DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY (AFMC)

6 Jan 98

MEMORANDUM FOR NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
ATTN: MR. DAVID K. HARRINGTON
ENVIRONMENTAL ENGINEER 1
50 WOLF ROAD
ALBANY, NEW YORK 12233-7010

FROM: AIR FORCE RESEARCH LABORATORY
ROME RESEARCH SITE/IFOCV
153 Brooks Road
Rome, New York 13441-4105

SUBJECT: Preliminary Site Assessment for the Verona Research Facility

1. As requested in your letter of 23 July 1997, additional sampling of the groundwater and an additional round of soil sampling has been accomplished at the Verona Research Facility. A copy of the Stearns and Wheler report on this sampling is forwarded herewith for your review.

2. Of particular interest is the new finding of PCB impacted soils in a number of locations at the site. Sampling locations were determined based upon interviews with site personnel familiar with the history of the experiments at Verona Research Facility. These interviews identified fourteen locations where electrical equipment, possibly containing PCBs, were previously located. At each of these sites, soil samples were taken and analyzed. Analytical results are found in the Stearns and Wheler report. It is our intention to remedy as many of these locations as you feel is necessary. Accordingly, once you have had an opportunity to review this report, I would like to discuss these PCB results and develop a strategy for clean-up.

3. I trust that the information we are providing fulfills the requirements stipulated in your 23 July 1997 letter. I am available to discuss these results at your convenience.

BRUCE H. MERO, REM
Chief, Environmental, Safety
and Occupational Health Office

Attachment:
Stearns and Wheler December 29, 1997 letter

cc:
Henriette Hamel
Darrell Sweredowski

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

December 29, 1997

Mr. Bruce H. Mero, REM
Chief, Environmental Management Branch
Civil Engineering Division
Department of the Air Force
Rome Laboratory
153 Brooks Road
Rome, NY 13441-4105

Re: Phase II Results of the Preliminary
Site Assessment (PSA) Report
S&W No. 43189.0

Dear Mr. Mero:

In accordance with the NYSDEC letter dated July 23, 1997, we have completed the following tasks based on NYSDEC comments of the draft PSA:

- Stearns & Wheler sampled monitoring wells around Buildings 1203, 1231 and 1253 in October 1997 and analyzed groundwater samples for TCL volatile organic compounds and PCBs.
- Collected surface soil samples from 14 separate transformer locations and analyzed them for PCBs.

RESULTS AND CONCLUSIONS

Attached are tables of the results of the groundwater and surface soil analysis from the October 1997 sampling event. In addition, there are maps which indicate groundwater and soil sampling points. The volatile organic compound analysis of the groundwater collected during this round of sampling is similar to that found in the previous rounds. The only exceedance of groundwater standards at Building 1203 was dichlorodifluoromethane (a CFC) at well MW-002 (8 ug/l). This compound was also detected in the October 1996 sampling round (13 ug/l at well MW-003). These wells are clustered in a relatively small area. There is no indication that the CFC has migrated away from this area. This is the result of a very low hydraulic gradient.

The analysis of groundwater at wells in the vicinity of Building 1231 in October 1997 mirror those found in October 1996 -- cis-1,2 dichloroethene, trichloroethane and tetrachloroethane at well MW-1231C and cis-1,2 DCE, benzene and chlorobenzene at well MW-001. However, the data

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indicates that the concentrations of the detected compounds were greater in October 1997. This is probably the result of decreased water levels during the second sampling round. Water levels were substantially lower (4 to 5 feet) than in the previous sampling event. The lower watertable results in less dilution of the compounds.

The concentrations of VOCs in the groundwater in the vicinity of Building 1253 during the October 1997 round also reflect those found in the October 1996 sampling results with respect to the compounds and the locations at which they were detected. A single additional compound was detected at well MW-002, 1,1,1-trichloroethane (22 ug/l).

Due to the lack of indications of migration of impacted groundwater away from discrete locations (impacts have not been identified in Brandy Brook, the local discharge point), it is apparent that groundwater impacts are localized and do not extend through the subsurface as large plumes. The low hydraulic gradient in the area, due to the flat topography, limits the movement of groundwater to approximately 25 feet a year.

