SITE MANAGEMENT PLAN

LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550
NYSDEC SITE NUMBER: 130187
USEPA ID #: 110004352995

REPORT DATE: FEBRUARY 6, 2020

PREPARED FOR:

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date
4	02/06/2020	REVISION	

[FEBRUARY 2020]

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CERTIFICATION STATEMENT

I ADAM K. SCHEU certify that I am currently a Qualified Environmental Professional as defined by the Environmental Protection Agency (EPA) 40 CFR Part 312.10 Definitions and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Adam K. Scheu QEP

FEBRUARY 6, 2020 DATE

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List of Acronyms

AS - Air Sparging
ASP - Analytical Services Protocol
BCA - Brownfield Cleanup Agreement
BCP - Brownfield Cleanup Program
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act
CAMP - Community Air Monitoring Plan
C/D - Construction and Demolition
CFR - Code of Federal Regulation
CLP - Contract Laboratory Program
COC - Certificate of Completion
CO2 - Carbon Dioxide
CP - Commissioner Policy
DER - Division of Environmental Remediation
EC - Engineering Control

List of Acronyms (Continued)

ECL - Environmental Conservation Law
ELAP - Environmental Laboratory Approval Program
ERP - Environmental Restoration Program
EWP - Excavation Work Plan
GHG - Green House Gas
GWE&T - Groundwater Extraction and Treatment
HASP - Health and Safety Plan
IC - Institutional Control
NYSDEC - New York State Department of Environmental Conservation
NYSDOH - New York State Department of Health
NYCRR - New York Codes, Rules and Regulations
O&M - Operation and Maintenance
OM&M - Operation, Maintenance and Monitoring
OSHA - Occupational Safety and Health Administration
OU - Operable Unit
PID - Photoionization Detector
PRP - Potentially Responsible Party
PRR - Periodic Review Report
QA/QC - Quality Assurance/Quality Control
QAPP - Quality Assurance Project Plan
RAO - Remedial Action Objective
RAWP - Remedial Action Work Plan
RCRA - Resource Conservation and Recovery Act
RI/FS - Remedial Investigation/Feasibility Study
ROD - Record of Decision
RP - Remedial Party
RSO - Remedial System Optimization
SAC - State Assistance Contract
SCG - Standards, Criteria and Guidelines
SCO - Soil Cleanup Objective
SMP - Site Management Plan
SOP - Standard Operating Procedures
SOW - Statement of Work
SPDES - State Pollutant Discharge Elimination System
SSD - Sub-slab Depressurization
SVE - Soil Vapor Extraction
SVI - Soil Vapor Intrusion
TAL - Target Analyte List
TCL - Target Compound List
TCLP - Toxicity Characteristic Leachate Procedure
USEPA - United States Environmental Protection Agency
UST - Underground Storage Tank
VCA - Voluntary Cleanup Agreement
VCP - Voluntary Cleanup Program

EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification:	NYSDEC Site Number: 130187 USEPA ID #: 110004352995 Love Cleaners, 416 Clinton Street, Hempstead, NY
Institutional Controls:	1. The property may be used for residential, restricted residential; commercial, and industrial use;
	2. Imposition of an environmental easement that requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3)
	3. Imposition of an environmental easement that restricts the use of groundwater as a source of potable water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
	4. Imposition of an environmental easement that requires compliance with the Department approved Site Management Plan.
	5. All ECs must be inspected at a frequency and in a manner defined in the SMP.
Engineering Controls:	Sub Slab Depressurization System (SSDS)
Inspections:	**Frequency**
SSDS Inspection	Monthly
Maintenance:	
SSDS Maintenance	As needed
Reporting:	
Periodic Review Report	Annually

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the Love Cleaners located in Hempstead, New York (hereinafter referred to as the "Site"). The Site is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program Site No. 130187 which is administered by New York State Department of Environmental Conservation (NYSDEC).

Mark Wieboldt entered into an Order on Consent on December 2, 2012 with the NYSDEC to remediate the site. A figure showing the site location and boundaries of this site is provided (see Figure 1 - Site Location Map). The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in Appendix B.

After completion of the remedial work, some contamination was left at this site, which is hereafter referred to as "remaining contamination". Institutional and Engineering Controls (ICs and ECs) have been incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC and recorded with the Nassau County Clerk, requires compliance with this SMP and all ECs and ICs placed on the site.

This SMP was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the Order on Consent (Index #A1-0780-11-11; Site #130187) for the site, and thereby subject to applicable penalties.

All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in Appendix A of this SMP.

This SMP was prepared by Optima Environmental Services ('Optima'), on behalf of Mark Wieboldt, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated: May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the site.

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. In accordance with the 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.

1.3 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

- 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.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity. Depending on the nature of the proposed activities, an Excavation Work Plan may be required.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- 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 SCs 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.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

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

- 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/Remedial Party has been provided with a copy of the Order on Consent, and all approved work plans and reports, including this SMP.

- 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 to the NYSDEC.

Table A below includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix A.

Table A: Notifications*

Name	Contact Information
Jared Donaldson NYSDEC Project Manager	(518) 402-9176 jared.donaldson@dec.ny.gov
Walter Parish NYSDEC Regional HW Engineer	(631) 444-0241 walter.parish@dec.ny.gov
Kelly Lewandowski NYSDEC Site Control	(518) 402-9569 kelly.lewandowski@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS & REMEDIAL ACTION

2.1 Site Location & Description

The site is located in Hempstead, Nassau County, New York and is identified as Section 34 Block J and Lots 540 and 541 on the Nassau County Tax Map (see Figure 4 – Tax Map). The site is an approximately 0.2-acre area and is bounded by a residential property to the north, Lincoln Boulevard to the south, the Village of Hempstead's Clinton Street well field and water filtration plant to the east, and Clinton Street to the west (see Figure 2 – Site Layout Map). The boundaries of the site are more fully described in Appendix B –Environmental Easement. The owner(s) of the site parcel(s) at the time of issuance of this SMP is:

Mark Wieboldt
3 Chase Lane
Bethpage, NY 11714

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: one on-site building of approximately 4,125 square feet and paved parking lot. The Site is zoned commercial and is currently utilized for commercial uses. Site occupants include a laundromat that does not include dry cleaning.

The properties adjoining the Site and, in the neighborhood, surrounding the Site primarily include commercial and residential properties. The properties immediately south of the Site include residential properties, gas station, and automotive shop; the properties immediately north of the Site include residential properties, a liquor store, and a delicatessen; the properties immediately east of the Site include the Village of Hempstead's Clinton St. Well Field and Water Filtration Plant; and the properties to the west of the Site include residential properties and an appliance store.

2.2.2 Geology

The area is made up of coastal plain deposits which may be up to 2,000-ft thick. The site appears to be located on the Monmouth and Matawan groups within the Magothy formation, which consists of silty clay, glauconitic sandy clay, sand, and gravel units. Based on available data from the nearby Clinton Street well field, unconsolidated deposits underlying the site consist of sand and gravel mixtures up to approximately 65 feet below ground surface (bgs), before clay units occur. No clay formations were encountered in soil borings down to 100 feet bgs during the investigation.

2.2.3 Hydrogeology

Groundwater depth beneath the Site ranges from approximately 25 to 30 feet bgs. Groundwater flow at the Site is to the south. Groundwater monitoring wells were not installed as part of any historic Site investigations.

2.3 Investigation & Remedial History

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

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2.3.1 Summary of Remedial Investigations

Two (2) Remedial Investigation Reports were completed for the target property in accordance with NYSDEC approved RI Work Plan (RIWP):

- *Love Cleaners Remedial Investigation Report, 416 Clinton Street, Hempstead, NY, Conklin Services & Construction Inc., dated: May 17, 2013* - This investigation was completed based on the Remedial Investigation Workplan completed by Conklin Services & Construction, Inc dated July 24, 2012. The work performed under this investigation consisted of the installation of two (2) soil borings on the western edge of the property (1-SB-13, 2-SB-13), two (2) soil vapor monitoring points adjacent to the soil borings (SV-1, SV-2), and one (1) sub-slab monitoring point installed within the building (SS-01). No volatile organic compounds (VOCs) were detected within the soil samples collected from soil borings 1-SB-13 or 2-SB-13. Analytical results for the sub-slab, ambient, and indoor air locations were below the NYSDOH air guidance value. Analytical results for the soil vapor points showed steeply elevated levels of TCE and PCE. Based on these findings, Conklin Services & Construction recommended a short term SVE pilot test be performed, additional soil vapor investigations to delineate the impacted areas, and confirmation sampling to be performed on the sub-slab location.

- *Remedial Investigation Report, Love Cleaners, 416 Clinton Street, Hempstead, NY, Optima Environmental Services, Inc., dated: October 21, 2015* - This investigation was completed based on the Remedial Investigation Workplan completed by Conklin Services & Construction on November 17, 2014. The work performed under this investigation consisted of two (2) external vapor monitoring points (VP-3, VP-4), the installation of two (2) interior sub-slab monitoring point (SS2R, SUBSLAB), the installation of one (1) Soil Vapor Extraction well (SVE), air sampling, and SVE pilot testing. Of the five (5) air samples collected, the ambient air concentrations did exceed air guidance values for MC, but it was determined that elevated levels were most likely attributed to laboratory error. Soil gas sampling indicated elevated PCE concentrations in the sub-slab samples both within and outside of the existing building footprint, and elevated concentrations were reported for soil vapor samples collected offsite. The SVE pilot test indicated that Soil Vapor Extraction would be a viable option. Based on these findings, Optima Environmental Services recommended the installation of the sub-slab

depressurization system, the installation of a soil extraction system, and an investigation of sub-slab and indoor air sampling for the adjacent 415 Clinton Street property.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Record of Decision dated March 28, 2016 are as follows:

2.4.1 Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

2.4.2 Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

2.4.3 Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

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2.5 Remaining Contamination

Should redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible, further investigation will be required. The nature and extent of contamination in areas where access was previously limited or unavailable (e.g. under the building slab) will be immediately and thoroughly investigated pursuant to an investigation work plan approved by the NYSDEC. Based on the results of the investigation, further remediation may be required.

If buildings are to be developed on-site, the potential for soil vapor intrusion must be evaluated via a work plan approved by the NYSDEC. If the results of the work plan demonstrate exposure potential, actions will be implemented to address exposures related to soil vapor intrusion.

2.5.1 Soil

Additional soil samples were not collected subsequent to implementation of the remedial action. As such, pesticide and metals concentrations in areas not affected by remedial actions are anticipated to remain similar to those identified in previous investigations.

Results of laboratory analysis of soil samples collected during the initial Site Characterizations completed by EA Engineering on May 28, 2009 are summarized below;

A total of eighteen (18) soil samples were collected from beneath the building slab (sub-slab), from the ground surface and from the subsurface.

Samples were analyzed for VOCs, semi-volatile organic compounds (SVOC), polychlorinated biphenyls (PCB) pesticides, and metals.

No exceedances of Standards, Criteria and Guidance (SCGs) were observed for VOCs, SVOCs or PCBs in any soil sample.

Minor detections of three pesticides and six metals exceeded Unrestricted Use Soil Cleanup Objectives (UUSCOs). One metal- copper, was detected at levels exceeding

Residential Use Soil Cleanup Objectives (RUSCOs). Copper was detected at up to 515 ppm, exceeding its Commercial Use SCO (CUSCO) of 270 ppm in one soil sample collected from beneath the concrete building slab. No exceedances of RUSCOs were observed in any surface soil sample.

2.5.2 Groundwater

Additional groundwater samples were not collected subsequent to implementation of the remedial action. As such, concentrations of VOCs, metals, and pesticides in areas not affected by remedial actions are anticipated to remain similar to those identified in previous investigations.

Results of laboratory analysis of groundwater samples collected during the initial Site Characterizations completed by EA Engineering on May 28, 2009 are summarized below;

One hundred and nine (109) groundwater samples were collected from various depths at thirteen locations on-site, upgradient of the site and downgradient of the site. The samples were collected from temporary wells utilizing direct-push sampling techniques. All samples were analyzed for VOCs. At six on-site locations, groundwater table samples were additionally analyzed for SVOCs, PCBs, pesticides and metals. Low levels of thirteen VOCs were detected in groundwater, with only one VOC naphthalene, which is not a site-related contaminant, marginally exceeding its SCG in one of the 109 samples. No site-related VOCs exceeded groundwater standards. SVOCs were non-detect (ND) in all six water table samples. PCBs were detected in one sample, but at a level below SGCs. Six metals (antimony, iron, manganese, mercury, sodium and thallium) and one pesticide (dieldrin), none of which are site-related compounds, were detected above SCGs in the on-site groundwater.

2.5.3 Soil Vapor

Soil vapor, sub-slab soil vapor, indoor air and outdoor (ambient) air samples were collected and analyzed for VOCs. PCE and TCE were detected in sub-slab soil vapor samples at up to 5,700 micrograms per cubic meter of air (µg/m3) and 30.7 µg/m3, respectively. PCE was detected in the indoor air at up to 5.5 µg/m3. TCE was not detected in the indoor air. Soil vapor samples collected from beneath the parking lot identified PCE at levels ranging from 51 µg/m3 to 1,160,000 µg/m3. An off-site soil vapor sample "Owner #1" had PCE at (6,660 µg/m3), leading the Department to initiate an offsite SVI investigation to determine the extent of site-related contamination.

The off-site SVI investigation was conducted separately under operable unit 02. Initial offsite sampling was conducted on March 10, 2017, prior to the installation and startup of the sub slab system. Elevated concentrations of PCE were detected in the sub- slab samples collected from "Owner #1" (820 µg/ m3) and "Owner #2" (1,390 µg/m3).

A second sampling event was conducted on February 1, 2018 after installation and implementation of the sub slab system. Concentrations of PCE were shown to diminish, and concentrations observed indicated no further action necessary. Final concentrations of PCE observed at "Owner #1" were (2.26 µg/m3) and final concentrations of PCE observed at "Owner #2" were (1.19 µg/m3).

As of the date of this SMP, no samples of soil vapor have exceeded the SCGs after installation and implementation of the sub slab system (completion of the remedial action).

3.0 INSTITUTIONAL & ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC.

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, which may require the implementation of an Excavation Work Plan (EWP) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site;
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required by the ROD to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the site to residential, restricted residential, commercial, and industrial uses only. Adherence to these ICs on the site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are the same as the Site boundaries and are shown on Figure 2.

These ICs are:

- The property may be used for:
    - Residential use as described in 6 NYCRR Part 375-1.8(g)(2)(i),
    - Restricted Residential use as described in 6 NYCRR Part 375- 1.8(g)(2)(ii),
    - Commercial use as described in 6 NYCRR Part 375-1.8(g)(2)(iii), and
    - Industrial use as described in 6 NYCRR Part 375-1.8(g)(2)(iv);

- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;

- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.

3.3 Engineering Controls

3.3.1 Sub-slab Depressurization System

A Sub Slab Depressurization System (SSDS) has been installed in the Site building to mitigate the potential for soil vapor intrusion.

Procedures for operating and maintaining the SSD system are documented in the Operation and Maintenance Plan (Section 5.0 of this SMP). As built drawings, signed and sealed by a professional engineer, are included in Appendix C – Operations and Maintenance Manual. Figure 3 shows the location of the ECs for the site.

3.3.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when 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 6.4 of NYSDEC DER-10.

3.3.3 Sub-slab Depressurization (SSD) System

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

4.0 MONITORING & SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in the Quality Assurance Project Plan provided in Appendix D.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards and Part 375 SCOs for soil; and
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

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

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site Wide Inspection

Site-wide inspections will be performed at a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix G – Site Management Forms.

The form will compile sufficient information to assess the following:

Compliance with all ICs, including site usage;

- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

Inspections of all remedial components installed at the site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If site records are complete and up to date.

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce

the effectiveness of ECs in place at the site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Treatment System Monitoring & Sampling

4.3.1 SSDS Monitoring

Monitoring of the SSDS will be performed on a routine basis, as identified in Table B Remedial System Monitoring Requirements and Schedule (see below). Modification to the frequency or sampling requirements will require approval from the NYSDEC. A visual inspection of the complete system will be conducted during each monitoring event. 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. SSD system components to be monitored include, but are not limited to, the components included in Table B below.

Table B – SSDS Monitoring Requirements and Schedule

Remedial System Component	Monitoring Parameter	Operating Range	Monitoring Schedule
Pipe	Visual inspection	N/A	Annually
Permanent Sub Slab Ports	Vacuum check	>-0.004 "H2O	Annually
Risers	Static vacuum and gate valve position	N/A	Annually
Blowers	Visual inspection	N/A	Annually

A complete list of components to be inspected is provided in the Inspection Checklist, provided in Appendix G - Site Management Forms. If any equipment readings are not within their specified operation range, any equipment is observed to be malfunctioning or the system is not performing within specifications; maintenance and repair, as per the Operation and Maintenance Plan, is required immediately.

