DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: **Former Norton/Nashua Tape Products**
Facility Address: **2600 Seventh Avenue, Watervliet , NY**
Facility EPA ID #: **NYD066829599**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   ___√___ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

__√__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

_____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not known or reasonably suspected to be "contaminated."

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Site Description:

The Norton Company (the Site), located in Watervliet, New York, was acquired by Saint-Gobain Corporation (Saint-Gobain) in 1990 (see Figure 1-1, Site Location Map). Saint-Gobain entered into an agreement with the NYSDEC to investigate past releases at the former Norton Site. From the mid-1930s until 1974, the Norton Company manufactured adhesive tape at the site and used toluene as a solvent in the production process. Norton sold the tape plant to the Nashua Corporation in 1974 and Nashua continued to manufacture tapes at the facility until the mid-1990s. Production stopped in 1997 and the facility closed. A warehouse is on the site today. Toluene was not used at the site since manufacturing operations stopped in 1997. The source of the toluene detected is believed to be a spill that occurred at the former tape manufacturing plant in 1969.

Geology & Hydrogeology:

The site lies in the Taconic Slate Belt, part of the Hudson-Champlain Lowland where infrequent rock outcrops are aligned with the north-south structure of the Ridge and Valley Province. Till was deposited during glaciations from 23,000 to 23,500 years ago. As Glacial Lake Albany advanced northward with the receding glacier, the Hudson Valley received abundant deposits of gravel and sands ice, and lacustrine silts and clays. The Hudson River has eroded the glacial deposits and deposited floodplain deposits of sands, silts, and gravels. These glacial deposits lie directly on top of strongly folded and faulted middle Ordovician bedrock consisting of the Snake Hill black and gray shales and mudstones, part of the Trenton Group.

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Unconsolidated deposits at the site consist of a layer of brown clayey silt, sand, and gravel fill with cinder, brick, and glass fragments up to 9 feet deep overlaying alluvium consisting of clayey silts, sands, and gravel. Fractured bedrock was encountered at 14 to 16 feet below grade.

Depth to water at the site is variable with average depths of 7 to 9 feet. Ground water flow at the site is consistently to the east-northeast, with gradients towards the east of 0.0133 and a localized northern gradient towards Alden Street which may have been augmented in the past by dewatering during sewer line construction. (Figure 1-2, Groundwater Elevation Contour Map)

Investigations – SWMUs & AOCs:

The RCRA Final Facility Investigation (RFI) was submitted to NYSDEC in December 2007. The principal objectives of the RFI were to: 1) further define the spatial distribution and magnitude of residual subsurface impact associated with the solid waste management units (SWMUs) indentified in the June 4, 2002 NYSDEC Order on Consent Index No. CO: 4-20001205-3375 and other areas of concern (AOCs) identified at the site; and 2) assess the necessity and scope of future corrective actions, if any, subject to NYSDEC's prior approval.

The following solid waste management units (SWMUs) and areas of concern (AOCs) were identified at the site (see Figure 2-1, Areas of Investigation). They were associated with the 1969 release and/or previous activities at the site.

- Former Tank Farm SWMU – Investigations in the area surrounding the former tank farm north of building 61 detected elevated concentrations of toluene and heptane in soil and groundwater. Impact in this area is assumed to be associated with leaks in the "solvent" lines, which were taken out of service by Norton in 1969.
- Former Beartex Sump Pit SWMU – This sump pit received liquids containing volatile organic compounds (VOCs) during the period of Norton "Beartex" operations. VOCs were also detected in the sanitary sewer formerly connected to the sump. The Beartex Sump Pit was closed around 1990.
- Storm Sewer and Sanitary Sewer SWMUs – Elevated photoionization detector (PID) readings were historically obtained in storm sewer manholes during prior investigations. Elevated concentrations of VOCs and SVOCs were detected in several water and sediment samples collected from manholes during sampling.
- Former Test Pit AOC – Following the discovery of the original release in 1969, a test pit was installed in Building 61 to recover free-phase product. A soil gas sample collected in the vicinity of the test pit detected minimal residual contamination in this area. However, soil gas survey results were not confirmed by laboratory analysis.
- Former Solvent Line AOC – Subsurface product lines were historically used to transport Tolusol (toluene and heptane) from the tank farm and areas of the northern portion of building 58. Although previous investigations presumed that a line leak was located near the tank farm, it was also possible that there were leaks along the subsurface lines in buildings 58 and 61.
- Building 61 Doorway Spill AOC – A small area of asphalt near the doorway of Building 61 was damaged by a toluene spill in 1989. Methyl iso-butyl ketone (MIBK) was detected in soil samples collected from this area.
- Building 58 AOC – Soil samples collected from geotechnical test borings installed in this building indicated the presence of toluene, heptane, and fuel oil at elevated concentrations. Until recently, there were two large cutouts in the concrete floor believed to be associated with footings for two pieces of heavy machinery used during former Nashua operations.

Four additional AOCs were identified for investigation in the RFI work plan. These are located outside of the vicinity of the former solvent lines.

- Quonset Hut B (adjacent to Building 61) AOC – This unit was closed by Nashua in 1988 but no confirmatory soil samples were collected from beneath the asphalt of the hut.
- Quonset Hut C (adjacent to Buildings 59 and 60) AOC - Small spills of epoxy-like material and black stains were noted of the floor of the hut and it is possible these spills or surface run-off may have entered the storm sewer system. (It should be noted that this AOC is not related to any Norton operations at any time.)
- Filter Room (adjacent to Building 59) AOC – Process liquids were historically filtered in this room. No soil samples were collected during previous investigations.
- Solvent Recovery Room (adjacent to Building 59) AOC – This room was used during Norton and Nashua operations to recover toluene from the process air stream prior to its discharge to the atmosphere. A previous soil boring detected low levels of toluene and cresols, which may have come from fill material used at the site.

Data collected during the early phases of the RFI indicated that investigation activities should also extend off-site, north of the Former Tank Farm SWMU onto a railroad right of way and towards Alden Street. This investigation established a ninth AOC referred to as the Off-site AOC.

- Off-site AOC – Residual toluene was detected in the railroad right of way extending along a narrow band north of the site across Alden street. [Subsequent sampling determined that toluene was the only COC and impact was limited to ground water and deeper soils in the saturated zone and capillary fringe (about 8 to 10 feet).] Because the off-site plume extends beneath residential structures, a vapor intrusion evaluation was completed at selected residences along Alden street.

Ultimately, the Final RFI Report identified 6 SWMUs and AOCs where additional investigation and possible corrective measures were necessary. (Figure 2-2, Final RFI SWMUs and AOCs)

- Former Tank Farm SWMU
- AOC beneath the buildings
- Sanitary Sewer SWMU
- Storm Sewer SWMU
- Quanset Hut C AOC and
- Off-Site AOC

Groundwater On-Site Impacts:

A total of 40 groundwater samples collected via Geoprobe were submitted for VOC analysis. Results are presented on Table 4-3 and Figure 4-4, Geoprobe Groundwater Sampling Results (Volatiles). Six VOC analytes were detected: methylene chloride, toluene, acetone, heptane, xylenes, and chloroform. Two VOC analytes were present at concentrations above the NYSDEC ground-water standard/guideline objectives: toluene and heptane. Except for ground-water sample SB-58, all heptane exceedances were associated with toluene exceedances.

A total of 14 ground-water samples were submitted for SVOC analysis. Results are presented in Table 4-4 and Figure 4-5 Geoprobe Groundwater Sampling Results (Semi-Volatiles). Five SVOC analytes were detected. Two phenolic compounds, 2-methylphenol and 4-methylphenol, were at concentrations above the NYSDEC groundwater standards.

In 2004, free-phase product was detected on-site at monitoring well MW-14, located in the Former Tank Farm SWMU. Continued monitoring showed apparent product thicknesses ranging from 0.02 feet to 0.12 feet, which were generally correlated to water depth beneath the ground surface. During the August 2006 gauging event, the APT at MW-14 was 0.05 feet.

Sampling competed from 2004 through 2006 for the on-site monitoring points/wells indicated that toluene concentrations above the NYSDEC ground water standard were limited to the Former Tank Farm SWMU and Buildings 58 and 61. This SWMU is contiguous with the larger on-site toluene plume and is continuous with the toluene plume in the Off-Site AOC to the north. However, toluene concentrations in wells along the margins of the toluene plume exhibited a strong decreasing trend. Some wells where toluene was formerly present at mg/L concentrations are now non-detect, suggesting active biodegradation.

Groundwater Off-Site Impacts:

Ground-water samples were collected at 22 selected Geoprobe boring locations. (Figure 2-3, Offsite AOC) Thirteen of these off-site borings were completed as fixed ground-water monitoring points. Two additional monitoring wells (MW-18 & MW-19) were installed north of Alden Street to better determine the location of the edge of the plume. The maximum thickness of the saturated overburden was fifteen feet; therefore, no shallow/deep "nested" monitoring well pairs were installed during the Off-Site RFI.

All homes in the Maplewood neighborhood are serviced by municipal water. There was one active private well at 32 Craig Street which is used for lawn/garden watering purposes. This well was inspected and two ground-water samples were collected in October of 2005 and analyzed for VOCs. The first sample was collected before purging the well, and the second sample was collected after pumping the well for approximately 10 minutes. No VOC analytes were detected in either of these samples.

Ground-water samples collected in February 2004 from monitoring points MP-5, MP-6 & MP-7, which are located on the northern side of the railroad right-of-way, were analyzed for SVOCs. No SVOC analytes were detected in the three samples. These results confirmed the Geoprobe sampling results and no additional SVOC analyses were performed during the Off-Site RFI.

References:

Forensic Environmental Services, Inc., August 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., July 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., June 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., May 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., April 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., March 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., December 2008. Corrective Measures Study (CMS) Workplan, Former Norton Company/Nashua Tape Products Facility, Watervliet, NY.

Forensic Environmental Services, Inc., December 2008. Fact Sheet, "Alden Street Toluene Investigation Update", Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., December 2007. RCRA Investigation (RFI) Report/Preliminary Corrective Measures Study/Interim Ground-Water Monitoring Plan, Former Norton Company/Nashua Tape Products Facility, Watervliet, NY.

In-Situ Oxidative Technoligies, Inc., May 2009. Laboratory Treatability Study Report, Former Norton/Nashua Tape Products Facility.

