Report

Natural Attenuation Monitoring
Two-Year Monitoring Summary
Buildings 1231 & 1253
NYSDEC Site No. 633046
Verona Research Facility
Verona, New York

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NATURAL ATTENUATION MONITORING
TWO-YEAR MONITORING SUMMARY
BUILDINGS 1231 & 1253
NYSDEC SITE No. 633046
VERONA RESEARCH FACILITY
TOWN OF VERONA, NEW YORK

Prepared for

ROME LABORATORY RESEARCH FACILITY

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May 2004

Project No. L2094

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SECTION 1 – INTRODUCTION

This report presents a summary and discussion of the two (2) year post closure groundwater and surface water monitoring program (May 2002 to March 2004) that has been completed at the Verona Research Facility (VRF), in accordance with a NYSDEC approved Operations, Monitoring, and Maintenance (OM&M) Plan. The two-year quarterly monitoring program included three areas of concern: Building 1231, Building 1253, and Brandy Brook. The New York State Department of Environmental Conservation (NYSDEC) has designated these three areas as Site No. 633046.

1.1 – SITE DESCRIPTION AND LOCATION

The Rome Laboratory Verona Research Facility (Formerly the Griffis Air Force Base Verona Test Annex) was founded in the early 1950's on 513-acres of former farmland adjacent to Germany Road in the town of Verona, Oneida County, New York (Figures 1 and 2). The site consisted of approximately thirty-five (35) buildings, many of which were electronic laboratories, constructed along a mile-long road on the eastern section of the property. The facility has been used for electronics research and development since 1952.

Site topography is generally flat with a mean elevation of 447-feet above mean sea level. Brandy Brook bisects the southern portion of the site and flows to the southwest. The Building 1231 and 1253 remediation areas are the focus of this groundwater monitoring program and are located on the southern and south central portions of the property (Figure 3).

1.2 – SITE BACKGROUND

A 1997 Preliminary Site Assessment (PSA) detected the presence of cis-1,2-dichloroethene (DEC), trans-1,2-dichloroethene (DCE), chlorobenzene, and tetrachloroethene (PCE) in groundwater samples collected from monitoring wells located at Buildings 1231 and 1253 (S&W, February 1997). The PSA indicated that further assessment would be needed at these buildings to characterize the nature and extent of impact. Accordingly, a semi-annual monitoring program was implemented over a two-year period from 1999 to 2000. The program included the collection of groundwater samples from monitoring wells (MW-001 and MW-1231C at Building 1231, and MW-

002 and MW-004 at Building 1253) and the collection of surface water samples from brandy Brook, which is located hydraulically down gradient of both remediation areas. Results of the two-year monitoring program indicated that chlorinated compounds were being attenuated in groundwater and were not present in Brandy Brook at detectable concentrations. Based on these findings, S&W recommended that monitored natural attenuation was an appropriate groundwater remedy (S&W, January 19, 2001). In a January 30, 2001 letter, the NYSDEC re-designated the site as a Class 4 Site (properly closed, but requiring continued management) and required that an Operations, Monitoring and Maintenance Plan (OM&M) be developed for monitored natural attenuation. Accordingly, S&W prepared an OM&M Plan (S&W, October 2001a). Post-closure monitoring was initiated in May 2002 in accordance with the OM&M Plan and has occurred on a quarterly basis from May 2002 to March 2004. This report summarizes field activities that took place during the two-year quarterly monitoring program and presents analytical results of groundwater and surface water samples for each quarterly sampling event.

SECTION 2 – METHODS

During each sampling event, S&W personnel collected groundwater samples from eleven (11) monitoring wells located in the remediation areas (Building 1231: MW-1231C, MW-1231E, MW-1231F, MW-1231G, MW-1231H, and MW-1231I ; and Building 1253: MW-1253E, MW-1253F, MW-1253G, MW-1253H, and MW-1253I). Monitoring well locations at Buildings 1231 and 1253 are provided on Figure 4 and 5, respectively. Prior to sampling, depth to water was measured using a Solinst® water level indicator. A peristaltic pump fitted with dedicated polyethylene and silicon tubing was used to purge groundwater from each well. Three volumes of water were purged from each well prior to sampling.

Water samples were packed in ice-filled coolers and sent to Adirondack Environmental Services, Inc (AES) and analyzed for the following parameters:

- TCL VOCs by EPA Method 624
- Total (unfiltered) iron and manganese by EPA Method 200.7
- Dissolved (filtered) iron and manganese by EPA Method 200.7 (selected wells, only)
- Nitrate and sulfate by EPA Method 300.0
- Carbon Dioxide by Standard Method 4500
- Total dissolved solids (TDS) and alkalinity by EPA Methods 160.1 and 310.1
- Ethene and ethane by GC analysis

Groundwater samples taken for volatile organic compound (VOC) analysis were collected using dedicated polyethylene bailers. Samples that were analyzed for other parameters were collected using the peristaltic pump, in accordance with the NYSDEC approved post-closure Operations, Monitoring and Maintenance (OM&M) Plan.

Three (3) surface water samples (SW-1, -2, and –3) were collected from Brandy Brook. Sampling locations are identified in Figure 6. The mouths of the sample bottles were tilted upstream to collect the surface water samples, in accordance with the OM&M Plan.

Groundwater field parameters (pH, Eh, turbidity, salinity, dissolved oxygen, specific conductance, and temperature) were recorded at all sampling locations after purging each monitoring well and prior to sample collection (Table 1). Groundwater samples were

collected for both total (unfiltered) and dissolved (filtered) iron and manganese from monitoring wells that produced turbid (>50 NTU) samples, in accordance with the approved OM&M Plan. No filtered surface water samples were collected.

SECTION 3 - RESULTS

3.1 – GROUNDWATER ELEVATIONS

Table 1 presents the depth to water measurements, the total depth of each well, water table elevations, and the field parameters described above. Groundwater contours for Buildings 1231 and 1253 are presented in Figures 7 and 8, respectively, based on depth to water measurements in March 2004. The contours depict a groundwater flow pattern that has remained fairly consistent at the site for the past eight monitoring quarters. The March 2004 groundwater elevations are shown.

A. BUILDING 1231 Groundwater contours indicate that a water table depression, exists near Building 1231, with groundwater flow to the south and east (Figure 7). The flow pattern has only been observed since post-closure monitoring began in 2002. Prior to 2002, there was no eastward flow component or water table depression (S&W, October 2001; S&W, October 2002b). The recent change in flow direction is related to flooding cause by a beaver dam in Brandy Brook, first observed during the May 2002 sampling event.

B. BUILDING 1253 Groundwater flow is to the southwest (Figure 8) near Building 1253. This groundwater flow pattern is similar in each quarterly monitoring event over the past two years and similar to historical data as well (S&W, October 2001; S&W, October 2002b).

3.2 – SAMPLE ANALYTICAL RESULTS

Groundwater and surface water analytical results, from each of the sampling events that took place between May 2002 and March 2004, are summarized in Table 2 (VOCs), Table 3 (total and dissolved metals), and Table 4 (natural attenuation indicator parameters). Analytical results of water samples were compared to the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) Class GA ambient water quality standards and guidance values (June 1998).

A. VOCs

1. BUILDING 1231 Monitoring wells MW-1231C, -1231E, and –1231F are located in the central portion of the Building 1231 area of concern (AOC), and have consistently contained VOCs over the last eight monitoring events. Groundwater samples from MW-1231C have contained concentrations of tetrachloroethene (PCE) above Class GA standards in each of the eight monitoring events. Groundwater samples from well MW-1231E have contained chlorobenzene in each monitoring quarter, but concentrations have steadily declined over the past two years. Groundwater samples from well MW-1231F have had concentrations of VOCs throughout the two-year sampling program, including chlorobenzene; 1,2-dichlorobenzene; 1,3-dichlorobenzene; and 1,4-dichlorobezene. In contrast, groundwater samples from wells MW-1231G, -1231H, and –1231I have never contained detectable VOCs in any of the sampling events.

2. BUILDING 1253 Groundwater samples from Building 1253 monitoring wells have only sporadically contained VOCs over the two-year sampling program. Monitoring well MW-1253I and MW-1253H, located in the central portion of the Building 1253 area, are the only two wells that produced samples that contained VOCs with any degree of consistency. Well MW-1253H has contained concentrations of trans-1,2-dichloroethene (May and November 2002) and vinyl chloride (November 2002 and March 2004). Well MW-1253I has contained concentrations of cis-1,2-dichloroethene (September 2003), trans-1,2-dichloroethene (May and November 2002), and trichloroethene (May 2002, June, September 2003, and March 2004) above Class GA standards. Well MW-1253E only contained acetone in one sampling event (March 2004) above Class GA standards. Wells MW-1253F and MW-1253G did not contain detectable VOCs in any of the sampling events.

3. BRANDY BROOK The VOC detection in surface water samples during the two year monitoring program was acetone, which was detected in each sample in the June 2003 sampling event. Aside from this acetone detection, no VOCs were detected in any of the Brandy Brook water samples during any of the sampling events. Acetone is a common component used in laboratories, and since no other VOC has been detected in the surface water samples in Brandy Brook

throughout the two-year monitoring period, it is concluded that the detection of acetone was a laboratory error.

B. INORGANICS

Inorganic analytical parameters included total and dissolved manganese (Table 3), plus a number of natural attenuation parameters (Table 4). To reduce the potential effects of turbidity, both dissolved and total (filtered and unfiltered) iron and manganese samples were collected during each sampling event.

1. BUILDING 1231 Analytical results for each sampling event indicated that total (unfiltered) iron concentrations ranged from non-detect (MW-1231G in December 2003) to 18 mg/l (MW-1231G in August 2002). The total iron concentrations were above Class GA standards in each well during each sampling event, with the exception of MW-1231C (December 2003 and March 2004) and MW-1231G (December 2003). Dissolved (filtered) iron concentrations were not detected in any of the wells during the eight sampling events.

Total (unfiltered) manganese concentrations ranged from 0.133 mg/l (MW-1231C in March 2004) to 2.9 mg/l (MW-1231I in August 2002). Dissolved (filtered) manganese concentrations ranged from non-detect (MW-1231C in May2002 and March 2003) to 1.15 mg/l (MW-1231I in May and August 2002).

Nitrate concentrations ranged from non-detect to 0.22 mg/l (MW-1231C in March 2003). Sulfate and carbon dioxide were detected in all wells in each sampling event.

Figures 10, 11, and 12 present isoconcentration contours for dissolved manganese, carbon dioxide, and sulfate in groundwater samples taken from Building 1231 monitoring wells. The March 2004 data produces isoconcentration patterns similar to the other sampling events. The data shown on those figures indicate the area of VOC impacts (see Figure 9) has relatively high manganese concentrations and relatively low sulfate concentrations. Carbon dioxide concentrations are fairly low throughout the Building 1231 area.

Elevated manganese and low sulfate concentrations indicate that conditions near the source area are anaerobic. Moreover, the relatively low carbon dioxide levels suggest that oxygen is no longer a key electron acceptor for degradation reactions, because anaerobic reactions involving oxygen usually produce carbon dioxide. This is probably because oxygen levels decreased in the source area as reduced forms of organic carbon were initially degraded aerobically. Gradually, as oxygen was depleted and reducing (anaerobic) conditions developed over time, conditions became more favorable for anaerobic degradation of the chlorinated organics that are currently being attenuated at the site. The chemical data, in combination with the limited extent of VOC impact, supports that natural attenuation continues to occur.

Collectively, this data indicates slightly anaerobic conditions near the source area where VOCs are present. Manganese (III) and sulfate appear to be the principle electron acceptors, evidenced by the relatively high dissolved manganese (II) levels and correspondingly low sulfate levels.

2. BUILDING 1253 Analytical results for each sampling event in the two-year monitoring program indicated total iron (unfiltered) concentrations that ranged from 0.815 mg/l (MW-1253F in September 2003) to 52.3 mg/l (MW-1231E in June 2003). All total iron concentrations were above Class GA water quality standards for all wells in all sampling events. Dissolved (filtered) iron concentrations were not detected in any of the wells during the eight sampling events.

Total (unfiltered) manganese concentrations ranged from 0.104 mg/l (MW-1253F in March 2003) to 5.98 mg/l (MW-1253G in September 2003). Total manganese concentrations were above Class GA standards in all wells in every sampling event, with the exception of well MW-1253F which had concentrations below standards in the March and December 2003 sampling events. Dissolved (filtered) manganese concentrations ranged from 0.027 mg/l (MW-1253F in December 2003) to 1.57 mg/l (MW-1253H in March 2003).

Wells near Building 1253 have had nitrate concentrations that were above laboratory detection limits in MW-1253F (0.04 mg/l in March 2003), MW-1253G (0.05 mg/l in August 2002), and in MW-1253I (0.04 mg/l in March 2003).

Sulfate and carbon dioxide concentrations were detected in all monitoring wells near Building 1253.

Figures 13, 14, and 15 present isoconcentration contours for the Building 1253 area (dissolved manganese, carbon dioxide, and sulfate, respectively). The isoconcentration patterns for dissolved manganese and sulfate in Building 1253 groundwater are similar to those in Building 1231 groundwater (see Figures 10 and 12). However, carbon dioxide concentrations in Building 1253 groundwater samples are not discernibly lower in the central portion of the Building 1253 area, as was the case at Building 1231. This suggests that there may be slightly more aerobic biological activity in Building 1253 groundwater compared to Building 1231 groundwater. Dissolved oxygen that is consumed as organic compounds aerobically degrade can produce carbon dioxide as a byproduct, as previously noted. In addition, sulfate concentrations at Building 1253 were slightly higher than at Building 1231 during the two-year monitoring period, which supports that there may be more dissolved oxygen at Building 1253.

3. BRANDY BROOK Analytical results of surface water samples from Brandy Brook indicate that total (unfiltered) iron concentrations range from 0.05 mg/l (SW-2 in March 2003) to 3.70 mg/l (SW-1 in September 2003). Total (unfiltered) manganese concentrations range from non-detect (SW-1 and SW-2 in March 2004 and SW-3 in March 2003). Dissolved samples were not taken from Brandy Brook.