4.4 Post-Remediation Media Monitoring & Sampling

Post-shutdown sampling requirements will be determined by the NYSDEC at the time of proposed shutdown.

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5.0 OPERATION & MAINTENANCE PLAN

This Operation and Maintenance Plan provides a brief description of 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 procedures necessary to allow individuals unfamiliar with the site to operate and maintain the SSD systems;
- Will be updated periodically to reflect changes in site conditions or the manner in which the SSD systems are operated and maintained.

Further detail regarding the Operation and Maintenance of the SSDS is provided in Appendix C - Operation and Maintenance Manual. A copy of this Operation and Maintenance Manual, along with the complete SMP, is to be maintained at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of this SMP.

Interviews were conducted with the following individuals. Findings from these interviews are discussed in the appropriate sections in this report.

5.1 Operation & Maintenance of Sub-slab Depressurization System

The following sections provide a description of the operations and maintenance of SSDS. Cut-sheets and as-built drawings for SSDS are provided in Appendix C - Operations and Maintenance Manual.

5.1.1 System Start-up & Testing

After the SSDS is installed or modified a start-up test will be performed to evaluate the effectiveness of the SSDS. The first step will be to start each of the SSDS fans on the roof of the building to document that the fans are functioning properly. Once the fans are fully operational at the roof level, a digital micromanometer will be used to collect vacuum readings from the pressure field extension (PFE) monitoring points in the basement of the building. PFE measurements will need to achieve a

minimum of 0.01 inches of water vacuum in order to meet the performance requirements of the October 2006 NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York. If these criteria are not met, adjustments will be made to the SSDS fans to increase air flow and vacuum influence including replacement of the fans with larger fans, if necessary.

The system testing described above will be conducted if, in the course of the SSD system lifetime, the system goes down or significant changes are made to the system and the system must be restarted.

5.1.2 System Start-up & Testing

All fans must be kept in continuous operation. Fans must restart automatically in event of power loss. Fan gauges must be regularly inspected to verify that values have not changed significantly.

5.1.3 System Start-up & Testing

In the event of unusual fan noise, failure to start, physical damage or repeated circuit breaker trip, turn fan off and service or replace. Any changes in the structure, HVAC systems, slab conditions, etc. will require a re-evaluation of the SSDS.

5.1.4 System Monitoring Devices & Alarms

The SSD system has warning devices to indicate that the system is not operating properly. In the event that a warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

Given the urban nature of the Site and surrounding area, the distance from and elevation above nearby water bodies, and the presence of sufficient municipal storm water collection infrastructure, vulnerability assessments do not appear to be warranted.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the site during site management, and as reported in the Periodic Review Report (PRR).

The Green Remediation Evaluation will include the following items:

- Energy usage by SSDS;
- Fossil fuel usage associated with travel to and from the Site for sampling and monitoring activities;

6.2.1 Timing of Green Remediation Evaluations

For major remedial system components, green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the Project Manager feels appropriate, e.g. during significant maintenance events or in conjunction with storm recovery activities.

Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities. Reporting of these modifications will be presented in the PRR.

6.2.2 Remedial Systems

Remedial systems will be operated properly considering the current site conditions to conserve materials and resources to the greatest extent possible. Consideration will be given to operating rates and use of reagents and consumables. Spent materials will be sent for recycling, as appropriate. The SSDS operation will be evaluated as part of the Green Remediation Evaluation.

6.2.3 Frequency of System Checks, Sampling & Other Periodic Activities

Transportation to and from the Site and use of consumables in relation to Site visits in order to conduct system checks and or collect samples and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources.

Consideration shall be given to:

- Reduced sampling frequencies;
- Reduced site visits and system checks;
- Coordination/consolidation of activities to maximize foreman/labor time; and
- Use of mass transit for site visits, where available.

6.2.4 Metrics & Reporting

As discussed in Section 7.0 and as shown in Appendix G– Site Management Forms, information on energy usage, solid waste generation, transportation and shipping, water usage and land use and ecosystems will be recorded to facilitate and document consistent implementation of green remediation during site management and to identify corresponding benefits; a set of metrics has been developed.

6.3 Green Remediation Evaluation

A Remedial Site Optimization (RSO) study will be conducted any time that the NYSDEC or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the Decision Document;
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

7.0 REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix G. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table D and summarized in the Periodic Review Report.

Table D: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
SSDS Inspection	Monthly – Completion of documented check list by site employees to confirm monthly visual check of manometer and confirm system is operating properly.

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

All interim monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- 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);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- 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);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;

Description of non-routine activities performed;

- 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
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link:

http://www.dec.ny.gov/chemical/62440.html.

7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion or equivalent document is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the Department or at another frequency as may be required by the Department. 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 -Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report.

The report 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 site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- 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, etc.), 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 in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

A site evaluation, which includes the following:

- The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
- 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 and Sampling Plan for the media being monitored;
- Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan; and
- Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the Decision Document.
- The overall performance and effectiveness of the remedy.

7.3 Certification of Institutional & Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"*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 environmental easement;*
- *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 [business address], am certifying as [Owner/Remedial Party or Owner's/Remedial Party's Designated Site Representative] for the site."

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located and the NYSDOH Bureau of Environmental Exposure Investigation. The Periodic Review Report may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.4 Corrective Measures Work 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 Work 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 Work Plan until it has been approved by the NYSDEC.

7.5 Corrective Measures Work Plan

In the event that an RSO is to be performed (see Section 6.3), upon completion of an RSO, an RSO report must be submitted to the Department for approval. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located, Site Control and the NYSDOH Bureau of Environmental Exposure Investigation.

8.0 REFERENCES

6NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation".

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

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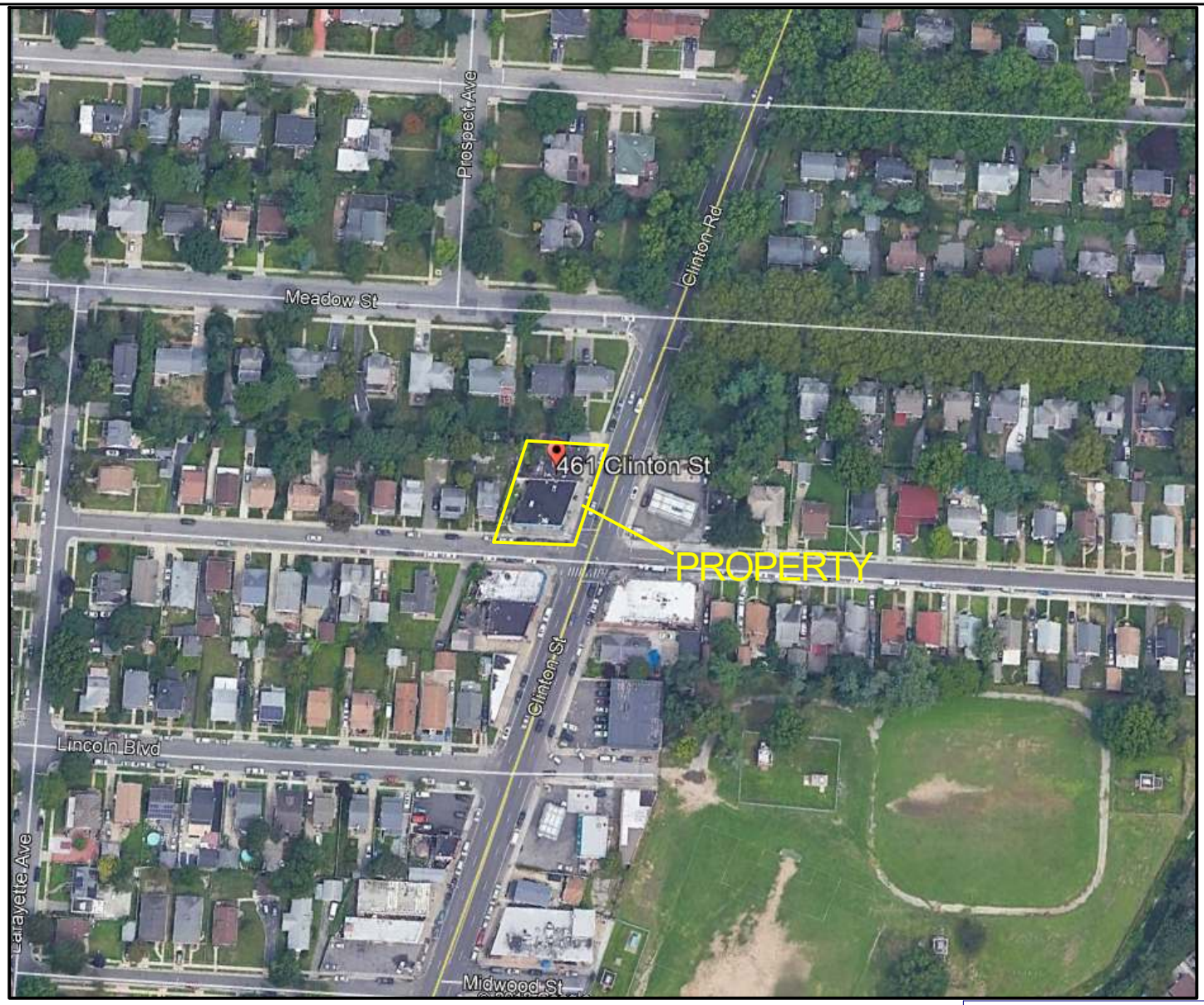
LIST OF FIGURES



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OPTIMA
ENVIRONMENTAL SERVICES

92-94 Stewart Avenue, Newburgh, New York 12550
www.optimaenv.com

DRAWN BY A. SCHEU	DATE 10/01/2019
TAX MAP INFO	
SECTION	xx
BLOCK	x
LOT	xx.xx
SITE CODE #	130187

LAUNDRY PALACE
AKA/ LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550

SCALE NONE | SHEET 1 OF 1 | SITE LOCATION

Job # E-17118

SS2R LAUNDRY PALACE
416 CLINTON STREET
SUBSLAB
(DESTROYED)

DOORS DOORS DOORS

SMH

UTP

PARKING

CONCRETE SIDEWALK

CB

SVE

VP-1

VP-2

VP-3

CONCRETE SIDEWALK

TO WELLINGTON ST.

UMH

TRAP

CLINTON STREET

CONCRETE SIDEWALK

VP-4

TO LINCOLN BLVD.

0' 5' 10' 15' 20'

APPROX SCALE

Conklin Services and Construction, Inc. - Environmental Division

94 Stewart Avenue, Newburgh, New York 12550
www.conklinservices.com

VAPOR RECOVERY SITE SKETCH

PROJECT# E-17118

STATE SUPERFUND PROGRAM

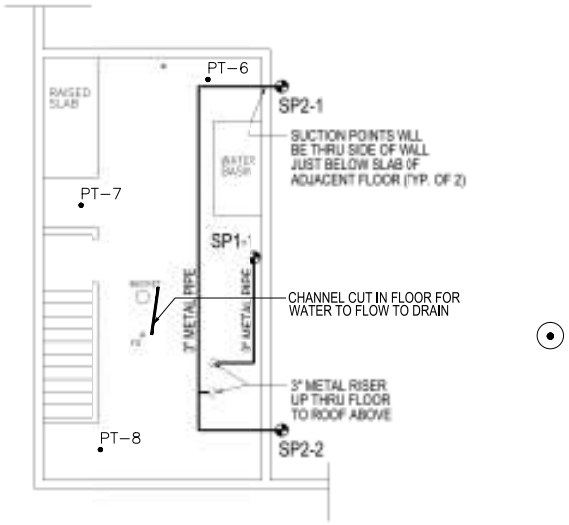
SITE CODE # 130187

DRAWN BY A. SCHEU

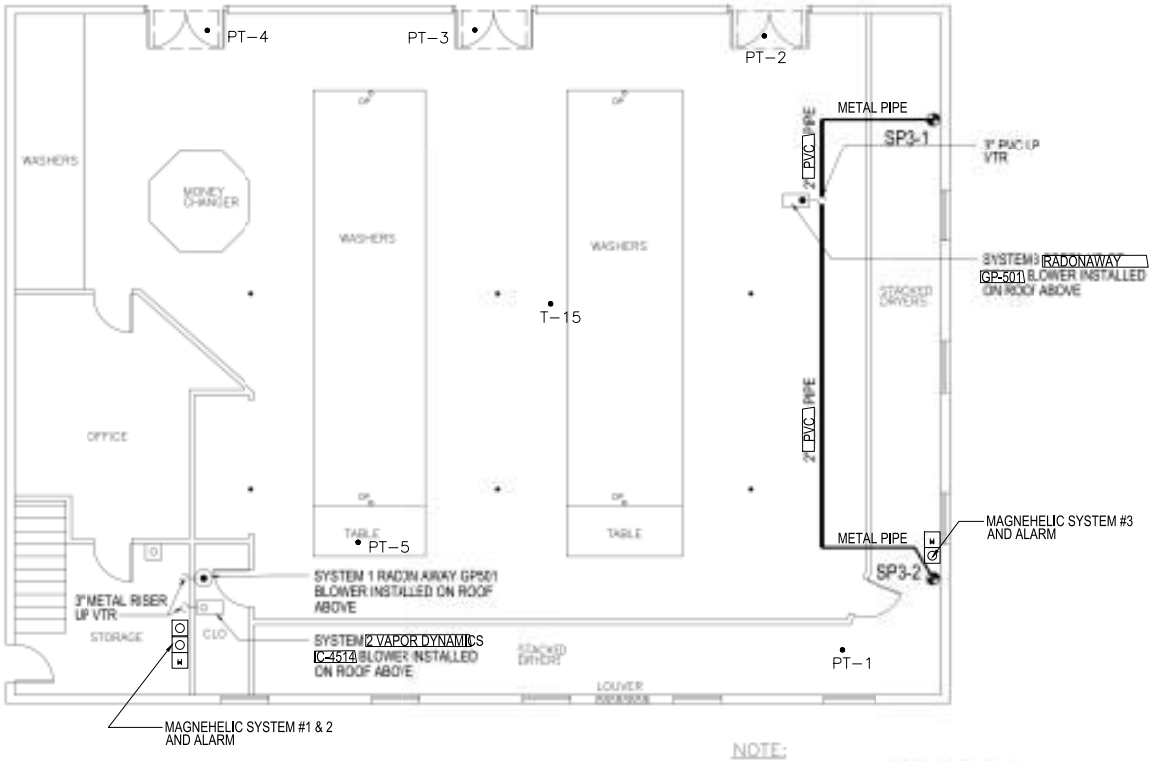
DATE 05/13/2015

LAUNDRY PALACE
aka/ LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550

SCALE NONE | SHEET 1 OF 1 | SITE SKETCH



BASEMENT PLAN



NOTE:
WINDOWS TO REMAIN IN PRESENT OPEN CONDITION OR OPEN LOUVERED VENT 100%

FLOOR PLAN

AS-BUILTS

LEGEND

SP#x-x	SUCTION POINT
PT-X	PERMANENT TEST HOLE
	VAPOR DYNAMICS IC-4514
	RADONAWAY GP501
	MAGNEHELIC PANEL
	ALARM PANEL
	FIRE COLLAR

0 4' 12'
2' 8' 16'
GRAPHIC SCALE

CLEAN VAPOR LLC
P.O. BOX 688, BLAIRSTOWN, NJ 07825
Ph. 908 362-5616 Fax. 908 362-5433
www.cleanvapor.com

CLEAN VAPOR LLC
VAPOR INTRUSION REMEDIATION

ACTIVE SOIL DEPRESSURIZATION
LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550

