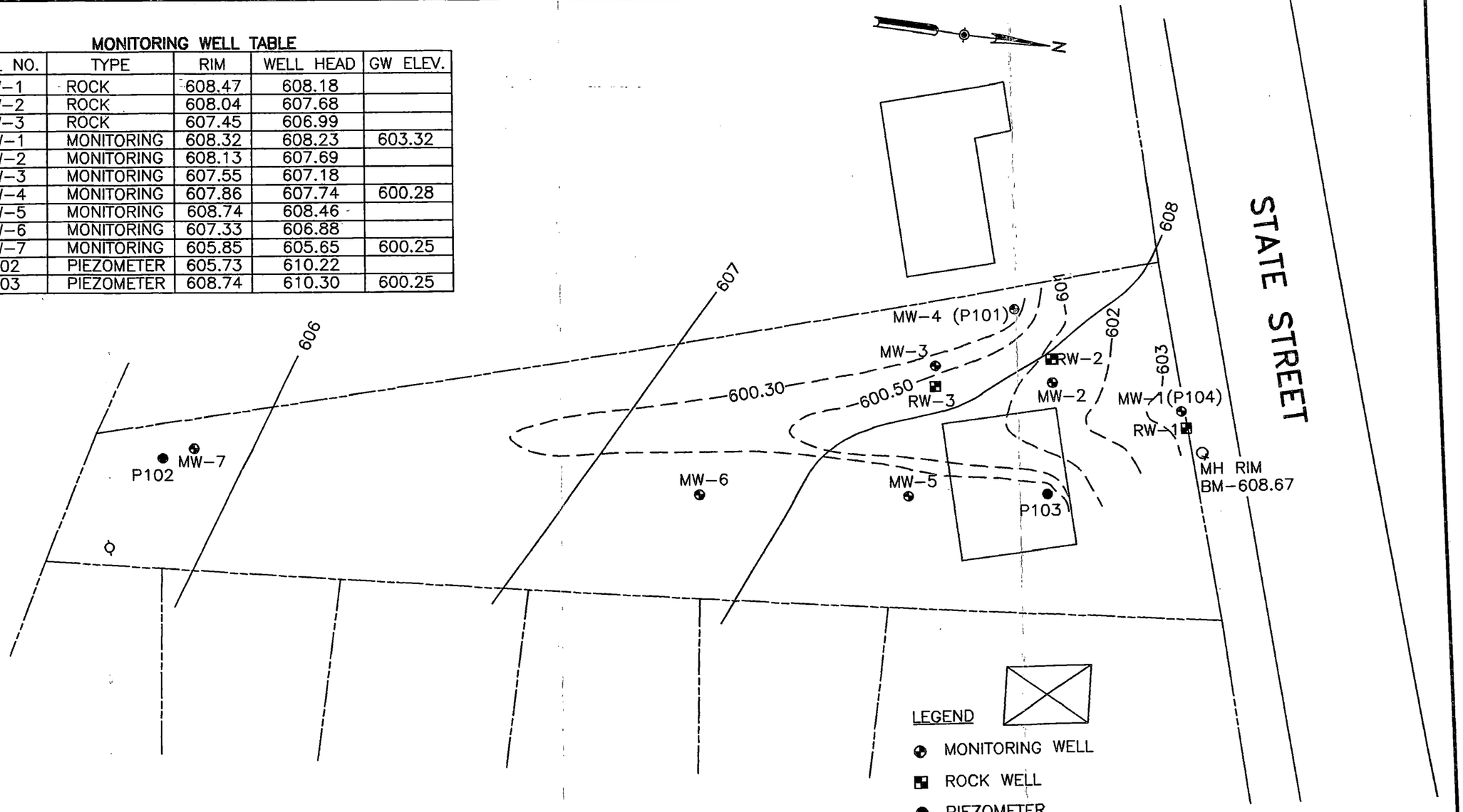
FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT NYSDEC PROJECT NO. (B00131-8) GROUNDWATER ELEVATIONS

