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Report 2004

**Report**

**2004 Annual Report  
Remedial Work Element 2  
(Ground water)  
Forest Glen Subdivision Site  
Niagara Falls, New York**

**The Goodyear Tire & Rubber Company**

**March 2005**



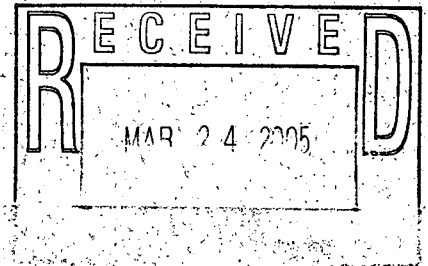
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ENGINEERS, INC.

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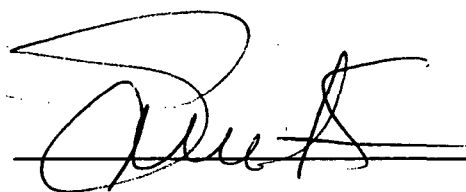


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Forest Glen Subdivision Site  
Niagara Falls, New York

*The Goodyear Tire & Rubber Company*



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Swiatoslav W. Kaczmar, Ph.D.  
Vice President/Chief Scientist

March 2005





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## 1. Introduction

### 1.1. General

This document is the 2004 Annual Report for Remedial Work Element 2 (RWE-2) at the Forest Glen Subdivision Superfund Site in Niagara Falls, New York. The report presents a summary of the construction completed in 2003 to address ground water at the Site. This report also presents a summary of the ground water recovery system operations that occurred during the first 14 months of operation from December 19, 2003 (system startup) through January 31, 2005.

The work was completed in compliance with the requirements of the Statement of Work (SOW) included as part of the Consent Decree in the matter of United States v. The Goodyear Tire & Rubber Company (Goodyear) et. ano., Civil Action No. 960CV-07215 S (H). The Consent Decree was entered in the United States District Court for the Western District of New York on June 7, 2001.

The SOW established two remedial work elements for the Site. Remedial Work Element 1 (RWE-1) was established to address soils and sediments on-site, while Remedial Work Element 2 (RWE-2) was established to address ground water.

As presented in the 1999 Record of Decision (ROD), two remedial action objectives (RAOs) were established for RWE-1, including:

- Prevent direct contact with contaminated soils and sediments
- Mitigate the potential for contaminants to migrate from the soil and sediments into the ground water

The RWE-1 actions completed to address these RAOs are presented in the USEPA-approved Remedial Action Report dated April 2004, and are not discussed further herein.

As for RWE-2, the ROD established two RAOs, including:

- Reduce or eliminate the threat to human health and environment posed by ground water contamination by remediating ground water to maximum contaminant levels (MCLs)
- Reduce or eliminate the potential for migration of contaminants to potential receptors

In general, the RWE-2 remedy includes the following measures to accomplish these RAOs:

- Extraction of impacted ground water from the on-site plume. This is being accomplished using two ground water recovery wells (RW-1 and RW-2) that were constructed on-site.
- Transfer of the extracted ground water via sanitary sewer to the City of Niagara Falls Wastewater Treatment Plant. The discharge point permitted by the Niagara Falls Water Board is at sanitary sewer manhole MH-3B.
- Implementation of a Long-Term Ground water Monitoring Program to assess progress toward the remedial goals.

The work conducted to date to achieve these three RAOs is summarized herein.

## 1.2. Chronology of events

Table 1-1 provides a chronology of benchmark events for RWE-2.

**Table 1-1** *Chronology of benchmark events.*

<b>Remedial Activity</b>	<b>Date Completed</b>
RI/FS	3/98
Supplemental Ground Water FS	3/99
Record of Decision	9/99
Consent Decree	6/01
Ground Water Remedial Design	9/03
Start-Up of Ground Water System	12/03
Final Inspection	6/04
Remedy Declared Operational and Functional by EPA	9/04

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Source: USEPA

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## 1.3. Report organization

Section 2 describes the recovery wells constructed on-site and describes the ground water recovery system including the pumps and controls.

Section 3 presents a summary of ground water recovery system operations and discharge monitoring that occurred from December 19, 2003 (system startup) through January 31, 2005.

Section 4 presents a summary of the quarterly ground water monitoring that occurred during the first 14 months of operation, and provides an assessment of the monitoring well data acquired that included monitored natural attenuation parameters.

Section 5 presents recommendations based on the data and observations described herein.





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## **2. Ground water recovery system components**

### **2.1. General**

This section describes the construction connected with RWE-2 completed at the Site. In particular, this section describes the recovery wells constructed on-site and describes the ground water recovery system including the pumps and controls.

A final inspection of the RWE-2 components was conducted on June 8, 2004. In attendance were the USEPA Remedial Project Manager, Gloria M. Sosa, the Goodyear Project Manager, Jeffery Sussman, and Goodyear's Consultant, Al Farrell, O'Brien & Gere Engineers, Inc. The ground water extraction system pumps were working properly and the shed that houses the ground water system controls was in good condition.

Based on the field observations associated with full-time construction and remedial action oversight, and the pre-final and final construction inspections conducted by USEPA, it has been determined by the USEPA that the construction activities related to the ground water remedial action have been completed. The performed construction activities are consistent with the remedy selected in the ROD. The ground water remedy is now considered by the USEPA to be operational and functional.

### **2.2. Recovery wells**

The RWE-2 remedy included the installation of two ground water recovery wells that were constructed on-site during 2003. The location of each of these wells, one between monitoring well groups MW-4 and MW-5 and the other between monitoring well groups MW-5 and MW-6, is shown on Figure 2.

The two recovery wells were constructed in conformance with the USEPA-approved technical specification for recovery well installation that accompanied an October 30, 2002 letter from O'Brien & Gere. In accordance with the October 30, 2002 letter, the two recovery wells were constructed to a termination depth of approximately 60-ft below the original grade. Noting that the waste embankment placed on the original surface during 2002 ranges in thickness, the recovery well depths were evaluated in the field taking into account the fill thickness above the original surface.

The recovery wells were installed between February 3 and February 13, 2003. SJB Services, Inc. of Buffalo, New York was contracted by Severson Environmental Services, Inc. to provide the drilling services for the recovery well installations.

The two recovery wells were installed using conventional hollow stem auger and air rotary drilling methods. Initially, nominal 14-inch diameter boreholes were advanced using 10¼-inch inside diameter hollow stem augers at each recovery well location for the purpose of setting permanent 8-inch diameter steel surface casings. Each borehole was advanced to the top of bedrock. Bedrock was encountered at approximately 14 feet below grade (fbg) at the RW-1 location and approximately 15 fbg at the RW-2 location. Air rotary drilling methods were then used to advance a nominal 10-inch diameter socket a minimum of three feet into the bedrock at each recovery well location. After advancement of the rock sockets, the 8-inch diameter steel surface casings were installed and grouted in place. The grout was allowed to cure for a minimum of 24 hours prior to further advancement of each recovery well.

Nominal 8-inch diameter open bedrock boreholes were advanced using air rotary drilling methods to terminal depths of approximately 65 fbg and 65.5 fbg at recovery wells RW-1 and RW-2, respectively. As the bedrock drilling progressed at each recovery well, rock chip samples were collected for descriptive purposes.

After installation, recovery wells RW-1 and RW-2 were developed. Development consisted of surging and pumping to remove fine-grained rock cuttings from fractures within each recovery well. During the development process, pH, temperature, specific conductivity, and turbidity readings were measured after the removal of each well volume. Well development continued until each recovery well yielded sediment free water and the pH, temperature, specific conductivity, and turbidity stabilized within 10 percent after removal of three successive well volumes. Approximately 1,400 gallons, representing approximately 10 well volumes, were removed from both RW-1 and RW-2, respectively.

### **2.3. Ground water recovery pumps and controls**

As described in the Final Design Report for RWE-2 dated September 2003, normally ground water is intended to be recovered from the two recovery wells at a flow rate of approximately 10 gpm, for a combined discharge rate of approximately 20 gpm.

Once recovered, the ground water is discharged to the sanitary sewer for treatment by the Publicly Owned Treatment Works (POTW). The discharge occurs at sanitary sewer manhole MH-3B (Figure 2). This

point is identified as outfall MS#1 on the Significant Industrial User (SIU) discharge permit issued by the Niagara Falls Water Board to Goodyear, as agent for the Forest Glen Site Trust. A copy of the discharge permit is included as Exhibit 1.

In addition to the facilities on-site, the RWE-2 ground water system includes monitoring that occurs at Sewer Regulator No. 8 on Royal Avenue near the intersection of 47<sup>th</sup> Street in the City of Niagara Falls. At this location, the water level in the sewer is monitored for the occurrence of an overflow, which may occur during storm/thaw events. The Niagara Falls Water Board requires that discharge of ground water from the Forest Glen site be suspended during overflow events at Sewer Regulator No. 8 since this may result in a bypass of the POTW.

To comply with this requirement, a sensing device was installed in Sewer Regulator No. 8 to detect flow over the overflow weir. When such a condition exists, a transmitter located in an electrical enclosure in the public right-of-way near Regulator No. 8 sends a signal to the recovery well pumps control panel located on the Forest Glen Superfund Site. The signal is being transmitted via radio signal from the location of Regulator No. 8 to the Forest Glen Site.

The controls for the two ground water recovery pumps are located in an electrical enclosure located west of the paved area behind the 38,400 square foot building. The location of the electrical enclosure is shown on Figure 2. The enclosure is divided into two halves, with incoming power and distribution panels located on one side, and pump controls and communication devices located on the other side.

The pump control panel is located on the control side of the enclosure. Each recovery well pump is provided a hand-off-auto selector switch that is normally set to the "auto" position. The switch is set to the "hand" position when testing operation of the pump. Each pump is equipped with run status and fault lights above the respective pump switch.

The control panel also includes:

- A display for each recovery well that indicates the ground water level measured above the sensor in each well. The water level sensor in each well is set at an elevation of 535 ft (msl) and is capable of detecting the water level between an elevation of 535 ft and 605 ft, a 70 ft span.
- A display for the ground water flow from each well. A magnehelic flow sensor for each well is located in the small shed located west of manhole MH-3B.

An auto dialer with data logging capabilities is installed inside the control panel. The auto dialer receives signals from each ground water level sensor and flow meter. The auto dialer also receives a signal from the master telemetry unit within the control panel, which receives a signal when an overflow is occurring at Regulator No. 8. The operator is

able to retrieve data by dialing into the auto dialer from a remote computer.

The completed work also includes an automatic refrigerated sampler, as required by the Niagara Falls Water Board. The sampler is used to collect flow-proportioned samples each workday (Monday through Friday) so that on twenty occasions per year samples can be collected for analyses for Soluble Organic Carbon (SOC) and Total Suspended Solids (TSS) by the Niagara Falls Water Board. Goodyear also uses the sampler to collect quarterly flow-proportioned samples for analyses for total phosphorus, lead, chromium, and nickel as required by the SIU Discharge Permit.

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### **3. Ground water recovery and discharge**

#### **3.1. General**

Construction of the system was completed and operations commenced on December 19, 2003. This section presents a summary of ground water recovery system operations and ground water discharge monitoring that occurred since starting the system, through January 31, 2005. The section documents the volume of ground water recovered and describes the quarterly monitoring. Quarterly monitoring was conducted in accordance with the SIU Discharge Permit issued on November 12, 2003 by the Niagara Falls Water Board. Since startup, the system has operated and the loading to the POTW has been in compliance with the SIU Discharge Permit requirements.

#### **3.2. Ground water volume recovered**

Table 3-1 presents a monthly summary of the volume of ground water recovered from the two wells each month through January 2005. When the system has been operating, ground water has been recovered from each of the two wells at a rate of approximately 9 gpm each.

#### **3.3. Quarterly ground water discharge sampling**

The SIU discharge permit issued by the Niagara Falls Water Board requires that the operator collect periodic effluent samples from the ground water recovery system. The SIU wastewater discharge permit requires that Goodyear perform self-monitoring on a quarterly basis for volatile organic compounds (VOCs), including vinyl chloride (VC), 1,1-dichloroethylene (1,1-DCE), 1,2-dichloroethylene (1,2-DCE, cis and trans), 1,1-dichloroethane (1,1-DCA), trichloroethylene (TCE), tetrachloroethylene (TCA), and 1,1,1-trichloroethane (1,1,1-TCA), and for total phosphorus, lead, chromium, and nickel. The procedures for collecting the samples are outlined in the RWE-2 Ground Water Systems Operations Plan (O'Brien & Gere, April 2004). The results through the first sampling event during 2005, conducted on January 17-18, are summarized below.

The SIU Discharge Permit also requires Goodyear to inspect the condition of the overflow sensor and test operation of the alarm each quarter. Before January 31, 2005, the sensor was inspected and the alarm tested on four occasions; January 7, May 11, August 31, and November 23. On each occasion, the overflow sensor was observed to be in good condition and the alarms functioned properly.

#### **3.3.1. Volatile organic compounds**

During each quarter, four separate grab samples were collected for each recovery well over a period of 24-hours. During the first 14 months of operation, samples were collected on five occasions, as follows: January 13-14, April 19-20, July 19-20, and October 25-26, 2004 and January 17-18, 2005.

On each occasion, the four grab samples collected for each recovery well were combined to create a composite sample for each recovery well. The composite sample for each recovery well was then individually analyzed using USEPA Method 624 by O'Brien & Gere Laboratories, an NYSDEC-certified laboratory.

Using the results of each recovery well sample, the VOC loading to the POTW was calculated based on the volume of ground water recovered from the two respective wells during the report period. To date, five quarterly reports presenting results were provided to the Niagara Falls Water Board, on the following dates: February 18, May 20, August 31, and November 23, 2004 and February 25, 2005. Table 3-2 summarizes the results of the laboratory analyses for each of the five quarters. Table 3-2 also summarizes the calculated average loading to the POTW, based on these results and the volume of ground water recovered during the report period, as presented in the reports to the Niagara Falls Water Board.

#### **3.3.2. Phosphorus, lead, chromium and nickel**

During each quarter, a 24-hour flow-proportioned composite sample of effluent was collected and analyzed for total phosphorous using EPA method 365. The flow-proportioned composite sample was also analyzed for total lead, total chromium, and total nickel using EPA method 200.7. During the first 14 months of operation, samples were collected on five occasions, as follows: January 14, April 20, July 20, and October 26, 2004, and January 18, 2005.

On each occasion, the composite sample did not exhibit phosphorus, lead, chromium, or nickel above the detection limits presented in Table 3-3.

**Table 3-3. Phosphorus, lead, chromium, and nickel detection limits.**

Parameter	Detection limit
Phosphorus	0.1 mg/L
Lead	0.005 mg/L
Chromium	0.01 mg/L
Nickel	0.05 mg/L
Source: O'Brien & Gere Engineers, Inc.	

Since none of these parameters were detected in the samples, the loading to the POTW was calculated using a concentration value equal to half of the reported detection limit. Table 3-2 summarizes the calculated average loading to the POTW, using half the detection limit and the volume of ground water recovered during the five report periods, as presented in the reports to the Niagara Falls Water Board dated February 18, May 20, August 31, and November 23, 2004 and February 25, 2005. For the first five quarters of operation, the average flow-weighted daily VOC loading to the POTW is calculated to be 0.02 lbs, based on the data presented in Table 3-2.

### 3.4. Daily ground water discharge sampling

In addition to the sampling identified above, the SIU wastewater discharge permit requires that 24-hour flow-proportioned samples be collected each workday, except Mondays. On Mondays, a 72-hour flow proportioned sample, started on Friday the week before, is collected.

Up to 5 of the "daily" samples collected each quarter are analyzed by the Niagara Falls Water Board for total suspended solids (TSS) and soluble organic carbon (SOC). These samples are collected solely for billing purposes and the results are not typically provided by the POTW. To date, the Niagara Falls Water Board has submitted samples for analyses on the following dates: 2/10, 2/24, 2/26, 3/8, 3/10, 4/1, 4/20, 5/14, 6/7, 6/15, 7/1, 7/7, 8/31, 9/15, 10/15, 10/19, 10/25, 11/4, 12/6, 2004 and 1/4/05.

Annually, the Water Board also collects a sample for verification. A verification sample was collected from the Forest Glen discharge on October 28, 2004, but the results were not provided to Goodyear.





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## **4. Long-term ground water monitoring**

### **4.1. General**

This Section summarizes the quarterly ground water sampling and annual natural attenuation monitoring that occurred during the first 14 months of operation in accordance with the *Long-Term Ground Water Monitoring Plan* dated September 2003 (revised March 24, 2004). The Section also provides an assessment of the data and observed trends.

### **4.2. Quarterly ground water monitoring**

#### **4.2.1. Ground water level measurements**

Prior to initiating the four ground water monitoring events conducted during 2004, ground water levels were measured in the on-site and off-site monitoring wells. The water levels were measured using an electronic water level probe. The water levels were subsequently converted to ground water elevations. Table 4-1 presents the ground water elevations recorded. Ground water level measurements also were performed on July 23, 2004 independent of the quarterly ground water monitoring events.

Ground water elevation contour maps are presented for shallow bedrock and deep bedrock as Figures 3A, 3B, 4A, 4B, 5A, 5B, 6A, 6B, 7A, and 7B for the February 6, May 17, July 23, August 4, and November 18, 2004 rounds of measurements, respectively. Baseline shallow and deep bedrock ground water contour maps, prepared using data collected on February 14, 2000 are presented as Figures 8A and 8B. The baseline data represents a particular moment in time before construction of the Part 360 cover and ground water recovery system was complete. Cross sections of these five contour map dates are presented as Figures 10-15. Figure 9 presents the locations of the cross sections.

Comparison of the pre-pumping ground water elevation contour map (Figures 8A and 8B), to the 2004 ground water elevation contour maps (Figures 3A, 3B, 4A, 4B, 5A, 5B, 6A, 6B, 7A, and 7B), demonstrate that the ground water recovery system has created an inward hydraulic gradient toward the recovery wells. The cross section figures (Figures 10

through 15) also show the effect the ground water recovery system is having on site ground water elevations.

#### **4.2.2. Ground water quality sampling**

Ground water samples were collected for analyses from seventeen monitoring wells on four occasions during the first year of operation; during the weeks of February 2, May 17, August 4, and November 15, 2004. The monitoring wells sampled include: MW-1S, MW-1D, MW-4S, MW-4D, MW-5S, MW-5D, MW-6S, MW-6D, MW-6DD, MW-7S, MW-7D, MW-7DD(2), MW-8S, MW-8D, MW-8DD, MW-10S, and MW-10D.

In accordance with the Long-Term Monitoring Plan, the wells were sampled using low flow purging and sampling methods. The samples were submitted to O'Brien & Gere Laboratories in Syracuse, New York where they were analyzed for Target Compound List (TCL) VOCs using USEPA methods SW5030B/SW8260B. The VOC results for the four quarters of sampling that occurred since system startup on December 19, 2003 are presented on Table 4-2. Table 4-2 also presents historic ground water data for the wells, collected prior to completing construction of the ground water recovery system and the Part 360 cover on-site.

### **4.3. Annual natural attenuation monitoring**

In addition to analyzing samples for VOCs, samples from the November 15, 2004 quarterly monitoring event were analyzed for the following geochemical and dissolved gases parameters:

- methane, ethane, ethene, sulfide, chloride, alkalinity, total organic carbon, sulfate, nitrate, nitrite, dissolved ferrous iron, total dissolved iron, total dissolved manganese.

These data provide an ongoing assessment of the natural attenuation processes that are occurring at the Site. Tables 4-3 and 4-4 present the geochemical and dissolved gases MNA data, respectively.

The November 2004 data documents consistent MNA conditions at the Site. The MNA parameters are generally within the range of values previously observed at the Site. The only parameter that showed a noticeable change was an increase in sulfate in the deep monitoring wells. The 2004 data continues to support the results of the MNA study presented in the Final Design Report for RWE-2 (O'Brien & Gere, 2003). The data indicate that natural processes are attenuating the shallow and deep bedrock CAH contaminant plumes. The contaminant plumes are attenuating both through physical and biological processes.

While ground water elevations fluctuate when the system is on and off, the overall ground water quality response to the recovery system is consistent with model predictions presented in the Final Design for RWE-2.

#### **4.4. Assessment of data and trends**

The following is a brief summary of observations during the period. While a semi-qualitative description of trends is provided, changes in observed concentrations over the period are subject to a number of factors, including system response as well as variability related to temporal, sampling, and analytical factors.

##### **4.4.1. Ground water elevation trends**

The 2004 ground water elevations reflect the pumping of the ground water recovery system. For 2004, ground water elevations in the wells closest to the two recovery wells show some of the lowest ground water elevations of their record, and noticeably lower elevations in comparison to background wells such as MW-1 and MW-11. The cross section figures (Figures 10 through 15) also show these fluctuations in ground water elevations. These data suggest that the recovery system cone of influence extends to MW-1 and possibly to MW-11. For MW-1 this is consistent with the results observed during the February 2003 aquifer tests, when MW-1 showed response to pumping.

Figures 16A and 16B present trend graphs of the Site ground water elevations for the shallow and deep wells. The trend graphs show that the Site ground water elevations generally fluctuate in a similar manner across the Site. The trend plots suggest that ground water depression due to the recovery system is comparable to the drawdown predicted by the ground water modeling presented in the Final Design Report for RWE-2 (O'Brien & Gere, 2003). The model predicted drawdowns for the central portion of the site range from 0.5 to about 2 ft. The trend plots based on field data suggest that, relative to MW-11 nest, the ground water elevations in many of the wells are lower by 1 to 2 feet. The model simulations were based on an average combined ground water recovery rate of 20 gpm.

##### **4.4.2. Regulator No. 8 activity**

As described in Section 2.3, the RWE-2 ground water system includes monitoring that occurs at Sewer Regulator No. 8 on Royal Avenue. At this location, the water level is monitored for the occurrence of an overflow, which may occur during and for a period after storm/thaw events. The Niagara Falls Water Board requires that discharge of ground water from the Forest Glen site be suspended during overflow events at Regulator No. 8 since this may result in a bypass of the POTW. Appendix B presents a summary of the periods during which ground

water recovery operations were suspended since startup through January 31, 2005. Appendix B also includes a summary of periods when the system operated at reduced capacity for maintenance and repair.

The ground water recovery system may have been off-line due to Regulator No. 8 or for maintenance/repair on a number of occasions, as summarized below.

- February 6: During this event, the ground water recovery system was operating, with recovery well RW-1 pumping at approximately 10 gpm and RW-2 pumping at approximately 9.6 gpm. Also, the system had been operating continuously for 18 days prior to when the ground water elevations were measured.
- May 17: On this day the ground water recovery system was operating intermittently, with recovery well RW-1 pumping at approximately 10 gpm and RW-2 pumping at approximately 10 gpm between 9:12 AM and 1:00 PM. Prior to May 17, the system had been operating continuously for 6 days, since May 11. Before May 11 the pumps were off due to an overflow indication at Regulator No. 8 for 14 days.
- July 23: During this event, the ground water recovery system was operating, with recovery well RW-1 pumping at 8.8 gpm and RW-2 pumping at 9.6 gpm. Before July 23, the pumps were off due to an overflow indication at Regulator No. 8 for approximately 2 days. However, before July 20 the system had been operating continuously for 57 days, since May 24.
- August 4: During this event, the ground water recovery system was not operating. The ground water recovery pumps were deactivated on August 3 as a precaution, since on August 1 the pump in RW-1 went off-line and failed to restart in "hand" mode. Prior to August 1, recovery well RW-1 was pumping at approximately 8.8 gpm and RW-2 was pumping at approximately 9.6 gpm. Also, the system had been operating nearly continuously for 66 days, except during a period between July 20 and July 22.
- November 18: During this event, the ground water recovery system was not operating. The ground water recovery pumps were deactivated by the automatic controls due to an overflow condition at Regulator No. 8. During November 16 and 17, the ground water recovery well pumps operated intermittently. The system did recover ground water without interruption between November 11 and November 15. Prior to the ground water sampling event, both recovery wells were pumping at approximately 9 gpm each.

About 6,751,800 gallons of ground water were recovered during 2004. This amounts to a time-weighted average yield of 12.8 gpm for the recovery system. This level and frequency of ground water recovery was sufficient to provide the drawdown and inward hydraulic gradient

depicted on Figures 3A, 3B, 4A, 4B, 5A, 5B, 6A, 6B, 7A and 7B. However, Goodyear recognizes that the uncertainty of conditions at Sewer Regulator No. 8 is not favorable to long term performance. Therefore, Goodyear has proposed to install a low profile air stripper with direct discharge of treated water to East Gill Creek.

#### 4.4.3. Water quality trends

The November 2004 ground water quality data document six monitoring wells with concentrations above New York (NY) State Class-A Ground Water Standards (MW-5S, MW-5D, MW-6S, MW-6D, MW-7D, and MW-8D). The other site monitoring wells are currently below standards. Plots showing concentration trends of TCE, cis-1,2-DCE, and vinyl chloride at monitoring well nests MW-4, MW-5, MW-6, MW-7, and MW-8 are presented as Figures 17 through Figure 21, respectively.

Monitoring well MW-4D, which is currently below NY State Class-A Ground Water Standards, had concentrations of cis-1,2-DCE and VC above standards before remediation was initiated (Figure 17). The remediation appears to have resulted in this well meeting NY State Class-A Ground Water Standards. In addition, concentrations of cis-1,2-DCE and VC in MW-8S appear to have been reduced to below standards following the initiation of remediation (Figure 21).

Of the monitoring wells that are currently above NY State Class GA Ground Water Standards, the deep wells have shown declines in concentrations since initiating remediation. The trend plots for monitoring wells MW-5D, MW-6D, MW-7D, and MW-8D (Figures 18, 19, 20, and 21) show a general decline in concentrations during 2004 and/or the lowest concentrations to date. The trends for MW-5D and MW-7D show the influence of pumping and the Part 360 cap on concentrations the most clearly. The concentration declines in these deep monitoring wells are generally consistent or better than was predicted by the ground water modeling presented in the Final Design Report for RWE-2 (O'Brien & Gere, 2003). Based on the model simulations, concentrations were generally expected to decline by about half *circa* 500 days from the initiation of ground water recovery and completion of the cap. The documented decline in concentrations in these wells since remediation was initiated is consistent with the model simulations.

Shallow monitoring wells MW-5S and MW-6S have shown mixed results due to the remediation. MW-5S (Figure 18) shows a general declining trend for cis-1,2-DCE and VC since initiating remediation, but TCE concentrations appear to have increased some. For MW-5S the increase in parent compound TCE could be expected since this well is believed to be close to the original source and the increased ground water flow velocities would limit the time for the parent compound to degrade. Less degradation would also reduce the concentrations of the daughter products cis-1,2-DCE and VC.

Monitoring well MW-6S (Figure 19) showed significantly increased concentrations for cis-1,2-DCE and a gradual increase for VC, but no increase for TCE. These trends are not inconsistent with an effective recovery system. The ground water recovery system has changed ground water flow paths at the site and as such contaminant concentrations are expected to change at individual monitoring wells. Some wells may experience an increase in concentrations for some time following the initiation of pumping. This appears to be case at MW-6S. The ground water modeling presented in the Final Design Report for RWE-2 (O'Brien & Gere, 2003) predicted that concentrations of these compounds would increase in MW-6S during the first year of ground water recovery.

Review of the quarterly effluent data reveals that the concentration of VOCs in ground water recovered from RW-1 was higher than the concentrations detected in ground water recovered from RW-2, except during the fourth quarterly event when the concentrations in the two wells were equivalent to one another. In general, the concentration of contaminants in RW-2 has remained nearly constant, except for 1,2-dichloroethylene and 1,1,1-trichloroethane which exhibited slightly elevated levels during the third and fourth quarterly events. Comparatively, the concentrations in RW-1 exhibited greater variability during 2004; but comparison of data from January 2005 to data collected during January 2004 indicates that the concentrations are unchanged or increased.

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## 5. Recommendations

No modification of the annual sampling program described in the *Long-Term Ground Water Monitoring Plan* dated September 2003 is recommended at present. As in 2004, ground water samples will be collected quarterly during 2005. On each occasion, the ground water samples will be analyzed for TCL VOCs. During the fourth quarter of 2005, *circa* November, the ground water samples will again be analyzed for natural attenuation parameters. After 2005, ground water samples will be collected on a semi-annual basis for a period of three years (2006 through 2008). On each occasion, the ground water samples will be analyzed for TCL VOCs, and *circa* November each of these years samples will be analyzed for natural attenuation parameters.

Goodyear does recommend, however, that the ground water treatment system be changed during 2005. The proposed change includes using a low-profile airstripper to treat and discharge the ground water pumped from the two on-site extraction wells. By doing so, Goodyear will be able to eliminate uncertainty regarding the frequency and duration of shutdowns caused by sanitary Sewer Regulator No. 8. Treated ground water from the air stripper would be discharged directly to East Gill Creek in compliance with discharge limits established by the NYSDEC, rather than the sanitary sewer, to allow near continuous operation of the recovery well pumps. As applicable, the system performance would be monitored in accordance with the discharge permit in effect at the time.





TABLE 3-1 RECOVERED GROUNDWATER VOLUMES

2004 ANNUAL REPORT  
REMEDIAL WORK ELEMENT 2 (GROUNDWATER)

FOREST GLEN SUBDIVISION SITE  
NIAGARA FALLS, NEW YORK

Period	Recovered groundwater volumes			% uptime
	RW-1 (gals)	RW-2 (gals)	Total (gals)	
Dec 03 - Jan 04	446,840	498,716	945,556	Note 1
Feb 04	178,926	190,510	369,436	50%
Mar 04	304,920	405,015	709,935	95%
Apr 04	261,591	264,902	526,492	63%
May 04	237,009	240,003	477,012	54%
Jun 04	399,775	420,613	820,389	100%
Jul 04	378,730	408,814	787,544	94%
Aug 04	41,426	140,484	181,910	Note 2
Sep 04	229,473	45,474	274,947	Note 3
Oct 04	345,324	213,985	559,309	Note 4
Nov 04	370,698	361,082	731,780	93%
Dec 04	180,924	186,555	367,479	44%
Jan 05	198,852	205,643	404,495	53%
Total to date =	3,574,488	3,581,796	7,156,284	

## Notes:

1. Not calculated for the startup and testing period.
2. RW-1 went off-line for reasons unknown on August 1. As a precautionary measure, RW-2 was also taken off-line on August 2 since an inspection revealed thermal damage to motor starters. The motor starters were replaced on August 23 and the system brought back on-line. However, the RW-1 pump was observed to be drawing excessive amperage at 10 gpm and was shutdown as a precaution. On August 24, the pump for RW-1 was restarted, but throttled to 4 gpm to reduce amperage drawn.
3. The groundwater recovery system continued to experience problems associated with apparent failure of one of the two pumps. On 9/3/04 the two pumps were swapped to determine if the problem transferred from one well to the other with exchange of the pumps. The swap of pumps revealed that the amperage problem was resulting from the pump. The failed pump (RW-2) was removed and returned to the manufacturer on 9/16/04. RW-1 continued to operate at a rate of approximately 9 gpm.
4. A new pump was installed inside RW-2 on 10/12/04. Since then, both wells have been on-line and recovering groundwater, except during periods when Regulator No. 8 caused the system to shutdown due to sewer overflow.

