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JUL 26 2002
Bureau Of Hazardous Site Control
DER

July 23, 2002

Mr. Gerald Rider
Operation & Maintenance Section
Division of Environmental Remediation
New York State Department of Environmental Conservation
50 Wolf Road, Room 260A
Albany, New York 12233-7010

RE: Vatrano Road Site Annual Monitoring Report (NYSDEC Site No. 401036)
CHA Project No. 7899.1001.1102

Dear Mr. Rider:

Enclosed please find one copy of the Annual Monitoring Report for the March 2002 sampling event at the Vatrano Road Site located in Albany, New York. This report has been prepared by Clough Harbour & Associates LLP (CHA) on behalf of The General Electric Company pursuant with the requirements of the approved 1998 Operations, Maintenance and Monitoring Plan. The next annual sampling event is currently scheduled for March/April 2003.

Should you have any questions, please do not hesitate to contact me at (518) 453-2899.

Very truly yours,

CLOUGH, HARBOUR & ASSOCIATES LLP
ENGINEERS, SURVEYORS, PLANNERS
& LANDSCAPE ARCHITECTS

Keith Cowan
Project Geologist

KC
Cc. Eric Hamilton, DEC (w/enclosure)
Cc. Dawn Varacchi, GE (w/enclosure)

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GROUNDWATER MONITORING REPORT
For
The Vatrano Road Site
Albany, New York
(New York State Department of Environmental Conservation
Inactive Hazardous Waste Site Number – 401036)

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1.0 INTRODUCTION

This is the second Annual Monitoring Report, following one previous Annual Report and two series of Semi-Annual Reports, for the former General Electric Vatrano Road Service Center. This report has been prepared, and the associated monitoring performed by Clough, Harbour, & Associates LLP (CHA), Albany, New York. In keeping with the reporting requirements outlined in the December 1998 *Operations, Maintenance and Monitoring Plan,* sampling was to be conducted on a **semi-annual** basis beginning in October of 1998 and continuing for two years, and on an **annual** basis beginning in 2001 and continuing for three years. The plan was approved by the New York State Department of Environmental Conservation (NYSDEC) in a letter dated February 1, 1999.

The location of the subject site is illustrated by Figure 1. A site plan, which illustrates the portion of the property that was remediated in the fall of 1997, and the extent of the groundwater monitoring network, is provided as Figure 2.

The purpose of this report is to describe the laboratory results for the groundwater samples collected from the site's groundwater monitoring wells during the March 2002 annual sampling event, as well as to discuss the data that has been collected since active remediation of the site was completed.

Copies of this report have been forwarded to the following:

Mr. Gerald J. Rider
Operation & Maintenance Section
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7014

and

Mr. Eric Hamilton

RHWRE
NYS Department of Environmental Conservation-Region 4
1150 N. Wescott Road
Schenectady, New York 12306

and

Dawn Varacchi
General Electric, EHS
1400 Computer Drive
Westborough, MA 01581

2.0 SITE DESCRIPTION

As illustrated by Figures 1 and 2, the subject site is located on Vatrano Road in the City of Albany, New York, just east of Central Avenue near the Town of Colonie border. A series of railroad tracks owned and operated by Consolidated Rail forms the southern boundary of the site, with Interstate 90 located further to the south. The site consists of a vacant lot within the Vatrano Commercial Park, and is less than two acres in size. During the spring of 1998, a chain link fence was placed near the rear of the site. The area in front of this fence was paved with asphalt and is currently used as a parking lot. The surrounding area is occupied by commercial and light industrial facilities, with the nearest residential properties located immediately to the north of the Vatrano Road Commercial Park.

2.1 HISTORY

From 1956 through 1981, the General Electric Company leased what is now known as 14 Vatrano Road, the structure immediately to the west of the subject site. This facility was used as an apparatus repair shop by General Electric, where electric motors and transformers containing polychlorinated biphenyls (PCBs) were serviced.