SNIEDZE ASSOCIATES, CONSULTING ENGINEERS
CANANDAIGUA, NEW YORK

SCALE: 1"=30'	HLH RCR	APRIL 2002	4360-3A

MONITORING WELL TABLE

WELL NO.	TYPE	RIM	WELL HEAD	GW ELEV.
RW-1	ROCK	608.47	608.18	
RW-2	ROCK	608.04	607.68	
RW-3	ROCK	607.45	606.99	
MW-1	MONITORING	608.32	608.23	603.32
MW-2	MONITORING	608.13	607.69	
MW-3	MONITORING	607.55	607.18	
MW-4	MONITORING	607.86	607.74	600.28
MW-5	MONITORING	608.74	608.46	
MW-6	MONITORING	607.33	606.88	
MW-7	MONITORING	605.85	605.65	600.25
P102	PIEZOMETER	605.73	610.22	
P103	PIEZOMETER	608.74	610.30	600.25



NOTE:
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VILLAGE OF MANCHESTER, NEW YORK

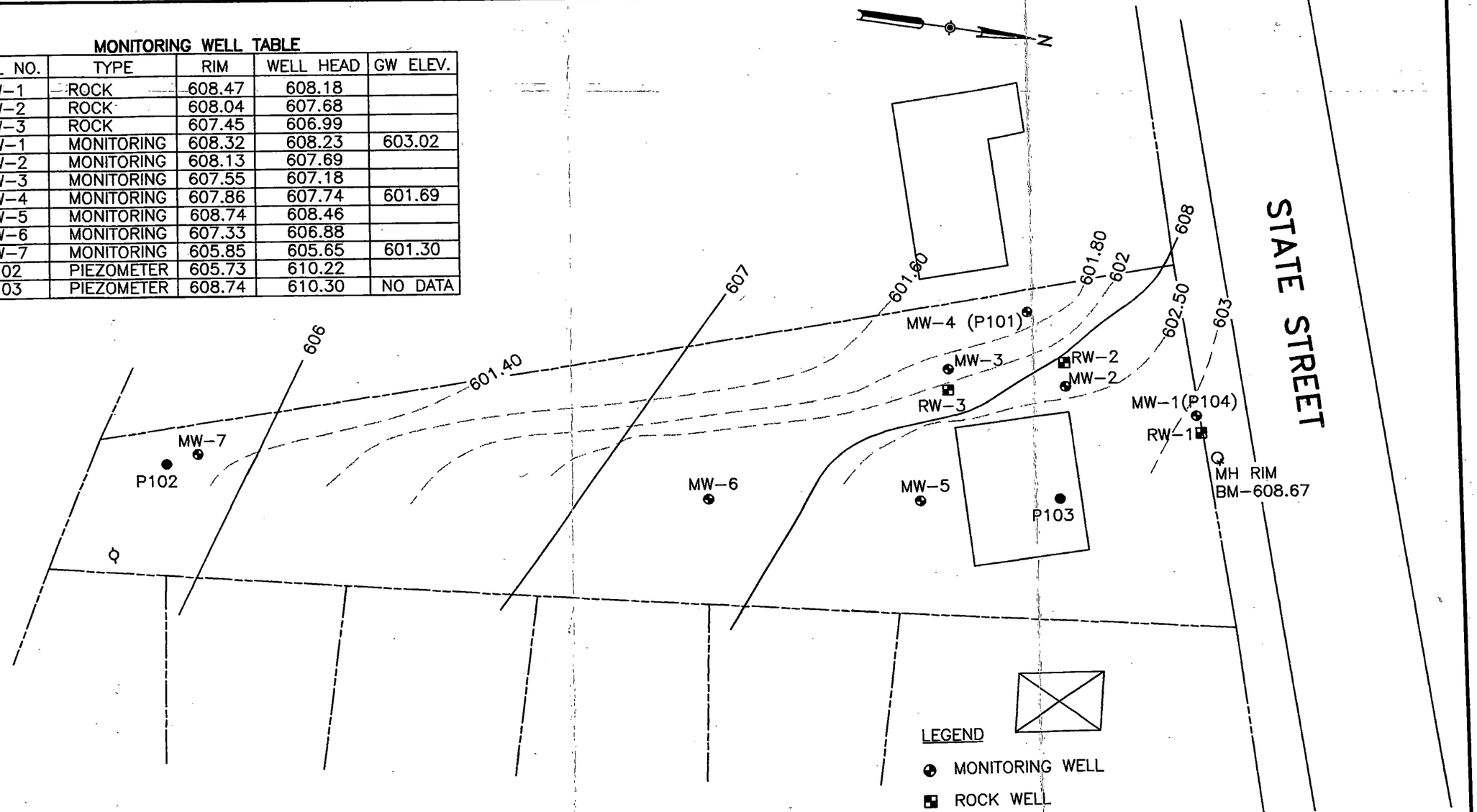
FREDERICK PROPERTY
ENVIRONMENTAL RESTORATION PROJECT
NYSDEC PROJECT NO. (B00131-8)
GROUNDWATER ELEVATIONS

