ENERGYSOLUTIONS

June 28, 2012
Ref. No. 31129-103

Mr. Jaspal Walia
Project Manager
New York State Department of Environmental Conservation, Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999

Subject: **Second Supplemental Sub-Slab Gas Investigation Work Plan**
Central Building Areas
Leica Facility
Cheektowaga, New York

Dear Mr. Walia:

Enclosed for your review and approval is a copy of the Second Supplemental Sub-Slab Gas Investigation Work Plan for the Central Building Areas at the Leica Facility.

If you have any questions regarding this plan, please feel free to call me at 801-303-1092.

Sincerely,

Robert E. McPeak, Jr., P.E., LEP
Department Manager, Environmental Services

REM/pm
Enclosure
cc: M. Forcucci, NYSDOH
C. Grabinski
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SECOND SUPPLEMENTAL SUB-SLAB GAS INVESTIGATION WORK PLAN CENTRAL BUILDING AREAS

Leica, Inc. Site
Eggert and Sugar Roads
Town of Cheektowaga, Erie County, New York
Site ID Number 915156

Prepared for

Leica, Inc., c/o Videojet Tech
1500 Mittell Boulevard
Wood Dale, Illinois 60191

And

New York State Department of Environmental Conservation, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

May 2012

ENERGYSOLUTIONS

CS-OP-PN-072

Second Supplemental Sub-Slab Gas Investigation Work Plan
Central Building Areas
Leica, Inc. Site
Eggert and Sugar Roads
Cheektowaga, New York
NYSDEC Site ID 915156

Project No. 137015 **Revision 0**

Prepared for:

Leica, Inc., c/o Videojet Tech 1500 Mittell Boulevard Wood Dale, IL 60191	and	NYSDEC, Region 9 270 Michigan Avenue Buffalo, NY 14203-299

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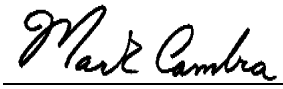
Reviewed By:  6/28/2012
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[X] New Plan

[ ] Title Change

[ ] Plan Revision

[ ] Plan Rewrite

Effective Date 6/28/2012

Table of Contents

FIGURES

ACRONYMS AND ABBREVIATIONS

COC	Chain-of-Custody
CRA	Conestoga-Rovers & Associates
CSM	Conceptual Site Model
DCE	cis-1,2-Dichloroethene
Energy*Solutions*	Energy*Solutions*, LLC
EPA	United States Environmental Protection Agency
HRC	Hydrogen Release Compound®
Leica	Leica, Inc.
NELAP	National Environmental Laboratory Accreditation Program
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PID	Photo-Ionization Detector
QC	Quality Control
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
Site	Leica, Inc. Site: NYSDEC Site ID Number 915156
SOP	Standard Operating Procedure
TCA	1,1,1-Trichloroethane
TCE	Tricholoroethene
VC	Vinyl Chloride
VOC	Volatile Organic Compound

1.0 INTRODUCTION

On behalf of Leica, Inc., c/o Videojet Tech of Wood Dale, Illinois (Leica), Energy*Solutions*, LLC (Energy*Solutions*) has prepared this Second Supplemental Sub-Slab Gas Investigation Work Plan for the former Leica facility located on the Leica, Inc. site (Site) at Eggert and Sugar Roads, Cheektowaga, New York (NYSDEC Site ID Number 915156). A Site Location Map is included as Figure 1. A Site Plan showing the building, site features, and monitoring well locations is included as Figure 2. Proposed sample locations and building layout are included in Figure 3.

This work plan is prepared in response to and based on the results from the implementation of the "Supplemental Sub-Slab Gas Investigation Work Plan," Document No. CS-OP-PN-060, Rev.0 (Ref. No. 1.2.1). This "Second supplemental Sub-Slab Gas Investigation Work Plan" is an addition to the mitigation effort proposed in the "Vapor Mitigation Work Plan" prepared by Energy*Solutions* in November 2010 (Ref. No. 1.2.2). In order to further assess the concentrations of Volatile Organic Compounds (VOCs) in the groundwater and soil vapors in the areas to be mitigated, one of the tasks in the "Vapor Mitigation Work Plan" included the collection of additional groundwater grab samples INT-1 through INT-5 be collected from within the site facility as well as one exterior sample EXT-1 located just outside the southeast corner of the facility. These groundwater grab samples were collected from beneath, or adjacent to, the building slab on June 8, 2011. When elevated concentrations of TCE and 1,2 DCE were discovered in these groundwater grab samples additional Sub-Slab and Ambient/Indoor air samples were planned and approved by NYDEC in July 2011 and subsequently collected from September 19 through September 22, 2011.

1.1 Purpose

The purpose of this work plan is to fill-in data gaps that were generated during the original "Supplemental Sub-Slab Gas Investigation Work Plan". During the implementation of the original Supplemental Sub-Slab Investigation Work Plan, 35 soil gas and ambient air samples were collected in addition to the 6 groundwater grab samples. Based on the results of those sample efforts this work plan has been generated.

The scope of this work plan is to obtain 4 additional groundwater grab samples and 16 additional Sub-Slab and Ambient/Indoor air samples at locations throughout the SamSon building to further delineate the extent of groundwater and soil vapor contamination under the building floor.

1.2 References

1.2.1 Energy*Solutions*, "Supplemental Sub-Slab Gas Investigation Work Plan" Document No. CS-OP-PN-060, Rev. 0.

1.2.2 Energy*Solutions*, "Vapor Mitigation Work Plan," Leica, Inc. (Site #915156), Cheektowaga, Erie County, New York, November 2010.

1.2.3 31129-095, "Sub-Slab Groundwater Sampling Results, Leica, Inc. Site; Erie County, Cheektowaga, New York, Inactive Hazardous Waste Disposal Site 915156," July 12, 2011.