The results of a series of preliminary investigations indicated that the subject site's soils were contaminated with PCBs. As a result, the NYSDEC identified the property as an inactive hazardous waste disposal site that constituted a significant threat to the environment. In 1990, the NYSDEC and General Electric entered into an order on consent, which required General Electric to conduct a Remedial Investigation/Feasibility Study (RI/FS) of the site. This study identified the nature and extent of the contamination on the property, and identified and evaluated remedial alternatives that General Electric could use to meet the goal of the remedial program. The objective of the remedial program was to restore the site to predisposal conditions, to the extent feasible, and authorized by law, while eliminating or mitigating all significant threats to public health and the environment.

In early 1997 the property owner asked General Electric to expedite the remediation of the site. General Electric reevaluated the stabilization/solidification remedy and the contingent remedy (the excavation and off site disposal of contaminated soils) and found that remediation could be completed in 1997 if the contingent remedy (excavation with off-site disposal) was chosen. Since both the selected remedy and the contingent remedy would achieve the cited remedial objective, the NYSDEC approved the implementation of the contingent remedy.

From October through December of 1997, the site was remediated by Four Seasons Environmental under the supervision of Clough, Harbour and Associates, LLP (CHA). A full description of the remediation can be found in the December 1998, *Remediation Engineering Certification Report* prepared by CHA.

2.2 REGIONAL GEOLOGY & HYDROGEOLOGY

The geology of the region consists of Ordovician age bedrock overlain by unconsolidated glacial till and outwash deposits and/or glacial lake deposits. The Ordovician bedrock is comprised predominantly of dark-gray to black argillaceous shales with occasional layers of limestone and localized chert.

Overlying the bedrock are glacial tills, glacial outwash deposits, and lacustrine (lake) deposits. The tills are comprised of poorly sorted fine to coarse grain sized materials and are generally found in lateral moraines which were deposited by advancing glaciers along the sides of the valleys. The outwash deposits are clean, well sorted sands and gravels found generally throughout the valley floor, having been deposited by streams originating from the melting glaciers during glacier retreats. The lacustrine deposits are comprised of silts and clays deposited in lakes formed during the temporary halts in advancements or retreats of the glaciers and are locally known as the Lake Albany Deposits. The glacial deposits are reportedly up to three hundred and fifty feet thick in some areas. All of the glacial deposits are discontinuous laterally and vary in thickness throughout, thereby producing a complex geologic and hydrogeologic setting.

The regional hydrogeologic feature controlling this area is the Hudson River, which is approximately four miles east of the site. Therefore, groundwater flow in the region is thought to be southeastward, toward the Hudson River.

2.3 SITE SOILS & HYDROGEOLOGY

Borings advanced on site encountered two to ten feet of ash and cinder fill over natural soil. The fill contained wood, brick, cinder blocks, asphalt and metal debris in sand, silt, cinders and ash. Natural soil underlying the fill and debris consists of approximately ten feet of silty sand, with 30 feet of clayey silt below the silty sand. Depth to bedrock is unknown.

The Patroon Creek flows easterly and passes the site approximately 200 feet to the south. This feature exerts local hydrologic control over the site's groundwater flow direction, with groundwater flowing to the south toward the Patroon Creek.

The New York State Bedrock Geologic Map shows the site is underlain with the Ordovician Normanskill Formation which has a relatively low permeability resulting in significantly lower water production rates than those associated with the glacial deposits. Permeability within the bedrock is directly related to the extent of fracturing and joints within the rock. Moderate levels of groundwater production may occur in portions of the bedrock where jointing and fracturing are significant. Random beds of limestone within the bedrock have been known to yield significant quantities of water. The extent of bedrock joints and fracturing beneath the Vatrano Road site has not been determined.