SNIEDZE ASSOCIATES, CONSULTING ENGINEERS
CANANDAIGUA, NEW YORK

SCALE: 1"=30'	HLH RCR	APRIL 2002	4360-38

MONITORING WELL TABLE

WELL NO.	TYPE	RIM	WELL HEAD	GW ELEV.
RW-1	ROCK	608.47	608.18	
RW-2	ROCK	608.04	607.68	
RW-3	ROCK	607.45	606.99	
MW-1	MONITORING	608.32	608.23	603.02
MW-2	MONITORING	608.13	607.69	
MW-3	MONITORING	607.55	607.18	
MW-4	MONITORING	607.86	607.74	601.69
MW-5	MONITORING	608.74	608.46	
MW-6	MONITORING	607.33	606.88	
MW-7	MONITORING	605.85	605.65	601.30
P102	PIEZOMETER	605.73	610.22	
P103	PIEZOMETER	608.74	610.30	NO DATA



LEGEND

- MONITORING WELL
- ROCK WELL
- PIEZOMETER
- BM BENCH MARK

NOTE:
ELEVATIONS BASED ON USGS ELEVATION OF 609.00 AT THE INTERSECTION OF THE CENTERLINES OF BENNETT AVE. AND STATE STREET.

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FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT NYSDEC PROJECT NO. (B00131-8) GROUNDWATER ELEVATIONS