1.2.4 Conestoga-Rovers & Associates, "Remedial Investigation Report, Leica, Inc., Cheektowaga, New York, Site Code 915156," October 1994.

1.2.5 Conestoga-Rovers & Associates, "Remedial Pre-Design Work Plan, Leica, Inc., Cheektowaga, New York, Site Code 915156," March 1996.

1.2.6 NES, Inc., "Feasibility Study Addendum Submittal, Leica Optical Site, Cheektowaga, New York," February 3, 1997.

1.2.7 New York State Department of Environmental Conservation, Division of Environmental Remediation, "Record of Decision, Leica, Incorporated Site, Town of Cheektowaga, Erie County, Registry Number 915156," March 1997.

1.2.8 Beacon Environmental Services, Inc., "Passive Soil-Gas Survey, Leica Site, Cheektowaga, New York," prepared for SCIENTECH, Inc., July 19, 2005, Beacon Report No. EM1789.

1.2.9 Energy*Solutions*, "Supplemental Area B Soil Remediation Using Hydrogen Release Compound (HRC), Remedial Action Work Plan for the Leica, Inc. Site, Cheektowaga, New York," May 2007.

1.2.10 New York State Department of Environmental Conservation, Approval of "HRC Injection Plan for Area B, Leica, Inc. (Site #915156), Cheektowaga, New York," November 14, 2007

1.2.11 New York State Department of Environmental Conservation Soil Vapor/Indoor Air Matrices 1 and 2, as published in the New York State Department of Health "Guidance for Evaluating Soil Vapor Intrusion in the State of New York," October 2006.

1.2.12 Energy*Solutions*, "Supplemental Area B Indoor Air and Sub-Slab Soil Gas Sampling Plan" Leica, Inc. Site, Cheektowaga, New York, September 2006.

1.3 Background

The building is owned and operated as a warehouse and distribution center by SamSon Distributing. Currently, there are no activities conducted within the building that use products containing VOCs, however, such products have been used in the past.

Leica, with NYSDEC approval, initiated a Remedial Investigation/Feasibility Study (RI/FS) in November 1993 to address the contamination at the Site. The RI was completed in October 1994 by Conestoga-Rovers & Associates (CRA) (Ref. No. 1.2.4). An FS was submitted by CRA in May 1995 with subsequent revisions in July 1995 and March 1996 (Ref. No. 1.2.5). The final FS addendum was submitted by NES, Inc. (now

Energy*Solutions*) in February 1997 (Ref. No. 1.2.6). Upon issuance of a Record of Decision (ROD) in 1997 (Ref. No. 1.2.7), NYSDEC authorized Leica to begin activities necessary to design and implement the chosen remedial alternative at the Site. NES, Inc. (now Energy*Solutions*) was contracted in 1997 by Leica to design, install and operate a remediation system at the Site which was completed in 1999. A Site Plan showing the location of the remediation areas is included as Figure 2.

In order to determine the potential source of the elevated VOC concentrations in groundwater samples collected from Area B monitoring wells MW-16R and MW-16A, SCIENTECH (now Energy*Solutions*) completed a soil gas survey of the area surrounding these wells in June 2005. Area B is a former dry well located immediately to the east of the main loading dock. The results of the study were provided to NYSDEC on July 19, 2005 (Ref. No. 1.2.8). Several contaminants of concern were detected in the soil gas survey including TCE, 1,1,1 trichloroethane (TCA), DCE and vinyl chloride. Sufficient samples were collected to the west, beneath the building, to locate what was believed to be the western edge of the hot spot which was within approximately 50 feet of the building's eastern side.

In consultation with NYSDEC, a work plan to inject Hydrogen Release Compound® (HRC) at select locations within the site was submitted by Energy*Solutions* on September 27, 2007 (Ref. No. 1.2.9), and subsequently approved by NYSDEC on November 14, 2007 (Ref. No. 1.2.10). HRC injection was used to reduce chlorinated VOC contaminant concentrations in groundwater in addition to a reduction of the VOC concentrations in the soils beneath the main building. In May 2008, Energy*Solutions* completed the implementation of the HRC injection plan, including injections within Area B.

Subsequent quarterly groundwater sampling indicated that VOC concentrations in groundwater had been reduced in Area B (MW-16, MW-16A, MW-24 and MW-24A). However, the source of the continuing concentrations of TCE observed in the shallow unconsolidated aquifer at the southeast corner of the building in MW-6 was still unclear.

Energy*Solutions* proposed additional groundwater investigation within the portion of the building west and south of MW-24 and MW-24A to determine the extent of the elevated concentrations of VOCs in groundwater generated by the former drywell located outside the main facility loading dock (Ref. No. 1.2.1). All samples collected during the investigation (INT-1 through INT-5 and EXT-1) were collected as grab samples from temporary wells; permanent wells were not installed.

The proposed sampling locations were chosen based on the direction of groundwater flow as observed during times when groundwater was not influenced by pumping well MW-16A. Flow direction in the area is generally to the southwest beneath the building. Two groundwater samples were collected at distances of 50 feet and 150 feet down gradient (i.e., southwest) from the MW-24 well pair. An additional four locations were proposed to the southeast of the MW-24 well pair to determine the source of the low concentrations of TCE observed in the shallow unconsolidated aquifer at MW-6. Two groundwater samples were collected in this southeasterly direction, the first approximately 50 feet and the second approximately 150 feet southeast from the MW-24 well pair, and along the eastern edge of the building. The third groundwater sample collected to the southeast

was collected near the southeast corner of the building and the fourth was collected outside the southeast corner of the building between the building and the MW-6 well pair.

The groundwater grab samples were collected on June 8, 2011. The six supplemental samples were collected from temporary wells cased with 1" PVC piping and screened at an approximate depth of five to fifteen feet below the building floor, or the ground surface in the case of sample EXT-1. The wells INT-1 through INT-5 were installed on June 7th and EXT-1 was installed on June 8th 2011. The wells were allowed to equilibrate overnight and then one sample was collected from each of the six temporary wells on June 8th 2011.

