

Documentation of Environmental Indicator Determination

RCRA Corrective Action Environmental Indicator (EI) RCRAInfo code (CA725) Current Human Exposures Under Control

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

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EIs) 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 EIs 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 "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "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 EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

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).

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1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, 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?

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

 If no - re-evaluate existing data, or

 If data is not available skip to #6 and enter "IN" (more information needed) status code.

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be "**contaminated**"¹ above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	YES	NO	?	Rationale/Key Contaminants
Groundwater	x			See rationale below
Air (indoors) ²		x		See rationale below
Surface Soil (e.g., <2 ft)	x			See rationale below
Surface Water		x		See rationale below
Sediment	x			See rationale below
Subsurface Soil (e.g., >2 ft)	x			See rationale below
Air (outdoors)		x		See rationale below

 If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

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 appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

²Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggests that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Site Description

The Norton Company (the Site), located in Watervliet, New York, was acquired by Saint-Gobain Corporation (Saint-Gobain) in 1990. 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.

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 12 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.

Solid Waste Management Units (SWMUs) & Areas Of Concern (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) identified 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. They were associated with the 1969 release and/or previous activities at the site.

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- 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 Toluol (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

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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.

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

Soil Impacts

Continuous soil samples were obtained via geoprobe recovery “sleeves” (i.e., disposable four-foot acetate liners placed in the macro-core sampler). Geoprobe borings were advanced to the water table (approximate depth 5 to 12 feet), or approximately four feet below the water table if it was determined that a ground-water sample would also be collected. Soil samples were analyzed for VOCs via EPA Method 8260 plus heptane and tentatively identified compounds (TICs), and semi-volatile organic compounds (SVOCs) plus TICs by EPA Method 8270. As the investigation continued it became apparent that samples for SVOC delineation were not needed at some locations, so the SVOC analysis was not performed.

Evidence of shallow soil impact (i.e., soils above a depth of 10 feet) was found: 1) in the vicinity of the Former Tank Farm; 2) in the immediate area, and east of the former Solvent Lines; and 3) at several locations near storm sewer lines east of the North Cut-Out in Building #61. Shallow soil samples subjected to laboratory analysis from the third area did not exceed soil cleanup objectives.

A total of 144 soil samples were submitted for VOC analysis. Eleven VOC analytes were detected in various samples as follows: methylene chloride, acetone, toluene, heptane, xylenes, ethylbenzene, benzene, chloroform, 2-butanone, cis-1,2-dichloroethylene, and trichloroethene. VOC TICs were reported in 115 of the soil samples, but 66 of these detections were “B-qualified”. Maximum reported soil concentrations for the seven of the eleven detected VOC analytes were below their respective soil cleanup objectives. Therefore, these seven VOC analytes are not considered to be COCs at the site. Four VOC analytes were present at concentrations above their respective NYSDEC soil clean-up objectives (see TAGM 4046): methylene chloride, acetone, toluene, and heptane. Except for soil samples SB-25 & SB-83, all heptane exceedances are associated with toluene exceedances. Toluene and heptanes were therefore retained as COCs at the site. Fifteen soil samples contained VOC TICs exceeding the total VOC objective of 10,000 µg/kg. Except for soil samples SB-22, SB-33, SB-110, SB-112 & SB-186, all TIC exceedances were associated with toluene/heptane exceedances.

A total of 119 soil samples were submitted for SVOC analysis. Detected SVOC analytes were compared to their respective soil clean-up objectives. The sum of all SVOC analytes and TICs in each sample was also compared to the clean-up standard of 500,000 µg/kg. Ten SVOC analytes (seven polycyclic aromatic hydrocarbons [PAHs] and three phenols) were present in soil samples at concentrations above their respective soil clean-up objectives. The PAH exceedances tended to occur in the same soil samples. These ten SVOCs were retained as COCs at the site.

In 2009 and 2010, the following technology was pilot tested at the site: in-situ submerged oxygen curtain (iSOC) which uses microporous fibers to introduce microbubbles of oxygen into ground water within the well borehole. Pilot testing determined that this technology was effective at increasing dissolved oxygen levels and reducing dissolved toluene concentrations. In addition, enhanced fluid recovery (EFR) technology was also pilot tested and shown to be effective. EFR utilizes a high vacuum (via vacuum truck

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or other methods) to extract ground water and floating product from monitoring points. EFR events can enhance floating product recovery through removal of "stranded" pockets via the development of preferred fluid pathways. Residual mass is also recovered from the vadose zone via vapor extraction. Last, soil excavation at the Former Tank Farm SWMU was rated feasible, assuming that a secondary technology is implemented to address residual aqueous-phase mass after excavation is completed.

Storm and Sanitary Sewer

The storm and sanitary sewer systems were identified as SWMUs because of historical data indicating impact to sewer water and sediment, and the potential for these systems and the surrounding bedding to act as preferred pathways for contaminant transport within the site and off site. The 2001 investigation determined that there was no evidence of significant impact to storm or sanitary sewer water at the site, and impact to sewer sediments was limited to SVOCs. The primary concern regarding the sewer systems is their potential to serve as a preferential pathway for off-site migration of COCs.