TRC Environmental Corporation, November 1993. Preliminary RCRA Facility Assessment, Nashua Corporation Industrial Tape Division, Watervliet, NY.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

__√__ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Toluene concentrations at "backyard "Alden Street wells MW-18 & MW-19 and Craig Street well MP-22 remained below detection limits (BDL) in June 2009 for the fifth consecutive quarter. Toluene remained BDL in the June 2009 samples collected from downgradient Alden Street monitoring point MP-16. Toluene has never been detected in this well. Toluene was also BDL at Alden Street monitoring point MP-17. The toluene concentration at Alden Street monitoring point MP- 14 decreased to 14 µg/L in June 2009. However, it increased in railroad right-of-way monitoring point MP-6 from BDL in April 2009 to 1,800 µg/L in June 2009. The June 2009 toluene concentration at MP-6 was below the June 2008 concentrations of 5,600 µg/L. Although toluene concentrations at several off-site monitoring points fluctuate in response to seasonal changes in the water table elevation, toluene concentrations at off-site (and on-site) monitoring wells continue to exhibit overall decreasing trends. (See Table, Ground-Water Analytical Data Summary – Volatiles and figure 4, Toluene Concentrations June 1-2, 2009.)

A geophysical survey was conducted in the vicinity of Alden Street during the week of October 2004 to investigate possible preferential pathways for ground water movement. The geophysical evaluation included four electrical resistivity transects as follows: 1) along Alden Street; 2) along Craig Street 3) north of the railroad embankment; and 4) south of the railroad embankment. The geophysical survey report did not indicate evidence of a preferred pathway via manmade conduits, fill or lithological change, bedrock surface channeling, or bedrock fractures. The most likely reason for the presence of residual toluene in the Off-Site AOC is historical dewatering activities that were performed in conjunction with the installation of the Dry River Interceptor storm sewer system that runs slightly south of and parallel to Alden Street. Continued dewatering activities along Alden Street, which were reportedly centered near the current location of the toluene plume, may have pulled ground water containing elevated dissolved toluene concentrations north from the site towards Alden Street. In addition, it is purported that when dewatering activities were completed, the pumped water was discharged without treatment and allowed to infiltrate in the same general area.

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[2]"existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

The sampling results described in Question 2 indicate that toluene is limited to "centerline" plume wells MP-6, MP-14, and MP-17. It is believed that this represents the residual plume from a larger area of contamination that was pulled towards Alden Street by the historical dewatering described above. This is supported by toluene concentrations in the off-site wells that continue to exhibit a strong decreasing trend which indicates that natural attenuation is actively occurring. Further evidence of active biodegradation is the total absence of heptane, which biodegrades even more readily than toluene.

Groundwater Monitoring Program:

An interim, ground-water monitoring plan (IGWMP) is currently in place to monitor changes in groundwater conditions and concentrations for Constituents Of Concern at the site. Ground-water samples will be analyzed for VOCs via EPA Method 8260 plus heptane and Tentatively Identified Compounds (TICs). The following IGWMP schedule was initiated in October 2006:

Quarterly (6 sampling locations):
- off-site wells: MP-6, MP-14, MP-17, MP-22, MW-18 & MW-19
- liquid-level gauging: all off-site wells
- product gauging and recovery: former tank farm wells

Semi-Annual (10-12 sampling locations):
- off-site wells: MP-6, MP-14, MP-17, MP-22, MW-18 & MW-19
- on-site "sentinel" wells: MW-12 (or DGC-10), MW-13 & MW-15
- "plume" wells: 1-3 selected wells (DGC-7/MP-12 next event)
- liquid-level gauging: all off-site and on-site wells
- product gauging and recovery: former tank farm wells

Annual (12-15 sampling locations):
- off-site wells: MP-6, MP-14, MP-17, MP-22, MW-18 & MW-19
- on-site "sentinel" wells: MW-12 (or DGC-10), MW-13 & MW-15
- "plume" wells: MP-10 or MP-11, MW-17
- "plume" wells: 1-3 wells near the former tank farm
- liquid-level gauging: all off-site and on-site wells
- product gauging and recovery: former tank farm wells.

Although toluene concentrations at several off-site monitoring points fluctuate in response to seasonal changes in the water table elevation, toluene concentrations at off-site (and on-site) monitoring wells continue to exhibit overall decreasing trends.

On-Going Corrective Measures Study:

Ground-water data collected as part of the investigation indicate that impact at the site is generally limited to the "smear zone" and shallow ground water (approximate depth eight to ten feet). Based on toluene impact and physical accessibility for treatment, two main target treatment areas were identified in vadose and saturated overburden soils at the Site: 1) the Former Tank Farm SWMU; and 2) beneath the floor of the main on-site buildings in the Building Subslab SWMU/AOC.

The principal objective for ground water in the approved Corrective Measures Study (CMS) Work plan is to field test enhanced bioremediation, in-situ chemical oxidation (ISCO), and enhanced fluid recovery (EFR) technologies as possible remedial measures in or adjacent to the Building Subslab SWMU/AOC. (Ground water monitoring will continue as outlined in the IGWMP.)

The remedial action proposed in the CMS Work plan for dissolved toluene in both on-site target areas is enhanced bioremediation. Pilot testing is required to determine the effectiveness of this technology and to establish short-term remedial performance goals and target concentrations. If pilot testing indicates that enhanced bioremediation will not achieve the necessary remedial action performance goals, then in-situ chemical oxidation (ISCO) technology, identified as a feasible alternative for both target areas, will be pilot tested as a potential remedial technology. Enhanced fluid recovery (EFR) will be evaluated as an alternative primary or secondary remedial technology for areas of dissolved toluene under the building.

Saint Gobain will conduct additional, short term monitoring to ensure that the on-site remedial measures have not inadvertently mobilized the on-site contaminants. Two rounds of monitoring in October and November, that are currently planned to evaluate the In-situ Submerged Oxygen Curtain (iSOCs) and the C-Sparge /Perozone systems, will accomplish much of this monitoring requirement. In addition, Saint Gobain will conduct one limited quarterly round of sampling in the spring that includes the following.

- An appropriate number of the monitoring wells from the treatment test program. The specific wells will be proposed by Saint Gobain based upon the October and November sampling results;
- On-site sentinel wells MW-12 and MW-15; and
- Off-site well MP-6.

When this study is completed the selected remedy will further limit the potential for contaminant migration off the site.

References:

Forensic Environmental Services, Inc., August 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., July 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., June 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., May 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., April 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., March 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

Forensic Environmental Services, Inc., December 2008. Corrective Measures Study (CMS) Workplan, Former Norton Company/Nashua Tape Products Facility, Watervliet, NY.

Forensic Environmental Services, Inc., December 2007. RCRA Investigation (RFI) Report/Preliminary Corrective Measures Study/Interim Ground-Water Monitoring Plan, Former Norton Company/Nashua Tape Products Facility, Watervliet, NY.

In-Situ Oxidative Technoligies, Inc., May 2009. Laboratory Treatability Study Report, Former Norton/Nashua Tape Products Facility.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

____ If yes - continue after identifying potentially affected surface water bodies.

__√__ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

The 2001 sewer water sampling data indicated that, under prevailing conditions, there was no significant occurrence of VOCs in the water present in the sewer systems. Except for chlorobenzene, VOC concentrations in sewer sediments demonstrated lower concentrations as compared with historical sampling events suggesting that the source of the previously detected VOCs in the sewer sediment and water samples was reduced or removed.

No other potential contaminant pathways into surface waters are known to exist at the site.

References:

Forensic Environmental Services, Inc., December 2007. RCRA Investigation (RFI) Report/Preliminary Corrective Measures Study/Interim Ground-Water Monitoring Plan, Former Norton

Company/Nashua Tape Products Facility, Watervliet, NY.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

Not Applicable

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be **"currently acceptable"** (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

Not Applicable

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

__√__ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

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[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

Rationale:

An interim, ground-water monitoring plan (IGWMP) is currently in place to monitor changes in groundwater conditions and concentrations for Constituents Of Concern at the site. Ground-water samples will be analyzed for VOCs via EPA Method 8260 plus heptane and Tentatively Identified Compounds (TICs). Complete details on this program are included in the discussion of #3.

In the future, when final corrective measures have been implemented, Saint Gobain will be required to develop a final, long term monitoring program to verify that contaminated groundwater has remained within the dimensions of the existing area of contaminated groundwater.

References:

Forensic Environmental Services, Inc., December 2007. RCRA Investigation (RFI) Report/Preliminary Corrective Measures Study/Interim Ground-Water Monitoring Plan, Former Norton Company/Nashua Tape Products Facility, Watervliet, NY.

Forensic Environmental Services, Inc., December 2008. Corrective Measures Study (CMS) Workplan, Former Norton Company/Nashua Tape Products Facility, Watervliet, NY.

Forensic Environmental Services, Inc., August 2009. Monthly Update Report on RCRA Facility Investigation (RFI) Activities, Former Norton/Nashua Tape Products Facility.

In-Situ Oxidative Technoligies, Inc., May 2009. Laboratory Treatability Study Report, Former Norton/Nashua Tape Products Facility.

8. Check the appropriate RCRAInfo status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

   __√__ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the **Former Norton/Nashua Tape Products** facility , EPA ID # **NYD066829599** ,located at **2600 Seventh Avenue, Watervliet , NY.** Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

   _____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

   _____ IN - More information is needed to make a determination.

Completed by: _____ Date: September 14, 2009

Larry A. Rosenmann
Engineering Geologist II
New York State Department of Environmental

Supervisor: _____ Date: September 14, 2009

Denise Radtke
Chief, Engineering Geology Section
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Locations where references may be found:

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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

FIGURES

FORENSIC ENVIRONMENTAL SERVICES, INC.	FIGURE 1-1
SITE LOCATION MAP FORMER NORTON/NASHUA TAPE PRODUCTS FACILITY WATERVLIET, NEW YORK	
0 2640 SCALE IN FEET	DRAWN BY: APPROVED BY:

DERIVED FROM THE TROY SOUTH QUADRANGLE
COMPILED BY THE U.S. GEOLOGICAL SURVEY.

