CMS Property Associates Site
ERIE COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: 915168

Prepared for:
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Revisions to Final Approved Site Management Plan			
No.	Submitted	Summary of Revision	DEC Approved:
1	9/23/2015	Added: SSDS installation; new site-specific HASP; SSDS and GWE/TS OM procedures; revised text of body accordingly; changed from Interim SMP.	
2	6/21/2016	**Added**: Annual determination of change ownership of off-site building(s) and determination whether SVI sampling may be offered new owner(s.); **Corrected:** section numbering in TOC; **3.2.1.3;** and **3.5;** minor formatting/grammatical	

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1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This Site Management Plan ("SMP") is to implement the No Further Action remedy that the New York State Department of Environmental Conservation ("NYSDEC") selected for continuing to remediate the CMS Property Associates Remediation Site (the "Site".) Although the NFA remedy was selected pursuant to a *Record of Decision* (March 2000,) no Environmental Easement has been filed for the Site, and additional Remedial Investigations are scheduled to occur to, among other things, further evaluate (1) geology and hydrology, (2) the extent and fate of contamination on and off the Site, (3) the effectiveness and range of influence of the selected Remedial Action, and (4) the feasibility of other potential Remedial Actions such as monitored natural attenuation.

This document is a required element of the remedial program at the CMS Site under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program that is administered by NYSDEC. The Site was remediated in accordance with an *Order on Consent* that CMS entered into on January 28, 1997, and it continues to be operated pursuant to an *Order on Consent*; Index # B9-0501-20-07, Site # 915168, that CMS entered into on March 18, 2003. Additionally, CMS entered into an *Order on Consent* on August 20, 2013, that required it to, among other remedial actions, investigate soil vapor intrusion at the Site and surrounding properties, and, if necessary, to remediate impacted structures.

Two Sub-Slab Depressurization Systems previously installed on the Site in 2005 have been expanded with additional equipment installed in spring 2015. A Groundwater Extraction/Treatment ("GWE/T") System at the Site has been operating since 1998, and it is being evaluated as discussed in the recommendations in the May 2013 Annual Summary Report (PRR.) If the results of these evaluations affect the Monitoring/Reporting and Operation/Maintenance Plans in this SMP, a revised SMP will be prepared as appropriate to reflect the most current information and procedures to manage the Site and operate the Engineering Controls.

As of the date of this SMP, there are additional groundwater monitoring wells scheduled to be installed south and north of the 210 French Road building, and hydraulic packer testing anticipated that may change the information presented in this SMP. A revised SMP will be prepared as appropriate to document additional RI work on the site.

1.1.1 GENERAL

CMS Property Associates LLC (hereinafter referred to as "CMS") entered into *Orders on Consent* with the NYSDEC to remediate and to continue operation of the selected final remedial measure for a 3.74-acre property located in Erie County, New York. These *Orders on Consent* required the Remedial Party, CMS, to investigate and remediate contaminated media at the site and to continue operating a groundwater recovery system to treat the remaining contaminated groundwater media. The site location and boundaries of this 3.74-acre site is shown on Figure 1. The boundaries of the site are more fully described in the metes and bounds of the site description (Appendix B) that is part of the deed restrictions and any Environmental Easement.

After completion of the remedial work described in the *Proposed Remedial Action Plan* (February 2000,) some contamination was left in the subsurface at this site, which is hereafter referred to as "remaining contamination." This SMP was prepared to manage the remaining contamination at the site until the deed restrictions or any Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Ken W. Kloeber PE, on behalf of CMS, in accordance with the requirements in NYSDEC *DER-10 Technical Guidance for Site Investigation and Remediation*, dated May 3, 2010, and the guidelines provided by NYSDEC.

This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Consent Order, Deed Restrictions, and any Environmental Easement for the site.

1.1.2 Purpose

The site contains contamination remaining after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. Deed restrictions granted to the NYSDEC, and recorded with the Erie County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the deed restrictions and any Environmental Easement for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the deed restrictions and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementing and managing all Engineering and Institutional Controls; (2) media monitoring; (3) operating and maintaining all treatment, collection, containment, or

recovery systems; (4) performing periodic inspections, certifying results, and submitting Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an *Engineering and Institutional Control Plan* to implement and manage the EC/ICs; (2) a *Monitoring Plan* to implement the Site Monitoring; and (3) an *Operation and Maintenance Plan* to implement the remedial collection, containment, treatment, and recovery systems.

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the *Consent Order*, deed restrictions, and any Environmental Easement. Failure to properly implement the SMP is a violation of the *Consent Order*, deed restrictions, and any Environmental Easement, and is grounds for revocation of a Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the Orders on Consent; Site #915168 for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this SMP will be proposed in writing to the NYSDEC project manager. In accordance with the deed restrictions or any Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The CMS Site is at 210 French Road; Cheektowaga, NY 14227, and contains a single-story, 44,750-square-foot, concrete slab-on-grade, masonry-block building, which includes an approximate 5,000-square-foot early 1970s addition at the northeast corner of the original structure. The property has a large asphalt and gravel parking lot—sections of which had new bituminous pavement overlays in 2008, 2009, and 2011.

The Site is located in the Town of Cheektowaga, Erie County, New York, and is identified as S-B-L 124.02-3-10 and 124.02-3-6 on the Town of Cheektowaga/Erie County Tax Maps. It contains approximately 3.74-acres bounded by Industrial Parkway to the north; French Road to the south; the rear line of properties fronting on the west side of Boxwood Lane to the east; and Rosina Food Products, Inc., manufacturing facility to the west (see Figure 1). The boundaries are more precisely described in the site metes and bounds (see Appendix B.)

1.2.2 Site History

CMS Property Associates LLC, formerly owned the property—which was the subject of a spill clean up after CMS excavated and removed a leaking, 2,000-gallon, underground fuel storage tank from in the vehicle parking lot adjacent to the northwest corner of the building in March 1996. The Site is designated NYSDEC inactive hazardous site no. 915168.

CMS reported that it constructed the building in the early 1960's for Moog Inc., who ceased its operation there in 1969. Com-Cir-Tek company then leased the building in October 1969 and occupied it until December 1992. CMS additionally reported that the NY Telephone Company also leased a portion for vehicle maintenance activities.

Subsequently, in January 1993 Excel Precision, Inc., leased the majority of the building floor space to manufacture printed circuit boards used in the cell tower communications industry. Rosina Food Products, Inc. (adjacent to the west of the Site) also leased a portion for warehousing, and Loomis Root, Inc., an automobile equipment and supply retailer additionally leased office/warehouse space.

According to CMS, a tenant installed the UST in the 1960s for fuel storage and at some unknown point in time abandoned its use. Reportedly, during also some unknown period, the tenant disposed of spent solvents and cleaners in the UST—which could have been a one-time event or possibly a continuing practice over several years.

In 1996 CMS decided to remove the unused UST and, retained B.U.G Remediation to remove and dispose of it. Believing it to be gasoline or diesel fuel product, CMS arranged for Bison Oil Company to recycle the contents. The contents failed a chlorine field test on March 5, 2006, and Bison therefore refused the material. B.U.G. secured one sample of the contents on March 6, 2006, and analytical results subsequently showed it was a mixture of generally chlorinated solvents with some gasoline components:

Primary Constituents of UST

Compound	mg/kg
1,1,1-Trichlorethane	200,000
Tetrachloroethene	110,000
1,2,4-Trimethylbenzene	10,000
Methylene Chloride	9,900
1,1-Dichloroethane	7,900

Note: Detection limits at 5,000 ppm.
Other compounds were likely present.

CMS arranged to have the tank contents emptied, and on April 4, 2006, 1810 gallons were extracted, and properly manifested and transported for disposed at Research Oil in Cleveland OH.

When BUG opened the excavation, the UST was found to be resting directly on bedrock, and was compromised and leaking contents onto bedrock and into the

surrounding soil. BUG excavated and temporarily placed the contaminated soil on site on PTE, and then cleaned and disposed of the scrapped tank off site. This was to be the first Interim Remedial Measure that was chosen to address the contamination on the Site.

CMS subsequently retained Hazard Evaluations, Inc., and Earth Dimensions, Inc, to advance seven soil borings to refusal (not to be confused with groundwater monitoring wells installed later) to sample for and investigate the extent of soil contamination.

The second IRM chosen was to remove and properly handle the contaminated soil, and approximately 350-tons were excavated from around the LUST. The walls of the excavation were sampled to confirm that the contaminated soil was removed, and the excavation was lined with PTE and backfilled with clean soil from off site. The additional contaminated soil was temporarily stored on site on and covered with PTE.

In December 1996, the excavated soil was placed in vented, wooden bio-treatment cell boxes built on site, and bacteria was added and air forced through cells to promote biodegradation and removal of VOCs. Vapor from the vents in the cells was passed through activated-carbon treatment canisters before release. The treated soil was sampled and analyzed to confirm that it met NYSDEC TAGM 4046 cleanup objectives, and it was spread over an unpaved portion north of the building, and graded and covered with topsoil and seed.

During 1996 and 1997, EDI and Buffalo Drilling, Inc. advanced overburden/bedrock borings and installed the following monitoring wells, and HEI sampled groundwater to investigate the extent of contamination:

Well MW-	Installed / By	Method / Depth [(1)]	Location-Type
1	May 1996 / EDI	Cored / 16.0’	West of LUST excavation
2	May 1996 / EDI	Cored / 12.5’	South edge LUST excavation
3	May 1996 / EDI	Cored / 14.6’	North edge LUST excavation
4	May 1996 / BDI	Roller bit / 22.3’	West perimeter[(2)] well
5	May 1996 / BDI	Roller bit / 20.1’	Northwest perimeter[(2)] well
6	May 1996 / BDI	Roller bit / 20.0’	North perimeter[(2)] well
7	May 1996 / EDI	Cored / 15.0’	East-center perimeter(2) well
8	May 1996 / EDI	Cored / 16.6’	South-center perimeter(2) well
9	July 1997 / EDI	Cored / 24.5’	North of LUST excavation

[(1)] Depth from original surface, not necessarily current ground surface
[(2)] Perimeter of CMS Property

Since the LUST was installed on bedrock, the Remedial Investigations focused on primarily the bedrock-groundwater regime. MW-1, -2, -3, above showed average VOCs of ~25,500 ppb soon after instituting the first two IRMs.

HEI's initial sampling results of the remaining wells reveal that contamination reached the CMS property boundary—most significantly toward the west, northwest, and east. Groundwater VOC concentrations three and seven months after removing the LUST, indicates that the groundwater plume extended to and beyond the CMS property boundary. The highest concentrations were observed to the northwest (MW-5; total VOCs ~5,000 ppb) and toward Boxwood Lane to the east (MW-7; total VOCs ~1,500 ppb.) At that time however, no off-site monitoring was performed to define the limits of the plume, pending additional monitoring and evaluating the effect of additional IRMs to reduce contaminates at the perimeter wells locations.

A third IRM that would later be chosen for the Site, was to install a vacuum-enhanced, multi-phase, groundwater extraction / treatment (GWE/T) system to control the spread of the contaminate plume and remove VOCs from the collected groundwater.

Although the two IRMs reduced groundwater well VOC concentrations dramatically, wells at the northwest property line (MW-5) and east property line (MW-7) had less reduction and remained higher than did the wells on the west (MW-4,) north (MW-6,) and south (MW-8) property boundaries:

Total VOCs in 1996 Perimeter Wells – Post Source Removal

Perimeter Well	Immediately after IRM #1	Subsequent average prior to GWE/T	Reduction
MW-5	12,990 µg/l	7,174 µg/l	45%
MW-7	1,500 µg/l	896 µg/l	40%
MW-4	20,970 µg/l	433 µg/l	98%
MW-6	86 µg/l	82 µg/l	~0%
MW-8	249 µg/l	72 µg/l	71%

In July 1997, MW-9 was installed just north of the LUST/contaminated soil excavation area, and was additionally used during packer testing to estimate bedrock hydraulic conductivity.

As the third IRM proposed for the Site, in October 1997 HEI recommended installing a groundwater extraction and treatment (GWE/T) system to pump contaminated groundwater from MW-1, -2, -3, and -9 to treat it in an air-stripper system to remove VOCs.

In June 1998, CMS put a vacuum-enhanced, multi-phase GWE/T System manufactured by Carbtrol Corporation (Model MPX-75) into operation in an outside wood-frame shed placed beside the northwest corner of the building. Also in 1998, CMS retained KWKCE to perform ongoing groundwater sampling and reporting for the Site. The GWE/T System was destroyed in December 1999 by a fire in the shed, and CMS

relocated the replacement GWE/T System inside a room at the northwest corner of the building—and it went back on line in April 2000.

To help determine the extent of the groundwater plume, in 1998 SJB Services, Inc., advanced borings into bedrock and installed off-site monitoring wells MW-10 and MW-11 to the northeast and north, respectively. Continued sampling of these wells have, thus far, shown no VOCs above the NYSDEC groundwater SCG thresholds.

Over the years of operating the GWR/T, the overall VOCs have reduced at the Site boundary, but some wells show more dramatic reductions than others. For instance, as of 2011, VOC reductions were observed at MW-4, MW-5, and MW-6, but average concentrations increased at MW-7 and MW-8:

Total VOCs in 1996 Perimeter Wells – With GWE/T IRM

Perimeter Well	Direction From LUST	Average Prior to GWE/T	Average 2011	Change
MW-4	West	433 µg/l	15 µg/l	– 96%
MW-5	Northwest	7,174 µg/l	694 µg/l	– 90%
MW-6	North	82 µg/l	56 µg/l	– 32%
MW-7	East	896 µg/l	1,199 µg/l	+ 37%
MW-8	South	72 µg/l	91 µg/l	+ 26%

In 2004, CMS had a pending agreement to sell the property to Cugini Ventures LLC, and desired to have the Site changed from Class 2 to Class 4 on the NYS Registry of Inactive Hazardous Waste Sites.

In considering the reclassification, in 2004 the NYSDOH and NYSDEC required CMS to undertake a study to determine if VOCs from the groundwater plume had entered the building envelope. At that time, the Soil Vapor Intrusion program for inactive hazardous waste sites was being developed, and the NYSDOH had not yet issued its *Guidance For Evaluating Soil Vapor Intrusion in the State of New York* (October 2006.) Therefore, the air intrusion investigations in the CMS building driven by then-available information and guidance based on Radon-related studies and residential building mitigation, and a investigation approach was negotiated with the NYSDOH.

The October 2004 *Air Intrusion Study* showed high VOCs under the building slab, and, led the NYSDEC and NYSDOH to require that CMS mitigate the condition before the Site would reclassified.

The sub-slab vapor showed the following compounds that are also present in the site groundwater wells:

1,1,1-TCA	3,500 μg/m3
1,1-DCA	27 μg/m3
Benzene	5.0 μg/m3
Chloroform	98 μg/m3
Ethylbenzene	8.8 μg/m3
m-Xylene	23 μg/m3
p-Xylene	8.5 μg/m3
TCE	1.9 μg/m3
Toluene	170 μg/m3

Additionally, these compounds in an indoor air sample were present in the groundwater monitoring wells:

1,1,1-TCA	4.4 μg/m3
Benzene	1.3 μg/m3
Ethylbenzene	2.6 μg/m3
m-Xylene	6.8 μg/m3
p-Xylene	3.0 μg/m3
Trichlorofluoromethane	1.7 μg/m3
Toluene	7.7 μg/m3
1,1,1-TCA	4.4 μg/m3
Benzene	1.3 μg/m3

The high concentration of 1,1,1-TCA in the sub-slab sample indicated that the contaminant plume had migrated under the building, and the 1,1,1-TCA in the indoor air sample indicated that soil vapor may have intruded into the building envelope. Because of the high sub-slab 1,1,1-TCA level, in December 2004 the NYSDEC required that CMS further investigate suspected SVI into the building envelope.

In May 2005, a *Soil Vapor Intrusion Work Plan* was prepared and subsequently approved by the NYSDEC and NYSDOH, and the NYSDEC required CMS to install an SVI mitigation system if the results showed high indoor or sub-slab VOC concentrations.

Initial screening identified locations in the north end of the building slab that had potentially high levels of VOCs, and subsequent indoor and sub-slab air sampling in May 2005 showed high concentrations of the following compounds at various locations under the floor slab:

1,1,1-Trichloroethane	0 – 2,600 μg/m3
1,1-Dichloroethane	180 – 22,000 μg/m3
1,1-Dichloroethene	160 – 9,100 μg/m3
Trichloroethene	0 – 900 μg/m3

Those compounds indicated that the VOC plume extended under the building, or at least vapors from the plume had migrated to soil underneath the floor. According to CMS at the time, the floor was poured upon 4-inches of compacted stone, so there was an opportunity for good communication underneath the slab, barring a significant anomaly in the composition or compaction of the underlying base material.

There was no sub-slab or indoor-air air testing in the former office area in the south end of the building because (1) CMS was unsure if Cugini would conclude the purchase of the building; (2) that area was far from the LUST spill, (3) it was not going to be immediately occupied or otherwise used, and (4) the plans for the building were uncertain and might be demolished.

In 2005, the NYSDEC reclassified the site from Class 2 to Class 4, and CMS installed two sub-slab depressurization systems in the north end of the building (See Appendix F). Also in November 2005, Cugini Ventures LLC, purchased the property and currently leases its entirety to the adjacent Rosina Food Products, Inc. at 170 French Road—who uses the site for employee and truck parking, and the building to warehouse mechanical equipment and parts, packaging/shipping materials, and maintenance supplies. CMS (as the Responsible Party) continues to own and operate the GWE/T and SSD Systems.