Many of the volatile organic compounds are susceptible to natural attenuation and it is extremely likely that they will degrade over time. This attenuation can be monitored at Buildings 1203, 1231, and 1253 during annual or semi-annual sampling rounds, if that is deemed necessary. Because of generally low concentrations of VOCs, limited areal impact, and the lack of a completed pathway, remediation of groundwater is not required at this facility.

No PCBs were detected in the groundwater at the site.

During this portion of the investigation, 14 surface soil samples were collected in areas where transformers were formerly located and adjacent to power houses. The soils were analyzed for PCBs. Two types of PCBs were detected, Aroclor 1254 (sample points SS-4 and SS-5) and Aroclor 1260 at each sampling point, except SS-4. Because of the elevated concentrations of PCBs in these areas, it is suggested that a remedial strategy be developed. At your request, Stearns & Wheler is currently developing a strategy to determine the extent of contamination in these areas. After the extent of impact has been determined, it will then be possible to determine possible remedial alternatives. This information will be forwarded to you as soon as possible.

If you have any questions regarding the results of this round of sampling, please feel free to contact me.

Very truly yours,

Scott L. Graham
Hydrogeologist

SLG/smp
Enclosures

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GLOSSARY OF DATA QUALIFIERS

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

U = NOT DETECTED SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS. [Substantially is equivalent to a result less than 10 times the blank level for common contaminants (methylene chloride, acetone and 2- butanone in the VOA analyses, and common phthalates in the BNA analyses, along with tentatively identified compounds) or less than 5 times the blank level for other target compounds.]

R = UNUSABLE RESULT. THE PRESENCE OR ABSENCE OF THIS ANALYTE CANNOT BE VERIFIED. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.

N = NEGATED COMPOUND. THERE IS PRESUMPTIVE EVIDENCE TO MAKE A TENTATIVE IDENTIFICCATION.

CODES RELATING TO QUATITATION

(can be used for both positive results and sample quantitation limits):

J = ANALYTE WAS POSITIVELY IDENTIFIED. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.

UJ = ANALYTE WAS NOT DETECTED. THE REPORTED QUATITATION LIMIT IS QUALIFIED ESTIMATED.

OTHER CODES

Q = NO ANALYTICAL RESULT.

Groundwater
Analytical Results
Volatile Organic Compounds
Verona Research Facility
Verona, NY
Oct-97

	Building 1203						Building 1231			GW
Compound (ug/l)	MW-001	MW-002	MW-003	MW-004	MW1203A	MW1203B	MW-001	MW-002	MW-003	Std.
Chloromethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	50
Bromomethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Vinyl Chloride	10U	10U	10U	10U	10U	10U	100U	10U	10U	2
Chloroethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Methylene Chloride	10U	10U	10U	10U	10U	10U	100UJ	10U	10U	5
Acetone	10U	10U	14B	10U	10U	10U	100U	10J	10U	50G
Carbon Disulfide	10U	10U	10U	10U	10U	10U	100U	10U	10U	50
Vinyl Acetate	10U	10U	10U	10U	10U	10U	100U	10U	10U	NONE
1,1-Dichloroethene	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
1,1-Dichloroethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
cis-1,2-Dichloroethene	10U	10U	10U	10U	1J	10U	38J	10U	10U	5
Trans-1,2-Dichloroethene	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Chloroform	10U	10U	10U	10U	10U	10U	100U	10U	10U	7
1,2-Dichloroethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
2-Butanone	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
1,1,1-Trichloroethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Carbon Tetrachloride	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Bromodichloromethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	50G
1,2-Dichloropropane	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
cis-1,3-Dichloropropene	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Trichloroethene	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Dibromochloromethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
1,1,2-Trichloroethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	50G
Benzene	10U	10U	10U	10U	10U	10U	8J	10U	10U	5
trans-1,3-Dichloropropene	10U	10U	10U	10U	10U	10U	100U	10U	10U	0.7
Bromoform	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
4-Methyl-2-Pentanone	10U	10U	10U	10U	10U	10U	100U	10U	10U	50G
2-Hexanone	10U	10U	10U	10U	10U	10U	100U	10U	10U	50
Tetrachloroethene	10U	10U	10U	10U	10U	10U	100UJ	10U	10U	50G
1,1,2,2-Tetrachloroethane	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Toluene	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Chlorobenzene	10U	10U	10U	10U	10U	10U	930J	4J	10U	5
Ethylbenzene	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Styrene	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Xylene (total)	10U	10U	10U	10U	10U	10U	100U	10U	10U	5
Dichlorodifluoromethane	5J	8J	2J	10U	10U	10U	100U	10U	10U	5
1,4-Dichlorobenzene	10U	10U	10U	10U	10U	10U	100U	10U	10U	4.7