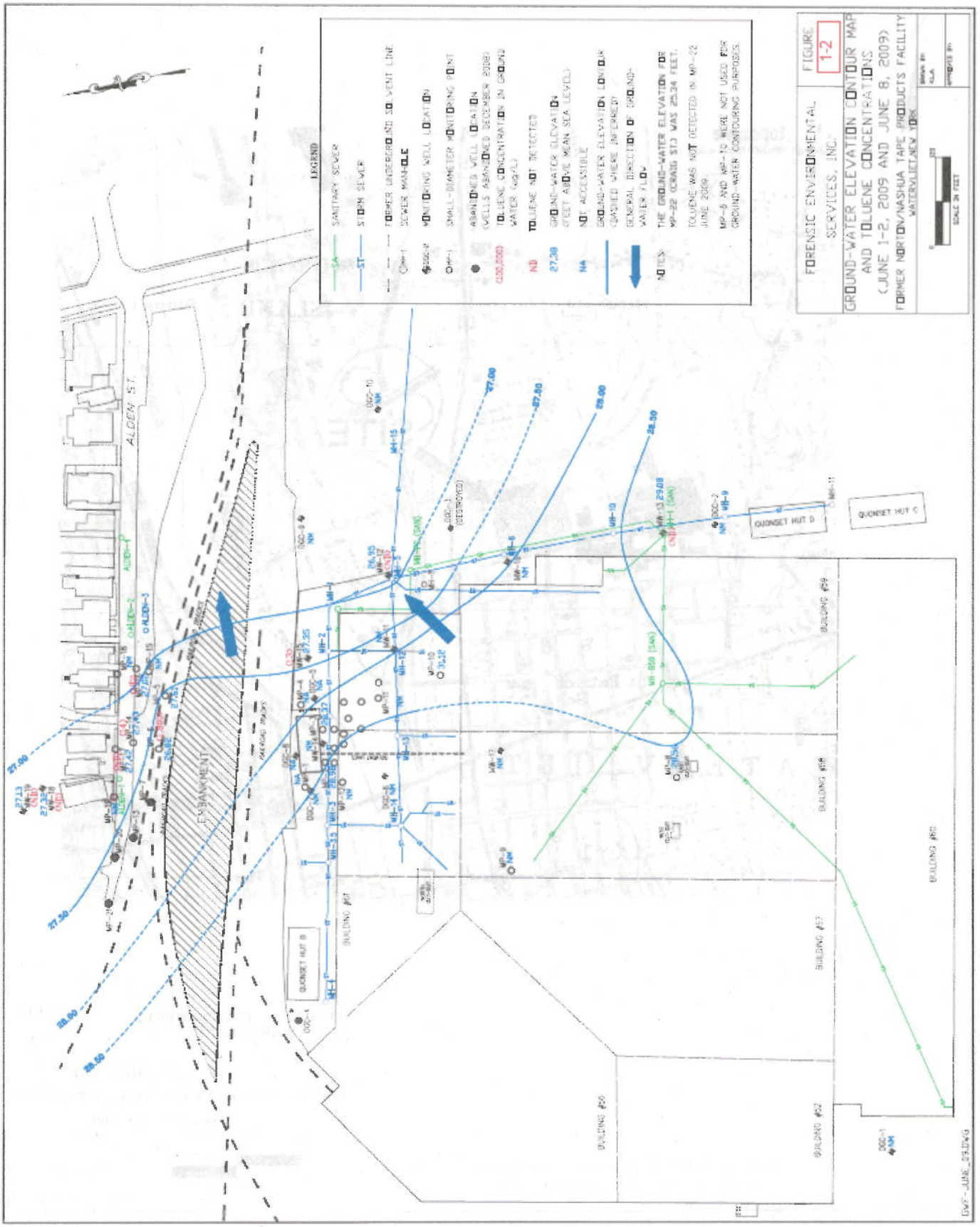
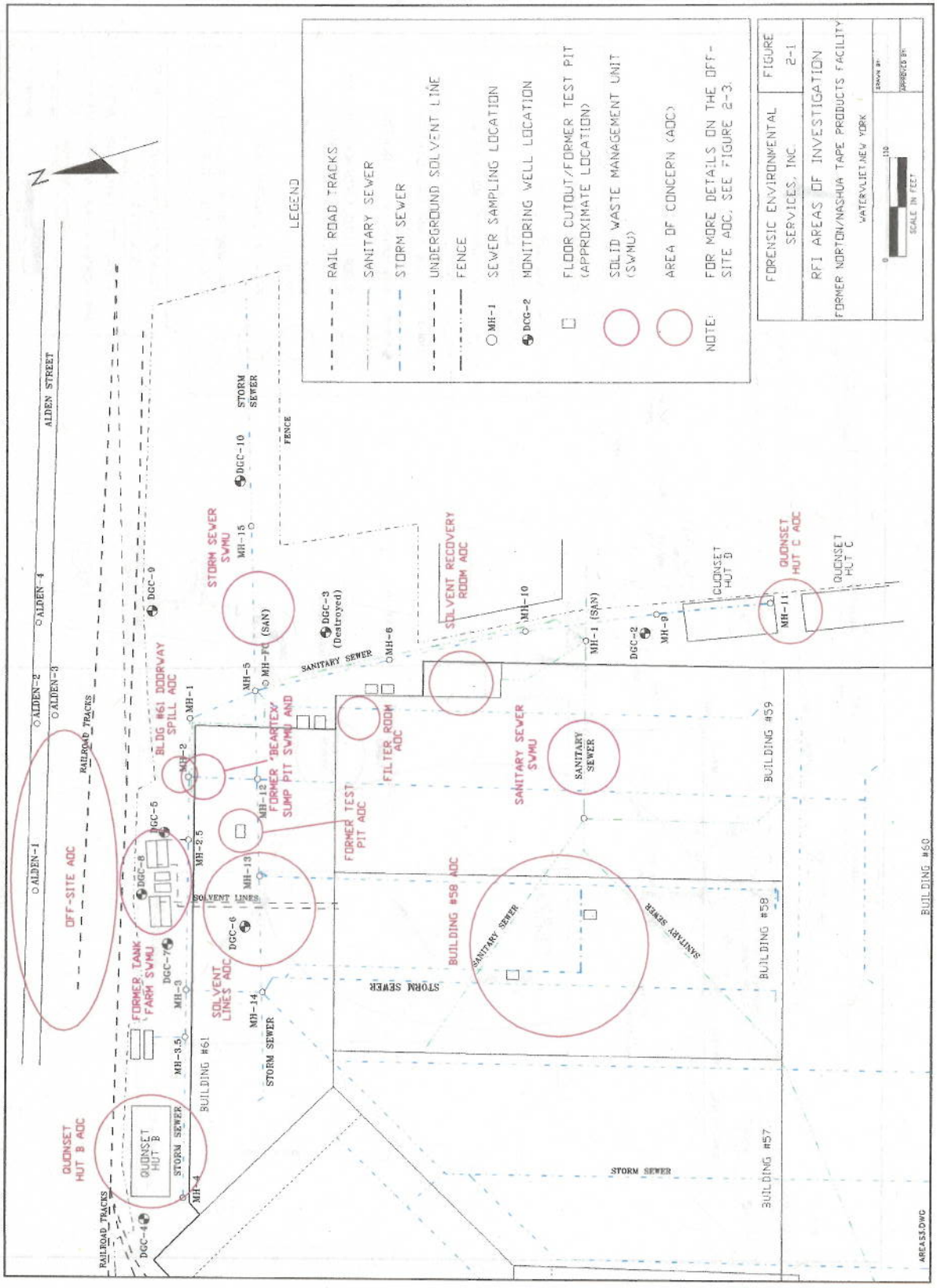
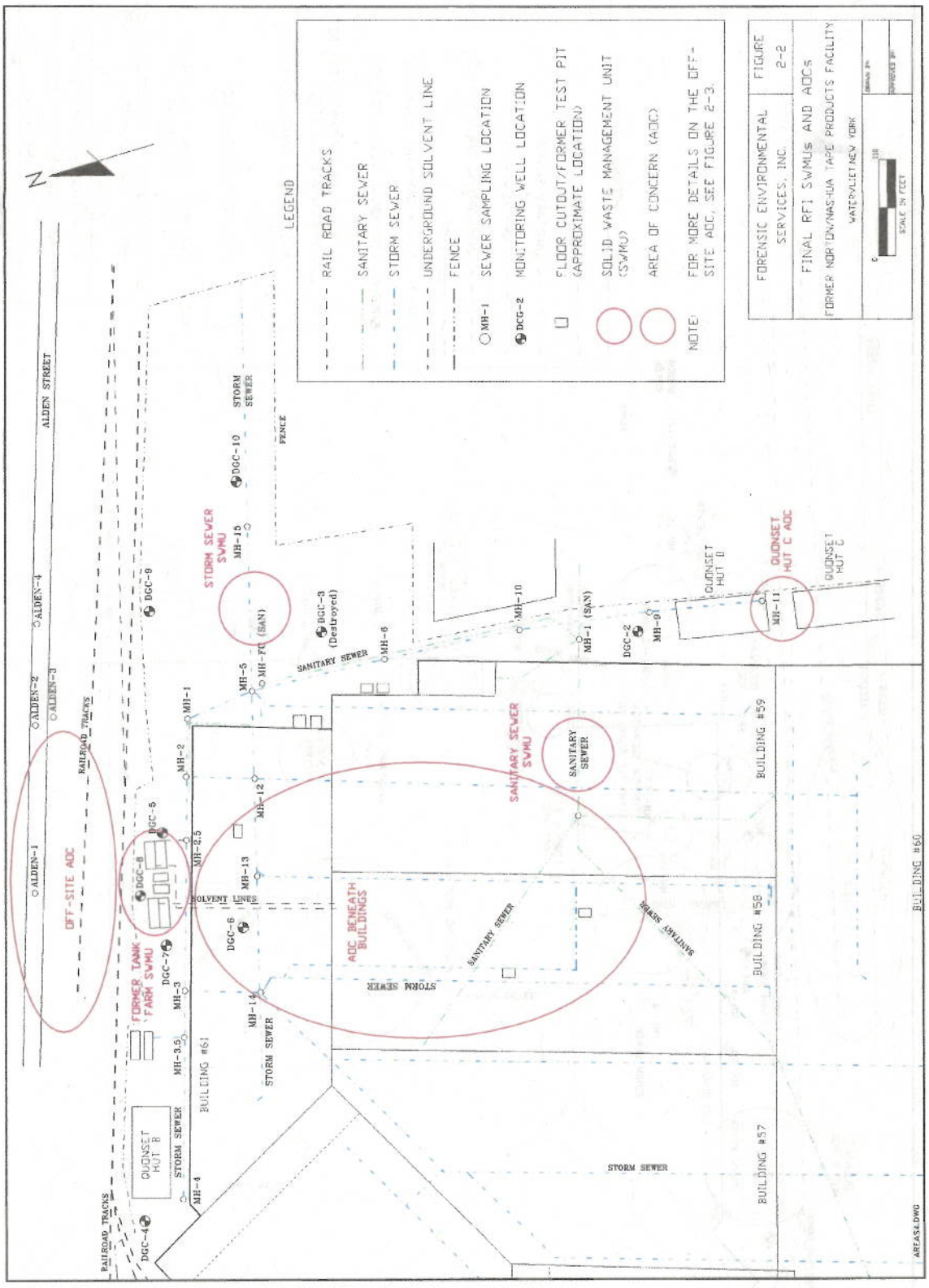
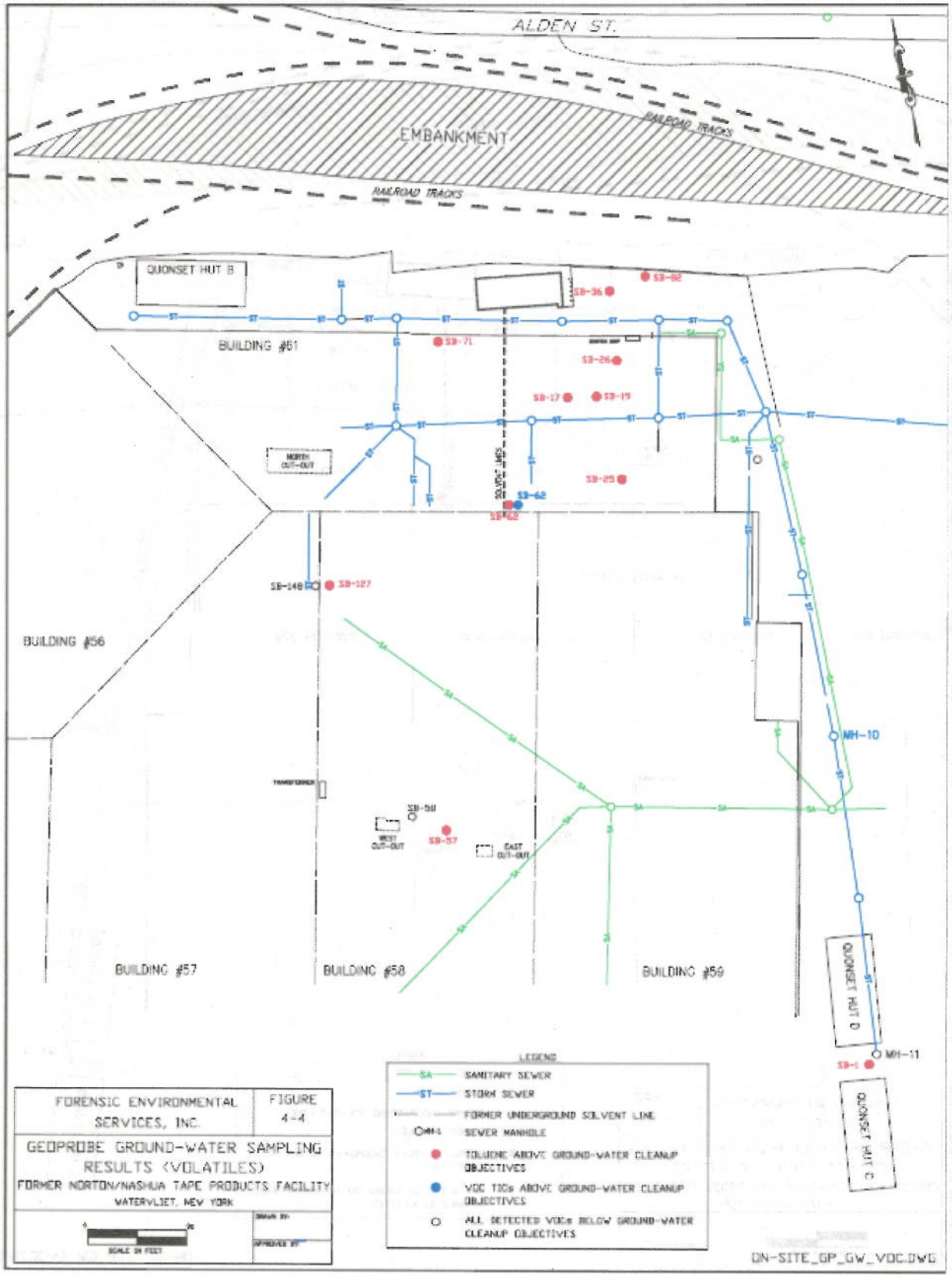
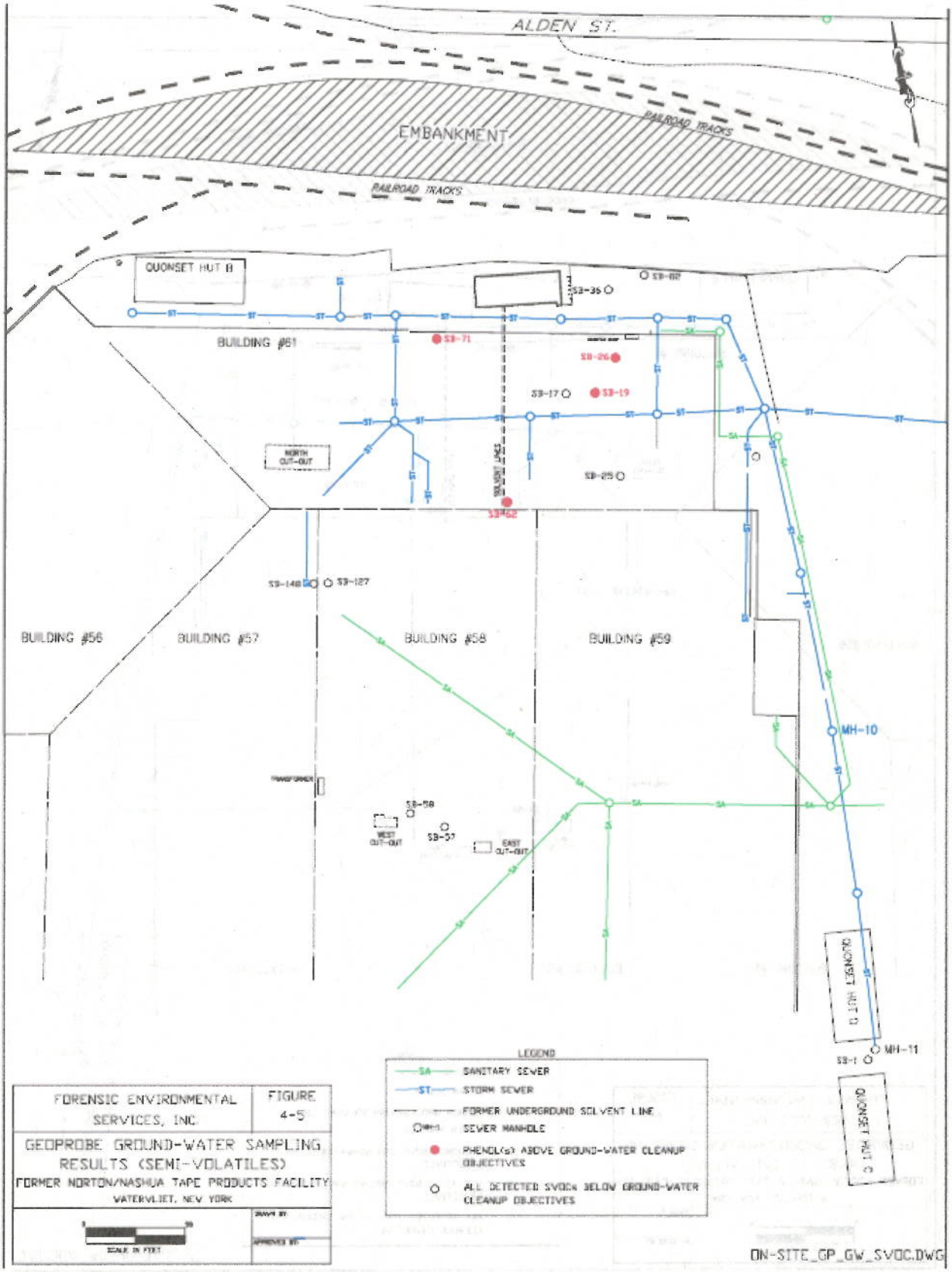