The following samples were collected at the site: 1) four sewer bedding soil samples for VOC analysis and five soil samples for SVOC analysis; 2) three sewer bedding vapor samples for VOC analysis; 3) four storm sewer sediment samples for SVOC analysis; and 4) six storm and sanitary sewer water samples for VOC/SVOC analysis. RFI sampling results are summarized below.

- The source of the PAHs detected in the sewer bedding soil is likely the bedding/fill material noted in the samples, which contained asphalt-coated gravel. The SVOC concentrations detected in the sewer bedding samples were generally several orders of magnitude lower than concentrations detected in the sediment samples collected from inside the adjacent sewers. Therefore, the source of the PAH compounds in the sewer sediments is most likely surface sediment (e.g., parking lot and roof runoff) entering the sewers.
- Except for the sample collected at upgradient indoor monitoring well MW-11, detected vapor-phase toluene concentrations were all within or below the normal background residential concentration range of 1.1 ppbv to 6.6 ppbv (see NYSDOH, 2005a). The maximum toluene and heptane concentrations detected in the sewer bedding vapor samples indicate that no significant residual mass is present proximal to these sewers. Potential off-site movement of dissolved VOCs via the sewer bedding is not a current concern.
- A total of 19 SVOC analytes were detected in the four storm sewer sediment samples. Sewer sediment SVOC concentrations were generally several orders of magnitude higher than SVOC concentrations detected in adjacent soil boring samples, suggesting a surface, rather than a subsurface sediment source.
- Six sewer water samples were analyzed for VOCs and SVOCs. Data results, consistent with historical (2001) results, indicate that under prevailing flow conditions, there is no significant off-site migration of dissolved VOCs or SVOCs via water in the sewer systems. No VOC analytes were detected in any storm sewer water samples, and no SVOC analytes were detected in the sewer water samples collected from the three downstream storm sewer manholes: MH-1, MH-5, and MH-12.

Storm sewer sediment removal activities were conducted on June 2009. Storm sewer manholes on the north side of the main building and inside the main building were inspected for the presence of accumulated sediments. Sediments and storm water were removed from manholes MH-2 (water only), MH-3 (water only), MH-3.5, MH-13 & MH-14, using the vacuum truck. Sediment was not present in other storm sewer manholes.

Off-Site Investigations

During off-site RFI activities, the same criteria as for on-site activities continued to be used to screen for residual soil impact. The results demonstrated that off-site impact is limited to dissolved-phase COCs

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(i.e., toluene) present in the smear zone and below the water table. No evidence of residual shallow soil impact was detected during the off-site activities.

Geoprobe soil borings (SB-128 through SB-137; SB-158) were installed in the railroad right-of-way in December 2003. Based on PID field screening results and confirmatory laboratory analytical data, evidence of residual soil in this area south of the railroad embankment was limited to the three borings immediately north of the Former Tank Farm SWMU (SB-128, SB-129 & SB-132).

Based upon the sampling results from the railroad right-of-way, the soil boring program was continued north to investigate the vicinity of Alden and Craig Streets. Soil borings and corresponding monitoring points (SB-159 through SB-163; MP-13 through MP-17) were installed adjacent to Alden Street in August 2004. Additional soil borings (SB-164 through SB-175), monitoring points (MP-18 through MP-21), and a vapor monitoring point couplet were installed adjacent to Alden Street in September 2004. In October 2004, soil borings and a monitoring point (SB-176 through SB-180, MP-22) were installed in Craig Street. Soil samples from one geoprobe boring along Alden Street and the five borings along Craig Street were submitted for VOC laboratory analysis. No VOC analytes or TICs were detected in these soil samples.

Off-site RFI geoprobe boring activities were initiated in December 2005 at the three properties where access agreements were finalized: 21, 23 & 25 Alden Street. An additional soil boring (SB-196) was installed at the western end of Alden Street at the request of the property owner. A total of 20 soil borings were installed, and 13 soil samples and 13 ground-water samples were collected for laboratory analysis of VOCs. Field evidence of residual soil impact as previously defined was encountered in three soil borings located north-northwest of MP-17 (SB-186, SB-188 & SB-191). Toluene was detected in six of the thirteen soil samples, with SB-191 having a concentration of 230,000 µg/kg. Toluene was the only VOC detected in the soil samples.

Soil Vapor

Subsurface vapor sampling and concurrent indoor/outdoor ambient air sampling was conducted at 21, 23, and 25 Alden Street on February 2006 to coincide with the heating season. Toluene concentrations in the sub-slab/soil vapor samples ranged from 8.0 µg/m³ at VMP-1 (25 Alden Street) to 22 µg/m³ at MSVP-1 (21 Alden Street). Toluene concentrations in the ambient indoor air samples ranged from 2.0 µg/m³ (basement samples at 21 Alden Street & 23 Alden Street) to 11 µg/m³ (first floor sample at 23 Alden Street).