2.4 MONITORING WELL NETWORK

There are nine groundwater-monitoring wells associated with the Vatrano Road site monitoring network. Wells MW-6, 7 and 8 are located off site just to the north of Patroon Creek. The remaining

wells (MW- 1,2,3,4,5 & 9) are located on the site. During the remediation of the site conducted in October, November, and December of 1997, the six on site groundwater monitoring wells (MW-1 through MW-5 and MW-9) were removed and replaced with six new wells. The current location of the wells are illustrated by Figure 2. The new wells were installed in similar locations and to similar depths as the original wells, however, some changes were made based on contamination discovered during the remediation. Well data and groundwater elevations from the last seven monitoring events (April 1998, October 1998, April 1999, October 1999, April 2000, March 2001 and March 2002) are presented in Table 1.

2.5 SITE GROUNDWATER FLOW AND AQUIFER CHARACTERISTICS

Based on the latest water level measurements, groundwater flow is determined to be to the south towards Patroon Creek. The hydraulic gradient across the site for the March 2002 event is calculated at approximately 0.02 feet per foot. The gradient steepens to 0.06 feet per foot at the southern end of the site reflecting the influence of Patroon Creek and the local topography. This data indicates that the shallow overburden aquifer likely discharges to Patroon Creek. Figure 3 shows the groundwater contours based on the water levels measured on March 21, 2002 in the wells installed within the shallow aquifer. MW-9 is installed deeper in the aquifer; therefore, the water levels from monitoring well MW-9 were not used in estimating the groundwater contour lines. When compared to adjacent monitoring wells that are installed in the shallow aquifer, historic water level data from MW-9 has indicated a vertically downward component of flow. Although soil boring data at the time monitoring well MW-9 was installed did not necessarily indicate the presence of a confining layer, the difference in water level could be evidence that the water bearing zone or aquifer monitored by MW-9, is confined.

2.6 PREREMEDIATION GROUNDWATER SAMPLING

Two partial rounds of groundwater sampling were conducted by CHA during the summer of 1997 prior to the start of remediation. During a July 8th 1997 sampling event, groundwater-monitoring

wells MW-2, MW-3 and MW-9 were sampled. These wells are located in an area where previous investigations indicated the presence of tetrachloroethene. The wells were analyzed for purgeable halocarbons by EPA Method 601, as well as for Polychlorinated Biphenyls (PCB's) by EPA Method 8080.

On July 10 and 11, 1997 groundwater samples were collected from monitoring wells MW-2, MW-7, MW-8 and MW-9. In addition, surface water samples from Patroon Creek were collected upstream and downstream of the site (Sample Numbers SW-1 and SW-2, respectively). The samples were analyzed for PCB's via EPA method 8080, volatile organics via EPA Method 624, and semi-volatile organics via EPA method 625. The PCB analysis performed on the samples were completed on both unfiltered and filtered duplicate samples (0.45 micron glass) to determine if PCB's were present in the dissolved state, or if they were associated with the sediment in the sample. The results of the filtered versus unfiltered data clearly showed that the PCB were not dissolved in the groundwater. The only organic compound detected during this event was tetrachloroethene at 20 ppb in the sample from well MW-2. Table 2 summarizes the results of all groundwater sampling rounds.

2.7 POST REMEDIATION GROUNDWATER QUALITY CHARACTERIZATION

In April of 1998, a qualified Clough Harbour Scientist sampled the six on-site and three off-site wells for the purpose of establishing baseline post remediation groundwater quality. The samples from this post remediation sampling were analyzed for the U.S. EPA Target Compound List of chemicals including total cyanide. Again, Table 2 includes the summary of results for this sampling event. The results of this baseline post remediation sampling event are discussed in the December, 1998 *Operations, Maintenance, and Monitoring Plan.*

3.0 MARCH 2002 SAMPLING EVENT

3.1 CURRENT SITE CONDITIONS

On March 21, 2002 a team of qualified CHA scientists measured groundwater levels and collected groundwater samples from all nine groundwater monitoring wells. The procedures used as well as the current site conditions are described below.