The fundamentally different environments for surface water, which flows under relatively turbulent conditions exposed to the atmosphere, and groundwater, which flows very slowly and is not in direct atmospheric contact, precludes a direct comparison of the above noted inorganic parameters in groundwater with those in surface water. The previously noted patterns with respect to inorganic parameters in groundwater are dissipated in surface water for a number of reasons. For example, carbon dioxide easily degasses (i.e. it "vaporizes") in surface water, which raises the pH of the water. Accordingly, the average pH (7.48 units) for all brook water samples is slightly higher than the average pH for groundwater samples from Building 1231 (7.23) and Building 1253 (7.11), whereas the average concentration of carbon dioxide in brook water samples (23.3

mg/L) is lower than at Buildings 1231 and 1253 (55.2 and 99.6 mg/L, respectively).

3.3 – GROUNDWATER QUALITY TRENDS

VOCs have only been occasionally detected over the eight sampling quarters in groundwater at Building 1253 (Table 2). Quarterly data, nonetheless, indicates evidence of natural attenuation at Building 1253.

Over the two-year monitoring program, tetrachloroethene (PCE) has been found in MW-1231C at fairly consistent concentrations above Class GA standards. However, MW-1231I, which is down gradient of MW-1231C, has not contained any VOC detections throughout the entire two-year monitoring period. This suggests that the contamination in MW-1231C is not migrating (downgradient) from the source area. Brandy Brook, which is downgradient of the Building 1231 area, has not contained detectable VOCs in any sampling event, which also indicates there is no migration of contaminants. Overall, the data provides evidence that natural attenuation is indeed occurring at Building 1231.

VOCs have been detected more frequently in monitoring wells from Building 1231 than in monitoring wells from Building 1253 over the two-year monitoring program. However, the steady decline in concentrations over time for the most frequently detected organic parameters (Figure 16) is evidence that natural attenuation continues in this area.

SECTION 4 – SUMMARY AND CONCLUSIONS

4.1 - SUMMARY

A. BUILDING 1231 & 1253 Analysis from samples taken from Building 1231 during the two-year sampling program identified PCE, chlorobenzene, trichloroethene, benzene, and 1,2-, 1,3- 1,4-dichlorobenzene above applicable NYSDEC groundwater standards. However, the overall data trend throughout the eight sampling quarters indicates that these concentrations are declining. Inorganic data from wells at Building 1231 indicate that natural attenuation reactions are occurring under a slightly anaerobic groundwater environment.

Over the past eight monitoring quarters, VOCs have only been detected at trace concentrations in wells at Building 1253 and have never been detected in wells MW-1253F or MW-1253G. Overall, based on inorganic and organic indicators, attenuation has apparently reduced organic contamination concentrations to near detection limits.

B. BRANDY BROOK Surface water samples collected from Brandy Brook did not contain concentrations of VOCs above groundwater standards during the two-year monitoring program. The only VOC found to be above detection limits was acetone, which was detected in all three surface water samples in the June 2003 sampling event. However, acetone is a common laboratory analyte, therefore the detection may be the cause of laboratory error during that sampling quarter.

4.2 – CONCLUSIONS

The past eight rounds of quarterly sampling indicate that natural attenuation is occurring at Buildings 1231 and 1253. Data from Building 1253 indicates that VOCs have only been detected at trace or non-detectable concentrations. In addition, the area of groundwater impact at Building 1231 is not migrating downgradient, as evidenced by the fact that two (2) down gradient wells at Building 1231 have not produced samples with detectable VOC concentrations (MW-1231G and MW-1231H). These observations are evidence of natural attenuation.

SECTION 5 - REFERENCES

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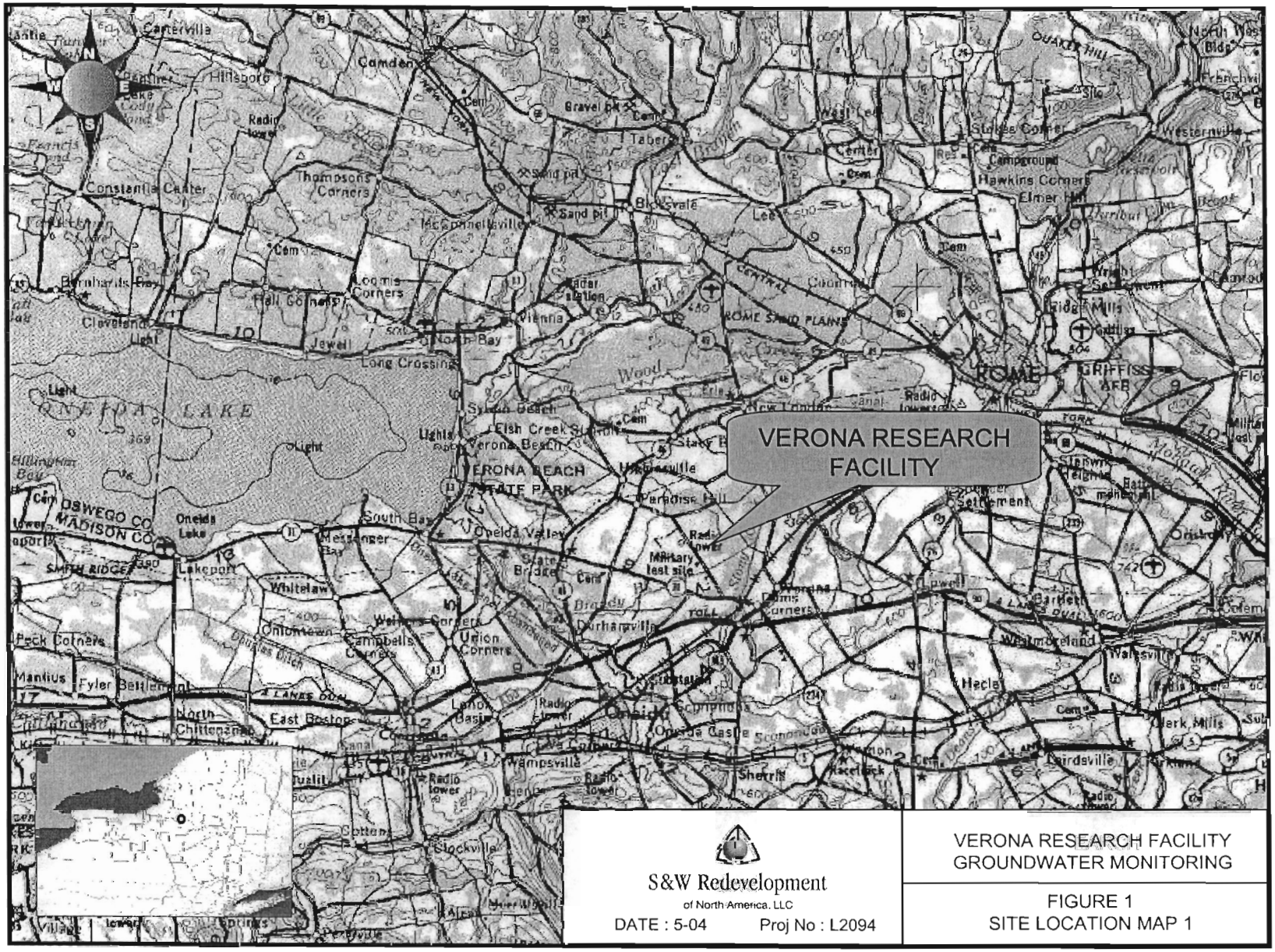
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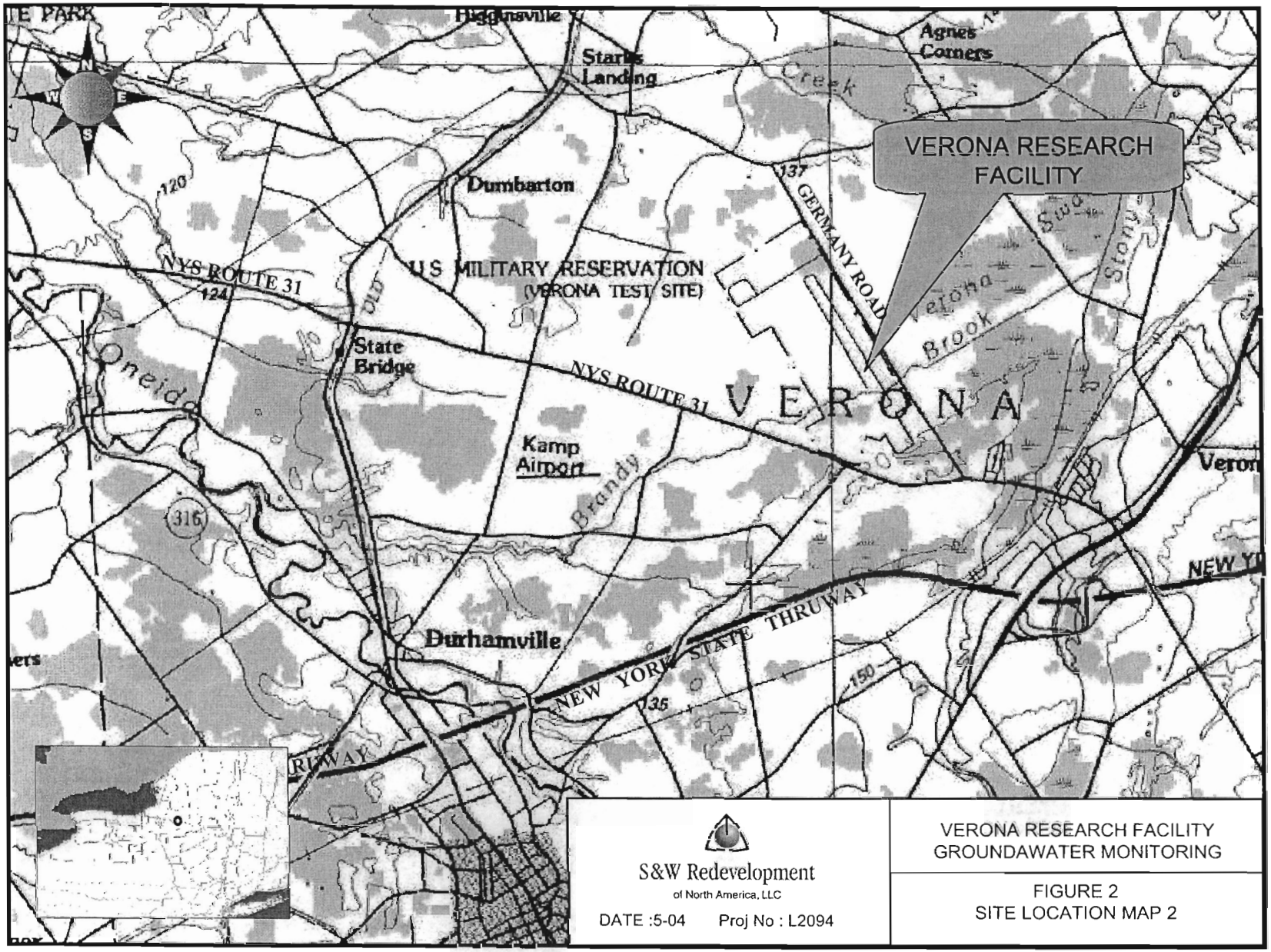
Figures



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VERONA RESEARCH FACILITY
GROUNDWATER MONITORING

FIGURE 1
SITE LOCATION MAP 1



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GROUNDAWATER MONITORING

FIGURE 2
SITE LOCATION MAP 2



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GROUNDAWATER MONITORING

FIGURE 3
BUILDING LOCATIONS



VRF Northwest corner looking south east



VRF Southeast corner looking northwest – Brandy Brook bottom of screen



B/1231 front – wells between the two buildings



B/1231 rear – Brandy Brook between the two buildings



B/1253 front – wells between the buildings



B/1253 rear



Brandy Brook looking west – B/1231 to the right



Brandy Brook looking east



Beaver dam that may have affected the shift in groundwater flow



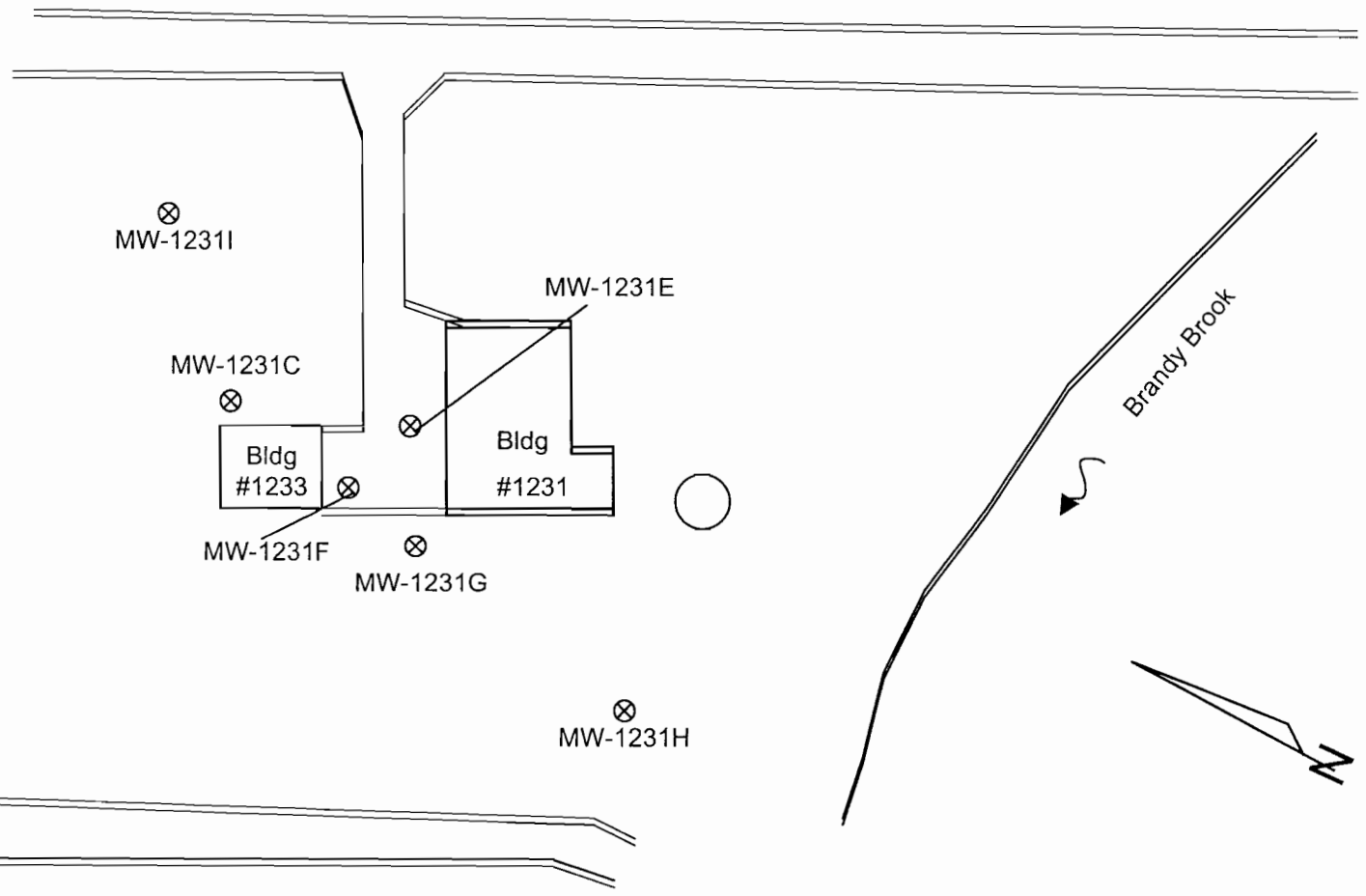
Beaver Lodge







Well installation



0 40 80

Approximate scale (ft)