SNIEDZE ASSOCIATES, CONSULTING ENGINEERS
CANANDAIGUA, NEW YORK

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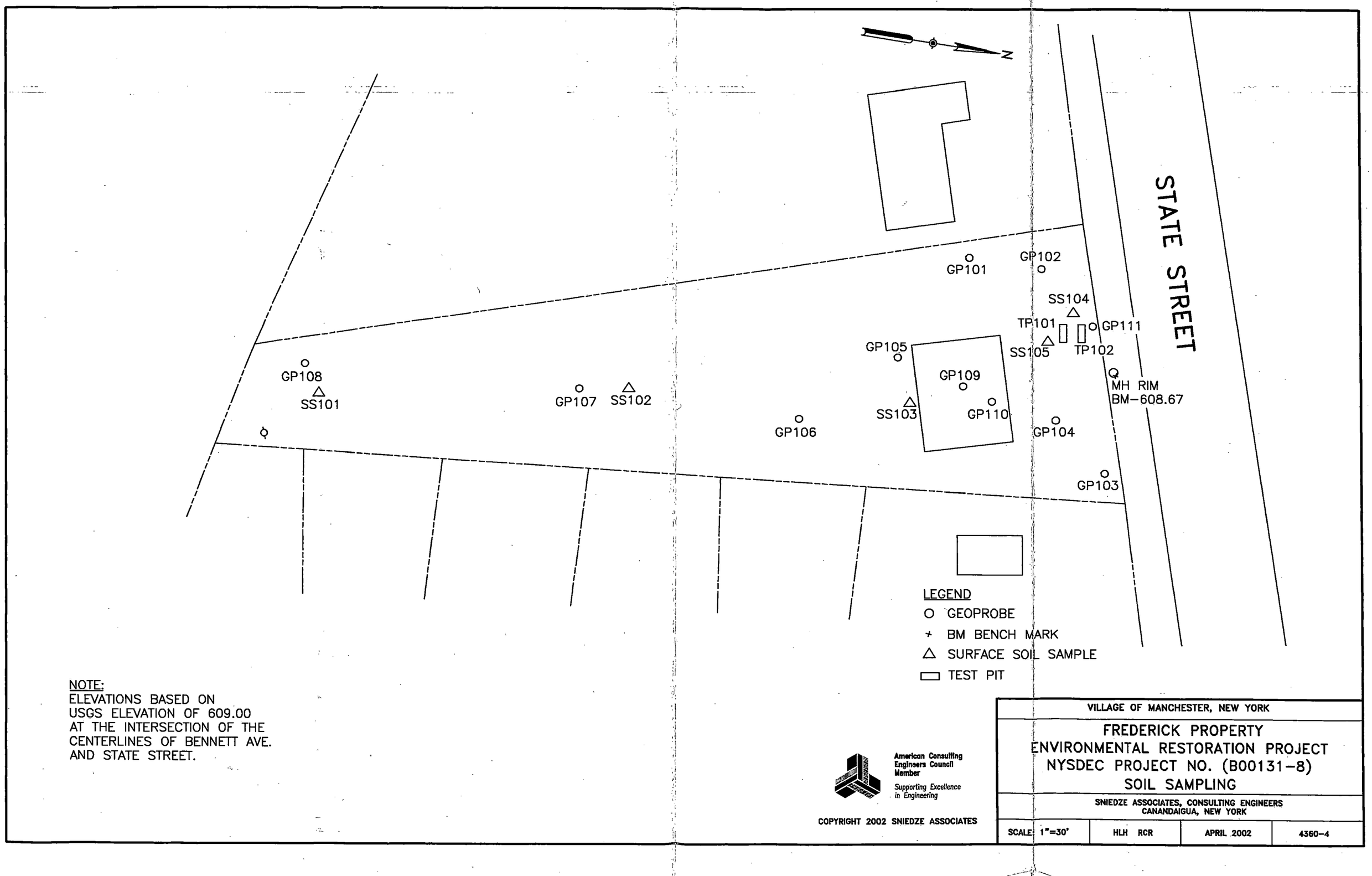

NOTE:
ELEVATIONS BASED ON
USGS ELEVATION OF 609.00
AT THE INTERSECTION OF THE
CENTERLINES OF BENNETT AVE.
AND STATE STREET.

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VILLAGE OF MANCHESTER, NEW YORK