Data collected from these supplemental groundwater grab samples indicated that elevated contaminant concentrations were present in the groundwater to the west and south of monitoring well pair MW-24 the most down gradient well pair located within the building footprint as of the date the samples were collected.

TCE concentrations ranged from a low of non-detectable in INT-1 to a high of 82,000 ug/l in INT-2. Cis 1,2 DCE concentrations ranged from a low of non-detectable in INT-1 to a high of 9,100 ug/l in INT-2. Vinyl Chloride concentrations ranged from a low of non-detectable in INT-1, INT-2 and EXT-1 to a high of 140 ug/l in EXT-1.

Based on these results, it appears that the groundwater plume from the former drywell has migrated to the west as far as location INT-2 and to the south as far as location INT-4. Lower concentrations at location INT-3 suggest that location INT-2 represents the limits to the west of the major elevated VOC concentrations in the groundwater. Based on the locations of these two samples (INT-2 and INT-3) the data collected in June of 2011 suggests that the releases from the former drywell have impacted the groundwater to the west approximately 300 feet.

Concentrations of TCE in samples INT-1 and INT-4 collected more directly to the south of the former drywell confirm that the majority of the groundwater flow travels to the west and south. The TCE concentration in INT-1 was non-detect, and the TCE concentration in INT-4 was 830 ug/l. Concentrations in the southern most sampling points INT-5 and EXT-1 were very low and non-quantifiable at 0.36 ug/l (J) and 0.35 ug/l (J) respectively suggesting that the limits of the southern impact of the drywell release is located somewhere between samples INT-4 and INT-5.

The high VOC concentrations detected in some of the groundwater grab samples collected during the June 8, 2011 sampling event, presented the potential for elevated sub-slab vapor concentrations to be present beneath the building floor slab. The "Supplemental Sub-Slab Gas Investigation Work Plan" Document No. CS-OP-PN-060, Rev. 0, (Ref. No. 1.2.1), was implemented in order to confirm whether the sub-slab vapors contained elevated VOC concentrations, and if so, to delineate the extent of these elevated concentrations and thus reveal a more thorough picture of areas with the potential for elevated VOC concentrations in the groundwater.

Samples were collected using Suma Canisters in accordance with the Supplemental Sub-Slab Gas Investigation Work Plan. Two types of sub-slab samples were collected. Twenty nine (29) 30-minute screening samples were collected in order to provide data

that might be used to assess the potential locations of groundwater contamination beneath the floor slab. To compliment these screening samples, four additional locations were selected for the collection of 8-hour indoor air and sub-slab samples which would provide data that could be compared to the NYSDOH Soil Vapor/Indoor Air Matrices 1 or 2 as appropriate.

The majority of the samples were collected from the central portion of the building with some additional locations added near the northern, western and southern perimeters of the building.

Results of the supplemental sub-slab vapor investigation indicated that there are additional areas within the building with elevated concentrations of chlorinated VOCs and aromatic VOCs in the sub-slab vapors. The locations of the highest sub-slab concentrations detected coincided well with the locations of the highest groundwater grab sample concentrations, suggesting that in some locations VOCs in the groundwater are evaporating and migrating through the vadose zone and becoming trapped beneath the floor slab. Sub-Slab sample 8hr-002, the sub-slab vapor sample with the highest TCE concentrations (TCE at 420,000 ug/m^3) was collected directly above groundwater sample INT-2, the groundwater grab sample with the highest concentrations (TCE at 82,000 ug/l). Correlation between groundwater sample results and sub-slab sample results was also good in the areas immediately to the west of groundwater sample INT-3. This sample was thought to represent the western boundary of the groundwater contamination, and sub-slab samples to the west of INT-3 seem to confirm this conclusion. Sub-slab vapor concentrations of TCE in samples 011, 012, 013, 025, 026, 018, 017 and 015 all to the south and west to INT-3 were less than 250 ug/m^3 in all cases. These results are significantly less than the concentrations of sub-slab samples 8hr-002 (TCE at 420,000 ug/m^3), 8hr-003 (TCE at 11,000 ug/m^3), 010 (TCE at 6,200 ug/m^3), 009 (TCE at 79,000 ug/m^3), 020 (TCE at 2,300 ug/m^3) and 021 (TCE at 200,000 ug/m^3), all located to the north and or east of INT-3.

Although the results revealed this zone of lower concentrations in the central building area just south and west of sample INT-3, higher sub-slab VOC concentrations were detected once again further to the south and west represented by samples 007 (TCE at 1,400 ug/m^3), 008 (TCE at 3600 ug/m^3), 027 TCE at 3,500 ug/m^3) and 028 (TCE at 60,000 ug/m^3). The data therefore suggests that the extent of the impacts from the drywell release may end in the vicinity of sample INT-3, and these elevated concentrations further to the south and west may have resulted from separate small surface releases unrelated to the former dry well.

2.0 SCOPE OF WORK

2.1 Additional Groundwater Grab Samples

Four groundwater grab samples will be collected at locations throughout the facility to provide a snapshot of the contaminants in the groundwater under the slab within the building. This data will also indicate whether the elevated soil vapors in the selected areas are the result of surface spills or groundwater contamination. See Figure 3 for a scaled map with sample locations.

2.1.1 The first groundwater sample (INT-10) will be collected in the immediate vicinity of the previously collected "30min-028" sub-slab air sample location in the southwest portion of the building. This sample will be located in or near the hallway where the ss-30min-028 sample was collected. The ss-30min-028 sample was analyzed and contained elevated concentrations of TCE and CIS 1,2-DCE at 60,000 and 3,400 ug/m3, respectively. This first groundwater grab sample is located in this area to determine the relationship between the groundwater and the observed elevated soil vapors in the "ss-30min-028" sample collected in September 2011. If the groundwater VOC concentrations in this area are not elevated, a surface release would likely be the source of the aforementioned elevated sub-slab vapors.