Legend

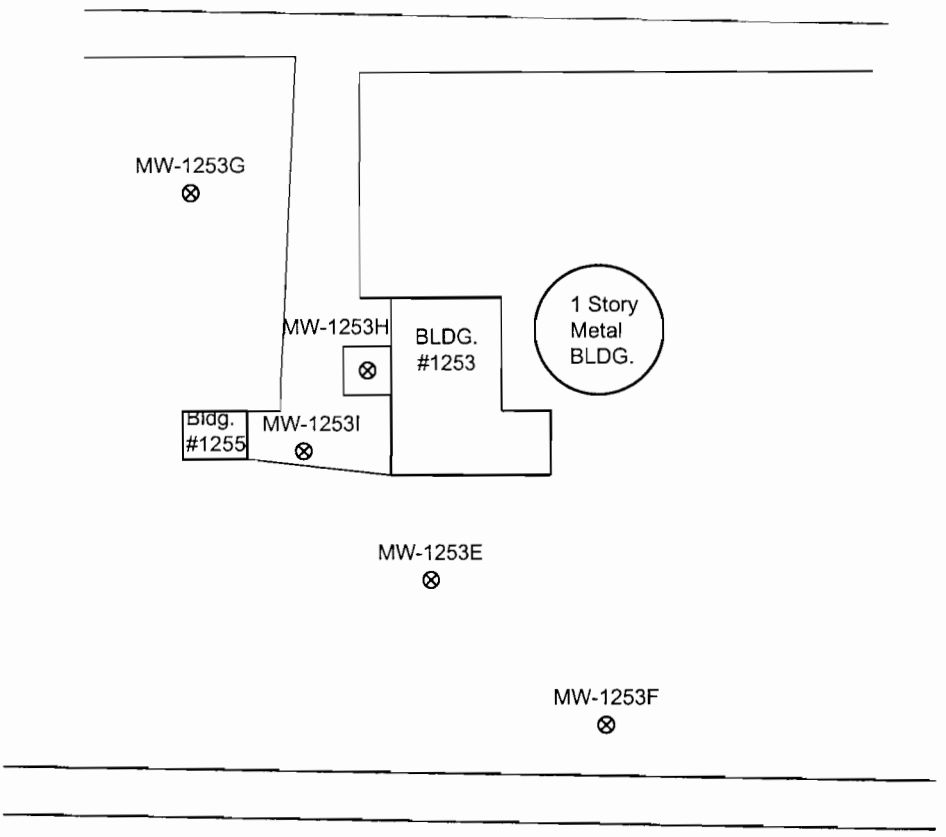
⊗ MW-1231I Monitoring Well

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Natural Attenuation Monitoring
Building 1231

Figure 4
Building 1231
Monitoring Well Locations



Legend

⊗ MW-1253F Monitoring Well

0 60 120

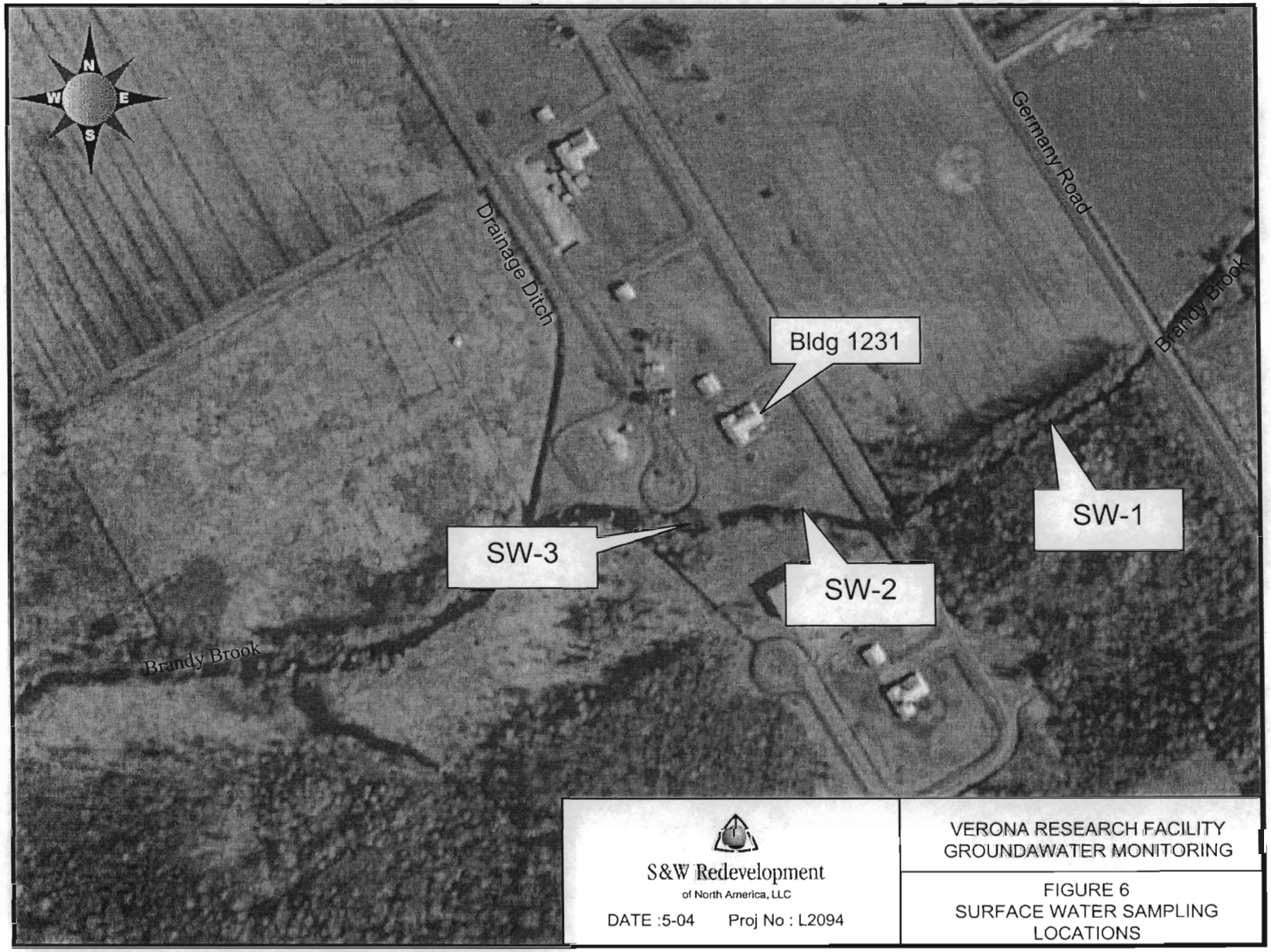
Approximate Scale in Feet

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Building 1253

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Figure 5
Building 1253 Monitoring Well
Locations

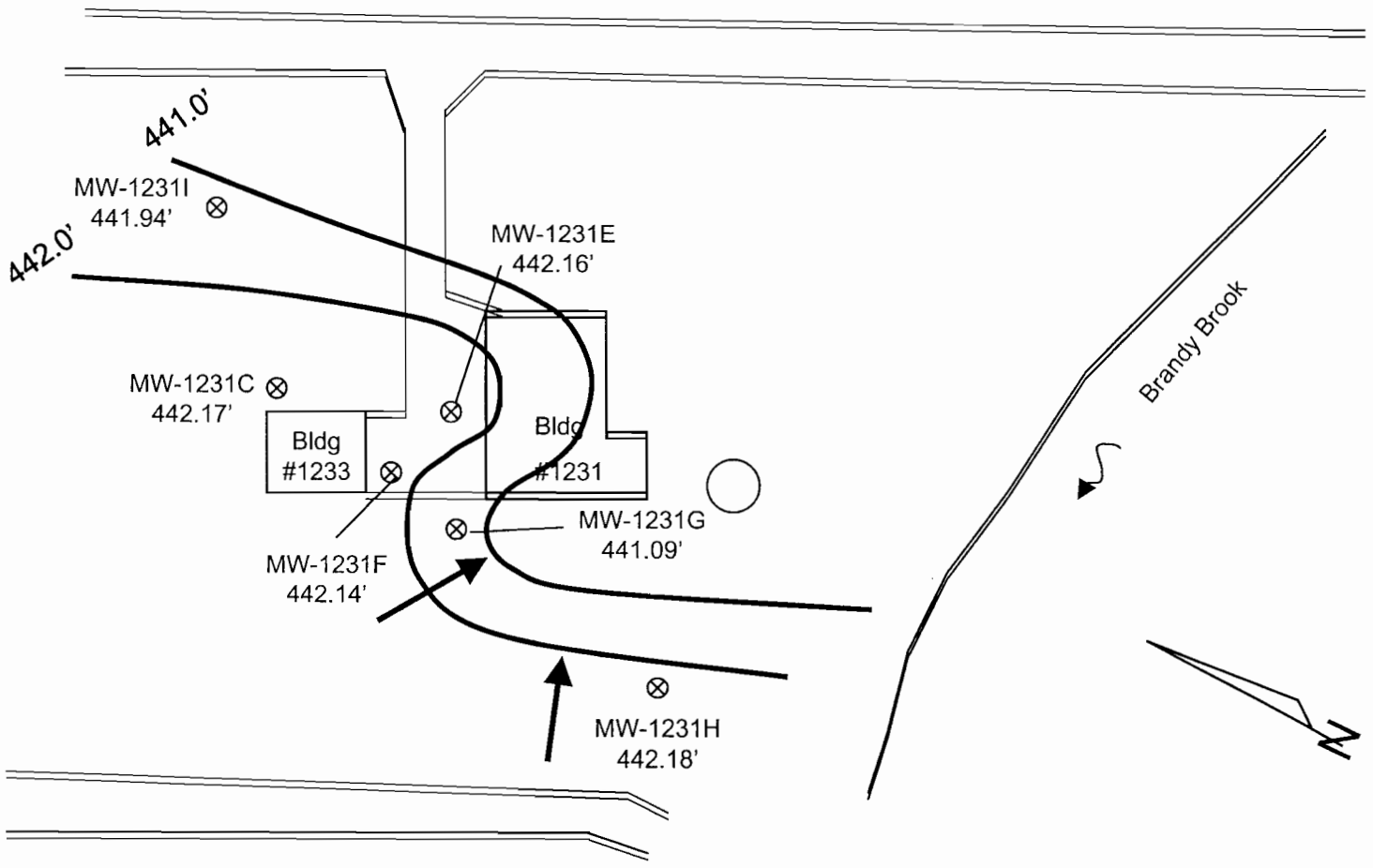


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GROUNDAWATER MONITORING

FIGURE 6
SURFACE WATER SAMPLING
LOCATIONS



Legend

MW-1231I	Monitoring Well Designation
441.94'	Groundwater Elevation
⊗	Monitoring well location
→	Groundwater flow direction
441.0'	Groundwater contour

0 40 80

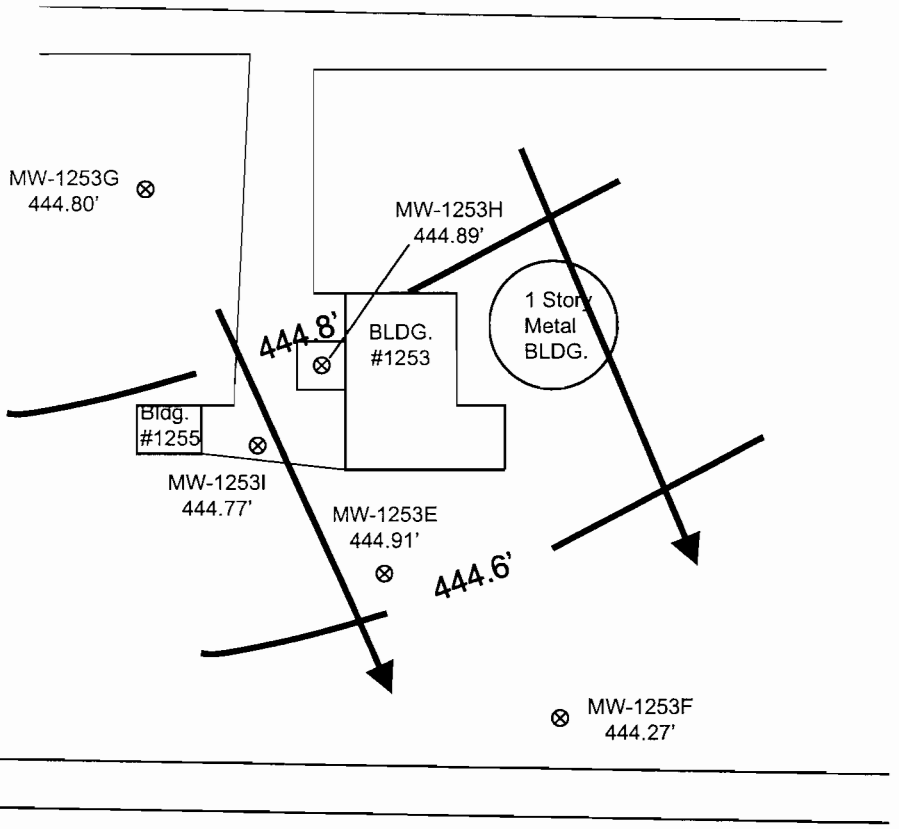
Approximate scale (ft)