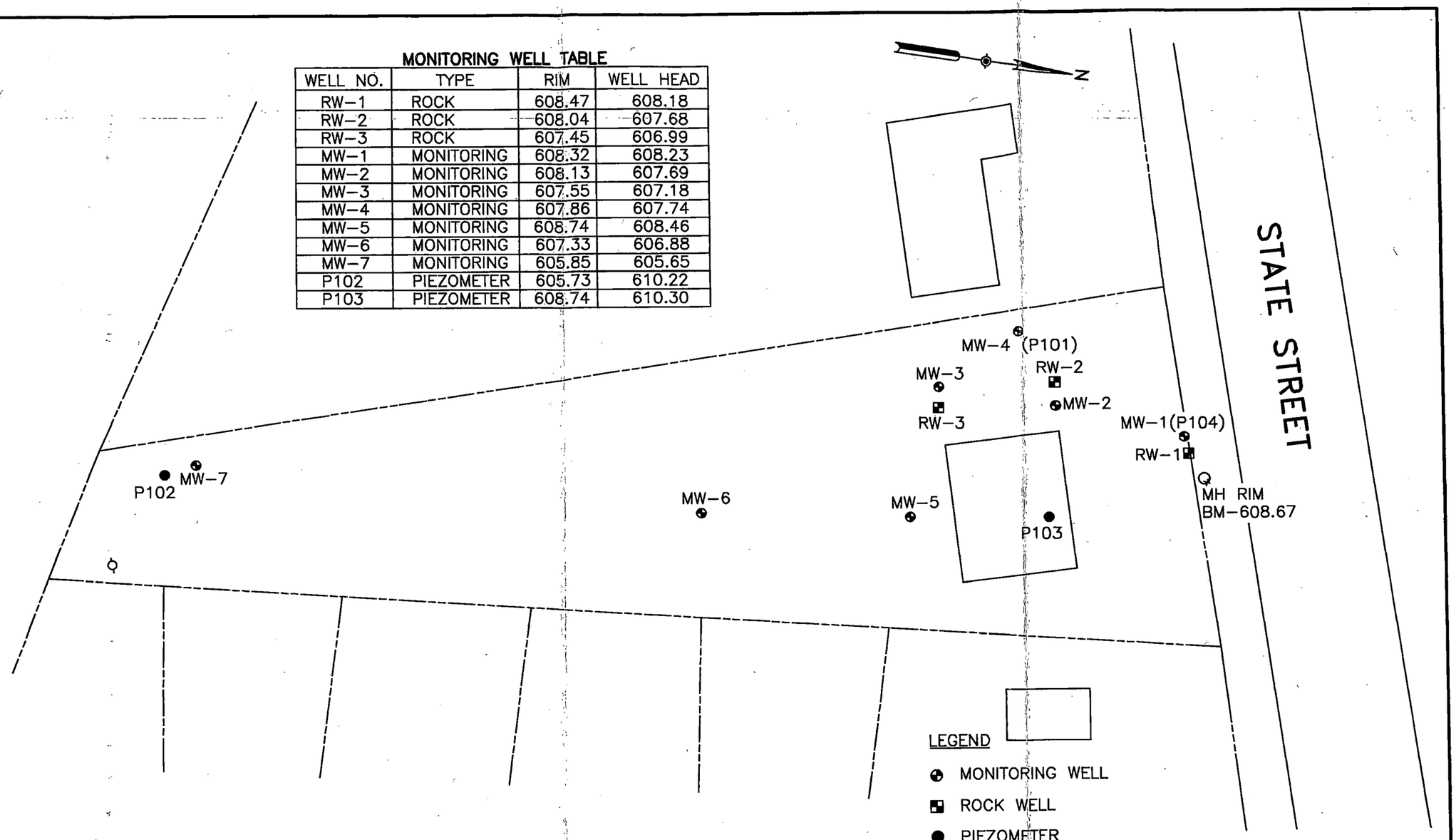
FREDERICK PROPERTY
ENVIRONMENTAL RESTORATION PROJECT
NYSDEC PROJECT NO. (B00131-8)
SOIL SAMPLING

SNIEDZE ASSOCIATES, CONSULTING ENGINEERS
CANANDAIGUA, NEW YORK

SCALE: 1"=30'	HLH RCR	APRIL 2002	4360-4

MONITORING WELL TABLE

WELL NO.	TYPE	RIM	WELL HEAD
RW-1	ROCK	608.47	608.18
RW-2	ROCK	608.04	607.68
RW-3	ROCK	607.45	606.99
MW-1	MONITORING	608.32	608.23
MW-2	MONITORING	608.13	607.69
MW-3	MONITORING	607.55	607.18
MW-4	MONITORING	607.86	607.74
MW-5	MONITORING	608.74	608.46
MW-6	MONITORING	607.33	606.88
MW-7	MONITORING	605.85	605.65
P102	PIEZOMETER	605.73	610.22
P103	PIEZOMETER	608.74	610.30



NOTE:
ELEVATIONS BASED ON USGS ELEVATION OF 609.00 AT THE INTERSECTION OF THE CENTERLINES OF BENNETT AVE. AND STATE STREET.