Prior to collecting groundwater samples, an overall site inspection was completed. Access to monitoring wells MW-5, MW-4, MW-3, MW-2 and MW-9 is gained through a gate located at the extreme eastern end of the Vatrano Road Complex of buildings. The parking area between Buildings 14 and 16 is paved with asphalt. There is also a six foot high chain link fence that runs from the southeast corner of Building 14 to the southwest corner of Building 16. All on-site monitoring wells were in good shape and locked at the time of this sampling event.

The unpaved area located south of buildings 14 and 16 was generally in good condition. There was no evidence of significant erosion noted at the time of this sampling event.

3.2 PROCEDURES

Prior to sampling, the water level in each well was measured to the nearest one hundredth of a foot using an electronic water level meter. The water level meter was thoroughly decontaminated between monitoring wells using accepted protocols. This data was used to develop the groundwater piezometric map presented as Figure 3.

Dedicated plastic Waterra tubing and footvalves are installed in monitoring wells MW-1, MW-6, and MW-9. The use of dedicated tubing prevents cross contamination. Disposable plastic bailers are used in the remaining six wells. Purge water from the wells on site was placed in a properly labeled drum and removed and properly disposed of by Clean Harbors Environmental Services, Inc.

of Glenmont, New York. A copy of the manifest for the disposal of the purge water is included as Appendix B

Approximately three well volumes of water were purged from each well prior to sampling. Field parameters such as turbidity, temperature, pH, conductivity and Eh were measured to determine well stabilization. These parameters were recorded on the field sampling logs included as Appendix E. For QA/QC purposes, a blind duplicate sample (MW-10), and a trip blank were submitted for analysis. The duplicate sample was collected from monitoring well MW-5.

Due to elevated turbidity levels at the time of sample collection during this monitoring event, a portion of the sample collected from wells MW-1, MW-3, MW-6, MW-7, MW-8, and MW-9 were filtered in the field using a 0.45 μm filter and submitted to the laboratory for both total and dissolved metals analyses. During previous sampling events, filtered metals samples were sent to the lab and the results indicated that the metals were bound to the soil particles and not dissolved in the groundwater. As per the Operations and Maintenance Plan for Vatrano Road, filtered mercury and lead groundwater samples are collected whenever the turbidity of the groundwater was greater than 50 NTUs.

The samples were labeled, stored in a cooler with ice to maintain proper temperature, and were delivered to Adirondack Environmental Services of Albany, NY with the appropriate chain of custody documents (Appendix E).

3.3 LABORATORY ANALYSIS AND QUALITY CONTROL

Each groundwater sample was analyzed for the presence of volatile organics via EPA Method 624, PCBs via EPA Method 608, lead via EPA Method 200.7, and Mercury via EPA Method 245.1.

Analytical procedures were performed by Adirondack Environmental Services of Albany, NY, which holds current NYSDEC certifications to perform the required analyses as per the New York State

Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP). All analytical QA/QC and laboratory procedures were consistent with the conditions contained in EPA SW-846.

3.4 LABORATORY ANALYSIS DISCUSSION

Groundwater Summary

A summary of the groundwater quality data (detected parameters only) is presented in Table 2, where it is also compared to data generated from previous monitoring events, and to applicable standards. Shaded values indicate a concentration greater than the New York State Groundwater Standards (6NYCRR 703). The complete data package from the March 2002 sampling event is included as Appendix B. A copy of the chain of custody is included as Appendix E.

As illustrated by Table 2, during this event, PCBs were detected only in wells MW-2, MW-5, and MW-10. It should be noted that MW-10 is the duplicate to MW-5. The average concentration of PCBs after the remediation (April 98-March 01) in well MW-2 (0.97 ug/l) is significantly less than the average before the remediation (August 91-July 97) (4.2 ug/l). MW-5 had no preremediation concentrations of PCBs and after an initial spike of 17 ug/l in April of 1998, it has decreased by over 29 times to a concentration of 0.57 ug/l in April 2000. The results derived from the March 2002 sampling event indicate that, the concentration of PCBs in MW-2 increased slightly (1.24 ug/l) and MW-5 decreased slightly (0.7 ug/l) relative to the previous year. However, both wells continue to exhibit an overall downward trend in PCB levels.