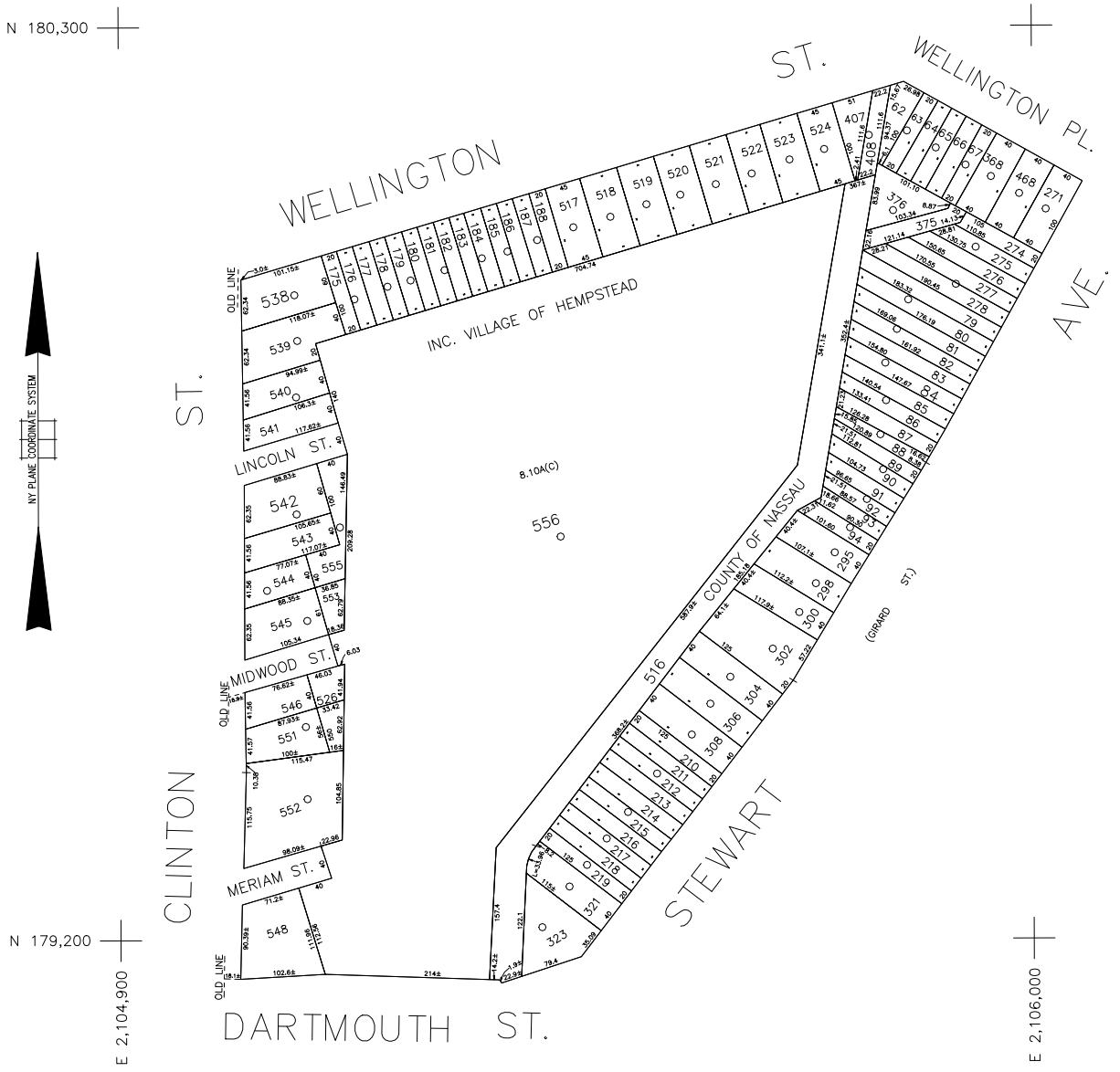
REVISION AS-BUILTS	DATE 6-19-17
	9-13-16
DRAWN BY	DAB
APPROVED	TEH
SCALE	1/4"=1'
CHECKED BY	TEH

SHEET TITLE
SUCTION PTS & BLOWERS

SHEET NO.
3

100' 50' 0' 100' 200'

SCALE: 1" = 100'



LEGEND

COUNTY LINE	
TOWN LINE	
VILLAGE LINE	
SCHOOL DISTRICT LINE	
PROPERTY LINE	
SPECIAL DISTRICT LINE	
BLOCK LIMIT	
LOCATOR POINT	•
TAX MAP PARCEL NO.	246
CALCULATED ACREAGE	75A(C)
DEED ACREAGE	176A
SCALED DIMENSION	327(S)
DEED DIMENSION	185.89
REFERENCE MAPS	
MAP NO.	

SPECIAL DISTRICTS

	DIST		DIST		DIST		DIST
POLICE		FIRE PROTECTION		PUBLIC PARKING		DRAINAGE	
WATER		SANITARY				FIRE HYDRANT RENTAL	
		REFUSE & GARBAGE		SEWER			
LIGHTING				Nassau County Sewage Disposal District #2	202	GARBAGE	
		REFUSE DISPOSAL		PARK		ESCALATOR	
LIBRARY		Town of Hempstead	X				
		SEWAGE COLLECTION				WATER POLLUTION CONTROL	
FIRE				IMPROVEMENT			
						Town, County, College, Police HQ	1
				SIDEWALK			

MUNICIPALITIES

TOWN OF:	
HEMPSTEAD	X
NORTH HEMPSTEAD	
OYSTER BAY	
CITY OF:	
GLEN COVE	
LONG BEACH	
VILLAGE OF:	
SCHOOL DISTRICT	
Hempstead	1

Nassau County Department of Assessment

Charles O'Shea, Chairman

Land & Tax Map

Map Last Revised: March 20 2003

SEC. 34

BLK. J

SHEET 1 OF 1

CODE	SPECIAL DISTRICT			WITHIN
399	1	202	X	

APPENDIX A
LIST OF SITE CONTACTS

APPENDIX A – LIST OF SITE CONTACTS

Name	Phone/Email Address
Mark Wieboldt Site Owner/ Remedial Party	Mailing Address: 3023 Ewell Place, Wantagh, NY 11793
Adam K. Scheu Qualified Environmental Professional Optima Environmental Services, Inc.	(845) 561-1512 ascheu@optimaenv.com
Jared Donaldson NYSDEC DER Project Manager	(518) 402-9176 jared.donaldson@dec.ny.gov
Walter Parish NYSDEC Regional HW Engineer	(631) 444-0241 walter.parish@dec.ny.gov
Kelly Lewandowski NYSDEC Site Control	(518) 402-9569 kelly.lewandowski@dec.ny.gov
Laundry Palace Onsite access contact/ tenant	(516) 292-3502 laundrypalace@me.com
Louis Gaccione Remedial Party Attorney	(516) 872-1343 gaccionelaw@aol.com

APPENDIX B
ENVIRONMENTAL EASEMENT

APPENDIX B – ENVIRONMENTAL EASEMENT

County: Nassau Site No: 130187 Order on Consent Index : A1-0780-11-11

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 27th day of June, 2018 between Owner(s) Mark Wieboldt, having an office at 3 Chase Lane, Bethpage, New York 11714, County of Nassau, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 416 Clinton Street in the Town of Hempstead, County of Nassau and State of New York, known and designated on the tax map of the County Clerk of Nassau as tax map parcel numbers: Section 34 Block J Lots 540 and 541, being the same as that property conveyed to Grantor by deed dated June 25, 2001 and recorded in the Nassau County Clerk's Office in Liber and Page 11354/66. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.19527 +/- acres, and is hereinafter more fully described in the Land Title Survey dated March 13, 2018 prepared by Frank I. Galluzzo, P.L.S. of Empire State Land Surveyor, P.C., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is

extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: A1-0780-11-11, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Residential as described in 6 NYCRR Part 375-1.8(g)(2)(i), Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for raising livestock or producing animal products for human consumption, and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her 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

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: 130187
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and

communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

County: Nassau Site No: 130187 Order on Consent Index : A1-0780-11-11

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Mark Wieboldt:

By: _____

Print Name: MARK WIEBOLDT

Title: OWNER Date: 5-19-18

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Nassau)

On the 19th day of May, in the year 2018, before me, the undersigned, personally appeared MARK WIEBOLDT, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

LOUIS J. GACCIONE, JR.
NOTARY PUBLIC, STATE OF NEW YORK
Registration No. 4998191
Qualified in Nassau County
Commission Expires June 22, 2022

County: Nassau Site No: 130187 Order on Consent Index : A1-0780-11-11

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting by and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Michael J. Ryan, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 27th day of June, in the year 2018 before me, the undersigned, personally appeared Michael J. Ryan, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2020

County: Nassau Site No: 130187 Order on Consent Index : A1-0780-11-11

SCHEDULE "A" PROPERTY DESCRIPTION

LEGAL DESCRIPTION AND ENVIRONMENTAL EASEMENT DESCRIPTION

SITE #130187 CONSENT INDEX #A1-0780-11-11

ALL THAT CERTAIN PLOT PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE CORNER FORMED BY THE INTERSECTION OF THE NORTHERLY SIDE OF LINCOLN BOULEVARD AND THE EASTERLY SIDE OF CLINTON STREET;

RUNNING THENCE ALONG THE EASTERLY SIDE OF CLINTON STREET, NORTH 09 DEGREES 23 MINUTES, 20 SECONDS EAST 83.13 FEET;

RUNNING THENCE NORTH 83 DEGREES 37 MINUTES 20 SECONDS EAST 95.03 FEET;

RUNNING THENCE SOUTH 06 DEGREES 22 MINUTES 40 SECONDS EAST 80.00 FEET TO THE NORTHERLY SIDE OF LINCOLN BOULEVARD;

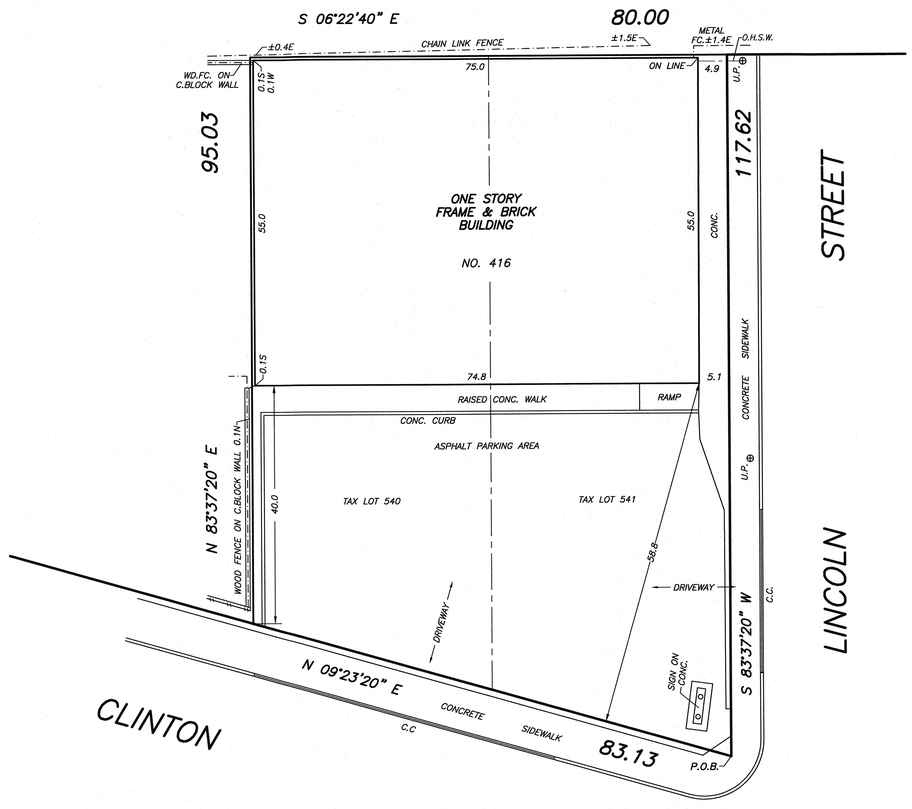
RUNNING THENCE ALONG THE NORTHERLY SIDE OF LINCOLN BOULEVARD SOUTH 83 DEGREES 37 MINUTES 20 SECONDS WEST 117.62 FEET TO THE CORNER, THE POINT OR PLACE OF BEGINNING.

LOT AREA = 8,505.90 SQ.FT. = 0.19527 ACRES.

RECORD & RETURN TO:
LOUIS J. GACCIONE, JR., ESQ.
775 BROOKLYN AVE., SUITE 115
BALDWIN, NY 11510

REF. NO. N34-J-540

ENVIRONMENTAL EASEMENT SURVEY



LEGAL DESCRIPTION AND ENVIRONMENTAL EASEMENT DESCRIPTION

SITE #130187 CONSENT INDEX #A1-0780-11-11

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LOT AREA = 8,505.90 SQ.FT. = 0.19527 ACRES.

SURVEYORS NOTES

1. THE ACCOMPANYING SURVEY WAS MADE ON THE GROUND AND CORRECTLY SHOWS THE LOCATION OF ALL BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED ON THE ABOVE DESCRIBED PREMISES.

2. THAT EXCEPT AS SHOWN, THERE ARE NO VISIBLE EASEMENTS OR RIGHT OF WAYS ACROSS SAID PREMISES.

3.. THE PROPERTY HAS DIRECT PHYSICAL ACCESS TO A PUBLIC STREET KNOWN AS CLINTON STREET AND LINCOLN STREET. THERE ARE NO CHANGES IN STREET RIGHT OF WAYS.

4. THE RECORD DESCRIPTION OF THE PROPERTY FORMS A MATHEMATICALLY CLOSED FIGURE.

5. THERE IS NO VISIBLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS AT THE PREMISES.

6. THERE IS NO VISIBLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

7. THERE IS NO VISIBLE EVIDENCE OF CEMETERIES.

8. THE SUBJECT PROPERTY DOES NOT LIE WITHIN A WETLANDS AREA.

LEGEND:

TRAFFIC LIGHT	T.L.
FIRE HYDRANT	HYD.
LIGHT POLE	
CATCH BASIN	C.B.
TREE	
UTILITY POLE	U.P.
VALVES GAS-G.V.	WATER-W.V.
OVERHEAD SERVICE WIRES	O.H.S.W.
TRAFFIC SIGN	T.S.
LEGAL GRADES	L.G.
PEDESTRIAN RAMP	P.R.
FIRE PULL BOX	F.B.
CURB AND CURB CUT	C.C.
DRAIN	DR.
PARKING METER	P.M.
TELEPHONE	TEL.
MANHOLES	MH
HANDICAP SPACE	

SITE #130187 CONSENT INDEX #A1-0780-11-11

THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL EASEMENT HELD BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PURSUANT TO TITLE 36 ARTICLE 71 OF THE NEW YORK ENVIRONMENTAL CONSERVATION LAW.

ENVIRONMENTAL EASEMENT AREA ACCESS

THE DEC OR THEIR AGENT MAY ACCESS THE ENVIRONMENTAL EASEMENT AREA AS SHOWN HEREON THROUGH AND EXISTING STREET ACCESS OR BUILDING INGRESS/EGRESS ACCESS POINT.

"THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL EASEMENT HELD BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PURSUANT TO TITLE 36 OF ARTICLE 71 OF THE NEW YORK ENVIRONMENTAL CONSERVATION LAW. THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FORTH IN MORE DETAIL IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP CAN BE OBTAINED FROM NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NY 12233 OR AT DERWEB@DEC.NY.GOV".

12 0 12 24 48

GRAPHIC SCALE 1'=12'

NO.	DATE	REVISION

STATE OF NEW YORK FRANK GALLUZZO LICENSED PROFESSIONAL LAND SURVEYOR # 050998

SURVEYED: MARCH 13, 2018

MAP OF PROPERTY SITUATED IN

HEMPSTEAD

NASSAU COUNTY, N.Y.