2.1.2 The second groundwater sample (INT-11) will be collected in the southern portion of the building, located centrally between the "ss-30min-027" and "ss-30min-008" sample locations. Analysis of the "ss-30min-027" and "ss-30min-008" samples revealed elevated concentrations of TCE at 3,500 and 3,600 ug/m3 respectively. The sample is located in this area to determine if elevated VOC concentrations in the sub-slab vapors in the area are the result of groundwater contamination or more likely the result of surface spills that have not reached groundwater and exist just below the slab.

2.1.3 The third groundwater grab sample (INT-12) will be collected in the northeasterly portion of the building in the approximate down-gradient location from the MW-24/24A and MW-16A/16R well pairs. This location was chosen to confirm whether the contamination coming from the known dry well source at Area "B", has migrated past the MW24/24A well pair and is continuous to the INT-2 sampling location. The soil vapor data suggests that in the middle portion of the building there is a large area where concentrations decrease from northeast to southwest. The sample is located in this area to determine if elevated VOC concentrations in the sub-slab vapors in the area are the result of groundwater contamination or more likely the result of surface spills that have not reached groundwater and exist just below the slab.

2.1.4 The fourth groundwater grab sample (INT-13) will be collected in the northern portion of the building between samples "ss-30min-024" and "ss-30min-021". This sample serves as an up-gradient groundwater sample that will serve two purposes. The first is to establish if the groundwater plume is extending in the northerly direction or not, the second is to correlate to the original "ss-30min-024" sample and to the proposed 8hr correlation sample.

Depth to groundwater is approximately 7 feet to 9 feet below the floor surface inside the building, or ground surface outside the building. Groundwater samples will be collected from a fine sand unit typically located just above the bedrock surface. Depth to bedrock in the proposed drilling area ranges from approximately 13 feet to 20 feet below ground surface.

A direct-push drilling rig and coring drill will be utilized to advance the proposed boreholes in overburden materials, typically very find sands, silts and clay. Total depth of any one boring is not expected to exceed 20 feet below ground surface.

Soil sampling will be performed using a continuous sampling method such as Geoprobe's Macro Core system. The soil will be screened with a photo-ionization detector (PID) and logged for its characteristics. Based on field observations samples may be retained for laboratory analysis.

Groundwater samples will be collected using a one inch temporary PVC casing and screen that will be inserted such that the groundwater interface is within the screened interval and allowed to equilibrate. Groundwater sampling will be conducted the following day using the Low Flow/Low Stress method described in Energy*Solutions* "Low Flow/Low Stress Groundwater Purging" Standard Operating Procedure (SOP). Groundwater samples will be collected from the fine sand zone located immediately above the top of the bedrock surface. Groundwater samples will be collected into laboratory supplied and cleaned glassware and will be submitted to Columbia Analytical Services under chain-of-custody and analyzed for VOCs via EPA Method 8260.

After groundwater samples are collected, interior boreholes will be backfilled with a cement-bentonite grout to the base of the concrete slab and finished with concrete, flush with the interior floor grade.

Drill cuttings and fluids generated during the installation of monitoring wells and water generated during well development will be collected and containerized. Handling of investigation-derived wastes (IDW) will be performed in accordance with all federal, state, and local regulations. All IDW will be stored at a designated location at the Leica, Inc. Site for subsequent characterization and disposal.

Quality Assurance and Quality Control groundwater samples will be collected in accordance with Energy*Solutions* "Quality Assurance and Quality Control" SOP. Specifically, this sampling event will utilize the following three different types QA/QC samples.

1. Field or equipment blanks will be collected at a rate of one for every 20 samples and at least one per sampling event. The equipment blank is intended to assess the success of the decontamination process and is collected after sampling equipment has been cleaned. The field blank matrix will be de-ionized water or distilled water if available. The sample is drawn through the sampling equipment in the same manner as the non-QA/QC samples and submitted for the same analysis.
2. Trip blanks will be utilized at a rate of one trip blank per cooler containing VOC samples. Trip blanks are used to assess the handling process from the project site to the laboratory. These blanks are typically pre-filled by the laboratory and included in a one trip blank per cooler rate.

3. The third type of QA/QC sample that will be collected is a duplicate, at a rate of one for every 20 samples collected and at least one per sampling event. Duplicate samples are collected using the same methodology and source as the sample they are duplicating. This sample is collected to assess the ability to replicate results from two samples taken under the same conditions.

It is anticipated that the aforementioned groundwater sample collection will be completed in one day following drilling activities, one trip blank, one equipment blank, and one duplicate will be collected.

2.2 Sub-slab and Indoor/Ambient Air samples and Correlation samples

Energy*Solutions* intends to collect sub-slab and/or indoor ambient air samples at 13 different locations throughout the facility during this sampling effort to further delineate the VOC concentrations in the sub-slab and indoor air to determine the need for additional mitigation at the SamSon facility. See Figure 3 for a scaled map and sample locations.

Three types of sub-slab gas samples will be collected at these 13 locations. The first sample type will be 30-minute screening samples that will be collected in order to provide data that may be used to assess the potential extent of soil vapor contamination beneath the slab. The data collected in this manner will be used only for screening, and will not be compared to the New York State Department of Health (NYSDOH) matrices (Ref. No. 1.2.11). The 30-minute screening samples (031-035) will be collected from five locations shown on Figure 3.