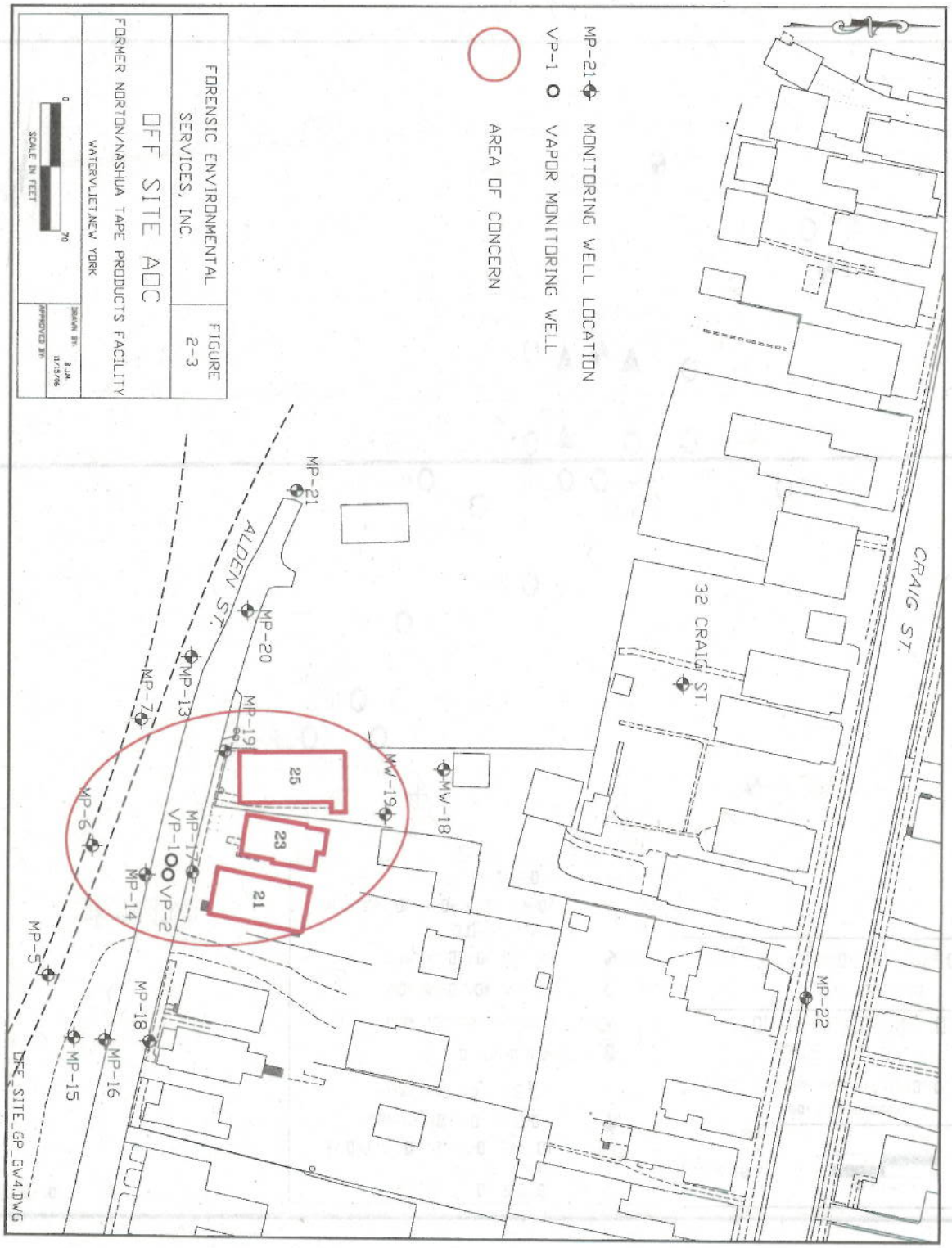
FIGURE 1-2
FORENSIC ENVIRONMENTAL SERVICES, INC.
GROUND-WATER ELEVATION CONTOUR MAP AND TOLUENE CONCENTRATIONS (JUNE 1-2, 2009 AND JUNE 8, 2009)
FORMER NORTON/NASHUA TAPE PRODUCTS FACILITY
WATERVLIET, NEW YORK
LEGEND
SANITARY SEWER
STORM SEWER
FORMER UNDERGROUND STORM SEWER LINE
SEWER MANHOLE
MONITORING WELL LOCATION
SMALL-DIAMETER MONITORING POINT
ABANDONED WELL LOCATION (WELLS ABANDONED DECEMBER 2008)
TOLUENE CONCENTRATION IN GROUND WATER (ug/L)
TOLUENE NOT DETECTED
GROUND-WATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
27.50 FEET ABOVE MEAN SEA LEVEL)
NOT ACCESSIBLE
GROUND-WATER ELEVATION CONTOUR
GENERAL DIRECTION OF GROUND-WATER FLOW
NOTES:
THE GROUND-WATER ELEVATION FOR MP-22 (CRAIG ST.) WAS 25.34 FEET.
TOLUENE WAS NOT DETECTED IN MP-22 JUNE 2009.
MP-9 AND MP-10 WERE NOT USED FOR GROUND-WATER CONTOURING PURPOSES
SCALE IN FEET
ALDEN ST.
EMBANKMENT
QUONSET HUT B
QUONSET HUT C
QUONSET HUT D
BUILDING #58
BUILDING #59
BUILDING #57
BUILDING #56
BUILDING #52
27.00
27.50
28.00
28.50