According to data presented in the February 2005 NYSDOH draft guidance document for evaluating soil vapor intrusion, background residential toluene concentrations in a 1997-2003 NYSDOH study ranged from 4.2 µg/m³ to 25 µg/m³. Therefore, toluene concentrations in all ambient indoor air samples and all sub-slab/soil vapor samples collected in conjunction with the February 2006 Alden Street sampling event were within or below normal background range.

A sub-slab VMP was installed adjacent to the office area on March 2009 and sub-slab vapor and indoor air samples were collected. An indoor air and sub-slab vapor monitoring point sampling event was conducted on February 2010. The indoor air samples generally exhibited higher VOC vapor concentrations (and more VOC analytes were detected) than in the corresponding sub-slab vapor sample. Toluene concentrations were 14 and 13 µg/m³ in the indoor air samples and 3.7 µg/m³ in the sub-slab vapor sample (VMP-2). Based on these results, additional indoor air and sub-slab vapor sampling was not required.

References:

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

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- 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 Technologies, 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. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

	Potential Human Receptors (Under Current Conditions)						
"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	NO	YES	NO	YES	---	---	NO
Air (indoors)	---	---	---	---	---	---	---
Soil (surface, e.g., <2 ft)	NO	NO	NO	NO	NO	NO	NO
Surface Water	---	---	---	---	---	---	---
Sediment	NO	NO	---	---	NO	NO	NO
Soil (subsurface e.g., >2 ft)	NO	NO	NO	YES	NO	NO	NO
Air (outdoors)	---	---	---	---	---	---	---

Instructions for Summary Exposure Pathway Evaluation Table:

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.
2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces (" _ _ _ "). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

 X If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

Potential exposure pathways associated with the Former Tank Farm SWMU include migration via ground water to off-site areas, and on-site worker exposure to toluene through direct contact with ground water and soils at and below the water table. There is currently little or no risk of off-site VOC migration via ground water. VOC analytes have consistently been absent in groundwater samples collected from downgradient monitoring wells/points. The toluene/heptane release occurred more than 35 years ago, and there have been no documented releases/spills at the site for at least ten years. The presence of an asphalt cover restricts precipitation infiltration and remobilization of VOCs in this area. A Soil Management Plan and deed restrictions to restrict the use of soil and ground water will be in place upon completion of site activities.

The same potential exposure pathways that are present in the Former Tank Farm SWMU apply to the On-Site SWMUs & AOCs located beneath the buildings. Accordingly, it is concluded that there is currently little or no risk of off-site VOC migration via ground water from the on-site SWMUs & AOCs for the reasons discussed above. Activities proposed in the Corrective Measures Study will address the residual soil and groundwater mass located beneath the buildings.

One additional potential exposure pathway associated with the on-site SWMUs & AOCs located beneath the buildings is the potential for vapor intrusion from ground water into the buildings. In December 2004, ambient air samples were collected from Buildings 58 & 61. Air sampling results indicated that total VOC concentrations were 88 ppbv and 77 ppbv, respectively. However, propene, which is believed to be related to forklift activity in the warehouses, was present in the two samples at concentrations of 60 ppbv and 50 ppbv, respectively. In February 2010, indoor air, sub-slab and ambient air samples were collected from the office area at Building 61. The results indicate that soil vapor intrusion is not currently occurring

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in the office space and is not likely to affect the indoor air quality significantly in the future. In a June 2010 letter, the NYSDOH determined that additional actions including sampling, mitigation or evaluation of the office space for soil vapor intrusion was not necessary.

VOCs were not detected in sanitary and storm sewer water samples collected in association with the RFI and previous studies. Data results show that the sewer lines and associated bedding are not a significant off-site transport mechanism for VOCs. Therefore, there is not a complete exposure pathway associated with VOCs in the Sewer SWMUs at the site.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**⁴ (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

 X If no (exposures cannot be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

 If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

 If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

 If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation

⁴ If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

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justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

6. Check the appropriate RCRA Info status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

 X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Former Norton/Nashua Tape Products facility, EPA ID # NYD066829599, located at 2600 Seventh Avenue, Watervliet, NY under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

_____ NO - "Current Human Exposures" are NOT "Under Control."

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

Completed by: Alicia Barraza Date: 9/30/10
Name: Alicia Barraza
Title: Environmental Engineer I

Supervisor: Dan Evans Date: 9/30/2010
Name: Dan Evans, P.E.
Title: Chief, Eastern Engineering Section

Director: Robert J. Phaneuf Date: 9/30/2010
Name: Robert J. Phaneuf, P.E.
Title: Bureau of Hazardous Waste and Radiation Management
Division of Solid and Hazardous Materials

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Locations where References may be found:

New York State Department of Environmental Conservation, Central Office
Division of Solid and Hazardous Materials
625 Broadway 9th Floor
Albany, New York 12233-7252