The second sample type will be collected at five locations that have been selected for the collection of 8-hour indoor air and 8-hour sub-slab samples. These samples will allow the comparison of results to the NYSDOH Soil Vapor/Indoor Air Matrices 1 or 2, as appropriate. These NYSDOH compliant 8-hour samples are intended to confirm compliance with the NYSDOH Soil Vapor/Indoor Air Matrices in the northern portion of the building and in the central portions of the building. The 8-hour screening samples (8hr-039– 8hr-043) will be collected from five locations shown on Figure 3.

The third type of sample will be used to provide correlations between the 30-minute samples and the 8-hour sub-slab and ambient air samples. This correlation is intended to provide some insight on the concentrations based upon sample drawing time (30min vs. 8hr) at similar locations. These 8-hour sub-slab and ambient air samples will be collected at three locations (8hr-036 – 8hr-038) where 30-minute samples were collected during the last round of sub-slab sampling. Figure 3 shows where each type of sample will be collected, as well as the sample locations that the correlation samples are being compared to.

2.3 Sample Location Selection

The five 30-minute sub-slab screening sample locations (032-036) were chosen to further delineate the extent of sub-slab vapor contamination beneath the site building.

1. Three of the samples (032-034) will surround the previously sampled "ss-30min-028" to the north, east, and south. These sample locations will help delineate the extent as well as the direction of the plume associated with the original sample.
2. The other two 30-minute screening sample locations (035 & 036) are to the north and to the south of the previous sub-slab vapor sample locations in the far northern and southern portions of the building. These additional samples will confirm that sub-slab VOC concentrations are not present north and south of the original locations.

The five 8-hour indoor air and sub-slab sample locations (8hr-040– 8hr-044) are intended to determine compliance with the NYSDOH Soil Vapor/Indoor Air Matrices in the northern portion of the building and in the central portions of the building.

1. The first pair (sub-slab and indoor air) of NYSDOH compliant samples (8hr-040) will be collected to the northwest of the MW-24/24A well pair. This sample is expected to provide data indicating that further mitigation in the area to the north of MW-24/24A well pair is not needed.
2. The second pair of NYSDOH compliant samples (8hr-041) will be collected in the immediate vicinity of the previously sampled "ss-30min-023" sample This sample location is expected to provide data indicating that mitigation to the north and west of this sample location is not needed.
3. The third pair of NYSDOH compliant samples (8hr-042) will be collected to the south of the second NYSDOH compliant sample and to the east of the previously sampled "ss-30min-022" sample. This sample is expected to provide data confirming that mitigation is not needed in this area.
4. The fourth pair of NYSDOH compliant samples (8hr-043) will be collected in the middle portion of the building, in the middle of the four previously collected samples "ss-30min-026", "ss-30min-025", "ss-30min-017", and "ss-30min-018". This sample location is expected to provide data confirming that mitigation is not needed in the middle portion of the building.
5. The fifth NYSDOH compliant samples (8hr-044) will be located in the area immediately south of the previously sampled "ss-30min-005" and "ss-30min-006". This sample location is expected to provide data that once again will confirm that mitigation is not needed in this area.

The three 8-hour samples (8hr-037 – 8hr-039) that are intended to serve as correlation samples will be collected to provide data to correlate the sample data from the 30-minute sample interval to the 8-hour sample interval. The sample locations are spread out so that the correlation is not location specific. These samples will also confirm the sample concentrations that were identified in the previous sampling round.

1. The first sample location (8hr-037) is in the original location of the previously sampled "ss-30min-024" and will serve to correlate the 8-hour sample interval to the 30-minute sample interval in this area.
2. The second sample location (8hr-038) is in the original location of the previously sampled "ss-30min-028" and will serve to correlate the 8-hour sample interval to the 30-minute sample interval in this area.

3. The third sample location (8hr-039) is in the original location of the previously sampled "ss-30min-008" and will serve to correlate the 8-hour sample interval to the 30-minute sample interval in this area.

All sampling locations described above are shown in Figure 3.

2.4 Sample Methodology

2.4.1 30-minute Screening Samples

The 30-minute samples will be collected using the same method as described in the "Supplemental Sub-Slab Gas Investigation Work Plan" Document No. CS-OP-PN-060, Rev. 0 (Ref. No. 1.2.1). These samples will be used for screening purposes only and the data will not be compared to the NYSDOH matrices.

Sub-slab vapor samples will be collected from the top two-inches of soil or aggregate located immediately below the slab. Sub-slab vapor samples will not be collected in close proximity to cracks or voids in the slab in order to minimize potential ambient air infiltration. Temporary sub-slab vapor probe installations will be constructed by:

- Drilling a one-inch diameter borehole through the concrete slab using an electric rotary hammer drill,
- Inserting Teflon™ tubing into the borehole to a maximum of two inches into the sub-slab soil or aggregate,
- Backfilling the annular space with clean, coarse sand to within approximately one-inch of the top of the floor slab
- Sealing the borehole with non-VOC emitting modeling clay to ensure that the sub-slab vapor sample is not diluted with air from within the building.

For the 30-minute screening samples, a length of Teflon ™ tubing will be connected from the draw point in the floor to a photo-ionization detector (PID). The PID will be used to purge three volumes of the tubing and to monitor the sub-slab vapor. Following purging activities, the PID will be turned off and the tubing will be connected to the SUMMA canister. Then the regulator will be opened to allow airflow from the draw point towards the SUMMA canister to collect the vapor sample. The pre-calibrated regulator on the SUMMA canister will restrict flow to allow sample collection over a 30-minute period for these screening samples. The vacuum in the SUMMA canisters should not fall to zero. If a canister exhibits a vacuum reading of zero, please contact the Project Manager to discuss its usability.

Six liter, laboratory supplied and certified clean SUMMA canisters will be used for the five screening samples with sample collection occurring over a period of approximately 30 minutes using the appropriate 30-minute calibrated regulators provided by the laboratory.