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Natural Attenuation Monitoring
Building 1231

Figure 7
Building 1231 Groundwater Contours,
3/24/04



Legend

MW-1253F — Monitoring Well Designation

441.27' — Groundwater Elevation

⊗ — Monitoring well location

→ — Groundwater flow direction

444.6' — Groundwater contour

N

0 60 120

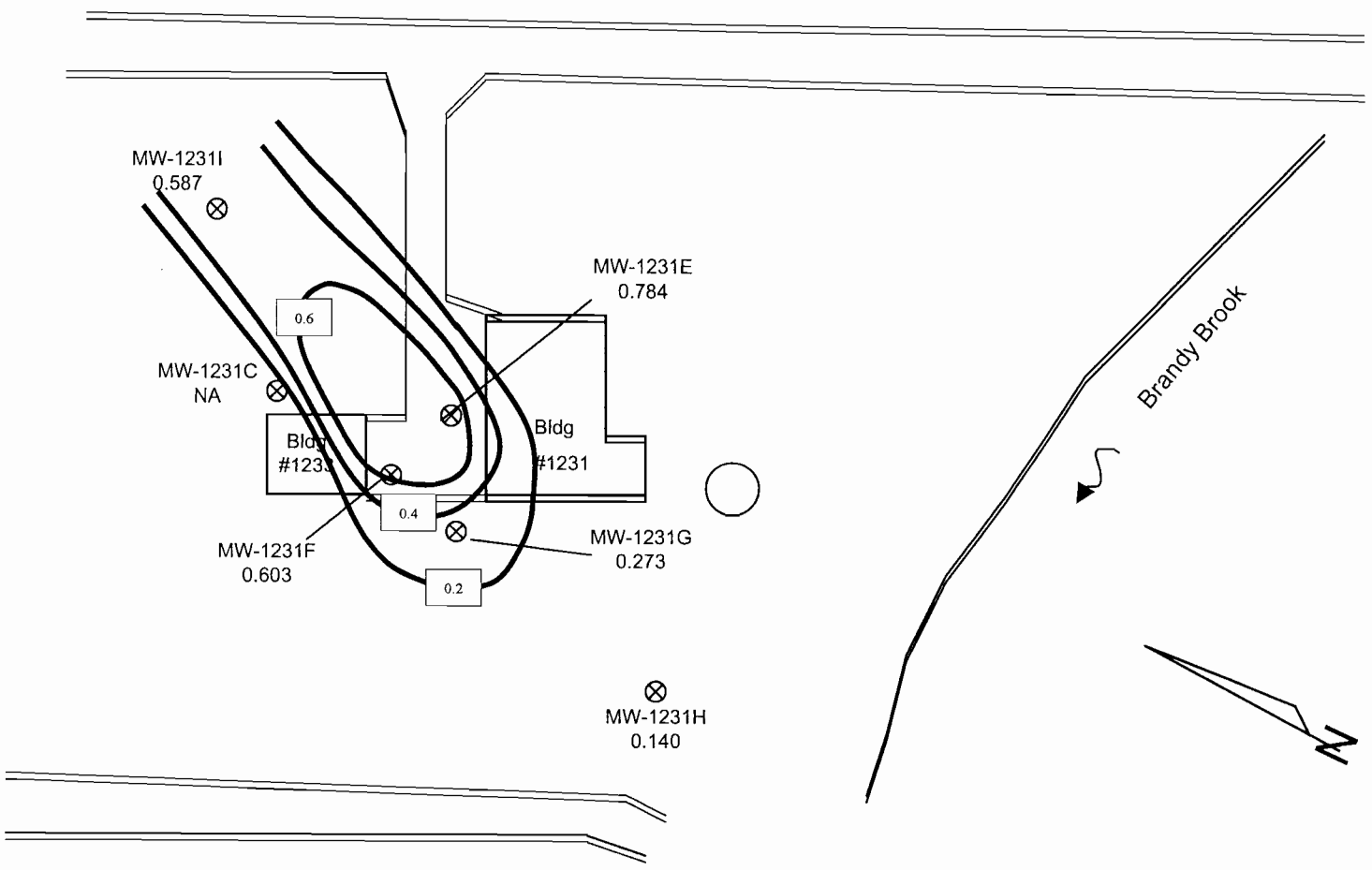
Approximate Scale in Feet

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Verona Research Facility
Natural Attenuation Monitoring
Building 1253

Figure 8
Building 1253 Groundwater Contours, 3/24/04

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Legend

MW-1231F	Monitoring Well Designation
0.581	Diss. Manganese, ppm
⊗	Monitoring well location
0.6	Isoconcentration contour, ppm
ND	Not detected

0 40 80

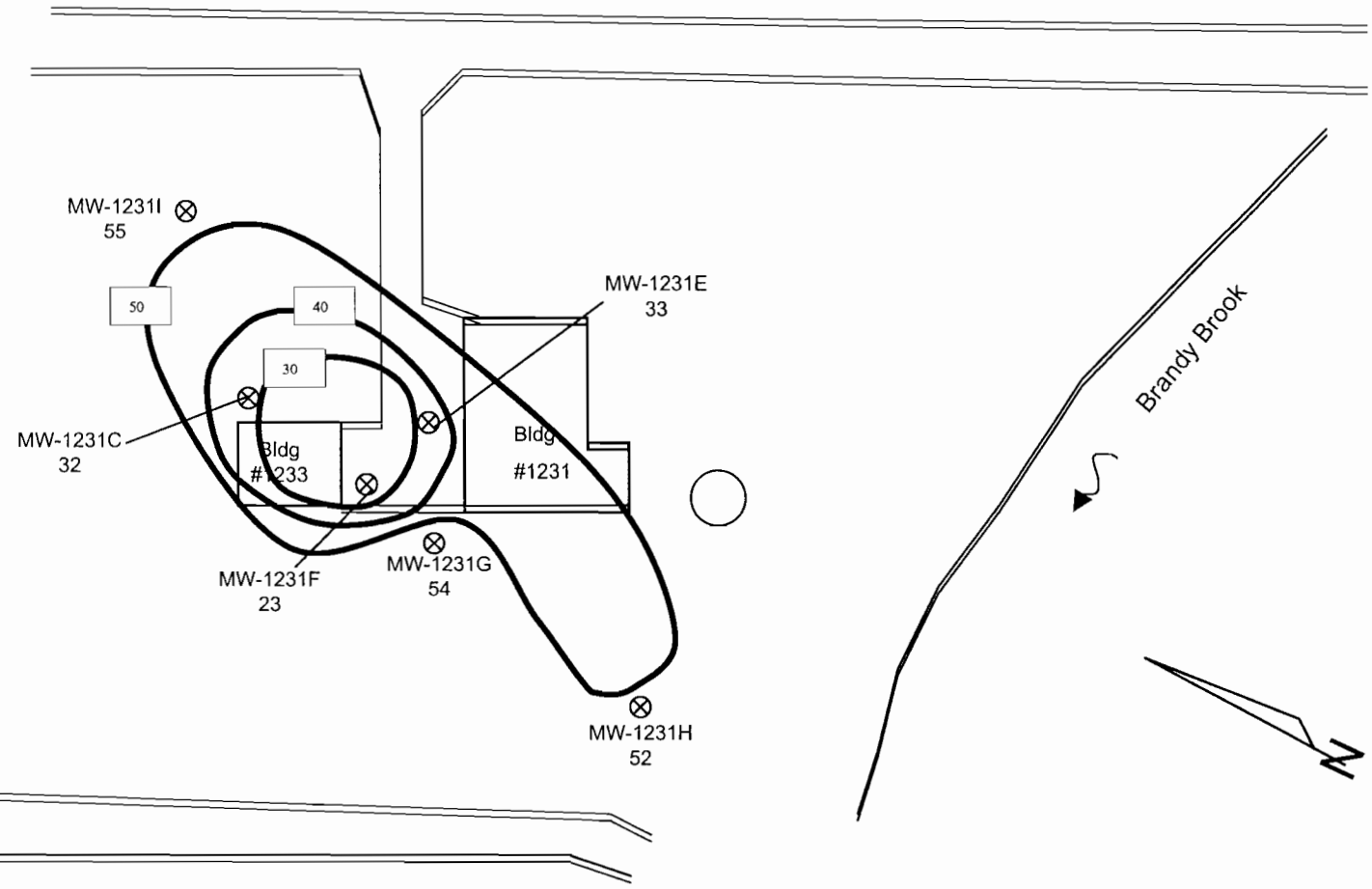
Approximate scale (ft)

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Verona Research Facility
Natural Attenuation Monitoring
Building 1231

Figure 10
Building 1231 Dissolved Manganese, 3/24/04



Legend

MW-1231H	Monitoring Well Designation
56	Diss. CO_2, ppm
⊗	Monitoring well location
50	Isoconcentration contour, ppm
ND	Not detected

0 40 80

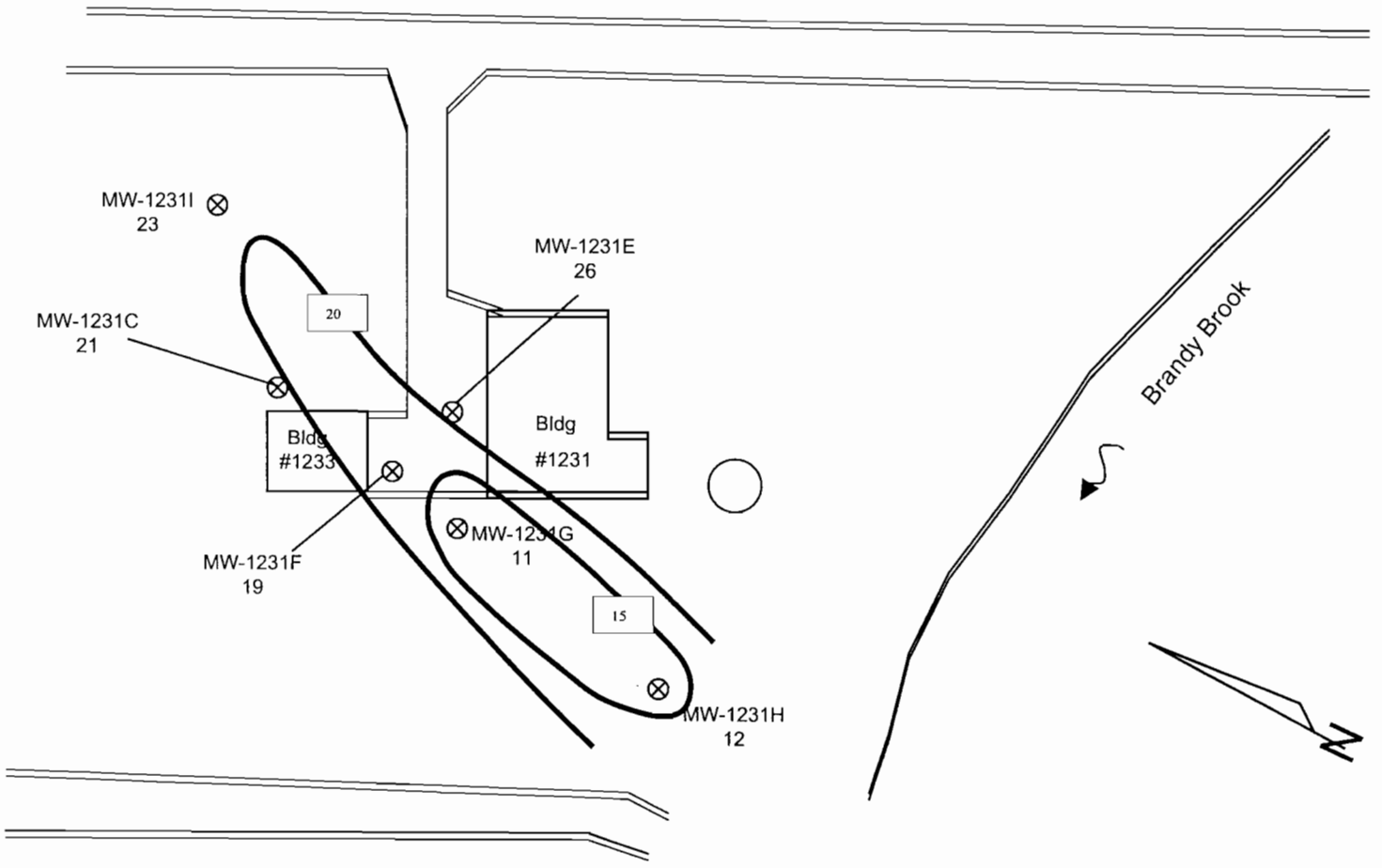
Approximate scale (ft)

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Verona Research Facility
Natural Attenuation Monitoring
Building 1231

Figure 11
Building 1231 Dissolved CO_2
3/24/04



Legend

MW-1231H	Monitoring Well Designation
12	Sulfate, ppm
⊗	Monitoring well location
30	Isoconcentration contour
ND	Not detected