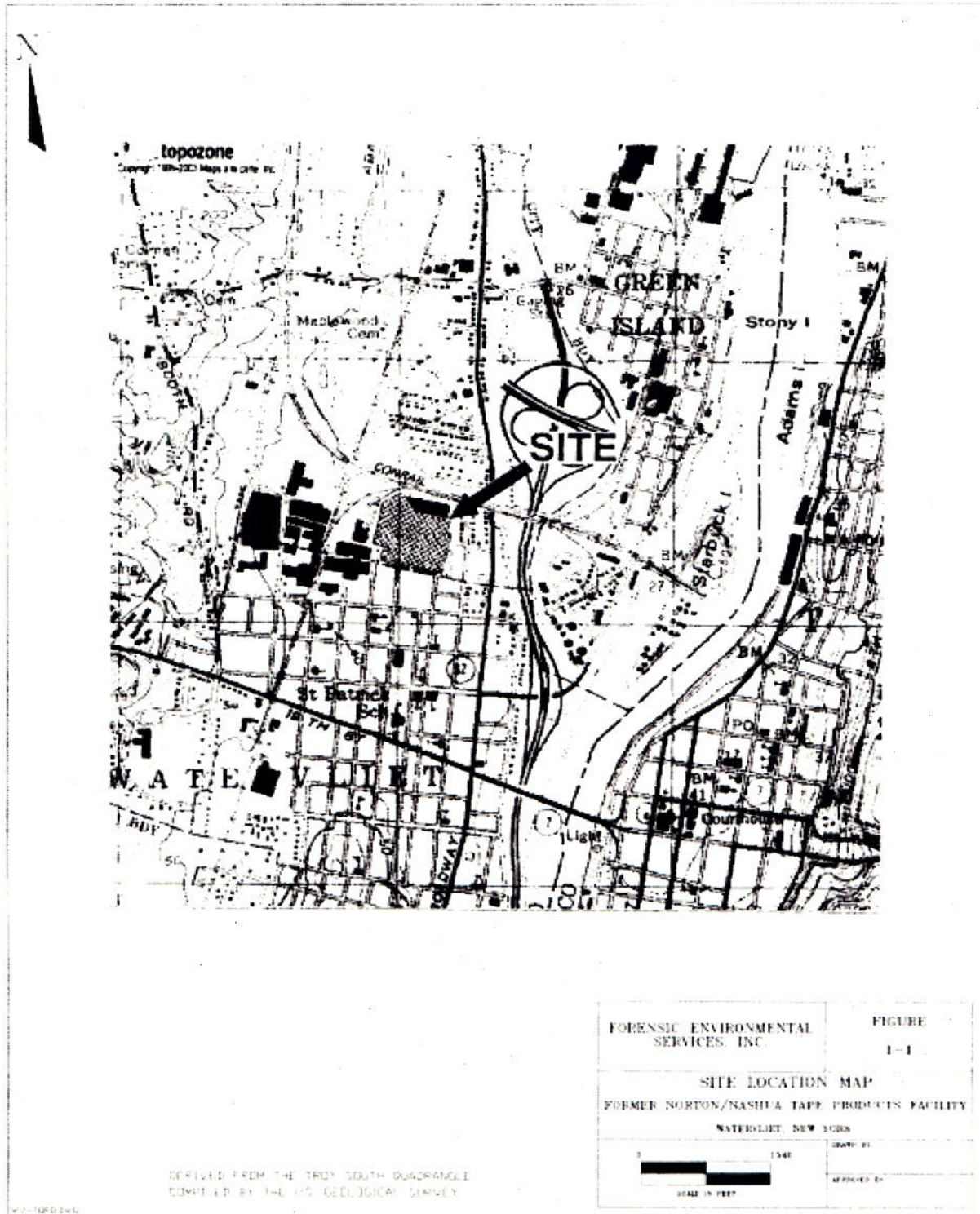
Contact telephone and e-mail numbers:


Alicia Barraza
(518) 402-8594
aabarraz@gw.dec.state.ny.us

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

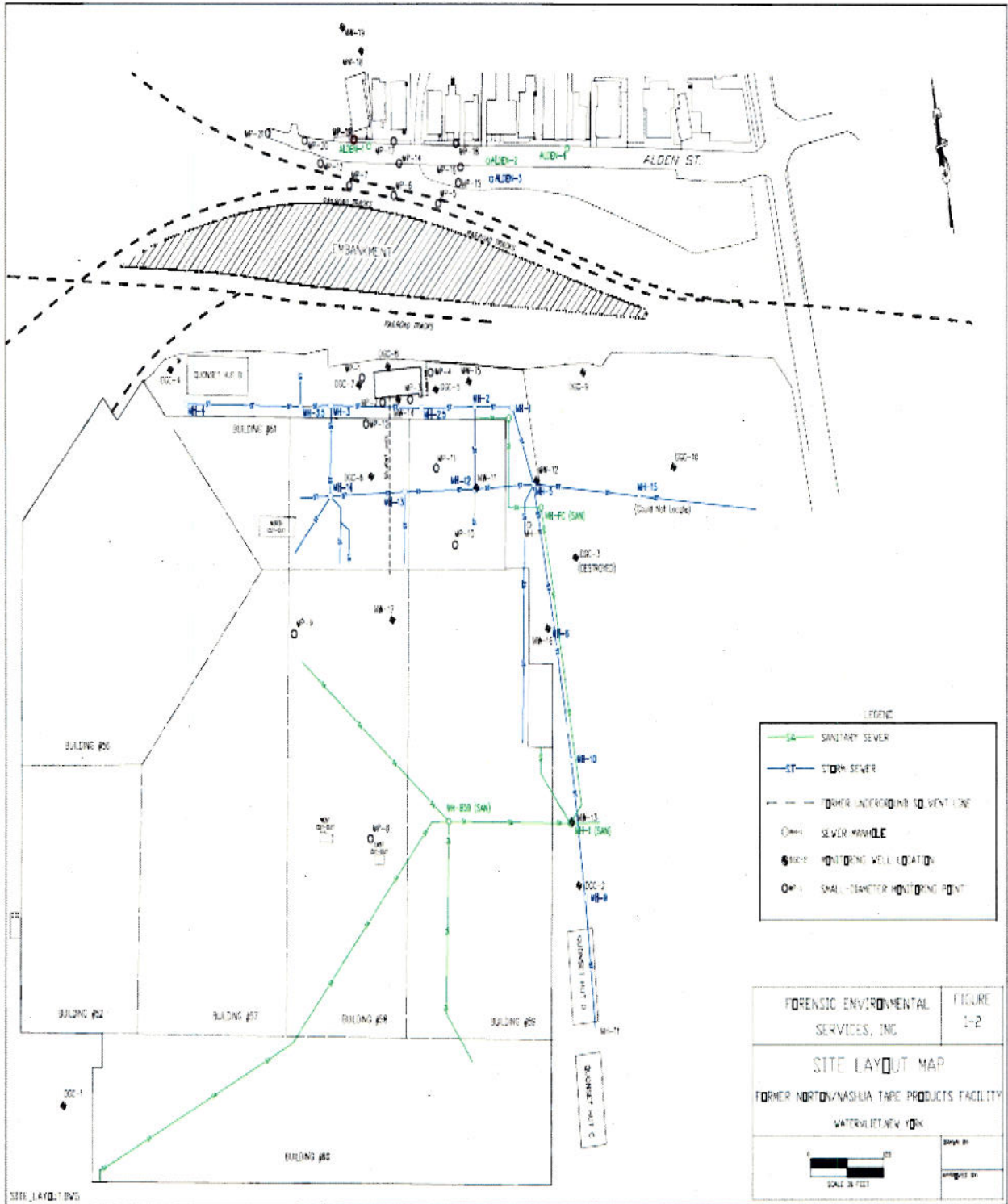
**Current Human Exposures Under Control
 Environmental Indicator (EI) RCRAInfo Code (CA725)
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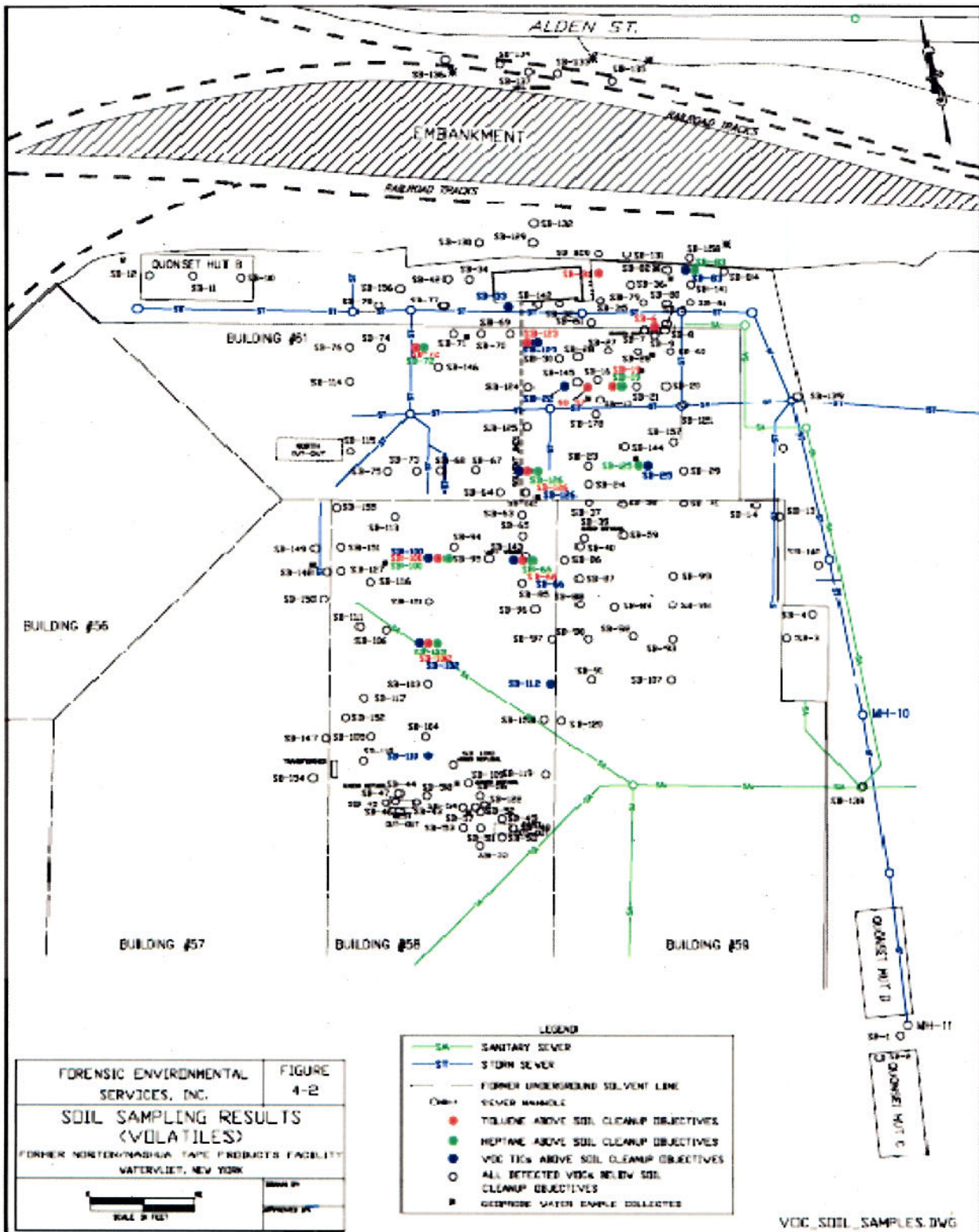
FORENSIC ENVIRONMENTAL SERVICES, INC.	FIGURE 1-1
SITE LOCATION MAP FORMER NORTON/NASHUA TAPP PRODUCTS FACILITY WATERBURY, NEW VERMONT	
 SCALE IS FEET	DRAWN BY: _____ APPROVED BY: _____