Total lead was detected in the sample taken from MW-3 at a concentration of 0.007 mg/l. This concentration in MW-3 is slightly lower than in March of 2001. However, the filtered groundwater sample from MW-3 was found not to contain dissolved lead at concentrations in excess of method detection levels, thereby indicating that lead is bound with the sediment found in this sample and not dissolved in the water. Lead was not detected in samples from any of the other monitoring wells

during this sampling event. Overall, a decreasing trend has been noted relative to the concentration of lead since post remediation sampling was first initiated in October of 1998. Both total and dissolved mercury have not been detected in samples from any of the monitoring wells since October 1999.

MW-2 remains the monitoring well most impacted by VOCs. During the March 2002 sampling event, concentrations of trichloroethene (37ug/l), tetrachloroethene (220 ug/l), and 1,2-dichloroethene (160 ug/l) were detected in the sample collected from this well. Each of these levels exceed the established standards of 5 ug/l, which has been established for each of these parameters. It should be noted that these parameters show a slight increase from the previous year, however all of these levels are in the range of the previous post remediation sampling events especially when compared to years with similarly decreased water levels. Despite the elevated levels detected this year, an overall trend of decreasing concentration is shown relative to the April of 1998 monitoring event.

The concentration of 1,2-dichloroethene detected in monitoring well MW-3 has decreased back to below the detection limit from 9 ug/l the previous year. Samples from monitoring wells MW-4 and MW-7 were both found to contain no analytical evidence of 1,2 dichloroethene at levels in excess of the method detection limits. These results illustrate a downward trend for this parameter relative to previous monitoring events.

VOCs were not found to be present at levels in excess of method detection limits during this monitoring event.

QA/ QC Sample Summary

A review of the available QA/QC data indicates that the analytical results appear to be acceptable. The laboratory data package did not contain any qualified data including estimated (J values) or rejected (R values) data. There were no parameters detected above the specified method detection

limits in the trip blank sample. The results from the field duplicate (sample MW-10) are comparable with the primary sample collected from monitoring well MW-5.

4.0 SUMMARY

The site was observed to be in good condition during the sampling event. Each of the monitoring wells associated with the site were locked and were not damaged at the time of the March 2002 monitoring event.