Over the years since MW-1, -2, -3, and -9 were installed in the parking lot, the covers on the manholes that house the wellheads had settled below the pavement surface. Each fabricated manhole barrel was 24-inch PVC pipe, buried on no foundation, and the cast aluminum manhole rims had detached from the barrels. Consequently, snow plowing and parking lot traffic dislodged the manhole rims and covers, and surface water and perched groundwater consistently entered the extraction-well manholes.

The situation and remedy was reported to the NYSDEC during a project meeting and CMS authorized rebuilding the manholes to raise rims and minimize surface water intrusion. Appendix D documents the problem, the aluminum extensions that were fabricated to raise the rims to parking lot grade, and the repairs/construction from late October 2009 to mid November.

The wellheads were excavated and the upper 2-inch risers were replaced with Schedule 80 PVC pipe and fittings, the PVC barrels set into poured concrete foundations, the manhole extensions/rims set to desired grade and secured to the barrels, and the excavations backfilled with clean gravel and compacted (see Appendix D.) The soil was stockpiled on site (covered with PTE,) and was subsequently tested and eventually trucked off site and used as fill material.

The groundwater extraction pump was tested as soon as the work was complete, and low vacuum was observed with no obvious cause. Subsequent pressure testing showed that the system was leaking vacuum somewhere and the underground piping was suspected.

Precise information was unavailable about the construction/installation of the suction lines, the wellhead hook-ups, the underground piping to the shed/treatment equipment—because, apparently, neither HEI nor B.U.G. oversaw the construction/installation that occurred prior to CMS retaining KWKCE, and no records of the work could be located in CMS files. The only representation of the buried lines was in HEI's *Focused Feasibility Study* (October 1997)—which showed a schematic of the proposed system that (1) was not detailed, and (2) would naturally not show changes made after the fire destroyed the outdoor shed in 1999.

The problem was isolated to the underground suction line and a suspected leak near the outside building wall. B.U.G. opened an excavation in late November 2009, and uncovered a cracked, eight-foot-deep elbow on the 4-inch PVC suction line, at the bottom of a vertical riser about 6-feet north of the building (see Appendix D for the damaged fitting.) The elbow and riser appeared to be D-W-V grade PVC, not meant for direct burial, and appeared to have "cold" solvent weld joints—perhaps the original installation was during wet or too-cold conditions. B.U.G. replaced the riser/fittings with Schedule 80 PVC, and closed and secured the excavation just before Thanksgiving 2009.

The groundwater extraction pump was retested in December 2009, and low vacuum was again observed at the pump and in each well. The conclusion drawn was that there was likely another leak somewhere between the new riser and one of the four extraction wells.

Over the period December 5—15, 2009, with several shutdowns due to decaying weather, B.U.G. opened an excavation to exposed and follow the 4-inch suction manifold from the prior repair, through the lawn area north of the building, to the edge of the bituminous parking lot—and found two additional broken PVC fittings (see Appendix D.) The entire suction line was found to be unnecessarily large 4-inch, again apparently D-W-V grade PVC—so all exposed pipe was replaced with 3-inch, Schedule 80 PVC. In addition, the manifold was elevated from where it had been laid directly on bedrock—to about four-feet deep with compacted stone bedding. Two inspection/cleanout risers fitted with vacuum-tight caps were also installed to grade. Appendix D shows the broken fittings on the 4-inch PVC, the replacement of the manifold between the building and the edge of the parking lot, and the riser/cleanouts.

The manifold piping was pressure-tested, determined to be tight, and B.U.G. closed the excavation and secured the site for the winter due to worsening weather. The disturbed site was graded and seeded in May 2010 once the soil had sufficiently dried out.

The leaks in the suction manifold understandably affected the efficiency of extracting groundwater at the four connected wells, and based on the condition of the damaged fittings, it appears that the leaks may have been ongoing for an extended period—possibly months or years rather than weeks. Prior to discovering the leaks, what appeared to be fine silt/clay had been drawn through the extraction system and settled out in the effluent tank. This material was subsequently tested, found to be non-hazardous, and disposed of, and it was theorized that the material was either recovered through the well screens—or was soil from around the leaking manifold fittings. This may have created voids around the fittings, which allowed more leakage, and led to discovering them due to the low vacuum at the pump and on the wells. In prior years, noticeably high flow through the treatment system was observed very soon after rain and snowmelt events. With the manifold pipe and the leaking fittings having been located directly on bedrock, it is possible that the GWE/TS had been "vacuuming up" perched groundwater that flowed across bedrock after precipitation events.

While previously investigating the buried piping for the GWE/T System, and the original installation of the wellhead manholes/valves/suction lines, KWKCE discovered that the GWE/TS installation had not been as specified in HEI's *Focused Feasibility Study* (October 1997,) and as shown by after-the-fact drawings KWKCE obtained from Carbtrol Corporation. Precise information about the installation was unavailable because, again, apparently neither HEI nor B.U.G. observed the construction and no one documented the buried lines or the wellhead hook-ups. Nonetheless, it at least appeared that when the GWE/T System was installed in 1998, MW-1, -2, -3, and -9 were not connected according to the manufacturer's specifications and HEI's recommendations. Any explanation(s) for that would be speculative, but indications were that it was an inadvertent mix-up—nonetheless this may be key as to why groundwater VOCs remain high at some perimeter wells. As constructed, the system was constantly attempting to raise the groundwater level around the four extraction wells, thus retarding any far-reaching groundwater movement toward those wells—therefore severely limiting its capacity to capture VOCs.

Upon reporting this finding to the NYSDEC, CMS arranged to correct the situation, and MW-1, -2, -3, and -9 were retrofitted in spring 2010. Appendix E shows an example of the new wellheads, and the new vacuum gauges shown were included so that the suction at each well could be easily determined.

In October 2010 a third and fourth off-site well were installed north (MW-13) and northwest (MW-12) of the Site to better define the northerly limit of the VOC plume. In April 2011, a sixth perimeter well (MW-14, the tenth on-site well) was installed east of the building to help define groundwater quality toward the southeast of the LUST.

Sampling during 2010 and 2011 after MW-12, -13, and -14 were developed, and continued sampling of the other perimeter wells, indicate that the current VOC plume extends off site—particularly toward the northwest, and additionally on the east and southeast sides of the CMS site.

Figure 10 shows the locations of the three newest and all other current monitoring wells. Drilling logs and well installation reports for all wells are in Appendix G.

Additional SVI evaluations of the building and adjacent properties began in 2010, and continued into 2011 with sub-slab sampling—and the preliminary evaluation showed that additional (indoor air) sampling was necessary. CMS did not undertaken this work, and the SVI evaluations resumed in 2013 under an *Order on Consent*. The *Soil Vapor Intrusion Evaluation of Surrounding Properties for CMS Associates Remediation Site* (October 2013) revealed that the adjacent properties had no issues regarding indoor air, and sub-slab VOCs did not reach NYSDOH action levels (see Appendix C.) No further action was recommended for the adjacent properties—which the NYSDEC approved in November 2014.

The *Soil Vapor Intrusion Evaluation For CMS Associates Remediation Site; 210 French Road Building* (September 2014) revealed that VOCs inside the CMS building were at low levels, but sub-slab VOCs exceeded NYSDOH action levels (see Appendix C.) The evaluation recommended installing additional SVI remediation equipment to extend the SSDS across the warehouse slab, and that the south end of the building slab be inspected and any potential SVI sources sealed. The NYSDEC approved that approach in December 2014 and in Spring 2015 the two SSD Systems installed in 2005 were supplemented with additional equipment (see Appendix O.)

The new SSDS installation and tested and verified to be performing as designed, and this SMP reflects the precise equipment installed and its location(s), and the monitoring, and operation and maintenance plans.

The remedial action selected for the Site was based on findings of the following relevant studies and reports:

Environmental Assessment of Excel Precision, Inc.; 210 French Road; Cheektowaga, New York
URS Consultants, Inc., July 12, 1994

Environmental Real Property Audit
North American Environmental Services Corporation, October 1989

Underground Storage Tank Removal report
B. U. G. Remediation, June 1996

Phase II Environmental Site Evaluation Report
Hazard Evaluations, Inc., November 1996

March 1997 Groundwater Sampling and Analytical Testing Event
Hazard Evaluations, Inc., April 1997

Focused Feasibility Study
Hazard Evaluations, Inc., October 1997

Summary Report: Soil Sampling and Analysis
Waste Resource Associates, Inc., February 1998

Site Investigation Report; Offsite Well Installation; 210 French Road
SJB Services, Inc., December 1998

Interim Remediation Measure Report for 210 French Road
Ken W. Kloeber Consulting Engineers, January 1999

Proposed Remedial Action Plan
Division of Environmental Remediation; NYSDEC, February 2000

Record of Decision; CMS Associates Site
New York State Department of Environmental Conservation, March 2000

Indoor Air Intrusion Study; CMS Remediation Site - # 915618
Ken W. Kloeber Consulting Engineers, October 22, 2004

Amendment to Indoor Air Intrusion Report
Ken W. Kloeber Consulting Engineers, October 29, 2004

Groundwater Monitoring Well Installation Report For Off-Site Monitoring Wells MW-12, MW-13
Ken W. Kloeber Consulting Engineers, April 2011

Groundwater Monitoring Well Installation Report For Perimeter Monitoring Well MW-14
Ken W. Kloeber Consulting Engineers, June 2011

Soil Vapor Intrusion Evaluation of Surrounding Properties for CMS Associates Remediation Site
Ken W. Kloeber Consulting Engineers, October 2013

Soil Vapor Intrusion Evaluation For CMS Associates Remediation Site 210 French Road Building
Ken W. Kloeber Consulting Engineers, September 2014

1.2.3 Geologic Conditions

Site geology consists of fractured and weathered Lavanna Shale and Stafford Limestone bedrock, mantled by ~2.5 feet (near the north end) to ~7 feet (near the south end at French Road) of typically clayey silt and sandy-silt overburden and topsoil.

Based on groundwater well readings, the depth to groundwater varies seasonally from near zero to ten or greater feet below ground surface.

A detailed geologic cross section was not prepared during HEI's Remedial Investigations subsequent to removing the leaking UST, presumably because more-detailed hydrogeologic investigations needed to be completed. Therefore, the current geology is referenced from groundwater well drilling logs, published works on area geology, and the NYSDEC *Record of Decision* (March 2000) for the selected Remedial Measure.

Additionally, Groundwater & Environmental Services, Inc. has been retained to undertake additional (geologic and hydrogeologic) Remedial Investigations of the Site that are scheduled for 2015 and 2016, depending on CMS's availability of funds. This SMP will be sequentially updated with the findings of those newer RIs.

In 2007, monitoring well MW-9 and a bedrock test hole (TH-8) in the parking lot were used to packer-test the shale and limestone to estimate both hydraulic conductivities. Pressure testing a 6.5-foot interval in MW-9, spanning the limestone and the upper portion of the shale layer, initially indicated near-zero hydraulic conductivity (the bedrock did not accept any of the injected water.) However, increasing the water pressure (possibly opening joints and bedding planes in the bedrock,) indicated an estimated hydraulic conductivity of ~1.45 $(10)^{-3}$ cm/sec. A deeper test spanning only the shale formation in MW-9 again indicated a near-zero hydraulic conductivity. Similar testing on TH-8 found that the hydraulic conductivity of the limestone and upper shale was approximately 1.6 $(10)^{-4}$ cm/sec. However, unlike MW-9, testing the shale formation in TH-8 indicated a hydraulic conductivity of ~1.2 $(10)^{-3}$ cm/sec. The hydraulic conductivity of the bedrock beneath the site might would be therefore be categorized as low (< $(10)^{-4}$ cm/sec) to moderate. This is consistent with observations during sampling where most wells can be bailed to dry and are very slow to recover. The packer tests at MW-9 and TH-8 also indicated that there may be variability in the bedrock characteristics across the Site.

The principal water-bearing features are bedrock joints and fractures and the boring logs indicate that thin, widely spaced, vertical and bedding-plane (near-horizontal) joints are present. The surface of the limestone is reported to be slightly to moderately weathered. Rock Quality Designations from most of the monitoring well boring logs on the average show that the limestone has fair to good competency (RQD ranging from 55% to 98%,) The RQD of the shale was poor to fair (RQD ranging from 13% to 84%.) While the shale might have more joints than the limestone, the joints are expected to be generally smaller. At greater depths, the overlying rock and overburden are likely to compress these joints—so the deeper shale would be expected to have a lower hydraulic conductivity than the upper shale and limestone.

Groundwater elevations near the former LUST are oftentimes higher than most of the site; the groundwater here being "mounded" several feet higher than at the perimeter of the site. Groundwater flow across the site is generally from south to north-northwest, but localized flow is dominated by bedrock fractures and precipitation/recharge events.

It is theorized that the confined groundwater is recharged or supplemented with precipitation passing through the overburden, to the weathered, fractured surface of the bedrock, entering the deeper bedrock through the widely spaced vertical fractures. Published works on the regional geology indicate that the weathered, fracture zone of the upper bedrock is discontinuous. Because the depth to bedrock is shallow across the site, the site drainage ditches, underground utilities trenches, and building foundations, which may sit on bedrock, can have a pronounced effect on the degree of groundwater recharge and pattern of groundwater flow.

There appears to be significant local recharge in the vicinity of the former LUST, compared to the remainder of the site. This is likely due to the large grassed adjacent pervious area, compared to the remainder that is mostly impervious paving and building footprint.

The improper initial installation of the GWE/T System as discussed above would have affected the ability of the system to lower the piezometric surface. Longer-term studies of the effect of the system are necessary to accurately determine its range of influence. An evaluation of the system is scheduled for 2015, and this SMP will be revised to reflect those results. Based on the pre-GWE/T System groundwater elevations, groundwater movement flow off site was estimated to be ~20 feet per year toward the north-northeast.

Figure 2 shows a cross section of the site from French Road at the south to Industrial Parkway at the north, and depicts the micro-variability of the top of bedrock elevation (from monitoring well installations and recent hand probes to refusal.) Monitoring well logs show that the top limestone and shale formations slope downward slightly from east to west and from north to south. Figure 3 depicts the top of bedrock elevations developed from available historic information. An additional monitoring well (see Appendix H) is scheduled for 2015 and this SMP will be updated with the findings of that boring.

Groundwater generally flows from south of French Road, toward the northwest across Industrial Parkway, and toward Slate Bottom Creek further north. Figure 4 depicts typical groundwater contours and groundwater flow directions on the Site.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

Remedial Investigation were performed in 1996 and 1997 by Hazard Evaluations to characterize the nature and extent of contamination at the site. The following reports described in detail the results and conclusions :

Underground Storage Tank Removal report
B. U. G. Remediation, June 1996

Phase II Environmental Site Evaluation Report
Hazard Evaluations, Inc., November 1996

March 1997 Groundwater Sampling and Analytical Testing Event
Hazard Evaluations, Inc., April 1997

Focused Feasibility Study
Hazard Evaluations, Inc., October 1997

When the tank was removed, it was evident that an unknown quantity of its contents had leaked. The HEI investigations determined that the UST contents had leaked both into the surrounding soil and onto the bedrock surface, directly on which the tank was installed. The former LUST apparently contained fuel products, and chlorinated hydrocarbon solvents and other VOC wastes—although the complete range of compounds in the tank was not characterized in 1996. The single sample of the tank contents was merely to characterize the contents for disposal, so detection limits were high.

Subsequent groundwater monitoring determined that the leaking UST contents had entered the bedrock groundwater regime and been transported beyond the tank excavation area. Below is a summary of site conditions when the RIs were performed in 1996-1997:

Soil

About 350 tons of soil surrounding the LUST was contaminated with the following VOCs, based on sampling of the excavated soil:

Compound	Range in samples, µg/l [(1)]
1,1,1-Trichloroethane	51 - 14,000
Tetrachloroethene	170 - >28,000
Ethylbenzene	26 - 1,200
o-Xylene	87 - 1,100
1,4-Dichlorobenzene	ND - 850
1,1-Dichloroethane	43 - 810
m,p-Xylene	49 - 690
Benzene	ND - 64
Toluene	ND - 62
Trichloroethene	ND - 17
cis-1,2-Dichloroethene	ND - 12
Methylene chloride	ND - 7 (µg/kg)

Notes:
1. Range of values from composite samples of excavated soil and wall of the excavation. Detection limits vary from 5 to 500, and other compounds may have been present below detection limits.
2. ND = Non-detectable at the test detection limit.

Site-Related Groundwater

Subsequent groundwater monitoring during HEI's Remedial Investigations confirmed that VOCs from the LUST had entered the bedrock/groundwater regime as its constituents were transported beyond the tank excavation area. Compounds observed in monitoring wells generally consist of mostly dense chlorinated solvents, dense insecticides and pesticides, dense refrigerants and halogens, light non-chlorinated, gasoline-related petroleum hydrocarbons (BTEX,) aromatic hydrocarbons, and some light chlorinated solvents. Nearly 50 VOC compounds have been identified, although not all are observed in every well, and total VOC concentrations vary by as much as two orders of magnitude between locations.

Four bedrock monitoring wells around the LUST site (MW-1, -2, -3, -9) and five site perimeter wells (MW-4, -5, -6, -7, -8) were installed during 1996 and 1997. MW-1, MW-2, and MW-3 had average VOC concentrations of ~25,500 ppb soon after removing the LUST and the surrounding contaminated soil.

Figure 6 shows groundwater monitoring results three and seven months after removing the LUST, and indicate that the contaminant plume extended beyond the CMS Site property boundary. The highest concentrations were observed in the northwest direction toward Industrial Parkway (total VOCs ~5,000 ppb) and toward Boxwood Lane to the east (total VOCs ~1,500 ppb.) At that time no off-site monitoring was performed to define the limits of the contaminate plume, pending additional monitoring and evaluating the effect of the IRMs to reduce contaminate levels at the perimeter wells locations.