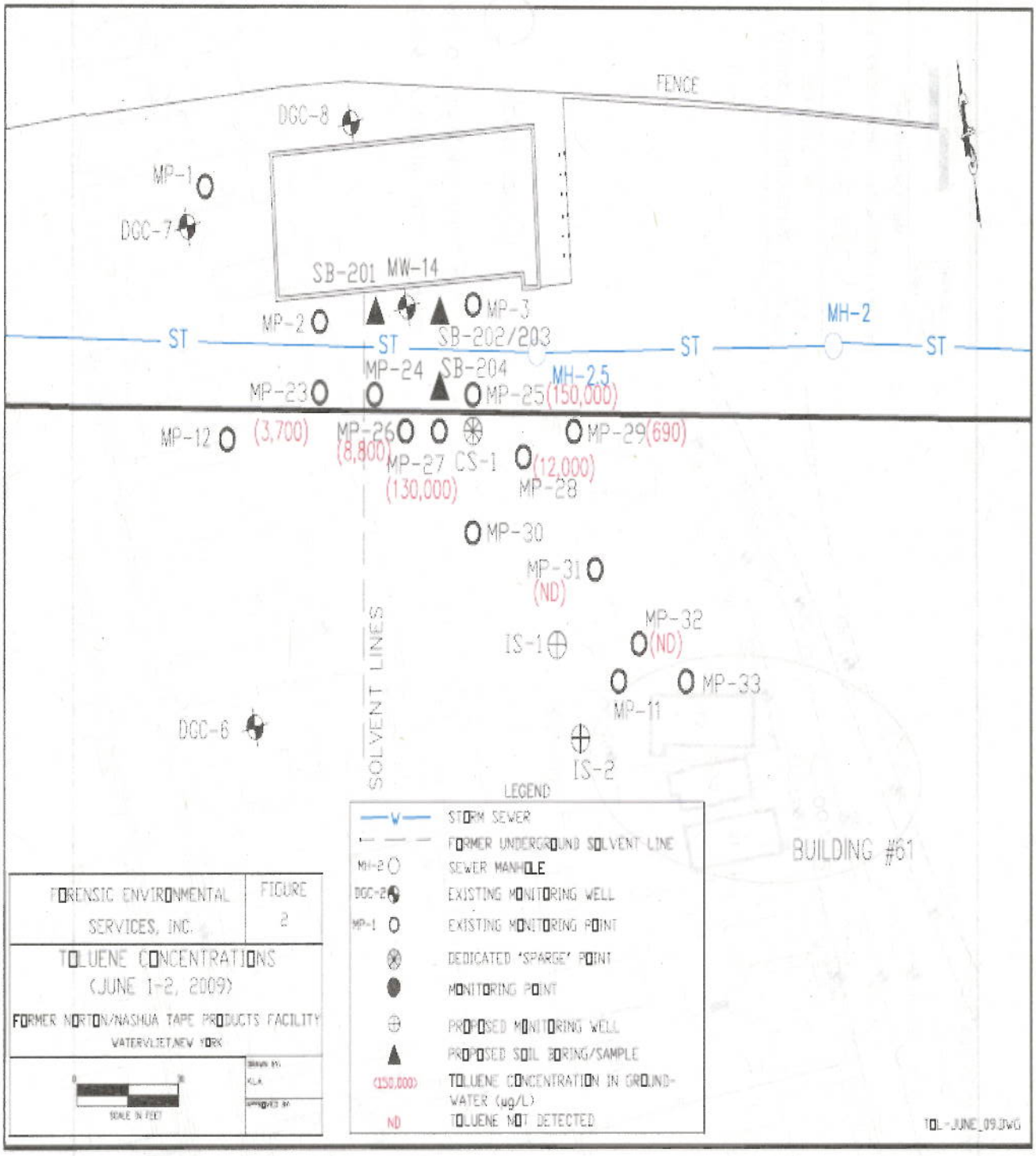

LEGEND
RAIL ROAD TRACKS
SANITARY SEWER
STORM SEWER
UNDERGROUND SOLVENT LINE
FENCE
SEWER SAMPLING LOCATION
MONITORING WELL LOCATION
FLOOR CUTOUT/FORMER TEST PIT (APPROXIMATE LOCATION)
SOLID WASTE MANAGEMENT UNIT (SWMU)
AREA OF CONCERN (AOC)
NOTE: FOR MORE DETAILS ON THE OFF-SITE AOC, SEE FIGURE 2-3.
FORENSIC ENVIRONMENTAL SERVICES, INC.
FIGURE 2-1
RFI AREAS OF INVESTIGATION
FORMER NORTON/NASHUA TAPE PRODUCTS FACILITY
WATERVLIET, NEW YORK
SCALE IN FEET
DRAWN BY:
APPROVED BY:
N
ALDEN-1
ALDEN-2
ALDEN-3
ALDEN-4
ALDEN STREET
RAILROAD TRACKS
OFF-SITE AOC
FORMER TANK FARM SWMU
BLDG #61 DOORWAY SPILL AOC
STORM SEWER SWMU
SOLVENT RECOVERY ROOM AOC
FILTER ROOM AOC
FORMER TEST PIT AOC
FORMER "BEARTEX" SUMP PIT SWMU AND
SANITARY SEWER SWMU
BUILDING #58 AOC
SOLVENT LINES AOC
QUONSET HUT B AOC
QUONSET HUT C AOC
QUONSET HUT B
QUONSET HUT C
BUILDING #61
BUILDING #59
BUILDING #58
BUILDING #57
BUILDING #60
STORM SEWER
SANITARY SEWER
SOLVENT LINES
FENCE
DGC-1
DGC-2
DGC-3 (Destroyed)
DGC-4
DGC-5
DGC-6
DGC-7
DGC-8
DGC-9
DGC-10
MH-1
MH-2
MH-2.5
MH-3
MH-3.5
MH-4
MH-5
MH-6
MH-9
MH-10
MH-11
MH-12
MH-13
MH-14
MH-15
MH-1 (SAN)
MH-FC (SAN)
AREAS3.DWG


LEGEND
RAIL ROAD TRACKS
SANITARY SEWER
STORM SEWER
UNDERGROUND SOLVENT LINE
FENCE
MH-1 SEWER SAMPLING LOCATION
DGG-2 MONITORING WELL LOCATION
FLOOR CUTOUT/FORMER TEST PIT (APPROXIMATE LOCATION)
SOLID WASTE MANAGEMENT UNIT (SWMU)
AREA OF CONCERN (AOC)
NOTE: FOR MORE DETAILS ON THE OFF-SITE AOC, SEE FIGURE 2-3.
FORENSIC ENVIRONMENTAL SERVICES, INC.
FIGURE 2-2
FINAL RFI SWMUs AND AOCs
FORMER NORTON/NASHUA TAPE PRODUCTS FACILITY
WATERVLIET NEW YORK
SCALE IN FEET
ALDEN STREET
ALDEN-1
ALDEN-2
ALDEN-3
ALDEN-4
RAILROAD TRACKS
OFF-SITE AOC
FORMER TANK FARM SWMU
STORM SEWER SWMU
SANITARY SEWER SWMU
ADC BENEATH BUILDINGS
SOLVENT LINES
STORM SEWER
SANITARY SEWER
FENCE
DGC-1
DGC-2
DGC-3 (Destroyed)
DGC-4
DGC-5
DGC-6
DGC-7
DGC-8
DGC-9
DGC-10
MH-1
MH-2
MH-2.5
MH-3
MH-3.5
MH-4
MH-5
MH-6
MH-7 (SAN)
MH-8
MH-9
MH-10
MH-11
MH-12
MH-13
MH-14
MH-15
MH-1 (SAN)
QUONSET HUT B
QUONSET HUT C
QUONSET HUT C ADC
QUONSET HUT D
BUILDING #57
BUILDING #58
BUILDING #59
BUILDING #60
BUILDING #61
AREAS.DWG