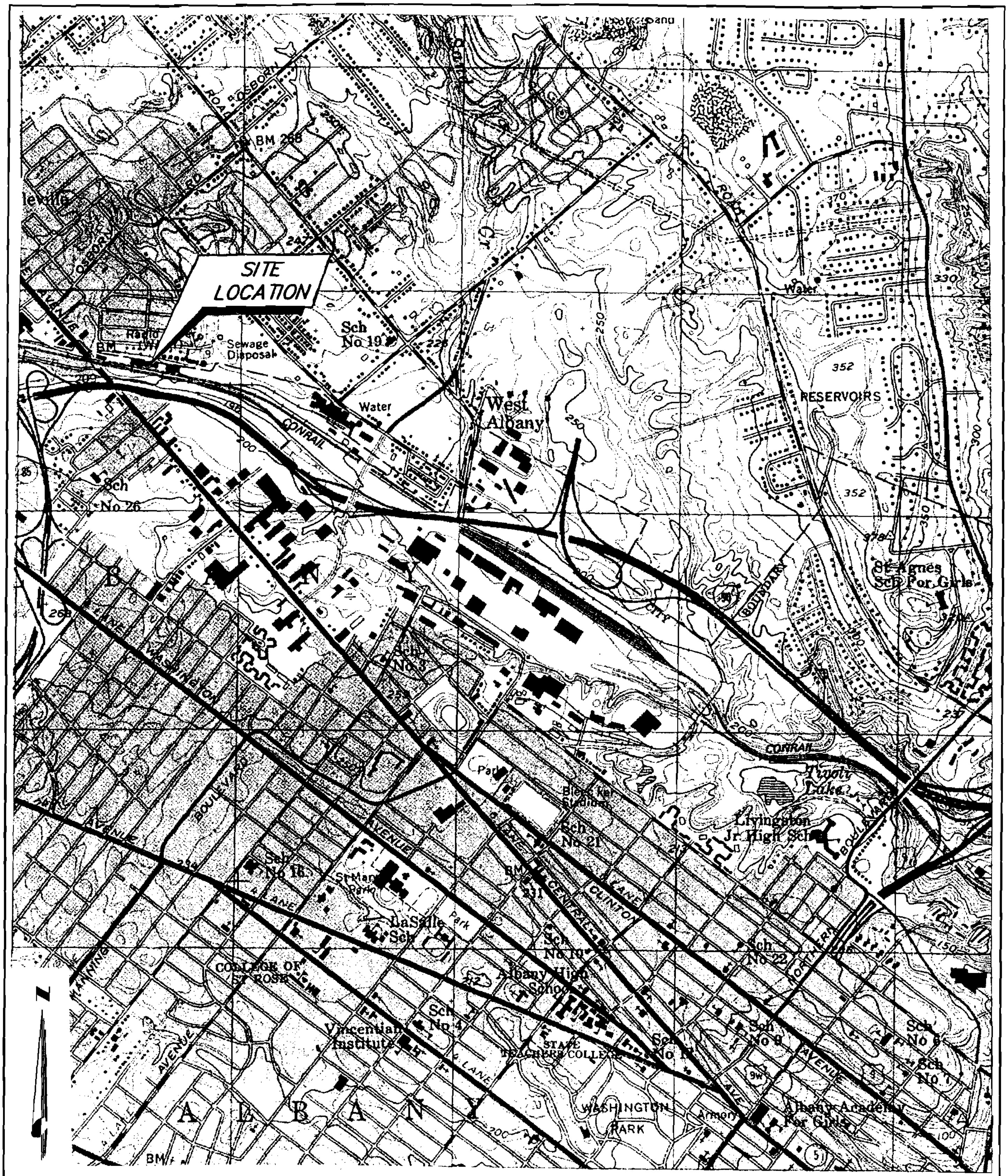
The laboratory results for the groundwater samples collected from the monitoring well network associated with the site in March of 2002 indicate that PCBs were detected in only two (MW-2 and MW-5) of the nine monitoring wells. The concentration of PCBs in well MW-2 has increased slightly relative to the March 2001 sampling event. Both MW-2 and MW-5 currently exceed established groundwater standards. However MW-2 and MW-5 continue to exhibit a decreasing trend relative to the samples collected during the April 1999 sampling event.

Total mercury was not found in any of the nine monitoring wells, and dissolved lead concentrations were not detected in excess of method detection limits. A very low level of total lead was detected in MW-3, but concentrations remain below the groundwater standards.

The VOC levels detected in the groundwater samples in well MW-2 all showed an increase from the March 2001 levels and continue to remain above standards. However, an overall decreasing trend in VOC concentration is evident when results are compared to the October of 1998 sampling event.

This was the second of three annual monitoring event scheduled for the site as specified by the March 1998 Post-closure Monitoring and Maintenance Operations Manual. Over the course of the last five monitoring events, all of the parameters that were originally detected have shown an overall decreasing trend relative to the October 1998 monitoring event.

The site will continue to be monitored, with the third and final annual monitoring event scheduled for March/April 2003.