Site-Related Soil Vapor Intrusion

Prior to the SVI Evaluations, in 2009 CMS offered SVI sampling to the owners of the off-site buildings at 75 and 109 Industrial Parkway, and the owners declined that offer in June 2010. The SVI Evaluations in 2010-2011, and in 2013-2014 demonstrate that there is no SVI concerns regarding off-site properties that were tested (see Appendix C.)

However, the 2004-2005 evaluations indicated high VOCs beneath the building on the CMS Site, and two SSD Systems were installed in the northern portion of the building in 2005. The further 2010-2011 and 2013-2014 SVI evaluations demonstrated that the existing SSD Systems needed to be enlarged to increase the coverage of the reduced pressure zone.

Underground Storage Tanks

The leaking UST was located under the bituminous parking lot, adjacent to the northwest corner of the building (see Figure 1). It contained 1,810 gallons of a mixture of waste chlorinated solvents, with some components of gasoline present, that were pumped out and disposed at an off-site hazardous waste disposal facility in April 1996.

1.4 SUMMARY OF REMEDIAL ACTIONS

The site was remediated in accordance with the NYSDEC-approved *Interim Remedial Measure Report* (January 1999) and according to the *Design Plan for Soil Vapor Intrusion Remediation – 210 French Road Building* (January 3, 2015.) The following is a summary of the Remedial Actions performed:

1. Removing and scrapping the LUST, and disposing of it off site.
2. Excavating the contaminated soils surrounding the tank during 1996, on-site treatment of the soils during 1996-1997, and spreading the treated soil over the surface of the site in 1997;
3. Disconnecting and abandoning a storm sewer that serviced a catch basin at the building loading dock to prevent transport of VOCs offsite.

4. Installation and continued operation of a multi-phase, vacuum-enhanced, GWE/T System.
5. Installation of two SSD Systems in the building during 2005 to prevent soil vapor intrusion into the building envelope due to high VOCs under the concrete floor.
6. Installation of additional SSDS equipment during spring 2015 to upgrade the SSDS previously installed and extend the reduced pressure zone across the building slab.
7. Inspection and sealing of the south end of the building during spring 2015 to prevent soil vapor intrusion into the building.
8. Deed Restrictions filed in 2003 to limit potential human and environmental pathway exposure of contaminants, by prevent the owner from using (1) groundwater from beneath the CMS Site without first treating it to render it safe; and (2) the property for anything other than commercial or industrial use.
9. Developing and implementing this Site Management Plan for long-term management of remaining contamination as required by the Deed Restrictions and any environmental easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;

Initial physical Remedial Activities were completed at the site in 1997 and the NYSDEC chose a no further remedial action remedy for the site in March 2000. Further activities to remediate sub-slab soil vapor intrusion in the 210 French Road building occurred during spring 2015.

1.4.1 Removal of Contaminated Materials from the Site

The contaminated soil that surrounded the LUST was not removed from the site, and was instead treated on site in 1996-1997, and in 1997 was subsequently spread to the lawn area north of the building. A composite soil sample collected from the walls of the excavation verified that TAGM 4046 cleanup objectives had been met.

The 1,810 gallons waste chlorinated solvents with some components of gasoline present in LUST were pumped out and disposed at an off-site hazardous waste disposal facility in 1996.

No other waste materials were present on the surface of the site or in the soil. Contaminated groundwater remains beneath the remediation site.

A list of the soil cleanup objectives (SCOs) for the primary contaminants of concern (COCs) is provided as Table 1.

The area where the contaminated soil was excavated from around the LUST is shown in Figure 7.

1.4.2 Site-Related Treatment Systems

GWE/T System

A Carbtrol Corporation model MPX-75, vacuum-enhanced, multi-phase GWE/T System is installed in a room at the northwest corner of the building. The system is connected to MW-1, MW-2, MW-3, and MW-9 – which are adjacent to the LUST excavation area. Vacuum for the system is provided by a Wilden, air-operated, diaphragm pump that currently operates nearly continuously to remove both the aqueous and vapor phase from the extraction wells.

A a dual-channel programmable controller system was installed so the extraction and treatment portions can be programmed separately. Because of the low volume of groundwater recovered, operating the treatment system continuously will evaporate the air stripper tank. Currently, the air sparging that takes place in the wells themselves is sufficient to remove VOCs such that the wastewater discharge consistently meets permit limits, so the treatment portion is not currently operated. Placing the system on a dual-channel controller provides flexibility in operating the extraction versus the treatment portions of the system.

Currently the on-time of the treatment system and the effluent discharge pump is recorded by electric hour and minute timers, respectively. Consideration is being given to installing a digital system in the future to record the pump and treatment system running times. Future changes, if any, to the treatment equipment will be documented in a revised SMP.

The location of the GWE/T System is shown on Figure 9A, and the extraction well network shown in Figure 9B.

Building SSD Systems

Two trench-type SSD Systems were installed in the building in 2005 to control soil vapor intrusion that operated continuously and covered approximately 80-percent of the central warehouse footprint (see Figure 8A.) In spring 2015, the systems were refitted and expanded to extend the reduced pressure zone across the entire footprint of the central warehouse, and into two additional northerly portions of the building. The construction was completed in spring 2015, and the system tested to verify it meets the clean-up objective of a minimum sub-slab negative pressure of 0.004 inches water column. The current SSDS system and test results are shown by Figure 8B and 8C.

1.4.3 Remaining Contamination

Groundwater in the shale and limestone bedrock is the media containing the remaining contamination on the Site. This is evidenced by sampling results from the four groundwater extraction wells, the six perimeter wells, and two (MW-12, MW-13 of the four off-site wells (MW-10, MW-11 consistently show no appreciable VOCs from the LUST spill.

Contamination is primarily concentrated in wells adjacent to the LUST location (MW-1. MW-2, MW-3, MW-9), and toward the east and southeast (MW-7, MW-14.). Minor contamination is observed offsite to the north and the northwest (MW-5, MW-6, MW-12, MW-13.)

The general groundwater flow is toward the north and northwest, which accounts for the contamination found in the wells to the north of the LUST. The contamination to the east and southeast of the LUST is believed to be present due to the tank contents traveling across the top of bedrock before it entered the bedrock-groundwater regime.

The remaining contaminated groundwater varies greatly across the site, as much as two orders of magnitude, with MW-14 exhibiting the highest levels of total VOCs. The lowest levels are found at MW-4 (west boundary,) MW-6 (north boundary,) and at MW-8 (south boundary.) Figure 11 depicts the remaining contamination as of December 2014.

There is no surface contamination known to remain on the Site that workers on-site would be exposed to, but it is advisable to monitor any future utility trenches/excavations for total VOCS using a ppb-level PID. Likewise, the VOCs being removed from under building slab by the additional SSDS equipment that is currently being installed, will avoid worker exposure inside the building. If any floor slab openings are made, the SSD Systems should remain in operation during the work, and the opening monitored for total VOCS using a ppb-level PID.

Figure 12 shows the areas of the site and surrounding property that were evaluated for SVI into building envelopes. If any excavations or other work is done in the existing building footprints depicted (such as removing/replacing portions of the floor slab, cutting into the slab for utility lines, etc.) an evaluation of SVI impact should be conducted. Likewise, if any new structures are constructed within or adjacent to the area of SVI concern that is depicted, SVI impact should be evaluated and remediation/prevention designed into the floor system,

Table 1 summarizes the results of the soil samples remaining at the site after completion of the Interim Remedial Measures in 1997.

2.0 ENGINEERING and INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated groundwater and soil vapor exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures to implement and manage all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This EC/IC Plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Deed Restrictions and any environmental easement.
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

Groundwater Extraction/Treatment System

Procedures for operating and maintaining the multi-phase GWE/T System are contained in the Operation and Maintenance Plan (Section 4 of this SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe environmental condition occurs that affects engineering controls at the site.

Soil Vapor Remediation System

An expansion of the trench-type Sub-Slab Depressurization System that was installed in the building in 2005 was completed in Spring 2015, with 12 new suction drops and two roof fans installed. The procedures for operating and maintaining the SSDS are likewise documented in the Operation and Maintenance Plan (Section 4 of this SMP). The SSDS was tested and balanced, and testing verified that it meets the clean-up remediation objective of providing a minimum sub-slab negative pressure of 0.004 inches water column across the footprint of the central warehouse.

The southerly former office area in the building does not have an SSES, as it was previously tested during the SVI Evaluation of the building and indoor air and sub-slab VOC levels did not warrant active remediation. That portion of the building was carefully and thoroughly inspected, and leaks in the slab and open joints at the perimeter walls were appropriately sealed. Penetrations through the slab were additionally sealed. Follow up sub-slab pressure testing shows that there is no bleed-through from the SSDS in the central warehouse to the southerly portion of the building. This is due to the wall footer that exists between the two sections.

Procedures for monitoring the system are also included in the Monitoring Plan, and the Monitoring Plan will address severe condition inspections in the event that a severe condition occurs that may affect controls at the site.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 Groundwater Extraction/Treatment System [GWE/T System]

The Multi-Phase Vacuum-Enhanced GE/T system will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the system is no longer required, CMS will submit a proposal to the NYSDEC to discontinue the system. Conditions that warrant discontinuing the GE/T system include groundwater contaminant concentrations that meet the remedial objective; the remedial objective for the CMS Site being any of the following:

The groundwater contaminant concentration levels that either:

1. Are consistently below ambient water quality standards, or
2. Have become asymptotic to a low level over an extended period of time as accepted by the NYSDEC, or
3. That the NYSDEC has determined that the system has reached the limit of its effectiveness.

This assessment will be based in part on post-remediation contaminant levels in groundwater collected from monitoring wells located throughout the site. Systems will remain in place and operational until the NYSDEC grants permission to discontinue their use in writing.

2.2.2.2 Sub-slab Depressurization System (SSDS)

The active SSD System will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD system is no longer required, a proposal to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the ROD (March 2000) to:

1. Implement, maintain and monitor Engineering Control systems;
2. Prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and,
3. Limit the use and development of the site to commercial uses only. Adherence to these Institutional Controls on the site is required by the Deed Restrictions and any environmental easement, and will be implemented under this Site Management Plan.

These Institutional Controls are:

1. Compliance with the Deed Restrictions and this SMP by the Grantor and the Grantor's successors and assigns;
2. All Engineering Controls must be operated and maintained as specified in this SMP;
3. All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.
4. Groundwater and other environmental monitoring must be performed as defined in this SMP;
5. Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;

Institutional Controls identified in the Deed Restrictions or any environmental easement may not be discontinued without an amendment to or extinguishment of the Deed Restrictions or any environmental easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Deed Restrictions or any environmental easement. Site restrictions that apply to the Controlled Property are:

1. The property may only be used for commercial use, provided that the long-term EC/ICs included in this SMP are employed.
2. The property may not be used for a higher level of use, such as residential use without additional remediation and amendment of the Deed Restrictions or any environmental easement, as approved by the NYSDEC;
3. All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
4. The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;
5. The potential for vapor intrusion must be evaluated for any buildings developed in the area noted on Figure 12, and any potential impacts that are identified must be monitored or mitigated;
6. Vegetable gardens and farming on the property are prohibited;
7. The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

The site is being remediated for commercial use. No excavation is currently anticipated on the site that will encounter any remaining contamination. If any excavation is proposed in the future an *Excavation Work Plan* will be prepared and submitted to the NYSDEC for approval, and Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP as appropriate, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5.)

A site-specific HASP is attached as Appendix O to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP will be updated and re-submitted with notification provided in an EWP.

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluations

Prior to the 2010-2011 and 2013-2014 SVI evaluation sampling, in August 2009 CMS offered soil vapor intrusion sampling (sub-slab vapor and indoor air) to the property owners of the off-site buildings at 75 and 109 Industrial Parkway and, in June 2010, each owner subsequently declined that sampling. Should the current or subsequent owners of those properties request their properties be sampled in the future, the NYSDEC, in consultation with the NYSDOH, shall determine if soil vapor intrusion sampling is still appropriate.

Prior to the construction of any new enclosed structures located over areas that contain remaining contamination and the potential for soil vapor intrusion (SVI) has been identified (see Figure 12), an SVI evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building design in lieu of first conducting an SVI investigation. This mitigation system would include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a Work Plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York." Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and the construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation. If the property is owned by a third party, include the following: Validated SVI data will be transmitted to the property owner within 30 days of validation. [if applicable add: "If any indoor air test results exceed NYSDOH guidelines, relevant NYSDOH fact sheets will be provided to all tenants and occupants of the property within 15 days of receipt of validated data"]

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of submitting a Periodic Review Report. The inspections will determine and document the following:

1. Whether Engineering Controls continue to perform as designed;
2. If these controls continue to be protective of human health and the environment;
3. Compliance with requirements of this SMP and the Deed restrictions;
4. Achievement of remedial performance criteria;
5. Sampling and analysis of appropriate media during monitoring events;
6. If site records are complete and up to date;
7. Changes, or needed changes, to the remedial or monitoring system; and
8. Visual observation whether the off-site buildings at 75 Industrial Parkway or 109 Industrial Parkway appear to have been conveyed to a different owner.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan (Section 3 of this SMP.) The reporting requirements are outlined in the Periodic Review Reporting (Section 5 of this SMP.)

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

1. 60-day advance notice of any proposed changes in site use that are required under the terms of the Order on Consent, 6NYCRR Part 375, and/or Environmental Conservation Law.
2. 7-day advance notice of any proposed ground-intrusive activities and preparation and approval of an Excavation Work Plan.
3. Notice within 48-hours of any damage or defect to the foundation, structures or engineering control that reduces or has the potential to reduce the effectiveness of an Engineering Control and likewise any action to be taken to mitigate the damage or defect.

4. Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
5. Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.
6. Subsequent to the annual site-wide inspection, any observed change in ownership of the property at 75 Industrial Parkway or 109 Industrial Parkway.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

1. At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Order on Consent, and all approved work plans and reports, including this SMP
2. Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, damaging earthquake, environmental release, or serious weather conditions that could cause human injury or physical damage to the site (e.g., tornado, hurricane.)

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the Owner or Owner's representative(s) should contact the appropriate party from the contact list below.

For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to Ken Kloeber PE. The emergency contact list in Table 6 must be maintained in an easily accessible location at the site.

2.5.2 Map and Directions to Nearest Health Facility

Site address:	210 French Road; Cheektowaga NY 14227
Nearest Hospital:	Sisters of Charity Hospital – St. Joseph Campus
Location:	2605 Harlem Road; Cheektowaga, NY 14225
Telephone:	716-891-2400 911 – Emergency/Ambulance

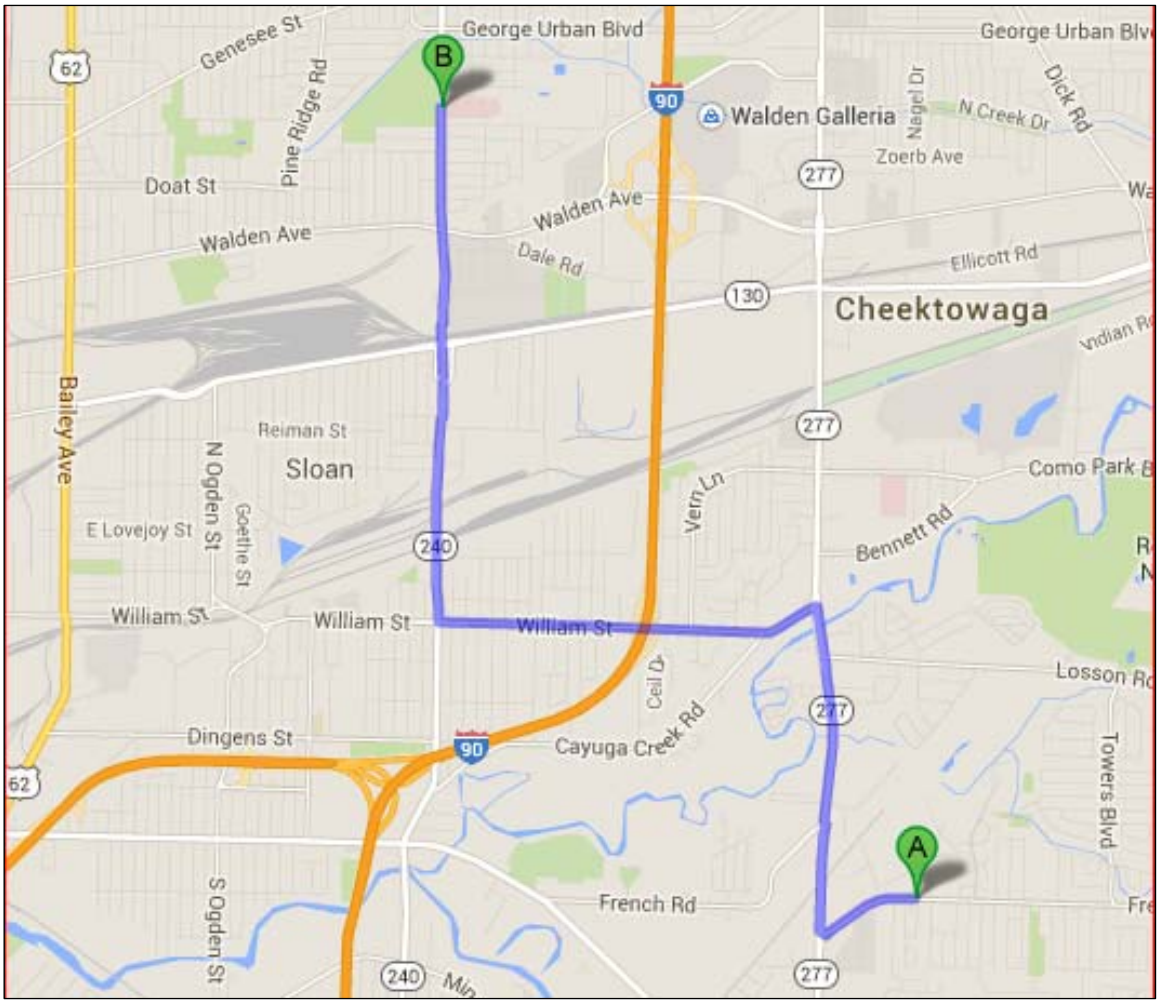
Directions to St. Joseph Campus:

1. West on French Road, toward Garden Village Drive and Union Road
2. 0.4 mi Turn right (north) onto Union Road
3. 1.3 mi Turn left (west) onto William Street
4. 1.6 mi Turn right (north) onto Harlem Road
5. 2.1 mi Hospital will be on the right.