Each air sample collected in the SUMMA canisters will have its serial number and the corresponding regulators serial number recorded in the field book or the provided sample log sheet from the laboratory in order to track which regulators were used

with which canisters. Start and ending times as well as start and ending vacuum readings will also be recorded on these sheets and provided to the lab and to the Project Manager.

2.4.2 8-Hour NYSDOH Compliant Samples

The 8hr Sub-slab vapor and ambient air samples will be collected in compliance with NYSDOH guidance (Ref. No. 1.2.11) and in accordance with this work plan. Sampling time periods will be as specified herein, and the tracer will be used on the sub-slab 8-hour samples only.

Sub-slab vapor samples will be collected from the top two-inches of soil or aggregate located immediately below the slab. Sub-slab vapor samples will not be collected in close proximity to cracks or voids in the slab in order to minimize potential ambient air infiltration. Temporary sub-slab vapor probe installations will be constructed by:

1. Drilling a one-inch diameter borehole through the concrete slab using an electric rotary hammer drill,
2. Inserting Teflon™ tubing into the borehole to a maximum of two inches into the sub-slab soil or aggregate,
3. Backfilling the annular space with clean, coarse sand to within approximately one-inch of the top of the floor slab,
4. Sealing the borehole with non-VOC emitting modeling clay to ensure that the sub-slab vapor sample is not diluted with air from within the building.

Similar six liter, laboratory supplied and certified clean SUMMA canisters with 8-hour calibrated regulators will be used for the collection of the eight sub-slab and the corresponding eight indoor air samples to be compared to the NYSDOH Soil Vapor/Indoor Air Matrices 1 or 2, as appropriate.

Each air sample collected in the SUMMA canisters will have its serial number and the corresponding regulator's serial number recorded in the field book or the provided sample log sheet from the laboratory in order to track which regulators were used with which canisters. Start and ending times as well as start and ending vacuum readings will also be recorded on these sheets and provided to the lab and to the Project Manager.

For the 8-hour period sub-slab samples, a length of Teflon ™ tubing will be connected from the draw point in the floor to a three way "tee" and one port will go to a valve that passes through the shroud and will be used to purge and ultimately connect to the photo-ionization detector (PID), the second port will connect with another piece of tubing to the 8 hour regulator that is pre mounted to the SUMMA canister under the shroud. The PID will be used to purge three volumes of the tubing and to monitor the sub-slab vapor. Following purging activities, helium will be added into the shroud and monitored with a helium detector so that a 30% concentration within the shroud is achieved and maintained. The helium will be monitored from a port in the shroud that is near the floor so that the majority of the shroud is contained at a minimum of 30% helium. The helium detector is also used to purge the sample

train to detect any leaks in the sample train. If leaks are detected, the system will be re-evaluated and leaks fixed. Once the leaks have been fixed and the shroud filled and sample train checked for leaks again, the regulator will be opened to allow airflow from the draw point towards the SUMMA canister to collect the vapor sample. The pre-calibrated regulator on the SUMMA canister will restrict flow to allow sample collection over an 8 hour period for these samples that will be ultimately compared to the NYDOH matrices. The vacuum in the SUMMA canisters should not fall to zero. If a canister exhibits a vacuum reading of zero, please contact the Project Manager to discuss its usability.

For the 8-hour ambient air samples, the SUMMA canisters will be placed in close proximity to the corresponding sub-slab canister at a "working height" which is usually 3 to 4 feet above the slab where the sub-slab sample is being collected.

2.4.3 8-Hour Correlation Samples

The 8-hour correlation samples will be collected using the hole previously drilled to obtain the corresponding 30-minute sample. This will ensure that the vapors collected during this sampling event are from the same location as the samples they are being compared to.

The vacuum in the SUMMA canisters should not fall to zero. If a canister exhibits a vacuum reading of zero, please contact the Project Manager to discuss its usability.

2.4.4 Quality Assurance and Quality Control Samples

Quality Assurance and Quality Control samples will be collected in accordance with Energy*Solutions* "Quality Assurance and Quality Control" Standard Operating Procedure (SOP). Specifically, this Sub-Slab and Indoor/Ambient Air samples and Correlation sampling event will utilize two different types QA/QC samples.

The first sample type is a field or equipment blank that will be collected at a ratio of one for every 20 samples collected and at least one per sampling event. The equipment blank will be collected using a typical setup of canister and regulator located in an area where VOC contamination is not known to exist (typically outside). This is methodology is used to assess the canister and regulators function as well as its cleanliness.

The second QA/QC sample type that will be collected is a duplicate, at a rate of one for every 20 samples collected and at least one per sampling event. The field duplicate will be collected at the same time and location as the actual sample it is duplicating, for example; if an 8hr helium shrouded sample were to be duplicated for QA/QC purposes, the duplicated sample would need to be taken from the same sample point and under the same helium shroud.

3.0 DATA MANAGEMENT

3.1 Sample Control and Analysis

The grab groundwater samples collected will be relinquished under Chain-of-Custody (COC) to Columbia Analytical Services of Rochester, New York, a National Laboratory Accreditation Program (NELAP) Laboratory. All groundwater grab samples will be analyzed for VOCs using United States Environmental Protections Agency (EPA) method SW-846/8260b.

The sub-slab vapor and indoor air samples collected in the SUMMA canisters will be relinquished under COC to Columbia Analytical Services of Rochester, New York, a NELAP laboratory. All air samples will be analyzed for VOCs using EPA Method TO-15.

3.2 Field Data

The field data collected will be managed using forms and/or bound field notebooks. All sample measurements taken during this project will be identified by matrix, type, and location to avoid ambiguity. Field records will include the following minimum information:

- A chronological listing of significant site events and sampling activities;
- Site name, field team members, signature, and date on each page;
- Site conditions, notes or sketches of sampling locations and sample descriptions;
- Sample times; and
- Record of all measurements.