ALDEN ST.
EMBANKMENT
RAILROAD TRACKS
RAILROAD TRACKS
QUONSET HUT B
BUILDING #61
BUILDING #56
BUILDING #57
BUILDING #58
BUILDING #59
QUONSET HUT D
QUONSET HUT C
SB-36
SB-82
SB-71
SB-26
SB-17
SB-19
SB-25
SB-62
SB-148
SB-127
SB-58
SB-57
MH-10
MH-11
SB-1
NORTH CUT-OUT
WEST CUT-OUT
EAST CUT-OUT
SAW CUT JOINTS
FORENSIC ENVIRONMENTAL SERVICES, INC.
FIGURE 4-4
GEOPROBE GROUND-WATER SAMPLING RESULTS (VOLATILES)
FORMER NORTON/NASHUA TAPE PRODUCTS FACILITY
WATERVLIET, NEW YORK
SCALE IN FEET
LEGEND
SA SANITARY SEWER
ST STORM SEWER
FORMER UNDERGROUND SOLVENT LINE
SEWER MANHOLE
TOLUENE ABOVE GROUND-WATER CLEANUP OBJECTIVES
VOC TICs ABOVE GROUND-WATER CLEANUP OBJECTIVES
ALL DETECTED VOCs BELOW GROUND-WATER CLEANUP OBJECTIVES
ON-SITE_GP_GW_VOC.DWG


ALDEN ST.
EMBANKMENT
RAILROAD TRACKS
RAILROAD TRACKS
QUONSET HUT B
BUILDING #51
BUILDING #56
BUILDING #57
BUILDING #58
BUILDING #59
SB-71
SB-26
SB-17
SB-19
SB-25
SB-62
SB-148
SB-127
SB-58
SB-57
MH-10
MH-11
NORTH CUT-OUT
WEST CUT-OUT
EAST CUT-OUT
SOLVENT LINES
LEGEND
SA SANITARY SEWER
ST STORM SEWER
FORMER UNDERGROUND SOLVENT LINE
SEWER MANHOLE
PHENOL(s) ABOVE GROUND-WATER CLEANUP OBJECTIVES
ALL DETECTED SVOCs BELOW GROUND-WATER CLEANUP OBJECTIVES
FORENSIC ENVIRONMENTAL SERVICES, INC
FIGURE 4-5
GEOPROBE GROUND-WATER SAMPLING RESULTS (SEMI-VOLATILES)
FORMER NORTON/NASHUA TAPE PRODUCTS FACILITY
WATERVLIET, NEW YORK
SCALE IN FEET
DRAWN BY
APPROVED BY
ON-SITE_GP_GW_SVOC.DWG


MP-21 MONITORING WELL LOCATION
VP-1 VAPOR MONITORING WELL
AREA OF CONCERN
FORENSIC ENVIRONMENTAL SERVICES, INC.
FIGURE 2-3
OFF SITE AOC
FORMER NORTON/NASHUA TAPE PRODUCTS FACILITY
WATERVLIET, NEW YORK
SCALE IN FEET
CRAIG ST.
32 CRAIG ST.
ALDEN ST.
MP-21
MP-20
MP-13
MP-19
MP-7
MP-6
MP-17
VP-1
VP-2
MP-14
MP-5
MP-18
MP-16
MP-15
MP-22
MW-19
MW-18
25
23
21
OFF_SITE_GP_GW4.DWG


FENCE
DGC-8
MP-1
DGC-7
SB-201
MW-14
MP-2
MP-3
ST
SB-202/203
MH-2
MP-24
SB-204
MH-2.5
MP-23
MP-25 (150,000)
MP-12
(3,700)
MP-26 (8,800)
MP-29 (690)
MP-27
CS-1
(130,000)
(12,000)
MP-28
MP-30
MP-31
(ND)
MP-32
(ND)
IS-1
MP-33
MP-11
DGC-6
IS-2
SOLVENT LINES
BUILDING #61
LEGEND
STORM SEWER
FORMER UNDERGROUND SOLVENT LINE
SEWER MANHOLE
EXISTING MONITORING WELL
EXISTING MONITORING POINT
DEDICATED 'SPARGE' POINT
MONITORING POINT
PROPOSED MONITORING WELL
PROPOSED SOIL BORING/SAMPLE
TOLUENE CONCENTRATION IN GROUNDWATER (ug/L)
TOLUENE NOT DETECTED
FORENSIC ENVIRONMENTAL SERVICES, INC.
FIGURE 2
TOLUENE CONCENTRATIONS
(JUNE 1-2, 2009)
FORMER NORTON/NASHUA TAPE PRODUCTS FACILITY
WATERVLIET, NEW YORK
SCALE IN FEET
TOL-JUNE_09.DWG

TABLES

Table 4-3

Summary of Geoprobe Ground-Water Analytical Data - Volatiles
Former Norton/Nashua Facility
Watervliet, New York

Sample Designation	Sampling Date	Acetone (µg/L)	Methylene chloride (µg/L)	Chloro-form (µg/L)	Toluene (µg/L)	m,p-xylene (µg/L)	o-xylene (µg/L)	Heptane (µg/L)	Total VOC TICs (µg/L)
SB-1	8/26/2003	13 B	3 JB	<5	7	<5	<5	<10	ND
SB-17	8/28/2003	<5000	3,500 B	<2500	33,000	<2500	<2500	<5000	ND
SB-19	8/29/2003	<10000	5,000 JB	<5000	110,000	<5000	<5000	<10000	ND
SB-25	9/2/2003	<10	6 B	3 J	78	3 J	<10	<10	9 J
SB-26	9/3/2003	<2000	980 JB	<1000	26,000	<1000	<1000	<2000	ND
SB-36	9/5/2003	7 J	3 JB	<5	37	<5	<5	7 J	7 J
West Cutout	9/8/2003	<10	2 JB	<5	1 J	<10	<10	<5	46 J
SB-57	9/10/2003	12	2 JB	<5	7	<5	<5	12	20 J
SB-58	9/10/2003	8 J	5 B	<5	4 J	<5	<5	8 J	ND
SB-62	9/11/2003	<100	70 B	<50	1,800	<50	<50	<100	800 J
SB-62A*	9/11/2003	<1000	710 B	<500	12,000	<500	<500	<1000	1,500 J
SB-71	9/12/2003	<2000	1,300 B	<1000	25,000	<1000	<1000	<2000	ND
SB-82	9/15/2003	<10	8 B	<5	19	<5	<5	<10	10 J
SB-127	11/26/2003	<2000	2,500 B	<1000	40,000 E	<1000	<1000	<2000	ND
SB-148	1/20/2004	<10	4 JB	<5	<5	2 J	<5	<10	ND
Field Blank	9/19/2003	<10	10 B	3 J	<10	<10	<10	<10	10 J
Field Blank	12/4/2003	<10	<5	3 JB	<5	<5	<5	<10	ND
Field Blank	1/22/2004	<10	<5	<5	<5	<5	<5	<10	15 J
		50	5	7	5	5	5	NA	NA
		NYSDEC ground-water standard/guideline (TOGS 1.1.1) - µg/L							

* SB-62A is a duplicate sample.

µg/L = micrograms per liter; VOCs = volatile organic compounds; TICs = tentatively identified compounds;

B = compound detected in blank, E = concentration exceeds the calibration range, J = estimated concentration,
analyte detected below the quantitation limit.

VOCs analyzed via EPA Method 8260 plus heptane and TICs. Only detected analytes are listed above.

A complete list of analytes is provided in the laboratory report.

B-qualified TICs not included in table. B-qualified analytes not included in Total VOCs.

Table 4-4

Summary of Geoprobe Ground-Water Analytical Data - Semi-Volatiles
Former Norton/Nashua Facility
Watervliet, New York

Sample Designation	Sampling Date	2-Methyl-phenol (µg/L)	4-Methyl-phenol (µg/L)	Bis-(2-ethyl-hexyl)phthalate (µg/L)	Di-n-Butyl phthalate (µg/L)	Pyrene (µg/L)	Benzo(b) fluoranthene (µg/L)	Benzo(k) fluoranthene (µg/L)	Indeno(1,2,3-cd) pyrene (µg/L)	Dibenzo(a,h) anthracene (µg/L)	Benzo(g,h,i) perylene (µg/L)	Total SVOC TICs (µg/L)
SB-1	8/26/2003	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	100 J
SB-17	8/28/2003	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ND
SB-19	8/29/2003	9 J	16	<10	<10	<10	<10	<10	<10	<10	<10	ND
SB-25	9/2/2003	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ND
SB-26	9/3/2003	6	6	<5	<5	<5	<5	<5	<5	<5	<5	ND
SB-36	9/5/2003	<5	<5	0.8 JB	<5	<5	<5	<5	<5	<5	<5	6 JN
West Cutout*	9/8/2003	<5	<5	<5	0.7 J	0.8 J	<5	<5	<5	<5	<5	14 JN
West Cutout (RE)	9/8/2003	<5	<5	<5	0.6 J	<5	<5	<5	<5	<5	<5	10 JN
SB-57	9/10/2003	<5	<5	1 JB	<5	<5	<5	<5	<5	<5	<5	ND
SB-58	9/10/2003	<5	<5	0.9 JB	<5	<5	<5	<5	<5	<5	<5	ND
SB-62	9/11/2003	5	9	<5	<5	<5	<5	<5	<5	<5	<5	ND
SB-62A**	9/11/2003	5	8	0.8 JB	<5	<5	<5	<5	<5	<5	<5	ND
SB-71	9/12/2003	2 J	3 J	<5	<5	<5	<5	<5	<5	<5	<5	ND
SB-82	9/15/2003	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	3 J
SB-127	11/26/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-148	1/20/2004	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	2 J
Field Blank	9/19/2003	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	22 JN
Field Blank	12/4/2003	<5	<5	8	<5	<5	<5	<5	<5	<5	<5	2 JN
Field Blank	1/22/2004	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ND
		1		5	50	50	0.002	0.002	0.002	NA	NA	NA
		NYSDEC ground-water standard/guideline (TOGS 1.1.1) - µg/L										

* Sample also analyzed for TPH-DRO (Total Petroleum Hydrocarbons-Diesel-Range Organics via EPA Method 8015. Reported TPH-DRO concentration was 50.8 mg/L (milligrams per liter).

** SB-62A is a duplicate sample.

µg/L = micrograms per liter; SVOCs = semi-volatile organic compounds; TICs = tentatively identified compounds;

B = compound detected in blank, E = concentration exceeds the calibration range, J = estimated concentration, analyte detected below the quantitation limit;

N = presumptive evidence of a compound (TICs only); NA = not analyzed; ND = not detected.