TABLE 3-2 SIU DISCHARGE PERMIT SELF-MONITORING SUMMARY

2004 ANNUAL REPORT  
REMEDIAL WORK ELEMENT 2 (GROUNDWATER)

FOREST GLEN SUBDIVISION SITE  
NIAGARA FALLS, NEW YORK

Parameter	Quarter ending February 2004			Quarter ending May 2004			Quarter ending August 2004			Quarter ending November 2004			Quarter ending February 2005		
	RW-1 (ug/L)	RW-2 (ug/L)	Loading (lbs/day)	RW-1 (ug/L)	RW-2 (ug/L)	Loading (lbs/day)	RW-1 (ug/L)	RW-2 (ug/L)	Loading (lbs/day)	RW-1 (ug/L)	RW-2 (ug/L)	Loading (lbs/day)	RW-1 (ug/L)	RW-2 (ug/L)	Loading (lbs/day)
Vinyl chloride	34	11	0.0033	34	12	0.0033	15	16	0.0030	10	13	0.0010	40	10	0.0034
1,1-dichloroethylene	1	ND	0.0001	ND	ND	0.0001	ND	ND	0.0002	ND	ND	0.0000	ND	ND	0.0004
1,2-dichloroethylene	160	13.5	0.0126	220	12	0.0163	40	20	0.0057	16	27	0.0019	320	10	0.0227
1,1-dichloroethane	10	3.8	0.0010	13	4.1	0.0012	7.7	4.2	0.0011	7.8	3.7	0.0006	14	3.5	0.0012
Trichloroethylene	11	ND	0.0008	12	ND	0.0009	4.6	ND	0.0005	ND	ND	0.0000	31	ND	0.0022
Tetrachloroethylene	1.9	1.3	0.0002	5.3	2.1	0.0005	ND	ND	0.0002	ND	ND	0.0000	ND	2.4	0.0005
1,1,1-trichloroethane	20	1.7	0.0016	19	1.4	0.0014	30	5.5	0.0033	6.6	3.7	0.0005	24	1.6	0.0018
Phosphorus	ND		0.0081	ND		0.0081	ND		0.0081	ND		0.0047	ND		0.0069
Lead	ND		0.0004	ND		0.0004	ND		0.0004	ND		0.0002	ND		0.0003
Chromium	ND		0.0008	ND		0.0008	ND		0.0008	ND		0.0005	ND		0.0007
Nickel	ND		0.0041	ND		0.0041	ND		0.0041	ND		0.0023	ND		0.0034

Notes: Average VOC loading to the POTW presented above was calculated based on the actual volume of water recovered from each well, and the concentration of the parameter detected in the composite sample representing the particular recovery well.  
Average metal loading to the POTW presented above was calculated based on the actual volume of water recovered from the system, and the concentration of the parameter detected in the system composite, following commingling of the recovery well flows.  
In cases where the parameter was not detected, half the detection value reported was used to calculate the average daily loading.

**TABLE 4-1 - GROUND WATER ELEVATIONS**  
**2004 ANNUAL REPORT**  
**REMEDIAL WORK ELEMENT 2 (GROUND WATER)**

**FOREST GLEN SUBDIVISION SITE**  
**NIAGARA FALLS, NEW YORK**

Well I.D.	Top of Casing Elevation (ft MSL)	Screened Interval Elevation (ft MSL)	2/14/2000		2/6/2004		5/17/2004		7/23/2004		8/4/2004		11/18/2004	
			DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE
MW-1S	598.15	568.5 - 578.5	16.67	581.48	19.23	578.92	16.61	581.54	18.58	579.57	15.65	582.50	20.77	577.38
MW-1D	598.05	546.7 - 567.5	16.32	581.73	19.03	579.02	16.44	581.61	18.60	579.45	15.56	582.49	20.80	577.25
MW-2S	596.95	567.1 - 577.1	13.47	583.48										
	600.11				24.85	575.26	21.85	578.26	24.53	575.58	20.36	579.75	26.50	573.61
MW-2D	596.98	535.4 - 559.8	15.25	581.73										
	600.21				24.46	575.75	22.12	578.09	24.57	575.64	20.31	579.90	26.45	573.76
MW-3S	597.43	567.3 - 577.3	13.53	583.90	ABND									
MW-3D	597.10	545.1 - 564.1	14.22	582.88	ABND									
MW-4S	595.34	573.6 - 583.6	12.05	583.29										
	593.96				18.05	575.91	15.35	578.61	17.74	576.22	14.53	579.43	19.45	574.51
MW-4D	595.44	534.1 - 563.4	13.50	581.94										
	594.11				19.48	574.63	16.93	577.18	19.37	574.74	15.00	579.11	21.45	572.66
MW-5S	594.25	566.2 - 576.2	12.01	582.24										
	592.85				18.60	574.25	16.21	576.64	18.23	574.62	14.10	578.75	20.48	572.37
MW-5D	594.34	542.7 - 565.4	12.46	581.88										
	593.68				19.29	574.39	16.82	576.86	19.10	574.58	14.87	578.81	21.37	572.31
MW-6S	597.11	568.2 - 578.2	11.56	585.55	21.35	575.76	17.69	579.42	21.03	576.08	16.26	580.85	22.42	574.69
MW-6D	596.73	540.3 - 567.8	14.81	581.92	22.19	574.54	19.93	576.80	22.22	574.51	17.25	579.48	24.43	572.30
MW-6DD	596.02		NI		24.22	571.80	23.55	572.47	25.32	570.70	23.08	572.94	26.93	569.09
MW-7S	596.28	566.3 - 576.3	11.45	584.83	19.93	576.35	17.19	579.09	19.69	576.59	15.88	580.40	21.42	574.86
MW-7D	596.28	543.2 - 563.2	15.42	580.86	21.56	574.72	19.28	577.00	21.34	574.94	16.95	579.33	23.47	572.81
MW-7DD			NI		22.48		20.80		24.10		19.50		24.68	
MW-8S	596.67	564.4 - 574.4	13.70	582.97	16.20	580.47	14.40	582.27	16.41	580.26	13.97	582.70	17.40	579.27
MW-8D	596.86	542.8 - 561.9	16.93	579.93	21.82	575.04	19.80	577.06	21.97	574.89	17.70	579.16	23.84	573.02
MW-8DD			NI		22.85		21.72		23.96		20.55		25.72	
MW-9S	595.22	568.2 - 578.2	11.51	583.71										
	600.98				25.65	575.33	22.18	578.80	25.27	575.71	20.88	580.10	27.34	573.64
MW-9D	595.31	538.5 - 567.5	13.22	582.09										
	600.77				25.20	575.57	22.74	578.03	24.96	575.81	21.02	579.75	27.17	573.60
MW-10S	595.52	563.7 - 573.7	14.70	580.82	19.02	576.50	16.81	578.71	19.00	576.52	15.18	580.34	20.78	574.74
MW-10D	594.96	543.4 - 563.4	14.53	580.43	18.29	576.67	16.22	578.74	18.28	576.70	14.44	580.52	20.16	574.80
MW-11S	600.54	585.3 - 595.3	12.87	587.67	16.20	584.34	14.24	586.30	16.23	584.31	13.50	587.04	17.90	582.64
MW-11D	600.20	549.2 - 559.2	10.32	589.88	12.18	588.02	10.60	589.60	12.70	587.50	10.20	590.00	13.86	586.34
MW-12S	600.24	582.1 - 592.1	14.71	585.53	19.50	580.74	17.38	582.86	19.33	580.91	16.32	583.92	21.16	579.08
MW-12D	600.36	546.7 - 565.7	14.58	585.78	19.75	580.61	17.50	582.86	19.56	580.80	16.52	583.84	21.40	578.96
MW-13S	597.75	566.8 - 576.8	13.09	584.66	18.05	579.70	15.87	581.88	17.79	579.96	14.75	583.00	19.55	578.20
MW-13D	597.87	545.6 - 565.1	13.46	584.41	18.56	579.31	16.56	581.31	18.03	579.84	15.01	582.86	20.07	577.80
MW-14S	597.18	565.1 - 575.1	15.00	582.18	21.75	575.43	19.32	577.86	21.35	575.83	17.71	579.47	23.67	573.51
MW-14D	596.38	544.7 - 564.7	14.58	581.80	21.74	574.64	19.56	576.82	21.60	574.78	17.30	579.08	23.08	573.30
MW-15S	599.70	566.4 - 576.4	14.03	585.67	18.51	581.19	16.43	583.27	18.34	581.36	15.38	584.32	20.17	579.53
MW-15D	598.37	547.0 - 563.0	13.20	585.17	17.93	580.44	15.94	582.43	17.96	580.41	14.80	583.57	19.65	578.72
RW-1	593.60	526.5 - 574.5	NI											
	593.67					573.90		576.60		574.00		578.70	21.65	572.02
RW-2	591.79	523.8 - 570.8	NI											
	591.80					575.60		577.80		575.50		579.90	19.79	572.01

NOTES: MSL - Mean Sea Level  
DTW - Depth to Water  
GWE - Ground Water Elevation  
NM - Not Measured  
NI - Not Installed  
Bold - Measure taken from PVC cap (Can't remove PVC)



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-01D	MW-01D	MW-01D	MW-01D	MW-01D	MW-01D
Sample Date	GW Standards ug/L	09/11/95	11/13/95	07/22/97	09/15/97	02/14/00 N9372 ug/L	08/13/01 T0226 ug/L
Units		ug/L	ug/L	ug/L	ug/L		
Compound							
1,1,1-Trichloroethane	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1-Dichloroethene	5*	10 U	10 U	1 U	1 U	0.1 J	0.5 U
1,2-Dichloroethane	0.6	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	10 U	10 U	1 U	1 U	---	---
1,2-Dichloropropane	1	10 U	10 U	1 U	1 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 UJ	10 U	4 U	4 U	10 U	10 U
2-Hexanone	NS	10 UJ	10 U	2 U	2 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	10 U	10 U	2 U	2 U	5 U	5 U
Acetone	50	12 J	10 UJ	2 U	2 U	10 U	10 U
Benzene	1	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Bromodichloromethane	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Bromoform	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Bromomethane	5*	2 J	10 U	2 U	2 U	1 U	1 UJ
Carbon disulfide	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Carbon tetrachloride	5	10 U	10 U	1 U	1 U	0.5 U	0.5 UJ
Chlorobenzene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Chloroethane	5*	10 U	10 U	1 U	1 U	1 U	1 UJ
Chloroform	7	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Chloromethane	NS	10 UJ	10 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Ethylbenzene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Methylene chloride	5*	13 UJ	10 U	1 U	1 U	2 U	2 U
Styrene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Tetrachloroethene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Toluene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Trichloroethene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Vinyl chloride	2	10 U	10 U	1 U	1 U	1 U	1 U
Xylene (total)	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	---	---	---	---	0.5 U	0.5 U
cis-1,3-Dichloropropylene	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	---	---	---	---	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA GW Standards ug/L	MW-01D 11/26/01 T5931 ug/L	MW-01D 02/25/02 U1080 ug/L	MW-01D 05/13/02 U6325 ug/L	MW-01D 02/03/04 B5527 ug/L	MW-01D 05/18/04 E0073 ug/L	MW-01D 08/05/04 E4095 ug/L
Compound	Units						
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 UJ	5 U	5 U	5 U
Acetone	50	10 UJ	10 U	10 U	10 U	1 U	10 U
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 UJ	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	2	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	0.2 J	0.1 J	0.1 J	0.5 U	0.1 J	0.5 U
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-01D	MW-01S	MW-01S	MW-01S	MW-01S	MW-01S
Sample Date	GW Standards ug/L	11/16/04 E9519 ug/L	09/11/95 ug/L	11/13/95 ug/L	07/22/97 ug/L	09/15/97 ug/L	02/14/00 N9373 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	10 U	10 U	1 U	1 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	10 U	10 U	1 U	1 U	0.5 U
1,1-Dichloroethane	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
1,1-Dichloroethene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	10 U	10 U	1 U	1 U	0.5 U
1,2-Dichloroethene	5*	---	10 U	10 U	1 U	1 U	---
1,2-Dichloropropane	1	0.5 U	10 U	10 U	1 U	1 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 UJ	10 UJ	4 U	4 U	10 U
2-Hexanone	NS	5 U	10 UJ	10 UJ	2 U	2 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	10 U	10 UJ	2 U	2 U	5 U
Acetone	50	10 U	10 UJ	10 UJ	2 U	2 U	10 U
Benzene	1	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Bromodichloromethane	NS	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Bromoform	NS	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Bromomethane	5*	1 U	1 U	10 U	2 U	2 U	1 U
Carbon disulfide	NS	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Carbon tetrachloride	5	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Chlorobenzene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Chloroethane	5*	1 U	10 U	10 UJ	1 U	1 U	1 U
Chloroform	7	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Chloromethane	NS	1 U	10 UJ	10 UJ	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Ethylbenzene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Methylene chloride	5*	2 U	12 UJ	10 U	1 U	1 U	2 U
Styrene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Tetrachloroethene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Toluene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Trichloroethene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Vinyl chloride	2	1 U	10 U	10 UJ	1 U	1 U	1 U
Xylene (total)	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
cis-1,2-Dichloroethene	5*	0.5 U	---	---	---	---	0.5 U
cis-1,3-Dichloropropylene	NS	0.5 U	10 U	10 U	1 U	1 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	---	---	---	---	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	10 U	10 U	1 U	1 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-01S	MW-01S	MW-01S	MW-01S	MW-01S	MW-01S
Sample Date	GW Standards ug/L	08/13/01 T0225 ug/L	11/26/01 T5929 ug/L	02/25/02 U1079 ug/L	05/13/02 U6324 ug/L	02/03/04 B5529 ug/L	05/18/04 E0072 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.2 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	5 J	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	1 J	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 UJ	5 U	5 U
Acetone	50	14 U	10 UJ	10 U	10 U	10 U	1 J
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 UJ	1 U	1 U	1 UJ	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 UJ	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	0.3 J	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	2	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.2 J	0.5 U	0.5 U
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-01S	MW-01S	MW-04D	MW-04D	MW-04D	MW-04D
Sample Date	GW Standards	08/05/04	11/16/04	09/14/95	11/13/95	07/24/97	09/17/97
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	10 U	10 U	1 U	0.3 J
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	10 U	10 U	1 U	1 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	10 U	10 U	1 U	1 U
1,1-Dichloroethane	5*	0.5 U	0.5 U	3 J	2 J	3.2	3.5
1,1-Dichloroethene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	10 U	10 U	1 U	1 U
1,2-Dichloroethene	5*	---	---	10 U	10 U	1.1	1.5
1,2-Dichloropropane	1	0.5 U	0.5 U	10 U	10 U	1 U	1 U
2-Butanone (MEK)	NS	10 U	10 U	10 UJ	10 UJ	4 U	4 U
2-Hexanone	NS	5 U	5 U	10 UJ	10 UJ	2 U	2 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	10 U	10 UJ	2 U	2 U
Acetone	50	1 J	10 U	10 UJ	10 UJ	2 U	2 U
Benzene	1	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Bromodichloromethane	NS	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Bromoform	NS	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Bromomethane	5*	1 U	1 U	10 U	10 U	2 U	2 U
Carbon disulfide	NS	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Carbon tetrachloride	5	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Chlorobenzene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Chloroethane	5*	1 U	1 U	10 U	10 UJ	1 U	1 U
Chloroform	7	0.5 U	0.5 U	10 UJ	10 U	1 U	1 U
Chloromethane	NS	1 U	1 U	10 UJ	10 UJ	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Ethylbenzene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Methylene chloride	5*	2 U	2 U	10 U	10 U	1 U	1 U
Styrene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Tetrachloroethene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Toluene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Trichloroethene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Vinyl chloride	2	1 U	1 U	10 U	10 UJ	[2.4]	[3.1]
Xylene (total)	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
cis-1,2-Dichloroethene	5*	0.5 U	0.5 U	---	---	---	---
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	10 U	10 U	1 U	1 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	---	---	---	---
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	10 U	10 U	1 U	1 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-04D	MW-04D	MW-04D	MW-04D	MW-04D	MW-04D
Sample Date	GW Standards	02/17/00	08/15/01	11/29/01	02/28/02	05/14/02	07/30/03
Units	ug/L	N9521 ug/L	T0334 ug/L	T6135 ug/L	U1278 ug/L	U6512 ug/L	A9184 ug/L
<b>Compound</b>							
1,1,1-Trichloroethane	5*	[11]	0.6	2	2	2	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	[30]	4	[14]	[18]	[19]	0.8
1,1-Dichloroethene	5*	0.7	0.5 U	0.2 J	0.2 J	0.2 J	0.5 U
1,2-Dichloroethane	0.6	0.2 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	10 U	10 U	10 U	1 J
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	0.5 J	1 U	0.4 J	0.5 J	0.5 J	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	0.2 J	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.4 J	0.5 U	0.1 J	0.1 J	0.1 J	0.5 U
Vinyl chloride	2	[20]	1	[5]	[6 J]	[7]	1
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	[11]	0.8	2	3	3	0.9
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.9	0.5 U	0.3 J	0.3 J	0.3 J	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

**NOTES:** U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-04D	MW-04D	MW-04D	MW-04D	MW-04S	MW-04S
Sample Date	GW Standards	02/03/04	05/19/04	08/05/04	11/17/04	09/14/95	11/13/95
Units	ug/L	B5690 ug/L	E0081 ug/L	E4104 ug/L	E9659 ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
1,1-Dichloroethane	5*	0.5	0.3 J	0.3 J	0.3 J	10 U	10 U
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
1,2-Dichloroethene	5*	---	---	---	---	10 U	10 U
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 UJ	10 UJ
2-Hexanone	NS	5 U	5 U	5 U	5 U	10 UJ	10 UJ
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	10 U	10 UJ
Acetone	50	10 U	10 U	2 J	10 U	10 UJ	10 UJ
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Bromomethane	5*	1 U	1 U	1 U	1 U	10 U	10 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Chloroethane	5*	1 U	1 U	1 U	1 U	10 U	10 UJ
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	10 UJ	10 U
Chloromethane	NS	1 U	1 U	1 U	1 U	10 UJ	10 UJ
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	10 U	10 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Trichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
Vinyl chloride	2	0.8 J	0.6 J	0.4 J	0.4 J	10 U	10 UJ
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
cis-1,2-Dichloroethene	5*	0.8	0.4 J	0.3 J	0.4 J	---	---
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	---	---
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	10 U	10 U

**NOTES:** U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-04S	MW-04S	MW-04S	MW-04S	MW-04S	MW-04S
Sample Date	GW Standards	07/24/97	09/17/97	02/17/00	08/15/01	11/29/01	02/28/02
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	1 U	1 U	0.2 J	0.5 U	0.2 J	0.1 J
1,1,2,2-Tetrachloroethane	5	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	1 U	1 U	0.4 J	0.3 J	0.4 J	0.3 J
1,1-Dichloroethene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	1 U	1 U	—	—	—	—
1,2-Dichloropropane	1	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	4 U	4 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	2 U	2 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	2 U	2 U	5 U	5 U	5 U	5 U
Acetone	50	2 U	2 U	10 U	10 U	10 U	10 U
Benzene	1	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	2 U	2 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	1 U	1 U	0.5 U	0.5 U	0.2 J	0.5 U
Carbon tetrachloride	5	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	1 U	1 U	2 U	2 U	2 U	2 U
Styrene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	1 U	1 U	0.2 J	0.5 U	0.1 J	0.1 J
Vinyl chloride	2	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	—	—	0.6 U	0.1 J	0.5 U	0.5 U
cis-1,3-Dichloropropylene	NS	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	—	—	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-04S	MW-04S	MW-04S	MW-04S	MW-04S	MW-04S
Sample Date	GW Standards ug/L	05/14/02 U6511 ug/L	07/31/03 A9183 ug/L	02/06/04 B5692 ug/L	05/19/04 E0082 ug/L	08/05/04 E4105 ug/L	11/17/04 E9660 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	0.2 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	0.5 J	0.2 J	0.1 J	0.5 U	0.2 J	0.2 J
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	1 J	1 J	1 J	10 U	1 J
Benzene	1	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.1 J
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.6	0.3 J	0.5 U	0.5 U	0.4 J
Trichloroethene	5*	0.2 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	2	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	5*	0.5 U	0.5	0.2 J	0.5 U	0.5 U	0.4 J
cis-1,2-Dichloroethene	5*	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

**NOTES:** U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-05D	MW-05D	MW-05D	MW-05D	MW-05D	MW-05D
Sample Date	GW Standards ug/L	09/13/95	11/14/95	07/24/97	09/16/97	02/17/00 N9519	08/14/01 T0269
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	[5 J]	[12]	[17]	[22]	[11]	[8]
1,1,2,2-Tetrachloroethane	5	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	[8 J]	[13]	[26]	[33]	[20]	[19]
1,1-Dichloroethene	5*	10 U	10 U	1.1	1.8	0.9	0.4 J
1,2-Dichloroethane	0.6	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	[21]	[68]	[63.2]	[101.8]	---	---
1,2-Dichloropropane	1	10 U	10 U	1 U	1 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 UJ	4 U	4 U	10 U	10 U
2-Hexanone	NS	10 U	10 UJ	2 U	2 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	10 U	10 UJ	2 U	2 U	5 U	5 U
Acetone	50	10 U	10 UJ	2 U	2 U	10 U	10 U
Benzene	1	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Bromodichloromethane	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Bromoform	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Bromomethane	5*	10 U	10 U	2 U	2 U	1 U	1 U
Carbon disulfide	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Carbon tetrachloride	5	10 U	10 U	1 U	1 U	0.5 U	0.5 UJ
Chlorobenzene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Chloroethane	5*	10 U	10 UJ	1 U	1 U	0.6 J	0.3 J
Chloroform	7	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Chloromethane	NS	10 U	10 UJ	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Ethylbenzene	5*	0.6 J	10 U	1 U	1 U	0.5 U	0.5 U
Methylene chloride	5*	10 U	10 U	1 U	1 U	2 U	2 U
Styrene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Tetrachloroethene	5*	10 U	10 U	1 U	0.6 J	0.2 J	0.5 U
Toluene	5*	2 J	10 U	1 U	1 U	0.5 U	0.5 U
Trichloroethene	5*	1 J	4 J	2.7	3.5	2	0.6
Vinyl chloride	2	[15]	[44 J]	[57]	[84]	[30]	[30]
Xylene (total)	5*	3 J	10 U	1 U	1 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	---	---	---	---	[37]	[30]
cis-1,3-Dichloropropylene	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	---	---	---	---	1	0.3 J
trans-1,3-Dichloropropene	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



## 2004 Annual Report

## Forest Glen Subdivision Site

## Niagara Falls, New York

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Data have not been validated.





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-05D	MW-05D	MW-05D	MW-05D	MW-05D	MW-05D
Sample Date	GW Standards	11/29/01	02/27/02	05/15/02	07/30/03	02/06/04	05/19/04
Units	ug/L	T6141	U1223	U6911	A9182	B5691	E0080
Compound		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane	5*	[8]	[6]	[5]	3	2	1
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	[18]	[17]	[17]	[6]	[5]	3
1,1-Dichloroethene	5*	0.5	0.4 J	0.4 J	0.3 J	0.3 J	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	10 U	1 J	10 U	2 J
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	0.4 J	0.4 J	0.4 J	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.7	0.6	0.6	0.3 J	0.3 J	0.2 J
Vinyl chloride	2	[33]	[21]	[20]	[13]	[9]	[5]
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	[40]	[28]	[24]	[17]	[13]	[7]
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.4 J	0.3 J	0.3 J	0.3 J	0.2 J	0.1 J
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-05D	MW-05D	MW-05S	MW-05S	MW-05S	MW-05S
Sample Date	GW Standards ug/L	08/05/04 E4103 ug/L	11/17/04 E9662 ug/L	09/14/95 ug/L	11/14/95 ug/L	07/24/97 ug/L	09/16/97 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	0.9	1	[5 J]	[65 J]	[110]	[88]
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	10 U	100 U	1 U	1 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	10 U	100 U	1 U	1 U
1,1-Dichloroethane	5*	3	4	[5 J]	[70 J]	[92]	[76]
1,1-Dichloroethene	5*	0.1 J	0.2 J	10 U	100 U	[16]	1 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	10 U	100 U	1 U	1 U
1,2-Dichloroethene	5*	---	---	[130]	[1300]	[1709.3]	[1400]
1,2-Dichloropropane	1	0.5 U	0.5 U	10 U	100 U	1 U	1 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	100 UJ	4 U	4 U
2-Hexanone	NS	5 U	5 U	10 U	100 UJ	2 U	2 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	10 UJ	100 UJ	2 U	2 U
Acetone	50	4 J	10 U	8 J	100 UJ	2 U	2 U
Benzene	1	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Bromodichloromethane	NS	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Bromoform	NS	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Bromomethane	5*	1 U	1 U	2 J	100 U	2 U	2 U
Carbon disulfide	NS	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Carbon tetrachloride	5	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Chlorobenzene	5*	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Chloroethane	5*	1 U	1 U	10 U	100 UJ	1 U	1 U
Chloroform	7	0.5 U	0.5 U	10 U	100 U	1.7	1 U
Chloromethane	NS	1 U	1 U	10 UJ	100 UJ	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Ethylbenzene	5*	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Methylene chloride	5*	2 U	2 U	10 U	100 U	1 U	1 U
Styrene	5*	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Tetrachloroethene	5*	0.5 U	0.5 U	10 U	100 U	4.2	1 U
Toluene	5*	0.5 U	0.5 U	10 U	100 U	1 U	1 U
Trichloroethene	5*	0.1 J	0.2 J	[8 J]	[76 J]	[350]	[230]
Vinyl chloride	2	[4]	[5]	[16]	[220 J]	[170]	[240]
Xylene (total)	5*	0.5 U	0.5 U	10 U	100 U	1 U	1 U
cis-1,2-Dichloroethene	5*	[6]	[8]	---	---	---	---
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	10 U	100 U	1 U	1 U
trans-1,2-Dichloroethene	5*	0.1 J	0.5 U	---	---	---	---
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	10 U	100 U	1 U	1 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-05S	MW-05S	MW-05S	MW-05S	MW-05S	MW-05S
Sample Date	GW Standards ug/L	02/17/00 N9520 ug/L	08/14/01 T0268 ug/L	11/29/01 T6142 ug/L	02/27/02 U1222 ug/L	05/15/02 U6910 ug/L	07/30/03 A9181 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	[90 ]	[120 ]	[73 ]	[57 ]	[35 ]	[90 ]
1,1,2,2-Tetrachloroethane	5	0.5 U	5 U	20 UJ	20 U	20 U	20 U
1,1,2-Trichloroethane	1	0.3 J	5 U	20 U	20 U	20 U	20 U
1,1-Dichloroethane	5*	[100 ]	[130 ]	[130 ]	[55 ]	[33 ]	[43 ]
1,1-Dichloroethene	5*	[13 ]	[20 ]	[12 J]	[8 J]	[5 J]	[7 J]
1,2-Dichloroethane	0.6	0.4 J	5 U	20 U	20 U	20 U	20 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	5 U	20 U	20 U	20 U	20 U
2-Butanone (MEK)	NS	10 U	100 U	400 U	400 U	400 U	400 U
2-Hexanone	NS	5 U	50 U	200 U	200 U	200 U	200 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	50 U	200 U	200 U	200 U	200 U
Acetone	50	10 U	100 U	400 U	400 U	400 U	400 U
Benzene	1	0.5 U	5 U	20 U	20 U	20 U	20 U
Bromodichloromethane	NS	0.5 U	5 U	20 U	20 U	20 U	20 U
Bromoform	NS	0.5 U	5 U	20 U	20 U	20 U	20 U
Bromomethane	5*	1 U	10 UJ	40 U	40 U	40 U	40 U
Carbon disulfide	NS	0.5 U	5 U	20 U	20 U	20 U	20 U
Carbon tetrachloride	5	0.5 U	5 UJ	20 U	20 U	20 U	20 U
Chlorobenzene	5*	0.5 U	5 U	20 U	20 U	20 U	20 U
Chloroethane	5*	1	10 UJ	40 U	40 U	40 U	40 U
Chloroform	7	0.5 U	5 U	20 U	20 U	20 U	20 U
Chloromethane	NS	1 U	10 U	40 U	40 U	40 UJ	40 U
Dibromochloromethane	5*	0.5 U	5 U	20 U	20 U	20 U	20 U
Ethylbenzene	5*	0.5 U	5 U	20 U	20 U	20 U	20 U
Methylene chloride	5*	2 U	20 U	80 U	80 U	80 U	80 U
Styrene	5*	0.5 U	5 U	20 U	20 UJ	20 U	20 U
Tetrachloroethene	5*	0.3 J	5 U	20 U	20 U	20 U	20 U
Toluene	5*	0.5 U	5 U	20 U	20 U	20 U	20 U
Trichloroethene	5*	[130 ]	[55 ]	[59 ]	[26 ]	[17 J]	[31 ]
Vinyl chloride	2	[210 ]	[370 ]	[190 ]	[140 ]	[89 ]	[380 ]
Xylene (total)	5*	0.5 U	5 U	20 U	20 U	20 U	20 U
cis-1,2-Dichloroethene	5*	[1300 ]	[2200 ]	[1100 ]	[880 ]	[590 ]	[1300 D]
cis-1,3-Dichloropropylene	NS	0.5 U	5 U	20 U	20 U	20 U	20 U
trans-1,2-Dichloroethene	5*	[41 ]	[25 ]	[11 J]	[8 J]	[6 J]	[11 J]
trans-1,3-Dichloropropene	NS	0.5 U	5 U	20 U	20 U	20 U	20 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]

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**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-05S	MW-05S	MW-05S	MW-05S	MW-06D	MW-06D
Sample Date	GW Standards ug/L	02/05/04 B5687 ug/L	05/19/04 E0079 ug/L	08/05/04 E4102 ug/L	11/17/04 E9661 ug/L	09/13/95 ug/L	11/14/95 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	[43 ]	[32 ]	[78 ]	[110 ]	10 U	10 U
1,1,2,2-Tetrachloroethane	5	20 U	20 U	10 U	20 U	10 U	10 U
1,1,2-Trichloroethane	1	20 U	20 U	10 U	20 U	10 U	10 U
1,1-Dichloroethane	5*	[99 ]	[29 ]	[15 ]	[190 ]	10 U	10 U
1,1-Dichloroethene	5*	[12 J]	[7 J]	4 J	[21 ]	10 U	10 U
1,2-Dichloroethane	0.6	20 U	20 U	10 U	20 U	10 U	10 U
1,2-Dichloroethene	5*	---	---	---	---	[6 J]	[17 ]
1,2-Dichloropropane	1	20 U	20 U	10 U	20 U	10 U	10 U
2-Butanone (MEK)	NS	400 U	400 U	200 U	400 U	10 UJ	10 UJ
2-Hexanone	NS	200 U	200 U	100 U	200 U	10 UJ	10 U
4-Methyl-2-pentanone (MIBK)	NS	200 U	200 U	100 U	200 U	10 U	10 UJ
Acetone	50	400 U	400 U	200 U	400 U	10 UJ	10 UJ
Benzene	1	20 U	20 U	10 U	20 U	10 U	10 U
Bromodichloromethane	NS	20 U	20 U	10 U	20 U	10 U	10 U
Bromoform	NS	20 U	20 U	10 U	20 U	10 U	10 U
Bromomethane	5*	40 U	40 U	20 U	40 U	10 U	10 U
Carbon disulfide	NS	20 U	20 U	10 U	20 U	10 U	10 U
Carbon tetrachloride	5	20 U	20 U	10 U	20 U	10 U	10 U
Chlorobenzene	5*	20 U	20 U	10 U	20 U	10 U	10 U
Chloroethane	5*	40 U	40 U	20 U	40 U	10 U	10 U
Chloroform	7	20 U	20 U	10 U	20 U	10 UJ	10 U
Chloromethane	NS	40 U	40 U	20 U	40 U	10 UJ	10 UJ
Dibromochloromethane	5*	20 U	20 U	10 U	20 U	10 U	10 U
Ethylbenzene	5*	20 U	20 U	10 U	20 U	10 U	10 U
Methylene chloride	5*	80 U	[60 J]	40 U	[6 J]	10 UJ	10 U
Styrene	5*	20 U	20 U	10 U	20 U	10 U	10 U
Tetrachloroethene	5*	20 U	20 U	4 J	20 U	10 U	10 U
Toluene	5*	20 U	20 U	10 U	20 U	10 U	10 U
Trichloroethene	5*	[34 ]	[35 ]	[85 ]	[44 ]	10 U	10 U
Vinyl chloride	2	[120 ]	[140 ]	[53 ]	[100 ]	10 U	[51 J]
Xylene (total)	5*	20 U	20 U	10 U	20 U	10 U	10 U
cis-1,2-Dichloroethene	5*	[740 ]	[1300 ]	[460 ]	[890 ]	---	---
cis-1,3-Dichloropropylene	NS	20 U	20 U	10 U	20 U	10 U	10 U
trans-1,2-Dichloroethene	5*	[12 J]	[11 J]	[5 J]	[16 J]	---	---
trans-1,3-Dichloropropene	NS	20 U	20 U	10 U	20 U	10 U	10 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-06D	MW-06D	MW-06D	MW-06D	MW-06D	MW-06D
Sample Date	GW Standards	07/28/97	09/17/97	02/15/00	08/15/01	11/29/01	02/27/02
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	0.7 J	1 U	1	0.5 J	0.8	0.9
1,1,2,2-Tetrachloroethane	5	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	[5.8]	3.6	2	2	2	2
1,1-Dichloroethene	5*	1 U	1 U	0.3 J	0.1 J	0.2 J	0.5 U
1,2-Dichloroethane	0.6	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	[14]	[35]	---	---	---	---
1,2-Dichloropropane	1	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	4 U	4 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	2 U	2 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	2 U	2 U	5 U	5 U	5 U	5 U
Acetone	50	2 U	2 U	10 U	10 U	10 U	10 U
Benzene	1	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	2 U	2 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	1 U	1 U	0.5 U	0.5 U	1	0.5 U
Carbon tetrachloride	5	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	1 U	1 U	2 U	2 U	2 U	2 U
Styrene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	1 U	1 U	0.5	0.2 J	0.3 J	0.3 J
Vinyl chloride	2	[22]	[45]	[44]	[24]	[40]	[39]
Xylene (total)	5*	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	---	---	[43]	[20]	[34]	[36]
cis-1,3-Dichloropropylene	NS	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	---	---	2	0.2 J	0.4 J	0.5 J
trans-1,3-Dichloropropene	NS	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.