3.3 Laboratory Data

The laboratory will be responsible for maintaining analytical logbooks and laboratory data as well as a sample inventory for submittal to Energy*Solutions*, if requested. Laboratory data will be transcribed onto a computer-based management system. This data will be summarized in a manner that provides efficiency in data reduction, tabulation, and evaluation. Un-consumed sample volume will be maintained by the laboratory for a period of at least 30 days after issuance of the final report to Energy*Solutions* under the conditions prescribed by the appropriate analytical methods for additional analysis, if necessary. Raw data files will be maintained by the laboratory and at a minimum will consist of the following files:

- Project-related plans;
- Project login data;
- Sample identification documents;
- Chain-of-Custody records;
- Project-related correspondence;

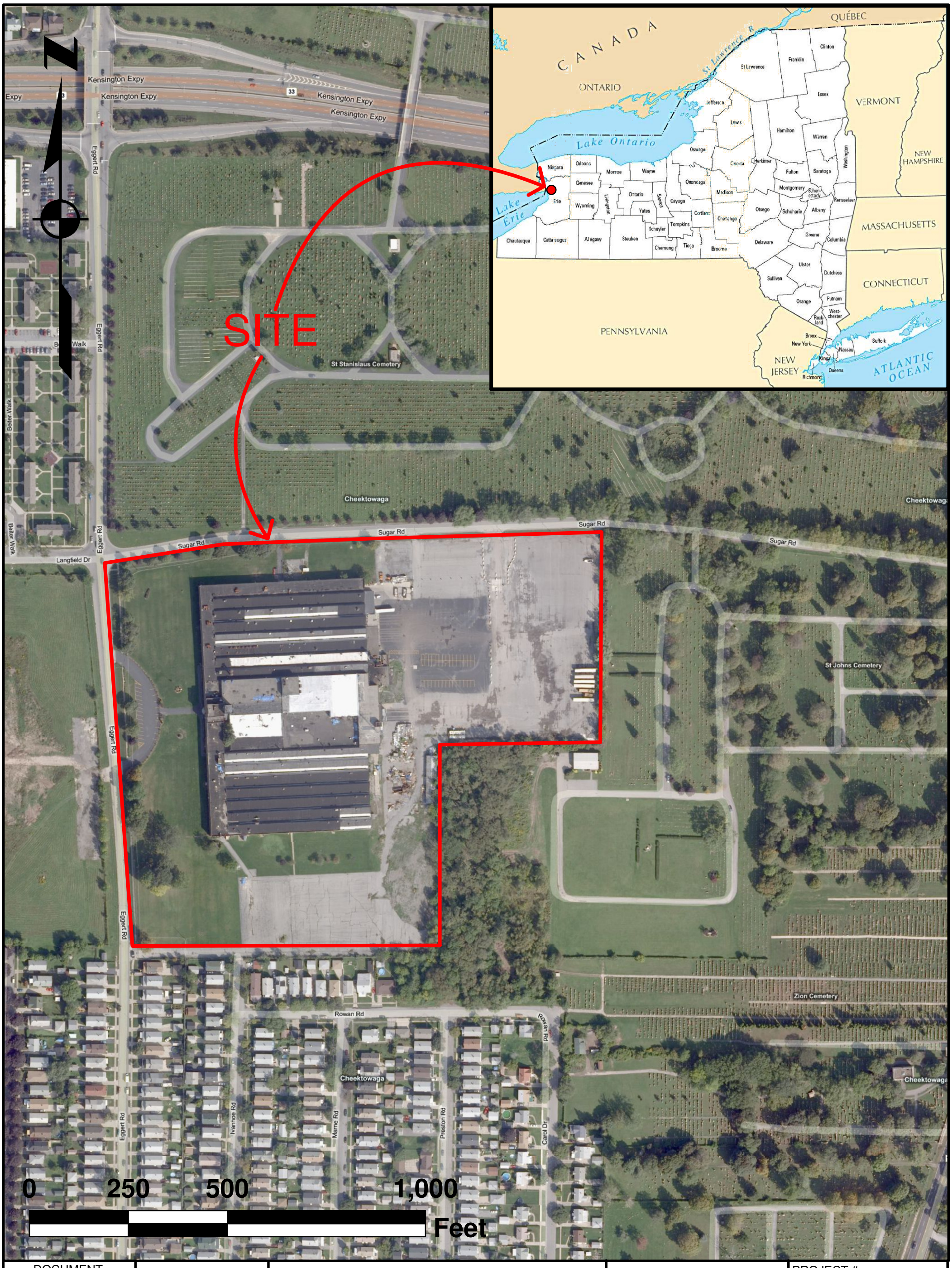
- Raw data sheets QC data;
- Copies of all final reports pertaining to the project; and
- Sample preparation records.

Raw laboratory data files will be retained by the laboratory for a minimum of 5 years.