0 40 80

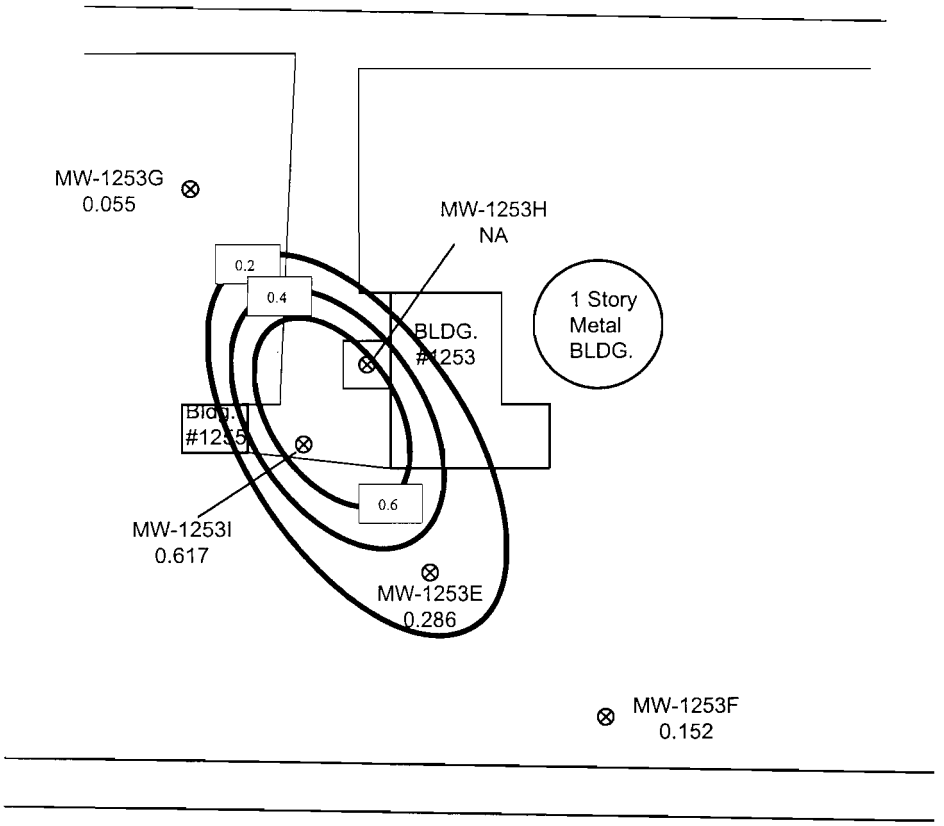
Approximate scale (ft)

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Verona Research Facility
Natural Attenuation Monitoring
Building 1231

Figure 12
Building 1231 Sulfate
3/24/04



Legend

MW-1253F	Monitoring Well Designation
0.152	Diss. Manganese, ppm
⊗	Monitoring well location
0.6	Isoconcentration contour, ppm

N

0 60 120

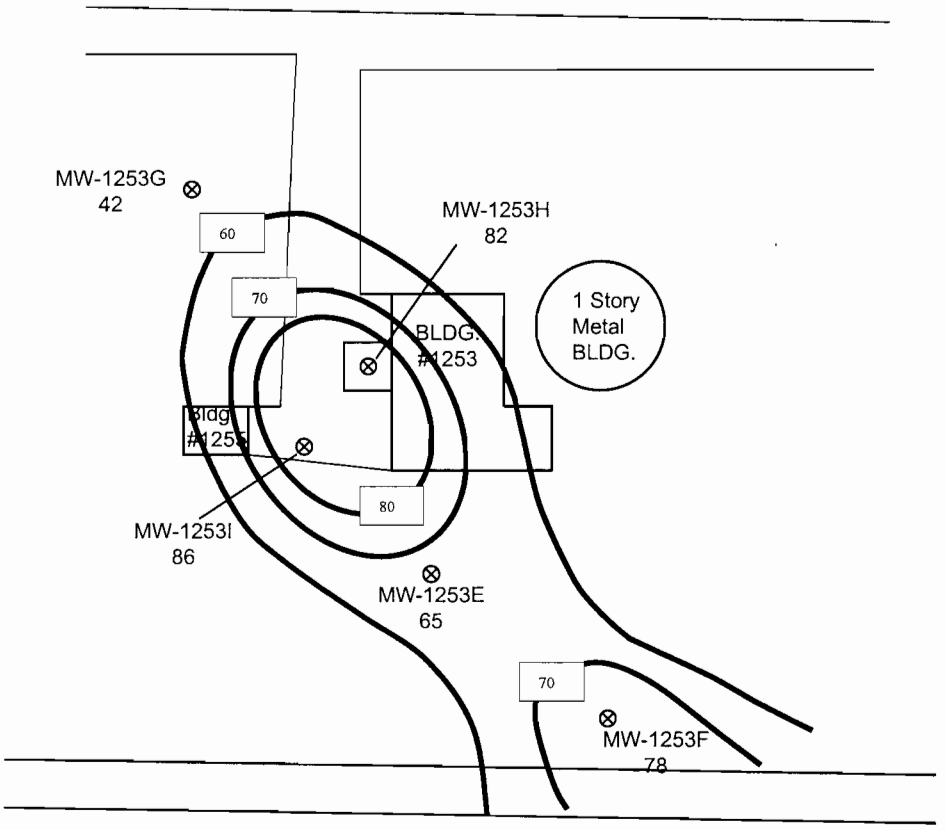
Approximate Scale in Feet

Stearns & Wheler, LLC
Environmental Engineers and Scientists

Verona Research Facility
Natural Attenuation Monitoring
Building 1253

Figure 13
Building 1253 Dissolved Manganese
3/24/04

Date: 5-04 Project No. L2094



Legend

MW-1253F	Monitoring Well Designation
78	Diss. CO_2, ppm
⊗	Monitoring well location
80	Isoconcentration contour, ppm

N

0 60 120

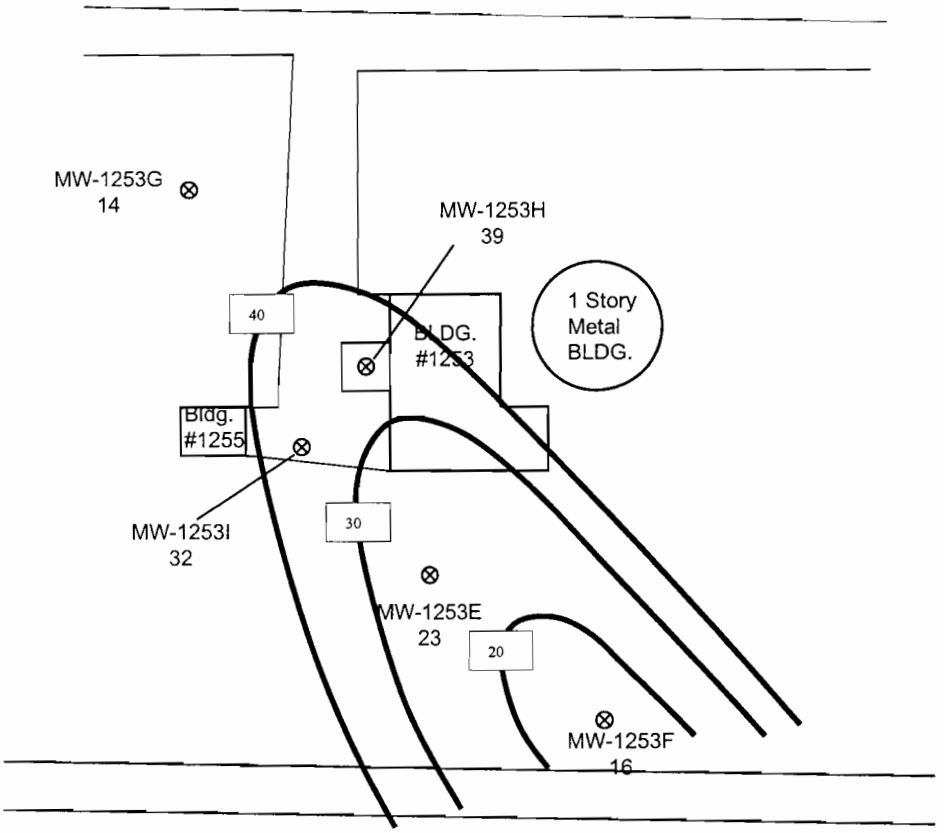
Approximate Scale in Feet

Stearns & Wheler, LLC
Environmental Engineers and Scientists

Verona Research Facility
Natural Attenuation Monitoring
Building 1253

Figure 14
Building 1253 Dissolved CO_2
3/24/04

Date: 5-04 Project No. L2094



Legend

MW-1253F	Monitoring Well Designation
16	Sulfate, ppm
⊗	Monitoring well location
20	Isoconcentration contour, ppm

N

0 60 120

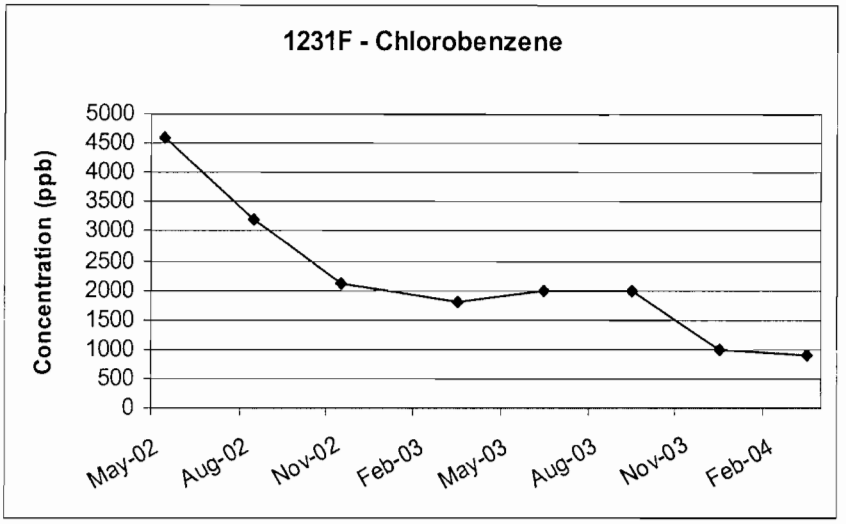
Approximate Scale in Feet

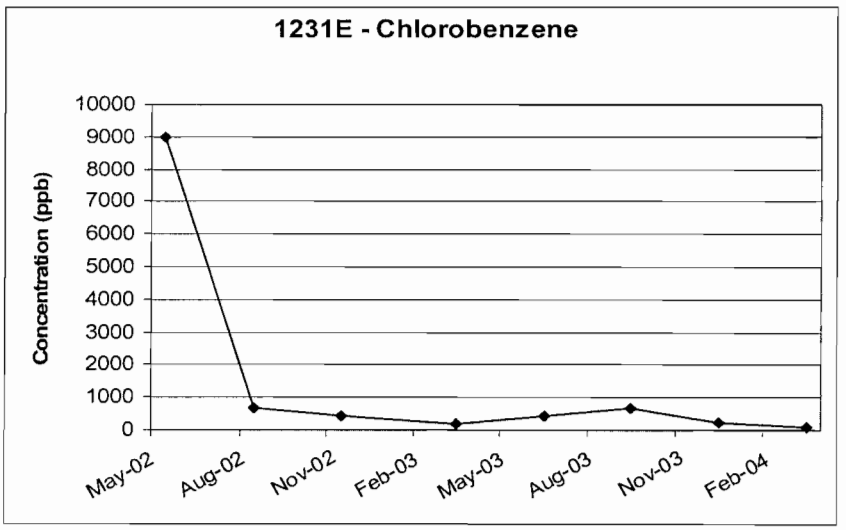
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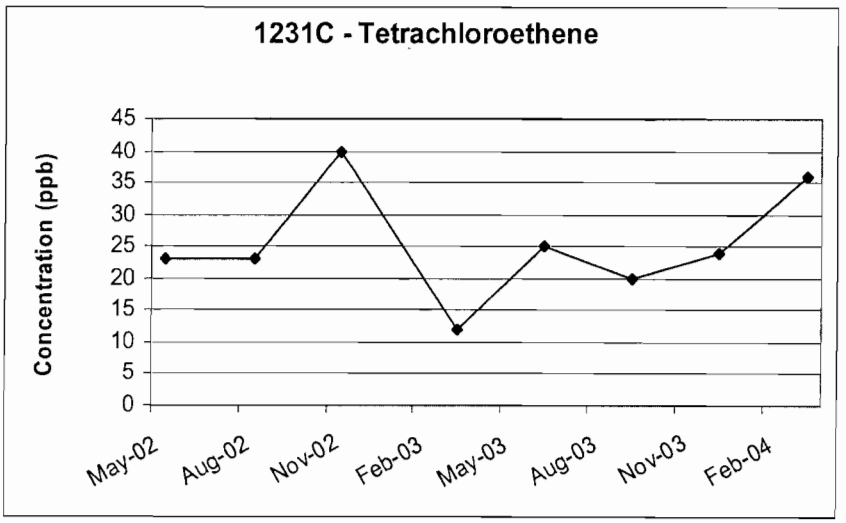
Verona Research Facility
Natural Attenuation Monitoring
Building 1253

Figure 15
Building 1253 Sulfate
3/24/04

Date: 5-04 Project No. L2094







Stearns & Wheler, LLC Environmental Engineers and Scientists	Verona Research Facility Natural Attenuation Monitoring Building 1253
Date: 5-04 Project No. L2094	Figure 16 Building 1231 Groundwater Trends 3/24/04

Tables

Table 1. Groundwater Field Parameters. Natural Attenuation Monitoring - Verona Research Facility. Building 1231. 2002-2004 Events.