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

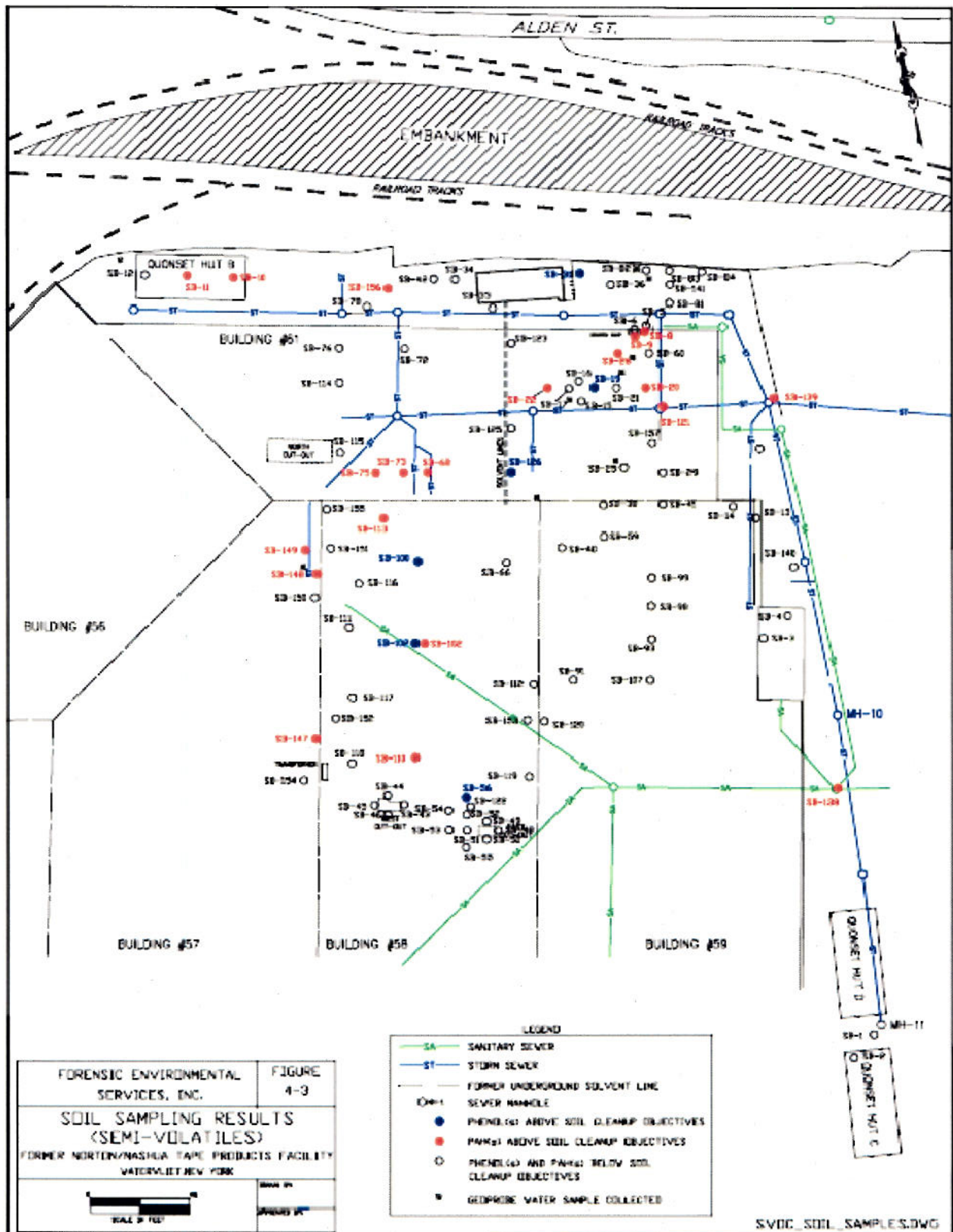
**Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo Code (CA725)**
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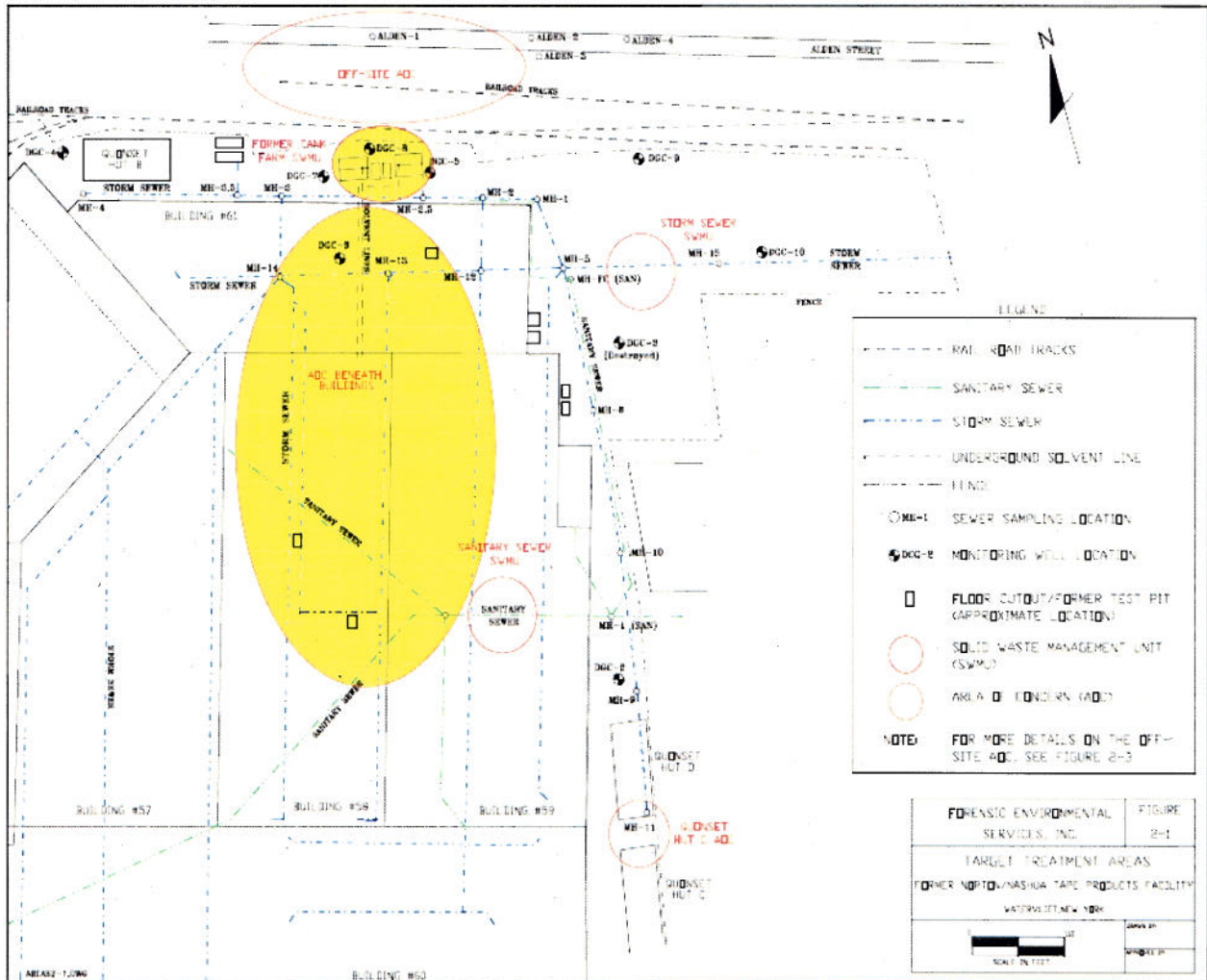
**Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo Code (CA725)**
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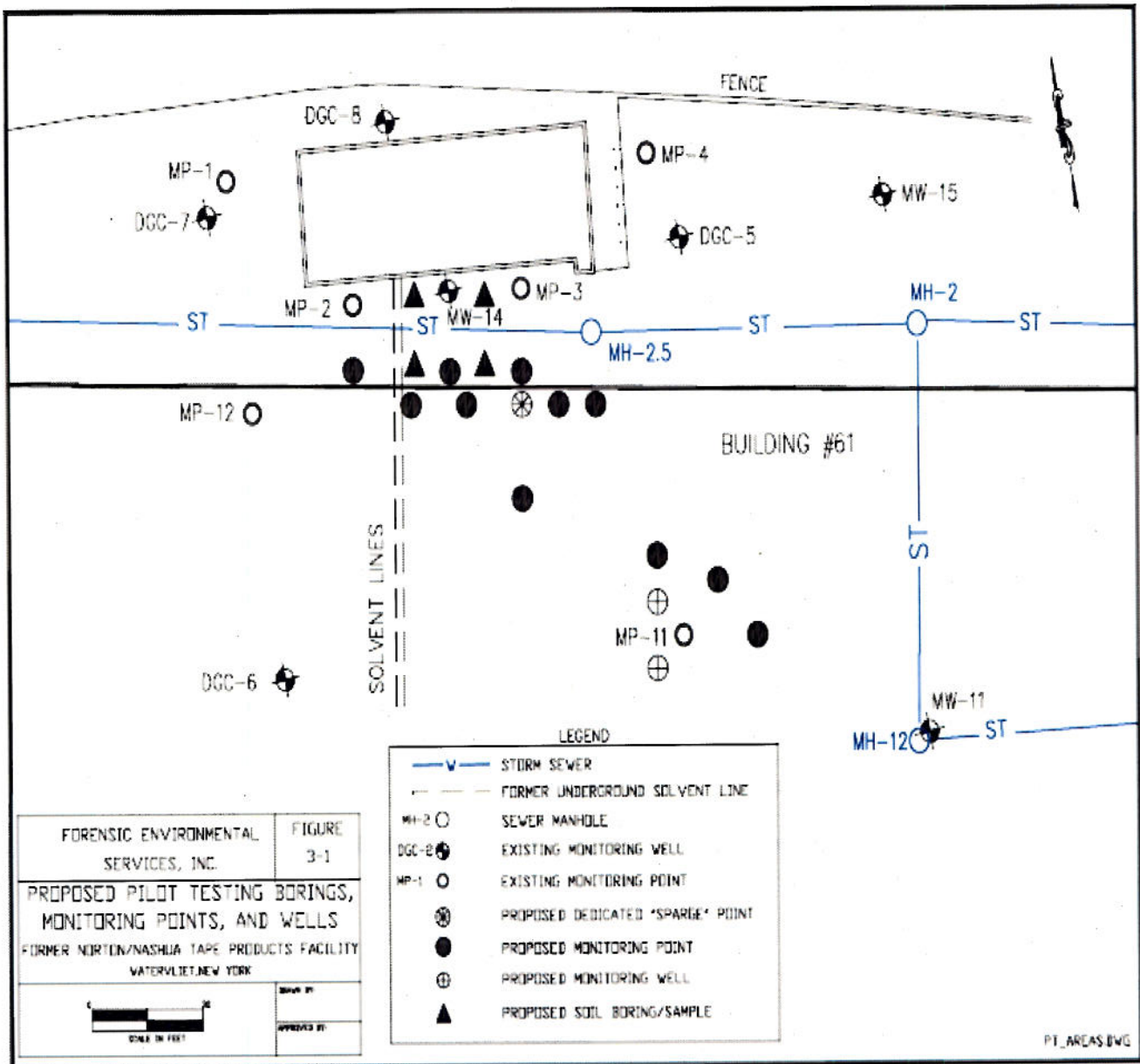
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Environmental Indicator (EI) RCRAInfo Code (CA725)
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Flanigan Square 547 River Street Troy, New York 12180-2216