Total Distance: 5.5 miles Travel Time: 15 minutes

Figure 13

Route from CMS Site to Sisters of Charity Hospital – St. Joseph Campus



2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 6). The list will also be posted prominently at the site and made readily available to all personnel at all times.

Spills

- There is minimal chance for materials used in conjunction with the groundwater remediation to be a widespread site hazard
- If appropriate, move to a safe area and notify Rosina Security if applicable.
- Ventilate is appropriate, use PPE as needed. Safety First
- Secure the spill from spreading as quickly as possible. Safely First.

Evacuation

- Always sign in at the Rosina Food Products Security office so that there is a record of who may be in the on site or in the building in case of an emergency.
- In the event of a site-wide emergency or evacuation (e.g., fire, explosion) follow the guidance of Rosina security, if available, or head as quickly as possible to the safest, location away from the area or source of concern. Winds are generally from the west (from the Rosina building,) so consider the most reasonable upwind location(s) to avoid contact with airborne contaminants. Consider sheltering at the Boxwood Lane South Line fire station or for emergency treatment if the wind direction is such that it is an upwind location.
- In case of emergencies requiring evacuation of the building, head for the nearest man door or manual overhead door. Anticipate that electrically overhead doors will not operate.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, and all affected site media identified below. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of groundwater.
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards.
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

The periodic monitoring specified of the performance of the remedy and overall reduction in contamination on-site and off-site will be conducted until the NYSDEC determines that the remedial performance is being met. At that time the SMP will me

revised to reflect their frequency determined by NYSDEC. Trends in contaminant levels in groundwater in the affected areas will be evaluated to determine if the remedy is effective in achieving remedial goals.

The monitoring programs are summarized in Table 3 and are outlined in detail in SMP Sections 3.2 and 3.3.

3.2 MEDIA MONITORING PROGRAM

There are two media for which monitoring is required to comply with the SMP:

1. Groundwater (both in-situ in GW monitoring wells, and as extracted, treated, and released to the county sanitary sewer system
2. Sub-Slab Vapor (vacuum under the floor slab)

3.2.1 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy. Figure 10 depicts the groundwater monitoring well network—in addition, there is a proposed new well (MW-15) to be located at the southeast corner of the Site, adjacent to French Road. The network has been installed to monitor both up-gradient and down-gradient groundwater conditions at the site. The network of on-site and off-site wells has been designed based on the following criteria:

Perimeter wells were installed on both the upgradient (south end - MW-8 and proposed MW-15,) and on the down-gradient (north end - MW-5, MW-6) limits of the Site. Additionally, there are down-gradient wells on off-site properties (MW-10, MW-11, MW-12, MW-13.) The criteria for these was to locate them in order to capture groundwater elevation and quality data at the most down-gradient extent of the Site beyond to help define the limit of the plume.

MM-14, installed in April 2011, was located east of the building due to the high sub-slab VOC levels discovered on the east side of the footprint – this appeared inconsistent with the general groundwater flow to the north-northwest, and that east side of the floor slab should be upgradient from the LUST. Therefore, MW-14 was installed on that side of the building to help define the limit of the plume toward Boxwood Lane. It has shown to be the well exhibiting the highest current VOCs levels, up to ~12,600 μg/l total VOCs, and more typically 4,000–8,000 μg/l.

Figure 2 is a cross section that shows the depths of all monitoring wells, and their spacing, relative to a north-south baseline through MW-1 (the near-middle of the Site.) Geologic cross sections had not been prepared during the Remedial Investigation, but new studies scheduled for 2015 and 2016 will concentrate on Site hydrogeology and this SMP will be revised with those findings.

Because in 2009-2010 the wellheads at MW-1, -2, -3, and -9 were retrofitted to the correct configuration to be used as source wells for the GWE/T System, and that MW-14 was installed in spring 2011, the current Site baseline conditions are taken as of

those in 2011. Figure 11 shows the average groundwater VOC contamination levels for 2011.

The monitoring schedule for groundwater wells is shown on Table 4.

Deliverables for the groundwater monitoring program are specified below.

1. Summary of quarterly analytical results for all GWE/T System extraction wells including tabular and graphical presentation.
2. Summary of quarterly analytical results for all Site perimeter monitoring wells including tabular and graphical presentation.
3. Summary of quarterly analytical results for all Off-Site monitoring wells including tabular and graphical presentation.
4. Mass balance presentation estimating \the quantity of VOCs removed from the groundwater, including tabular and graphical presentation.

Monitoring well construction logs are included in Appendix G.

The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

3.2.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix L. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network.

Preparation of Sampling Equipment, Containers, Materials, and Site

1. Follow protocol in Field Sampling Plan (Appendix L.)
2. If conditions require any deviation from the FSP, note them on the sampling field sheet and report the conditions in the next reporting.

Field Procedures—General and Safety

1. Follow protocol in Field Sampling Plan (Appendix L.)
2. If conditions require any deviation from the FSP, note them on the sampling field sheet and report the conditions in the next reporting.

Field Procedures—Groundwater Elevation Gauging

1. Follow protocol in Field Sampling Plan (Appendix L.)
2. If conditions require any deviation from the FSP, note them on the sampling field sheet and report the conditions in the next reporting.

3.2.1.2 Monitoring Well Repairs, Replacement And Decommissioning

If biofouling or silt accumulation occurs in the monitoring wells, they will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the next PRR. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with the NYSDEC *Groundwater Monitoring Well Decommissioning Procedures.* Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.2.1.3 Sub-Slab Vapor (reduced pressure zone)

The reduction of sub-slab VOC vapors is monitored indirectly, using the presence of a reduced pressure zone under the slab as a surrogate indicator. The see SMP Section and Table 3.

3.2.1.3.1 Monitoring Protocol

The SSDS manifold vacuum is verified using two dial-type vacuum gauges—one located in the Carbtrol Room (for the west-side of the SSDS) and in the maintenance room (for the east-side SSDS). See Figure 8B and 8C for their locations as follows:

West-side gauge – on 3” suction drop at J.1-5.4

East-side gauge – on 3” suction drop at J.9-1.7

The vacuum is read and recorded on appropriate forms and in the field log book maintained in the Carbtrol Room.

3.2.1.3.2 SSDS Repairs, Replacement, and Decommissioning

Repairs and/or replacement of any component of the SSDS will be performed based on assessments of system integrity and overall performance and failure of any component.

The NYSDEC will be notified prior to any repair of the SSDS for the purpose of component replacement or repair, and the repair / replacement process will be documented in the next PRR. SSDS decommissioning would be done only with the prior approval of NYSDEC and only if it is determined that the SSDS is no longer necessary to meet the remediation objective. Abandonment will be performed in according to a Work Plan fined with and approved by the NYSDEC.

3.3 SITE-WIDE INSPECTION

Site-wide inspections will be performed at a minimum of once per year prior to, with the results reported in, the annual PRR. A site-wide inspection will also be performed after a severe weather event that could affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix N). The form will compile sufficient information to assess the following:

1. Compliance with all ICs, including site usage;
2. An evaluation of the condition and continued effectiveness of ECs;
3. General site conditions at the time of the inspection;
4. The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
5. Compliance with permits and schedules included in the Operation and Maintenance Plan; and
6. Confirm that site records are up to date.

3.4 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All groundwater sampling and analyses will be performed in accordance with the requirements of the NYSDEC ASP Level B protocol and include the analytes in Appendix M.

QA/QC Objectives for Data Measurement

1. Sampling Program:
    - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
    - Sample holding times will be in accordance with the NYSDEC ASP requirements.
    - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
    - Sample Tracking and Custody;

- Use standard sample collection log/field sheets, and Chain of Custody sheets (see Appendix K.)

2. Calibration Procedures:

   - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
   - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.

3. Analytical Procedures per ASP Level B;

   - Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.
   - Internal QC and Checks;
   - QA Performance and System Audits;
   - Preventative Maintenance Procedures and Schedules;
   - Corrective Action Measures.

3.5 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the *Periodic Review Report,* as specified in the Reporting Plan of this SMP.

All monitoring results will be reported to NYSDEC in the *Periodic Review Repor*t, and a letter report will also be prepared if required by NYSDEC, subsequent to each sampling event. The report (or letter) will include, at a minimum:

1. Date of the sampling event;
2. Personnel conducting sampling;
3. Description of the activities performed;
4. Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
5. Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);

6. Sampling results in comparison to appropriate standards/criteria;
7. A figure illustrating sample types and locations;
8. Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
9. Observations, conclusions, or recommendations; and
10. A determination whether groundwater conditions have changed since the last reporting period.

Data will be reported in hard copy or digital format as determined by NYSDEC project manager. A summary of the monitoring program deliverables are summarized in Table 5.

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

This Operation and Maintenance Plan describes the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site. This Operation and Maintenance Plan:

- Includes the steps necessary to allow individuals unfamiliar with the site to operate and maintain the groundwater extraction/treatment systems;
- Includes an operation and maintenance contingency plan; and,
- Will be updated periodically to reflect changes in site conditions or the manner in which the groundwater extraction/treatment systems are operated and maintained.

A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP.

4.2 E/C SYSTEM OPERATION AND MAINTENANCE

4.2.1 SSD Systems

4.2.1.1 Scope

Two previously installed Sub-Slab Depressurization Systems have been operating effectively since 2005.

An expansion to the SSD System was installed in Spring 2015, the systems was tested and balanced, and was verified to meet the clean-up remediation objective of maintaining a minimum 0.004” water column negative pressure below the floor slab.

4.2.1.2 SSD System Start-Up and Testing

The expanded SSDS was completed and started up in May 2015. The SSDS was tested using the vacuum gauges installed on the east and west sides of the system, and the operation of the SSDS was normal. Additionally, the residual sub-slab vacuums were monitored to determine the amount of coverage across the building footprint, and the SSDS met the intended remedial objective.

4.2.1.3 SSD System Operation: Routine Operation Procedures

The SSDS will be operated continuously over 24 hours/day. The east and west SSDS systems are on a single TORK timer next to the breaker panel in the "Carbtrol Room." The timer was installed as a precaution in the event there is a reason to operate the systems on another schedule. The TORK is currently kept in the "permanently ON" position.

4.2.1.4 SSD System Operation: Routine Equipment Maintenance

The SSDS operates with no intervention and without any routine equipment maintenance. Maintenance is necessary only if a periodic inspection shows that the SSDS is not maintaining the necessary residual sub-slab negative pressure.

4.2.1.4 SSD System Operation: Non-Routine Equipment Maintenance

Equipment must be checked if an inspection shows that the SSDS is not maintaining the necessary residual sub-slab vacuum. In this occurs, the equipment train must be checked starting with the breaker box in the "Carbtrol Room," to the two fans on the roof in order to determine where the fault in the system exists.

4.2.2 GWE/T System

4.2.2.1 Scope

A Groundwater Extraction/Treatment ("GWE/T") System at the Site has been operating effectively since 1998. The owner has modified the System's Extraction and Treatment portions of the system over the years to address maintenance and repair issues as they arose.

There are operational controls and additional preventive maintenance and other changes that are evaluated as the system is being operated, some of which are as discussed in the recommendations contained in the previous *Annual Summary Report* (May 2013.) The changes (1) make preventive maintenance easier, (2) allow more flexibility in controlling the equipment, (3) allow separate control of the extraction vs. treatment equipment, (4) reduce wear and tear on the equipment, and (5) reduce annual maintenance and repair costs. Additional changes that affect the Monitoring/Reporting and Operation/Maintenance Plans in this SMP, must be included in subsequent SMP revisions to reflect the most current information and procedures to manage the Site and operate this E/C.

In addition, the extraction well network is the subject of future Remedial Investigations to determine the current zone of influence of the system and will be reported in the PRR for the site. If any changes are made that affect the Monitoring/Reporting and Operation/Maintenance Plans in this SMP, they must be included in subsequent SMP revisions to reflect the most current information and procedures to manage the Site and operate this E/C.

Additional evaluations are planned to address a potential Monitored Natural Attenuation option for the Remedial Action. This may affect Monitoring/Reporting and Operation/Maintenance Plans in this SMP, and if so, the SMP will be sequentially revised to reflect the most current procedures to manage the Site.

4.2.2.2 GWE/T System Start-Up and Testing

The extraction system was started up and tested, and operates continuously 24-hours per day. The groundwater treatment system currently does not operate because air sparging that takes place in the extraction wells themselves removes VOCs so that the GWE/TS effluent consistently meets discharge standards.

4.2.2.3 GWE/T System Operation: Routine Operation Procedures

The system operates continuously and there is no normal intervention necessary. The system manifold vacuum to the extraction wells typically operates between 20" Hg to 27" Hg Net Positive Suction Head at the extraction pump. This is checked daily and recorded in a ledger maintained in the "Carbtrol Room." The following is checked to verify that:

The pump compressor maintains 100-125 psi at the air compressor and in the air storage tank.

The extraction pump inlet pressure is maintained between approximately 35 to 45 psi (can be adjusted to maximize the pump manifold vacuum.)

The compressor oil is above the fill line in the sight glass on the compressor.

The oil filter at the compressor air pressure regulator not blocked.

The extraction pump maintains the manifold vacuum.

The effluent discharge pump operates (the pump system Cramer minute meter reading has advanced since the day before.

The treatment system operates (the system Cramer hour meter reading has advanced since the day before.)

Vacuum is present at the four extraction wells.

4.2.2.4 GWE/T System Operation: Routine Equipment Maintenance

Replace the oil filter on the compressor air-pressure regulator when the indicator identifies that that the filter is blocked.

Adjust the feed pressure as necessary to maximize the extraction pump vacuum on the well manifold.

Add compressor oil if the level in the compressor sight glass drops below the minimum.

Grease the air blower on the treatment system semi-annually.

Service the air compressor serviced every 8,000 operating hours (overall inspection, filters, belts, oil change.

Calibrate the treatment system effluent pump annually to determine the flow rate (gpm) for compliance reporting.

4.2.2.4 GWE/T System Operation: Non-Routine Equipment Maintenance

Switch to the backup extraction pump if the manifold vacuum drops below 20" Hg NPSH. Have the faulty extraction pump serviced.

4.3 E/C SYSTEM PERFORMANCE MONITORING

4.3.1 SSD System

The SSDS operates continuously and without intervention. So long as the system sub-slab vacuum is maintained at the two vacuum gauges, the SSDS is performing as designed. The performance monitoring consists of inspection and reporting of the system vacuums.

The performance of the SSDS is monitored indirectly, using the presence of vacuum in the manifold piping and suction drops as the indicator. See SMP Section 3.3.1.1 and Table 3 for the monitoring protocol.

4.3.2 GWE/T System

4.3.2.1 Introduction

The GWE/TS consists of a field of four groundwater extraction wells (MW-1, MW-2, MW-3, and MW-9,) a Wilden air-operated, 2" extraction pump, an Atlas-Copco air compressor, and a Carbtrol Corporation air stripper to remove VOCs from the water phase.

4.3.3 Monitoring Schedule

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSD System has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverables for the SSD System are specified later in this Plan.

4.3.4 General Equipment Monitoring

Monitor and record the following daily in the ledger in the "Carbtrol Room":

GWE/TS extraction well manifold vacuum (typically 20" Hg to 27" Hg NPSH.)

Monitor and record the treatment system effluent pump minute meter.

Monitor and record the treatment system hour meter.

Bi-Weekly monitor and record the vacuums at the extraction wells.

4.4 MAINTENANCE and PERFORMANCE MONITORING REPORTING REQUIREMENTS

Maintenance reports and any other information generated during regular operations at the site will be kept on-file on-site. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the Periodic Review Report, as specified in the Section 5 of this SMP.

4.4.1 Routine Maintenance Reports

A record will be completed during each routine maintenance event (checklist, form, log book entry, or other appropriate documentation). Checklists/forms/documentation will include, but not necessarily be limited to the following information:

1. Date;
2. Name, company, and position of person(s) conducting maintenance activities;
3. Maintenance activities conducted;
4. Any modifications to the system;
5. Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
6. Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

4.4.2 Non-Routine Maintenance Reports

During each non-routine maintenance event, documentation will be prepared that will include, but not be limited to, the following information:

1. Date;
2. Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
3. Presence of leaks;

4. Date of leak repair;
5. Other repairs or adjustments made to the system;
6. Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and,
7. Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system which are contained in Appendix J (GWE/T System E/C) and Appendix R (SSD System E/C)). Additionally, a general site-wide inspection form will be completed during the site-wide inspection (see Appendix N.) These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;
- Use of the site is compliant with the deed restrictions;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name of Professional Engineer], of [business address], am certifying as the RP's Designated Representative for the site.