**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-06D	MW-06D	MW-06D	MW-06D	MW-06D	MW-06D
Sample Date	GW Standards	05/15/02	07/29/03	02/04/04	05/18/04	08/05/04	11/16/04
Units	ug/L	U6913	A9070	B5531	E0077	E4101	E9521
Compound		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane	5*	0.8 J	0.6	0.1 J	0.5	0.1 J	0.1 J
1,1,2,2-Tetrachloroethane	5	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	1	1	1	0.7	1	1
1,1-Dichloroethene	5*	0.2 J	0.2 J	0.5 U	0.3 J	0.5 U	0.5 U
1,2-Dichloroethane	0.6	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	20 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	10 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	10 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	20 U	10 U	10 U	10 U	2 J	10 U
Benzene	1	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	2 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	2 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	2 U J	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	4 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.3 J	0.3 J	0.5 U	0.4 J	0.5 U	0.5 U
Vinyl chloride	2	[37]	[24]	[6]	[28]	[6]	[4]
Xylene (total)	5*	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	[35]	[21]	[5]	[29]	[5]	4
cis-1,3-Dichloropropylene	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.4 J	0.4 J	0.5 U	0.6	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-06DD 60 - 62 ft.	MW-06DD 69 - 70 ft.	MW-06DD 80 - 81 ft.	MW-06DD 80 - 81 ft.	MW-06DD 60 - 62 ft.	MW-06DD 60 - 62 ft.
Sample Date	GW Standards ug/L	07/29/03 A9066	07/29/03 A9067	07/29/03 A9068	02/04/04 B5530	05/18/04 E0075	08/05/04 E4098
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.7	[5]	2	[9]
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	0.1 J	0.5 U	1	[5]	[5]	[5]
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.3 J	0.2 J	0.3 J
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	10 U	4 J	10 U	10 U
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 J	0.8	0.6	0.7
Toluene	5*	0.3 J	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.5 U	0.3 J	2	1	2
Vinyl chloride	2	0.3 J	0.1 J	[5]	[20]	[14]	[15]
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	0.5 J	0.5 U	[7]	[32]	[12]	[21]
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.3 J	0.1 J	0.2 J
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-06DD 60 - 62 ft.	MW-06S	MW-06S	MW-06S	MW-06S	MW-06S
Sample Date	GW Standards	11/16/04 E9522	09/14/95	11/14/95	07/23/97	09/17/97	02/15/00 N9417
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
<b>Compound</b>							
1,1,1-Trichloroethane	5*	0.7	10 U	10 U	1 U	1 U	0.2 J
1,1,2,2-Tetrachloroethane	5	0.5 U	10 U	10 U	1 U	1 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	10 U	10 U	1 U	1 U	0.5 U
1,1-Dichloroethane	5*	[9]	10 U	10 U	1 U	1 U	2
1,1-Dichloroethene	5*	0.2 J	10 U	10 U	1 U	1 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	10 U	10 U	1 U	1 U	0.5 U
1,2-Dichloroethene	5*	---	4 J	10 U	3.1	2.6	---
1,2-Dichloropropane	1	0.5 U	10 U	10 U	1 U	1 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	4 U	4 U	10 U
2-Hexanone	NS	5 U	10 U	10 U	2 U	2 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	10 U	10 U	2 U	2 U	5 U
Acetone	50	10 U	18	10 U	2 U	2 U	10 U
Benzene	1	0.2 J	10 U	10 U	1 U	1 U	0.5 U
Bromodichloromethane	NS	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Bromoform	NS	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Bromomethane	5*	1 U	10 U	10 U	2 U	2 U	1 U
Carbon disulfide	NS	0.2 J	10 U	10 U	1 U	1 U	0.5 U
Carbon tetrachloride	5	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Chlorobenzene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Chloroethane	5*	0.5 J	10 U	10 U	1 U	1 U	1 U
Chloroform	7	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Chloromethane	NS	1 U	5 J	10 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Ethylbenzene	5*	0.2 J	10 U	10 U	1 U	1 U	0.5 U
Methylene chloride	5*	2 U	10 U	10 U	1 U	1 U	2 U
Styrene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Tetrachloroethene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Toluene	5*	0.5 U	10 U	10 U	1 U	1 U	0.5 U
Trichloroethene	5*	0.6	10 U	10 U	1 U	1 U	0.2 J
Vinyl chloride	2	[12]	10 U	10 U	1 U	1 U	0.3 J
Xylene (total)	5*	0.9	10 U	10 U	1 U	1 U	0.5 U
cis-1,2-Dichloroethene	5*	[16]	---	---	---	---	2
cis-1,3-Dichloropropylene	NS	0.5 U	10 U	10 U	1 U	1 U	0.5 U
trans-1,2-Dichloroethene	5*	0.3 J	---	---	---	---	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	10 U	10 U	1 U	1 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-06S	MW-06S	MW-06S	MW-06S	MW-06S	MW-06S
Sample Date	GW Standards ug/L	08/15/01 T0336 ug/L	11/29/01 T6139 ug/L	02/27/02 U1225 ug/L	05/15/02 U6912 ug/L	07/29/03 A9069 ug/L	02/04/04 B5532 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.2 J	0.1 J	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	1	2	1	0.9	0.4 J	0.3 J
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	10 U	10 U	10 U	6 J
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 J
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.2 J	0.5 U	0.5 U	0.2 J	0.1 J
Vinyl chloride	2	0.8 J	0.4 J	0.4 J	0.2 J	0.7 J	0.5 J
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	3	2	1	2	[6]	[5]
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.







**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-06S	MW-06S	MW-06S	MW-07D	MW-07D	MW-07D
Sample Date	GW Standards ug/L	05/18/04 E0078 ug/L	08/05/04 E4100 ug/L	11/16/04 E9520 ug/L	09/21/95	11/14/95	07/23/97
Units					ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	10 U	10 U	[5.7]
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
1,1-Dichloroethane	5*	0.2 J	0.3 J	0.4 J	10 U	10 U	[8]
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
1,2-Dichloroethene	5*	---	---	---	10 U	10 U	[69]
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 UJ	10 U	4 U
2-Hexanone	NS	5 U	5 U	5 U	10 UJ	10 U	2 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	10 U	10 U	2 U
Acetone	50	10 U	10 U	5 J	17 J	10 UJ	2 U
Benzene	1	0.5 U	0.5 U	0.5 U	[1 J]	10 U	1 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
Bromomethane	5*	1 U	1 U	1 U	10 U	10 U	2 U
Carbon disulfide	NS	0.5 U	0.5 U	0.4 J	10 U	10 U	1 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
Chloroethane	5*	1 U	1 U	1 U	10 U	10 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	10 UJ	10 U	1 U
Chloromethane	NS	1 U	1 U	1 U	10 UJ	10 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.7 J	10 U	1 U
Methylene chloride	5*	2 U	2 U	2 U	10 UJ	10 U	1 U
Styrene	5*	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
Tetrachloroethene	5*	0.1 J	0.1 J	0.5 U	10 U	10 U	1 U
Toluene	5*	0.5 U	0.5 U	0.5 U	2 J	10 U	1 U
Trichloroethene	5*	0.2 J	0.2 J	0.2 J	10 U	10 U	1 U
Vinyl chloride	2	0.4 J	1	0.9 J	10 U	10 U	[26]
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	3 J	10 U	1 U
cis-1,2-Dichloroethene	5*	4	[30]	[14]	---	---	---
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U
trans-1,2-Dichloroethene	5*	0.1 J	0.3 J	0.2 J	---	---	---
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	10 U	10 U	1 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-07D	MW-07D	MW-07D	MW-07D	MW-07D	MW-07D
Sample Date	GW Standards ug/L	09/18/97	02/18/00	08/16/01	11/28/01	02/25/02	05/16/02
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	[12]	[34]	[34]	[35]	[33]	[31]
1,1,2,2-Tetrachloroethane	5	1 U	0.5 U	0.5 U	5 U	1 U	5 U
1,1,2-Trichloroethane	1	1 U	0.2 J	0.5 U	5 U	1 U	5 U
1,1-Dichloroethane	5*	[15]	[41]	[35]	[33]	[31]	[29]
1,1-Dichloroethene	5*	1.3	4	3	3 J	2	3 J
1,2-Dichloroethane	0.6	1 U	0.2 J	0.5 U	5 U	1 U	5 U
1,2-Dichloroethene	5*	[141]	---	---	---	---	---
1,2-Dichloropropane	1	1 U	0.5 U	0.5 U	5 U	1 U	5 U
2-Butanone (MEK)	NS	4 U	10 U	10 U	100 U	20 U	100 U
2-Hexanone	NS	2 U	5 U	5 U	50 U	10 U	50 U
4-Methyl-2-pentanone (MIBK)	NS	2 U	5 U	5 U	50 U	10 U	50 U
Acetone	50	2 U	10 U	10 U	100 U	20 U	100 U
Benzene	1	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Bromodichloromethane	NS	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Bromoform	NS	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Bromomethane	5*	2 U	1 U	1 U	10 U	2 U	10 U
Carbon disulfide	NS	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Carbon tetrachloride	5	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Chlorobenzene	5*	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Chloroethane	5*	1 U	0.2 J	1 U	10 U	2 U	10 U
Chloroform	7	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Chloromethane	NS	1 U	0.3 J	1 U	10 U	2 U	10 U
Dibromochloromethane	5*	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Ethylbenzene	5*	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Methylene chloride	5*	1 U	2 U	2 U	20 U	0.2 J	20 U
Styrene	5*	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Tetrachloroethene	5*	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Toluene	5*	1 U	0.5 U	0.5 U	5 U	1 U	5 U
Trichloroethene	5*	1 U	2	0.8	5 U	0.8 J	5 U
Vinyl chloride	2	[52]	[79]	[100]	[160]	[120]	[130]
Xylene (total)	5*	1 U	0.5 U	0.5 U	5 U	1 U	5 U
cis-1,2-Dichloroethene	5*	---	[190]	[220]	[240]	[210]	[220]
cis-1,3-Dichloropropylene	NS	1 U	0.5 U	0.5 U	5 U	1 U	5 U
trans-1,2-Dichloroethene	5*	---	[18]	3	4 J	3	3 J
trans-1,3-Dichloropropene	NS	1 U	0.5 U	0.5 U	5 U	1 U	5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-07D	MW-07D	MW-07D	MW-07D	MW-07D	MW-07DD
Sample Date	GW Standards	07/29/03	02/03/04	05/17/04	08/04/04	11/15/04	07/29/03
Units	ug/L	A9065	B5523	B9956	E4090	E9487	A9061
Compound		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane	5*	1	0.8	0.6	0.3 J	0.5	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	[7]	[6]	4	0.7	4	0.3 J
1,1-Dichloroethene	5*	0.5 J	0.4 J	0.3 J	0.5 U	0.3 J	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.1 J	0.1 J	0.2 J	0.1 J	0.5 U
Vinyl chloride	2	[35]	[32]	[24]	[2]	[22]	1 J
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	[38]	[33]	[23]	[5]	[23]	0.4 J
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.4 J	0.4 J	0.2 J	0.1 J	0.2 J	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

[illegible]





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-07DD 66 - 68 ft.	MW-07DD 82 - 84 ft.	MW-07DD 02/04/04	MW-07DD 53 - 55 ft.	MW-07DD 53 - 55 ft.	MW-07DD 53 - 55 ft.
Sample Date	GW Standards	07/29/03	07/29/03	02/04/04	05/18/04	08/04/04	11/15/04
Units	ug/L	A9062	A9063	B5686	E0071	E4089	E9488
Compound		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	0.3 J	0.3 J	1	0.2 J	0.5 U	0.1 J
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	1	0.5 U	0.2 J	0.2 J	0.5 U	0.5 U	0.1 J
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.1 J	0.4 J	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U
Toluene	5*	0.5 U	0.3 J	1	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.5 U	0.2 J	0.2 J	0.2 J	0.2 J
Vinyl chloride	2	1 J	1 J	[9 J]	0.2 J	0.2 J	0.2 J
Xylene (total)	5*	0.5 U	1	[5]	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	0.3 J	0.3 J	[7 J]	0.3 J	0.3 J	0.4 J
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-07S	MW-07S	MW-07S	MW-07S	MW-07S	MW-07S
Sample Date	GW Standards	09/12/95	11/13/95	07/23/97	09/18/97	02/18/00	08/16/01
Units	ug/L	ug/L	ug/L	ug/L	ug/L	N9572 ug/L	T0522 ug/L
<b>Compound</b>							
1,1,1-Trichloroethane	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,1-Dichloroethene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	10 U	10 U	1 U	1 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	10 U	10 U	1 U	1 U	—	—
1,2-Dichloropropane	1	10 U	10 U	1 U	1 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 UJ	10 U	4 U	4 U	10 U	10 U
2-Hexanone	NS	10 UJ	10 U	2 U	2 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	10 U	10 U	2 U	2 U	5 U	5 U
Acetone	50	10 UJ	10 UJ	2 U	2 U	10 U	10 U
Benzene	1	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Bromodichloromethane	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Bromoform	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Bromomethane	5*	10 U	10 U	2 U	2 U	1 U	1 U
Carbon disulfide	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Carbon tetrachloride	5	10 U	10 U	1 U	1 U	0.5 U	0.5 UJ
Chlorobenzene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Chloroethane	5*	10 U	10 U	1 U	1 U	1 U	1 UJ
Chloroform	7	10 UJ	10 U	1 U	1 U	0.5 U	0.5 U
Chloromethane	NS	10 UJ	10 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Ethylbenzene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Methylene chloride	5*	10 UJ	10 U	1 U	1 U	2 U	2 U
Styrene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Tetrachloroethene	5*	10 U	10 U	1 U	1 U	0.5 U	0.1 J
Toluene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Trichloroethene	5*	10 U	10 U	1 U	1 U	0.5 U	0.5 U
Vinyl chloride	2	10 U	10 U	1 U	1 U	1 U	1 U
Xylene (total)	5*	10 U	10 U	1 U	1 U	2 U	0.5 U
cis-1,2-Dichloroethene	5*	—	—	—	—	0.5 U	0.5 U
cis-1,3-Dichloropropylene	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	—	—	—	—	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	10 U	10 U	1 U	1 U	0.5 U	0.5 U

**NOTES:** U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-07S	MW-07S	MW-07S	MW-07S	MW-07S	MW-07S
Sample Date	GW Standards	11/28/01	02/25/02	05/16/02	07/29/03	02/03/04	05/17/04
Units	ug/L	T6085	U1081	U7823	A9064	B5524	B9957
Compound		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 UJ	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.1 J	0.2 J	0.3 J	0.2 J	0.2 J	0.1 J
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.5 U	0.5 U	0.1 J	0.4 J	0.4 J
Vinyl chloride	2	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.1 J	0.3 J	0.3 J
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-07S	MW-07S	MW-08D	MW-08D	MW-08D	MW-08D
Sample Date	GW Standards ug/L	08/04/04 E4091 ug/L	11/15/04 E9486 ug/L	09/13/95	11/14/95	07/23/97	09/18/97
Units				ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	10 U	10 U	1 U	1 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	10 U	10 U	1 U	1 U
1,1-Dichloroethane	5*	0.5 U	0.5 U	10 U	10 U	1.7	2
1,1-Dichloroethene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	10 U	10 U	1 U	1 U
1,2-Dichloroethene	5*	---	---	10 U	10 U	4.1	[5.3]
1,2-Dichloropropane	1	0.5 U	0.5 U	10 U	10 U	1 U	1 U
2-Butanone (MEK)	NS	10 U	10 U	10 UJ	10 U	4 U	4 U
2-Hexanone	NS	5 U	5 U	10 UJ	10 U	2 U	2 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	10 U	10 U	2 U	2 U
Acetone	50	10 U	10 U	10 J	10 UJ	2 U	2 U
Benzene	1	0.5 U	0.5 U	[1 J]	10 U	1 U	1 U
Bromodichloromethane	NS	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Bromoform	NS	0.5 U	0.5 U	10 U	10 UJ	1 U	1 U
Bromomethane	5*	1 U	1 U	10 U	10 U	2 U	2 U
Carbon disulfide	NS	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Carbon tetrachloride	5	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Chlorobenzene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Chloroethane	5*	1 U	1 U	10 U	10 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	10 UJ	10 U	1 U	1 U
Chloromethane	NS	1 U	1 U	10 UJ	10 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Ethylbenzene	5*	0.5 U	0.5 U	0.8 J	10 U	1 U	1 U
Methylene chloride	5*	2 U	2 U	10 UJ	10 U	1 U	1 U
Styrene	5*	0.5 U	0.5 U	10 U	10 U	1 U	1 U
Tetrachloroethene	5*	0.2 J	0.2 J	10 U	10 U	1 U	1 U
Toluene	5*	0.5 U	0.5 U	3 J	10 U	1 U	1 U
Trichloroethene	5*	0.5	0.6	10 U	10 U	1 U	1 U
Vinyl chloride	2	1 U	1 U	10 U	10 U	[9.1]	[11]
Xylene (total)	5*	0.5 U	0.5 U	[5 J]	10 U	1 U	1 U
cis-1,2-Dichloroethene	5*	0.4 J	0.5 J	---	---	---	---
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	10 U	10 U	1 U	1 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	---	---	---	---
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	10 U	10 U	1 U	1 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.

[illegible]





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-08D	MW-08D	MW-08D	MW-08D	MW-08D	MW-08D
Sample Date	GW Standards ug/L	02/18/00 N9575 ug/L	08/16/01 T0521 ug/L	11/28/01 T6087 ug/L	02/25/02 U1085 ug/L	05/16/02 U7826 ug/L	07/30/03 A9180 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	0.3 J	0.3 J	0.2 J	0.2 J	0.1 J	0.2 J
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	3	3	3	2	2	3
1,1-Dichloroethene	5*	0.2 J	0.1 J	0.1 J	0.1 J	0.1 J	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	10 U	10 U	10 U	1 J
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 UJ	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	0.9 J	0.5 J	0.7 J	0.7 J	0.7 J	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	2	[24]	[24]	[28]	[25]	[25]	[9]
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	[14]	[14]	[13]	[12]	[13]	[5]
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.3 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.







**O'BRIEN & GERE**  
ENGINEERS, INC.

**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA GW Standards ug/L	MW-08D 02/03/04 B5526 ug/L	MW-08D 05/17/04 B9954 ug/L	MW-08D 08/04/04 E4093 ug/L	MW-08D 11/16/04 E9517 ug/L	MW-08DD 53 - 56 ft. 07/28/03 A9012 ug/L	MW-08DD 69 - 70 ft. 07/28/03 A9011 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	2	2	2	2	1	1
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	0.1 J
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	1 J	10 U	10 U	10 U
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	2	[3]	[10]	[5]	[3]	[15]	[14]
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	2	4	3	2	[8]	[11]
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
[ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
Data have not been validated.

[illegible]



**O'BRIEN & GERE**  
ENGINEERS, INC.

**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-08DD 80 - 83 ft.	MW-08DD	MW-08DD 53 - 56 ft.	MW-08DD 53 - 56 ft.	MW-08DD 53 - 56 ft.	MW-08S
Sample Date	GW Standards ug/L	07/28/03 A9010 ug/L	02/04/04 B5685 ug/L	05/17/04 B9955 ug/L	08/04/04 E4092 ug/L	11/15/04 E9489 ug/L	09/14/95
Units							ug/L
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
1,1-Dichloroethane	5*	1	0.2 J	1	0.9	1	10 U
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
1,2-Dichloroethene	5*	---	---	---	---	---	[13]
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	10 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	10 U
Acetone	50	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	1	0.5 U	0.1 J	0.2 J	0.5 U	0.1 J	10 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	10 U
Carbon disulfide	NS	0.5 U	0.5 U	0.1 J	0.5 U	0.1 J	10 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	10 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	10 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Ethylbenzene	5*	0.5 U	0.5 U	0.3 J	0.1 J	0.2 J	10 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	10 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Toluene	5*	0.2 J	0.1 J	0.5	0.3 J	0.1 J	10 U
Trichloroethene	5*	0.5 U	0.1 J	0.5 U	0.5 U	0.1 J	2 J
Vinyl chloride	2	[16]	0.8 J	1	1	[2]	[3 J]
Xylene (total)	5*	0.5	0.5	3	1	0.8	10 U
cis-1,2-Dichloroethene	5*	[12]	0.7	0.6	0.7	1	---
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	---
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
[ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-08S	MW-08S	MW-08S	MW-08S	MW-08S	MW-08S
Sample Date	GW Standards	11/14/95	07/23/97	09/18/97	02/18/00	08/16/01	11/28/01
Units	ug/L	ug/L	ug/L	ug/L	N9574 ug/L	T0520 ug/L	T6088 ug/L
Compound							
1,1,1-Trichloroethane	5*	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	5*	10 U	1 U	1 U	0.3 J	0.1 J	0.5 U
1,2-Dichloroethane	0.6	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	[11]	[8.7]	[8.2]	---	---	---
1,2-Dichloropropane	1	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	4 U	4 U	10 U	10 U	10 U
2-Hexanone	NS	10 U	2 U	2 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	10 U	2 U	2 U	5 U	5 U	5 U
Acetone	50	10 U	2 U	2 U	10 U	10 U	10 U
Benzene	1	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	10 U	2 U	2 U	1 U	1 U	1 U
Carbon disulfide	NS	10 U	1 U	1 U	0.5 U	0.5 U	10
Carbon tetrachloride	5	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	10 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	10 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	10 U	1 U	1 U	2 U	2 U	2 U
Styrene	5*	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	10 U	1 U	1 U	0.5 U	0.5 U	0.2 J
Toluene	5*	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	2 J	1.7	1.6	3	1	3
Vinyl chloride	2	10 U	[2.3]	[2]	[3]	[2]	1
Xylene (total)	5*	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	---	---	---	[9]	[7]	[5]
cis-1,3-Dichloropropylene	NS	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	---	---	---	0.5 J	0.1 J	0.1 J
trans-1,3-Dichloropropene	NS	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

[illegible]





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-08S	MW-08S	MW-08S	MW-08S	MW-08S	MW-08S
Sample Date	GW Standards	02/25/02	05/16/02	07/30/03	02/03/04	05/17/04	08/04/04
Units	ug/L	U1084	U7825	A9179	B5525	B9953	E4094
Compound		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	1 J	10 U	1 J	10 U
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.9	1	0.4 J	0.7	0.6	0.7
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	[6]	[6]	3	[5]	3	3
Vinyl chloride	2	1	1 J	[2]	0.9 J	1	0.3 J
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	[5]	4	[5]	[5]	[5]	3
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.1 J	0.1 J	0.2 J	0.2 J	0.1 J
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-08S	MW-10D	MW-10D	MW-10D	MW-10D	MW-10D
Sample Date	GW Standards ug/L	11/16/04 E9516 ug/L	07/29/97	09/15/97	02/15/00 N9415 ug/L	08/14/01 T0275 ug/L	11/29/01 T6138 ug/L
Units			ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	0.5 U	1 U	1 U	0.1 J	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	0.5 U	1 U	1 U	2	0.5	0.5 J
1,1-Dichloroethene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	1 U	1 U	---	---	---
1,2-Dichloropropane	1	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	4 U	4 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	2 U	2 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	2 U	2 U	5 U	5 U	5 U
Acetone	50	10 U	2 U	2 U	10 U	10 U	10 U
Benzene	1	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	2 U	2 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.3 J	1 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	1 U	1 U	2 U	2 U	2 U
Styrene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.6	1 U	1 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	3	1 U	1 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	2	0.2 J	1 U	1 U	0.8 J	0.7 J	[2]
Xylene (total)	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	4	---	---	1 U	0.3 J	0.3 J
cis-1,3-Dichloropropylene	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.2 J	---	---	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-10D	MW-10D	MW-10D	MW-10D	MW-10D	MW-10D
Sample Date	GW Standards ug/L	02/27/02 U1227 ug/L	05/15/02 U6915 ug/L	07/30/03 A9178 ug/L	02/05/04 B5688 ug/L	05/18/04 B0076 ug/L	08/05/04 B4099 ug/L
Units							
Compound							
1,1,1-Trichloroethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	1	0.3 J	0.1 J	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	10 U	10 U	10 U	10 U	1 J	10 U
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	2	0.5 J	1	0.2 J	1 U	0.1 J	1 U
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	0.4 J	0.3 J	0.1 J	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

**NOTES:** U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
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**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

[illegible]



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-10D	MW-10S	MW-10S	MW-10S	MW-10S	MW-10S
Sample Date	GW Standards	11/17/04	08/01/97	09/15/97	02/15/00	08/14/01	11/29/01
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	0.5 U	1 U	1 U	0.2 J	0.5 U	0.2 J
1,1,2,2-Tetrachloroethane	5	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	0.5 U	1 U	1 U	2	1	2
1,1-Dichloroethene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	1.3	2	---	---	---
1,2-Dichloropropane	1	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	4 U	4 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	2 U	2 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	2 U	2 U	5 U	5 U	5 U
Acetone	50	10 U	2 U	2 U	10 U	10 U	10 U
Benzene	1	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	2 U	2 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	1 U	1 U	2 U	2 U	2 U
Styrene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.5 U	1 U	1 U	0.1 J	0.5 U	0.2 J
Vinyl chloride	2	1 U	1.5	1.5	0.3 J	0.2 J	1 U
Xylene (total)	5*	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	0.5 U	---	---	1 U	0.9	0.8
cis-1,3-Dichloropropylene	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	---	---	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.



**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

[illegible]





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-10S	MW-10S	MW-10S	MW-10S	MW-10S	MW-10S
Sample Date	GW Standards	02/27/02	05/15/02	07/30/03	02/05/04	05/18/04	08/05/04
Units	ug/L	U1226 ug/L	U6914 ug/L	A9177 ug/L	B5689 ug/L	E0074 ug/L	E4097 ug/L
Compound							
1,1,1-Trichloroethane	5*	0.2 J	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	5*	2	1 J	0.9	0.7	0.7	0.4 J
1,1-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene	5*	---	---	---	---	---	---
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (MEK)	NS	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	NS	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	3 J	10 U	10 U	10 U	10 U	2 J
Benzene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	5*	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5*	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5*	0.1 J	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	2	0.1 J	0.1 J	0.9 J	0.4 J	0.6 J	0.4 J
Xylene (total)	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	5*	0.7	0.8 J	2	1	1	1
cis-1,3-Dichloropropylene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTES: U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.  
 Data have not been validated.





**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Table 4-2 Ground Water Quality Data - VOCs**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-10S
Sample Date	GW Standards	11/17/04
Units	ug/L	E9657 ug/L
Compound		
1,1,1-Trichloroethane	5*	0.5 U
1,1,2,2-Tetrachloroethane	5	0.5 U
1,1,2-Trichloroethane	1	0.5 U
1,1-Dichloroethane	5*	0.3 J
1,1-Dichloroethene	5*	0.5 U
1,2-Dichloroethane	0.6	0.5 U
1,2-Dichloroethene	5*	—
1,2-Dichloropropane	1	0.5 U
2-Butanone (MEK)	NS	10 U
2-Hexanone	NS	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U
Acetone	50	10 U
Benzene	1	0.5 U
Bromodichloromethane	NS	0.5 U
Bromoform	NS	0.5 U
Bromomethane	5*	1 U
Carbon disulfide	NS	0.5 U
Carbon tetrachloride	5	0.5 U
Chlorobenzene	5*	0.5 U
Chloroethane	5*	1 U
Chloroform	7	0.5 U
Chloromethane	NS	1 U
Dibromochloromethane	5*	0.5 U
Ethylbenzene	5*	0.5 U
Methylene chloride	5*	2 U
Styrene	5*	0.5 U
Tetrachloroethene	5*	0.5 U
Toluene	5*	0.5 U
Trichloroethene	5*	0.5 U
Vinyl chloride	2	0.2 J
Xylene (total)	5*	0.5 U
cis-1,2-Dichloroethene	5*	0.5 J
cis-1,3-Dichloropropylene	NS	0.5 U
trans-1,2-Dichloroethene	5*	0.5 U
trans-1,3-Dichloropropene	NS	0.5 U
<b>NOTES:</b> U - not detected, J - estimated, D - diluted result, R - unusable, NC - no criteria, Dup - duplicate sample. [ ] - Exceeds NYS Class GA Ground Water Quality Standard. Data have not been validated.		





**Table 4-3 Ground Water Quality Data - Geochemical**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-01S	MW-01S	MW-01S	MW-01S	MW-01S	MW-01S
Sample Date	GW Standards	02/14/00	08/13/01	11/26/01	02/25/02	05/13/02	11/16/04
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound							
Alkalinity (as CaCO <sub>3</sub> )	NS	250	300	270	260	340	270
Chloride	250	[560 ]	[920 ]	[670 ]	[660 ]	[510 ]	[1000 ]
Nitrate (as N)	10	0.24	0.05 U	0.27	0.08	0.05 U	0.050 U
Nitrite (as N)	1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0046 J
Nitrite-nitrate nitrogen	10	0.24	0.05 U	0.27	0.08	0.05 U	0.050 U
Sulfate	250	[290 J]	[270 ]	[290 ]	220	[280 ]	[360 ]
Total Sulfides	0.05	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	[0.40 J]
Total organic carbon, filtered	NC	5	6	3	1	2	3.6
pH	NS	7.3	---	---	---	---	---

NOTES: U - not detected, J - estimated, R - unusable, NC - no criteria, Dup - duplicate sample, FF - field filtered.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.