Richard F. Daines, M.D.
Commissioner

James W. Clyne, Jr.
Executive Deputy Commissioner

June 25, 2010

Ms. Alicia Barraza
NYS Department of Environmental Conservation
Division of Solid and Hazardous Materials
625 Broadway, 9th Floor
Albany, New York 12233-7258

Re: On-site Vapor/Air Sampling Results
Former Norton/Nashua Tape Products Facility
Site #401866N
Colonie (T), Albany County

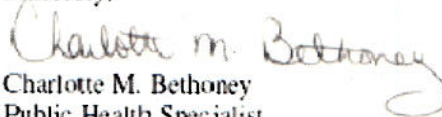
Dear Ms. Barraza,

I have reviewed the March 2010 Monthly Update Report on Project Activities submitted by Forensic Environmental Services, Inc. and the May 2010 Data Validation Report submitted by DATAVAL, Inc. for the Former Norton/Nashua Tape Products Facility. These documents contain the validated data for the February 2010 sub-slab soil vapor, indoor and ambient air sampling of the on-site office building. The goal of the sampling was to determine whether actions are needed to address exposures to site-related contaminants of concern, which may move from contaminated material beneath the building into the indoor air of the office space through the soil vapor intrusion process.

The results indicate that soil vapor intrusion is not currently occurring in the office space and is not likely to affect the indoor air quality significantly in the future. Therefore, I do not believe additional actions including sampling, mitigation or evaluation of the office space for soil vapor intrusion is necessary.

If you should have any questions, please contact me at (518) 402-7860.

Sincerely,


Charlotte M. Bethoney
Public Health Specialist
Bureau of Environmental Exposure Investigation

cc: G. Litwin/J. Crua/file
R. Groves, ACHD
D. Radtke, NYSDEC Central
L. Rosenmann, NYDEC Central

P:\Bureau\Site\Region_4\ALBANY\401866N\Correspondence\Vapor Intrusion\Onsite\build SV1.odt