TAX SECT.: 34 TAX BLOCK: "J" TAX LOT(S): 540 & 541

Empire State Land Surveyor, P.C.
Frank I. Galluzzo Professional Land Surveyor
Records of Albert A. Bianco
Stephen J. Reid - M. Berry Carman - G. W. Haviland
Vandewater & Lapp - Robert E. Carlin - William J. Daly
1005 Glen Cove Avenue, Glen Head, NY, 11545
(516)-240-6901

APPENDIX C
O&M MANUAL

CLEAN VAPOR LLC
V.O.C. & RADON PLAN DESIGN AND REMEDIATION

VAPOR INTRUSION MITIGATION PLAN DESIGN
for:
416 Clinton Street
Hempstead, NY 11550

Prepared for:

Mr. Clifford Bell, C.P.G
Optima Environmental Services, Inc.
94 Stewart Avenue
Newburgh, NY 12550

Prepared by:

Mr. Thomas E. Hatton
NRPP ID # 104705
Clean Vapor, LLC
148 Route 94
P.O. Box 688
Blairstown, NJ 07825

September 19, 2016

Table of Contents

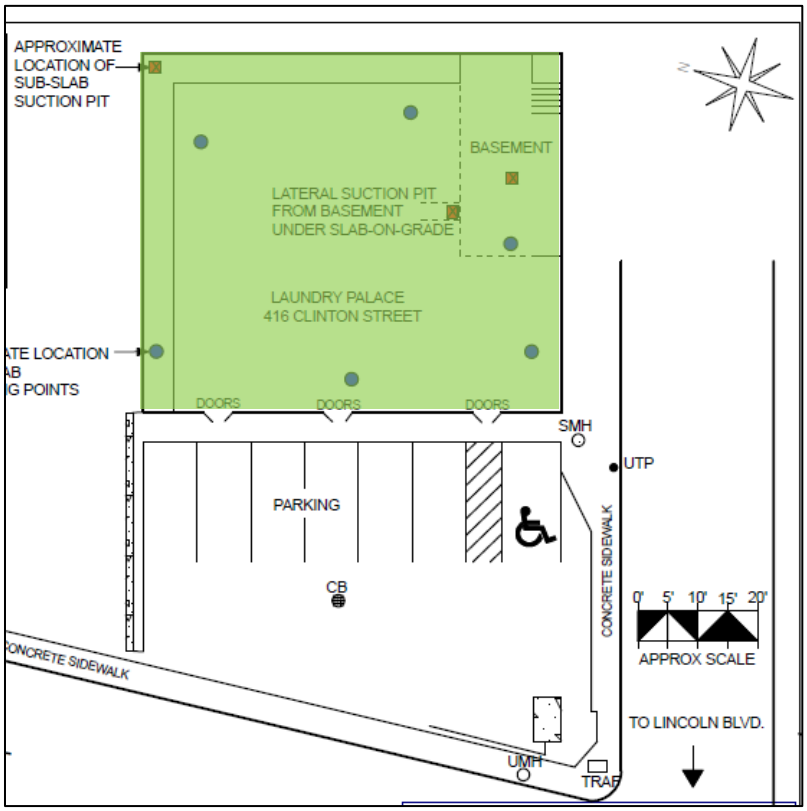
Appendix A – Drawings

Exterior of Building

1.0 Introduction

1.1 Background

Clean Vapor, LLC (Clean Vapor) was retained by Mr. Bell of Optima Environmental Services, Inc. to conduct a building investigation, diagnostic test, and prepare a vapor intrusion mitigation system (VIMS) design for the building located at 416 Clinton Street in Hempstead, New York. The area of concern is highlighted below in green and measures approximately 4,125 square feet.



Unit of Concern Highlighted

The proposed VIMS has been designed to create a negative pressure field (relative to typical building pressures at the time of diagnostic testing) under the slab of the building areas of concern, so that sub slab vapors will be unlikely to migrate upwards into the building. Clean Vapor's design consists of specifications and drawings that provide details for construction of a Sub Slab Depressurization System (SSDS). If installed, operated and maintained per specification, the SSDS will be able to maintain negative sub slab pressures under reasonably anticipated conditions and prevent soil borne vapors from entering into the building areas of concern. The goal of the system is to create a sub slab negative pressure field with a minimum

vacuum field of -0.004 inches of water column ("w.c.). The industry accepted standard of 0.004 "w.c. as proposed by Sundquist and Wertz[1], will be used as a target level of depressurization.

2.0 Diagnostics

2.1 Diagnostic Procedures

In accordance with the accepted design proposal and plan for diagnostics dated July 22, 2016, a building investigation and diagnostic testing were performed on September 1, 2016. Two, 2 5/8-inch diagnostic suction holes were drilled through the floor slab. One suction hole was located in the basement and the other in the northwest corner of the slab on grade section behind a bank of dryers. A calibrated shop vacuum was used to apply vacuum to the sub slab material to simulate vacuum fields. Smaller test holes were drilled throughout the areas within the suction holes' radii of influence. The motor speed of the vacuum was varied to develop a performance curve that would enable us to project the airflow characteristics of different blowers. Static vacuum and airflow measurements were conducted at the suction holes. A micro-manometer was used to measure pressure differentials at the remote test holes. A vane anemometer was used to measure airflow that was yielded from the sub slab. The acquired data has been interpolated to make reasonable assumptions to predict pressure field extension and airflow. Baseline pressure differential measurements were collected to establish building pressure relative to the sub slab material.

The results of vacuum field extension testing are shown in the Diagnostic Data Section of this report. Pictures of the vacuum field extension testing being performed can also be seen in the Pictures section and relevant points from testing are shown on a sheet in the attached drawings.

2.2 *Diagnostic Data*

Test hole locations can be found in the attached drawings. All distances are in feet and vacuum measurements in inches of water column.

[1]Sundquist, Jon A. Ph.D., Wertz, William E. PhD, Boyd, John H., September 2007, AWMA Symposium, Providence, RI. Sub Slab Depressurization System Performance Evaluation

2.2.1 Test Suction S-1

Vacuum Applied ("wc):		Baseline	34.5	17	9
Airflow (cfm):		-	52	31	20
Test Hole #	**Distance (ft.)**				
T-1	10	-0.0003	-0.1171	-0.0637	-0.0348
T-2	20	-0.0005	-0.0022	-0.0070	-0.0003
T-3	30	-0.0002	-0.0135	-0.0042	-0.0031
T-4	40	-0.0003	-0.0041	-0.0007	-0.0043
T-5	49	-0.0004	-0.0071	-0.0037	-0.0005
T-6	10	+0.0009	-0.1419	-0.0807	-0.0442
T-7	20	+0.0008	-0.0446	-0.0255	-0.0135
T-8	30	+0.0004	-0.0139	-0.0085	-0.0038
T-9	40	+0.0003	-0.0010	-0.0007	-0.0007
T-10	51	-0.0001	-0.0014	-0.0015	-0.0008
T-13	50	-0.0009	-0.0046	-0.0024	-0.0020
T-14	28	-	-0.0397	-0.0228	-0.0145
T-15	39	-	-0.0233	-0.0142	-0.0059
T-16	53	-	-0.0093	-0.0055	-0.0016

2.2.2 Test Suction S-2

Vacuum Applied ("wc):		Baseline	20.85	10	5	2.5
Airflow (cfm):		-	91	51	30	17
Test Hole #	**Distance (ft.)**					
V1	1	+0.0003	6.9900	-3.6200	-1.9200	0.9600
V2	5	+0.0002	6.9700	-0.3020	-0.1268	0.0535
T-11	10	+0.0003	0.7890	-0.4050	0.2050	0.0928
T-12	20	0.0008	0.4050	-0.2030	0.1132	0.0478

2.3 Interpretation of Diagnostics

Vacuum fields were determined by evaluating the results of the negative pressure field testing. The overall vacuum field extension testing provided data that could be used to develop a model capable of projecting the negative pressure field that will prevent the upward migration of soil gases into the building. Sandy soils with small stones were encountered in the sub slab. A radius of influence of approximately 34 feet was observed at 17″ w.c. of applied vacuum in the large slab on grade section of the laundromat. The soil beneath the basement slab was far more permeable and 3″ w.c. of applied vacuum extended a negative pressure field throughout the entire basement.

There are two banks of dryers totaling 78 dryers that exhaust air from the building. This exhausted air contributes to the negative pressures that draw in soil vapors. There are several windows and a louvered vent at the rear of the building that allows fresh supply air to be drawn in to replace the air that is exhausted. Many laundromats have engineered dedicated fresh air ducts so that the pressures that are induced by the exhausted air are somewhat neutralized. This feature does not exist at this building. Having these windows remain open in their tilted in condition is a critical component in controlling the negative pressures which are induced by the dryer exhaust. There is a louvered vent along the back wall. This vent should be partially opened and fixed in place if possible when the mitigation system is installed. The mitigation system has been designed to function with the windows in their present partially open condition. Having the windows and the louvered vent open shall be noted in the Operations Maintenance and Monitoring Plan (OM&M).

2.4 Blower Selection and Suction Point Locations

Blowers and suction points have been selected and specified based on the volume of air yield testing. The design objective is to create a negative pressure field with a minimum performance of -0.004" w.c. at the outer extent of the negative pressure field. Pressure field projections are adjusted to accommodate anticipated field installation conditions. For example, when removing one cubic foot of soil under the slab, the static pressure can drop 25% and the volume of air increase subject to the limitations of the soil and blower. The radius of the negative pressure field beneath the slab may also increase. Since variability in soils and permeability exist beneath the slab, the projected radius is not based on a pure mathematical extrapolation but a total approach that includes the aforementioned conditions. An examination of the soil matrix, sub slab permeability mapping data, and experience factors are all considered when developing these projections. The following graph shows the blower curve for the fans to be installed at the site.

3.0 System Design and Installation

3.1 System Layout

There will be three Sub Slab Depressurization Systems installed. The table below displays the different fans specified to create applied vacuum and projected soil airflow yields to meet minimum pressure field requirements.

System #	Fan Model	Applied Vacuum ("w.c.)	# of Suction Points	Location
1	RadonAway GP501	3	1	Basement
2	Obar SOE 16 or Equal	14	2	Basement Stem Wall
3	Obar 76UD or Equal	23	2	Behind Dryers

3.2 Suction Holes

A total of five (5) suction points will be installed. The System 1 suction point will be located along the side wall of the basement. The two suction points associated with System 2 will be installed through the basement stem wall just below the level of the first floor slab. The two suction points associated with System 3 will be installed behind the north wall dryer bank.

See Drawing Sheet 3 for the locations of suction points, mitigation piping and blower locations. The specific location of the suction points shall be agreed upon by Clean Vapor and the building owner's representative prior to installation. When drilling suction points, the procedures listed in the General Installation section shall be followed to minimize damaging any sub slab utilities. Approximately 1.5 cubic feet of soil will be removed from each suction point.

Optima Environmental Services, Inc. is responsible for sub slab fill testing and disposal, it is estimated that two (2), 55 gallon drums will be required. Clean Vapor will supply the soil drums.

3.3 System Piping

All horizontal pipe runs between the fans and the first suction point will be installed with a one-inch slope back to a suction point for each ten feet of horizontal pipe run. All vertical pipe runs will be installed plumb. All horizontal runs after the first suction point may be run level. However, in no case will the piping be installed so as to create a possible water trap in the piping. All piping and fittings installed, unless otherwise noted or specified, shall be two and three-inch metal pipe.

Metal pipe will be supported at least every ten feet of horizontal run vertical runs and within 1 foot of a change in direction. Suction point riser pipes will be secured to the wall or column adjacent to the suction point. Conduit channel with pipe clamps can also be used to support pipe routed along the ceiling or walls. Pipe cannot be supported by other building piping or ducts. Swivel ring or standard bolt-type clevis will be used to support pipe. Vertical pipe that penetrates the roof shall be securely clamped to an overhead support within one foot of the roof penetration.

There may be a need to balance airflow and equalize the distribution vacuum throughout the systems. Inline gate valves shall be installed in each suction point riser pipe to facilitate balancing if required.

3.4 Blower Installation and Start Up

There will be three (3) roof mounted blowers installed. The location of the blowers is indicated on the attached drawings and a typical photo example can be seen in the Pictures section. The blowers were specified based on diagnostic vacuum distribution and airflow measurements as discussed earlier. When soil is removed from the suction point, solution channels that were not detected during the diagnostic phase are sometimes discovered. This can result in greater than expected airflow and decreased static vacuum. After the suction points have been developed, they may be individually tested using a vapor blower or calibrated vacuum to confirm the

vacuum to be applied by the permanent blower. This should be done before the permanent blower is mounted to the stand for final activation. If the system is yielding a greater or less than anticipated volume of soil gas, the blower shall be changed to a blower in an appropriate performance range.

The locations and blower types are noted by a symbol in the System Drawing. The blower exhaust will be a minimum of one foot above the roofline. The blower exhaust will be a minimum of twenty feet from windows, doors, air intakes and passive relief vents.

3.5 Roof Penetrations

All roof penetrations must be coordinated with the owner's representative prior to performing the work. The owner's roofer or an approved roofer that is certified by the roofing material manufacturer should perform the flashing related sealing work. All roof penetrations, cuts, repair flashing and related roof work will be made by a roofer that is certified by the roofing material manufacturer and is permitted by the manufacturer to perform roof work on warrantied roofs. The roofer should certify the work and continue the manufacturer's warranty after the work has been completed. *This applies only to roof sections that are covered by a manufacturer's warranty.*

3.6 Sealing

3.6.1 Cracks and Joints

Any visible expansion joints or slab cracks in the area being mitigated that have a 1/16 inch or greater opening will be sealed. Cracks will be sealed with a gun-grade urethane caulk sealant. Any openings into the slab, such as those that may occur around conduit pipe penetrations through the slab, will be cleaned and sealed with gun-grade urethane caulk. Expansion joints that are greater than ¼ inch in width or greater than 3/8 inch below the floor surface may require the installation of backer rod and self-leveling urethane sealant.

3.6.2 Other Floor Openings

There are two areas of exposed soil that require sealing. The first is an area of approximately one foot in diameter that is around a conduit opening in the utility space in the north corner of the building. A few inches of soil shall be removed from this space and the depression sealed with concrete flush with the level of the existing floor. The second area is an imbedded bucket that is through the basement floor. This bucket was most likely installed as a makeshift drain. A few inches of soil should be removed, the upper side wall of the bucket removed and the depression filled with concrete. Both of these areas are noted on the print. Using the crack saw, a water channel that is at least 3/8 inch in depth shall be scoured into the concrete floor from the area where the lint separator overflows to the existing floor drain. See the site pictures section for further clarification.

There are conduit openings in the west basement wall that are just below the level of the first floor slab. Sealing these openings is critical to maintaining the negative pressure field that is

generated by System 2. The openings around the electrical conduit shall be sealed with mortar and the openings within the pipes themselves shall be sealed with fire rated expandable foam.

3.6.3 Floor Drain

There is an open floor drain near the south basement wall that leads to a small vaulted area that is approximately three feet in radius just below the level of the slab. The drain is thought to be connected to the city sewer but we have no information to verify that assumption. This drain opening shall be fitted with an industrial style Dranjer or ball trap. These devices are one way valves that allow water to drain while soil gases are contained. Sealing this drain is noted on the sealing plan.

3.7 Blower Wiring

A dedicated breaker shall be used for the mitigation blowers. This will prevent the blowers from being shut off when a circuit is powered down for an unrelated function. Based on the blower amperage requirements, a licensed electrician will determine the load for each circuit. The panel location and breaker number will be referenced in the final report and on the system labels. The electric will be pulled from the nearest available panel or other panel as identified by the building owner. When wiring the outdoor blower, the electrical contractor will use outdoor rated flexible conduit from each switch box to the blower.

3.8 Vacuum Indicators

Magnehelics will be installed to indicate the static vacuum generated by each system. To the extent practicable, the range of the Magnehelics will be selected so that the indicator needle is close to or just to the right of center on the dial face. The Magnehelics shall be enclosed in protective enclosures. The low pressure Magnehelic port will be connected with 1/4" O.D. rigid polyethylene tubing to a common conveyance pipe in the system. The polyethylene tubing should arc to a higher elevation than where it exits the riser pipe before it is connected with the Magnehelics. This will prevent condensation from running into the Magnehelics or creating a water trap in the tube. Exposed sections of tubing will be enclosed in rigid conduit. The exact location of the Magnehelic is at the discretion of Clean Vapor, with input from the owner's representative, and should be noted on the final system drawing. We believe the best location for this panel to be the office wall adjacent to the two riser pipes that are coming up from the basement.

In addition to the Magnehelics, an audible and visual vacuum alarm will be installed for each system. A RadonAway Air Flow Alarm will be installed for each system. The alarm will be mounted directly to the system's suction point riser. The battery powered alarm will indicate through audible buzzer and flashing light if there is a loss of airflow within the system.

3.9 Fire Stopping

Pipes that penetrate fire-rated walls or ceilings shall be sealed using fire-rated caulk. Hilti is the recommended manufacturer of fire stopping products.

3.10 Sampling Ports

Test ports for manually measuring vacuum and airflow shall be installed in each of the riser pipes. Ports shall be drilled, tapped and plugged using a 3/8-16 x ¾ stainless steel socket cap screw with a neoprene washer. Soil gas samples may also be collected from these ports. Test ports for risers enclosed in sheetrock will be installed above the drop ceiling. The System 3 Number 1 test port shall be above the drop ceiling between the north washer and dryer bank so technicians do not have to work behind dryers. Permanent sub slab test ports will be installed at various locations throughout the building at the outer extent of the vacuum field for the purpose of measuring sub slab vacuum. The location of these shall be shown on the As-Built drawings.

3.11 System Labeling

A label will be installed at the disconnect switch next to the fan that says "Active Soil Depressurization System, Do Not Alter." The electrical circuit at the panel that is used to control the fan will be labeled as "Active Soil Depressurization System". At least every 20 feet of exposed contaminant vent pipe length will have a label that reads "Active Soil Depressurization System" attached to the pipe. All labels shall be readable from three feet away.