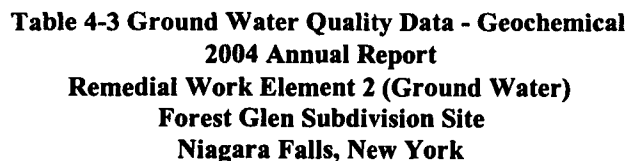


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**Table 4-3 Ground Water Quality Data - Geochemical**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-04S	MW-04S	MW-04S	MW-04S	MW-04S	MW-04S
Sample Date	GW Standards mg/L	02/17/00	08/15/01	11/29/01	02/28/02	05/14/02	11/17/04
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound							
Alkalinity (as CaCO <sub>3</sub> )	NS	350	330	370	360	370	350
Chloride	250	150	130	230	200	200	190
Nitrate (as N)	10	0.05 U	0.05 U	0.15	0.05 U	0.05 U	0.061
Nitrite (as N)	1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.018 J
Nitrite-nitrate nitrogen	10	0.05 U	0.05 U	0.15	0.05 U	0.05 U	0.079
Sulfate	250	[530]	[300]	[790]	[740]	[700]	[370]
Total Sulfides	0.05	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	[0.40 J]
Total organic carbon, filtered	NC	5	2 J	4	1 U	3	17
pH	NS	7.9	---	---	---	---	---

**NOTES:** U - not detected, J - estimated, R - unusable, NC - no criteria, Dup - duplicate sample, FF - field filtered.  
[ ] - Exceeds NYS Class GA Ground Water Quality Standard.



**NOTES:** U - not detected, J - estimated, R - unusable, NC - no criteria, Dup - duplicate sample, FF - field filtered.  
[ ] - Exceeds NYS Class GA Ground Water Quality Standard.





**Table 4-3 Ground Water Quality Data - Geochemical**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-05S	MW-05S	MW-05S	MW-05S	MW-05S	MW-05S
Sample Date	GW Standards	02/17/00	08/14/01	11/29/01	02/27/02	05/15/02	11/17/04
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound							
Alkalinity (as CaCO <sub>3</sub> )	NS	370	470	340	340	330	400
Chloride	250	240	170	170	97	75	120
Nitrate (as N)	10	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.050 U
Nitrite (as N)	1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.011 J
Nitrite-nitrate nitrogen	10	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.017 J
Sulfate	250	[270]	[290]	[270]	[260]	200	[370]
Total Sulfides	0.05	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	[0.60 J]
Total organic carbon, filtered	NC	6	2 UJ	9	2	6	5.2
pH	NS	7.1	---	---	---	---	---

**NOTES:** U - not detected, J - estimated, R - unusable, NC - no criteria, Dup - duplicate sample, FF - field filtered.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.







**Table 4-3 Ground Water Quality Data - Geochemical**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-06S	MW-06S	MW-06S	MW-06S	MW-06S	MW-06S
Sample Date	GW Standards	02/15/00	08/15/01	11/29/01	02/27/02	05/15/02	11/16/04
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound							
Alkalinity (as CaCO <sub>3</sub> )	NS	250	270	230	200	230	160
Chloride	250	200	120	90	43	44	52
Nitrate (as N)	10	0.05 U	0.05 U	0.05 U	0.05 U	0.07	0.050 U
Nitrite (as N)	1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0074 J
Nitrite-nitrate nitrogen	10	0.05 U	0.05 U	0.05 U	0.05 U	0.07	0.050 U
Sulfate	250	220 J	230	200	130	120	[330]
Total Sulfides	0.05	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	[0.80]
Total organic carbon, filtered	NC	5	7 J	8	6	2	5.8
pH	NS	7.4	---	---	---	---	---

**NOTES:** U - not detected, J - estimated, R - unusable, NC - no criteria, Dup - duplicate sample, FF - field filtered.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.



**Table 4-3 Ground Water Quality Data - Geochemical**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-07D	MW-07D	MW-07D	MW-07D	MW-07D	MW-07D
Sample Date	GW Standards	02/18/00	08/16/01	11/28/01	02/25/02	05/16/02	11/15/04
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound							
Alkalinity (as CaCO <sub>3</sub> )	NS	330	330	330	320	330	280
Chloride	250	180	180	180	120	120	97
Nitrate (as N)	10	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.050 U
Nitrite (as N)	1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.050 U
Nitrite-nitrate nitrogen	10	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.050 U
Sulfate	250	[260]	230	[310]	240	210	190
Total Sulfides	0.05	0.2 U	[0.6]	0.2 U	0.2 U	0.2 U	[0.40 J]
Total organic carbon, filtered	NC	6	8 J	5	3	1 U	5.2
pH	NS	7.9	---	---	---	---	---

NOTES: U - not detected, J - estimated, R - unusable, NC - no criteria, Dup - duplicate sample, FF - field filtered.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.



**Table 4-3 Ground Water Quality Data - Geochemical**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-07S	MW-07S	MW-07S	MW-07S	MW-07S	MW-07S
Sample Date	GW Standards	02/18/00	08/16/01	11/28/01	02/25/02	05/16/02	11/15/04
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound							
Alkalinity (as CaCO <sub>3</sub> )	NS	320	370	150	140	150	180
Chloride	250	9	13	6	9	7	53
Nitrate (as N)	10	0.05 U	0.05 U	0.11	0.14	0.10	0.16
Nitrite (as N)	1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0068 J
Nitrite-nitrate nitrogen	10	0.05 U	0.05 U	0.11	0.14	0.10	0.17
Sulfate	250	110	95	77	42	32	120
Total Sulfides	0.05	0.2 U	[0.2 ]	0.2 U	0.2 U	0.2 U	0.80 U
Total organic carbon, filtered	NC	2	2.1	6	1 U	2	10
pH	NS	7.3	---	---	---	---	---

**NOTES:** U - not detected, J - estimated, R - unusable, NC - no criteria, Dup - duplicate sample, FF - field filtered.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.





**Table 4-3 Ground Water Quality Data - Geochemical**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-08S	MW-08S	MW-08S	MW-08S	MW-08S	MW-08S
Sample Date	GW Standards mg/L	02/18/00	08/16/01	11/28/01	02/25/02	05/16/02	11/16/04
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound							
Alkalinity (as CaCO <sub>3</sub> )	NS	240	190	190	190	190	190
Chloride	250	19	54	13	13	12	12
Nitrate (as N)	10	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.050 U
Nitrite (as N)	1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0072 J
Nitrite-nitrate nitrogen	10	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.050 U
Sulfate	250	120	100	110	92	61	130
Total Sulfides	0.05	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	[0.40 J]
Total organic carbon, filtered	NC	2	4 J	4	2	1	3.4
pH	NS	7.4	---	---	---	---	---

**NOTES:** U - not detected, J - estimated, R - unusable, NC - no criteria, Dup - duplicate sample, FF - field filtered.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.







**Table 4-3 Ground Water Quality Data - Geochemical**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

Sample ID	NYSDEC Class GA	MW-10S	MW-10S	MW-10S	MW-10S	MW-10S	MW-10S
Sample Date	GW Standards mg/L	02/15/00	08/14/01	11/29/01	02/27/02	05/15/02	11/17/04
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
<b>Compound</b>							
Alkalinity (as CaCO <sub>3</sub> )	NS	250	260	210	210	230	280
Chloride	250	[370 J]	130	70	23	14	[270 J]
Nitrate (as N)	10	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.050 U
Nitrite (as N)	1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.013 J
Nitrite-nitrate nitrogen	10	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.050 U
Sulfate	250	210 J	150	170	93	57	[380 J]
Total Sulfides	0.05	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	[0.60 J]
Total organic carbon, filtered	NC	5	7.1	4	5	3	3.9
pH	NS	7.3	---	---	---	---	---

**NOTES:** U - not detected, J - estimated, R - unusable, NC - no criteria, Dup - duplicate sample, FF - field filtered.  
 [ ] - Exceeds NYS Class GA Ground Water Quality Standard.

















**Table 4-4 Ground Water Quality Data - Dissolved Gases**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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**Table 4-4 Ground Water Quality Data - Dissolved Gases**  
**2004 Annual Report**  
**Remedial Work Element 2 (Ground Water)**  
**Forest Glen Subdivision Site**  
**Niagara Falls, New York**

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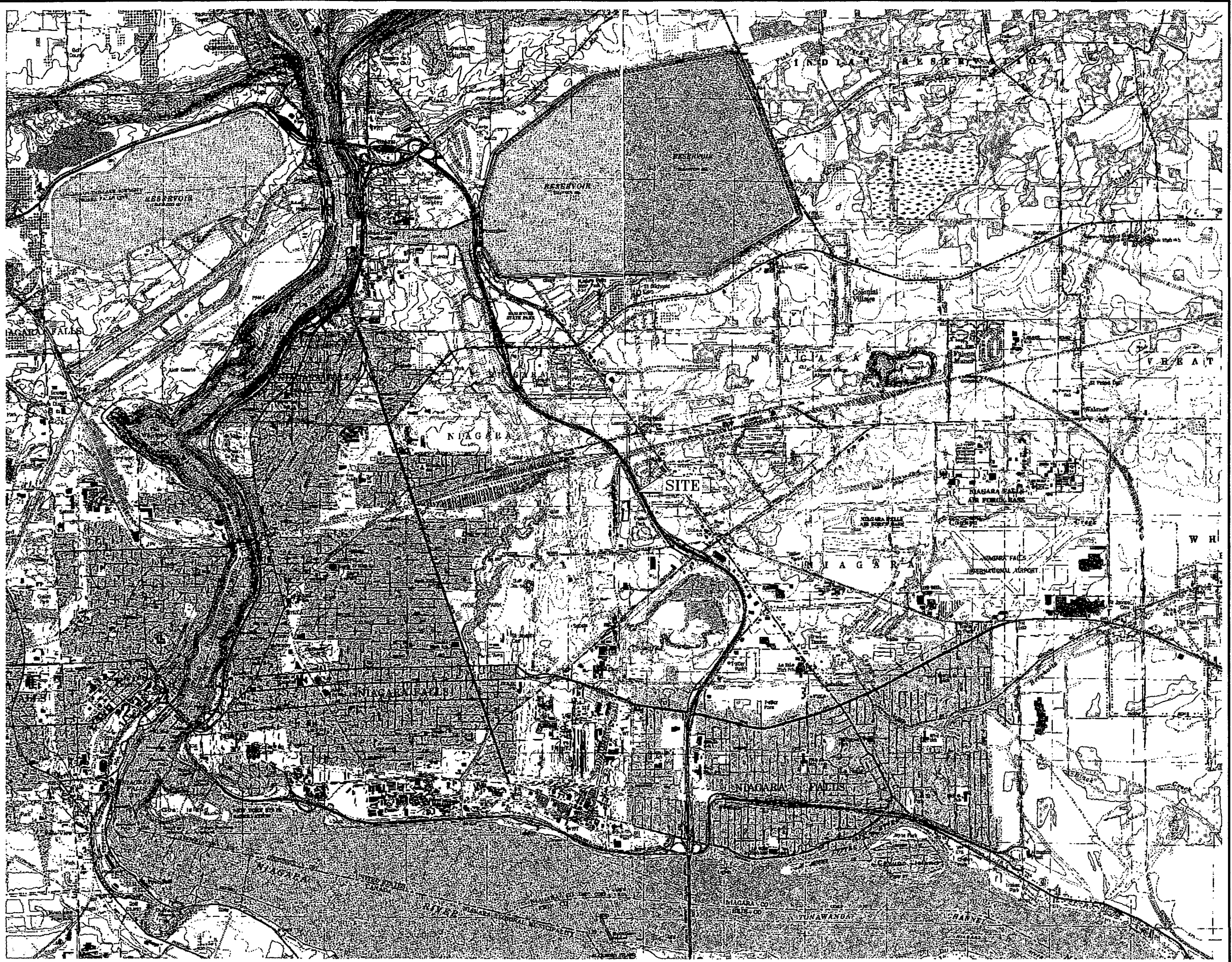


FIGURE 1



FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

SITE LOCATION  
MAP



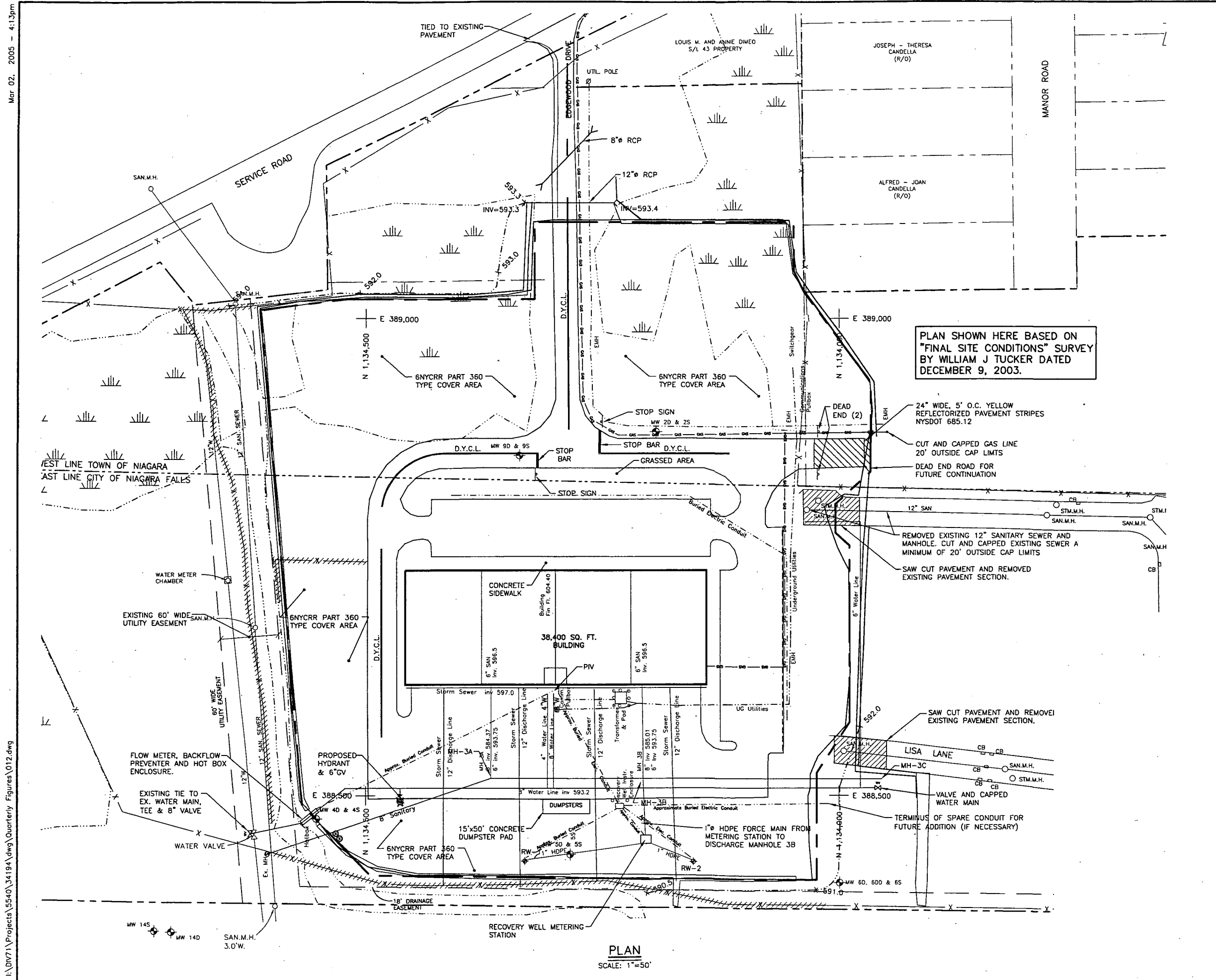
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MARCH 2005

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FIGURE 2



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**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

FIGURE 3A



**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS
- 571 GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)

(576.50) GROUND WATER ELEVATIONS

**NOTE:**

1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**SHALLOW BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(2/6/04)**



FILE NO. 5540.34194.001  
MARCH 2005



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**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

FIGURE 3B

**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS
- 575 GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)
- (576.67) GROUND WATER ELEVATIONS

**NOTE:**

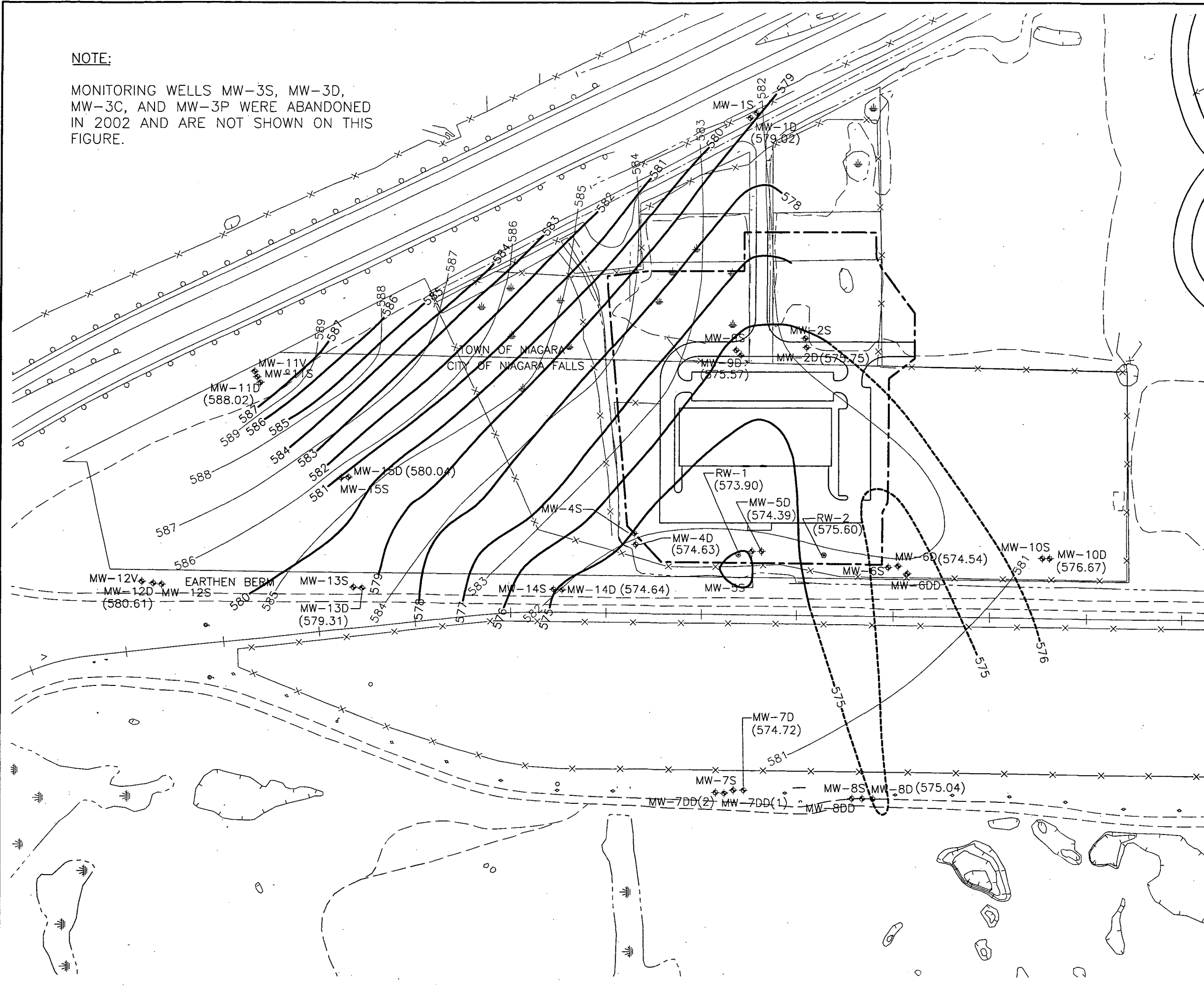
1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**DEEP BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(2/6/04)**

1"=200' 

FILE NO. 5540.34194.002  
MARCH 2005



Mar 02, 2005 - 4:14pm

**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

FIGURE 4A



**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS
- 580 — GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)

(578.71) GROUND WATER ELEVATIONS

**NOTE:**

1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**SHALLOW BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(5/17/04)**

1"=200'

FILE NO. 5540.34194.003  
MARCH 2005



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Mar 02, 2005 - 4:14pm

**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

FIGURE 4B



**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS
- 577— GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)

(578.74) GROUND WATER ELEVATIONS

**NOTE:**

1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**DEEP BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(5/17/04)**



FILE NO. 5540.34194.004  
MARCH 2005



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Mar 02, 2005 - 4:15pm

**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

FIGURE 5A



**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS
- 575 GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)

(580.26) GROUND WATER ELEVATIONS

**NOTE:**

1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**SHALLOW BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(7/23/04)**

1"=200'

FILE NO. 5540.34194.005  
MARCH 2005



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FIGURE 5B

**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

- LEGEND**
- SWAMP/WETLANDS
  - FENCE LINE
  - RAILROAD TRACKS
  - EXISTING MONITORING WELL LOCATION
  - APPROXIMATE RECOVERY WELL LOCATION
  - ENGINEERED CAP LIMITS
  - 575 GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)
  - (576.70) GROUND WATER ELEVATIONS

**NOTE:**

1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

DEEP BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(7/23/04)

1"=200' 200 0 200

FILE NO. 5540.34194.006  
MARCH 2005

**O'BRIEN & GERE**  
ENGINEERS INC.

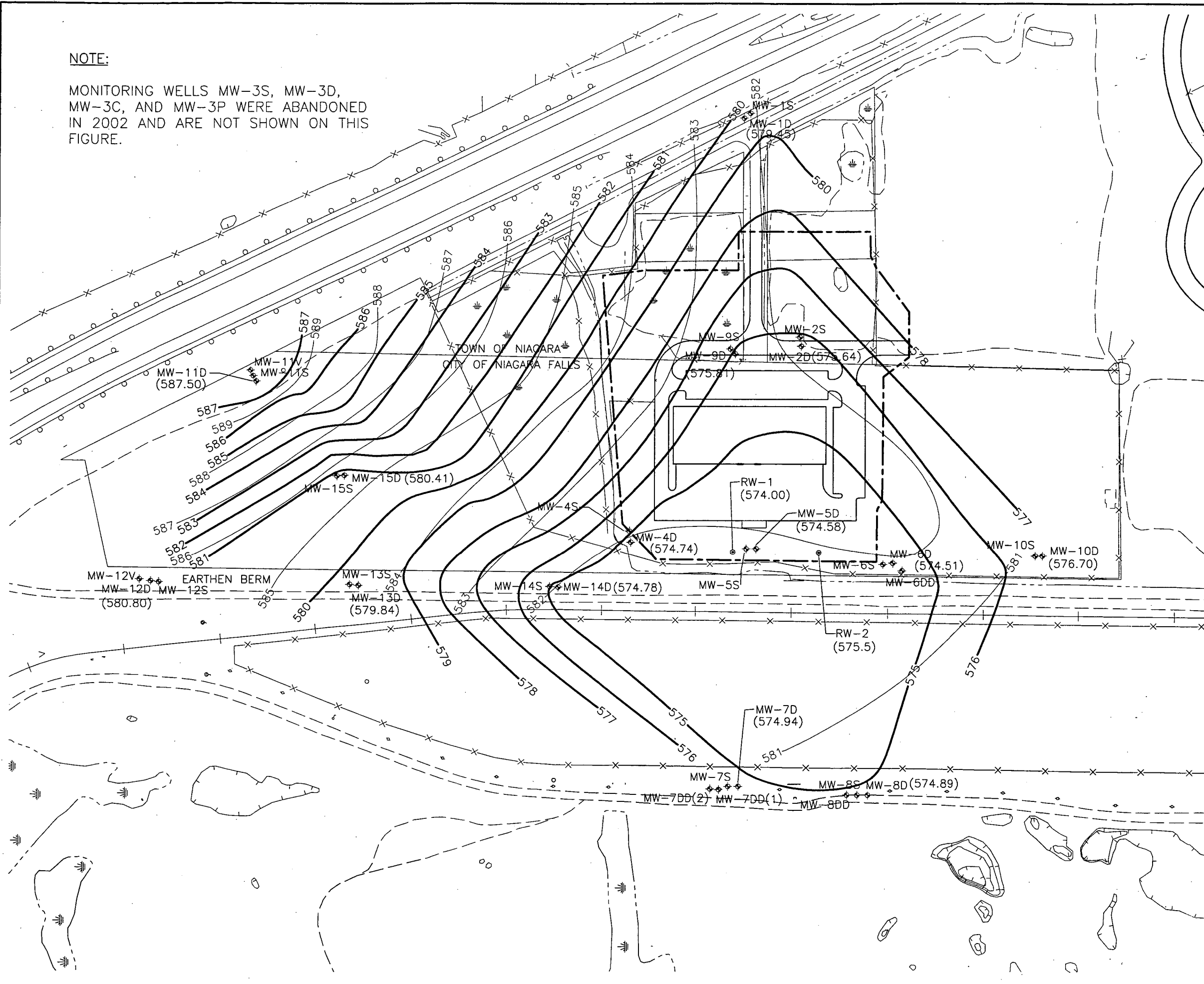


FIGURE 6A

**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS
- GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)

(580.34) GROUND WATER ELEVATIONS

**NOTE:**

1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**SHALLOW BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(8/4/04)**

1"=200' 200 0 200

FILE NO. 5540.34194.007  
MARCH 2005

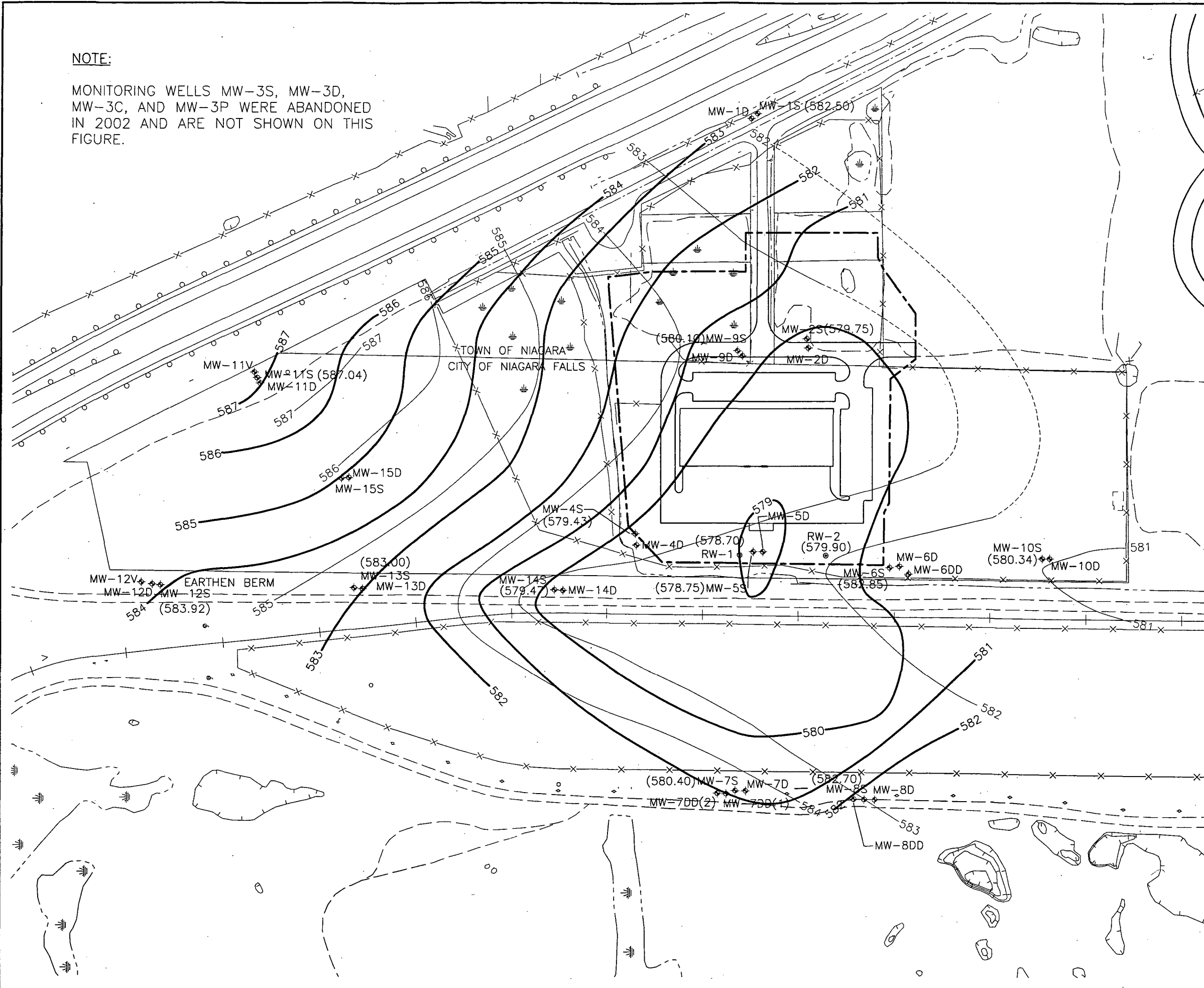




FIGURE 6B

**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.



**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS
- 580 — GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)

(580.52) GROUND WATER ELEVATIONS

**NOTE:**

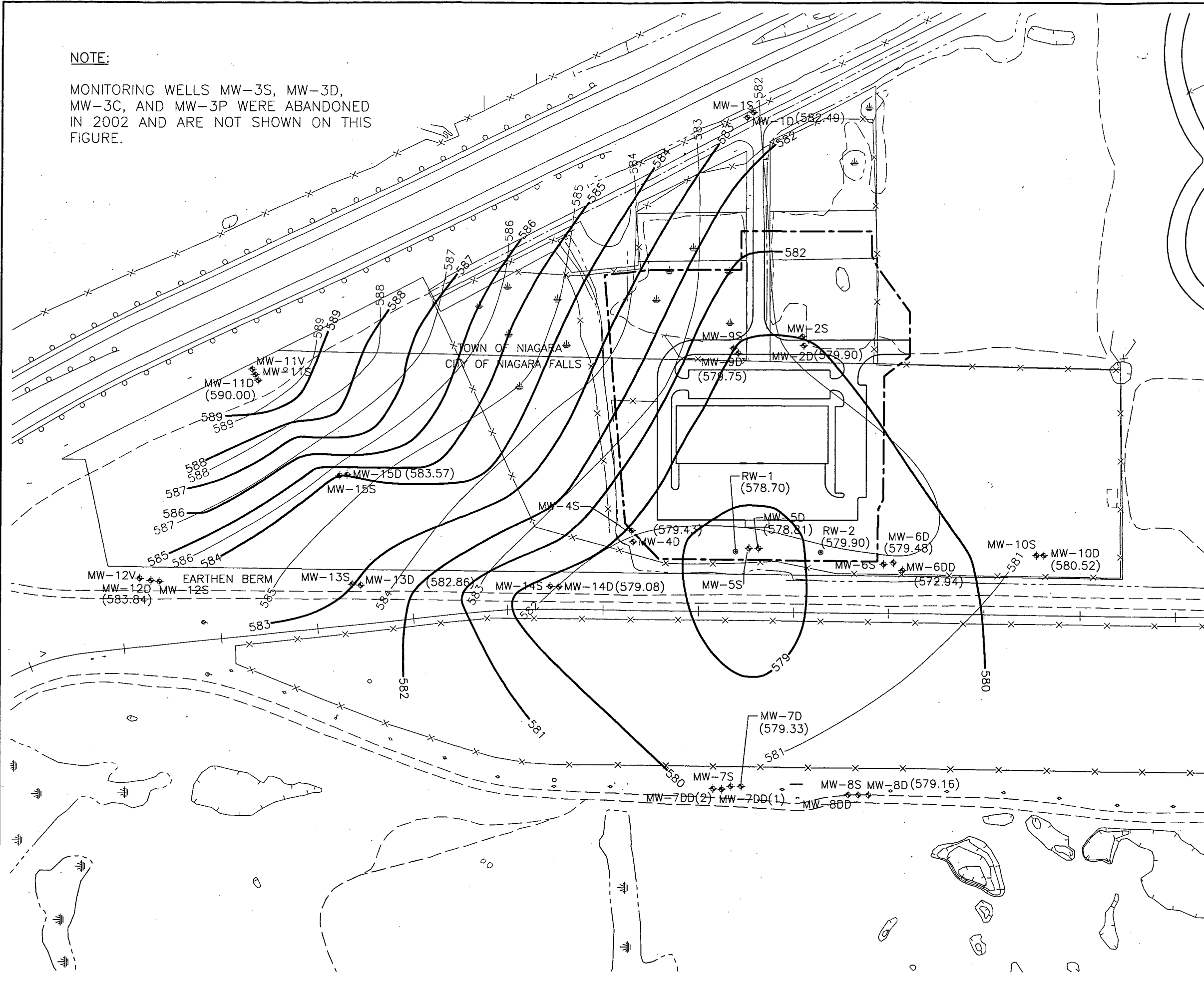
1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**DEEP BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(8/4/04)**