* Treated as UOC
G: NYSDEC guidance value.
ND: No Detectable amounts allowed.
All values in this table are based upon NYSDEC standards as of October 1993.

Shaded areas indicate exceedances of standards
See attachment for other qualifiers

Table
(Continued)

	Building 1231				Building 1253						GW
Compound (ug/l)	MW-004	MW1231A	MW1231C	MW1231D	MW-001	MW-002	MW-003	MW-004	MW1253C	MW1253D	Std.
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	50
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Vinyl Chloride	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	2
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Methylene Chloride	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Acetone	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	50G
Carbon Disulfide	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	50
Vinyl Acetate	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	NONE
1,1-Dichloroethene	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
1,1-Dichloroethane	10U	10U	10U	10U	10U	18	2J	10U	10U	10U	5
cis-1,2-Dichloroethene	10U	10U	14	10U	2J	3J	1J	26	10U	10U	5
Trans-1,2-Dichloroethene	10U	10U	10U	10U	10U	1J	1J	7J	10U	10U	5
Chloroform	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	7
1,2-Dichloroethane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
1,1,1-Trichloroethane	10U	10U	10U	10U	10U	22	10U	10U	10U	10U	5
Carbon Tetrachloride	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Bromodichloromethane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	50G
1,2-Dichloropropane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
cis-1,3-Dichloropropene	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Trichloroethene	2J	10U	14	10U	10U	2J	2J	12	10U	10U	5
Dibromochloromethane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
1,1,2-Trichloroethane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	50G
Benzene	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
trans-1,3-Dichloropropene	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	0.7
Bromoform	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
4-Methyl-2-Pentanone	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	50G
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	50
Tetrachloroethene	3J	10U	50	10U	10U	10U	10U	10U	10U	10U	50G
1,1,2,2-Tetrachloroethane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Toluene	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Chlorobenzene	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Ethylbenzene	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Styrene	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Xylene (total)	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
Dichlorodifluoromethane	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	5
1,4-Dichlorobenzene	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	4.7

* Treated as UOC

G: NYSDEC guidance value.

ND: No Detectable amounts allowed.

All values in this table are based upon NYSDEC standards as of October 1993.

Shaded areas indicate exceedances of standards

See attachment for other qualifiers

Groundwater
Analytical Results
PCBs
Verona Research Facility
Verona, NY
Oct-97

	Building 1203						Building 1231			GW
Compound (ug/l	MW-001	MW-002	MW-003	MW-004	MW1203A	MW1203B	MW1231A	MW1231D	MW1231C	Std.
Aroclor-1016	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1221	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	0.1
Aroclor-1232	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1242	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1248	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1254	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1260	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1

	Building 1231				Building 1253						GW
Compound (ug/l	MW-001	MW-002	MW-003	MW-004	MW-001	MW-002	MW-003	MW-004	MW1253C	MW1253D	Std.
Aroclor-1016	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1221	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	0.1
Aroclor-1232	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1242	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1248	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1254	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1
Aroclor-1260	1.0U	1.0U	1.0U	.13J	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	0.1

* Treated as UOC
G: NYSDEC guidance value.
ND: No Detectable amounts allowed.
All values in this table are based upon NYSDEC standards as of October 1993.