SVOCs analyzed via EPA Method 8270 plus TICs. Only detected analytes are listed above. A complete list of analytes is provided in the laboratory report.

B-qualified TICs not included in table. B-qualified analytes not included in Total VOCs.

Table
Ground-Water Analytical Data Summary - Volatiles
Former Norton/Nashua Facility
Watervliet, New York

Sample Designation	Sampling Date	Acetone (µg/L)	Benzene (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Toluene (µg/L)	Heptane (µg/L)	m,p-Xylenes (µg/L)	Total TICs (µg/L)
MW-12	2/19/04	<10	<5	<5	9 B	6	<10	<5	14 J
	6/15/04	<10	<5	<5	<5	<5	<10	<5	ND
	6/23/05	10 JB	<10	<10	<10	3 J	<10	<10	ND
	8/21/06	<10	<10	<10	<10	<10	<10	<10	ND
	3/14/07	<10	<10	<10	<10	<10	<10	<10	ND
	9/20/07	<10	<10	<10	<10	<10	<10	<10	ND
	3/27/08	<10	<10	<10	<10	<10	<10	<10	ND
	8/27/08	<10	<10	<10	<10	<10	<10	<10	ND
	4/8/09	<10	<5	<5	<5	15	<10	<5	ND
	6/1/09	<10	<5	<5	<5	<5	<5	<5	ND
Dup. MW-50	6/1/09	<10	<5	<5	7.0 B	<5	<5	<5	ND
MW-13	2/19/04	63	<5	<5	3 JB	<5	<10	<5	15 J
	6/15/04	<10	<5	<5	<5	<5	<10	<5	ND
	3/14/07	<10	<10	<10	<10	<10	<10	<10	ND
Dup.	9/21/07	<10	<10	<10	<10	<10	<10	<10	ND
	9/21/07	<10	<10	<10	<10	<10	<10	<10	ND
	3/27/08	<10	<10	<10	<10	<10	<10	<10	ND
	8/27/08	<10	<10	<10	<10	<10	<10	<10	ND
	4/8/09	<10	<5	<5	<5	29	<10	<5	ND
	6/1/09	<10	<5	<5	<5	<5	<5	<5	ND
MW-15	2/19/04	<10	<5	<5	3 JB	5	120	1 J	ND
	6/15/04	<10	<5	<5	<5	3 J	<10	<5	ND
*	10/28/04	<10	<10	<10	<10	3 J	<10	<10	ND
	4/7/05	<10	<10	<10	<10	<10	<10	<10	ND
	3/14/07	<10	<10	<10	<10	<10	<10	<10	126 JN
	9/20/07	<10	<10	<10	<10	<10	<10	<10	6 J
	3/27/08	<10	<10	<10	<10	<10	<10	<10	ND
	8/27/08	<10	<10	<10	<10	<10	<10	<10	ND
	4/8/09	<10	<5	<5	<5	20	<10	<5	ND
	6/1/09	<10	<5	<5	<5	13	<5	<5	ND

* Methylcyclohexane detected at MW-15 (37 µg/L) on 10/28/04.

Table
Ground-Water Analytical Data Summary - Volatiles
Former Norton/Nashua Facility
Watervliet, New York

Sample Designation	Sampling Date	Acetone (µg/L)	Benzene (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Toluene (µg/L)	Heptane (µg/L)	m,p-Xylenes (µg/L)	Total TICs (µg/L)
MW-18	5/3/06	<50	<50	<50	21 JB	580	<50	<50	ND
	8/22/06	<50	<50	<50	<50	590	<50	<50	ND
	12/20/06	<10	<10	<10	4 JB	<10	<10	<10	ND
	3/14/07	<100	<100	<100	<100	1,400	<100	<100	ND
	5/23/07	<100	<100	<100	<100	580	<100	<100	ND
	9/21/07	<10	<10	<10	<10	<10	<10	<10	ND
	12/11/07	<10	<10	<10	<10	<10	<10	<10	ND
	3/27/08	<200	<200	<200	<200	1,900	<200	<200	ND
	6/25/08	<10	<10	<10	<10	<10	<10	<10	ND
	8/26/08	<10	<10	<10	<10	<10	<10	<10	ND
	12/16/08	<10	<10	<10	<10	<10	<10	<10	ND
	4/7/09	<10	<5	<5	<5	<5	<10	<5	ND
	6/8/09	<10	<5	<5	<5	<5	<5	<5	ND
MW-19	5/3/06	<10	<10	<10	<10	<10	<10	<10	ND
	8/22/06	<10	<10	<10	<10	<10	<10	<10	ND
	12/20/06	<10	<10	<10	<10	<10	<10	<10	ND
	3/14/07	<10	<10	<10	<10	6 J	<10	<10	ND
	5/23/07	<10	<10	<10	<10	<10	<10	<10	ND
	9/21/07	<10	<10	<10	<10	18	<10	<10	ND
	12/11/07	<10	<10	<10	<10	<10	<10	<10	ND
Dup.	12/11/07	<10	<10	<10	<10	<10	<10	<10	ND
	3/28/08	<10	<10	<10	<10	<10	<10	<10	ND
MW-19a	3/28/08	<10	<10	<10	<10	7.9 J	<10	<10	ND
	6/25/08	<10	<10	<10	5.1 J	<10	<10	<10	ND
	8/26/08	<10	<10	<10	<10	<10	<10	<10	ND
	12/16/08	<10	<10	<10	<10	<10	<10	<10	ND
	4/7/09	<10	<5	<5	<5	<5	<10	<5	ND
	6/8/09	11	<5	<5	<5	<5	<5	<5	ND
MP-2	2/18/04	<200	<100	<100	67 JB	2,200	<200	<100	ND
*	6/23/05	12 J	5 J	<20	5 J	13	<20	4 J	ND
D *	6/23/05	51 B	<50	<50	10 J	12 J	<50	<50	400 J
*	10/25/05	<500	<500	<500	1,000	4,600	<500	<500	ND
*	6/2/09	<100	<50	<50	77	1,200	<50	<50	303 J
MP-3	2/18/04	<25000	<12000	<12000	6,500 JB	410,000	<25000	<12000	ND
	6/1/09	<2000	<1000	<1000	<1000	39,000	<1000	<1000	ND

* Ethylbenzene and methylcyclohexane detected at MP-2 (8 J µg/L & 470 E µg/L, respectively) on 6/23/05; methylcyclohexane detected at MP-2 (D) (350 µg/L) on 6/23/05, (330 J µg/L) on 10/25/05, and (310 µg/L) on 6/2/09.

Table
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Sample Designation	Sampling Date	Acetone (µg/L)	Benzene (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Toluene (µg/L)	Heptane (µg/L)	m,p-Xylenes (µg/L)	Total TICs (µg/L)
MP-6	6/14/04	410 JB	<500	<500	<500	9,100	<1000	<500	ND
	10/27/04	<10	<10	<10	<10	120	<10	<10	ND
Dup.	10/27/04	36	<10	<10	<10	150	<10	<10	ND
	4/7/05	<10	<10	<10	<10	6 J	<10	<10	ND
	6/23/05	<500	<500	<500	<500	7,900	<500	<500	ND
	10/25/05	<10	<10	<10	4 JB	6 J	<10	<10	ND
Dup.	10/25/05	<10	<10	<10	<10	4 J	<10	<10	ND
	5/2/06	<10	3 J	<10	5 JB	150	<10	<10	ND
	8/22/06	<10	<10	<10	<10	<10	<10	<10	ND
	12/20/06	<10	<10	<10	<10	<10	<10	<10	ND
	5/23/07	<10	<10	<10	<10	<10	<10	<10	ND
	9/20/07	<10	<10	<10	<10	<10	<10	<10	ND
	12/11/07	<10	<10	<10	<10	<10	<10	<10	ND
	3/26/08	<10	<10	<10	<10	<10	<10	<10	ND
Dup.	3/26/08	<10	<10	<10	<10	<10	<10	<10	ND
	6/25/08	<500	<500	<500	<500	5,600	<500	<500	ND
	8/27/08	<100	<100	<100	<100	1,600	<100	<100	ND
Dup. *	8/27/08	<100	<100	<100	<100	1,200	<100	<100	ND
*	12/16/08	<10	<10	<10	<10	<10	<10	<10	41.9 JN
*	4/7/09	<10	<5	<5	<5	<5	<10	<5	59.5 JN
*	6/1/09	<100	<50	<50	88 B	1,800	<50	<50	59 J
MP-14	9/9/04	76	<5.0	<5.0	<5.0	850	<5.0	<5.0	ND
	4/7/05	<10	<10	<10	<10	46	<10	<10	ND
Dup.	4/7/05	<10	<10	<10	<10	48	<10	<10	ND
	6/23/05	<10	<10	<10	<10	110	<10	<10	ND
Dup.	6/23/05	<10	<10	<10	4 J	170	<10	<10	ND
**	10/25/05	<10	<10	<10	<10	7 J	<10	<10	ND
	5/3/06	<10	<10	<10	5 JB	<10	<10	<10	ND
	8/22/06	<10	<10	<10	<10	<10	<10	<10	ND
	12/19/06	<10	<10	<10	<10	<10	<10	<10	ND
	5/23/07	<10	<10	<10	<10	4 J	<10	<10	ND
	9/20/07	<100	<100	<100	<100	870	<100	<100	ND
	12/11/07	<100	<100	<100	<100	1,400	<100	<100	ND
	3/27/08	<200	<200	<200	<200	3,100	<200	<200	ND
	6/25/08	<10	<10	<10	<10	10	<10	<10	ND
	8/26/08	<10	<10	<10	<10	140	<10	<10	ND
Dup.	12/17/08	<10	<10	<10	<10	38 / 48	<10	<10	ND
Dup.	4/7/09	<10	<5	<5	<5	67 / 68	<10	<5	ND
	6/1/09	<10	<5	<5	<5	14	<5	<5	ND

* Cyclohexane detected at MP-6 (dup.) (23 Jµg/L) on 8/27/08; cyclohexane (32 µg/L) and methylcyclohexane detected at MP-6 (32 µg/L and 8.6 J µg/L) on 12/16/08, (62 µg/L and 25 µg/L) on 4/7/09, and (100 µg/L and 120 µg/L) on 6/1/09.