Field Measurement	Building 1231 Well Network															
	MW-1231C								MW-1231E							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Depth to water (DTW)	4.31	5.55	4.54	4.32	4.67	4.97	3.96	4.47	3.43	4.77	3.82	3.47	3.84	4.17	3.31	3.55
Total depth of well (TDW)	16.41	16.41	16.50	16.50	16.50	16.50	16.50	16.50	13.68	13.68	13.86	13.86	13.86	13.86	13.86	13.86
Reference elevation (ft.)	446.64	446.64	446.64	446.64	446.64	446.64	446.64	446.64	445.71	445.71	445.71	445.71	445.71	445.71	445.71	445.71
Water elevation (ft.)	442.33	441.09	442.10	442.32	441.97	441.67	442.68	442.17	442.28	440.94	441.89	442.24	441.87	441.54	442.40	442.16
Temperature (C)	8.2	15.1	12.1	5.88	9.71	14.19	8.79	5.47	9.1	19.9	13.1	5.49	12.70	17.75	7.78	4.84
Conductivity (ms/cm)	0.648	0.641	0.527	0.420	0.524	0.610	0.448	0.409	0.653	0.592	0.415	0.352	0.496	0.583	0.436	0.393
pH	6.83	6.85	7.36	7.58	7.23	7.37	7.81	7.35	6.74	6.70	7.40	7.62	7.47	7.34	7.80	7.33
Eh (mV)	142	142	314.6	173.5	211.6	330.9	202.1	248.6	137	-8	152.6	107.8	169.6	167.1	207.4	244.1
Turbidity	505	23	1073.6	175.6	439.1	146.3	22.1	9.6	>999	>999	1304.5	276.4	150.3	274.3	119.5	191.8
Dissolved oxygen (ppm)	4.50	1.11	0.05	0.05	3.44	11.47	12.26	5.62	3.68	0.34	0.16	0.03	9.22	9.58	11.52	5.64
Salinity (%)	0.02	0.02	0.34	0.32	0.36	0.36	0.32	0.32	0.02	0.02	0.26	0.27	0.32	0.33	0.32	0.31

Field Measurement	Building 1231 Well Network															
	MW-1231F								MW-1231G							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Depth to water (DTW)	3.68	4.88	3.99	3.61	3.94	4.27	3.48	3.76	2.96	4.47	3.58	3.38	3.53	3.27	2.92	3.34
Total depth of well (TDW)	13.37	13.37	14.43	14.43	14.43	14.43	14.43	14.43	9.56	9.56	13.79	13.79	13.79	13.79	13.79	13.79
Reference elevation (ft.)	445.90	445.90	445.90	445.90	445.90	445.90	445.90	445.90	444.43	444.43	444.43	444.43	444.43	444.43	444.43	444.43
Water elevation (ft.)	442.22	441.02	441.91	442.29	441.96	441.63	442.42	442.14	441.47	439.96	440.85	441.05	440.90	441.16	441.51	441.09
Temperature (C)	9.7	20.3	14.1	6.23	12.25	17.76	8.83	4.49	9.3	16.8	11.8	6.91	11.28	14.68	8.12	5.65
Conductivity (ms/cm)	0.658	0.599	0.467	0.337	0.477	0.550	0.413	0.569	0.745	0.950	0.574	0.485	0.650	0.751	0.576	0.508
pH	6.90	6.74	7.37	7.69	7.28	7.35	7.80	7.30	6.49	6.61	7.43	7.28	7.41	7.33	7.82	7.16
Eh (mV)	123	71	286.5	129.1	163.4	226.4	205.9	250.9	139	176	257.8	147.8	152.3	238.6	203.8	106.2
Turbidity	>999	607	1307.6	824.3	754.6	659.2	330	10.9	>999	>999	556.8	480.6	840.6	101.4	173.6	486.2
Dissolved oxygen (ppm)	4.66	0.22	0.01	0.00	2.17	8.97	11.93	4.17	2.80	4.68	0.00	0.08	12.01	18.71	17.45	8.00
Salinity (%)	0.02	0.02	0.29	0.26	0.31	0.31	0.29	0.28	0.03	0.04	0.37	0.36	0.43	0.46	0.42	0.39

Field Measurement	Building 1231 Well Network															
	MW-1231H								MW-1231I							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Depth to water (DTW)	2.39	3.52	2.63	2.43	2.77	3.04	2.28	2.46	2.20	3.72	2.78	2.53	2.79	3.14	2.24	2.58
Total depth of well (TDW)	12.28	12.28	12.24	12.24	12.24	12.24	12.24	12.24	10.44	10.44	13.25	13.25	13.25	13.25	13.25	13.25
Reference elevation (ft.)	444.64	444.64	444.64	444.64	444.64	444.64	444.64	444.64	444.52	444.52	444.52	444.52	444.52	444.52	444.52	444.52
Water elevation (ft.)	442.25	441.12	442.01	442.21	441.87	441.60	442.36	442.18	442.32	440.80	441.74	441.99	441.73	441.38	442.28	441.94
Temperature (C)	8.6	14.6	12.3	7.01	9.76	13.75	9.38	6.44	8.6	15.4	11.3	6.01	9.98	13.55	8.14	6.76
Conductivity (ms/cm)	0.717	0.640	0.450	0.419	0.459	.0621	0.518	0.695	1.00	0.739	0.550	0.485	0.611	0.681	0.597	0.851
pH	6.58	6.70	7.32	7.54	7.13	7.26	7.51	7.14	6.71	6.49	7.40	7.60	7.19	7.37	7.41	6.99
Eh (mV)	50	-39	96.6	0.0	58.1	66.0	135.1	123.6	131	26	211.9	184.3	231.2	309.8	211	249.1
Turbidity	675	25	1214.1	573.5	196.7	104.6	28.4	1088.1	>999	>999	1297.3	527.4	472.3	865.4	133	21.2
Dissolved oxygen (ppm)	1.60	1.01	0.02	0.02	6.09	13.52	11.27	4.50	3.53	0.60	0.07	0.10	7.71	9.87	10.01	1.91
Salinity (%)	0.03	0.02	0.29	0.31	0.32	0.39	0.36	0.34	0.04	0.03	0.37	0.37	0.42	.043	0.43	0.42

Field parameters were recorded with a YSI 6820 water quality meter.

Table 1 (continued). Groundwater Field Parameters. Natural Attenuation Monitoring - Verona Research Facility. Building 1253. 2002-2004 Events.

Field Measurement	Building 1253 Well Network															
	MW-1253E								MW-1253F							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Depth to water (DTW)	3.34	6.18	3.94	3.25	3.94	4.91	3.04	3.45	3.04	6.36	3.92	3.33	4.08	5.12	3.92	3.49
Total depth of well (TDW)	14.40	14.40	14.71	14.71	14.71	14.71	14.71	14.71	13.68	13.68	14.10	14.10	14.10	14.10	14.10	14.10
Reference elevation (ft.)	448.36	448.36	448.36	448.36	448.36	448.36	448.36	448.36	447.76	447.76	447.76	447.76	447.76	447.76	447.76	447.76
Water elevation (ft.)	445.02	442.18	444.42	445.11	444.42	443.45	445.32	444.91	444.72	441.40	443.84	444.43	443.68	442.64	443.84	444.27
Temperature (C)	9.4	15.9	11.9	5.91	11.18	14.45	7.32	4.97	9.2	16.3	11.3	4.89	12.29	14.69	6.08	4.53
Conductivity (ms/cm)	0.711	0.773	0.523	0.439	0.573	0.680	0.543	0.490	0.773	0.906	0.668	0.395	0.610	0.785	0.531	0.723
pH	6.82	6.86	7.20	7.44	7.08	7.28	7.52	7.12	6.73	6.59	7.03	7.53	7.00	7.05	7.40	6.82
Eh (mV)	55	8	93.9	91.6	83.4	65.6	137.2	151.3	104	37	210.3	119.3	109.2	234.1	147.6	157.3
Turbidity	>999	>999	1300.8	1277.4	1300.4	1210.5	1279.8	393.1	>999	>999	247.9	124.1	223.7	24.1	120.9	167.5
Dissolved oxygen (ppm)	2.53	1.41	0.01	0.10	1.47	15.18	12.50	5.83	4.80	1.17	0.00	0.01	6.09	17.82	15.10	8.96
Salinity (%)	0.02	0.03	0.34	0.34	0.38	.042	0.40	0.39	0.03	0.03	0.45	0.31	0.40	.049	0.41	0.35

Field Measurement	Building 1253 Well Network															
	MW-1253G								MW-1253H							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Depth to water (DTW)	2.79	4.78	3.47	3.07	3.63	3.88	2.81	3.21	3.54	5.76	4.24	3.76	4.33	4.86	3.56	4.00
Total depth of well (TDW)	13.05	13.05	12.65	12.65	12.65	12.65	12.65	12.65	16.43	16.43	16.25	16.25	16.25	16.25	16.25	16.25
Reference elevation (ft.)	448.01	448.01	448.01	448.01	448.01	448.01	448.01	448.01	448.89	448.89	448.89	448.89	448.89	448.89	448.89	448.89
Water elevation (ft.)	445.22	443.23	444.54	444.94	444.38	444.13	445.2	444.8	445.35	443.13	444.65	445.13	444.56	444.03	445.33	444.89
Temperature (C)	8.6	17.8	11.0	4.70	11.52	14.16	6.89	4.19	10.0	19.0	13.1	6.70	11.89	16.77	8.32	5.84
Conductivity (ms/cm)	0.668	0.815	0.503	0.366	0.530	0.621	0.445	0.631	0.772	0.707	0.599	0.514	0.630	0.758	0.604	0.572
pH	6.82	6.32	7.25	7.58	7.19	7.26	7.61	7.37	6.74	6.54	7.30	7.47	7.20	7.30	7.45	7.08
Eh (mV)	60	125	112.8	32.0	28.2	60.3	99.4	87.3	-24	-78	-80.6	2.7	5.3	22.1	86.7	70.8
Turbidity	>999	>999	1297.3	1269.7	817.6	982.0	1193.2	66.4	>999	0	48.2	252.8	34.6	540.7	15.4	19.0
Dissolved oxygen (ppm)	2.10	0.67	0.03	0.05	2.49	12.28	13.21	8.17	2.29	0.59	0.08	0.02	6.40	20.61	17.94	5.96
Salinity (%)	0.02	0.03	0.34	0.29	0.35	0.39	0.33	0.31	0.03	0.03	0.38	0.38	0.42	0.44	0.44	0.44

Field Measurement	Building 1253 Well Network							
	MW-1253I							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Depth to water (DTW)	3.71	6.04	4.28	3.83	4.45	4.99	3.49	4.09
Total depth of well (TDW)	16.23	16.23	16.31	16.31	16.31	16.31	16.31	16.31
Reference elevation (ft.)	448.86	448.86	448.86	448.86	448.86	448.86	448.86	448.86
Water elevation (ft.)	445.15	442.82	444.58	445.03	444.41	443.87	445.37	444.77
Temperature (C)	10.8	21.6	14.0	6.09	13.79	19.01	7.23	5.59
Conductivity (ms/cm)	0.832	0.845	0.684	0.537	0.750	0.858	0.596	0.842
pH	6.65	6.57	7.09	7.31	6.95	7.05	7.45	7.25
Eh (mV)	105	76	102.6	67.3	68.2	137.0	132.9	159.9
Turbidity	>999	0	402.9	271.4	573.4	210.6	107.4	54.9
Dissolved oxygen (ppm)	1.74	1.30	0.01	0.03	1.76	17.49	9.70	4.99
Salinity (%)	0.03	0.03	0.43	0.40	0.47	0.48	0.45	0.41

Field parameters were recorded with a YSI 6820 water quality meter.

Table 1 (continued). Groundwater Field Parameters. Natural Attenuation Monitoring Verona Research Facility. Surface Water. 2002-2004 Events.

Field Measurement	*Surface Water*							
	SW-1							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Depth to water (DTW)	NA	NA	NA	NA	NA	NA	NA	NA
Total depth of well (TDW)	NA	NA	NA	NA	NA	NA	NA	NA
Reference elevation (ft.)	NA	NA	NA	NA	NA	NA	NA	NA
Water elevation (ft.)	NA	NA	NA	NA	NA	NA	NA	NA
Temperature (C)	13.0	19.5	8.2	6.12	21.60	13.93	1.66	1.04
Conductivity (ms/cm)	0.267	0.379	0.334	0.155	0.320	0.462	0.255	0.725
pH	7.03	6.80	7.51	8.43	7.64	7.55	8.11	7.70
Eh (mV)	121.0	140.0	256.1	82.3	77.9	132.9	108.6	108.9
Turbidity	0.0	0.0	3.0	6.3	18.4	20.1	9.8	7.3
Dissolved oxygen (ppm)	4.42	2.60	0.00	0.15	9.83	18.60	22.80	11.61
Salinity (%)	0.01	0.01	0.24	0.12	0.16	0.29	0.22	0.35

Field Measurement	*Surface Water*							
	SW-2							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Depth to water (DTW)	NA	NA	NA	NA	NA	NA	NA	NA
Total depth of well (TDW)	NA	NA	NA	NA	NA	NA	NA	NA
Reference elevation (ft.)	NA	NA	NA	NA	NA	NA	NA	NA
Water elevation (ft.)	NA	NA	NA	NA	NA	NA	NA	NA
Temperature (C)	12.8	18.4	7.0	2.76	20.97	13.09	0.92	0.86
Conductivity (ms/cm)	0.313	0.330	0.318	0.137	0.293	0.432	0.260	0.734
pH	6.62	6.67	7.44	8.04	7.31	7.70	7.83	7.56
Eh (mV)	123.0	130	251.7	74.5	53.0	185.6	135.9	140.2
Turbidity	59.0	0.0	3.9	4.0	4.2	6.2	8.6	5.0
Dissolved oxygen (ppm)	1.67	1.90	0.00	0.04	7.71	19.41	22.85	10.63
Salinity (%)	0.01	0.01	0.23	0.11	0.15	0.27	0.23	0.36

Field Measurement	*Surface Water*							
	SW-3							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Depth to water (DTW)	NA	NA	NA	NA	NA	NA	NA	NA
Total depth of well (TDW)	NA	NA	NA	NA	NA	NA	NA	NA
Reference elevation (ft.)	NA	NA	NA	NA	NA	NA	NA	NA
Water elevation (ft.)	NA	NA	NA	NA	NA	NA	NA	NA
Temperature (C)	13.2	19.4	6.8	3.22	20.00	13.85	1.18	1.59
Conductivity (ms/cm)	0.279	0.360	0.316	0.147	0.295	0.455	0.270	0.798
pH	6.66	6.72	7.44	8.19	7.32	7.72	7.94	7.68
Eh (mV)	108	150	257.4	66.8	45.9	149.3	133.6	144.8
Turbidity	15	0	7.5	4.1	2.6	9.2	6.1	58.0
Dissolved oxygen (ppm)	1.30	1.30	0.01	0.07	7.23	19.04	21.40	9.51
Salinity (%)	0.01	0.01	0.23	0.12	0.16	0.28	0.24	0.39

Field parameters were recorded with a YSI 6820 water quality meter.
NA - Not applicable.