Shaded areas indicate exceedances of standards
See attachment for other qualifiers

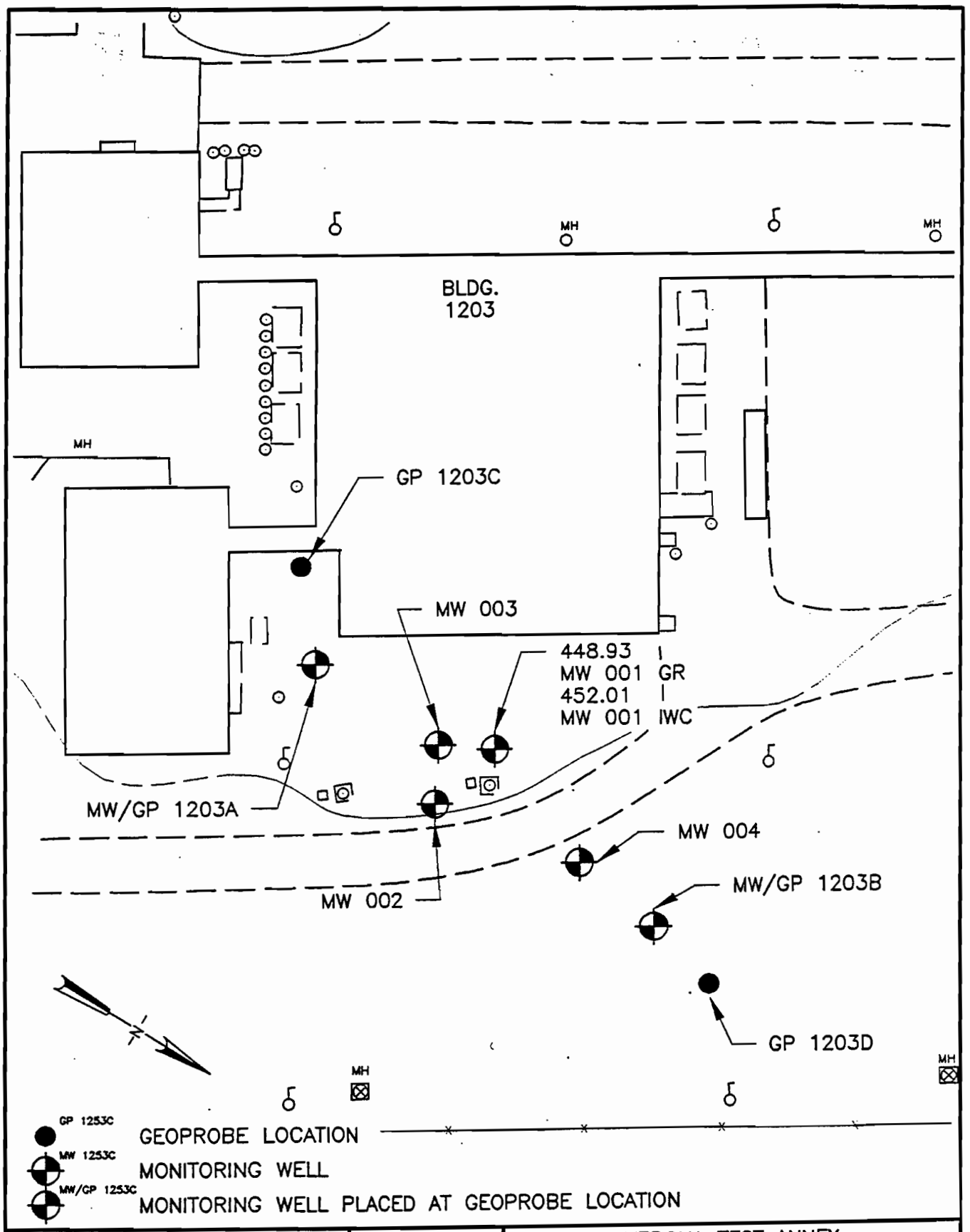
Soils Analytical Results
PCBs
Verona Research Facility
Verona, NY
Oct-97