4.0 General Installation Notes

All mitigation system components will be installed to facilitate servicing, maintenance and repair or replacement of other equipment components in or outside the building. Where mounting heights are not detailed or dimensions not given, system materials and equipment are to be installed to provide the maximum headroom or side clearance as is possible. The owner's representative will be contacted in cases where a conflict exists. All systems, materials and equipment will be installed level, plumb, parallel or perpendicular to other building systems and components unless otherwise specified.

Every reasonable precaution shall be made to avoid any damage to existing utilities located anywhere in the building or those located in or below the slab floor. Detailed blueprints indicating utility piping in or under the slab are not available. Undocumented sub slab utilities may alter the scope of work. A metal detecting relay box or another similar instrument should be used in conjunction with any slab drilling that does not involve wet coring.

All penetrations through the foundation walls and the roof shall be sealed. There will be no placement of piping or conduit that would inhibit intended use of any areas. No foreign materials shall be left or drawn into the vapor system piping or fan which might at a later period interfere with or in any way impair the vapor system performance. The entire system will have UL or equivalent ratings for both individual components and the entire system as applicable.

4.1 Safety Precautions

Unguarded dryer belts and pullies present a significant work hazard. Two suction points will be installed along the north wall of the building behind the dryer banks. Dryers adjacent the work space shall be made inoperable while suction point and pipe installation is underway.

Furthermore, we recommend that a vertical set of dryers be removed for installation of System 3, Suction Point 1. At no time shall work be conducted behind operational ungraded dryers. While System 3 overhead pipe is being installed, laundering of clothes in the north bank of washers and dryers shall be suspended and the area blocked off with caution tape.

There is a significant infestation of pestilence around the washers and behind the dryer banks. This condition shall be treated and a certificate demonstrating such shall be supplied to the environmental consultant and mitigation contractor prior to proceeding with the mitigation system installation.

5.0 System Materials

I. Vapor Vent Piping
   a. 2" and 3″ Galvanized Pipe ASTM A787
   b. 3" Schedule 40 No Hub Cast Iron Pipe ASTM A888
   c. 2″ and 3″ Shielded Couplings ASTM 1277
   d. 3" Schedule 40 black steel pipe ASTM A53
   e. 2 inch inline PVC slide valves (Valterra Bladex)

II. Piping Supports and Hardware
   a. 2″ and 3" Hanging Pipe Supports
   b. Adjustable swivel ring or standard bolt type clevis hangers
   c. Adjustable band hangers
   d. 3/8" and 1/2” threaded rod
   e. Conduit clamps
   f. Assorted bolts, nuts & washers
   g. 1 5/8" C- Profile Galvanized Unistrut
   h. 13/16" C- Profile Galvanized Unistrut

III. Vapor Blowers
   a. OBAR GBR-76-UD or Equal (1)
   b. OBAR SOE-16 or Equal (1)
   c. RadonAway GP 501 or Equal (1)

IV. Blower Support Frames
   a. 1 5/8" C- Profile Galvanized Unistrut
   b. Pipe Pier Foam Blocks

V. Visual Pressure Indicator and Protective Enclosure
   a. Integra Hinged Enclosure (1)
   b. Dwyer Magnehelic (3) (range to be determined)
   c. RadonAway Air Flow Alarm (3)

VI. Sealing Materials
   a. Gun Grade Urethane Caulk (Vulkem 116)
   b. Flowable Urethane Caulk (Vulkem 45SSL)

Note: Hilti is the suggested manufacturer of fastening and fire stopping products.

6.0 Administrative and Final Report

6.1 Permits

It is the responsibility of the installation contractor to secure any municipal permits. The owner will need to provide building access for the municipal building inspectors or any other jurisdictional authority to inspect the relevant components of the SSDS.

6.2 Warranties

The mitigation contractor shall warranty all system components, workmanship, and a sub slab vacuum level of -0.004" w.c. for a period of one year from the date of system commissioning. Sub slab vacuum extension values are based on the conditions at the date of the diagnostic measurements. The client will not incur any cost for warranty work performed during this period. Fluctuating water tables, sink holes, and other unforeseen sub slab anomalous conditions that may affect sub slab soil gas channeling after commissioning values have been achieved may be considered outside of the warranty. Repairing system damage caused by others is not included in the warranty. Clean Vapor's warranty does not apply to systems installed by others.

6.3 Final Project Report

The pressure field extension beneath the slab created by the SSDS shall be measured with a digital micro-manometer capable of reading down to 0.0001 inches water column. The slide valves in the riser pipes shall be adjusted to facilitate maximum vacuum distribution. Static vacuum measurements for each system will be recorded. All vacuum measurements will be measured in inches of water column. The exhaust airflow from the blower system shall be measured, calculated and reported in cfm.

The final report summarizing remedial activities shall include a summary of remedial activities, As-Built drawings, blower and system performance tables, photo documentation, equipment warranties and material submittals.

The As-Built drawings will be a modification of the original design print and include the specific locations of mechanical equipment and conveyance piping. The electrical panel location and breaker number will also be noted for the blower. The location of all low pressure gauges will also be on the drawing. The title block will include the final system installation date.

Photo documentation will include at least one picture of the blower installed, the low pressure panel, system labels, suction points, relevant sealing, fire stopping, post-mitigation vacuum testing and pictures thought to be important by the owner. Warranties and Submittals will include: blower warranties, performance and wiring information and Material "cut sheets".

The Operations and Maintenance Section will include a table of items to be checked quarterly and annually. A copy of the final report will be maintained by Clean Vapor, and the owner.

6.4 Submittals

The mitigation contractor shall provide copies of the following submittals to Optima Environmental Services, Inc;

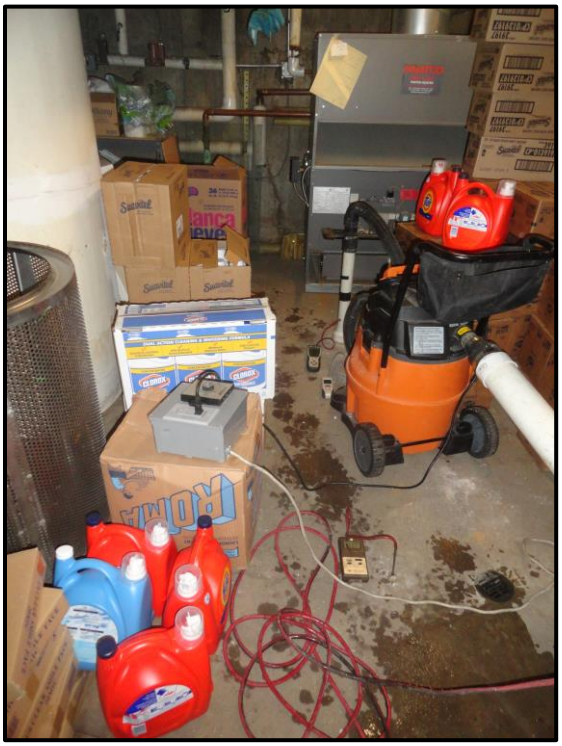
I. Pre Work Submittals
    a. Copy of applicable licenses
        i. NRPP Radon Mitigation Specialist responsible for the installation of the system
    b. Equipment manufacturer cut sheets
II. Post Work Submittals
    a. As-Built drawings to include all applicable mechanical component locations
    b. Final project report certified by NJPE, LSRP, or Radon Mitigation Business
    c. OM&M instructions and recommendations

7.0 Pictures

7.1 Site Pictures

Coring Primary Diagnostic Suction Hole

Drilling Remote Pressure Differential Measuring Holes

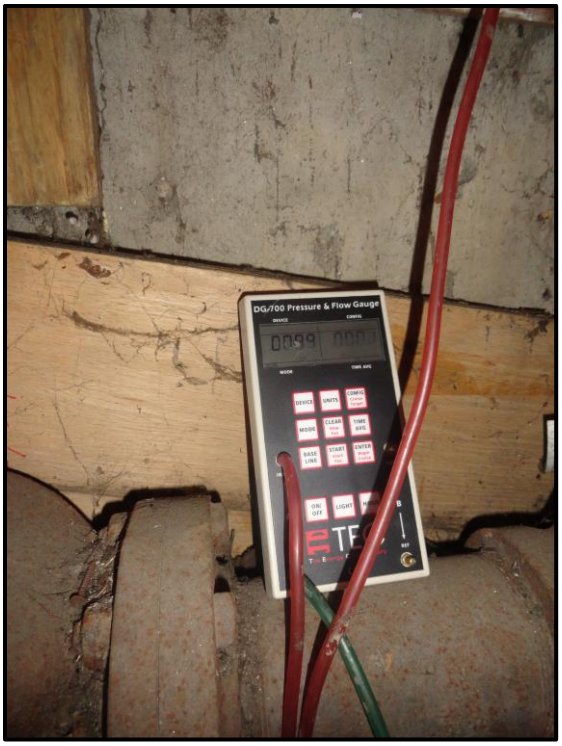


Speed Controlling the Motor to Apply a Precise Amount of Vacuum

Measuring Sub Slab Differential Pressures at Remote Test Holes

Measuring Airflow Yields at Known Amounts of Applied Vacuum

Venting Extracted Soil Gases Outside of the Building
Supply Air Opening for Gas Hot Water Boiler



Measuring Indoor to Outdoor Pressure Differentials


Soil Representative of Sub Slab Fill Material

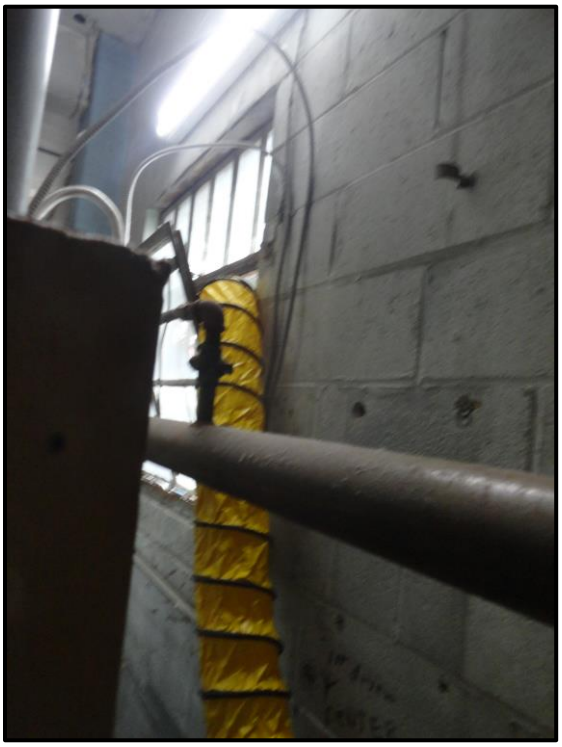
Underground Drainage Vault to be Sealed with a One Way Valve

Bucket and Exposed Soil to be Removed and Sealed with Concrete
Water Channel to be Scored into Concrete Floor in the Direction of the Floor Drain

Conduit Openings to be Sealed

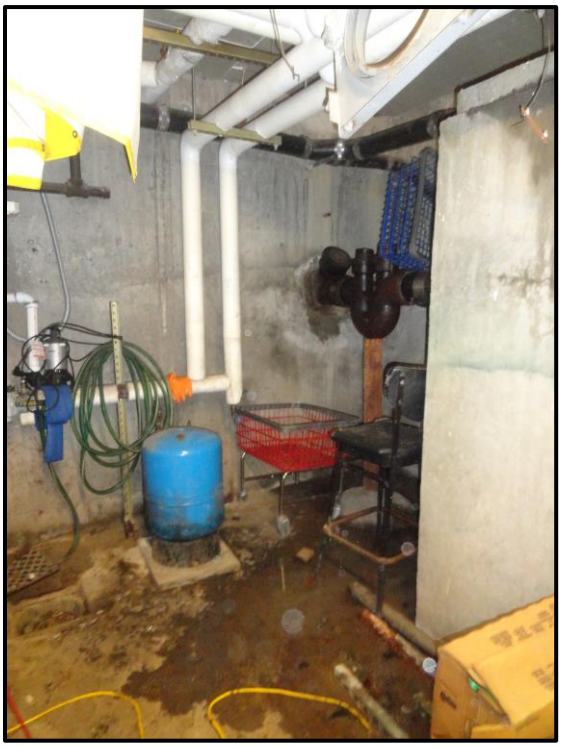
Floor Cracks to be Sealed

Open Windows and Louvered Wall Vent to Provide Continuous Passive Supply Venting to Replace Air and Exhaust by the Dryers



Extracted Soil Gas Vented Outside
Open Window that Provides Fresh Air Supply to Building for Dryer Exhaust

Unguarded Belts and Pullies Present a Work Safety Concern



Waste Water Wash Lint Separator Overflowed While We Were Onsite.
This Assembly Requires Scheduled Servicing.

Approximate Blower Location

Approximate Location of Blowers

7.2 Installation Examples

Suction Point and Metal Riser Pipe

Metal Pipe Through Second Floor to Roof

Overhead Metal Conveyance Pipe

Roof Mounted Compact Radial Blowers

Roof Mounted Inline Centrifugal Blower

Magnehelic Vacuum Gauge Panel

Appendix A – Drawings

ACTIVE SOIL DEPRESSURIZATION SYSTEM
LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550

SEPTEMBER 13, 2016

DRAWING LIST

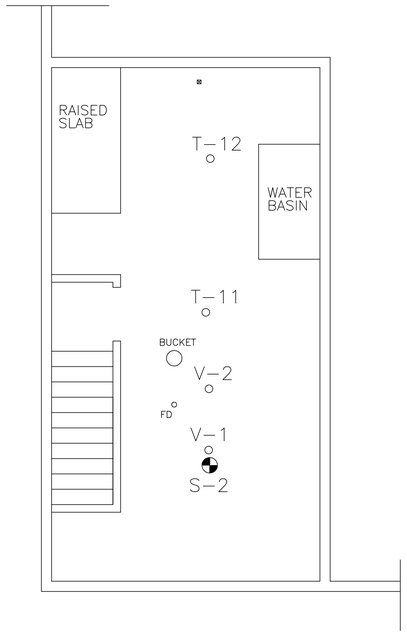
C	Cover
1	Diagnostic Test Holes
2	Sealing Plan
3	Suction Points & Blowers
4	Mechanical Details

CLEAN VAPOR LLC
V.O.C. & RADON PLAN DESIGN AND REMEDIATION

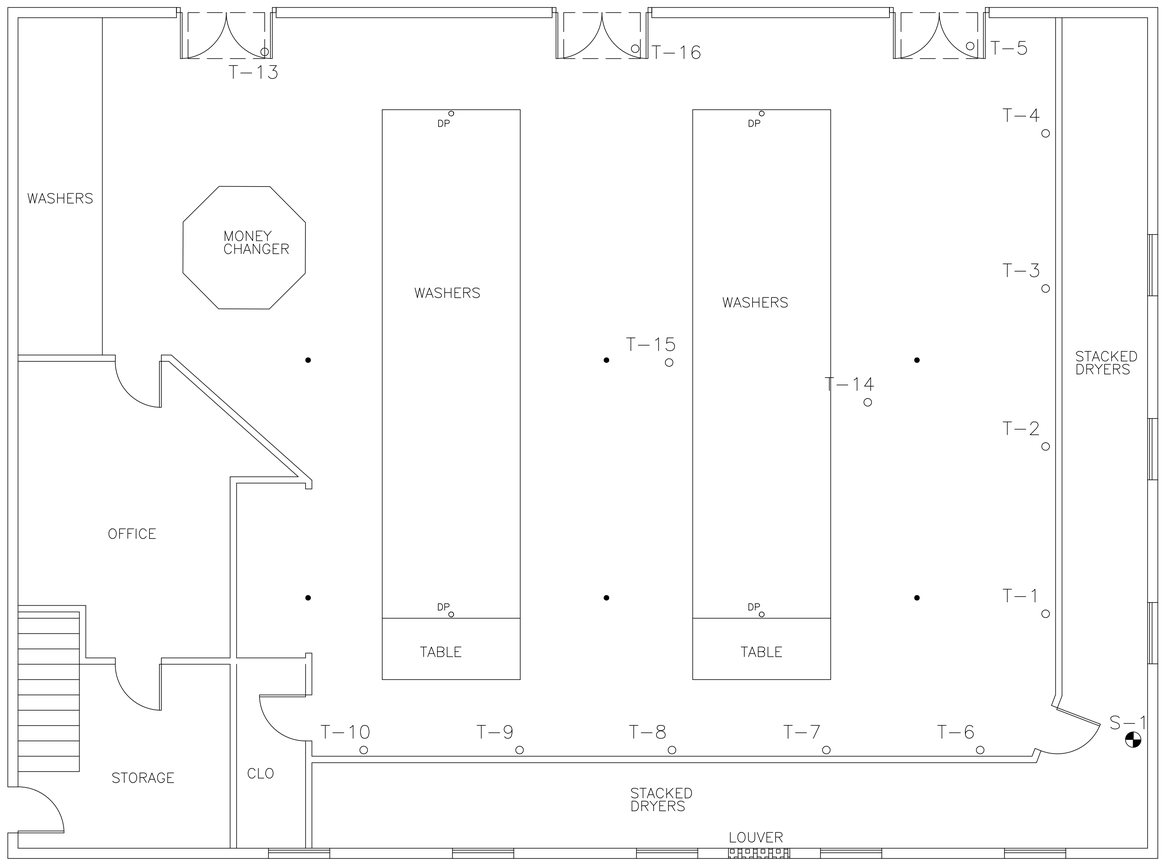
CLEAN VAPOR LLC

P.O. BOX 688, BLAIRSTOWN, NEW JERSEY 07825

Ph 908 362-5616 Fax 908 362-5433 www.cleanvapor.com



BASEMENT PLAN



NOTE:

WINDOWS TO REMAIN IN PRESENT C
CONDITION OR OPEN LOUVERED VEI

FLOOR PLAN

0 4' 12'

2' 8' 16'

GRAPHIC SCALE

LEGEND

T-1 TESTHOLE

S-1 SUCCTION POINT

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VOC & RADON PURGE DESIGN AND REMEDIATION

ACTIVE SOIL DEPRESSURIZATION
LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550

REVISION	DATE
	9-13-16
DRAWN BY	DAB
APPROVED	TEH
SCALE	1/4"=1'
CHECKED BY	TEH

SHEET TITLE

DIAGNOSTIC TEST HOLES

SHEET NO.