SOURCE: N.Y.S.D.O.T. 7.5' Topographic
QUADRANGLE: ALBANY, NY

SCALE: 1" = 2000'

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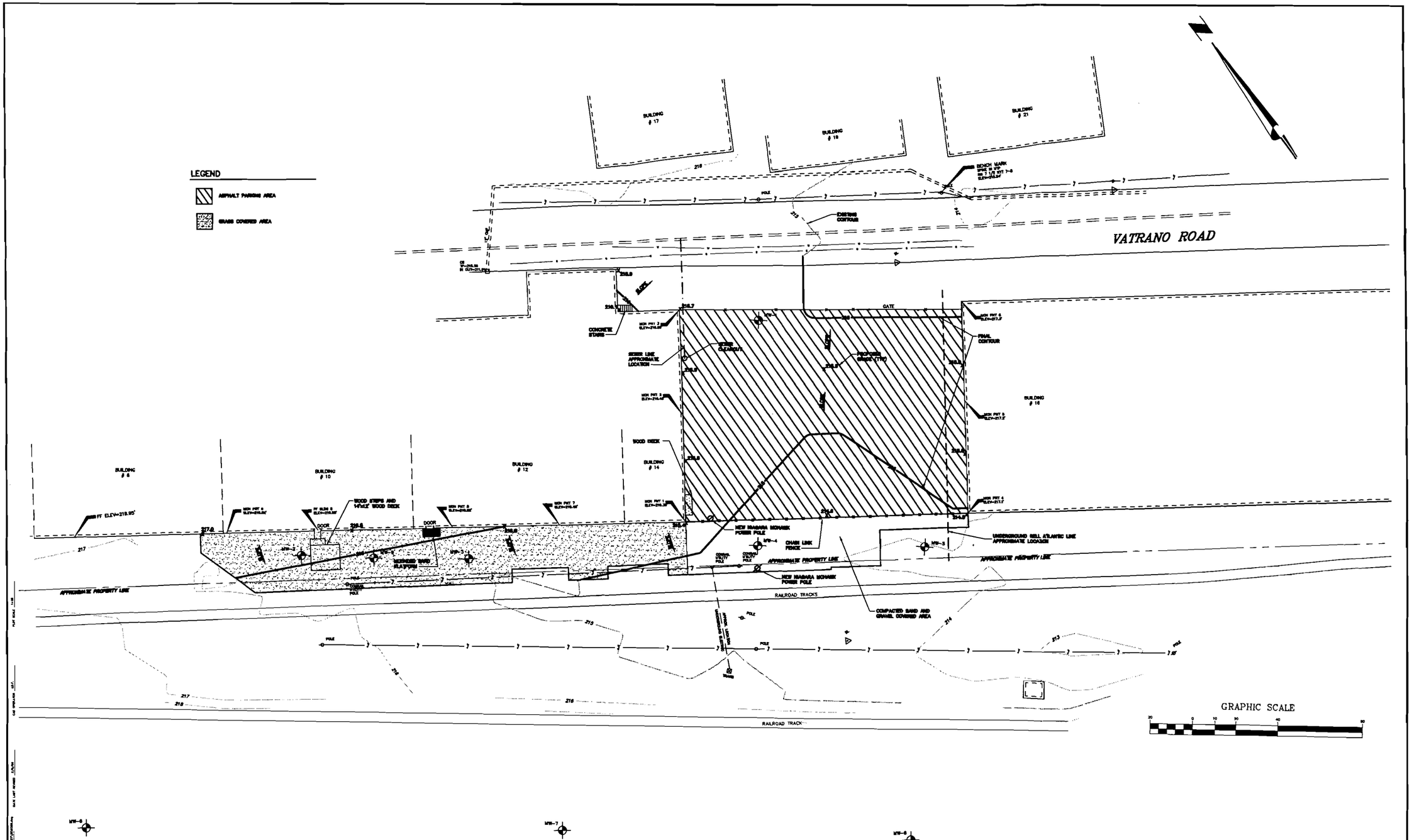
ENGINEERS, SURVEYORS, PLANNERS & LANDSCAPE ARCHITECTS