1"=200'

FILE NO. 5540.34194.008  
MARCH 2005



Mar 02, 2005 - 4:17pm

**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

FIGURE 7A



**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS
- 573— GROUND WATER ELEVATION CONTOURS

(572.01) GROUND WATER ELEVATIONS

**NOTE:**

1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**SHALLOW BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(11/18/04)**



FILE NO. 5540.34194.030  
MARCH 2005










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**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

FIGURE 7B

**LEGEND**

-  SWAMP/WETLANDS
-  FENCE LINE
-  RAILROAD TRACKS
-  EXISTING MONITORING WELL LOCATION
-  APPROXIMATE RECOVERY WELL LOCATION
-  ENGINEERED CAP LIMITS
-  573— GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)

(572.81) GROUND WATER ELEVATIONS

**NOTE:**

1. THE BACKGROUND GROUND WATER ELEVATION CONTOURS SHOWN REPRESENT CONDITIONS ON FEBRUARY 14, 2000 BEFORE THE PART 360 COVER AND GROUND WATER RECOVERY SYSTEM WAS CONSTRUCTED.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**DEEP BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(11/18/04)**

1"=200' 

FILE NO. 5540.34194.029  
MARCH 2005



FIGURE 8A



**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS
- 581 — GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)
- (580.82) GROUND WATER ELEVATIONS

**NOTE:**  
GROUND WATER ELEVATION AT MW-6S APPEARS ANOMALOUS AND WAS NOT USED IN CONTOUR GENERATION.

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**BASELINE  
SHALLOW BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(2/14/00)**

1"=200'

FILE NO. 5540.34194.009  
MARCH 2005

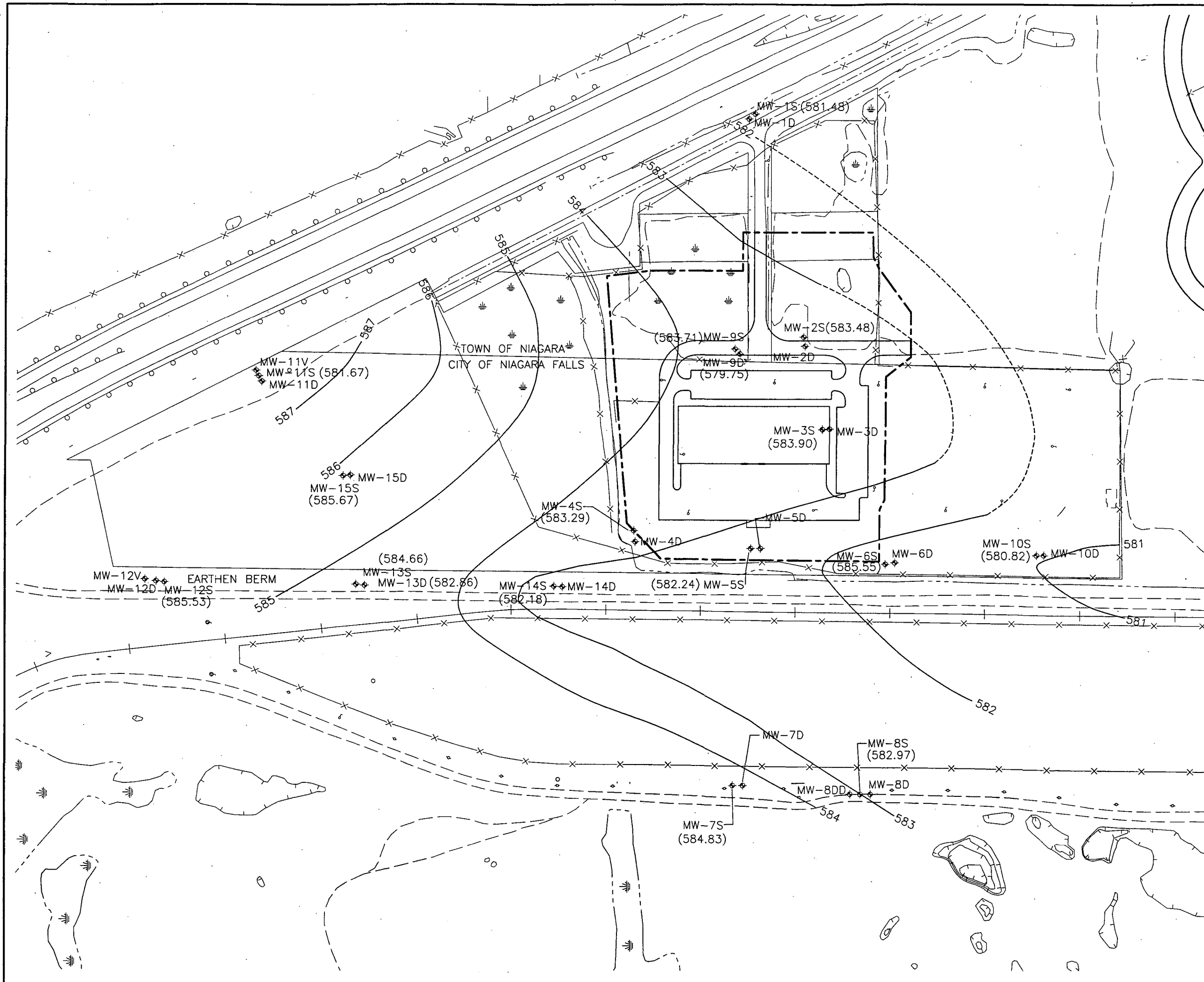
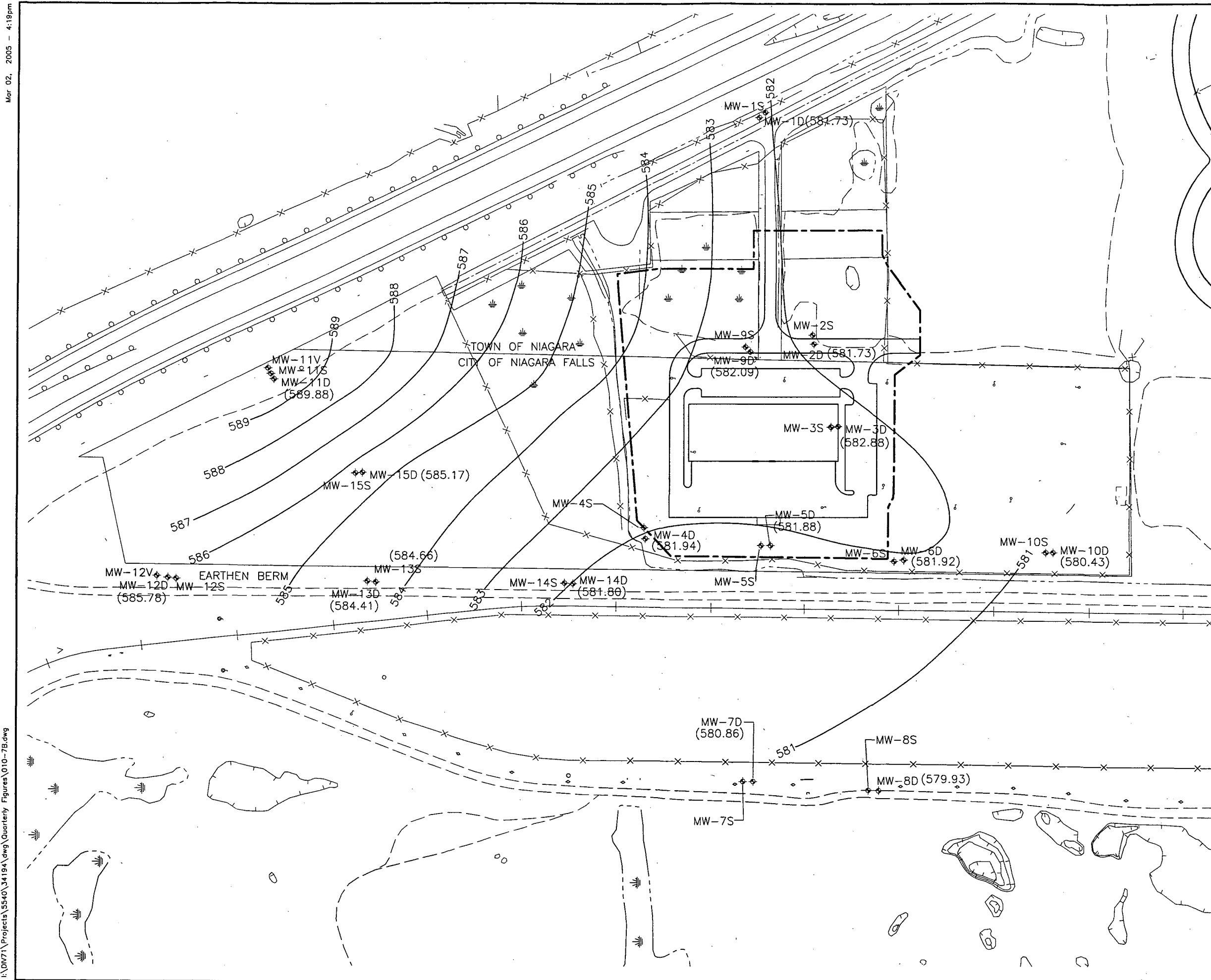


FIGURE 8B



LEGEND

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- ENGINEERED CAP LIMITS
- 581 — GROUND WATER ELEVATION CONTOURS (DASHED WHERE INFERRED)
- (580.43) GROUND WATER ELEVATIONS



FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

BASELINE  
DEEP BEDROCK  
GROUND WATER  
ELEVATION CONTOURS  
(2/14/00)

1"=200'

FILE NO. 5540.34194.009  
MARCH 2004



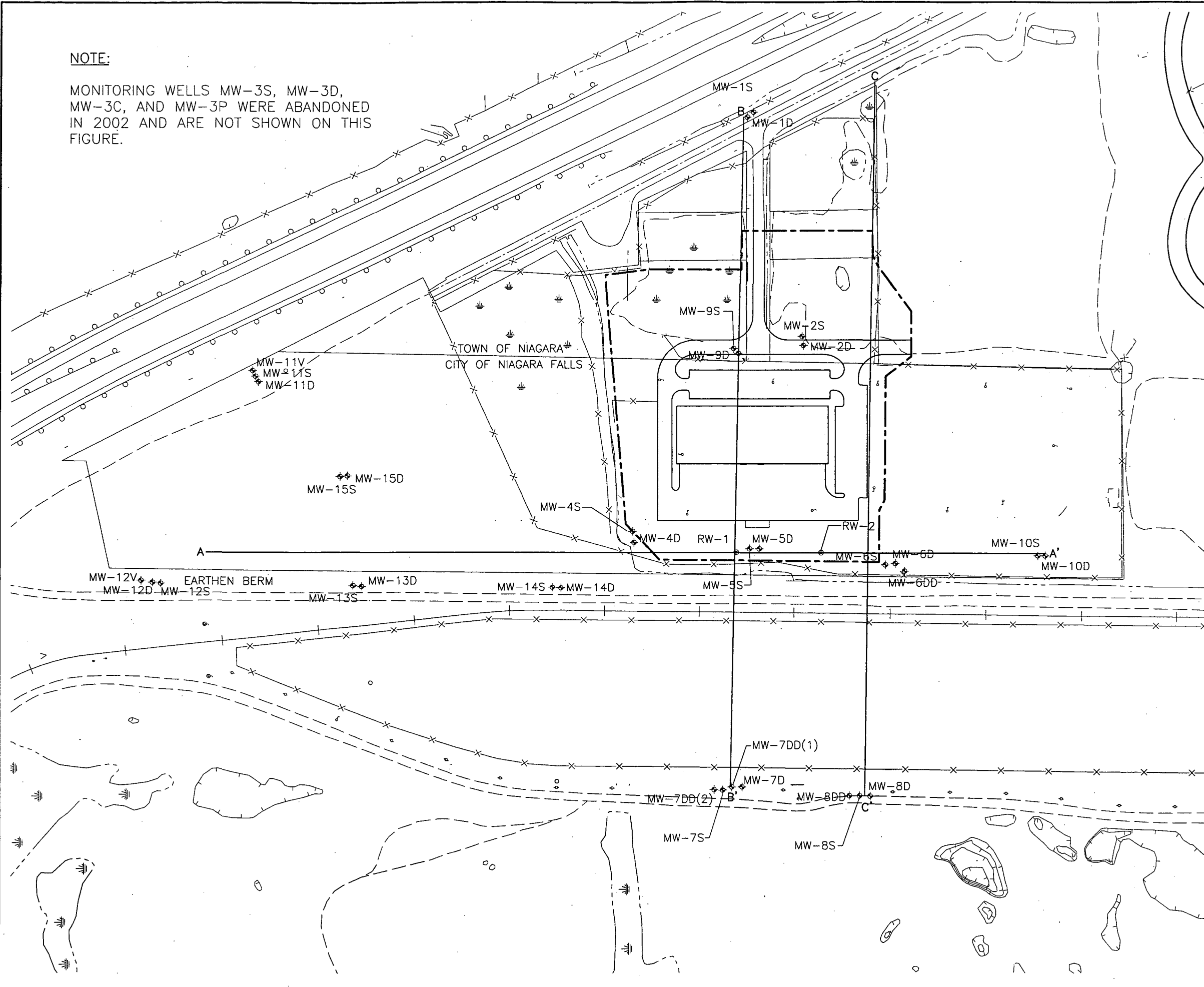
FIGURE 9

**NOTE:**

MONITORING WELLS MW-3S, MW-3D, MW-3C, AND MW-3P WERE ABANDONED IN 2002 AND ARE NOT SHOWN ON THIS FIGURE.

**LEGEND**

- SWAMP/WETLANDS
- FENCE LINE
- RAILROAD TRACKS
- EXISTING MONITORING WELL LOCATION
- APPROXIMATE RECOVERY WELL LOCATION
- ENGINEERED CAP LIMITS



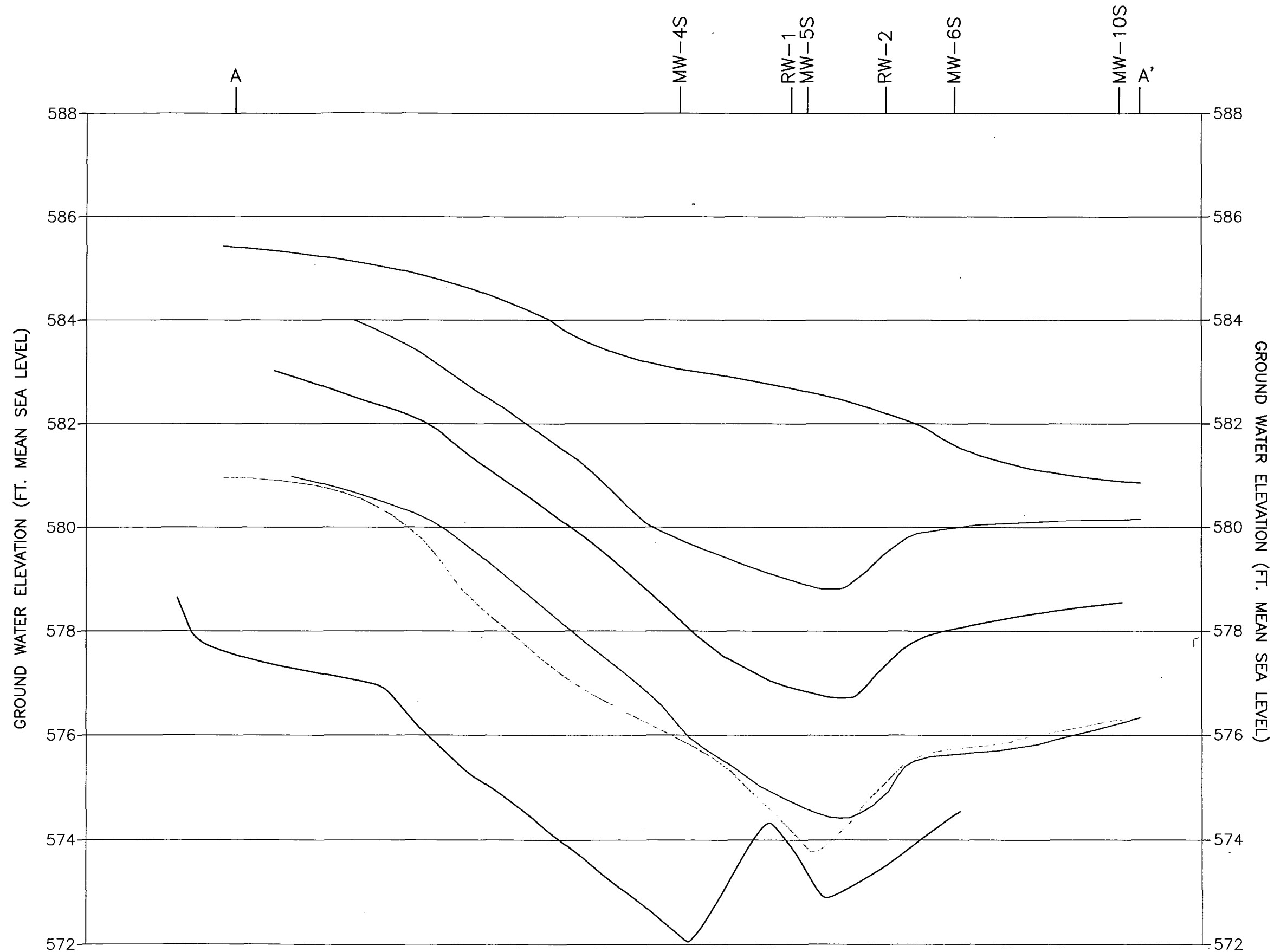
FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

**CROSS-SECTION  
LOCATIONS**

1"=200' 200 0 200

FILE NO. 5540.34194.013  
MARCH 2005

FIGURE 10



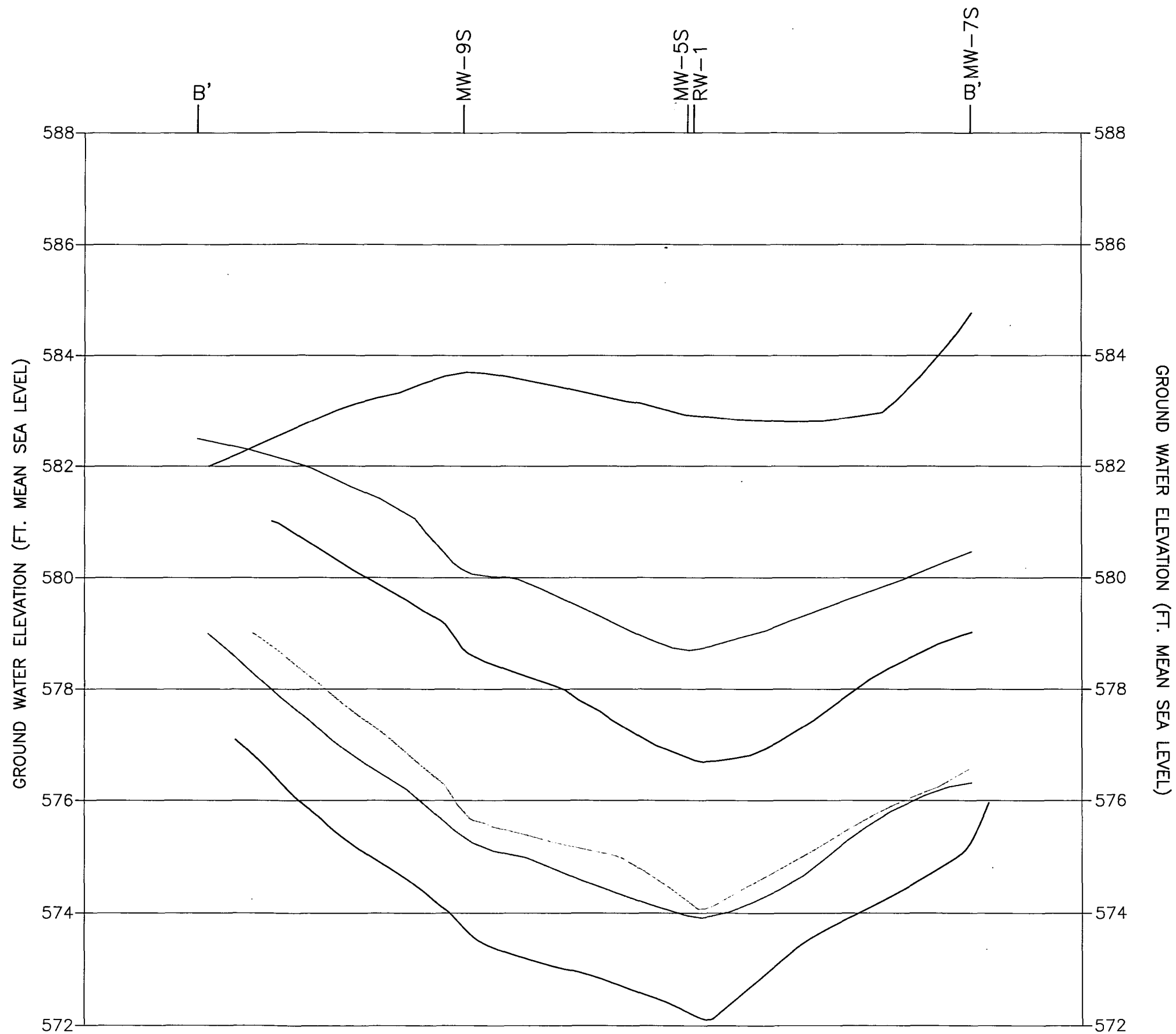


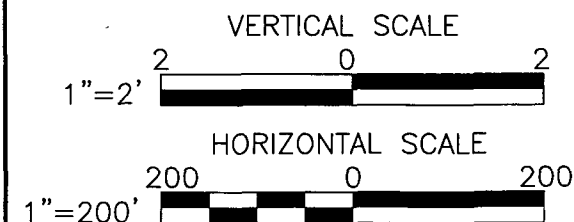
FIGURE 11

LEGEND

- 2/14/00
- 2/6/04
- 5/17/04
- 7/23/04
- 8/4/04
- 11/18/04

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

SHALLOW BEDROCK  
GROUND  
WATER ELEVATIONS  
CROSS-SECTION B-B'



FILE NO. 5540.34194.015  
MARCH 2005



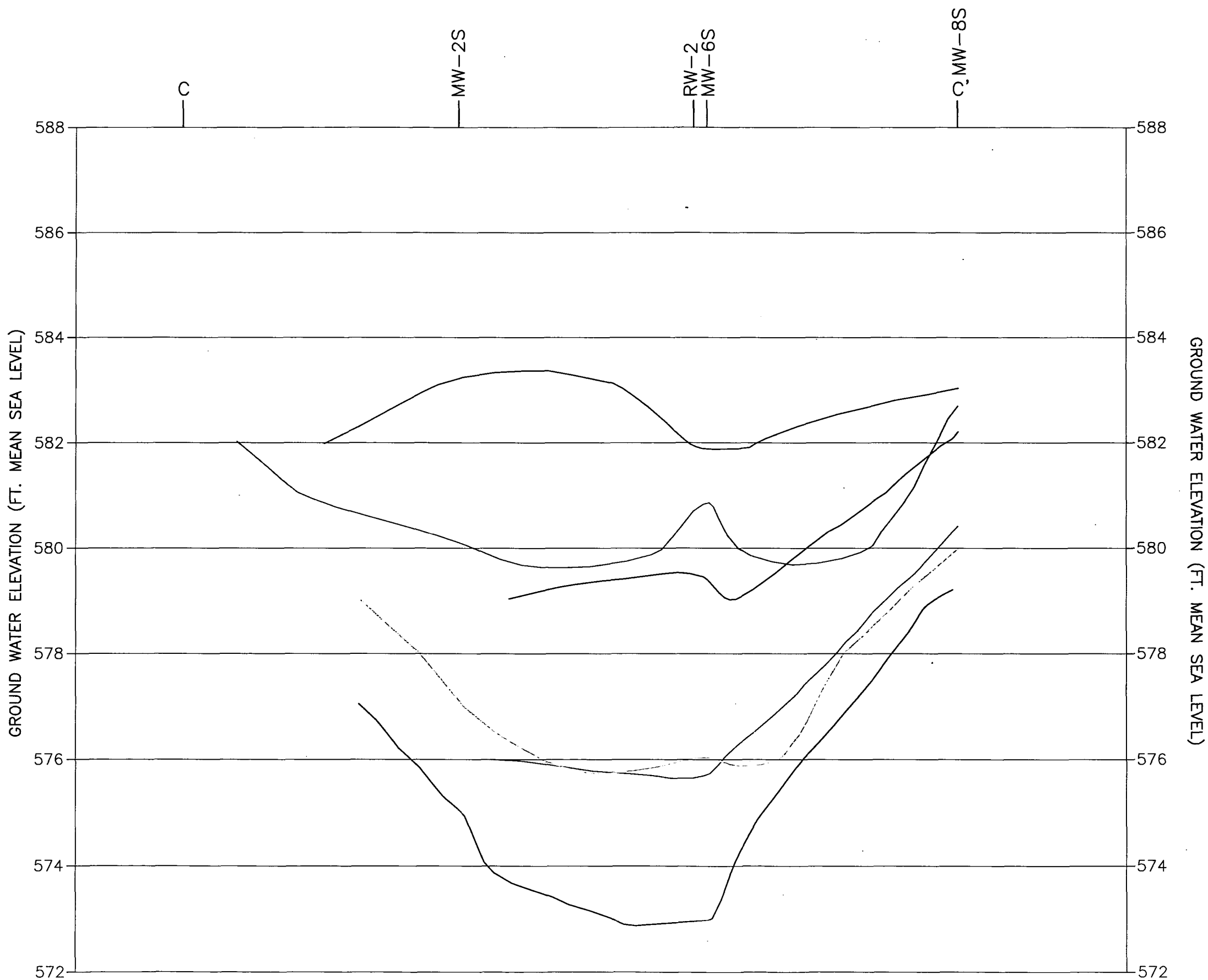


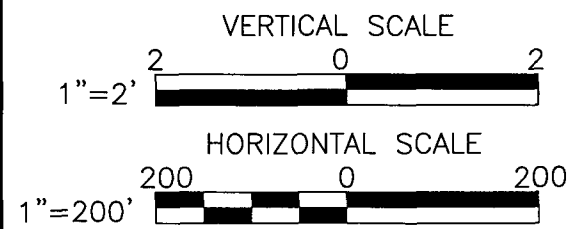
FIGURE 12

LEGEND

- 2/14/00
- 2/6/04
- 5/17/04
- 7/23/04
- 8/4/04
- 11/18/04

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

SHALLOW BEDROCK  
GROUND  
WATER ELEVATIONS  
CROSS-SECTION C-C'



FILE NO. 5540.34194.016  
MARCH 2005

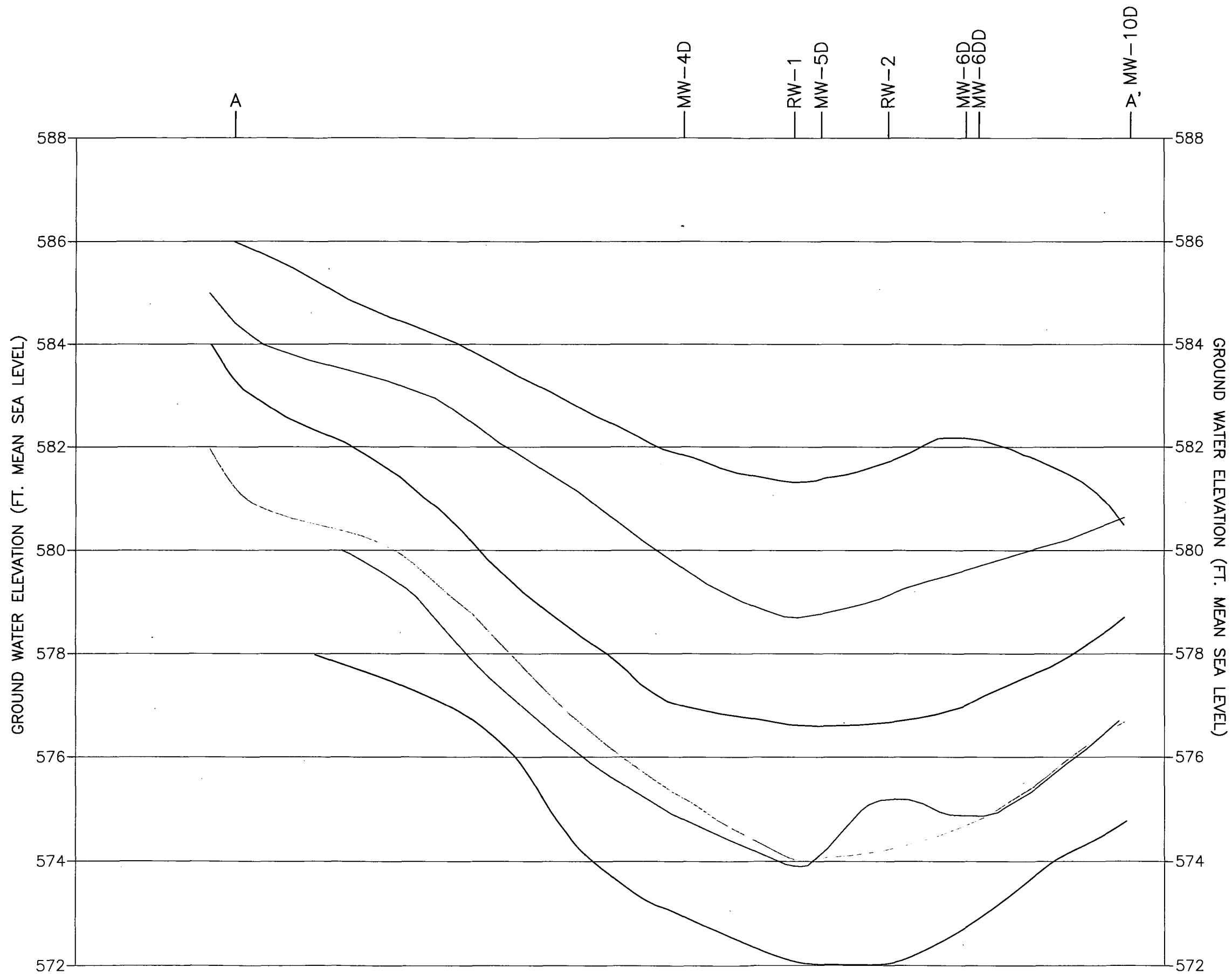


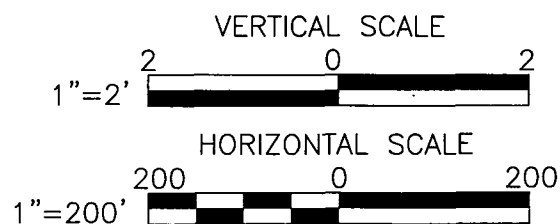
FIGURE 13

**LEGEND**

- 2/14/00
- 2/6/04
- 5/17/04
- 7/23/04
- 8/4/04
- 11/18/04

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

DEEP BEDROCK GROUND  
WATER ELEVATIONS  
CROSS-SECTION A-A'