1

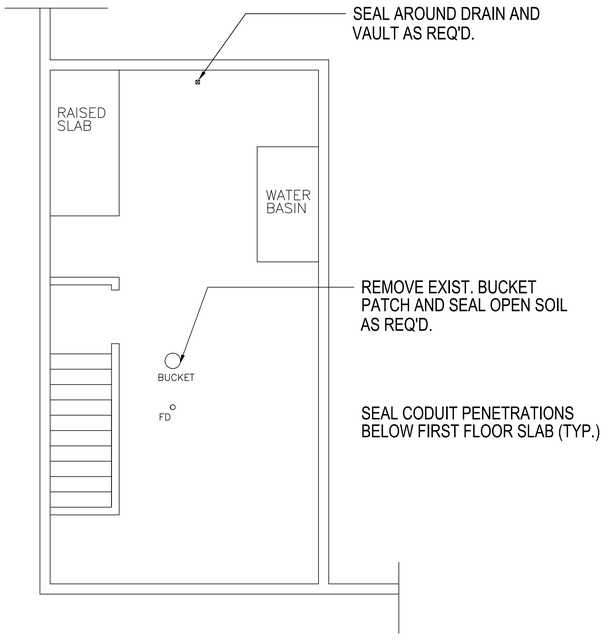
NOTE:

SEAL ALL EXISTING EXPANSION JOINTS AS REQ'D. VERIFY THEY ARE CLEANED AND CUT FOR PROPER INSTALLATION (TYP.)

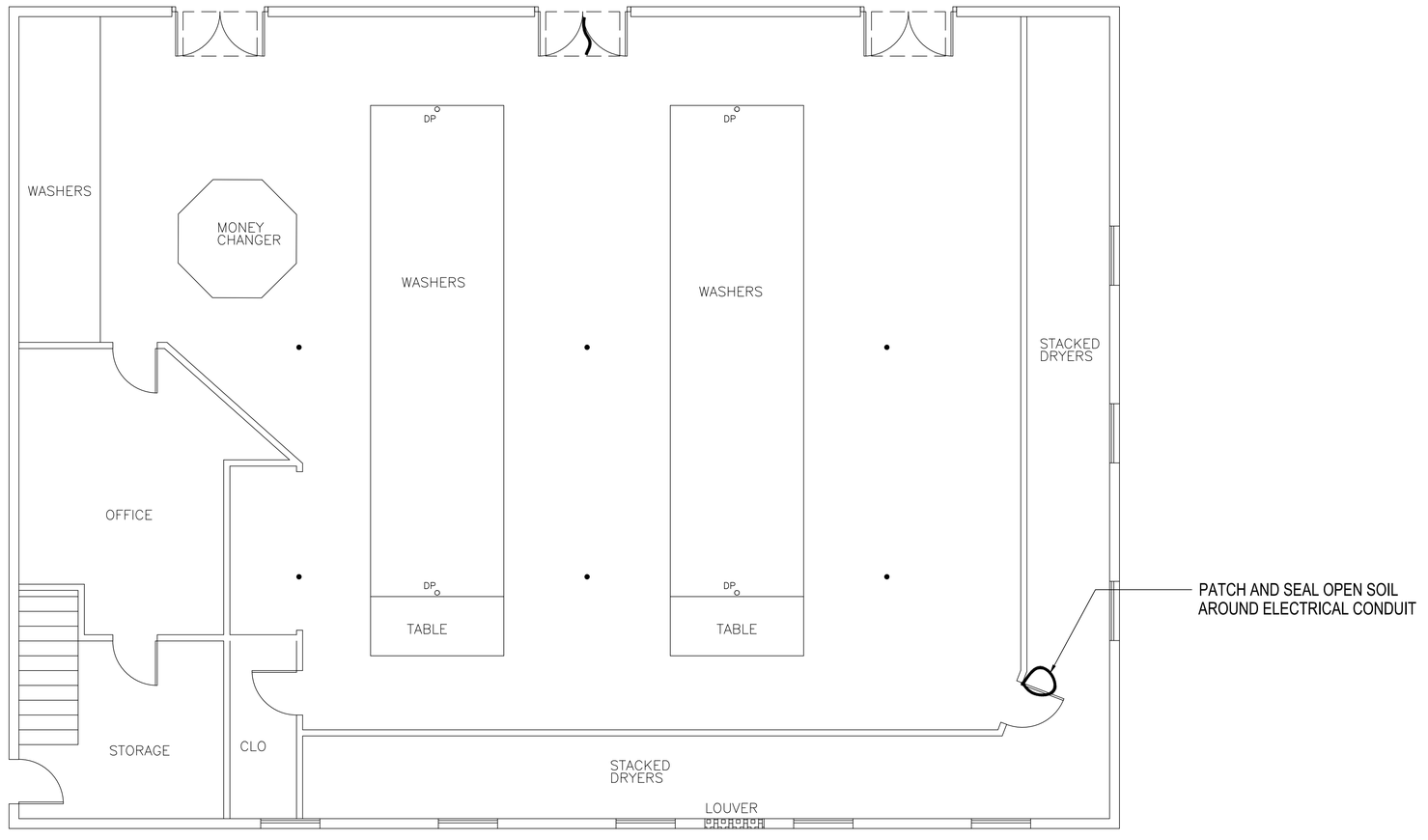
SEAL EXISTING FLOOR PERIMETER JOINTS AS REQ'D. VERIFY THEY ARE CLEANED AND CUT FOR PROPER INSTALLATION (TYP.)

SEALING NOTES:

SEE SPEC SHEET 4 FOR SEALING NOTES



BASEMENT PLAN



NOTE:

WINDOWS TO REMAIN IN PRESENT OPEN CONDITION OR OPEN LOUVERED VENT 100%

FLOOR PLAN

0 4' 12'

2' 8' 16'

GRAPHIC SCALE

LEGEND

EXPANSION JOINT

CRACK IN CONCRETE

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ACTIVE SOIL DEPRESSURIZATION
LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550

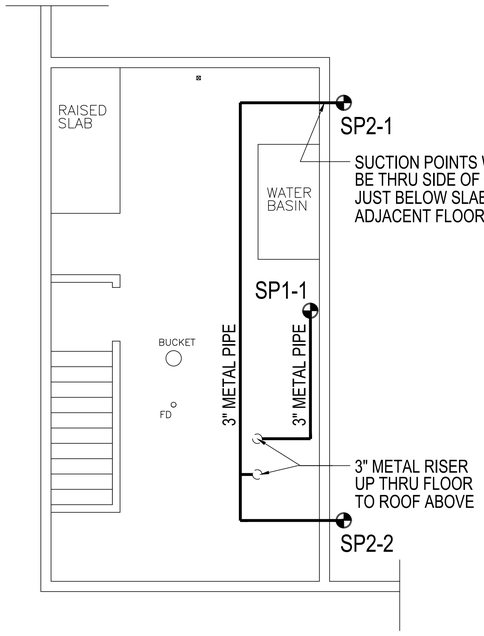
REVISION	DATE
	9/13/16
DRAWN BY	DAB
APPROVED	TEH
SCALE	1/4"=1'
CHECKED BY	TEH

SHEET TITLE

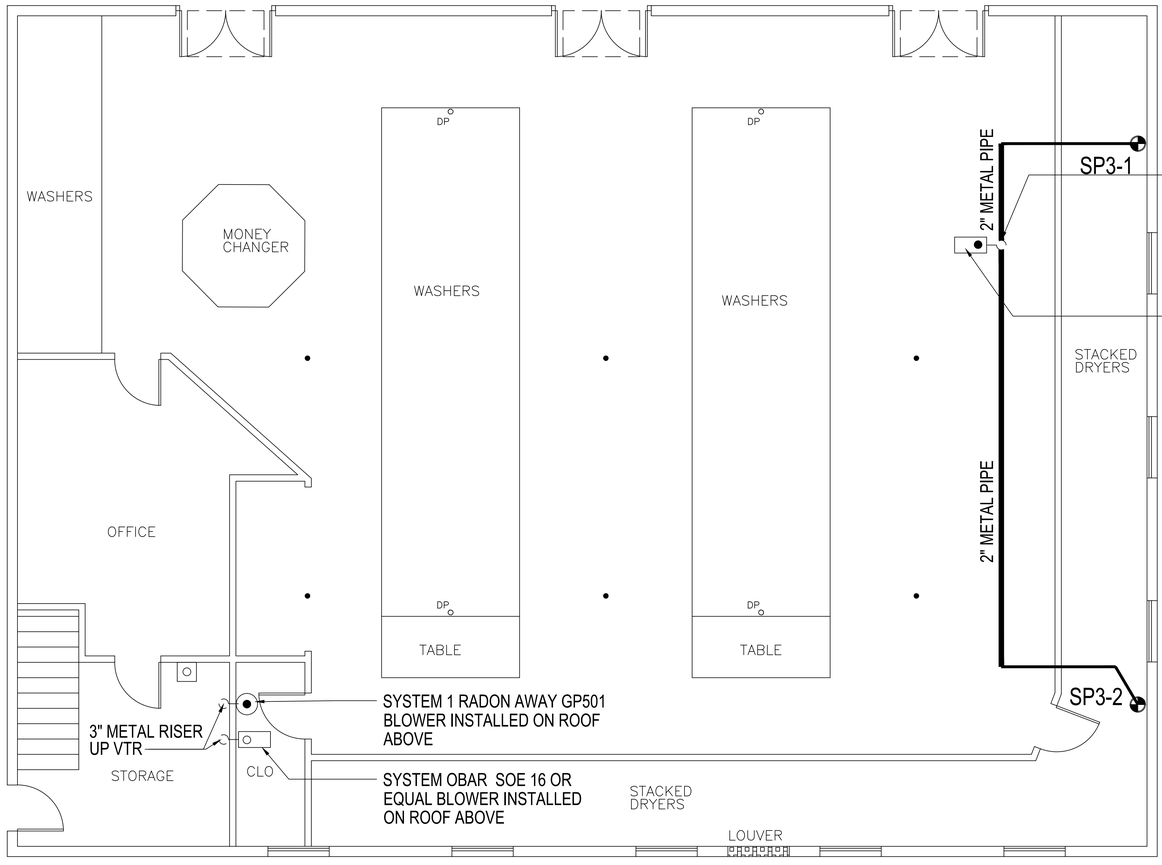
SEALING PLAN

SHEET NO.

2



BASEMENT PLAN



FLOOR PLAN

NOTE:

WINDOWS TO REMAIN IN PRESENT OPEN CONDITION OR OPEN LOUVERED VENT 100%

0 4' 12'

2' 8' 16'

GRAPHIC SCALE

LEGEND

SP#-#	SUCTION POINT
	MAGNEHELIC PANEL
	LOW PRESSURE ALARMS
	OBAR GBR76-UD BLOWER, OR EQUAL
	OBAR SOE 16 BLOWER, OR EQUAL
	RADONAWAY GP501
	FIRE COLLAR (AS REQ'D.)

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LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550

REVISION	DATE
	9/13/16
DRAWN BY	DAB
APPROVED	TEH
SCALE	3/32"=1'
CHECKED BY	TEH

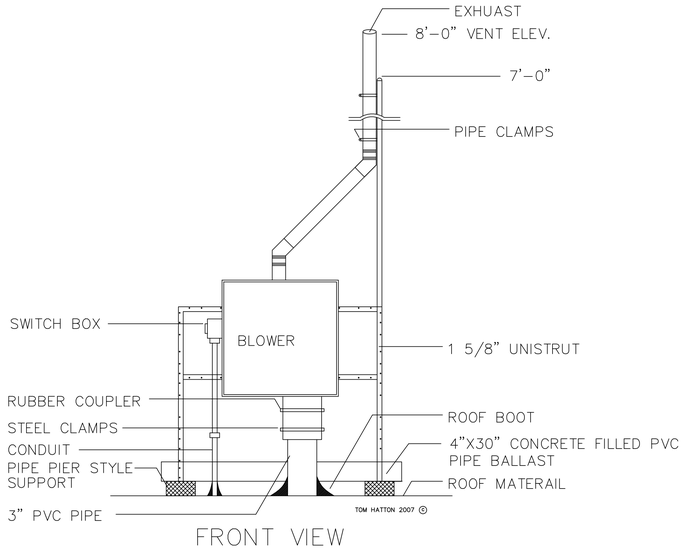
SHEET TITLE

SUCTION PT. & BLOWERS

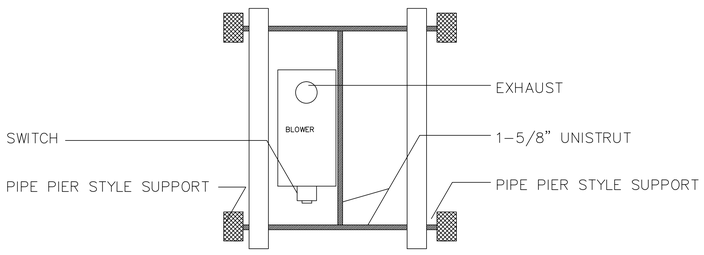
SHEET NO.