** Methylcyclohexane detected at MP-14 (6 J µg/L) on 10/25/05.

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Sample Designation	Sampling Date	Acetone (µg/L)	Benzene (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Toluene (µg/L)	Heptane (µg/L)	m,p-Xylenes (µg/L)	Total TICs (µg/L)
MP-16	9/9/04	13	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND
	5/23/07	<10	<10	<10	<10	<10	<10	<10	ND
	9/20/07	<10	<10	<10	<10	<10	<10	<10	ND
	12/11/07	<10	<10	<10	<10	<10	<10	<10	ND
	6/25/08	<10	<10	<10	<10	<10	<10	<10	ND
	8/26/08	<10	<10	<10	<10	<10	<10	<10	ND
	4/7/09	<10	<5	<5	<5	<5	<10	<5	ND
	6/8/09	<10	<5	<5	<5	<5	<10	<5	ND
MP-17	9/7/04	<2500	<1200	<1200	<1200	**10,000**	<2500	<1200	ND
	10/27/04	<250	<250	<250	<250	**4,800**	<250	<250	ND
*	4/7/05	<10	<10	<10	<10	**1,400 E**	<10	<10	ND
	4/7/05	<200	<200	<200	<200	**1,400 D**	<200	<200	ND
	6/23/05	<100	<100	<100	<100	**1,200**	<100	<100	ND
	10/25/05	<200	<200	<200	**340**	**1,900**	<200	<200	ND
	5/3/06	<10	<10	<10	<10	**160**	<10	<10	ND
*	12/19/06	<10	<10	<10	<10	**180**	<10	<10	ND
	3/14/07	<10	<10	<10	<10	**78**	<10	<10	ND
	5/23/07	<200	<200	<200	<200	**2,200**	<200	<200	ND
	9/20/07	<10	<10	<10	<10	**330/540 E**	<10	<10	ND
	12/11/07	<20	<20	<20	<20	**220**	<20	<20	ND
	3/27/08	<20	<20	<20	<20	**240**	<20	<20	ND
	6/25/08	<10	<10	<10	<10	**8.3 J**	<10	<10	ND
Dup.	6/25/08	<10	<10	<10	<10	**8.4**	<10	<10	ND
	8/26/08	<10	<10	<10	<10	**4.3 J**	<10	<10	ND
	12/17/08	<10	<10	<10	<10	<10	<10	<10	ND
	4/7/09	<10	<5	<5	<5	<5	<10	<5	ND
	6/8/09	<10	<5	<5	<5	<5	<5	<5	**5.5 J**

* Methylcylcohexane detected at MP-17 (12 µg/L) on 4/7/05 and (6 J µg/L) on 12/19/06.

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Sample Designation	Sampling Date	Acetone (µg/L)	Benzene (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Toluene (µg/L)	Heptane (µg/L)	m,p-Xylenes (µg/L)	Total TICs (µg/L)
MP-22	11/15/04	<10	<10	<10	<10	<10	<10	<10	ND
	4/7/05	<10	<10	<10	<10	<10	<10	<10	ND
	6/23/05	<10	<10	<10	4 J	<10	<10	<10	ND
	10/25/05	<10	<10	<10	7 J	<10	<10	<10	ND
	5/2/06	<10	<10	<10	5 JB	10 J	<10	<10	ND
	8/21/06	<10	<10	<10	<10	<10	<10	<10	ND
Dup.	8/21/06	<10	<10	<10	<10	<10	<10	<10	ND
	12/19/06	<10	<10	<10	<10	<10	<10	<10	ND
Dup.	12/19/06	<10	<10	<10	<10	<10	<10	<10	ND
	3/14/07	<10	<10	<10	<10	<10	<10	<10	ND
Dup.	3/14/07	<10	<10	<10	<10	<10	<10	<10	ND
	5/23/07	<10	<10	<10	<10	<10	<10	<10	ND
Dup.	5/23/07	<10	<10	<10	<10	<10	<10	<10	ND
	9/21/07	<10	<10	<10	<10	<10	<10	<10	ND
	12/11/07	<10	<10	<10	<10	<10	<10	<10	ND
	3/26/08	<10	<10	<10	<10	<10	<10	<10	ND
	6/25/08	<10	<10	<10	<10	58	<10	<10	ND
	8/28/08	<10	<10	<10	<10	<10	<10	<10	ND
	12/17/08	<10	<10	<10	<10	<10	<10	<10	ND
	4/7/09	<10	<5	<5	<5	<5	<10	<5	ND
Dup.	4/7/09	<10	<5	<5	<5	<5	<10	<5	ND
	6/8/09	<10	<5	<5	<5	<5	<5	<5	ND
MP-23	6/2/09	<200	<100	<100	100	3,700	<100	<100	ND
MP-25	6/2/09	<10000	<5000	<5000	6,000	150,000	<5000	<5000	ND
MP-26	6/2/09	<500	<250	<250	<250	8,800	<250	<250	ND
MP-27	6/2/09	<10000	<5000	<5000	6,100	130,000	<5000	<5000	ND
MP-28	6/2/09	<1000	<500	<500	<500	12,000	<500	<500	ND
MP-29	6/2/09	<50	<25	<25	<25	690	<25	<25	ND
MP-31	6/2/09	<10	<5	<5	5.6	<5	<5	<5	13 J
MP-32	6/2/09	<10	<5	<5	<5	<5	<5	<5	ND

* Methylcyclohexane detected at MP-31 (4.4 J) on 6/2/09.

Table
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Sample Designation	Sampling Date	Acetone (µg/L)	Benzene (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Toluene (µg/L)	Heptane (µg/L)	m,p-Xylenes (µg/L)	Total TICs (µg/L)
TB	2/18/04	<10	<5	<5	**5 JB**	<5	<10	<5	**5 J**
	2/20/04	<10	<5	<5	**10 B**	<5	<10	<5	**5 J**
*	6/16/04	**19 B**	<5	<5	**8**	<5	<10	<5	ND
	9/7/04	**14 B**	<5.0	<5.0	**6 J**	<5.0	<5.0	<5.0	ND
	9/9/04	< 10	< 10	< 10	< 10	< 10	< 10	< 10	ND
	10/26/04	<10	<10	<10	<10	<10	<10	<10	**9 JB**
	10/28/04	<10	<10	<10	<10	<10	<10	<10	ND
	11/15/04	**19**	<10	<10	<10	<10	<10	<10	ND
	4/8/05	**9 JB**	<10	<10	**2 JB**	<10	<10	<10	ND
	6/23/05	**16**	<10	<10	**4 J**	<10	<10	<10	ND
	10/25/05	<10	<10	<10	<10	<10	<10	<10	**8 JB**
	5/2/06	**14**	<10	<10	**7 JB**	<10	<10	<10	**6 JB**
	5/3/06	**11**	<10	<10	**6 JB**	<10	<10	<10	**7 JB**
	8/21/06	<10	<10	<10	<10	<10	<10	<10	ND
	12/19/06	<10	<10	<10	**6 JB**	<10	<10	<10	ND
	3/14/07	<10	<10	<10	**6 JB**	<10	<10	<10	ND
	5/23/07	**8 JB**	<10	<10	<10	<10	<10	<10	ND
	9/21/07	**14**	<10	<10	<10	<10	<10	<10	ND
	12/11/07	**9.2 J**	<10	<10	<10	<10	<10	<10	ND
	3/28/08	<10	<10	<10	<10	<10	<10	<10	ND
	6/25/08	<10	<10	**8.4 J**	<10	<10	<10	<10	ND
	8/26/08	<10	<10	<10	<10	<10	<10	<10	ND
	12/16/08	<10	<10	<10	<10	<10	<10	<10	ND
	4/7/09	**9.9 J**	<5	<5	<5	<5	<10	<5	ND
	6/1/09	<10	<5	<5	<5	<5	<5	<5	ND
	6/8/09	<10	<5	<5	<5	<5	<5	<5	ND

* 2-Butanone detected in the TB sample (18 µg/L) on 6/16/04.

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Sample Designation	Sampling Date	Acetone (µg/L)	Benzene (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Toluene (µg/L)	Heptane (µg/L)	m,p-Xylenes (µg/L)	Total TICs (µg/L)
FB	2/20/04	<10	<5	<5	**10 B**	<5	<10	<5	ND
	6/15/04	<10	<5	<5	<5	**3 JB**	<10	<5	ND
	9/9/04	<10	<5.0	**12**	<5.0	**2 J**	<5.0	<5.0	**20 J**
	10/27/04	<10	<10	<10	<10	<10	<10	<10	**6 JB**
	11/15/04	**15**	<10	<10	<10	<10	<10	<10	ND
	4/8/05	< 10	<10	<10	<10	<10	<10	<10	ND
	6/23/05	**16**	<10	<10	**5 JB**	<10	<10	<10	ND
	10/25/05	<10	<10	<10	**6 J**	<10	<10	<10	**6 JB**
*	5/2/06	**9 J**	<10	<10	**5 JB**	<10	<10	<10	**6 JB**
*	5/3/06	<10	<10	<10	**3 J**	<10	<10	<10	**8 JB**
	8/21/06	<10	<10	<10	<10	<10	<10	<10	ND
	12/19/06	<10	<10	<10	**6 JB**	<10	<10	<10	ND
	3/14/07	<10	<10	<10	**6 JB**	<10	<10	<10	ND
	5/23/07	**7 JB**	<10	<10	<10	<10	<10	<10	ND
	9/21/07	**8 J**	<10	<10	<10	<10	<10	<10	ND
	12/11/07	<10	<10	<10	<10	<10	<10	<10	ND
	3/26/08	<10	<10	<10	<10	<10	<10	<10	ND
	6/25/08	<10	<10	<10	<10	<10	<10	<10	**45 J**
	8/26/08	**8.3 JB**	<10	<10	<10	<10	<10	<10	ND
	12/16/08	<10	<10	<10	**2.4 J**	<10	<10	<10	ND
	4/7/09	**16**	<5	<5	<5	<5	<10	<5	ND
	6/1/09	<10	<5	<5	<5	<5	<5	<5	ND
	6/8/09	<10	<5	<5	**5.1 B**	<5	<5	<5	ND

* Chlorobenzene detected in the FB sample (7J µg/L) on 5/2/06 and (5 J µg/L) on 5/3/06.

µg/L = micrograms per liter; TICs = tentatively identified compounds; Dup. = duplicate sample; FB = field blank
TB = trip blank; NA = not analyzed for the indicated parameter; ND = not detected; B = detected in the laboratory blank; D = laboratory diluted sample; E = laboratory estimated concentration; J = estimated concentration, detected below the quantitation limit

Volatiles analyzed via EPA Method 8260 plus heptane and TICs. Only detected analytes are listed above. B-qualified TICs not included in above table. For a complete list of analytes, see the laboratory reports.