	Sample ID														Soil
Compound (ug/l)	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12	SS-13	SS-14	Std
Aroclor-1016	38U	42U	38U	360U	39U	39U	180U	44U	40U	42U	850U	42U	44U	44U	1\10**
Aroclor-1221	76U	86U	76U	730U	79U	79U	360U	89U	81U	86U	1700U	86U	90U	90U	1\10**
Aroclor-1232	38U	42U	38U	360U	39U	39U	180U	44U	40U	42U	850U	42U	44U	44U	1\10**
Aroclor-1242	38U	42U	38U	360U	39U	39U	180U	44U	40U	42U	850U	42U	44U	44U	1\10**
Aroclor-1248	38U	42U	38U	360U	39U	39U	180U	44U	40U	42U	850U	42U	44U	44U	1\10**
Aroclor-1254	38U	42U	38U	750J	50J	39U	180U	44U	40U	42U	850U	42U	44U	44U	1\10**
Aroclor-1260	4.1J	120J	12J	360UJ	56J	6J	500J	7J	6.9J	10J	2400J	32J	19J	8.1J	1\10**

Standards based on NYSDEC TAGM January 24, 1994, Determination of Soil Cleanup Objectives
*Total pesticides less than 10 ppm
**surface/subsurface standard

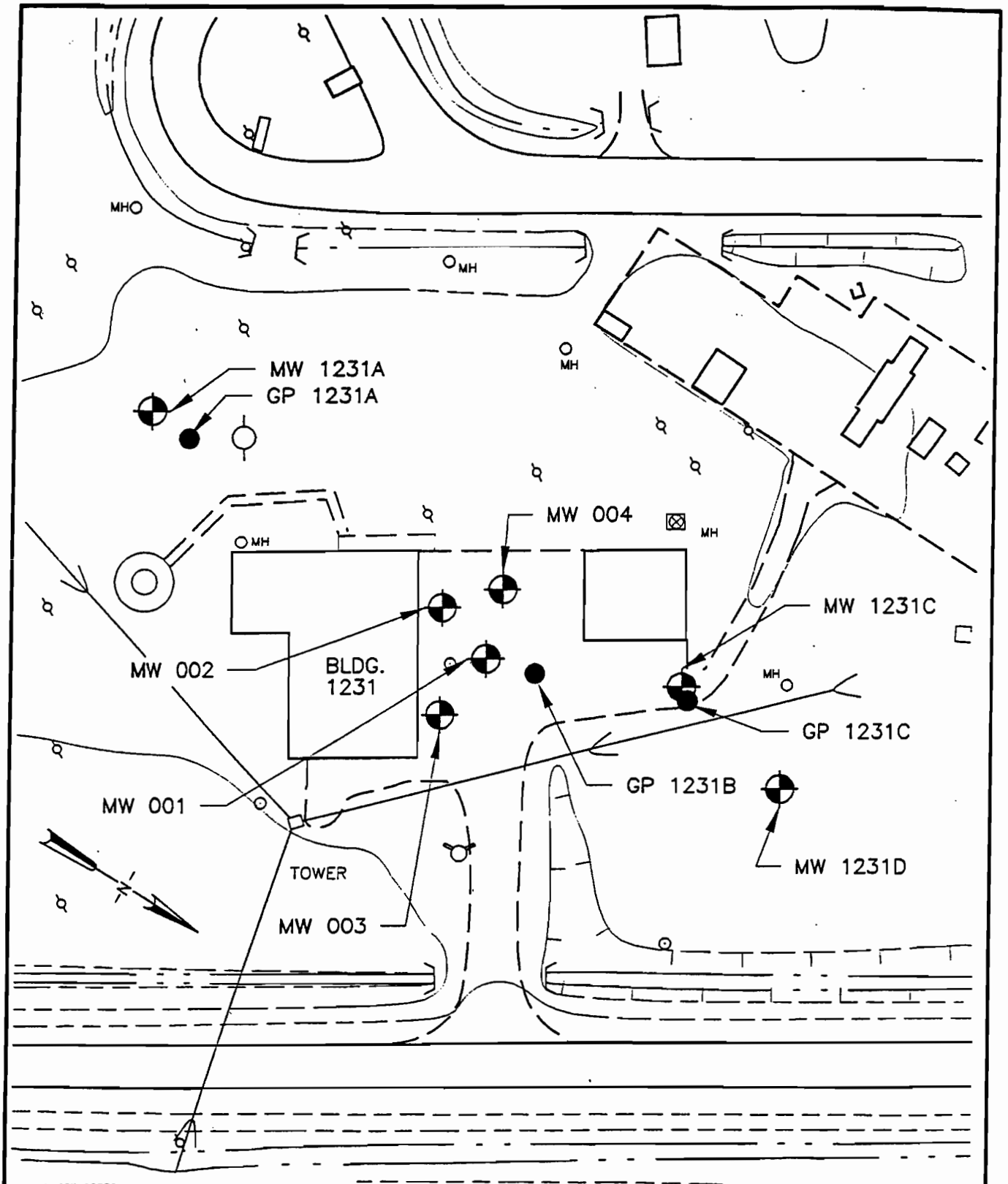
Shaded areas indicate exceedances of standards
See attachment for other qualifiers