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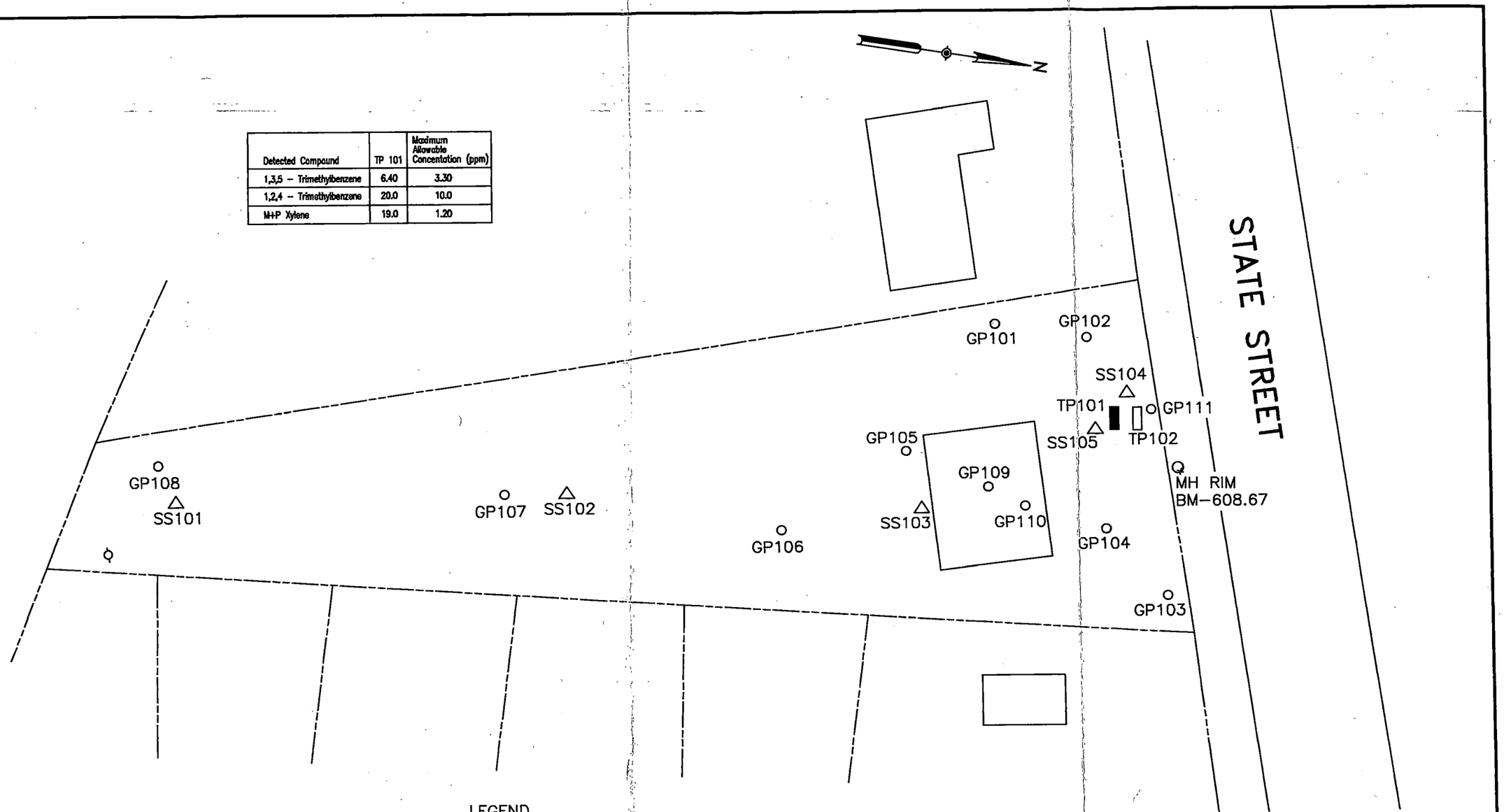
VILLAGE OF MANCHESTER, NEW YORK