FIGURE 1
SITE LOCATION MAP

THE VATRANO ROAD SITE
ALBANY, NEW YORK

PROJ. NO. 7899 | DATE: MAY 2002



No.	Revisions	Drawn By:	App'd. By:	Date:

Designed By:	Date:
S.P.	5/99
Drawn By:	Date:
J.O.F.	5/99
Checked By:	Date:
C.H.F.	5/99

CHA
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III WINNERS CIRCLE - ALBANY, NEW YORK - 12205
518-453-4500
CHA Project No. 7899.07.00

REMEDIATION OF THE VATRANO ROAD SITE

NYSDEC ID #401036
ALBANY, NEW YORK

ANNUAL MONITORING REPORT

POST REMEDIATION CONDITIONS

SCALE: AS NOTED | DATE: June, 2001

Drawing No.
FIGURE 2

SHEET 1 OF 1

LEGEND

—202— GROUNDWATER CONTOUR

LIMITS OF SITE REMEDIATION

PLACE FILL TO THE LIMITS INDICATED AND IN ACCORDANCE SPECIFICATION SECTION 02200

BENCH MARK

EXISTING CONTOUR

PROPOSED GRADE (TYP)

SEWER LINE APPROXIMATE LOCATION

SEWER CLEANOUT

CONCRETE STAIRS

WOOD DECK

MOUNDED SAND PLATFORM

NEW NIAGARA MOHAWK POWER POLE

APPROXIMATE PROPERTY LINE

RAILROAD TRACKS

GATE

MW-1 209.81

MW-2 207.47

MW-3 207.56

MW-4 207.26

MW-5 207.20

MW-6 198.72

MW-7 202.50

MW-8 204.77

MW-9

BUILDING # 6

BUILDING # 10

BUILDING # 12

BUILDING # 14

BUILDING # 17

BUILDING # 19

SCALE: 1" = 40'

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ENGINEERS, SURVEYORS, PLANNERS & LANDSCAPE ARCHITECTS

III WINNERS CIRCLE ALBANY, NEW YORK, 12205

DWG. NO. 07899.1001.1102 | DATE APRIL, 2002

MARCH, 200

RE

NY

LEGEND

—202— GROUNDWATER CONTOUR

VATRANO ROAD

LIMITS OF SITE REMEDIATION

EXISTING CONTOUR

PROPOSED GRADE (TYP)

PLACE FILL TO THE LIMITS INDICATED AND IN ACCORDANCE WITH SPECIFICATION SECTION 02200

BENCH MARK

SEWER LINE APPROXIMATE LOCATION

SEWER CLEANOUT

CONCRETE STAIRS

WOOD DECK

MOUNDED SAND PLATFORM

NEW NIAGARA MOHAWK POWER POLE

UNDERGROUND BELL ATLANTIC LINE APPROXIMATE LOCATION

APPROXIMATE PROPERTY LINE

RAILROAD TRACKS

BUILDING # 6

BUILDING # 8

BUILDING # 10

BUILDING # 12

BUILDING # 14

BUILDING # 16

BUILDING # 17

BUILDING # 19

MW-1 209.81

MW-2 207.47

MW-3 207.56

MW-4 207.26

MW-5 207.20

MW-6 198.72

MW-7 202.50

MW-8 204.77

209

208

207

206

205

204

203

202

201

200

SCALE: 1" = 40'

GRAPHIC SCALE

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III WINNERS CIRCLE ALBANY, NEW YORK, 12205

DWG. NO. 07899.1001.1102 | DATE APRIL, 2002

FIGURE 3

MONITORING REPORT

MARCH, 2002 WATER TABLE GROUNDWATER CONTOUR MAP

REMEDIATION OF THE VATRANO ROAD SITE
NYSDEC ID #401036, ALBANY, NEW YORK

File: M:\7899\ACAD\GW402.dwg Scale: 1" = 20' 4/26/02 1:41:59 PM User: 330