Stearns Wheler
43189ZA



Stearns & Wheler, LLC ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NEW YORK	DRAWN BY: KMD DATE: 2/97 JOB NO.: 43189ZA	VERONA TEST ANNEX BUILDING 1203 MONITORING WELL LOCATIONS FIGURE 2A SITE PLAN

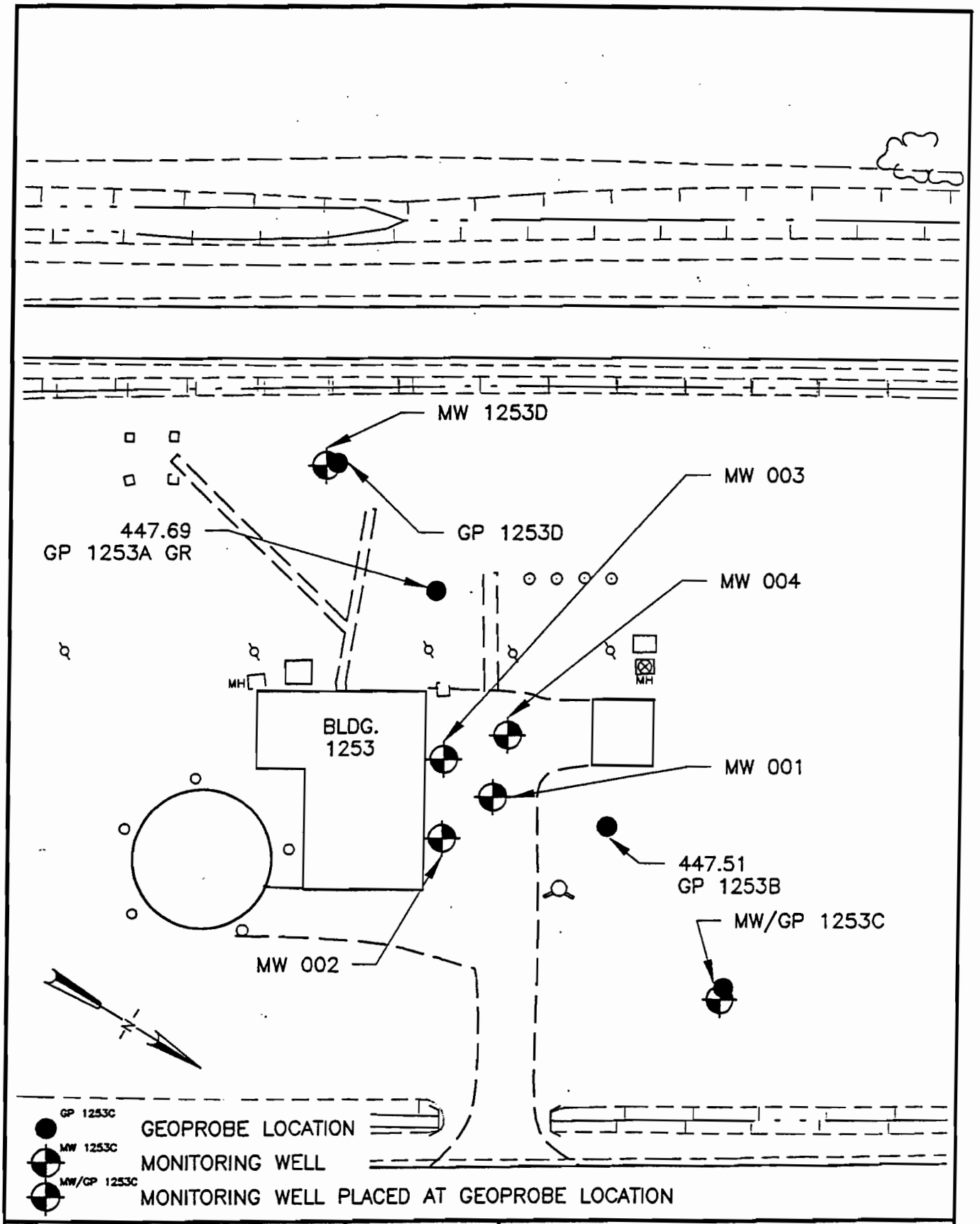
N:\CADUSE\#3189\2-97\8X10FIG



Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS
CAZENOVIA, NEW YORK

DRAWN BY: KMD	VERONA TEST ANNEX BUILDING 1231 MONITORING WELL LOCATIONS
DATE: 2/97	FIGURE 2B SITE PLAN
JOB NO.: 43189ZA	

H:\CADD\E\43189\2 - 97\8/10FIG



Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS
CAZENOVIA, NEW YORK

DRAWN BY: KMD	VERONA TEST ANNEX BUILDING 1253 MONITORING WELL LOCATIONS
DATE: 2/97	FIGURE 2D SITE PLAN
JOB NO.: 43189ZA	

N:\CADUSE\#3189\2-97\8X10FIG

LEGEND

▼ SS-4 – SOIL SAMPLE LOCATION AND NUMBER

ROUTE 31

WETLAND AREA VE-40

WETLAND AREA VE-35

WETLAND AREA VE-41

APPROXIMATE LOCATION OF SUSPECTED LANDFILL

CHLORINATION DOSING CHAMBER

BRANDY BROOK

PHASED ARRAY

VOSS AVENUE

GUARD HOUSE

HEADQUARTERS BUILDING

SS-1 SS-2 SS-3 SS-4 SS-5 SS-6 SS-7 SS-8 SS-9 (DUPLICATE) SS-10 SS-11 SS-12 SS-13 SS-14

GERMANY ROAD

GERMANY ROAD

0 250' 500' 750'

SCALE

NOTES:

Underground facilities, structures, and utilities have been plotted from available surveys and records, and therefore their locations must be considered approximate only. There may be others, the existence of which is presently not known.

It is a violation of New York State Education Law for any person, unless acting under the direction of a licensed professional engineer, to alter an item on this drawing in any way. If an item is altered, the altering engineer shall affix to the item his/her seal and the notation "altered by" followed by his/her signature and the date of such alteration, and a specific description of the alteration.

ISSUE NO.	DRAWN	DATE	CHECKED	DESIGNER	APPROVED	DATE
1	DW	10/97		SLG		

FOR APPROVAL

PROJECT SUPERVISOR _____ DEPARTMENT SUPERVISOR _____

ISSUE NO.	DRAWN	DATE	CHECKED	DESIGNER	APPROVED	DATE

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS
CAZENOVIA, NEW YORK

VERONA RESEARCH FACILITY
TOWN OF VERONA, NEW YORK
SOIL SAMPLING LOCATIONS
OCTOBER 1997

JOB NO. 43189ZA | CONTRACT | SHEET FIGURE 2.