3

GBR SERIES BLOWERS
BLOWER B-8 EXHAUST DETAIL

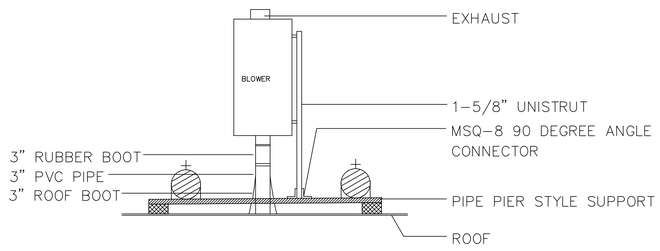


FRONT VIEW



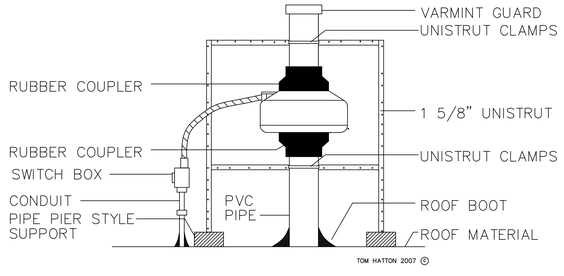
TOP VIEW

NTS



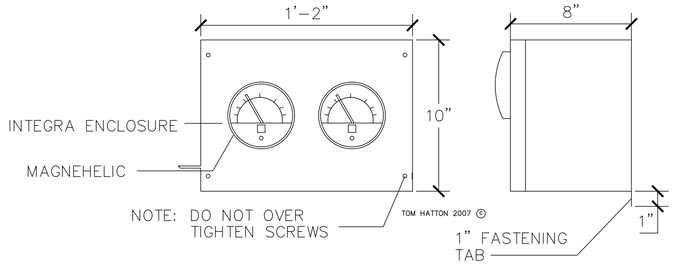
SIDE VIEW

RADONAWAY BLOWER

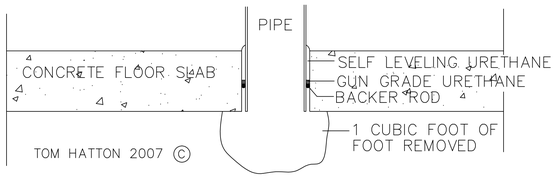


FRONT VIEW

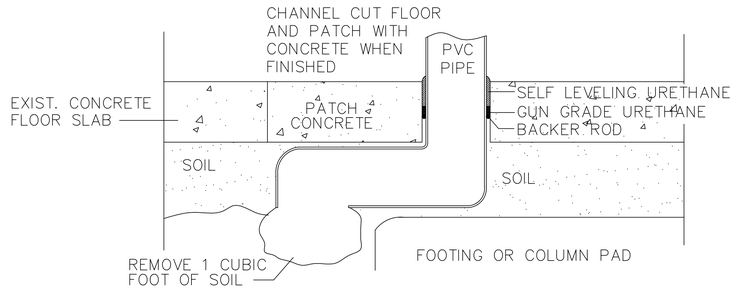
MAGNEHELIC AND PROTECTIVE BOX ENCLOSURE DETAIL



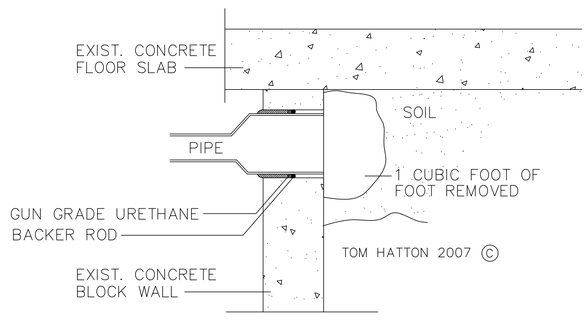
SUCTION POINT DETAIL



SUCTION POINT DETAIL AT FOOTER



SUCTION POINT THRU SIDEWALL DETAIL



EQUIPMENT SCHEDULE

Vapor Vent Piping
- Steel schedule 40 pipe and fittings (ASTM D-?)
  Hollow Core PVC is not permissible
- PVC cement clear primer will comply with ASTM F-656
- PVC cement adhesive will comply with ASTM D-2564

Piping Supports and Hardware
- 3" Hanging Pipe Supports
- Swivel ring or standard bolt type clevis
- Adjustable band hanger
- Double Expansion Anchors
- 3/8" threaded rod
- 1/2" threaded rod
- Assorted bolts, nuts & washers
- 3" Pipe Secured to Concrete Floor or Wall
- Slotted Conduit Channel
- Conduit Clamps
- Assorted bolts, nuts & washers

Vapor Blower
- (1) OBAR GBR76-UD or equal
- (1) OBAR SOE 16 or equal
- (1) RADONAWAY GP501
- 3" to 3" rubber boots with stainless steel hose clamps

Blower Support Frame
- 1 5/8" C- Profile Galvanized Unistrut
- MSQ-4 Hole 90 degree Angle Connector
- MSQ-8 Hole 90 degree Angle Connector
- MSQ Pushbutton fastening bolt
- Pipe Pier style supports for roof contact

Air Flow Regulator Valves
- 3" Gate Valves

Sealing Materials
- Urethane sealant will comply with Federal Specification TT-S-00230C, Subject to compliance with contract requirements; the following manufacturers of urethane caulking sealants may be used:
  - VULKEM 45 SSL
  - VULKEM 116

Fire Protection
- 3" Fire collars
- Fire stopping Caulk (Hilti)

Hilti is a suggested manufacturer of fire stopping fastening products

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VOC & RADON FLOOR DESIGN AND REMEDIATION

ACTIVE SOIL DEPRESSURIZATION
LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550

REVISION	DATE
	9/13/16
DRAWN BY	DAB
APPROVED	TEH
SCALE	NTS
CHECKED BY	TEH

SHEET TITLE
MECHANICAL DETAILS

SHEET NO.
4

APPENDIX D
QUALITY ASSURANCE PROJECT PLAN

APPENDIX D – QUALITY ASSURANCE PROJECT PLAN

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plan (QAPP) prepared for the site. Main Components of the QAPP include:

- QA/QC Objectives for Data Measurement;
- 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;
- 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.
- Analytical Procedures;
- 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.
- Assessing achievement of the remedial performance criteria.
- Preparing the necessary reports for the various monitoring activities.
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;

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APPENDIX E
RESPONSIBILITY OF OWNER & REMEDIAL PARTY
E-1 RESPONSIBILITIES
E-2 SITE OWNER'S RESPONSIBILITIES
E-3 REMEDIAL PARTY RESPONSIBILITIES

APPENDIX E - RESPONSIBILITIES OF OWNER AND REMEDIAL PARTY

Responsibilities

The responsibilities for implementing the Site Management Plan ("SMP") for the Love Cleaner site (the "site"), number 130187, are divided between the site owner(s) and a Remedial Party, as defined below.

The owner(s) is/are currently listed as:

Mark Wieboldt,
3023 Ewell Place,
Wantagh, NY 11793 (the "owner").

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation ("NYSDEC") is carrying out remediation or site management, the NYSDEC and/or an agent acting on its behalf.

The RP is:

Mark Wieboldt,
3023 Ewell Place,
Wantagh, NY 11793

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the site.

Site Owner's Responsibilities:

1. The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the site.
2. In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in a(n) Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the site's Periodic Review Report (PRR) certification to the NYSDEC.
3. In the event the site is delisted, the owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.
4. The owner shall grant access to the site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.
5. The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3 - Notifications.
6. In the event some action or inaction by the owner adversely impacts the site, the owner must notify the site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3 - Notifications and (ii) coordinate the performance of necessary corrective actions with the RP.
7. The owner must notify the RP and the NYSDEC of any change in ownership of the site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the site property. 6 NYCRR Part contains notification requirements applicable to any construction

or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 2.4 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8. Until such time as the NYSDEC deems the vapor mitigation system unnecessary, the owner shall operate the system, pay for the utilities for the system's operation, and report any maintenance issues to the RP and the NYSDEC.

9. In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

Remedial Party Responsibilities

1. The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.

2. The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3. Before accessing the site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the site visit and/or any final report produced.

4. If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).

5. The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at:

   http://www.dec.ny.gov/chemical/76250.html

6. The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3- Notifications of the SMP.
7. The RP is responsible for the proper maintenance of any installed vapor intrusion mitigation systems associated with the site, as required in Appendix 5 (Operation, Monitoring and Maintenance Manual) of the SMP.
8. The RP is responsible for the proper monitoring and maintenance of any installed drinking water treatment system associated with the site, as required in Appendix 5 (Operation, Monitoring and Maintenance Manual).
9. Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.
10. Any change in use, change in ownership, change in site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.
11. Change in RP ownership and/or control and/or site ownership does not affect the RP's obligations with respect to the site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.
12. Future site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

APPENDIX F
HEALTH & SAFETY PLAN

Health and Safety Plan

Prepared For:
LoveCleaners
416 Clinton Street
Hempstead, New York, 11550

Prepared By:
Optima Environmental Services, Inc.
94 Stewart Avenue, Newburgh
New York, 12550

Preparation Date:

June 3, 2019

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Receipt of Acknowledgement

I acknowledge that I have reviewed the following site-specific health and safety plan and have familiarized myself with the information contained herein:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

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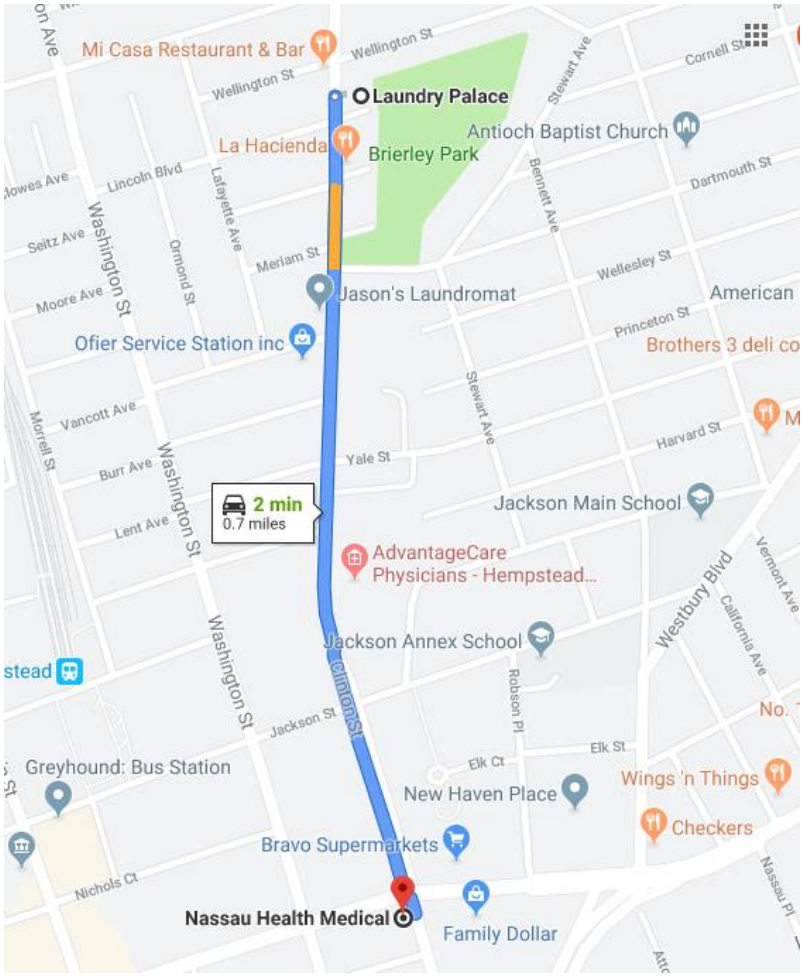
Contents

1. Emergency Contact Information and Procedures

1.1 Hospital Route and Directions



Laundry Palace
416 Clinton St, Hempstead, NY 11550

1. Head south on Clinton St toward Lincoln Blvd
   Destination will be on the right

0.7 mi

Nassau Health Medical
95 Clinton St, Hempstead, NY 11550

1.2 Emergency Contact Information

Local Police – *Hempstead Police Department* *99 James A Garner Way, Hempstead NY*	911 OR (516) 483-6200
Local Fire Department – *Hempstead Fire Department* *75 Clinton Street, Hempstead NY*	911 OR (516) 486-0311
Local Hospital – *Nassau Health Medical* *95 Clinton Street, Hempstead NY*	911 OR (516) 629-0349
Optima Environmental Services Project Manager - Amber Caputo	(845) 561-1512

2. Introduction

All work on this project will be carried out in compliance with Optima Environmental Service, inc (Optima's) Health and Safety Standards and the Occupational Safety and Health's (OSHA's) regulations. Specific health and safety information for the project in contained in this HASP. All personnel working on hazardous operations or in the area of hazardous operations shall read and be familiar with this HASP before doing any work. All project personnel shall sign the certification page acknowledging that they have read and understand this HASP.

LoveCleaners in Hempstead, NY has had a Sub-Slab Depressurization System installed to mitigate concentrations of tetrachloroethene (PCE) in the soil vapor beneath the site. Optima has been contracted to monitor and evaluate the observed concentrations and provide Operation and Maintenance for the engineering control. This HASP is created as part of a Site Management Plan for the onsite operable unit (OU-1).

3. Project Site History and Requirements

3.1 Site Description and History

Hempstead, Town of Hempstead, Nassau County, Long Island. The area is a densely developed mixture of urban small business and residential properties.

Site Features: The site is composed of a double lot whose combined size is approximately 83x106 feet, forming the northeast corner of Clinton Street and Lincoln Blvd. The one on-site building, a single-story, concrete block building comprising 4125 square feet and built in 1969, spans the entire rear of both lots and a paved parking lot for 8-10 cars is in the front along Clinton Street.

Current Zoning and Land Use: The site is zoned for commercial use and is operated as a laundromat that does not include dry cleaning. The nearest residential property is next door, approximately 20 feet to the north of the Site. Adjacent to the west of the Site is the Village of Hempstead's Clinton St. well field and water filtration plant, which supplies drinking water to a community of over 56,000 residents.

Past Use of the Site: The site operated as a dry cleaner (Love Cleaners) from approximately 1969 until 1999. Nassau County Department of Health Services documented disposal of tetrachloroethene (PCE), a dry cleaning solvent at the Site during a 1997 Underground Injection Control (UIC) Program inspection. Low-level PCE contamination was found in soils beneath a window where mist from a wastewater treatment machine was discharging and also in soils below a floor drain which was found in the building. Under NCDHS supervision, the discharges were ceased and the floor drain was investigated (sampled) and later sealed. Only minor PCE contamination was detected.

A Site Characterization (SC) investigation was completed by the Department in December 2008. A follow-up soil vapor intrusion investigation was conducted by the Department, and a report of that investigation was issued in March 2010.

The site was listed as Class 2 inactive hazardous waste disposal site in May 2011 due to high levels of PCE in the soil vapor under the on-site building slab.

Operable Units: The site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical and administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. Operable Unit 01 (OU 01) pertains to the on-site contamination. OU 02 consists of off-site soil vapor contamination attributable to the site. Geology and Hydrology: The area is made up of coastal plain deposits which may be up to 2,000-ft thick. The site appears to be located on the Monmouth and Matawan groups within the Magothy formation, which consists of silty clay, glauconitic sandy clay, sand, and gravel units. Based on available data from the nearby Clinton Street well field, unconsolidated deposits underlying the site consist of sand and gravel mixtures up to approximately 65 feet below ground surface (bgs), before clay units occur. No clay formations were encountered in soil borings down to 100 feet bgs during the investigation. Groundwater beneath the Site is approximately 25-30 feet bgs and flows to the south.

Operable Unit (OU) Number 01 is the subject of this document.

3.2 List of Tasks and Scope of Work

Task 1: *Operation and Maintenance of Sub Slab Depressurization System* – Annual inspections of the Sub Slab Depressurization system will be completed in accordance with Section 5.0 of the Site Management Plan.

Task 2: Soil Vapor Sampling – In the event that the Sub Slab System is shut down, soil vapor sampling will be completed 2 weeks after the shutdown to evaluate soil vapor conditions. Sampling protocol is discussed in Section 4.0 of the Site Management Plan.

4. Optima Organization and Responsibilities

4.1 All Personnel

Each person is responsible for completing tasks safely and reporting any unsafe acts or conditions to their supervisor. No person may work in a manner that conflict with these procedures. Prior to initiating Site activities, all Optima and subcontractor personnel will receive training in accordance with applicable regulations and be familiar with the requirements and standards referenced in this HASP. In addition, all personnel will attend daily safety meetings (toolbox

meetings) to discuss hazards prior to beginning each day's work. Every Optima employee, subcontractor, and client representative at the Site has the responsibility to stop the work of a coworker or subcontractor if the working conditions or behaviors are considered unsafe.

4.2 Project Manager

The Project Manager is responsible for verifying that project activities are completed in accordance with the requirements of this HASP. The Project Manager is responsible for confirming that the project has the equipment, materials, and qualified personnel to fully implement the safety requirements of this HASP, and/or that subcontractors assigned to this project meet the requirements established by Optima. It is also the responsibility of the Project Manager to:

- Review all applicable H&S Standards and ensure that project activities conform to all requirements;
- Obtain client specific health and safety information and communicate with the client on health and safety issues;
- Communicate with field personnel on health and safety issues;
- Allocate resources for correction of identified unsafe work conditions;
- Ensure Optima field personnel have all training necessary for the project; and
- Report all injuries, illnesses, and near-misses to the client representative and Optima Health and Safety Manager, and ensure that any recommendations made are implemented.

5. Project Hazards and Control Measures

5.1 Project Hazards

Hazards that may be encountered during completion of the scope of work discussed above include but are not limited to the following:

- Driving
  - Urban driving
  - Night driving
- Mechanical
  - Pinch points
- Motion
  - Lifting/ awkward body positions
  - Sampling in active parking lot/ vehicle traffic
- Personal Safety
  - Working alone
  - Moderate crime rate area
- Pressure
  - Compressed gas cylinders
- Sound
  - Traffic noise
- Chemical
  - Soil vapor
- Gravity
  - Slips, trips, falls

5.2 Control Measures

5.2.1 Toolbox Meetings

Toolbox safety briefings must be conducted at least once daily or as tasks/ hazards change. Each toolbox safety briefing must be documented on the form included in **Appendix B** and maintained with the project files. The toolbox safety briefing will serve as a final review for hazard identification and controls to be utilized.