FILE NO. 5540.34194.017  
MARCH 2005



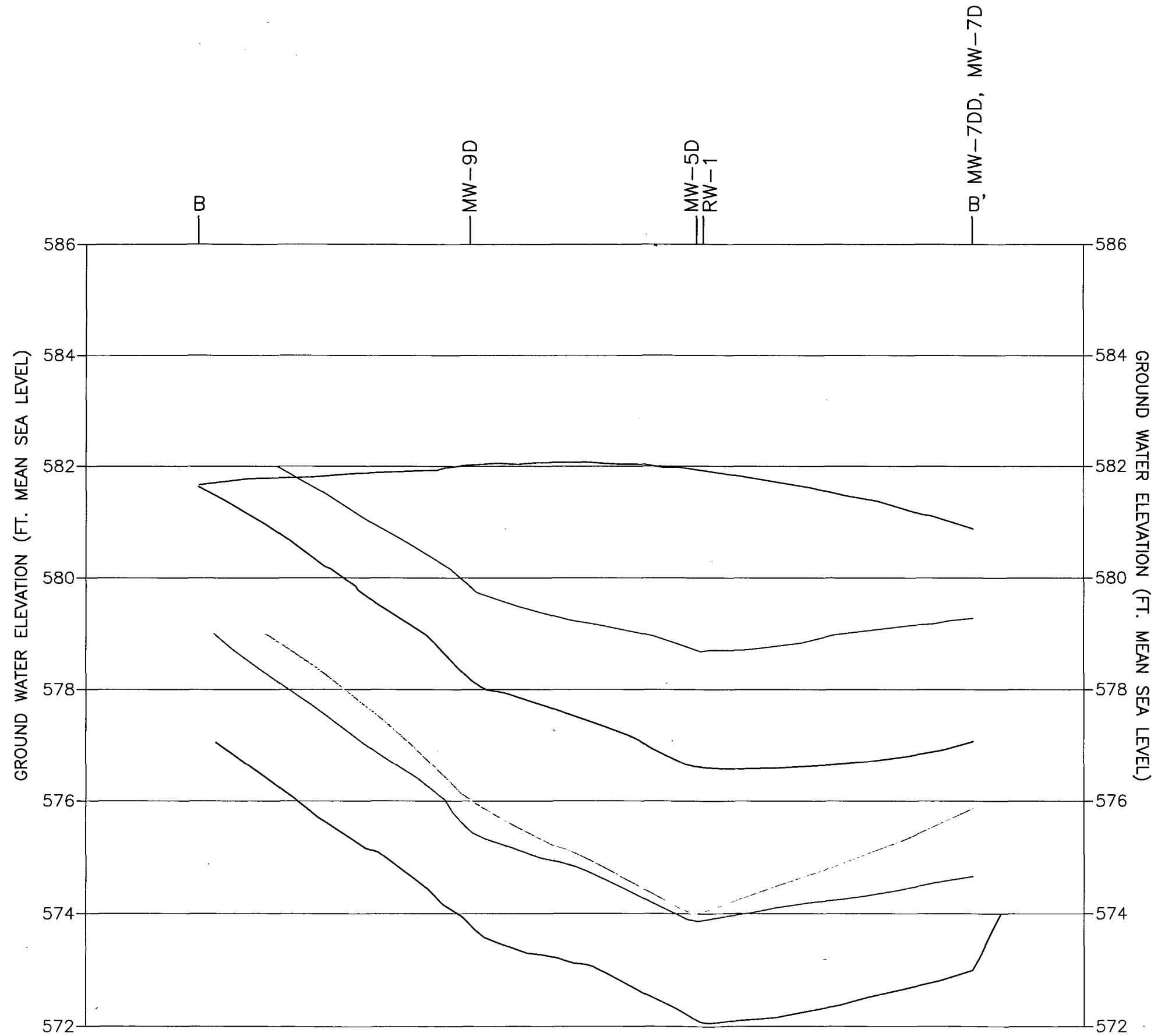


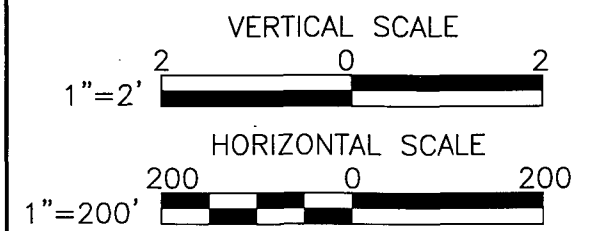
FIGURE 14

**LEGEND**

- 2/14/00
- 2/6/04
- 5/17/04
- - - 7/23/04
- 8/4/04
- 11/18/04

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

DEEP BEDROCK GROUND  
WATER ELEVATIONS  
CROSS-SECTION B-B'



FILE NO. 5540.34194.018  
MARCH 2005

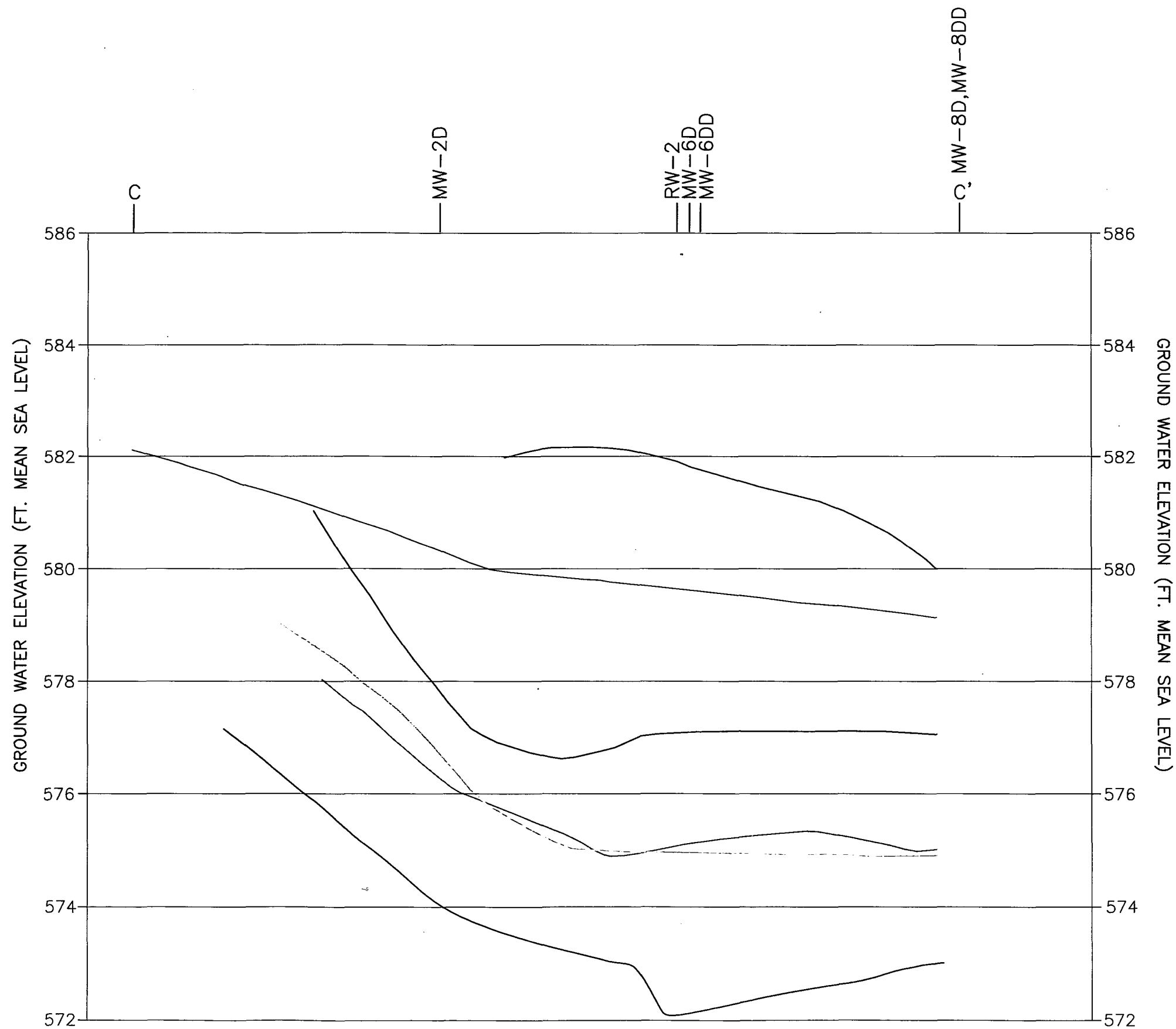


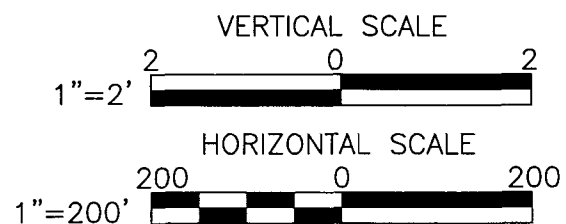
FIGURE 15

LEGEND

- 2/14/00
- 2/6/04
- 5/17/04
- 7/23/04
- 8/4/04
- 11/18/04

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

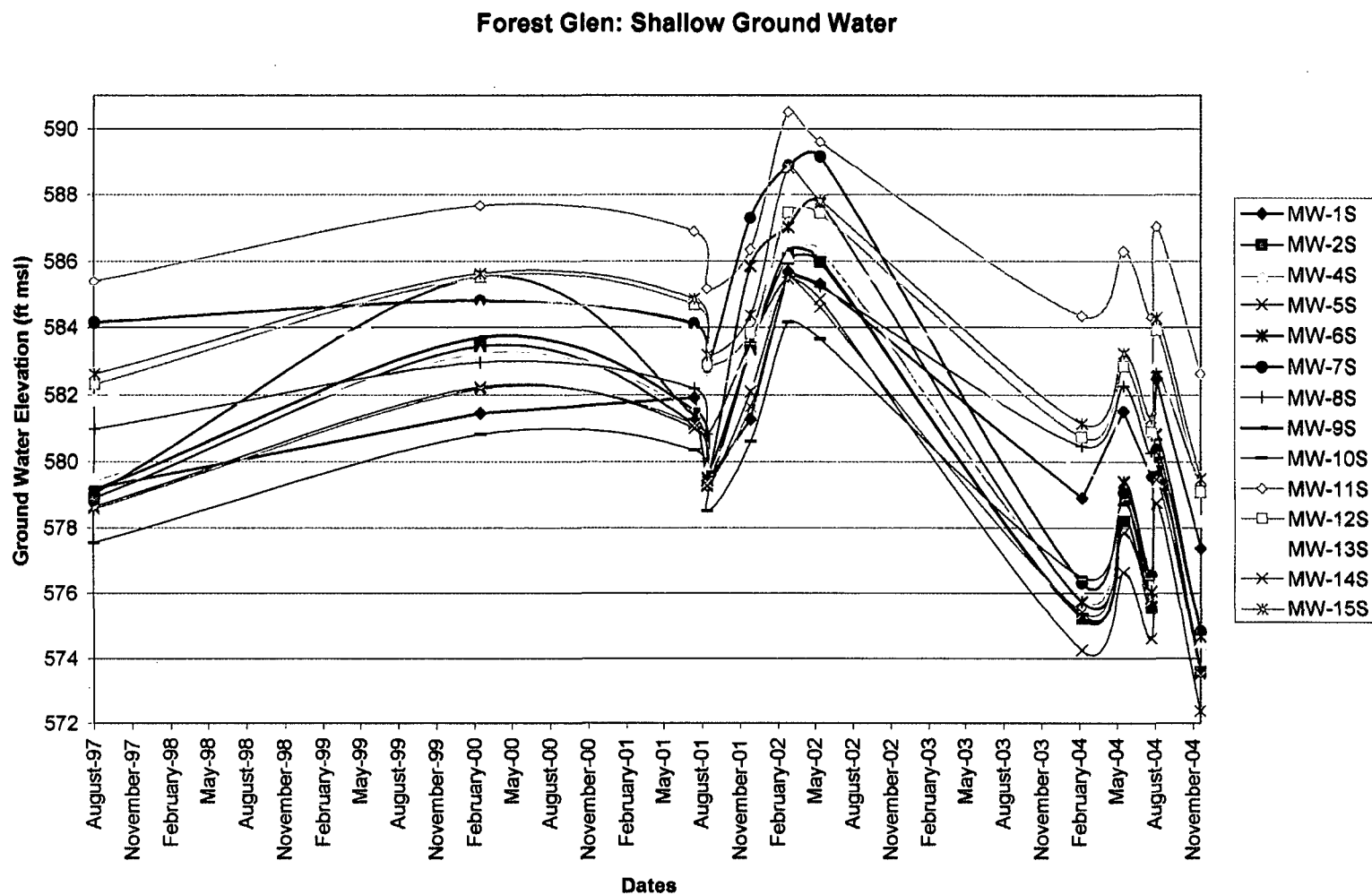
DEEP BEDROCK GROUND  
WATER ELEVATIONS  
CROSS-SECTION C-C'



FILE NO. 5540.34194.019  
MARCH 2005



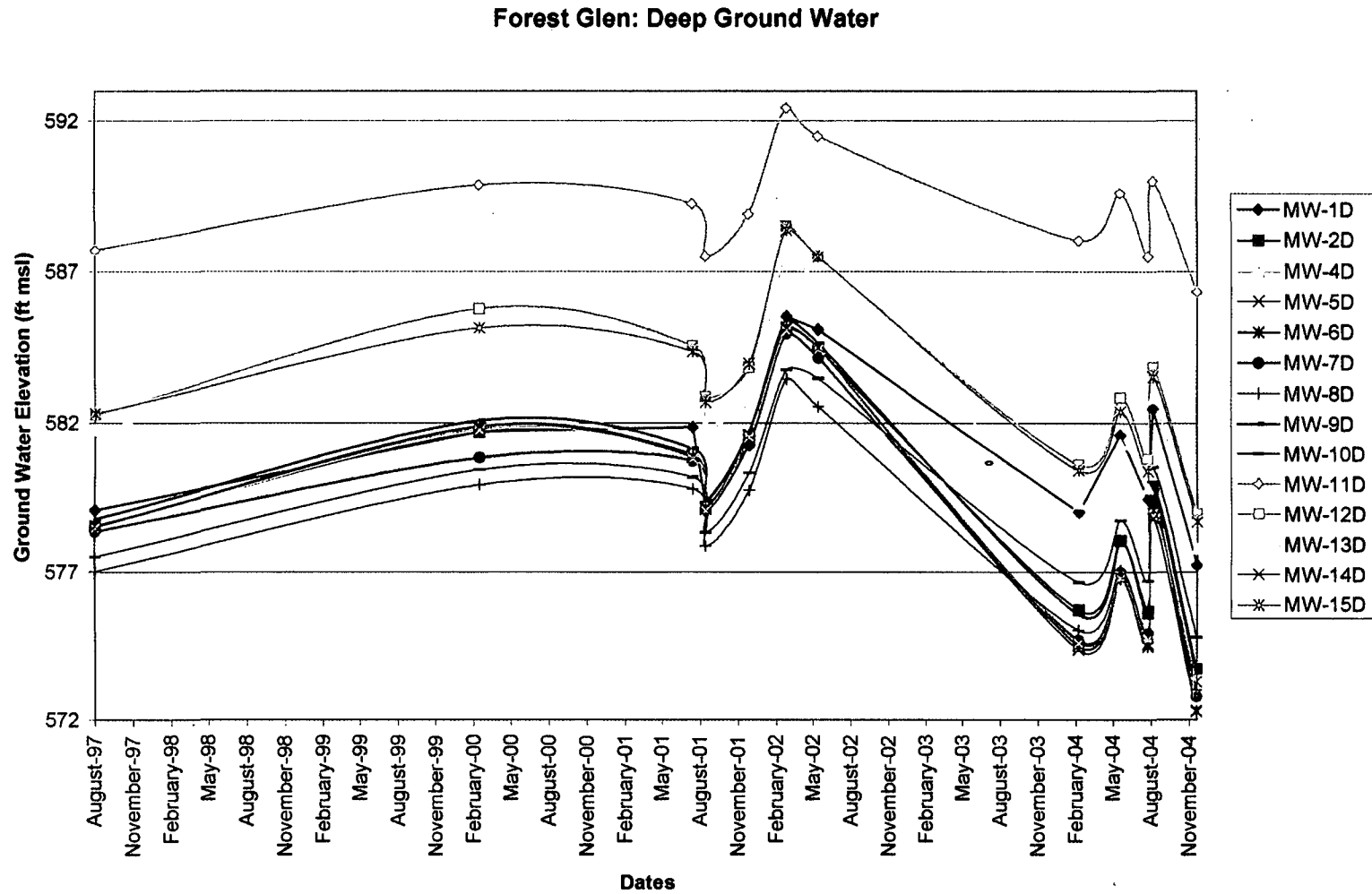
FILE NO. 5540.34194.027  
MARCH 2005



FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK  
  
SHALLOW GROUND WATER ELEVATION TREND

FIGURE 16A

FILE NO. 5540.34194.028  
MARCH 2005



FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK  
  
DEEP GROUND WATER ELEVATION TRENDS

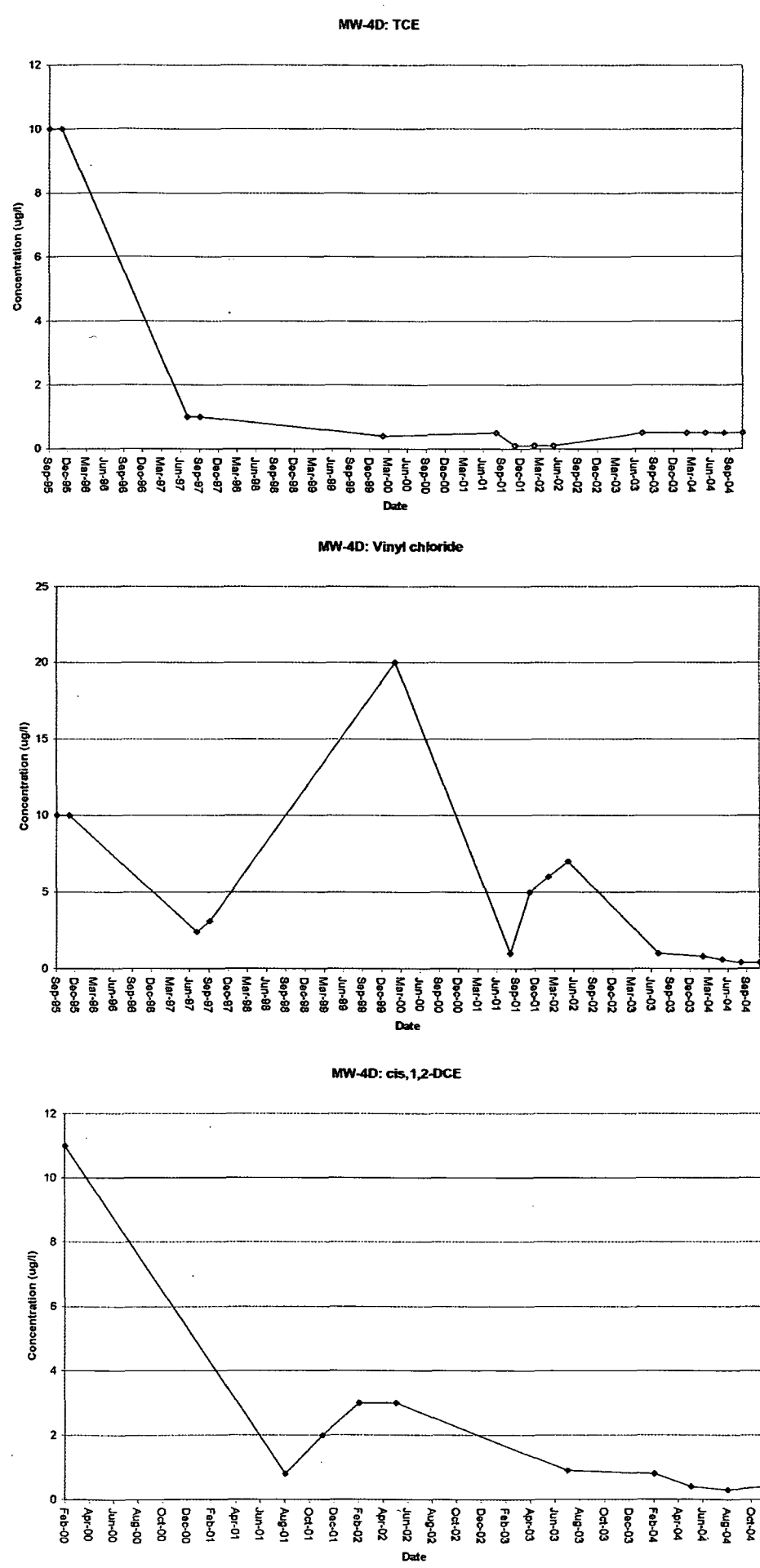
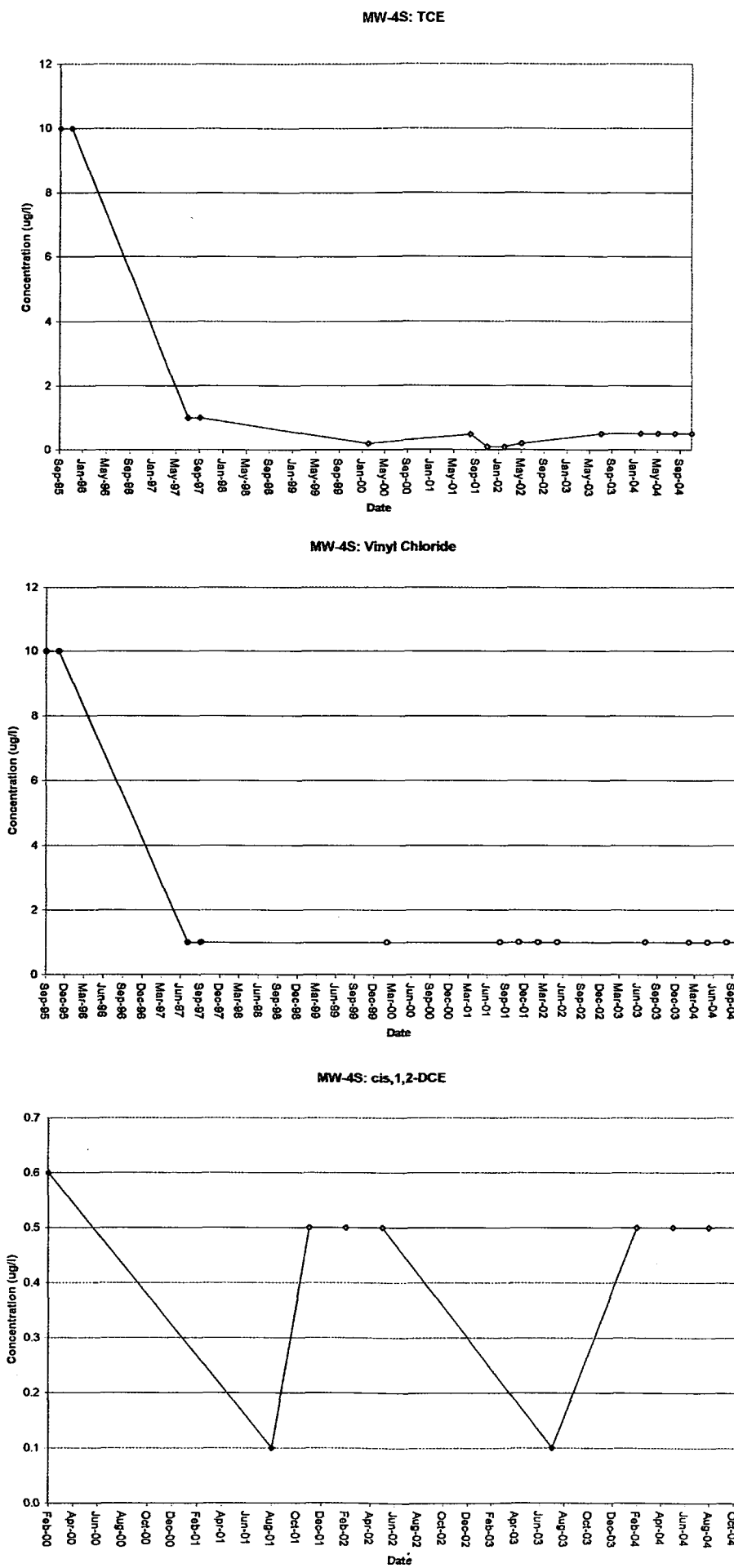
FIGURE 16B

FIGURE 17

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

GROUND WATER  
QUALITY TRENDS: MW-4

FILE NO. 5540.34194.022  
MARCH 2005



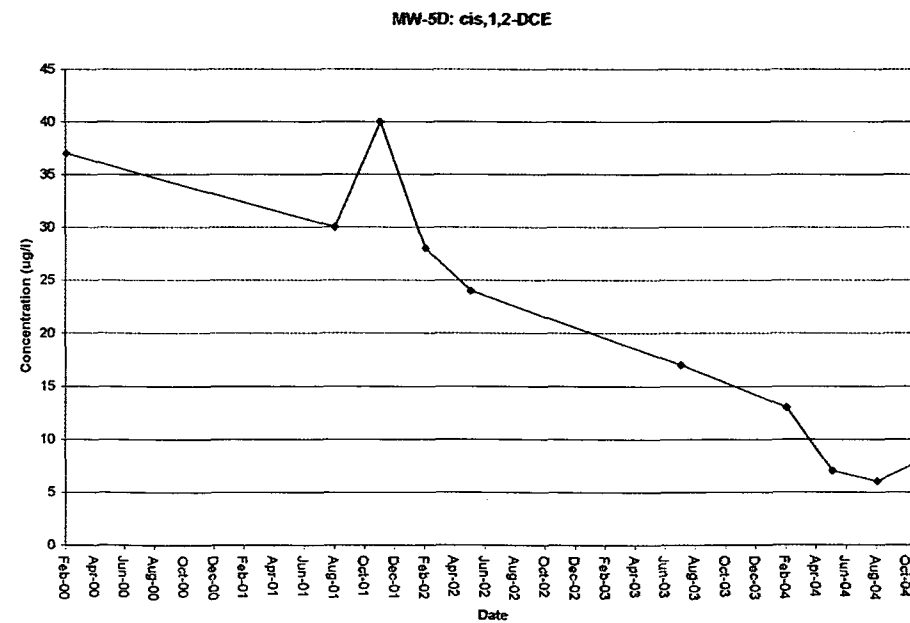
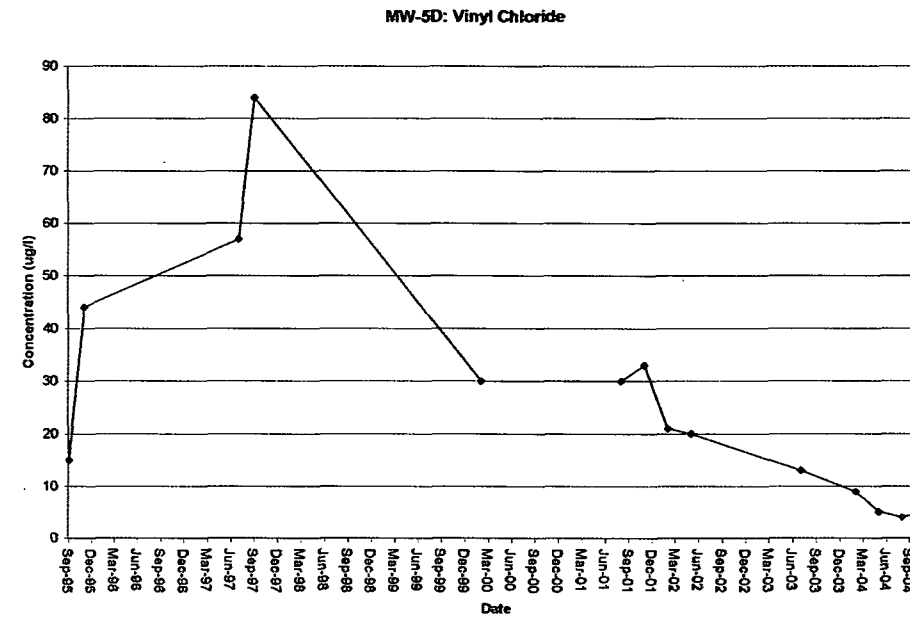
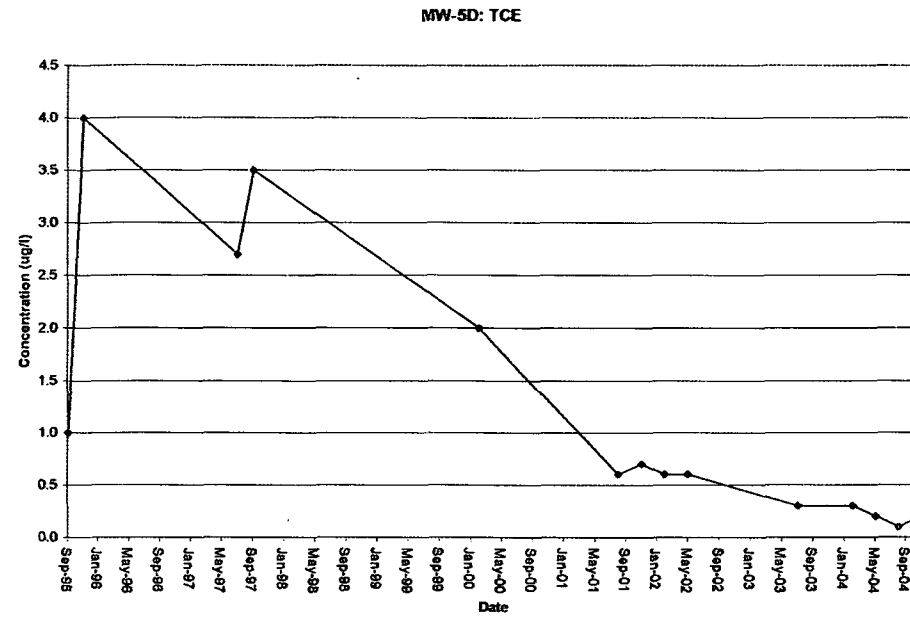
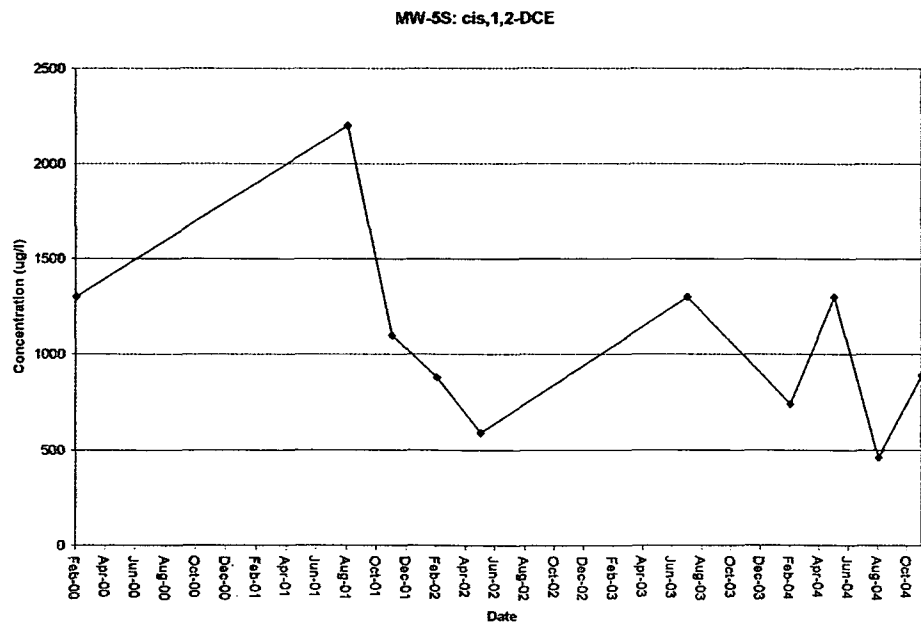
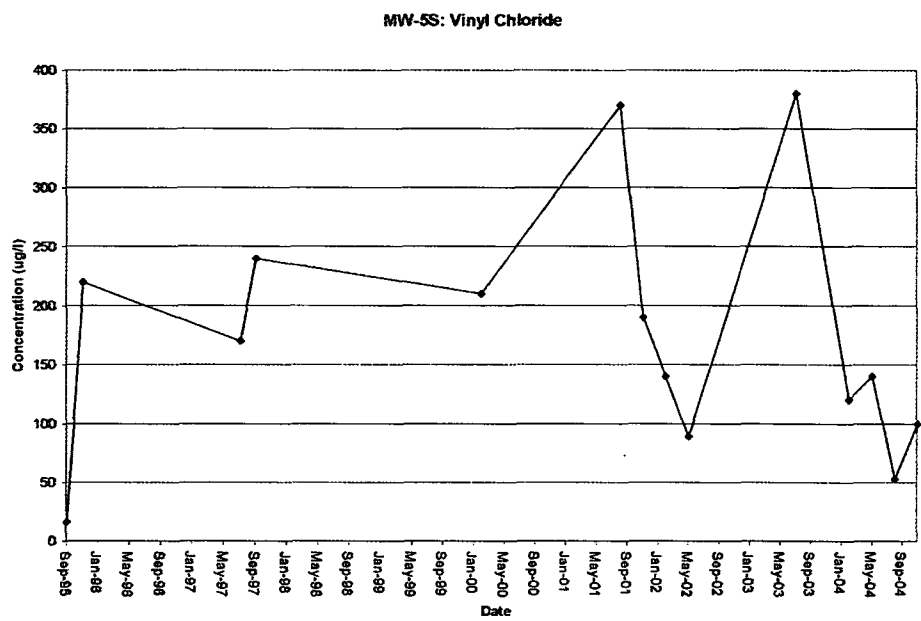
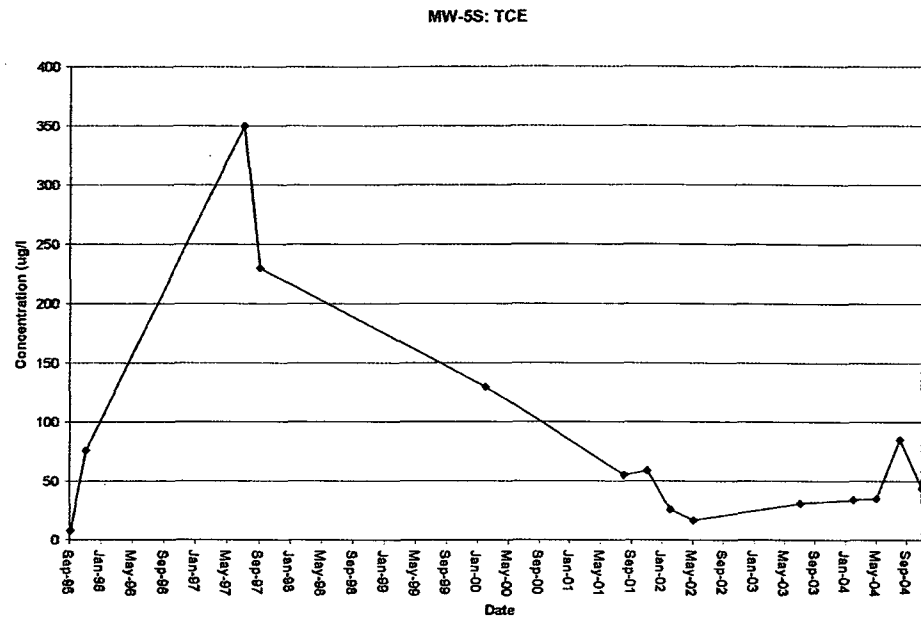