FREDERICK PROPERTY
ENVIRONMENTAL RESTORATION PROJECT
NYSDEC PROJECT NO. (B00131-8)
GROUNDWATER SAMPLING

SNIEDZE ASSOCIATES, CONSULTING ENGINEERS
CANANDAIGUA, NEW YORK

SCALE: 1"=30'	HLH RCR	APRIL 2002	4360-5

Detected Compound	TP 101	Maximum Allowable Concentation (ppm)
1,3,5 – Trimethylbenzene	6.40	3.30
1,2,4 – Trimethylbenzene	20.0	10.0
M+P Xylene	19.0	1.20



NOTE:
ELEVATIONS BASED ON USGS ELEVATION OF 609.00 AT THE INTERSECTION OF THE CENTERLINES OF BENNETT AVE. AND STATE STREET.

LEGEND

- O GEOPROBE
- + BM BENCH MARK
- △ SURFACE SOIL SAMPLE
- ▭ TEST PIT
- ▬ CONTAMINATE CONCENTRATION ABOVE SCG VALVES

American Consulting Engineers Council Member
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VILLAGE OF MANCHESTER, NEW YORK

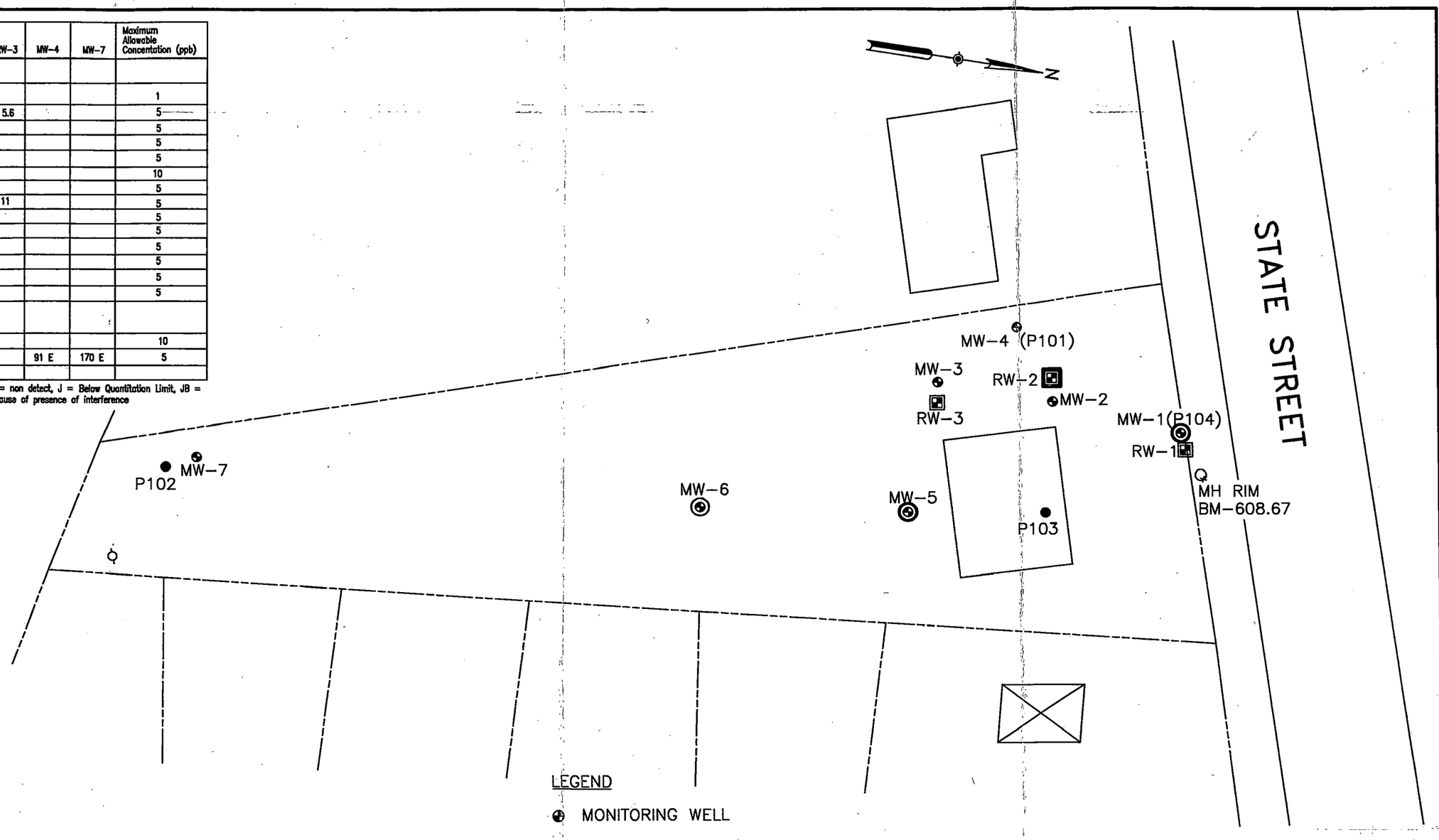
FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT NYSDEC PROJECT NO. (B00131–8) SOIL CONTAMINATION