Table 2. Groundwater and Surface Water Analytical Results - Volatile Organic Compounds (VOCs). Natural Attenuation Monitoring - Verona Research Facility. Building 1231 2002-2004 Events.

Compounds (ug/L)	NYSDEC TOGS	*Building 1231 Well Network*															
		MW-1231C								MW-1231E							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Chloromethane		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<50	<50	<20	<20
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<50	<50	<20	<20
Vinyl Chloride	2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<50	<50	<20	<20
Chloroethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<50	<50	<20	<20
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Acetone	50(G)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<50	<50	<20	<20
Carbon Disulfide		<5	<5	<5	<5	<10	<10	<10	<10	<5	<5	<25	<10	<50	<50	<20	<20
1,1-Dichloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
1,1-Dichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
cis-1,2-Dichloroethene	5 [1]	<5	<5	<5	<5	<5	<5	<5	<5	**9**	<5	<25	<5	<25	<25	<10	<10
trans-1,2-Dichloroethene	5 [1]	-	-	-	-	<5	<5	<5	<5	-	-	-	-	<25	<25	<10	<10
Chloroform	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
1,2-Dichloroethane	0.6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<50	<50	<20	<20
1,1,1-Trichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Vinyl Acetate		-	-	-	-	<10	<10	<10	<10	-	-	-	-	<50	<50	<20	<20
Bromodichloromethane	50(G)	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Trichloroethene	5	<5	<5	**6**	<5	<5	<5	<5	**5.5**	**17**	<5	<25	<5	<25	<25	<10	<10
Dibromochloromethane	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Benzene	1	<5	<5	<5	<5	<5	<5	<5	<5	**63**	<5	<25	<5	<25	<25	<10	<10
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Bromoform	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
2-Hexanone	50(G)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<50	<50	<20	<20
4-Methyl-2-Pentanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<50	<50	<20	<20
Tetrachloroethene	5	**23**	**23**	**40**	**12**	**25**	**20**	**24**	**36**	**100**	**6**	<25	<5	<25	<25	<10	<10
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Toluene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	**9000**	**670**	**450**	**180**	**430**	**670**	**230**	**120**
Ethylbenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Styrene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
Xylenes, Total		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<5	<25	<25	<10	<10
1,3 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<25	<5	<25	<25	<10	<10
1,4 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<25	<5	**25**	**33**	<10	**19**
1,2 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<25	<5	<25	<25	<10	<10
TOTAL VOCs		**23**	**23**	**46**	**12**	**25**	**20**	**24**	**41.5**	**9189**	**676**	**450**	**180**	**455**	**703**	**230**	**139**

[1] 5 ug/l standard is applied separately to the cis and trans isomers of 1,2-dichloroethene.

Bold values indicate compounds that exceeded the NYSDEC TOGS water quality standard.

(G) Signifies a NYSDEC guidance value where a standard has not been established.

ND - Not Detected.

* Duplicate sample collected at MW-1231H during May 2002 sampling event.

- indicates no analysis performed

Table 2 (continued). Groundwater and Surface Water Analytical Results - Volatile Organic Compounds (VOCs). Natural Attenuation Monitoring - Verona Research Facility. Building 1231 2002-2004 Events.

Compounds (ug/L)	NYSDEC TOGS	*Building 1231 Well Network*															
		MW-1231F								MW-1231G							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Chloromethane		<10	<10	<100	<100	<100	<100	<50	<50	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<100	<100	<100	<100	<50	<50	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	<10	<10	<100	<100	<100	<100	<50	<50	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	5	<10	<10	<100	<100	<100	<100	<50	<50	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	50(G)	<10	<10	<100	<100	<100	<100	<50	<50	<10	<10	<10	<10	<10	<10	<10	<10
Carbon Disulfide		<5	<5	<50	<100	<100	<100	<50	<50	<5	<5	<5	<10	<10	<10	<10	<10
1,1-Dichloroethene	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5 [1]	-	-	-	-	<50	<50	<25	<25	-	-	-	-	<5	<5	<5	<5
trans-1,2-Dichloroethene	5 [1]	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Chloroform	7	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
2-Butanone		<10	<10	<100	<100	<100	<100	<50	<50	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Acetate		-	-	-	-	<100	<100	<50	<50	-	-	-	-	<10	<10	<10	<10
Bromodichloromethane	50(G)	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	50(G)	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	1	**29**	**20**	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	50(G)	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	50(G)	<10	<10	<100	<100	<100	<100	<50	<50	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone		<10	<10	<100	<100	<100	<100	<50	<50	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	5	**7**	**7**	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	5	**4600**	**3200**	**2100**	**1,800**	**2000**	**2000**	**1000**	**890**	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Styrene	5	<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
Xylenes, Total		<5	<5	<50	<50	<50	<50	<25	<25	<5	<5	<5	<5	<5	<5	<5	<5
1,3 dichlorobenzene		-	-	**240**	**250**	**280**	**320**	**160**	**190**	-	-	<5	<5	<5	<5	<5	<5
1,4 dichlorobenzene		-	-	**900**	**900**	**940**	**1000**	**480**	**460**	-	-	<5	<5	<5	<5	<5	<5
1,2 dichlorobenzene		-	-	**180**	**160**	**180**	**200**	**110**	**140**	-	-	<5	<5	<5	<5	<5	<5
TOTAL VOCs		4636	3227	3420	3,110	3400	3520	1750	1680	ND	ND	ND	ND	ND	ND	ND	ND

[1] 5 ug/l standard is applied separately to the cis and trans isomers of 1,2-dichloroethene.

Bold values indicate compounds that exceeded the NYSDEC TOGS water quality standard.

(G) Signifies a NYSDEC guidance value where a standard has not been established.

ND - Not Detected.

* Duplicate sample collected at MW-1231H during May 2002 sampling event.

- indicates no analysis performed

Table 2 (continued). Groundwater and Surface Water Analytical Results - Volatile Organic Compounds (VOCs). Natural Attenuation Monitoring - Verona Research Facility. Building 1231 2002-2004 Events.

Compounds (ug/L)	NYSDEC TOGS	Building 1231 Well Network															
		MW-1231H								MW-1231I							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Chloromethane		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	50(G)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon Disulfide		<5	<5	<5	<10	<10	<10	<10	<10	<5	<5	<5	<10	<10	<10	<10	<10
1,1-Dichloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5 [1]	-	-	-	-	<5	<5	<5	<5	-	-	-	-	<5	<5	<5	<5
trans-1,2-Dichloroethene	5 [1]	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloroform	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Acetate		-	-	-	-	<10	<10	<10	<10	-	-	-	-	<10	<10	<10	<10
Bromodichloromethane	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	50(G)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Styrene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Xylenes, Total		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,3 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5
1,4 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5
1,2 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5
TOTAL VOCs		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND

[1] 5 ug/l standard is applied separately to the cis and trans isomers of 1,2-dichloroethene.

Bold values indicate compounds that exceeded the NYSDEC TOGS water quality standard.

(G) Signifies a NYSDEC guidance value where a standard has not been established.

ND - Not Detected.

* Duplicate sample collected at MW-1231H during May 2002 sampling event.

- indicates no analysis performed

Table 2 (continued). Groundwater and Surface Water Analytical Results - Volatile Organic Compounds (VOCs). Natural Attenuation Monitoring - Verona Research Facility. Building 1253. 2002-2004 Events.

Compounds (ug/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253E								MW-1253F							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Chloromethane		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	50(G)	<10	<10	<10	<10	<10	<10	<10	**89**	<10	<10	<10	<10	<10	<10	<10	<10
Carbon Disulfide		<5	<5	<5	<10	<10	<10	<10	<10	<5	<5	<5	<10	<10	<10	<10	<10
1,1-Dichloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5 [1]	-	-	-	-	<5	<5	<5	<5	-	-	-	-	<5	<5	<5	<5
trans-1,2-Dichloroethene	5 [1]	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloroform	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Acetate		<10	<10	<10	<5	<10	<10	<10	<10	<10	<10	<10	<5	<10	<10	<10	<10
Bromodichloromethane	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone	50(G)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5
1,3 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5
1,4 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Styrene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Xylenes, Total		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
TOTAL VOCs		ND	ND	ND	ND	ND	ND	ND	**89**	ND	ND	ND	ND	ND	ND	ND	ND

[1] 5 ug/l standard is applied separately to the cis and trans isomers of 1,2-dichloroethene.
Bold values indicate compounds that exceeded the NYSDEC TOGS water quality standard.
(G) Signifies a NYSDEC guidance value where a standard has not been established.
ND - Not Detected.
* Duplicate sample collected at MW-1231H during May 2002 sampling event.
- indicates no analysis performed

Table 2 (continued). Groundwater and Surface Water Analytical Results - Volatile Organic Compounds (VOCs). Natural Attenuation Monitoring - Verona Research Facility. Building 1253. 2002-2004 Events.

Compounds (ug/L)	NYSDEC TOGS	*Building 1253 Well Network*															
		MW-1253G								MW-1253H							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Chloromethane		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**26**	<10	<10	<10	<10	**16**
Chloroethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	50(G)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	11	<10	<10	<10
Carbon Disulfide		<5	<5	<5	<10	<10	<10	<10	<10	<5	<5	<5	<10	<10	<10	<10	<10
1,1-Dichloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5 [1]	-	-	-	-	<5	<5	<5	<5	-	-	-	-	<5	<5	<5	<5
trans-1,2-Dichloroethene	5 [1]	<5	<5	<5	<5	<5	<5	<5	<5	**6**	<5	**6**	<5	<5	<5	<5	<5
Chloroform	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Acetate		<10	<10	<10	<5	<10	<10	<10	<10	<10	<10	<10	<5	<10	<10	<10	<10
Bromodichloromethane	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone	50(G)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5
1,3 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5
1,4 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Styrene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Xylenes, Total		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
TOTAL VOCs		ND	ND	ND	ND	ND	ND	ND	ND	**6**	ND	**32**	ND	**11**	ND	ND	ND

[1] 5 ug/l standard is applied separately to the cis and trans isomers of 1,2-dichloroethene.
Bold values indicate compounds that exceeded the NYSDEC TOGS water quality standard.
(G) Signifies a NYSDEC guidance value where a standard has not been established.
ND - Not Detected.
* Duplicate sample collected at MW-1231H during May 2002 sampling event.
- indicates no analysis performed

Table 2 (continued). Groundwater and Surface Water Analytical Results - Volatile Organic Compounds (VOCs). Natural Attenuation Monitoring - Verona Research Facility. Building 1253. 2002-2004 Events.

Compounds (ug/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253I								Duplicate							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02 (1231H)	Aug-02 (1253H)	Nov-02 (1253H)	Mar-03 (1231F)	Jun-03 (1231C)	Sep-03 (1253E)	Dec-03 (1253E)	Mar-04 (1253E)
Chloromethane		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<10	<10
Vinyl Chloride	2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**27**	<100	<10	<10	<10	<10
Chloroethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Acetone	50(G)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	10	<10	<10	<10
Carbon Disulfide		<5	<5	<5	<10	<10	<10	<10	<10	<5	<5	<5	<100	<10	<10	<10	<10
1,1-Dichloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
cis-1,2-Dicholorethene	5 [1]	-	-	-	-	<5	**9.8**	<5	<5	-	-	-	-	<5	<5	<5	<5
trans-1,2-Dichloroethene	5 [1]	**33**	<5	**9**	<5	<5	<5	<5	<5	<5	<5	**6**	<50	<5	<5	<5	<5
Chloroform	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<10	<10
1,1,1-Trichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Vinyl Acetate		<10	<10	<10	<5	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<10	<10
Bromodichloromethane	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Trichloroethene	5	**25**	<5	<5	<5	**12**	**17**	<5	**7.1**	<5	<5	<5	<50	<5	<5	<5	<5
Dibromochloromethane	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Benzene	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Bromoform	50(G)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
4-Methyl-2-Pentanone		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<10	<10
2-Hexanone	50(G)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<10	<10
Tetrachloroethene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	**21**	<5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	1600	<5	<5	<5	<5
1,2 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	140	<5	<5	<5	<5
1,3 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	240	<5	<5	<5	<5
1,4 dichlorobenzene		-	-	<5	<5	<5	<5	<5	<5	-	-	<5	760	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Styrene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Xylenes, Total		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
TOTAL VOCs		**58**	ND	**9**	ND	**12**	**26.8**	ND	ND	ND	ND	**33**	**2,740**	**31**	ND	ND	ND

[1] 5 ug/l standard is applied separately to the cis and trans isomers of 1,2-dichloroethene.
Bold values indicate compounds that exceeded the NYSDEC TOGS water quality standard.
(G) Signifies a NYSDEC guidance value where a standard has not been established.
ND - Not Detected.
* Duplicate sample collected at MW-1231H during May 2002 sampling event.
- indicates no analysis performed

Table 3. Groundwater and Surface Water Analytical Results - Total Metals - Natural Attenuation Monitoring - Verona Research Facility. Building 1231. 2002-2004 Events.