FIGURE 18

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

GROUND WATER  
QUALITY TREND: MW-5

FILE NO. 5540.34194.023  
MARCH 2005





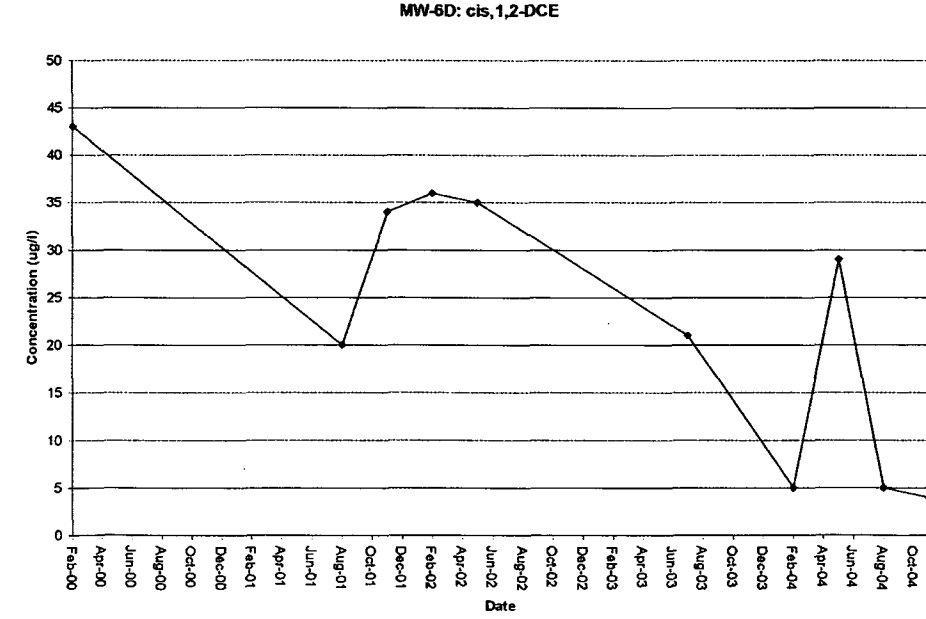
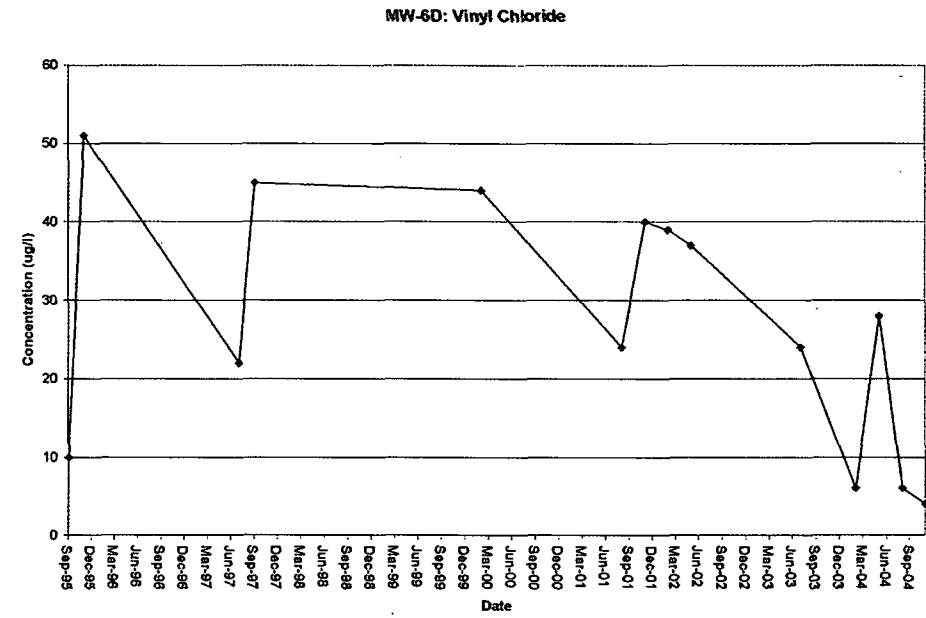
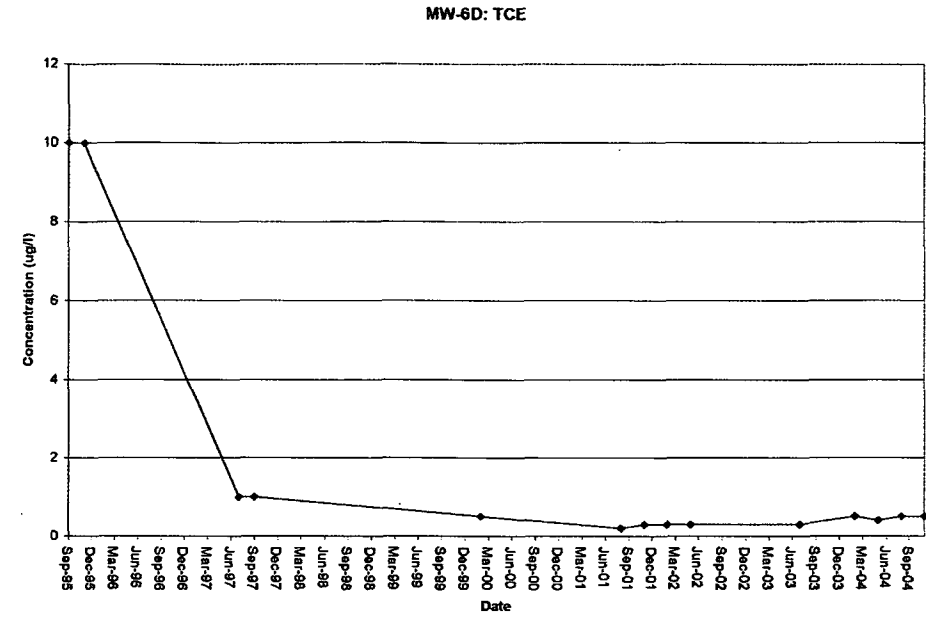
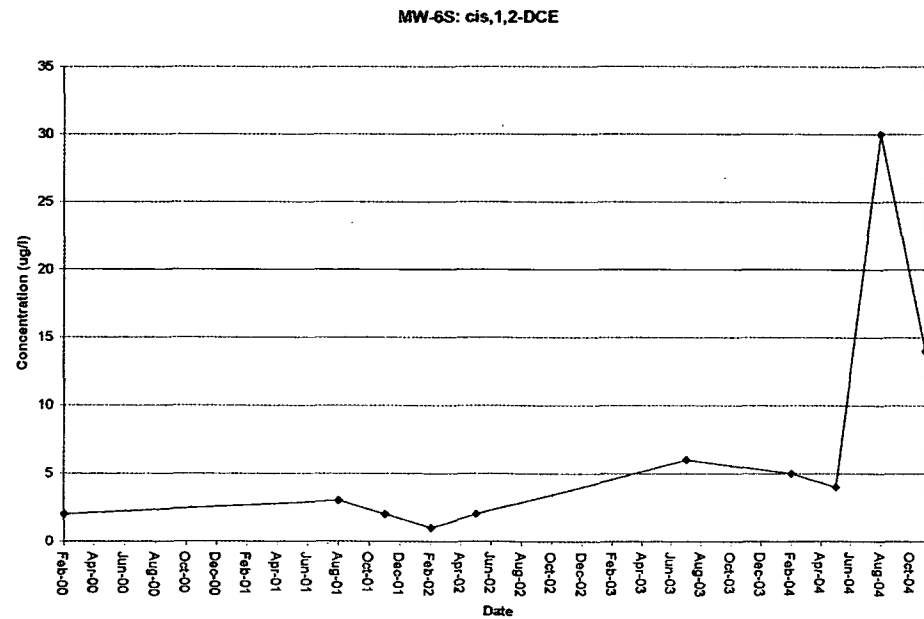
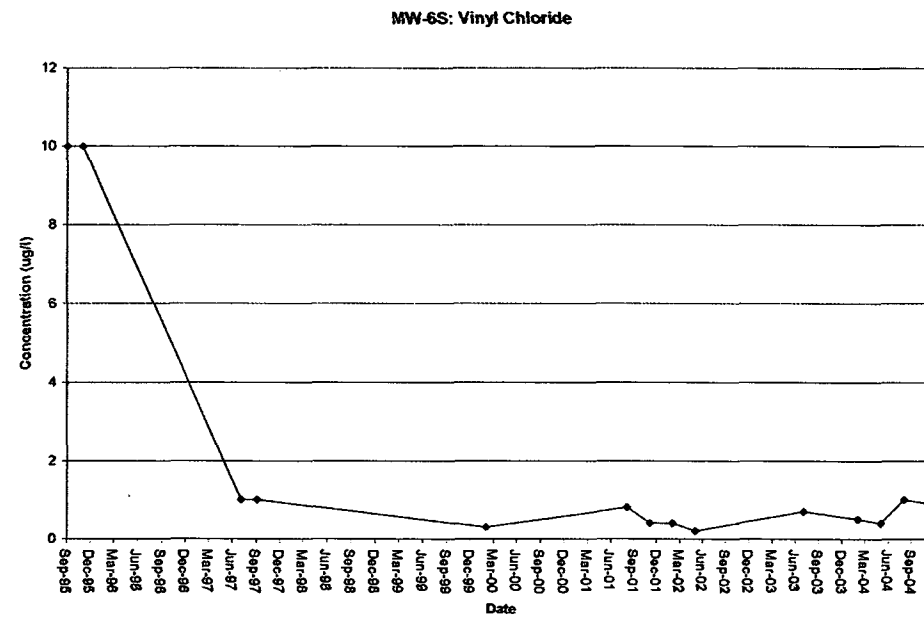
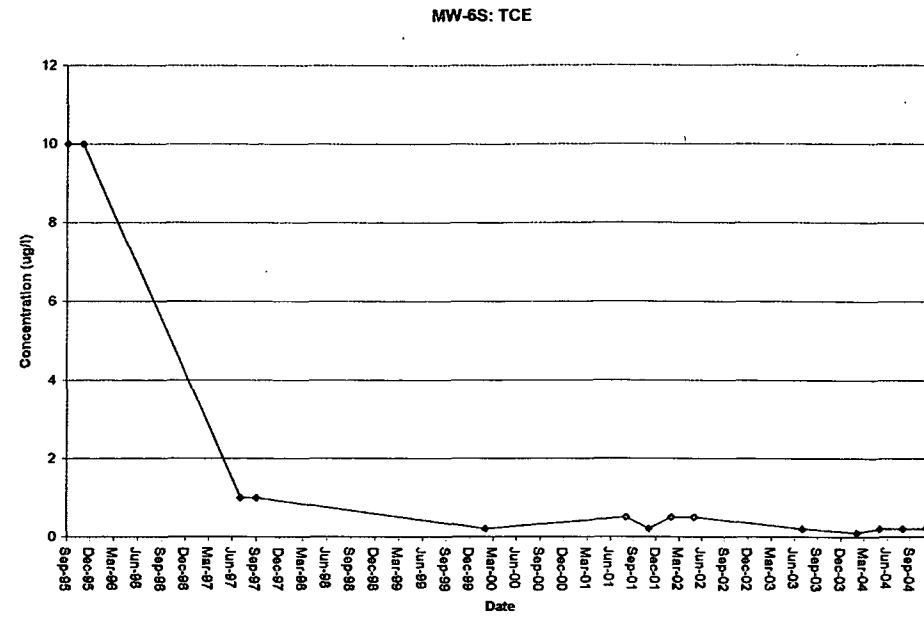


FIGURE 19

FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

GROUND WATER  
QUALITY TRENDS: MW-6

FILE NO. 5540.34194.024  
MARCH 2005



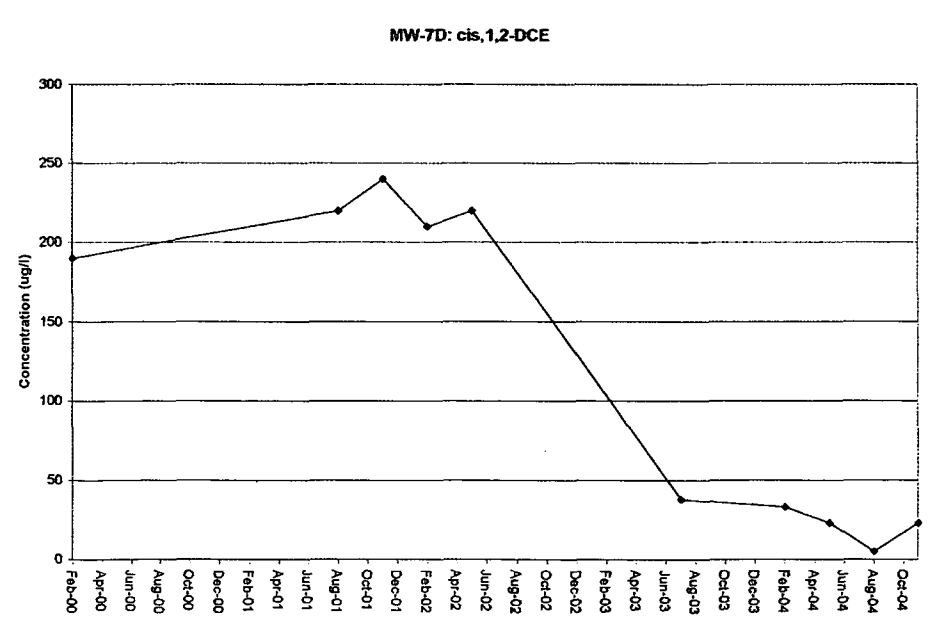
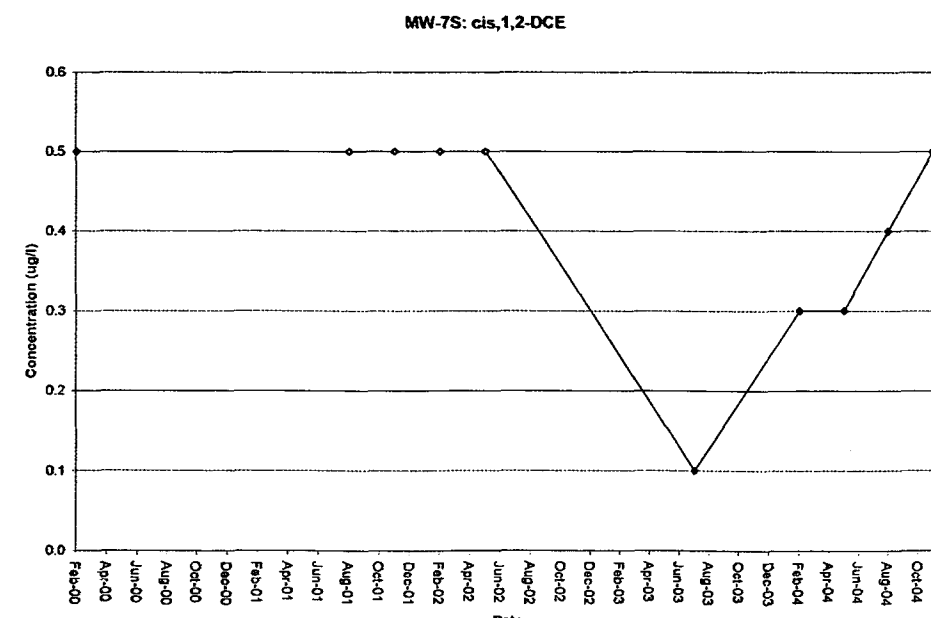
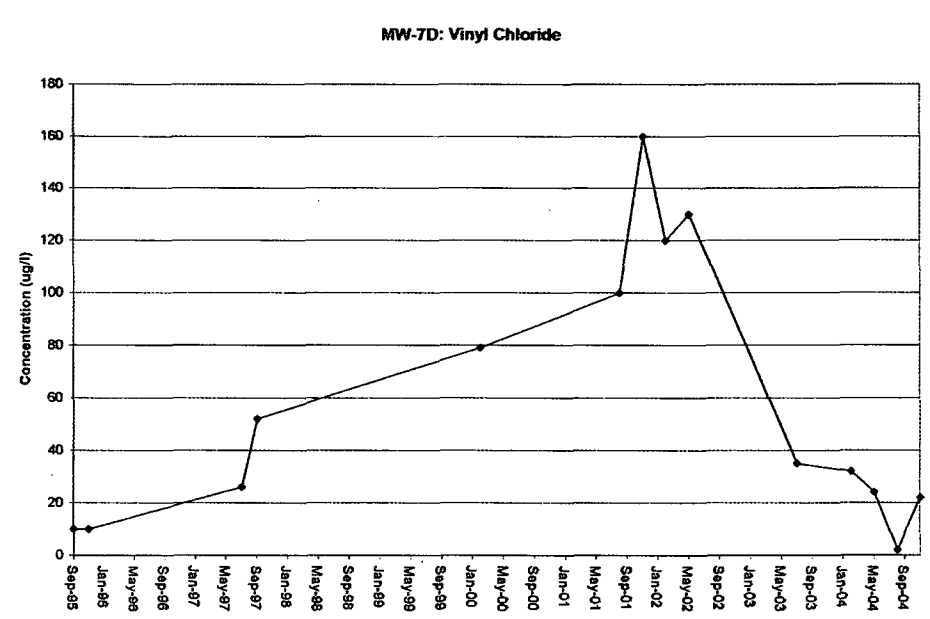
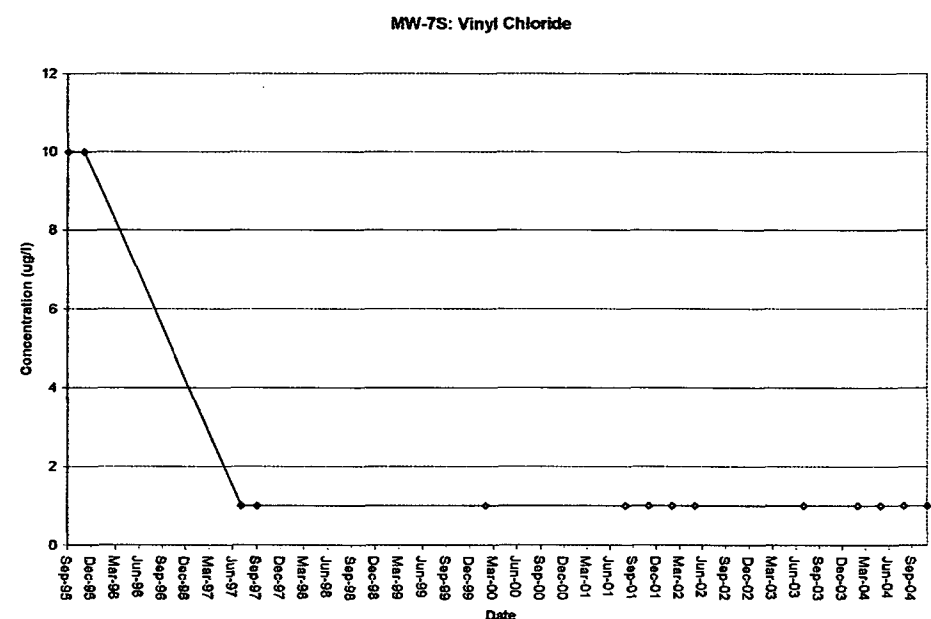
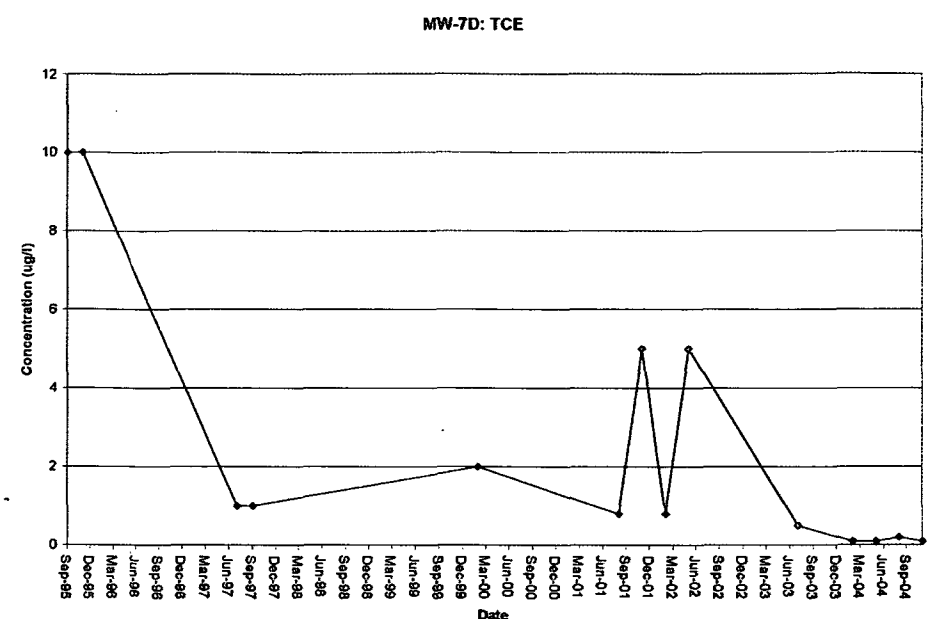
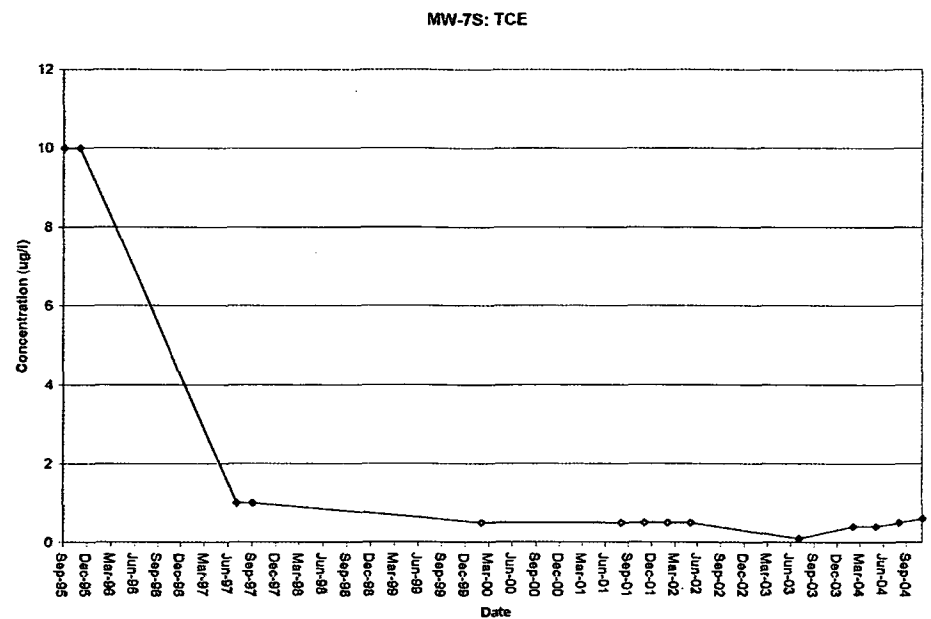