The signed certification above will be included in the submittal for the Periodic PRR described below.

5.3 PERIODIC REVIEW REPORT

RP will submit a PRR to the Department on or before April 1st every year covering the previous calendar year (Jan 1 to Dec 31) certification period. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix B (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 for the previous certification period. Media sampling results will also be incorporated into the Periodic Review Report.

The PRR will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the site-specific ROD;
    - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
    - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
    - The overall performance and effectiveness of the remedy.

- A performance summary for all treatment systems at the site during the calendar year, including information such as:
    - The number of days the system was run for the reporting period;
    - The average, high, and low flows per day;
    - The contaminant mass removed;
    - A description of breakdowns and/or repairs along with an explanation for any significant downtime;
    - A description of the resolution of performance problems;
    - A summary of the performance, effluent and/or effectiveness monitoring; and
    - Comments, conclusions, and recommendations based on data evaluation.

The PRR will be submitted, in hard-copy and in electronic (PDF) formats, to the NYSDEC Regional Office Project Manager for the Site,and in electronic (PDF) format to the NYSDOH Regional Office.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

TABLES

Table 3: Monitoring/Inspection Schedule

Monitoring	Frequency*	Matrix	Analysis
GWW Elevation	Monthly	GW	Visual – Record GW elevations on field form
GWW Quality	Quarterly	GW	EPA Method 8260 GCMS VOCs, plus BTEX
GWE/TS E/C Extraction & Treatment	Daily Inspection and manifold vacuum check	GW Pump and suction manifold vacuum	Visual – Record vacuum gauge reading in Log Book
GWE/TS E/C Extraction & Treatment	Semi-annual Jun 30, Dec 31 reporting to Erie County	Treated GW discharge	EPA Method 8260 GCMS VOCs, plus BTEX
GWE/TS E/C gw extraction wells MW-1,2,3,9	Bi-weekly (weather permitting) Or if there is an issue with daily manifold vacuum	GW	Visual – Record vacuum gauge reading on inspection form
SSDS E/C East System West System	Bi-weekly May, Jun, Jul 2015 Monthly Aug, Sep, Oct, Nov, Dec 2015 Quarterly Q1, Q2, Q3, Q4 2016 Semi-annually Q2, Q4 thereafter	SSV Suction drops and manifold vacuum	Visual – Record vacuum gauge reading on inspection form or in Log Book
Site Wide Inspection	Annual	GW, SSV	Visual Inspection / checklists

* The frequency of events will be as specified until otherwise approved by NYSDEC and NYSDOH

Table 4: Summary of Well Purging, Sampling, and Analytical Protocols

Well	Frequency*	Analysis	Protocol
GWE/T <u>Extraction wells</u> MW-1, -2, -3, 9	Q1, Q2, Q3, Q4	EPA Method 8260B by GCMS - Expanded list of 8260 analytes	1. Measure and record groundwater elevation. 2. Sample well for VOCs
<u>Perimeter wells</u> MW-4, -5, -6, 7, -8, -14	Q1, Q2, Q3, Q4	EPA Method 8260B by GCMS - Expanded list of 8260 analytes	1. Measure and record groundwater elevation. 2. Purge well for sampling. 3. Sample well for VOCs
<u>Off-site wells</u> MW-10, -11, -12, -13	Q1, Q2, Q3, Q4	EPA Method 8260B by GCMS - Expanded list of 8260 analytes	1. Measure and record groundwater elevation. 2. Purge well for sampling. 3. Sample well for VOCs
GWE/TS Effluent	Each GWW Sampling event	EPA Method 8260B by GCMS - Expanded list of 8260 analytes	Sample GWE/TS effluent tank.
Field Blank sample	Each GWW Sampling event	EPA Method 8260B by GCMS - Expanded list of 8260 analytes	(1) blank prepared for each sampling event using organic-free water supplied from laboratory.
Trip Blank sample	Each GWW Sampling event(with	EPA Method 8260B by GCMS - Expanded list of 8260 analytes	One unopened blank for each sampling event prepared by laboratory to travel with and accompany GWW samples.
Blind Field Duplicate samples	10% of samples during each sampling event	EPA Method 8260B by GCMS - Expanded list of 8260 analytes	Secure Field Duplicate sample and record location on field sheet. Code the sample ID and record on Chain or Custody so that laboratory cannot determine the parent sample.

* Frequency of events as specified until otherwise approved by NYSDEC and NYSDOH

Table 5: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Daily GWW/TS visual inspections	Annual: Maintain results in on-site field book. Include PDF copy of reports for the certification period with PRR submittal.
Monthly GWW elevation monitoring.	Quarterly: Include with quarterly letter report above. Annual: Include PDF copy of reports for the certification period with PRR submittal.
Monthly GWE/TS extraction well network	Quarterly: Include with quarterly letter report above. Annual: Include PDF copy of reports for the certification period with PRR submittal.
Quarterly GWW groundwater quality monitoring.	Quarterly: Letter report (PDF) submitted to NYSDEC via email. Submit EQuIS EDD to NYSDEC. Annual: Include PDF copy of reports for the certification period with PRR submittal.
Semi-annual GWE/TS effluent compliance reporting to Erie County	Semi-annually (Q2, Q4): Submit concurrent PDF copy to NYSDEC via email.
Frequency varies Periodic SSD System inspections.	Quarterly: Submit inspection forms with the next quarterly letter report to NYSDEC. Annual: Include PDF copy of reports for the certification period with PRR submittal.
Annual Site Wide Inspection.	Annual: Include PDF copy of reports for the certification period with PRR submittal.

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC.

Any occurrences in the systems that arise during the inspections will be reported via email to the NYSDEC Project Manager outside and in addition to the stated frequency of reporting.

Table 6: Emergency Contact Numbers	
Medical, Fire, and Police:	911
NYS One-Call Center:	811 (3 day notice required for utility mark out)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Table 7: Other Contact Numbers*	
Ken Kloeber PE	(716) 864-0012 (cell / text / voicemail) (775) 860-3804 (fax)
Bruce Stolinski, Sr. Manager-Engineering/Maintenance Rosina Food Products, Inc.	(716) 572-1059 (cell / text / voicemail) (716) 608-8520 (office and voicemail) (716) 668-1119 (fax)
Rosina Food Products – Security	(716) 608-8531
South Line Fire District #10	911 – Emergency (716) 668-9787 – Non-emergency (716) 668-1232 - Administrative
* Note: Contact numbers subject to change and should be updated as necessary	

FIGURES

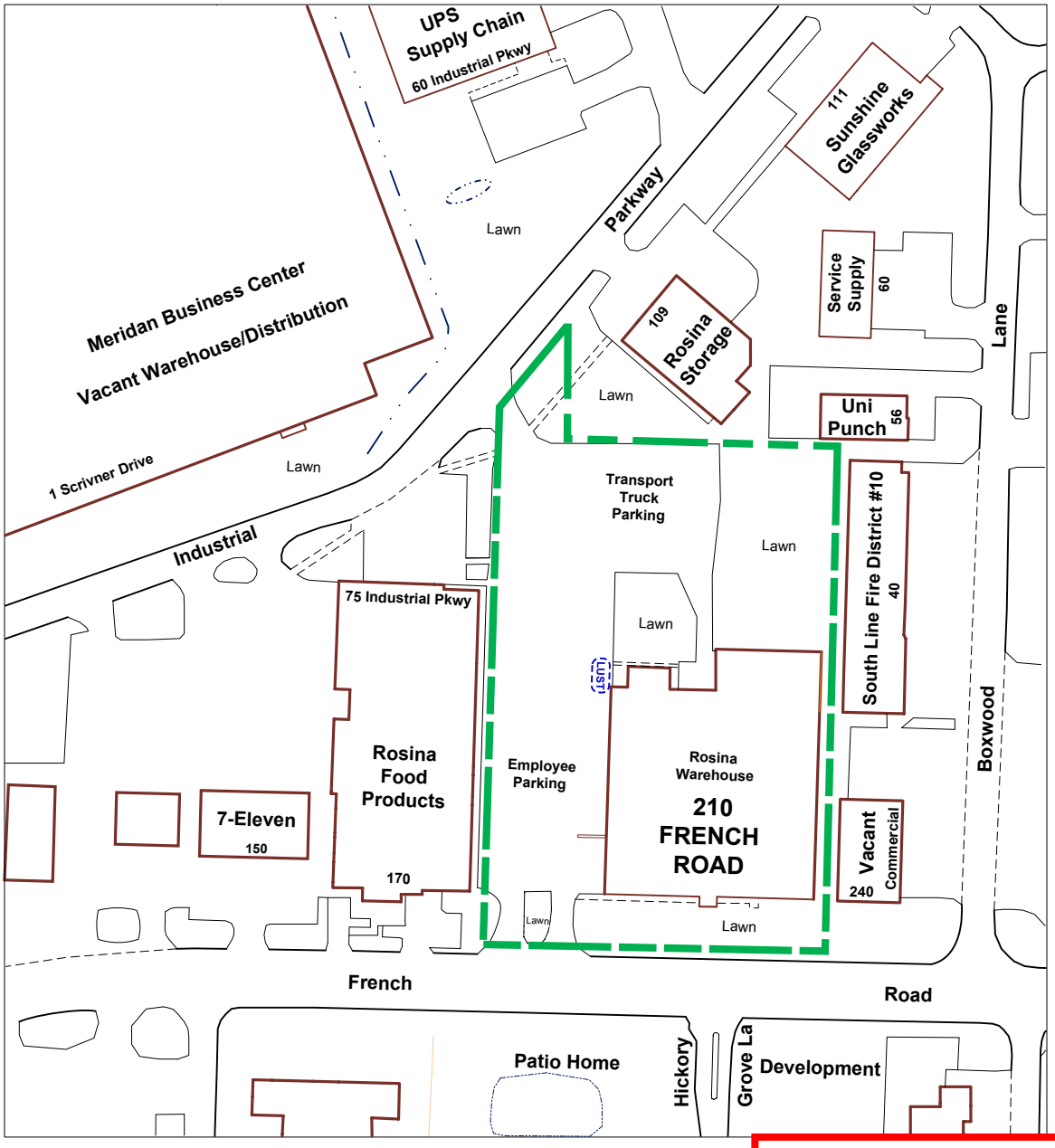


FIGURE 1
Site Area

Key:

LUST — *Former LUST Location*

CMS Site Property Boundary

N

0 60 100 200

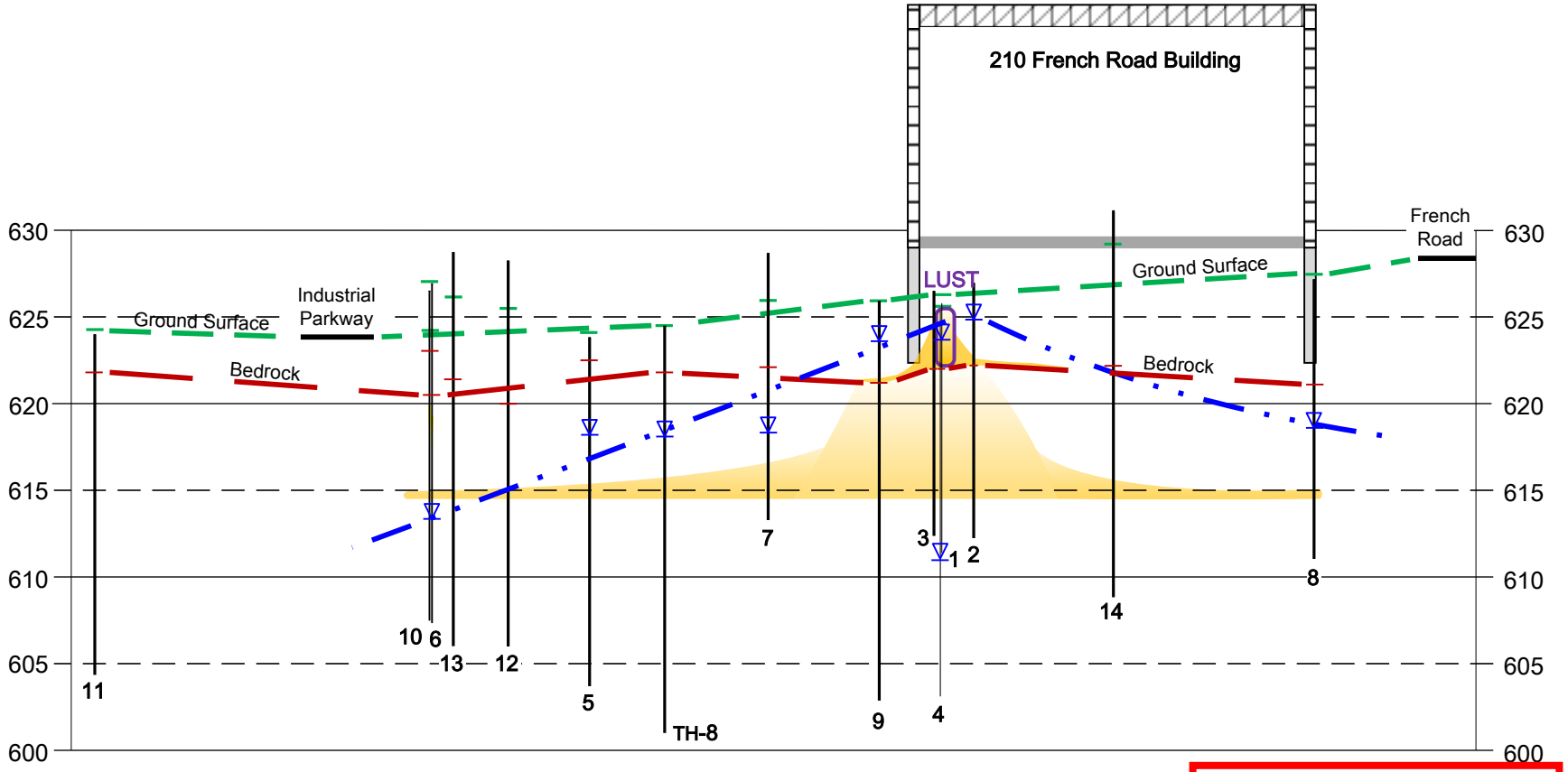
Approximate Feet

CMS Associates Remediation Site
Annual Summary Report

Figure 2

Surrounding Properties

Ken W. Kloeber Consulting Engineers



Key:

Groundwater Monitoring Wells

Ground Surface

Water Elevation

Bedrock Surface

Well No.

5

Existing Site Grade

Top of Bedrock

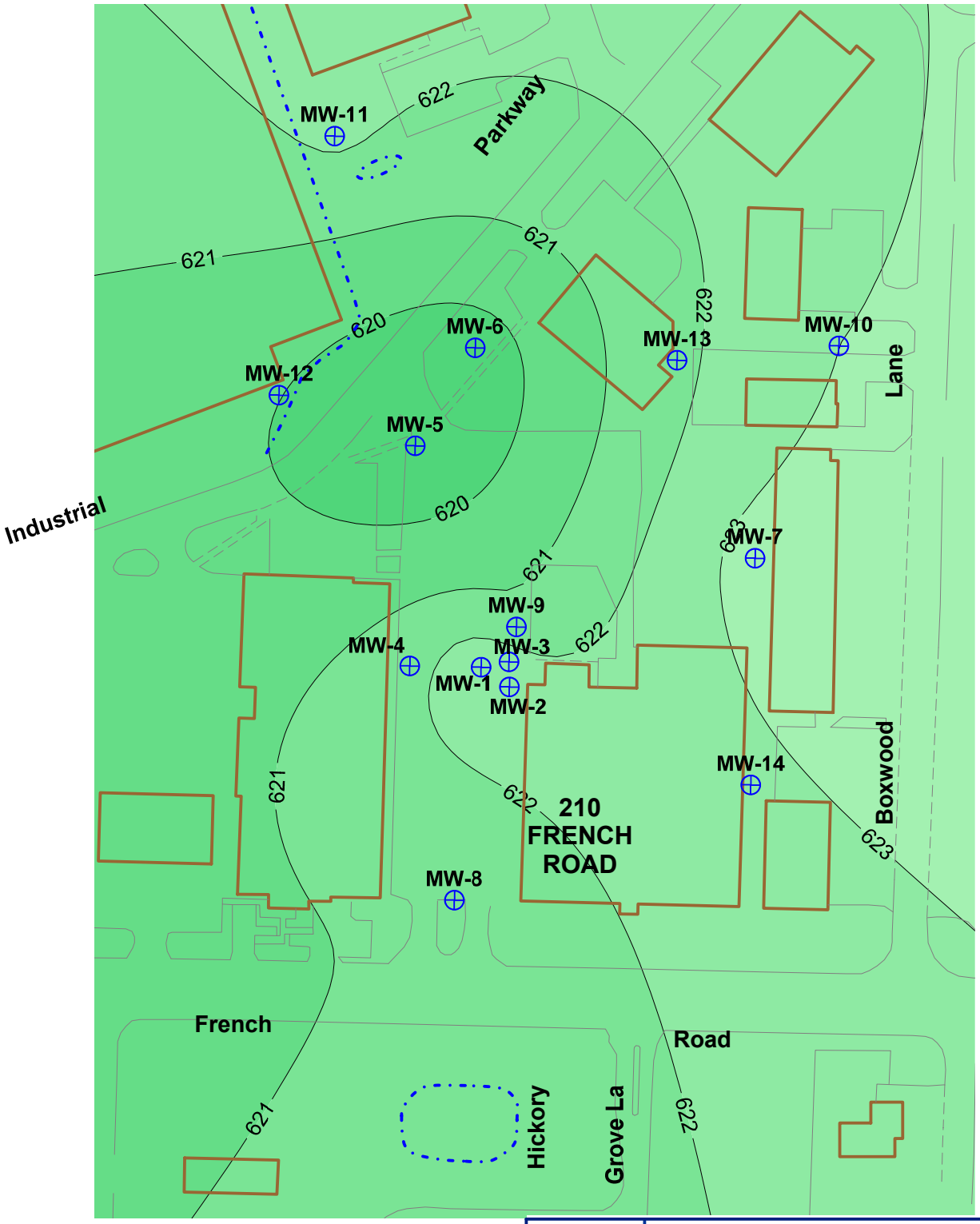
Assumed Piezometric Surface after LUST removed (Aug 1997)