Total Unfilitered Metals

Analyte (mg/L)	NYSDEC TOGS	*Building 1231 Well Network*															
		MW-1231C								MW-1231E							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	**1.2**	**0.32**	**2.7**	**0.25**	**0.633**	**0.310**	0.192	0.099	**8.07**	**17**	**19.4**	**2.72**	**5.58**	**1.94**	**7.92**	**7.19**
Manganese	0.3	**0.32**	**0.34**	**1.02**	**0.266**	**0.461**	0.270	**0.329**	0.133	**1.37**	**2.9**	**1.72**	**1.01**	**1.47**	**0.884**	**1.69**	**2.32**

Analyte (mg/L)	NYSDEC TOGS	*Building 1231 Well Network*															
		MW-1231F								MW-1231G							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	**3.21**	**0.3**	**3.91**	**0.962**	**8.02**	**2.62**	**1.51**	**3.55**	**9.37**	**0.57**	**18**	**2.65**	**1.30**	**0.770**	<0.050	**2.93**
Manganese	0.3	**1.20**	**0.73**	**0.86**	**0.75**	**1.26**	**0.879**	**0.808**	**0.984**	**2.28**	**1.1**	**1.65**	**0.772**	**0.733**	**0.557**	0.257	**1.23**

Analyte (mg/L)	NYSDEC TOGS	*Building 1231 Well Network*															
		MW-1231H								MW-1231I							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	**8.26**	**2.62**	**16.2**	**8.64**	**5.34**	**4.11**	**9.33**	**8.90**	**7.9**	**1.51**	**6.64**	**1.4**	**6.08**	**2.08**	**1.74**	**4.38**
Manganese	0.3	**0.83**	**0.19**	**0.77**	**0.269**	0.256	0.262	0.169	**0.742**	**2.19**	**1.31**	**1.18**	**0.946**	**1.47**	**1.17**	**0.823**	**1.35**

Total Filtered Metals

Analyte (mg/L)	NYSDEC TOGS	*Building 1231 Well Network*															
		MW-1231C								MW-1231E							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	<0.05	NA	<0.05	<0.05	<0.05	<0.05	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050
Manganese	0.3	<0.02	NA	0.15	<0.020	0.07	0.195	NA	NA	**0.54**	**0.59**	**0.75**	**0.72**	**0.787**	**0.745**	**0.624**	**0.784**

Analyte (mg/L)	NYSDEC TOGS	*Building 1231 Well Network*															
		MW-1231F								MW-1231G							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	<0.05	<0.05	NA	<0.05	<0.05	<0.05	<0.050	<0.050	<0.05	<0.05	<0.05	<0.050	<0.05	<0.05	<0.050	<0.050
Manganese	0.3	**0.87**	**0.67**	NA	**0.65**	**0.639**	**0.691**	**0.581**	**0.603**	**0.93**	**0.98**	**0.52**	**0.306**	**0.55**	**0.518**	0.257	0.273

Analyte (mg/L)	NYSDEC TOGS	*Building 1231 Well Network*															
		MW-1231H								MW-1231I							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	<0.05	NA	<0.05	<0.05	<0.05	<0.05	NA	<0.050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	NA
Manganese	0.3	0.19	NA	0.18	0.136	0.118	0.183	NA	0.140	**1.15**	**1.15**	**0.92**	**0.71**	**1.01**	**0.876**	**0.587**	NA

Bold values indicate compounds that exceeded the NYSDEC TOGS water quality standard.
NA - Not available
NYSDEC TOGs reported here are applicable to groundwater and surface water.

Table 3 (continued). Groundwater and Surface Water Analytical Results - Total Metals - Natural Attenuation Monitoring - Verona Research Facility. Building 1253. 2002-2004 Events.

Total Unfiltered Metals

Analyte (mg/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253E								MW-1253F							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	**37.9**	**30.3**	**50.1**	**28.4**	**52.3**	**20.8**	**26.4**	**21.2**	**9.86**	**24.8**	**6.6**	**0.884**	**15.9**	**0.815**	**1.32**	**14.9**
Manganese	0.3	**3.02**	**2.73**	**2.18**	**1.99**	**5.22**	**1.68**	**2.07**	**1.95**	**1.61**	**3.55**	**5.54**	0.104	**2.46**	**0.347**	0.114	**2.76**

Analyte (mg/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253G								MW-1253H							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	**31.9**	**17**	**44.1**	**16.7**	**18.2**	**43.4**	**11.3**	**6.07**	**7.39**	**7.14**	**6.19**	**13.2**	**5.64**	**5.32**	**7.11**	**8.94**
Manganese	0.3	**3.20**	**1.86**	**1.69**	**1.31**	**2.11**	**5.98**	**1.38**	**0.838**	**1.85**	**1.5**	**1.64**	**1.91**	**1.61**	**1.49**	**2.05**	**2.32**

Analyte (mg/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253I								DUP.*							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02 (1231H)	Aug-02 (1231H)	Nov-02 (1231H)	Mar-03 (1231F)	Jun-03 (1231C)	Sep-03 (1253E)	Dec-03 (1253E)	Mar-04 (1253E)
Iron	0.3	**20.6**	**0.48**	**14.3**	**2.97**	**5.06**	**1.96**	**1.56**	**2.79**	**8.31**	**6.37**	**6.2**	**0.955**	**0.676**	**18.7**	**23.3**	**0.524**
Manganese	0.3	**2.00**	**0.45**	**1.02**	**0.84**	**0.923**	**0.813**	**0.591**	**0.765**	**0.80**	**1.43**	**1.67**	**0.761**	**0.498**	**1.45**	**1.87**	**0.302**

Total Filtered Metals

Analyte (mg/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253E								MW-1253F							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	<0.05	<0.05	<0.05	<0.050	<0.05	<0.05	<0.050	<0.050	<0.05	<0.05	<0.05	<0.05	<0.05	NA	<0.050	<0.050
Manganese	0.3	**0.34**	**0.37**	0.23	0.12	0.23	0.241	0.227	0.286	**0.6**	**0.49**	0.23	0.038	0.165	NA	0.027	0.152

Analyte (mg/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253G								MW-1253H							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.05	NA	NA	<0.05	NA	<0.05	NA	NA
Manganese	0.3	0.29	**0.43**	0.21	0.14	0.128	0.213	0.055	0.055	**1.47**	NA	NA	**1.57**	NA	**1.40**	NA	NA

Analyte (mg/L)	NYSDEC TOGS	Building 1253 Well Network							
		MW-1253I							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	<0.05	NA	<0.05	<0.05	<0.05	0.137	<0.050	<0.050
Manganese	0.3	**0.58**	NA	**0.69**	**0.71**	**0.703**	**0.725**	**0.578**	**0.617**

Bold values indicate compounds that exceeded the NYSDEC TOGS water quality standard.
NA - Not available
NYSDEC TOGs reported here are applicable to groundwater and surface water.

Table 3 (continued). Groundwater and Surface Water Analytical Results - Total Metals - Natural Attenuation Monitoring - Verona Research Facility. Surface Water. 2002-2004 Events.

Total Unfiltered Metals

Analyte (mg/L)	NYSDEC TOGS	*Surface Water* SW-1							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	0.91	0.51	0.42	0.272	**1.39**	**3.70**	**0.370**	0.243
Manganese	0.3	0.13	0.08	0.07	0.022	**0.379**	**1.10**	0.047	<0.020

Analyte (mg/L)	NYSDEC TOGS	*Surface Water* SW-2							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	1.05	0.84	0.53	0.05	**2.10**	**1.98**	**0.493**	0.252
Manganese	0.3	0.27	0.08	0.13	0.02	**0.427**	**0.605**	0.131	<0.020

Analyte (mg/L)	NYSDEC TOGS	*Surface Water* SW-3							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	1.27	**0.82**	**0.46**	**0.229**	**1.75**	**2.55**	**0.508**	**2.55**
Manganese	0.3	0.29	0.16	0.05	<0.020	0.171	**0.750**	0.119	**0.499**

Total Filtered Metals

Analyte (mg/L)	NYSDEC TOGS	*Surface Water* SW-1							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA

Analyte (mg/L)	NYSDEC TOGS	*Surface Water* SW-2							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA

Analyte (mg/L)	NYSDEC TOGS	*Surface Water* SW-3							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Iron	0.3	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA

Bold highlighted indicate the analyte exceeded applicable water quality standards.
NA - Not available - no filtered sample was collected.

Standards taken from the New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 4. Groundwater and Surface Water Analytical Results - Natural Attenuation Parameters - Natural Attenuation Monitoring - Verona Research Facility. Building 1231. 2002-2004 Events.

Analyte (mg/L)	NYSDEC TOGS	Building 1231 Well Network															
		MW-1231C								MW-1231E							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Nitrate	10 [1]	0.03	0.19	0.16	0.22	0.04	0.04	<0.02	0.04	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02
Sulfate	250	25	21	30	24	24	26	21	21	38	25	22	18	16	17	19	26
Carbon Dioxide		44.0	86	87	44.0	49	63	29	32	47.7	64.0	63.0	30	40	53	32	33
Alkalinity, as CaCO3		440	430	435	360	390	500	290	320	400	320	340	320	400	420	320	330
Total Dissolved Solids		495	402	458	512	450	415	282	322	542	395	582	540	448	360	295	328
Ethane		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1
Ethene		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1

Analyte (mg/L)	NYSDEC TOGS	Building 1231 Well Network															
		MW-1231F								MW-1231G							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Nitrate	10 [1]	<0.02	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02
Sulfate	250	42	25	21	24	25	21	19	19	44	77	39	19	15	30	14	11
Carbon Dioxide		33.4	61	46	25	40	42	25	23	41.2	83	82	55	53	97	57	54
Alkalinity, as CaCO3		420	385	380	315	400	420	320	287	480	480	480	480	440	650	450	430
Total Dissolved Solids		490	360	535	450	422	325	252	292	725	720	732	600	540	550	405	410
Ethane		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1
Ethene		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1

Analyte (mg/L)	NYSDEC TOGS	Building 1231 Well Network															
		MW-1231H								MW-1231I							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Nitrate	10 [1]	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	0.09	<0.02	0.03	U	0.04	<0.02	<0.02	0.06	<0.02
Sulfate	250	45	21	10	12	17	17	12	12	198	26	54	31	18	21	30	23
Carbon Dioxide		55.4	72	76	44	53	81	56	52	65.5	107	85	50	71	55	55	55
Alkalinity, as CaCO3		440	390	390	360	420	510	350	330	480	425	472	435	460	440	440	440
Total Dissolved Solids		432	395	542	520	435	420	325	350	722	478	608	608	505	480	415	432
Ethane		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1
Ethene		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1

Standards taken from the New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 4 (continued). Groundwater and Surface Water Analytical Results - Natural Attenuation Parameters - Natural Attenuation Monitoring - Verona Research Facility. Building 1253. 2002-2004 Events.

Analyte (mg/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253E								MW-1253F							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Nitrate	10 [1]	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02
Sulfate	250	28	25	28	32	28	14	20	23	54	43	81	26	23	38	16	16
Carbon Dioxide		88.6	165	75	64	67	124	67	65	94.6	154	178	61	105	148	86	78
Alkalinity, as CaCO3		580	1080	420	435	450	780	420	410	520	660	680	405	590	620	430	390
Total Dissolved Solids		522	525	622	578	548	478	372	415	600	575	852	538	645	540	380	378
Ethane		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1
Ethene		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1

Analyte (mg/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253G								MW-1253H							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Nitrate	10 [1]	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02
Sulfate	250	30	44	27	23	19	25	17	14	54	28	45	31	25	51	32	39
Carbon Dioxide		86.9	122	99	46	61	103	42	42	63.1	60	41	60	71	70	82	82
Alkalinity, as CaCO3		560	500	550	370	500	650	330	330	420	375	240	430	460	640	410	410
Total Dissolved Solids		505	518	612	502	525	472	305	315	542	492	750	668	515	682	435	492
Ethane		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1
Ethene		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1

Analyte (mg/L)	NYSDEC TOGS	Building 1253 Well Network															
		MW-1253I								DUP.*							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	May-02 (1231H)	Aug-02 (1253H)	Nov-02 (1253H)	Mar-03 (1231F)	Jun-03 (1231C)	Sep-03 (1253E)	Dec-03 (1253E)	Mar-04 (1253E)
Nitrate	10 [1]	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	-
Sulfate	250	72	36	40	36	39	35	35	32	45	28	45	23	23	15	19	-
Carbon Dioxide		96.5	122	134	81	79	141	92	86	50.8	55	89	24	50	66	67	-
Alkalinity, as CaCO3		540	525	620	465	440	610	460	430	320	365	400	300	410	440	420	-
Total Dissolved Solids		632	582	732	702	615	587	412	438	412	540	650	480	508	540	388	-
Ethane		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1
Ethene		<10	<1.0	<1.0	<10	<1	<1	<1	<1	<10	<1.0	<1.0	<10	<1	<1	<1	<1

Standards taken from the New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 4 (continued). Groundwater and Surface Water Analytical Results - Natural Attenuation Parameters - Natural Attenuation Monitoring - Verona Research Facility. Building 1253. 2002-2004 Events.

Analyte (mg/L)	NYSDEC TOGS	*Surface Water* SW-1							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Nitrate	10 [1]	0.07	1.1	0.08	0.21	0.42	<0.02	0.08	0.09
Sulfate	250	2.8	67	46	6	5	6	9	11
Carbon Dioxide		13.0	12	46	19.0	26.0	38.0	21.0	15.0
Alkalinity, as CaCO3		130	116	145	75	165	300	130	150
Total Dissolved Solids		238	390	360	208	258	430	190	345
Ethane		<10	<1.0	<1.0	<10	<1	<1	<1	<1
Ethene		<10	<1.0	<1.0	<10	<1	<1	<1	<1

Analyte (mg/L)	NYSDEC TOGS	*Surface Water* SW-2							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Nitrate	10 [1]	0.20	0.09	<0.02	0.23	0.62	<0.02	0.08	0.21
Sulfate	250	2.2	41	44	6	<2.00	24	9	11
Carbon Dioxide		20.2	14.0	34.0	14	20	35	19	18
Alkalinity, as CaCO3		160	140	135	70	125	280	120	140
Total Dissolved Solids		312	332	368	182	260	420	198	352
Ethane		<10	<1.0	<1.0	<10	<1	<1	<1	<1
Ethene		<10	<1.0	<1.0	<10	<1	<1	<1	<1

Analyte (mg/L)	NYSDEC TOGS	*Surface Water* SW-3							
		May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Nitrate	10 [1]	0.07	0.10	0.08	0.21	0.06	<0.02	0.09	<0.02
Sulfate	250	2.2	43	45	6	<2	11	9	11
Carbon Dioxide		18.9	15	43	14	17	43	21	24
Alkalinity, as CaCO3		150	150	355	70	110	340	130	150
Total Dissolved Solids		268	312	135	210	252	410	205	385
Ethane		<10	<1.0	<1.0	<10	<1	<1	<1	<1
Ethene		<10	<1.0	<1.0	<10	<1	<1	<1	<1

Standards taken from the New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).