FIGURE 20

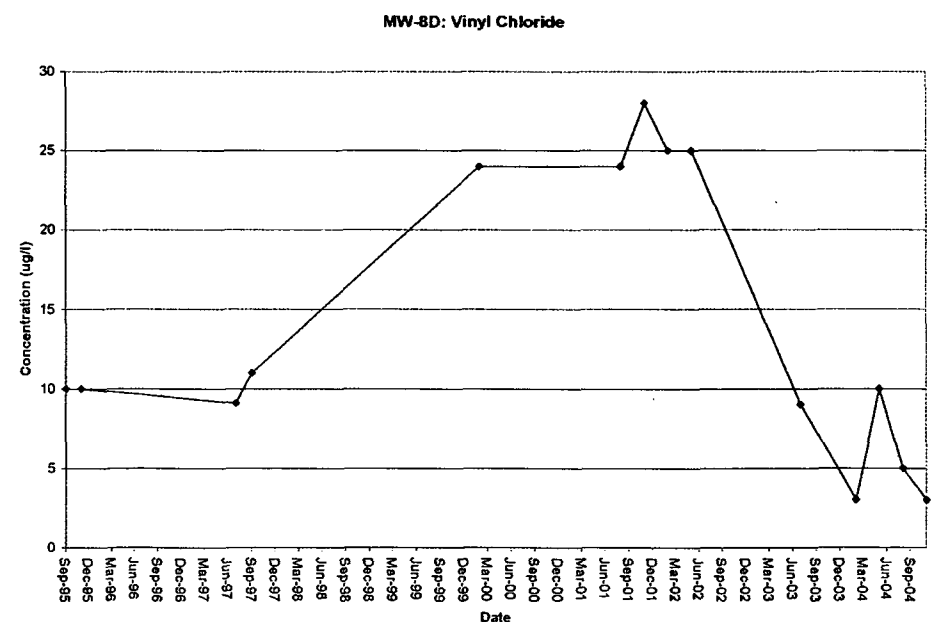
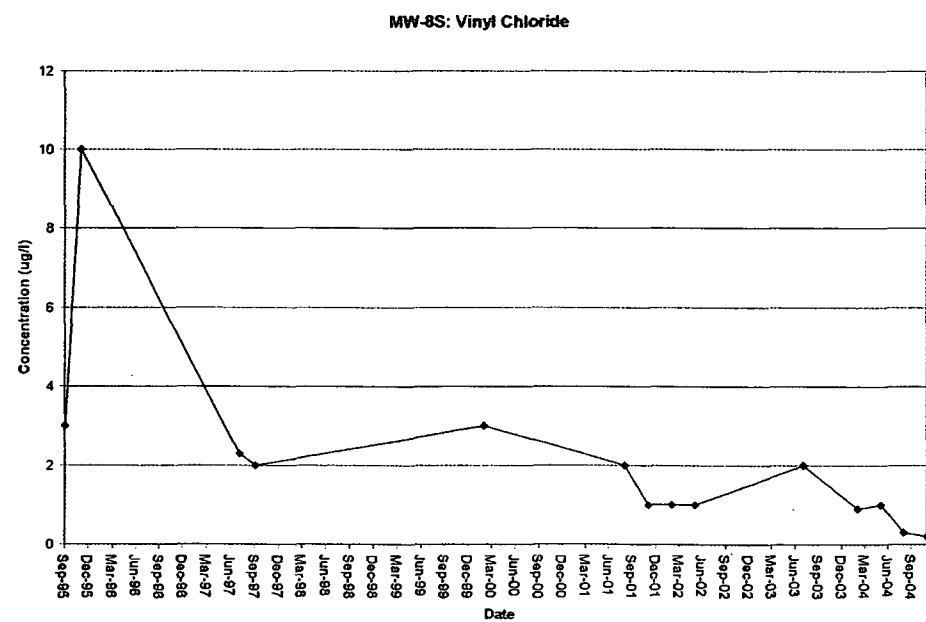
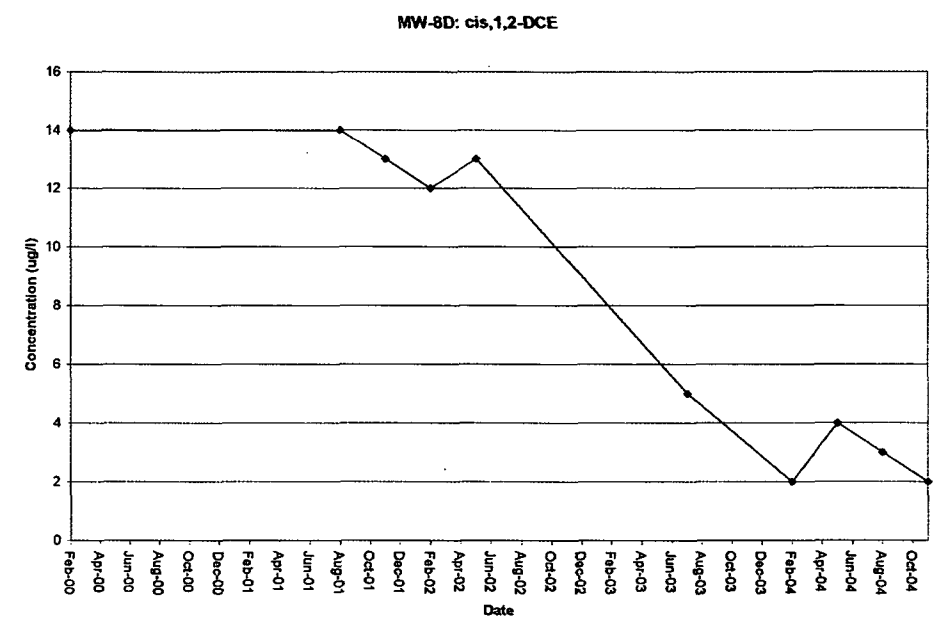
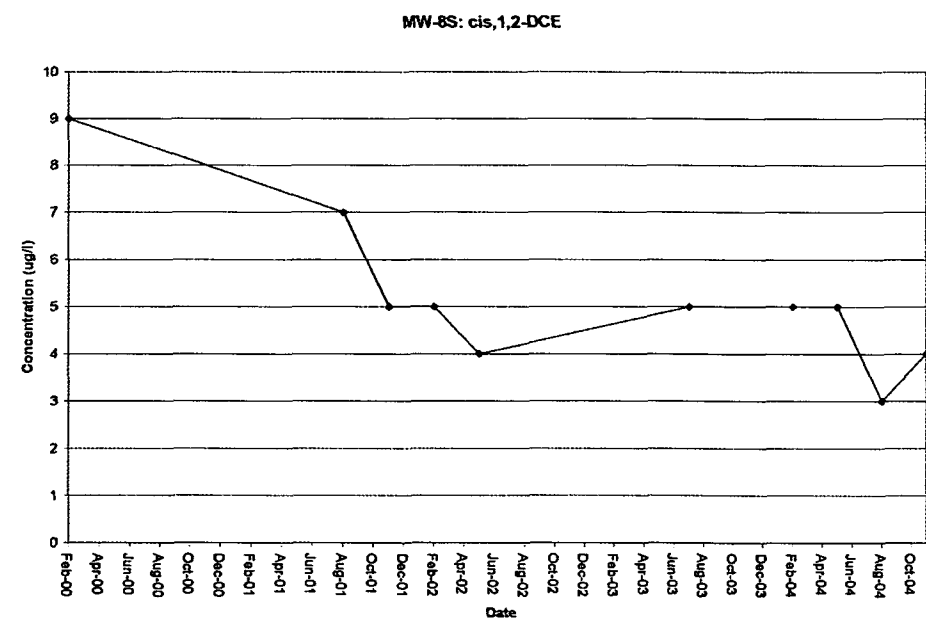
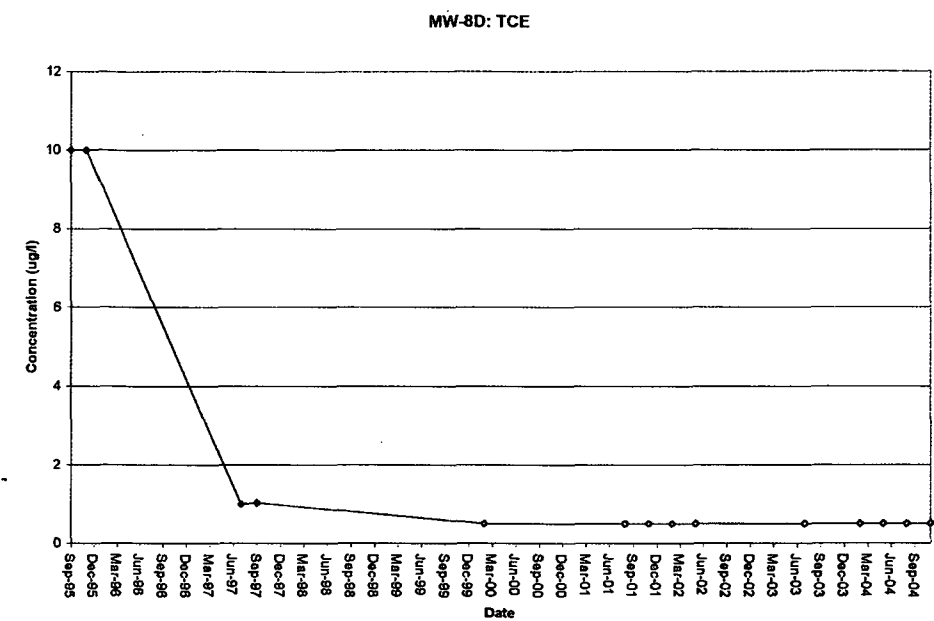
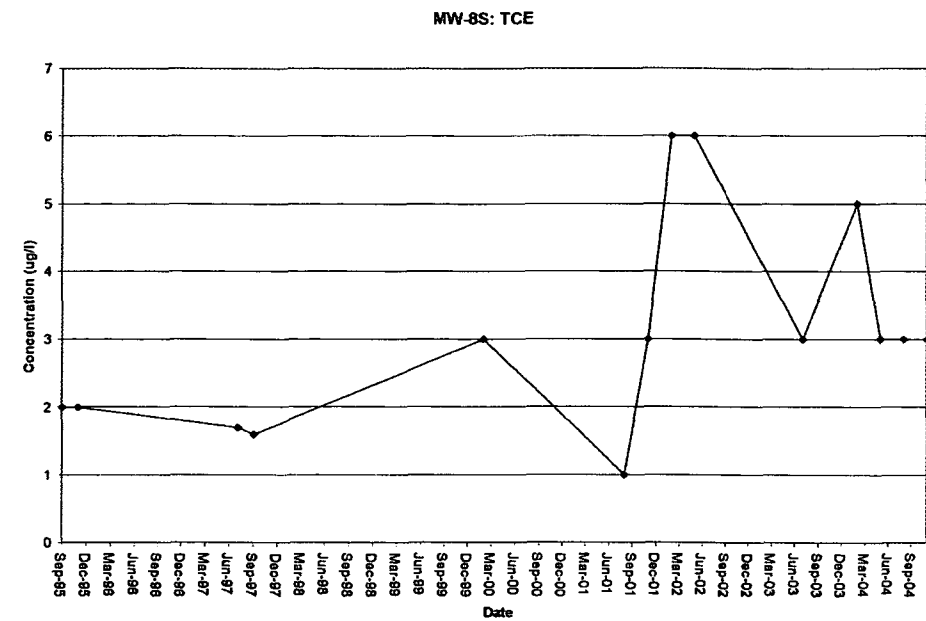
FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

GROUND WATER  
QUALITY TRENDS: MW-7

FILE NO. 5540.34194.025  
MARCH 2005

 **OBRIEN & GERE**  
ENGINEERS INC.

FIGURE 21



FOREST GLEN  
SUBDIVISION SITE  
NIAGARA COUNTY, NEW YORK

GROUND WATER  
QUALITY TRENDS: MW-8

FILE NO. 5540.34194.026  
MARCH 2005



## APPENDICES



**APPENDIX A**

**CONTACT INFORMATION**

## APPENDIX A – CONTACT INFORMATION

### 2004 ANNUAL REPORT REMEDIAL WORK ELEMENT 2 (GROUNDWATER)

#### FOREST GLEN SUBDIVISION SUPERFUND SITE NIAGARA FALLS, NEW YORK

##### EPA Project Manager

Gloria M. Sosa  
US EPA - Region II  
290 Broadway  
New York, NY 10007-1866  
Tel: 212-637-4283  
Fax: 212-637-4284  
[sosa.gloria@epa.gov](mailto:sosa.gloria@epa.gov)

##### NYSDEC Project Manager

Vivek Nattanmai  
NYSDEC  
Bureau of W. Remedial Action  
Division of Hazardous Waste  
625 Broadway, 11<sup>th</sup> Floor  
Albany, NY 12233-7017  
Tel: 518-402-9671  
Fax: 518-402-9679  
[vrnattan@gw.dec.state.ny.us](mailto:vrnattan@gw.dec.state.ny.us)

##### OCC Project Manager

Jeffery Sussman  
The Goodyear Tire & Rubber Co.  
1144 East Market St  
Department 110F  
Akron, OH 44316-0001  
Tel: 330-796-0578  
Fax: 330-796-6459  
[jeff\\_sussman@goodyear.com](mailto:jeff_sussman@goodyear.com)

EPA used TAMS Consultants/Earthtech to provide oversight for the RA.

##### TAMS Consultants/Earthtech Project Manager

Maheyar Bilimoria  
TAMS/Earthtech  
300 Broadacres Drive  
Bloomfield, NJ 07003  
Tel: 973-338-6680  
Fax: 973-338-1052  
[Maheyar.Bilimoria@earthtech.com](mailto:Maheyar.Bilimoria@earthtech.com)

Goodyear used O'Brien & Gere as the Engineer for the RA.

##### O'Brien & Gere Project Manager

Al Farrell  
O'Brien & Gere Engineers, Inc.  
5000 Brittonfield Parkway  
Syracuse, NY 13221-4873  
Tel: 315-437-6100 X2316  
Fax: 315-463-7554

**APPENDIX B**

**LOG OF REGULATOR NO. 8  
OVERFLOW PERIODS**

## APPENDIX B – LOG OF REGULATOR NO. 8 OVERFLOW PERIODS

### 2004 ANNUAL REPORT REMEDIAL WORK ELEMENT 2 (GROUNDWATER)

#### FOREST GLEN SUBDIVISION SUPERFUND SITE NIAGARA FALLS, NEW YORK

The ground water recovery system operated in “automatic” mode and shutdown due to an overflow indication at Regulator No. 8 during the periods listed below:

- From 3:24 PM on January 11 until 10:40 AM on January 13
- From 2:18 PM on January 14 until 2:08 PM on January 15
- From 5:23 PM on January 15 until 6:28 on January 15
- From 6:55 AM on January 16 until 8:00 AM on January 16
- From 3:30 AM on January 17 until 5:08 AM on January 17
- From 1:15 PM on January 17 until 11:50 AM on January 19
- From 2:20 PM on February 9 until 12:05 AM on February 21
- From 12:35 PM until 1:05 PM on February 24
- From 3:50 AM on February 27 until 2:21 PM on March 2
- From 5:06 PM on April 6 until 9:06 PM on April 13
- For approximately one hour on April 18 *circa* noon
- For approximately 15 minutes on April 21 *circa* 9:36 PM
- From 11:36 AM on April 27 until 6:12 PM on May 11
- From 10:27 PM on May 16 until 9:12 AM on May 17
- From 1:12 PM on May 17 until 6:57 AM on May 18
- From 1:42 AM on May 19 until 9:27 AM on May 21
- From 5:42 AM on May 24 until 6:12 AM on May 24
- From 3:12 PM on July 20 and 9:27 AM on July 22

In addition to the events listed above, the groundwater recovery system was off-line from August 2 until August 23. The data logger recorded that the pump inside recovery well RW-1 went off-line, for reasons unknown, at approximately 4:00 AM on August 1. During an examination of the electrical circuits for the recovery well pump, it was discovered that the motor starter was damaged due to thermal overload. Similar conditions were observed on the starter for the pump inside recovery well RW-2. As such, as a precautionary measure to prevent further damage, both pumps were taken off-line pending a closer examination as to the cause and pending replacement of the damaged motor starters.

On August 23 the motor starters for both pumps were replaced and the system was restarted. However, the pump in RW-1 draws excessive amperage for reasons unknown. Comparatively, the amperage drawn by the pump in RW-2 is within the range identified on the motor nameplate. As such, the pump in RW-1 was again de-energized as a precaution to prevent damage due to excessive amperage draw.

On August 24 the pump inside RW-1 was restarted, but its flow was throttled down to 4 gpm to induce head loss for the pump and to reduce the amperage drawn to within the range specified on the motor nameplate. The pump inside RW-2 continues to pump at approximately 10 gpm, with its current demand within the motor nameplate specified range.



On August 26 the pump inside RW-1 went off-line from approximately 1:55 AM until 9:40 AM. The pump inside RW-1 also went off-line from approximately 9:25 PM on August 26 until 9:55 AM on August 27. These two shutdown periods were triggered by the low-flow alarm setting, which was subsequently changed to prevent further nuisance shutdowns.

Between August 27 and September 3, the system operated continuously with RW-1 pumping at approximately 4 gpm and RW-2 pumping at approximately 10 gpm. On September 3, the contractor that constructed the system returned to the Site to further assess the condition of the pumps and connected piping. During the fieldwork, the pumps inside the two wells were swapped to determine if the problem transferred from one well to the other with exchange of the pumps. The swap of pumps revealed that the amperage problem was resulting from the pump, versus being associated with the system.

The system was off-line from September 4 until September 14, a portion of time due to indications of overflow from Regulator No. 8 and also pending replacement of peristaltic tubing connected with the automatic sampler and necessary for its operation. On September 14 the system came back on-line, with the pump in RW-1 discharging at approximately 9 gpm and the pump in RW-2 discharging at approximately 3.7 gpm. Operation as so continued until September 16 when the contractor returned to the site and removed the failing pump for assessment and repair by the manufacturer.

From September 16 until October 12, the system operated with only one of the two ground water recovery wells in service. The pump inside RW-1 discharged at a rate of approximately 9 gpm. A new pump was installed inside RW-2 on October 12.

Since October 12, the system was off-line due to an overflow indication inside Regulator No. 8 on the following occasions:

- A period between October 15 and October 18
- Intermittent periods on November 2, 4, 10, 11, 16, 17, 18, 19, 20, and 22.
- Regulator No. 8 permitted ground water to be recovered 44% of the available time during December. Specifically, Regulator No. 8 caused a prolonged period of continuous shutdown between 9:56 PM on December 13 and 7:56 AM on December 19, and also between 9:26 AM on December 25 and 3:41 PM on December 31. Intermittent operation, with the pumps shutting down for several hours on each occasion, was also observed on December 1, 4, 6, 7, and between December 20 and December 25.
- Regulator No. 8 permitted ground water to be recovered 53% of the available time during January. Specifically, Regulator No. 8 caused a prolonged period of continuous shutdown between 12:00 AM on January 22 and January 31. Another long period (approximately 38.5 hours) of shutdown was observed between 9:00 PM on January 11 and 11:30 AM on January 13. Intermittent operation, with the pumps shutting down for several hours on each occasion, was also observed on January 2, 8/9, 16, and 19/20.



**EXHIBIT 1**

**SIGNIFICANT INDUSTRIAL USER (SIU)  
DISCHARGE PERMIT**



**NIAGARA FALLS WATER BOARD  
WASTEWATER FACILITIES**  
1200 Buffalo Avenue, Niagara Falls, New York 14303-1514

November 13, 2003

Mr. Jeffery A. Sussman  
Project Engineer  
Goodyear Tire & Rubber Co.  
Dept. 110F  
1144 East Market Street  
Akron, OH 44316-0001

Dear Mr. Sussman:

Enclosed please find the updated copy of Goodyear Tire & Rubber Company as Agent for the Forest Glen Site Trust Wastewater Discharge Permit No. 61.

If you have any questions, I may be contacted at 716-286-4978.

Sincerely,

NIAGARA FALLS WATER BOARD  
WASTEWATER FACILITIES

Albert C. Zaepfel  
Industrial Monitoring Coordinator

Enc.  
ACZ: mc

Cc: FILE: SIU - 61



PAGE 1 OF 12  
PERMIT NO. 61

**CITY OF NIAGARA FALLS  
DEPARTMENT OF WASTEWATER FACILITIES  
SIGNIFICANT INDUSTRIAL USER  
WASTEWATER DISCHARGE PERMIT**

**PERMIT NO. 61      THE GOODYEAR TIRE & RUBBER COMPANY, AS AGENT FOR THE  
FOREST GLEN SITE TRUST**

In accordance with all terms and conditions of Chapter 250 of the City of Niagara Falls Municipal Code; Sewer Use Ordinance, as adopted by City Council on July 25, 1983; et seq. and also with all applicable provisions of Federal and State Law or regulation.

Permission is Hereby Granted To: SAME AS ABOVE

Located at: EDGEWOOD DRIVE – NIAGARA FALLS, NY 14304

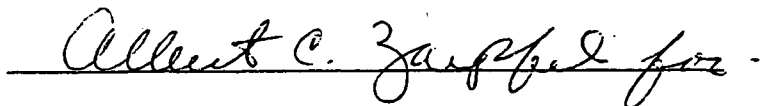
Classified by SIC No(s): 4953

For the contribution of wastewater into the City of Niagara Falls Publicly-Owned Treatment Works (POTW).

Effective this 30<sup>th</sup> day of September 2003

To expire this 30<sup>th</sup> day of September 2008

This Permit modified: 11-12-03



William G. Bolents, Jr.  
Acting Director of Wastewater Facilities

Signed this 12<sup>th</sup> day of November 2003

[illegible]

**WASTEWATER DISCHARGE PERMIT  
REQUIREMENTS FOR:**

**ACTION  
REQUIRED**      **REQUIRED DATE  
OF SUBMISSION**

**A.    Discharges to the City Sewer**

- |    |  |      |                                    |
|----|--|------|------------------------------------|
| 1. | Identification of all discharges to the City Sewer System on a current plant sewer map certified by a New York State licensed professional engineer.   | NONE | SUBMISSION<br>RECEIVED<br>08-05-03 |
| 2. | Identification of each contributing waste stream to each discharge to the City Sewer System clearly marked on, or referenced to, a current plant sewer map certified by a New York State licensed professional engineer. | NONE | SUBMISSION<br>RECEIVED<br>08-05-03 |
| 3. | Elimination of all uncontaminated discharges to the City Sewer System. All uncontaminated flows should be clearly identified on a current sewer map certified by a New York State licensed professional engineer.        | NONE | SUBMISSION<br>RECEIVED<br>08-05-03 |
| 4. | Establishment of a control manhole that is continuously and immediately accessible for each discharge to the City Sewer System.  | NONE | SUBMISSION<br>RECEIVED<br>08-05-03 |

**B.    Wastewater Discharge Management Practices**

- |    |  |                        |   |
|----|--|------------------------|---|
| 1. | Identification of a responsible person(s) (day to day and in emergencies). | SUBMISSION<br>REQUIRED | 30 DAY S AFTER<br>EFFECTIVE DATE<br>OF THE PERMIT<br>[LOCAL STAFF PERSON] |
|----|--|------------------------|---|

WASTEWATER DISCHARGE PERMIT REQUIREMENTS FOR:

C. Slug Control Plan\*\*

Pursuant to Section 40 CFR 403.12 (v) of the Federal Pretreatment Standards the City of Niagara Falls will evaluate the permittee, a minimum of once every two years for the need for a "Slug Control Plan." If a plan is required by the City of Niagara Falls then the plan will contain, at a minimum, the following elements:

- a) Description of discharge practices, including non-routine batch discharges;
- b) Description of stored chemicals;
- c) Procedures for immediately notifying the POTW of slug discharges, including any discharge that would violate a prohibition under 40 CFR 403.5 (b), with procedures for follow-up written notification within five days;
- d) If necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site runoff, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment necessary for emergency response.

\*\*This section applies to all pollutants limited by the City of Niagara Falls' SPDES Permit and all prohibited wastewater discharges (See Section 250.5.1-A of the Sewer Use Ordinance).



D. General Wastewater Discharge Permit Conditions

1. Flow monitoring should be performed concurrently with any Wastewater Discharge Permit sampling and should be reported at the same time as analytical results. If it is not feasible to perform flow monitoring, an estimate of flow (method of estimated flow preapproved by the City of Niagara Falls) should be submitted with the analytical results.
2. All sampling for billing and pretreatment compliance purposes will be coordinated through the City of Niagara Falls' Industrial Monitoring Coordinator.
3. All analysis must be performed by a State certified laboratory using analytical methods consistent with 40 CFR 136 and quality control provisions as required by the City of Niagara Falls' Environmental Chemist. The permittee will report the results as directed in Section G of this permit. Results should be reported using the Method Detection Limit (MDL). Reporting results less than MDL will be indicated in the report by a less than sign (<) followed by the numeric MDL concentration reported by the laboratory. In these cases the pollutant load will be calculated and reported as zero (0). The MDL will be defined as the level at which the analytical procedure referenced is capable of determining with a 99% probability that the substance is present. The value is determined in reagent water. The precision at this level is +/- 100%.
4. An estimate of relative production levels for wastewater contributing processes at the time of any pretreatment compliance sampling will be submitted upon request of the Director of Wastewater Facilities.
5. All samples will be handled in accordance with EPA approved methods. Chain of Custody records will be submitted with all sampling results.
6. All conditions, standards and numeric limitations of Section 250 of the Sewer Use Ordinance are hereby incorporated into this permit by reference. These conditions, standards and numeric limitations must be complied with. Failure to comply with any part of said ordinances constitutes a violation and is subject to enforcement actions(s) described in Section 250.9 of said ordinances, and in the City of Niagara Falls' Pretreatment Administrative Procedure Number Five (5) - "Enforcement Response Guide." Violators are subject to all applicable *Civil* and *Criminal* penalties. In the event of a violation, including slug discharges or spills, the City of Niagara Falls must be notified immediately by phone and confirmed by letter within five (5) working days.

Any person adjudicated of violating any provision in the Sewer Use Ordinance shall be assessed a fine in the amount of up to \$5,000. This amount is available for each violation, and each day of a violation is a separate incident for which penalties may be sought.

- o. The person violating any of the provisions of the Sewer Use Ordinance will be liable to the City for any expense, loss, or damage occasioned by the City by reason of such violation. The expense, loss or damage will be taken to be to the extent determined by the Director.

In addition, any person who knowingly makes any false statements; representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to the Sewer Use Ordinance, or Wastewater Discharge Permit, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under the Sewer Use Ordinance will, upon conviction be punished by a fine up to \$5,000. Furthermore, the City of Niagara Falls may recover reasonable attorney's fees, court costs, court reporting fees, and other expenses of litigation by appropriate suit at law against the person found to have violated applicable laws, orders, rules and permits required by the Sewer Use Ordinance.

7. In accordance with Federal Regulation CFR 40, Part 403.12(g), any exceedance of a numeric limitation noted by the SIU must be re-sampled, analyzed and resubmitted to the City of Niagara Falls' Wastewater Facilities (WWF) within 30 days.

Specifically, if any limit that is listed in Section F of this permit is exceeded, then the permittee will undertake a short term monitoring program for that pollutant. Samples will be collected identical to those required for routine monitoring purposes and will be collected on each of at least two (2) operating days and analyzed. Results will be reported in both concentration and mass, and will be submitted within 30 days of becoming aware of the exceedance.

- d. Sampling frequency for any permitted compounds may be increased beyond the requirements set forth in Section F and G of this permit. If the permittee monitors (sample and analysis) more frequent than required under this permit, all results of this monitoring must be reported.
9. As noted in Section 250.6.2 of the Sewer Use Ordinance, "Personnel as designated by the Director will be permitted at any time for reasonable cause to enter upon all properties served by the City of Niagara Falls WWF for the purpose of, and to carry out, inspection of the premises, observation, measurement, sampling and testing, in accordance with provisions of the Ordinance."
10. As noted in Section 250.5.3 of the Sewer Use Ordinance, significant changes in discharge characteristics or volume must be reported immediately to the WWF.
11. As noted in Section 250.6.2 of the Sewer Use Ordinance, samples required to be collected via a 24-hour composite sampler must be retained refrigerated for an additional 24 hour plus unrefrigerated an additional 48 hours (total 72 hours).
12. As noted in Section 250.5.4 of the Sewer Use Ordinance, all "SIU's will keep on file for a minimum of three (3) years, all records, flow charts, laboratory calculations or any other pertinent data on their discharge to the WWF."

13. As noted in Section 250.6.7 of the Sewer Use Ordinance, "Permits are issued to a specific user for a specific monitoring station. A permit will not be reassigned or transferred without the approval of the Director which approval will not be unreasonably withheld. Any succeeding owner or user to which a permit has been transferred and approved will also comply with all the terms and conditions of the existing permit."
14. The Annual Average Limitation is equivalent to the specific SIU allocation, and will be defined as the permissible long term average discharge of a particular pollutant. These limitations are listed in Section F of this permit. The computation of the Annual Average will be as follows; for each compound listed in Section G of this permit, the Annual Average will be the average of the present monitoring quarter and three previous quarters' data.
15. The Daily Maximum Limitation will be defined as the maximum allowable discharge on anyone day. The Daily Maximum Limitation will allow for periodic short term discharge fluctuations. These specific limitations are listed in Section F of this permit.
16. Enforcement of the Annual Average Limitation will be based on the reported average of the last four quarters data vs. the Annual Average Limited listed in Section F of this permit. Enforcement of the Daily Maximum Limitation will be based on individual analysis results vs. the Daily Maximum Limit listed in Section F of this permit. These results may be obtained from self monitoring (Section G), City of Niagara Falls Verification, incident investigation or billing samples.
17. The City of Niagara Falls' Administrative Procedure Number 6 "Procedure for Determination and Use of Local Limits" lists all pollutants noted in the City of Niagara Falls WWF SPDES Permit. The limits defined in the procedure are values which are based on the quantity of substances discharged which can be easily related to the Treatment Plant's removal capacity.

The pollutants listed in this procedure which are not specifically listed in Section F and G of this permit may be present in the permittee's wastewater discharge, but at levels which do not require specific permit limitations. Consequently, if any of the limits listed in this procedure, for pollutants not identified in Section F and G of this permit, are exceeded then the permittee will undertake a short-term, high intensity monitoring program for that pollutant. Samples identical to those required for routine monitoring purposes will be collected on each of at least three operating days and analyzed. Results will be expressed in terms of both concentration and mass, and will be submitted no later than the end of the third month following the month when the limit was first exceeded.

If levels higher than the limit are confirmed, the permit may be reopened by the City of Niagara Falls for consideration of revised permit limits.

**E. Specific Wastewater Discharge Permit Conditions**

**1. Billing Agreement:**

- a) The determination of the quantities of TSS and SOC will be made by laboratory analysis at the City's expense and will be based on the collection of five (5) representative 24-hours composite samples from Monitoring Station MS#1.
- b) The determination of the quantity of flow will be based on effluent meter readings obtained from MS#1. The daily readings and total average flow will be recorded on a monthly report. This report will be sent to the City due 15 days after the monitoring month.
- c) "Substances of Concern" charges will be based on pollutant analysis results contained in the permittee's Quarterly Self-Monitoring Report and other appropriate data collected by the City or the permittee.

**2. Self Monitoring:**

The permittee will collect and analyze samples for pollutant analysis and submit the results as directed in Sections F and G of this permit.

**3. Regulator 8:**

The City maintains several flow regulators throughout the collection system. The purpose of the regulators is to divert excess flow during peak storm events away from the treatment plant. The permittee's discharge passes through regulator 8, which is one of these devices. Therefore, during storm events the potential for this wastewater to bypass the treatment plant exists. Consequently, the permittee must complete the following prior to initiating discharge.

- a) Install an appropriate alarm system to indicate when regulator 8 is overflowing. Such a system will trigger all discharge from the site to cease until such time overflow at regulator 8 ceases.
- b) A log of all such instances will be maintained. The log will be submitted with the Quarterly Self-Monitoring Report.
- c) A check of the alarm system will be conducted quarterly and recorded on the log noted in item E3b.

### Discharge Limitations & Monitoring Requirements

During the Period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall(s) will be limited and monitored by the permittee as specified below.

OUTFALL NUMBER/ EFFLUENT PARAMETER	DISCHARGE LIMITATIONS		UNITS	MINIMUM MONITORING REQUIREMENTS	
	ANNUAL AVERAGE	DAILY MAXIMUM		MEASUREMENT FREQUENCY	SAMPLE TYPE
MS#1 - Flow	0.04	0.06	MGD	Continuous	N/A
MS#1 - Total Suspended Solids	50	100	lbs/d	5/Qrt	7
MS#1 - Soluble Organic Carbon	15	25	lbs/d	5/Qrt	7
MS#1 - T. Phosphorous	5.0	8.0	lbs/d	1/Qrt	3
MS#1 - T. Lead	0.026	0.053	lbs/d	1/Qrt	3
MS#1 - T. Chromium	0.20	0.40	lbs/d	1/Qrt	3
MS#1 - T. Nickel	0.20	0.40	lbs/d	1/Qrt	3
MS#1 - Vinyl Chloride	0.02	0.03	lbs/d	1/Qrt	2
MS#1 - 1,1 Dichloroethylene	0.005	0.01	lbs/d	1/Qrt	2
MS#1 - *1, 2 Dichloroethylene	0.05	0.1	lbs/d	1/Qrt	2
MS#1 - 1,1 Dichloroethane	0.005	0.01	lbs/d	1/Qrt	2
MS#1 - Trichloroethylene	0.005	0.01	lbs/d	1/Qrt	2
MS#1 - Tetrachloroethylene	0.005	0.01	lbs/d	1/Qrt	2
MS#1 - 1,1,1 Trichloroethane	0.005	0.01	lbs/d	1/Qrt	2

\*total cis and trans

F. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS CONTINUED

**SAMPLE TYPE FOOTNOTES**

- (1) Each sample will consist of four (4) grabs collected spaced throughout the **batch** discharge, such that they are representative of the effluent being discharged pursuant to 40CFR 403.12.b5iii. The four (4) grabs will be **composited in the laboratory** and analyzed as one sample.
- (2) Each sample will consist of four (4) grabs collected spaced over the 24-hour period, such that they are representative of the effluent being discharged pursuant to 40CFR 403.12.b5iii. The four (4) grabs will be **composited in the laboratory** and analyzed as one sample.
- (3) Each sample will consist of a 24-hour, **flow proportioned** composite sample collected from the monitoring point.
- (4) Flow will be monitored continuously with the use of a water meter or another acceptable flow metering device.
- (5) Each sample will consist of a 24-hour, **time proportioned** composite sample collected from the monitoring point.
- (6) Reserved
- (7) Same as (3), however, five (5) samples will be collected per quarter from the monitoring point and analyzed by and at the City of Niagara Falls expense.
- (8) Four (4) grab samples will be collected spaced over the 24-hour period, such that they are representative of the effluent being discharged pursuant to 40CFR 403.12.b5iii. Each grab will be **analyzed and reported separately**.
- (9) A grab sample is defined as an aliquot collected over a period of not more than 15 minutes.

**G. Discharge Monitoring Reporting Requirements**

During the period beginning the effective date of this permit and lasting until its expiration date, discharge monitoring results will be summarized and reported by the permittee; Monthly - 14 days after monitoring period, Quarterly - by the last day of the monitoring period = February 28, May 31, August 31, November 30. Semiannual reports will be submitted on the last day of the monitoring period = February 28, August 31. The annual average for each parameter listed in Section F, will be computed and reported quarterly. The individual sample analysis for present quarter will also be reported quarterly unless directed otherwise in this permit.

OUTFALL NO	PARAMETER	REPORTING FREQUENCY
MS#1	Flow	Monthly
MS#1	Regular 8 data, Inspections	Quarterly
MS#1	Vinyl Chloride	Quarterly
MS#1	1,1 – Dichloroethylene	Quarterly
MS#1	1,2 – Dichloroethylene	Quarterly
MS#1	1,1 - Dichloroethane	Quarterly
MS#1	Trichloroethylene	Quarterly
MS#1	Tetrachloroethylene	Quarterly
MS#1	1,1,1 – Trichloroethane	Quarterly
MS#1	T. Phosphorous	Quarterly
MS#1	T. Lead	Quarterly
MS#1	T. Chromium	Quarterly
MS#1	T. Nickel	Quarterly

H. Comments/Revisions