N

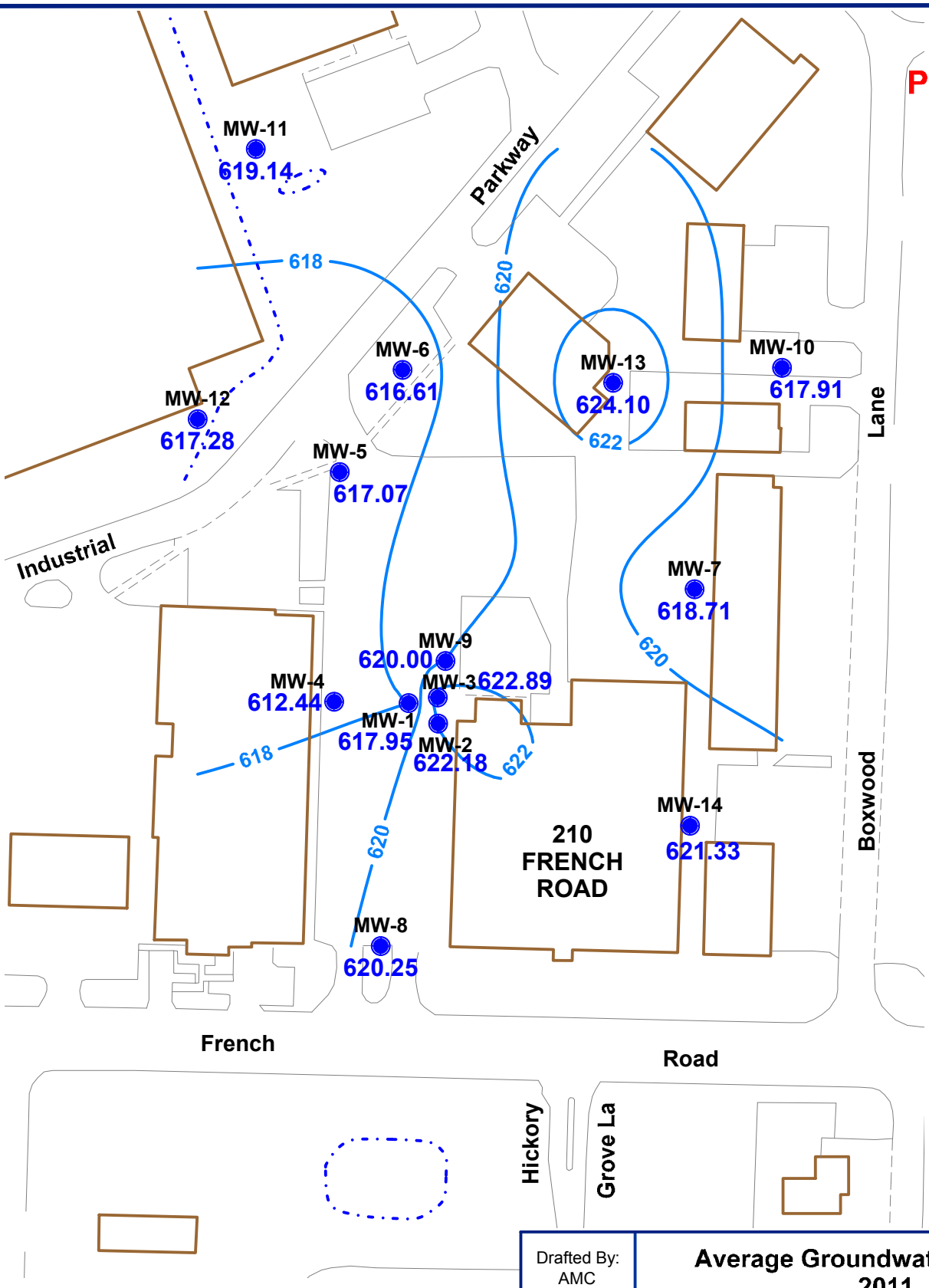
FIGURE 2
Conceptual Site Model

Note: Site cross-section is an approximate north-south line through well MW-1. Elevations are NAVD88.

CMS Associates Remediation Site **Annual Summary Report**
Figure 10 **Conceptual Site Model**
Ken W. Kloeber Consulting Engineers



Drafted By: JTL	**Bedrock Elevations**
Checked By: DMC	CMS Associates Remediation Site 210 French Road Cheektowaga, New York
Date: 04-22-2015	**Groundwater & Environmental Services, Inc.** 1750 Kraft Drive, Suite 2700, Blacksburg, VA 24060
North	Map Scale (ft) 0 100 200 **FIGURE 3**



Note:

Average groundwater elevation at MW-4 was not used in contours.

Legend:

Water Retention Pond

Drafted By: AMC	**Average Groundwater Elevation 2011**
Checked By: DL	CMS Associates Remediation Site 210 French Road Cheektowaga, New York
	Groundwater & Environmental Services, Inc. 1750 Kraft Drive, Suite 2700, Blacksburg, VA 24060
North	Map Scale (ft) 0 100 200

FIGURE 4

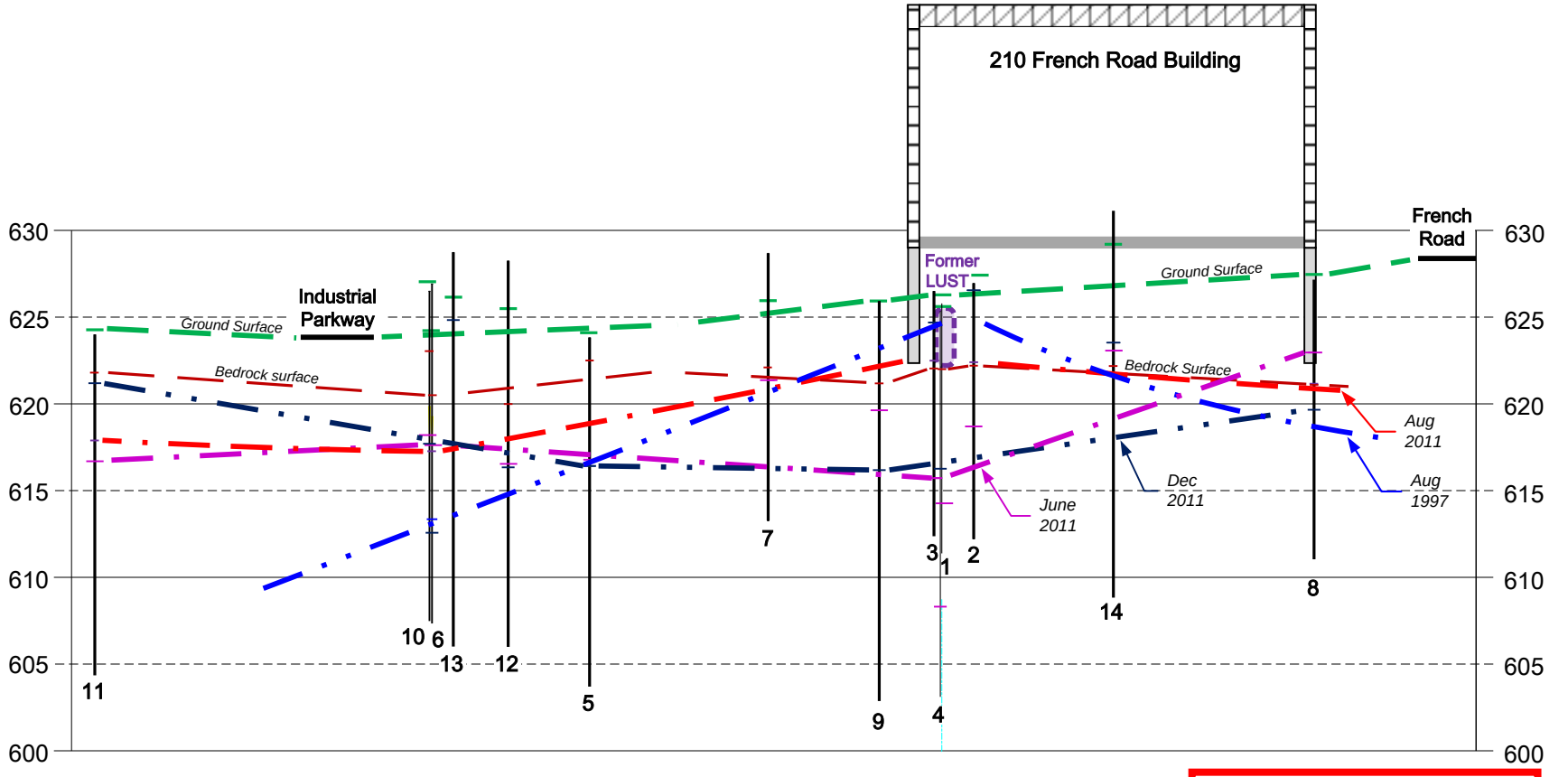


FIGURE 5

0 60 100 Feet 200

Approximate Horizontal Scale

Key:

Groundwater Monitoring Wells

Ground Surface

Water Elevation

Bedrock Surface

MW No.

5

Existing Site Grade

Top of Bedrock

Assumed Piezometric Surface

N

Note: Site cross-section is an approximate north-south line through well MW-1. Elevations are NAVD88. Assumed piezometric surface is from well elevations and is generalized between wells.

CMS Associates Remediation Site
Annual Summary Report

Figure 11

Confined Groundwater Piezometric Surface

Ken W. Kloeber Consulting Engineers

NOTES:
- o CONCENTRATIONS REPORTED IN ug/l (PARTS PER BILLION)
- o ND - NOT DETECTED
- o BDL - BELOW DETECTION LIMIT
- o SAMPLES COLLECTED JUNE, 1996 ANALYZED BY ECOLOGY & ENVIRONMENT
- o SAMPLES COLLECTED OCTOBER, 1996 ANALYZED BY UPSTATE LABORATORIES, INC.

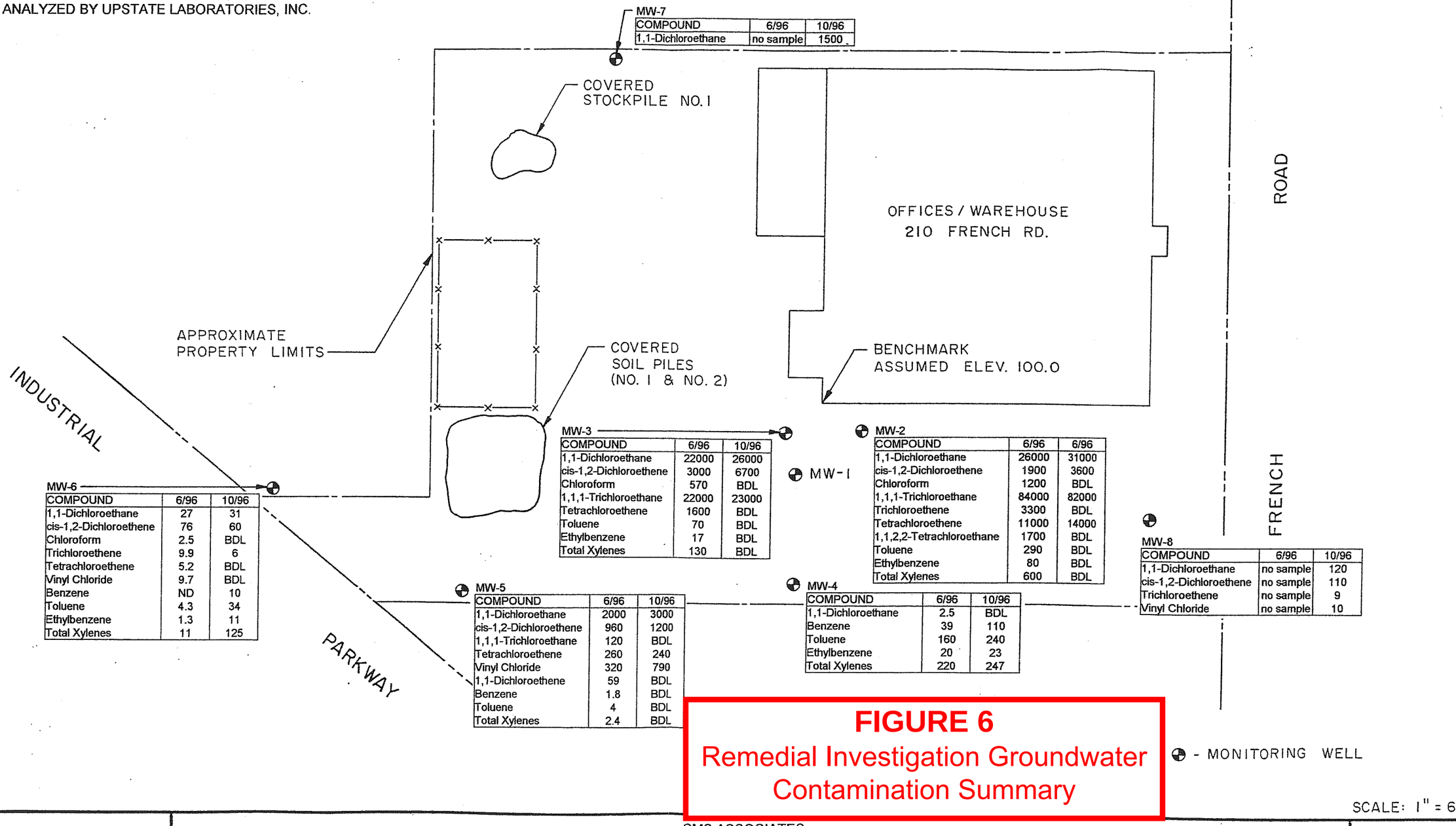


FIGURE 6
Remedial Investigation Groundwater Contamination Summary

- MONITORING WELL

SCALE: 1" = 60'

HAZARD EVALUATIONS

CMS ASSOCIATES
210 FRENCH ROAD, CHEEKTOWAGA, N.Y.
SUMMARY OF ANALYTICAL TESTING RESULTS

FIGURE 5

LEGEND

EXISTING MONITORING WELL

NEW TEST HOLE
(PACKER PRESSURE TEST)