SNIEDZE ASSOCIATES, CONSULTING ENGINEERS
CANANDAIGUA, NEW YORK

SCALE: 1"=30'	HLH RCR	APRIL 2002	4360–6

Detected Compound	MW-1	RW-1	RW-2	RW-3	MW-4	MW-7	Maximum Allowable Concentation (ppb)
Volatile Organics							
Benzene							1
CIS-1,2-Dichloroethene		13	14	5.6			5
Ethylbenzene			110				5
Isopropyl Benzene			21				5
P-Isopropyltoluene			2.3 J				5
Napthalene			73				10
N-Propylbenzene			42				5
Tetrachloroethene		59	48	11			5
Toluene			12				5
Trichloroethene			13				5
1,3,5-Trimethylbenzene			43				5
1,2,4 - Trimethylbenzene			310 E				5
O-Xylene			15				5
M+P Xylene			260				5
SemiVolatile Organics							
Napthalene			32				10
Bis(2-Ethylhexyl)Phthalate	67				91 E	170 E	5
Diethylphthalate							

Concentrations are in ug/kg or parts per billion (ppb), ND = non detect, J = Below Quantitation Limit, JB = Estimated below contract detection limit, E = Estimated because of presence of interference



NOTE:
ELEVATIONS BASED ON USGS ELEVATION OF 609.00 AT THE INTERSECTION OF THE CENTERLINES OF BENNETT AVE. AND STATE STREET.

LEGEND

- MONITORING WELL
- ROCK WELL
- PIEZOMETER
- BM BENCH MARK
- MAY 2002
- OCTOBER 2002

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VILLAGE OF MANCHESTER, NEW YORK

FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT NYSDEC PROJECT NO. (B00131-8) GROUNDWATER CONTAMINATION

SNIEDZE ASSOCIATES, CONSULTING ENGINEERS
CANANDAIGUA, NEW YORK

SCALE: 1"=30'	HLH RCR	APRIL 2002	4360-7