3.4 Data Review and Reporting

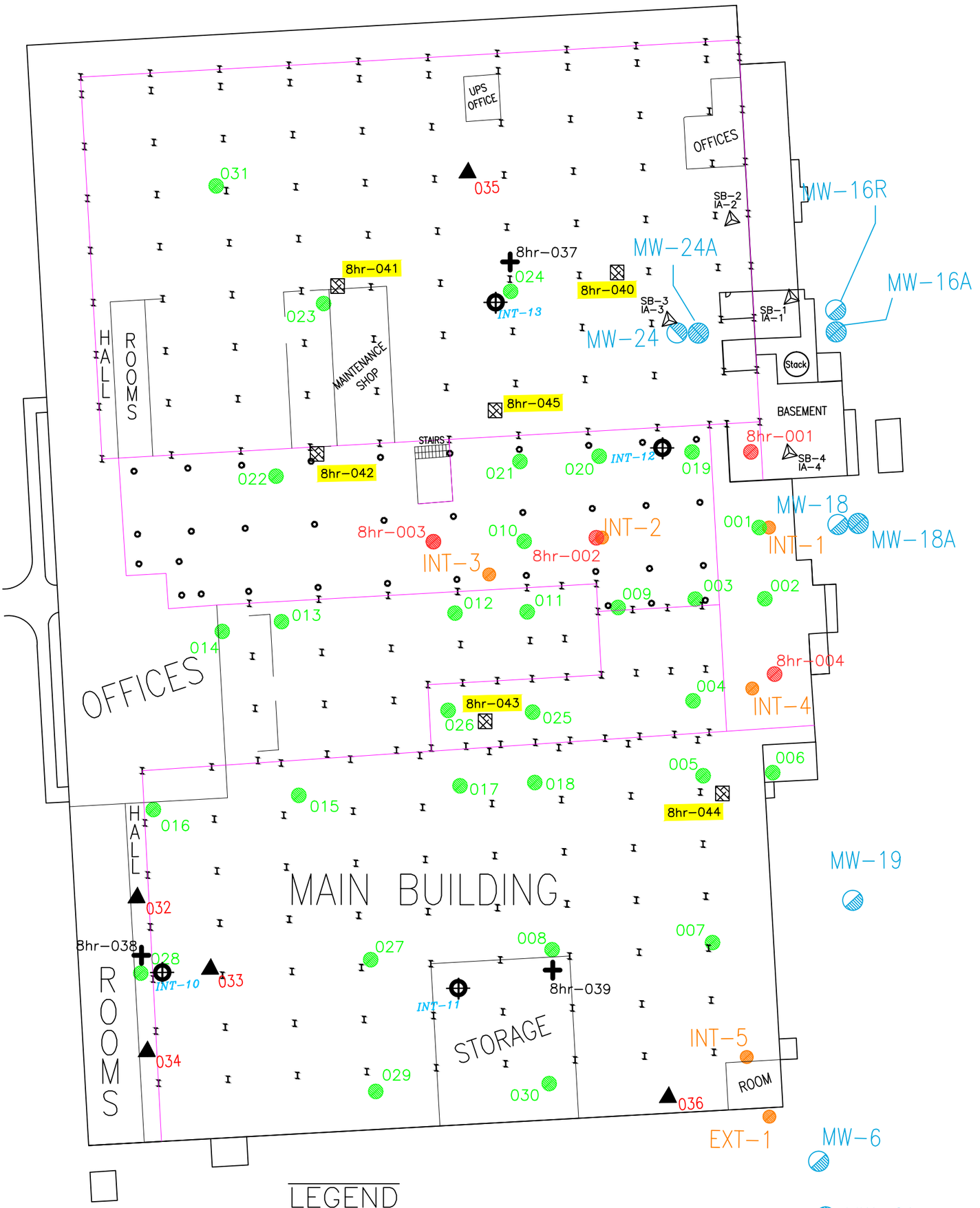
Sub-slab vapor data and Groundwater grab data collected during this investigation will be reviewed and plotted on site mapping to help delineate VOCs in the underlying groundwater and sub-slab vapor and indoor air. The data from the eight, 8-hour sampling locations will also be compared to the Soil Vapor/Indoor Air Matrices 1 and 2 of the NYSDOH guidance (Ref. No. 1.2.11) to assess the need for additional mitigation efforts within the main warehouse. The 30-minute sub-slab gas data will be used to determine the extent of the contamination as well as the need for additional permanent groundwater monitoring wells within the building. The data may also be used to determine appropriate locations, if needed, for additional HRC injections to remediate identified groundwater contamination. The 8-hour data collected adjacent to previous 30-minute sample locations for the purpose of correlating the data between the two different sample durations will also be analyzed and conclusions drawn on their relevance to the data set. The data will be summarized and submitted in an annual project status report to NYSDEC.

FIGURES



DOCUMENT CONTROL NO.	PROJECT	LEICA MICROSYSTEMS INC. 203 EGGERT ROAD CHEEKTOWAGA, NY	ENERGYSOLUTIONS 100 Mill Plain Road Danbury, CT 06811 203-797-8301	PROJECT # 137015
				FILENAME:
				SCALE: *SEE SCALEBAR* / DATE: 12/9/09
REVISION NO.	DRAWING	SITE LOCATION MAP		BY: MT / CK:
				FIGURE # 1

DOCUMENT CONTROL NO.	PROJECT	LEICA MICROSYSTEMS INC. 203 EGGERT ROAD CHEEKTOWAGA, NY	ENERGY SOLUTIONS 100 Mill Plain Road Danbury, CT 06811 203-797-8301	PROJECT # 137015 FILENAME:
REVISION NO.	DRAWING	Site Plan		SCALE: *SEE SCALEBAR* DATE: 8/17/10 BY: MT CK: PM FIGURE # 2



LEGEND

- Possible Foundation
- Non-support Interior Walls
- 8hr-037 = Proposed 30 minute/8 hour correlation samples
- 033 = Proposed Subslab samples
- INT-12 = Proposed Groundwater grab samples
- 8hr-042 = Proposed DOH compliant Indoor air and subslab samples
- MW-2 = OVERBURDEN MONITORING WELL
- MW-2A = BEDROCK MONITORING WELL
- 025 = EXISTING 30 MINUTE SOIL GAS SCREENING SAMPLING LOCATIONS
- 8hr-002 = EXISTING PROPOSED DOH COMPLIANT INDOOR AIR AND SUBSLAB SAMPLES
- INT-1 = EXISTING DIRECT PUSH GROUNDWATER SAMPLE LOCATIONS
- SB-4 IA-4 = MARCH 23, 2010 EXISTING INDOOR AIR AND SUBSLAB AIR SAMPLES

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REVISION NO.	DRAWING	Proposed Sub-Slab, Indoor Air, and Groundwater Grab Sampling Locations		SCALE: See Scalebar DATE: 6/22/12 BY: MT CK: RM FIGURE # 3