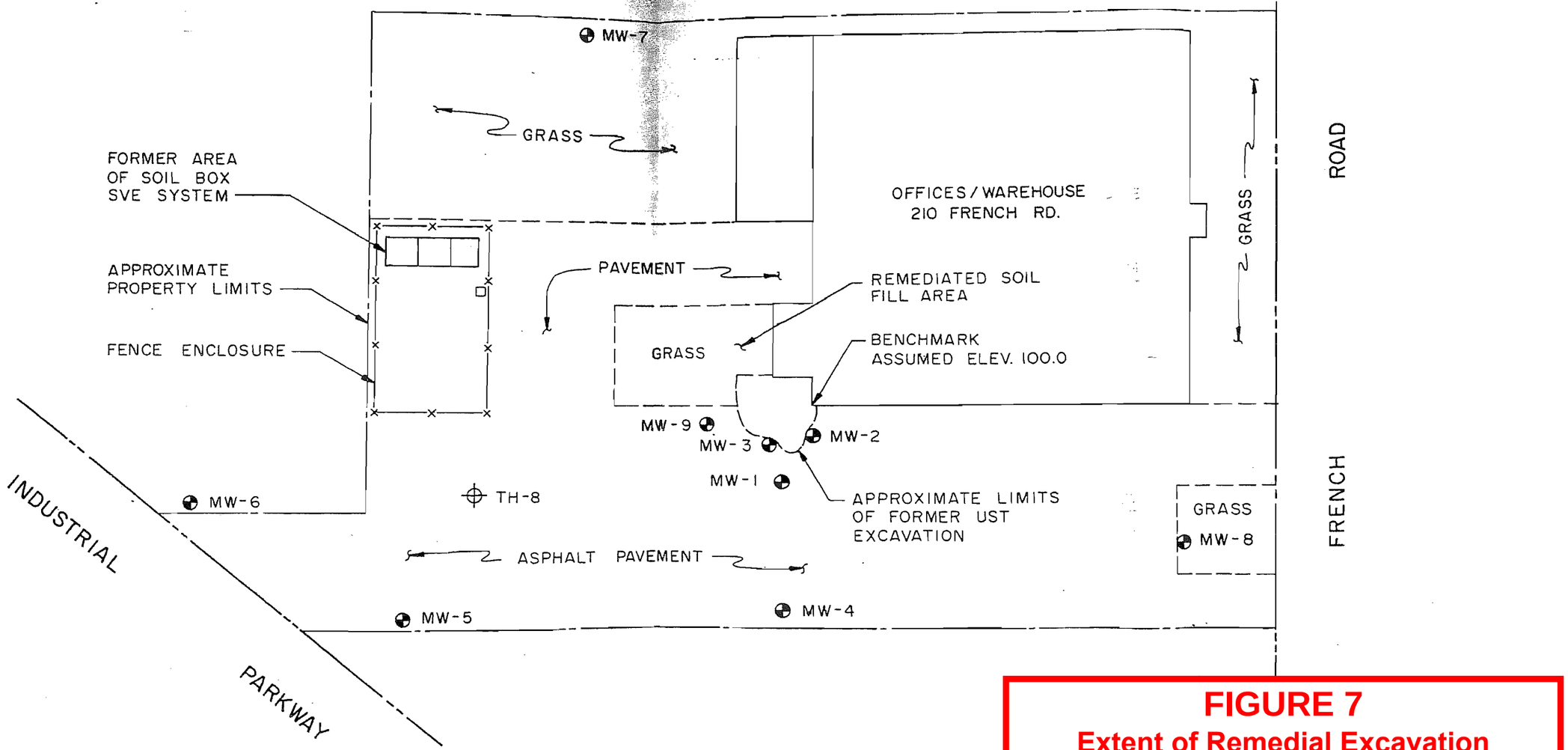


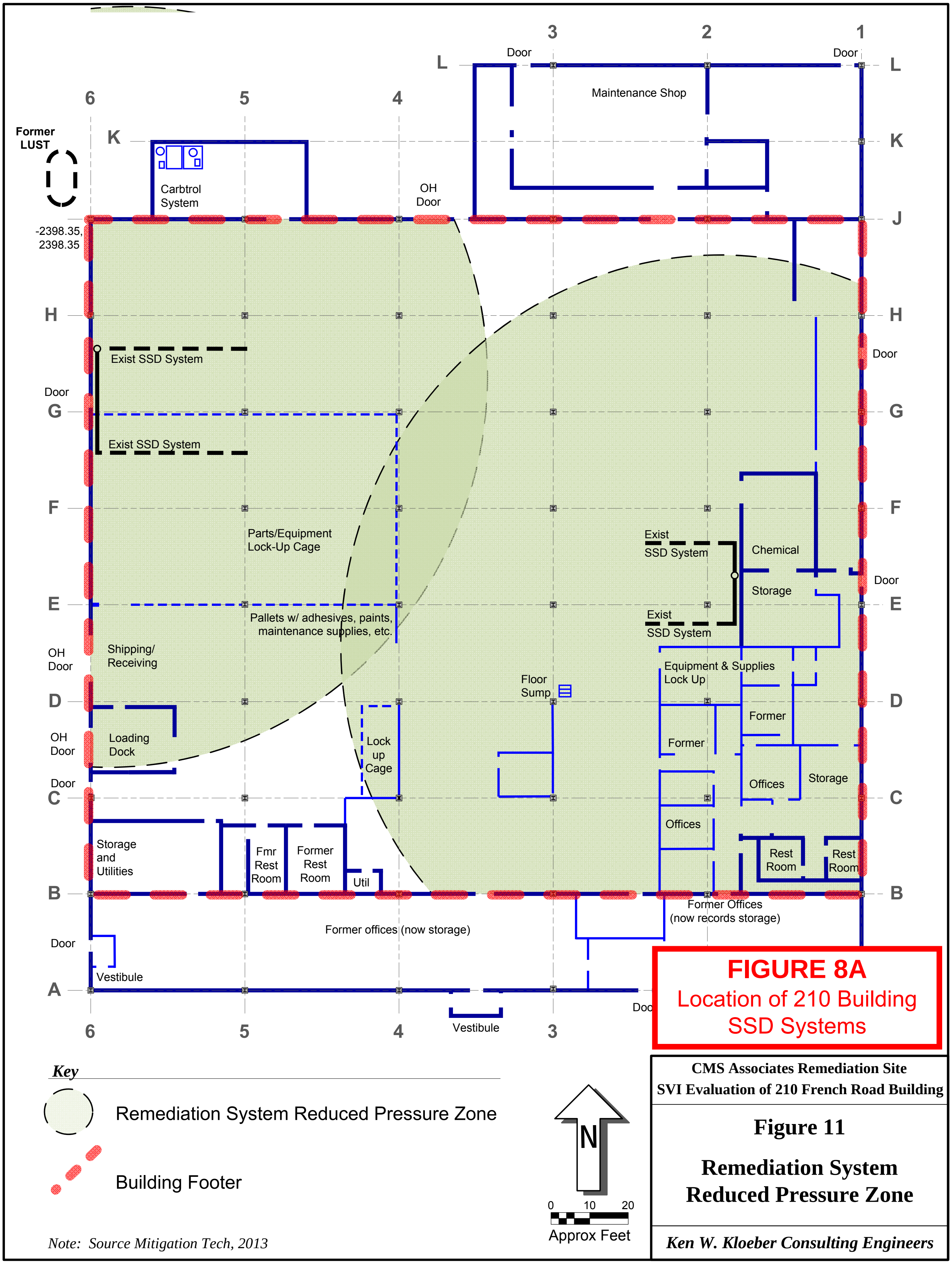
FIGURE 7
Extent of Remedial Excavation Performed

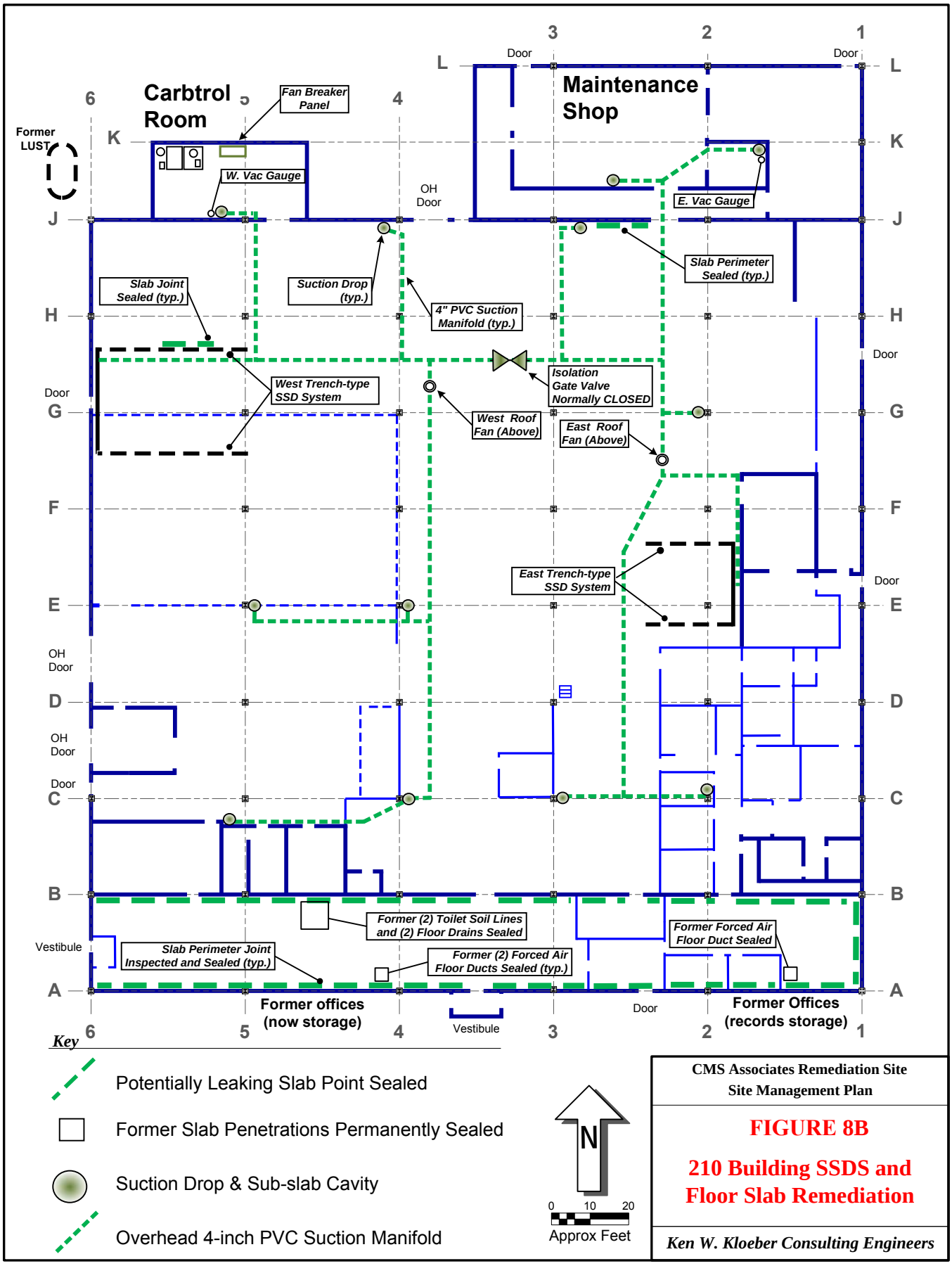
APPROX. SCALE: 1" = 60'

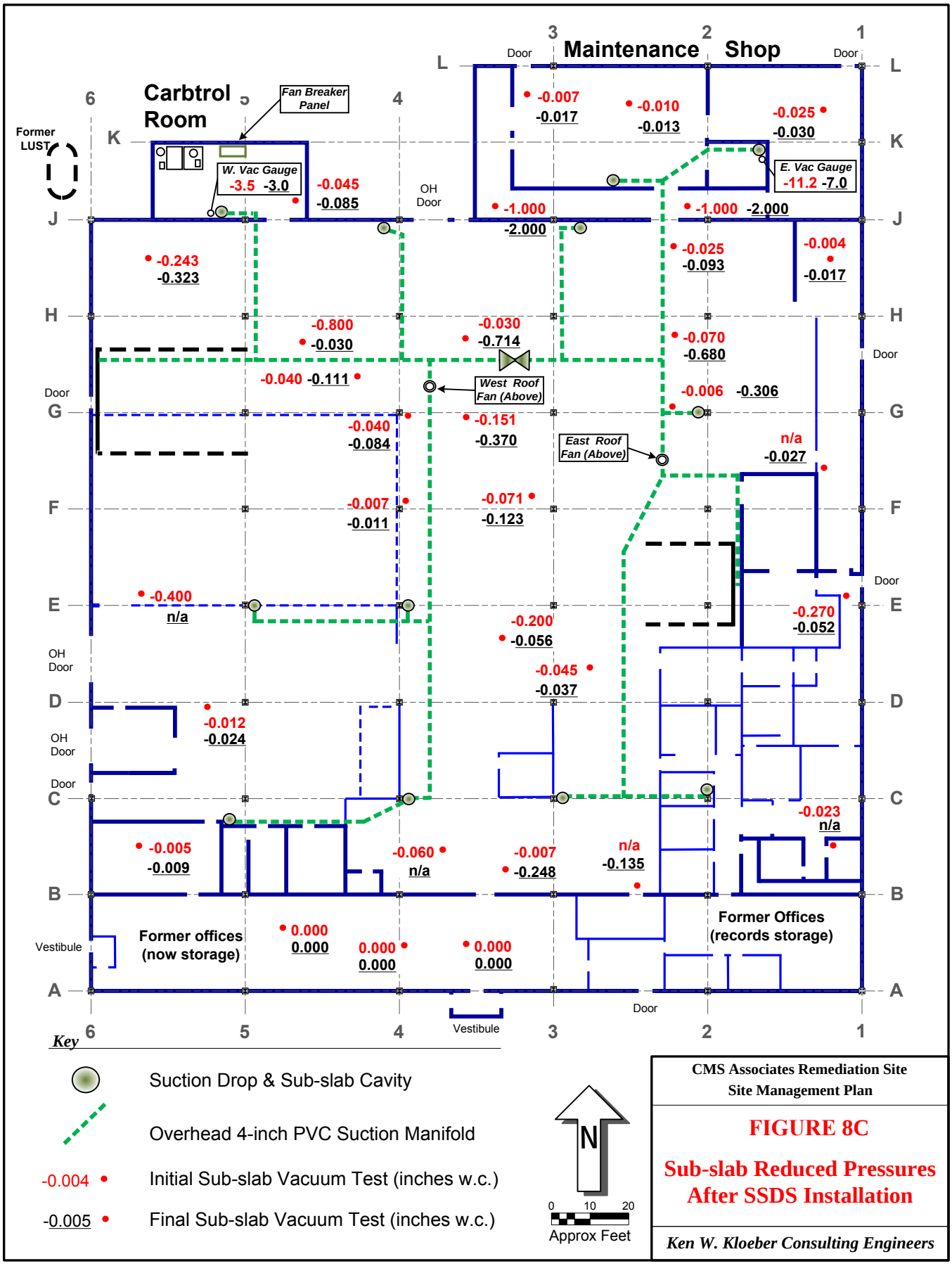
HAZARD EVALUATIONS

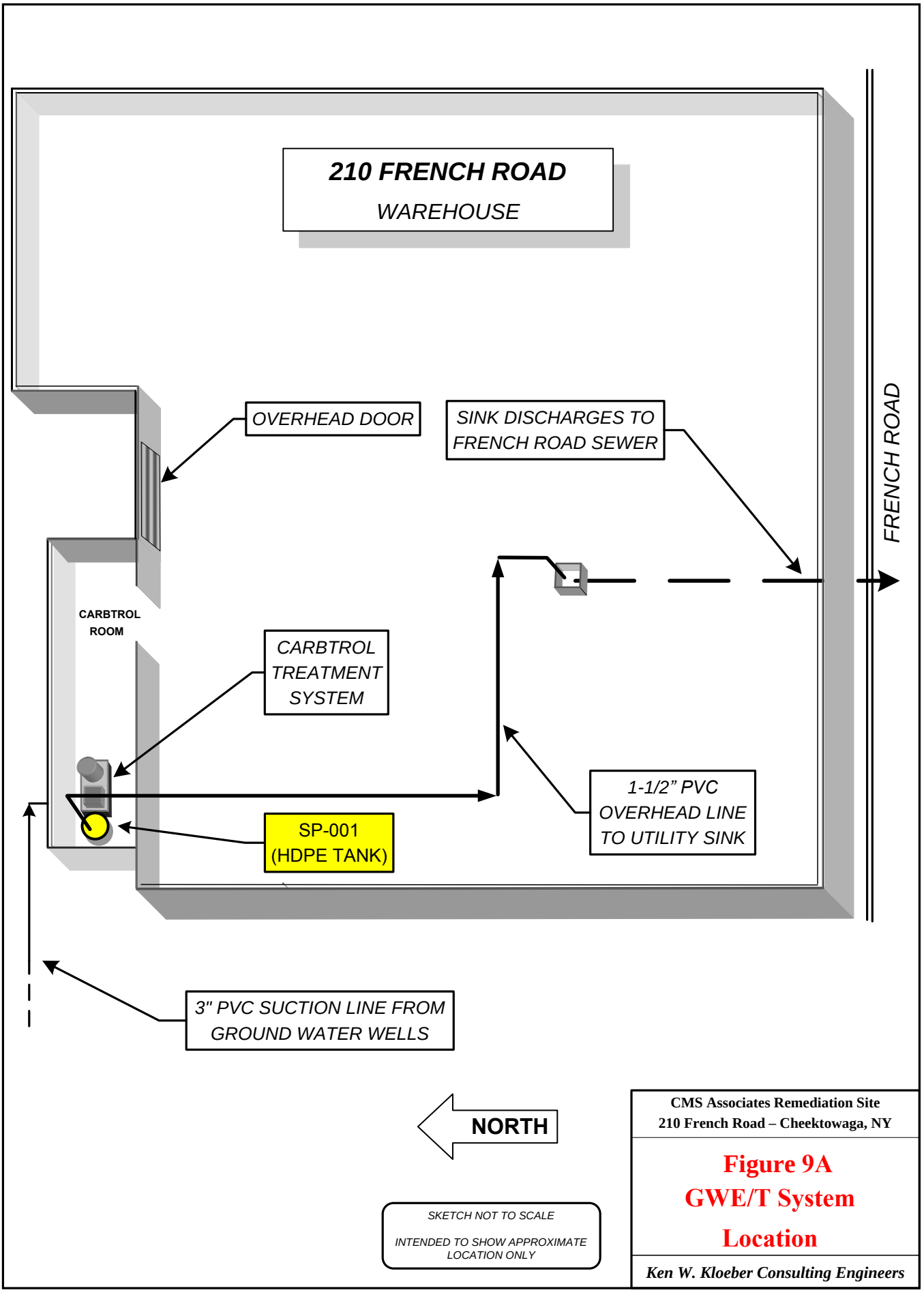
CMS ASSOCIATES
210 FRENCH ROAD, CHEEKTOWAGA, N.Y.
MONITORING WELL LOCATION PLAN

FIGURE 2









CMS Associates Remediation Site
210 French Road – Cheektowaga, NY

Figure 9A
GWE/T System Location

Ken W. Kloeber Consulting Engineers

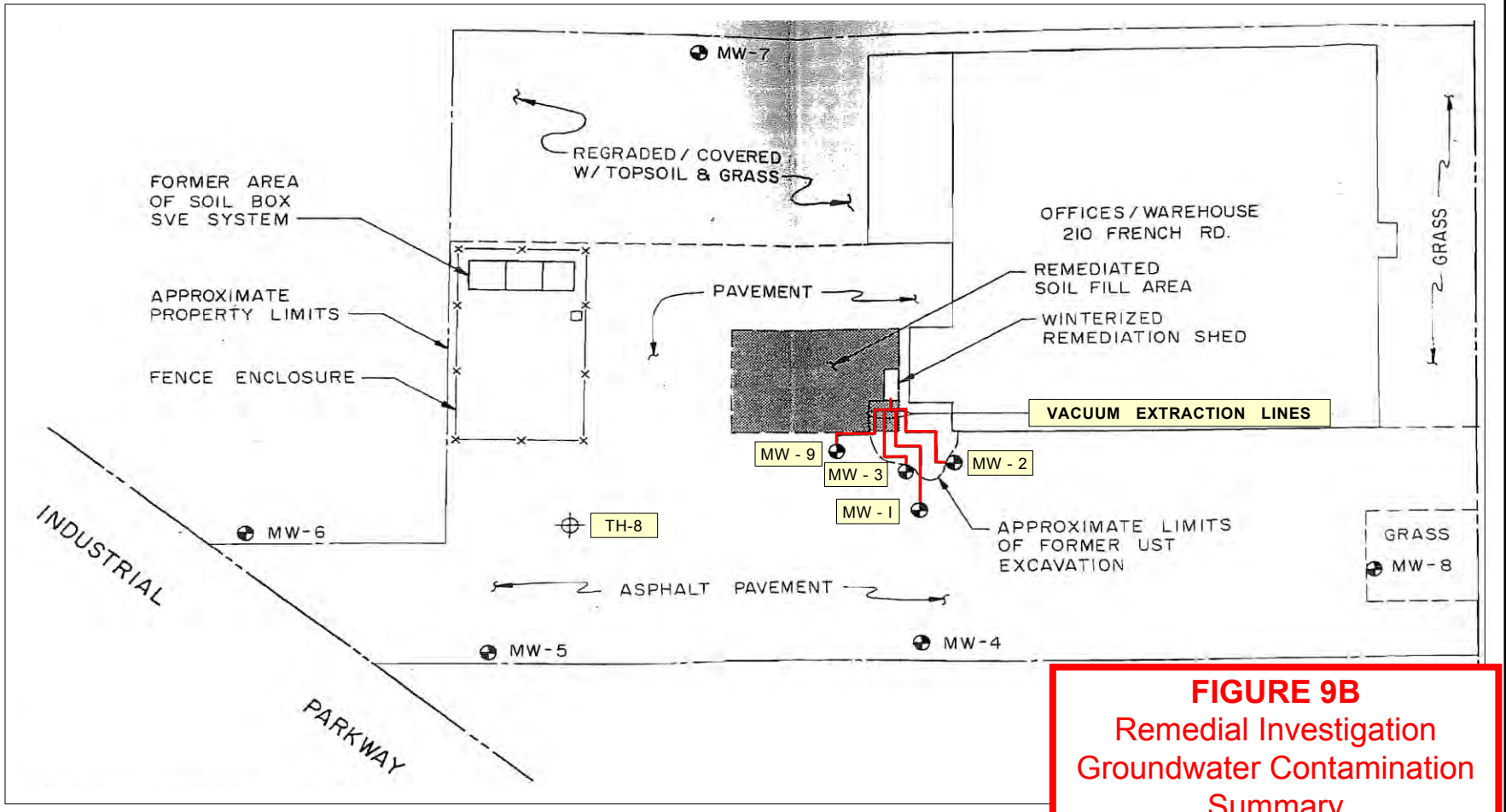


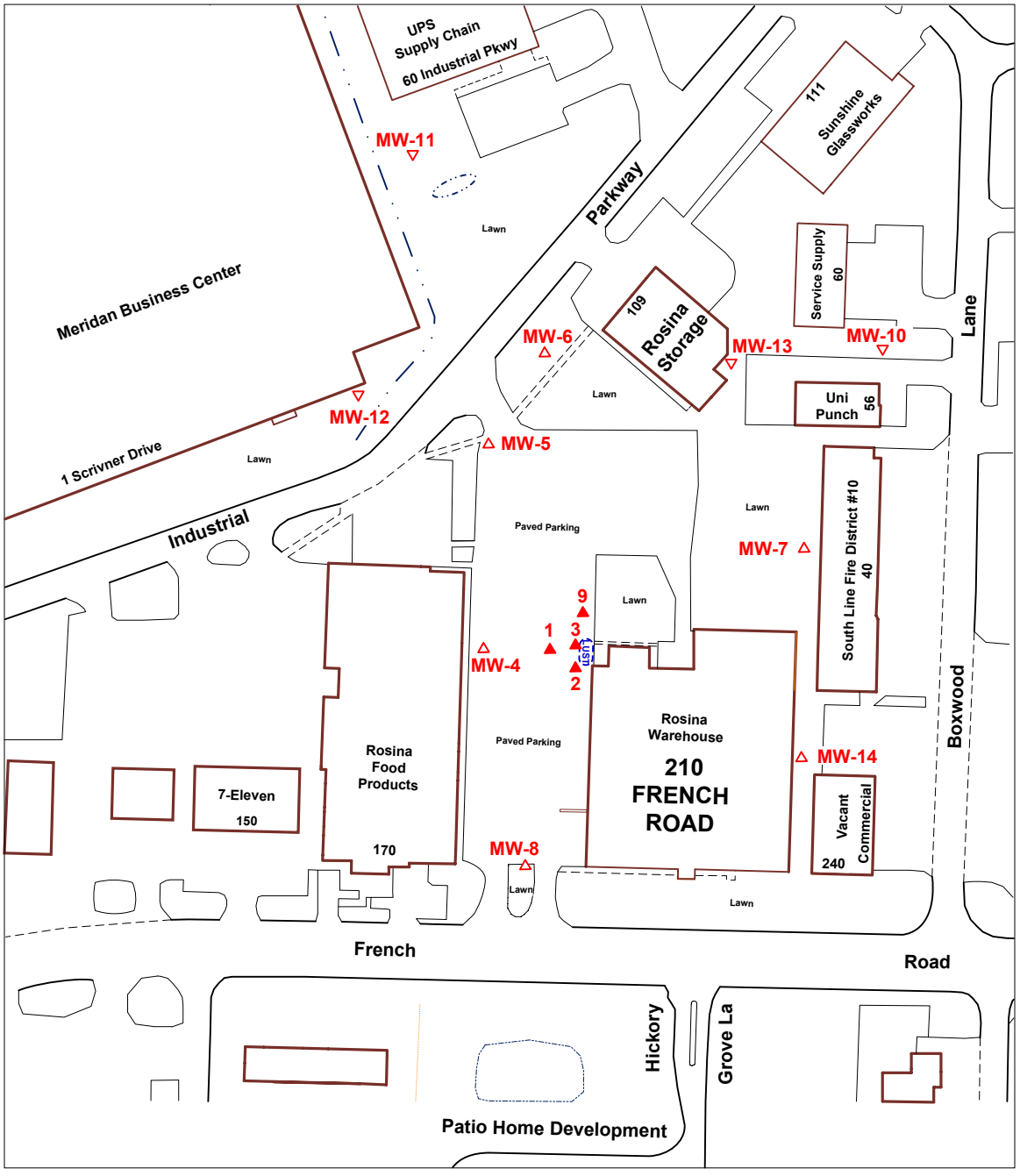
FIGURE 9B
Remedial Investigation
Groundwater Contamination
Summary

Key:

Groundwater Monitoring Well

Source: Adapted from Hazard Evaluations, Inc. 1997 *Focused Feasibility Report;* Figure 4 (emphasis added)

CMS Associates Remediation Site **Annual Summary Report**
Figure 8 **Groundwater Extraction Well Schematic**
Ken W. Kloeber Consulting Engineers



Key:

- LUST — *Former LUST Location*
- △ — *Perimeter Monitoring Wells (6)*
- ▽ — *Off-site Monitoring Wells (4)*
- ▲ — *Extraction/Monitoring Wells (4)*

N

0 60 100 200

Approximate Feet

CMS Associates Remediation Site
Annual Summary Report

FIGURE 10

Groundwater Monitoring Well Network

Ken W. Kloeber Consulting Engineers

PRELIMINARY

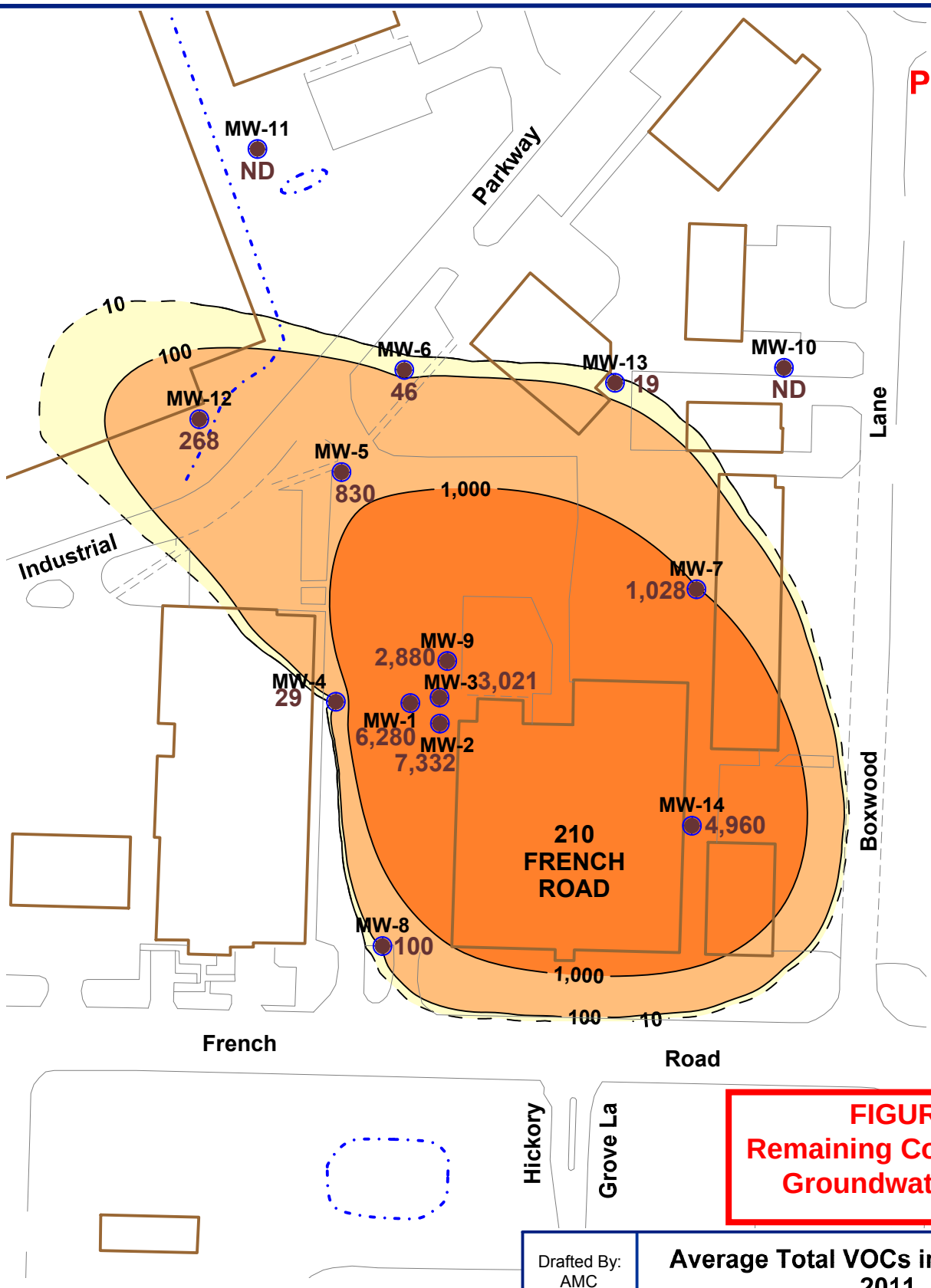


FIGURE 11
Remaining Contamination
Groundwater Quality

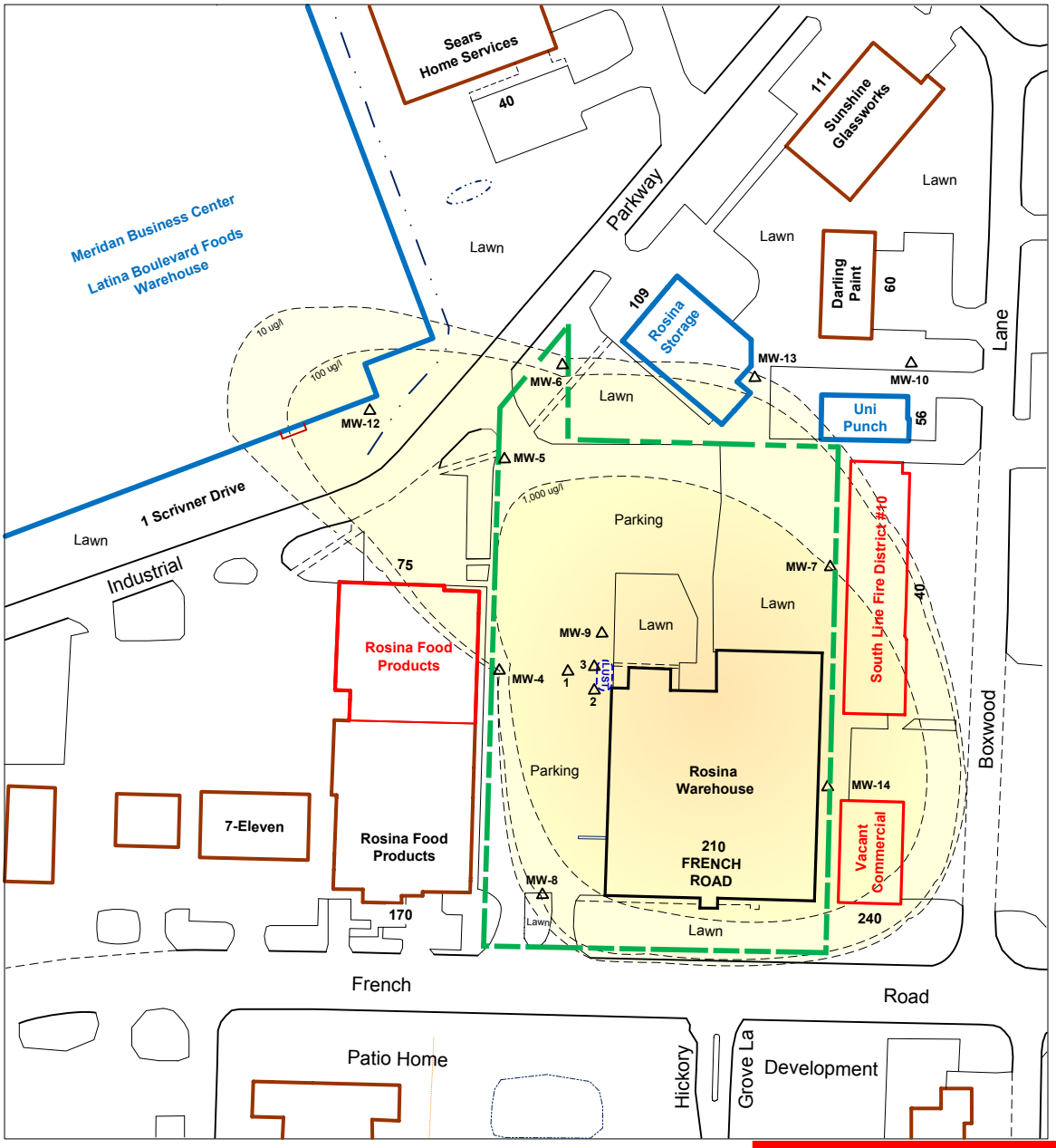
Legend:

19 Average Total VOC Groundwater Concentration (ug/L)

Inferred Contour Line

Water Retention Pond

Drafted By: AMC	**Average Total VOCs in Groundwater 2011**	
Checked By: DL	CMS Associates Remediation Site 210 French Road Cheektowaga, New York	
	Groundwater & Environmental Services, Inc. 1750 Kraft Drive, Suite 2700, Blacksburg, VA 24060	
North	Map Scale (ft) 0 100 200	**Figure 14**



Key:

- LUST — *Former LUST Location*
- *CMS Site Property Boundary*
- Darling — No Potential for SVI Impact in building
- UniPunch — Low Potential for SVI Impact in building
- Vacant — Moderate Potential for SVI Impact in building
- 1,000 ug/l — *Average Total Groundwater VOCs 2010-2011*

N

0 60 100 200

Approximate Feet

FIGURE 12
Areas of SVI Concern

CMS Associates Remediation Site
SVI Evaluation of Surrounding Properties

Figure 2

Surrounding Properties

Ken W. Kloeber Consulting Engineers

mapquest

Trip to:
2605 Harlem Rd
Cheektowaga, NY 14225-4018
5.33 miles / 10 minutes

HOSPITAL ROUTE MAP

CMS Associates Remediation Site (210 French Road, Cheektowaga, NY) to St. Joseph Hospital (2605 Harlem Road, Cheektowaga, NY)

		Download Free App
A	**210 French Rd**, Cheektowaga, NY 14227-2717	
●	1. Start out going **west** on **French Rd** / **County Hwy-321** toward **Garden Village Dr**. Map	**0.4 Mi** *0.4 Mi Total*
↱ 277	2. Turn **right** onto **Union Rd** / **NY-277**. Map *Union Rd is 0.2 miles past Scrivner Dr*	**2.9 Mi** *3.3 Mi Total*
↰	3. Turn **left** onto **Walden Ave**. Map *If you reach Goering Ave you've gone about 0.2 miles too far*	**1.6 Mi** *4.8 Mi Total*
↱ 240	4. Turn **right** onto **NY-240** / **Harlem Rd**. Map *NY-240 is 0.1 miles past Thruway Mall* *If you reach Leonard Post Dr you've gone a little too far*	**0.5 Mi** *5.3 Mi Total*
■	5. **2605 HARLEM RD** is on the **right**. Map *Your destination is just past McNaughton Ave* *If you reach Southern State Pkwy you've gone a little too far*	

FIGURE 13
Route from Site to Hospital

Total Travel Estimate: **5.33 miles - about 10 minutes**