6. General Site Access and Control

The Project Manager will coordinate access to the work site. The field personnel will establish a work area perimeter. The size of the perimeter will be based on the daily task activities and will be discussed with the Project Manager prior to the start of site activities as well as discussed during the Toolbox meeting and noted on the Toolbox form.

Only authorized personnel will be allowed beyond the perimeter. Other Site workers and visitors to the Site should be kept out of the work site. If visitors need access to the site, the field personnel will escort the visitor at all times. All visitors will log in and out with the field personnel, and be noted on the Visitor Log Sheet included in **Appendix B**.

Appendix A

HASP Addendum Pages
and
Log Table

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Addendum Page

This form should be completed for new tasks associated with the project. The Project Manager should provide a summary of newly identified tasks which include anticipated hazards and the associated recommended controls. The summary sheet should be attached to this addendum sheet.

Review the addendum and summary sheet with all Site staff, including subcontractors during the toolbox briefing, and complete the toolbox briefing form as required. Attach a copy of the addendum to all copies of the HASP including the Site copy, and log in the Addendum Log on the next page.

Addendum Number: _____ Project Number: _____

Date of Changed Condition: _____ Date of Addendum:_____

Description of Change that Results in Modifications to HASP:

Signed: _____ Signed:_____
Project Manager Field Lead

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Addendum Log Table

Addendums are to be added to every copy of the HASP, and logged on the table below to verify that all copies of the HASP are current:

Addendum Log Table

Addendum Number	Date of Addendum	Reason for Addendum	Person Completing Addendum
1			
2			
3			
4			
5			
6			
7			

Appendix B

Safety Forms

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Employee Signature Form

I certify that I have read, understand, and will abide by the safety requirements outlined in this HASP.

Printed Name	Signature	Date

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Subcontractor Acknowledgement: Receipt of HASP Signature Form

Optima claims no responsibility for the use of this HASP by others although subcontractors working at the Site may use this HASP as a guidance document. In any event, Optima does not guarantee the health and/ or safety of any person entering the Site. Strict adherence to the health and safety guidelines provided herein will reduce, but not eliminate, the potential for injury at the Site. To this end, health and safety becomes the inherent responsibility of personnel working at the Site.

Printed Name	Company	Signature	Date

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Visitor Acknowledgement and Acceptance of HASP Signature Form

By signing below, I waive, release and discharge the owner of the site and Optima and their employees from any future claims for bodily and personal injuries which may result from my presence at, entering, or leaving the site and in any way arising from or related to any and all known and unknown conditions on the Site.

Name	Company	Reason for Visit	Date/ Time On Site	Date/ Time Off Site

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Toolbox Meeting Form

Project Name: _____ Date: _____

Project Address: _____ Job Number: _____

Conducted by: _____ Weather: _____

TASKS:

1)_____ 4)_____

2)_____ 5)_____

3)_____ 6)_____

HAZARDS:

- ☐ Electrical (i.e. utilities, power tools)
- ☐ Chemical (i.e. petroleum, paint)
- ☐ Biological (i.e. insects, poison ivy)
- ☐ Ergonomic (i.e. sitting, reaching, lifting)
- ☐ Gravity (i.e. slips, trips, falls)
- ☐ Vehicular (ie. car, truck, excavator, traffic)
- ☐ Environmental (i.e. heat, cold, ice, sun)
- ☐ Sound (i.e. generators, heavy equipment, sawsall)

MITIGATION:

- ☐ Proper PPE Usage
- ☐ Personal Hygiene
- ☐ Good Housekeeping
- ☐ Hearing Conservation
- ☐ Fall Protection
- ☐ Monitoring
- ☐ Backup Alarms Functional
- ☐ Spotter Used (if needed)
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

ATTENDEES:

Name (printed)/ Company	Onsite at:	Offsite at:

NOTES:

APPENDIX G
SITE MANAGEMENT FORMS
&
SUMMARY OF GREEN METRICS FOR SITE MANAGEMENT

APPENDIX G - SITE MANAGEMENT FORMS

Interim Monitoring/Inspection Report

Site Name: _____ Report Date: _____

Address: _____

State: _____Zip Code: _____County: _____

Inspection Company

Name: _____

Address: _____

State: _____Zip Code: _____County: _____

Inspector:

Name: _____ Position: _____

Description of activities performed:

_____

_____

_____

_____

_____

_____

_____

Color Photographs or Sketch showing approximate location of any problems or incidents noted:

Sample Name/Location: _____ Sample Type: _____

Include:

- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- 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);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;

Description of non-routine activities performed;

- 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
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Results of all analyses, copies of all laboratory data sheet and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

Operations and Maintenance Checklist:

Component	Date	Condition/Reading	Date	Condition/Reading	Date	Condition/Reading
Sealing	6/2/2017	New				
Pipe	6/2/2017	New				
Blowers	6/2/2017	New				

Blower Number	Date	Static Vac	Airflow cfm	Date	Static Vac	Airflow cfm	Date	Static Vac	Airflow cfm
Blower #1	6/2/2017	-3.5"	34						
Blower #2	6/2/2017	-4.6"	168						
Blower #3	6/2/2017	-3.1"	54						

Riser Number	Date	Static Vac	Gate Valve	Date	Static Vac	Gate Valve	Date	Static Vac	Gate Valve
1-1	6/2/2017	-3.5	100						
2-1	6/2/2017	-2.4	100						
2-2	6/2/2017	-2.6	100						
3-1	6/2/2017	-3.1	100						
3-2	6/2/2017	-3.0	100						

Permanent Port	Date	Vacuum "w.c.	Date	Vacuum "wc	Date	Vacuum "wc
PT-1	6/2/2017	-0.0560				
PT-2	6/2/2017	-0.0847				
PT-3	6/2/2017	-0.0921				
PT-4	6/2/2017	-0.1440				
PT-5	6/2/2017	-0.2980				
PT-6	6/2/2017	-0.1860				
PT-7	6/2/2017	-0.1052				
PT-8	6/2/2017	-0.3050				
T-15	6/2/2017	-0.1710				

Summary of Green Remediation Metrics for Site Management

Site Name: _____Site Code: _____

Address: _____City: _____

State: _____ Zip Code: _____ County: _____

Initial Report Period (Start Date of period covered by the Initial Report submittal)

Start Date: _____

Current Reporting Period

Reporting Period From: _____ To: _____

Contact Information

Preparer's Name: _____ Phone No.: _____

Preparer's Affiliation: _____

I.Energy Usage: Quantify the amount of energy used directly on-site and the portion of that derived from renewable energy sources.

	Current Reporting Period	**Total to Date**
Fuel Type 1 (e.g. natural gas (cf))		
Fuel Type 2 (e.g. fuel oil, propane (gals))		
Electricity (kWh)		
Of that Electric usage, provide quantity:		
Derived from renewable sources (e.g. solar, wind)		
Other energy sources (e.g. geothermal, solar thermal (Btu))		

Provide a description of all energy usage reduction programs for the site in the space provided

II.Solid Waste Generation: Quantify the management of solid waste generated on-site.

	Current Reporting Period (tons)	Total to Date (tons)
Total waste generated on-site		
OM&M generated waste		
Of that total amount, provide quantity:		
Transported off-site to landfills		
Transported off-site to other disposal facilities		
Transported off-site for recycling/reuse		
Reused on-site		

Provide a description of any implemented waste reduction programs for the site in the space provided on Page 87.

III.Transportation/Shipping: Quantify the distances travelled for delivery of supplies, shipping of laboratory samples, and the removal of waste.

	Current Reporting Period (miles)	Total to Date (miles)
Standby Engineer/Contractor		
Laboratory Courier/Delivery Service		
Waste Removal/Hauling		

Provide a description of all mileage reduction programs for the site in the space provided on Page 87. Include specifically any local vendor/services utilized that are within 50 miles of the site.

IV.Water Usage: Quantify the volume of water used on-site from various sources.

	Current Reporting Period (gallons)	Total to Date (gallons)
Total quantity of water used on-site		
Of that total amount, provide quantity:		
Public potable water supply usage		
Surface water usage		
On-site groundwater usage		
Collected or diverted storm water usage		

Provide a description of any implemented water consumption reduction programs for the site in the space provided on Page 87.

V.Land Use and Ecosystems: Quantify the amount of land and/or ecosystems disturbed and the area of land and/or ecosystems restored to a pre-development condition (i.e. Green Infrastructure).

	Current Reporting Period (acres)	Total to Date (acres)
Land disturbed		
Land restored		

Provide a description of any implemented land restoration/green infrastructure programs for the site in the space provided on Page 87.

Description of green remediation programs reported above (Attach additional sheets if needed)
Energy Usage:
Waste Generation:
Transportation/Shipping:
Water usage:
Land Use and Ecosystems:
Other:

CERTIFICATION BY CONTRACTOR

I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of the Company/Corporation herein referenced and contractor for the work described in the foregoing application for payment. According to my knowledge and belief, all items and amounts shown on the face of this application for payment are correct, all work has been performed and/or materials supplied, the foregoing is a true and correct statement of the contract account up to and including that last day of the period covered by this application.

_____

Date **Contractor**

Please post near Manometer

Year _____

Monthly Manometer Checks

Date	Initials	Manometer Reading	Based on visual checks, this system is operating
			Yes / No
			Yes / No
			Yes / No
			Yes / No
			Yes / No
			Yes / No
			Yes / No
			Yes / No
			Yes / No
			Yes / No
			Yes / No
			Yes / No

This system is required to be in operation at all times.

In Case of system failure, please contact:

Jared Donaldson (NYSDEC) (518) 402-9176

Email: jared.donaldson@dec.ny.gov

APPENDIX H
POST MITIGATION REPORT
&
SSDS INSTALLATION FORM

CLEAN VAPOR LLC
V.O.C. & RADON PLAN DESIGN AND REMEDIATION

REPORT OF
VAPOR INTRUSION MITIGATION
for:
The Former Love Cleaners
416 Clinton Street, Hempstead, NY11550

Prepared for:

Ms. Amber Caputo
Optima Environmental Services
92 Stewart Avenue
Newburgh, NY 12550

Prepared by:

Mr. Thomas E. Hatton
Project Director
NRPP ID# 104705
Clean Vapor, LLC
148 Route 94
PO Box 688
Blairstown, NJ 07825

June 5, 2017

Table of Contents

Former Love Cleaners

1. Introduction

This report summarizes the vapor intrusion mitigation activities at 416 Clinton Street in Hempstead, New York. The vapor intrusion mitigation system was installed in accordance with the specifications provided by the September 19, 2016, Clean Vapor, Vapor Intrusion Mitigation Plan Design. Mitigation activities began with mobilization on May 22, 2017. The depressurization blowers were activated on June 2, 2017 and the final commissioning data was collected. An electrical filed in accordance with local municipal code and final inspections are pending. The system is meeting all defined requirements for a successful Sub Slab Depressurization System.

2. System Commissioning Measurements

The design objective of the Vapor Intrusion Mitigation System was to create a negative sub slab pressure field with a minimum performance of -0.004 inches of water column ("w.c.). Post mitigation commissioning exhaust airflow, vacuum, and sub slab vacuum distribution measurements occurred on June 2, 2017. Sub slab vacuum measurements were made using a digital micro-manometer capable of reading down to 0.0001 inches water column and airflow measurements made using a hot wire anemometer. Blower vacuum and airflow was measured on the roof at a test port installed before the blower inlet. The tables below show the system performance metrics as measured during commissioning. There is a difference in the airflow measured at the riser pipes as compared to the inlet of the blower. This is most likely due to high velocity turbulence. All targeted areas of the sub slab are being depressurized to a vacuum level of -0.004 inches of water column or greater.

2.1. Blower Measurements

Blower # and Type	Vacuum ("wc)	Airflow (cfm)	Amps
Blower #1 RadonAway GP501	-3.5”	34	0.85
Blower #2 Vapor Dynamics IC 4514P	-4.6”	168	2.4
Blower #3 RadonAway GP501	-3.1”	54	0.94

2.2. Riser Pipe Measurements

System #	Riser #	Vacuum ("wc)	Airflow (cfm)
1	**1-1**	**-3.5**	**26**
2	**2-1**	**-2.4**	**80**
2	**2-2**	**-2.6**	**85**
3	**3-1**	**-3.1**	**38**
3	**3-2**	**-3.0**	**15**

2.3. Sub Slab Vacuum Measurements

The locations of the permanent sub slab test ports can be found on the As-built drawings.

Floor Test Port	Vacuum ("w.c.)
PT-1	-0.0560
PT-2	-0.0847
PT-3	-0.0921
PT-4	-0.1440
PT-5	-0.2980
PT-6	-0.1860
PT-7	-0.1052
PT-8	-0.3050
T-15	-0.1710

3. Suction Point Installation

A total of five (5) suction points were installed as shown in the As-built drawings. All piping, except the risers behind the dryers for System #3, is three-inch diameter Schedule 40 PVC. Two-inch diameter Schedule 40 metal risers and piping were installed behind the dryers and the overhead conveyance pipe and extends beyond the sheetrock wall that separates the dryer bank from the floor area of the laundromat.

All suction holes were created using a five-inch diameter concrete coring bit and were sealed following the removal of one cubic foot of soil and riser pipe installation. Gun-grade urethane caulking and backer rod were used below the surface of the concrete as a preliminary seal followed by self-leveling urethane to seal the suction point flush with the concrete floor. The riser pipes were secured above each suction hole with pipe clamps attached to the adjacent walls or columns. Photo documentation of a completed suction point is shown below.

Sealed Suction Point

All horizontal pipe runs between the roof mounted fans and the suction points were installed with a 1-inch slope back to a suction point for every ten feet of horizontal pipe run. All vertical pipe runs were installed plumb. Piping was installed so that there are no possible water traps between the blowers and the suction points. All piping and fittings installed are Schedule 40 PVC and are clamped and supported according to the 2015 National Standard Plumbing Code. Pipe is not supported by other building piping or ducts. Photos of overhead piping and a vertical riser are shown below.

Overhead Conveyance Piping

Vapor Conveyance Pipe Installation

4. Gate Valves

Inline slide valves were installed for all suction points. All valves are currently in the 100% open position. Optimum sub slab vacuum extension was observed throughout the targeted areas and no balancing was necessary.

Gate Valve

5. Expansion Joint and Crack Sealing

Visible expansion joints and slab cracks that had an approximate 1/16 inch or greater opening were sealed. Cracks and expansion joints were hand cleaned of debris using a cotter pin puller and the dust removed with a vacuum. Once cleaned, the cracks were sealed with a gun-grade urethane caulk sealant. Expansion joints that are greater than ¼ inch in width or greater than 3/8 inch below the floor surface required a two-part process where the gun-grade urethane caulk was installed as a base layer and self-leveling urethane installed on top to the level of the concrete floor. A water channel was scored into the basement floor to direct surface water to the floor drain. Sealed floor cracks and expansion joints are noted on the As-Built Drawings Sheet 2.

Water Channel Cut to Floor Drain

6. Blower Installation

There are three roof mounted blowers: one blower is a compact brushless radial blower and two of the blowers are high vacuum inline centrifugal blowers. The location of these blowers is noted on the As-built drawings. The blowers are mounted on a shared Uni-strut frame that is affixed to pipe pier foam blocks to minimize vibrations. The blower exhausts are shielded with a ½ inch stainless steel mesh wire varmint guard. The exhaust discharges extend a minimum of 2 feet above the roofline and terminate at least 20 feet from fresh air intake vents or other openings. The blowers were specified based on previous diagnostic vacuum and air flow measurements. The following photo shows the roof mounted blowers.

Roof Mounted Blower #1 and Blower #2

Roof Mounted Blower # 3

7. Blower Wiring, Panels, and Breakers

One dedicated 110V breaker was used to power each of the mitigation blowers. A separate dedicated breaker was used to power the systems' visual and audible alarm. The breakers have yellow labels with the text "ASD Blower Circuit, Do Not Power Off".

Labeled Circuit Breakers

8. Magnehelic and Alarm

Magnehelic vacuum gauges were installed to indicate the static vacuum generated by each of the blower systems. A RadonAway Air Flow audible and visual alarm was installed to provide notice of vacuum loss. If the system malfunctions, the red light will illuminate and the audible alarm will sound. The Magnehelics and alarms for Systems #1 and #2 were installed in the rear of the space adjacent to the rear side door. The Magnehelic for System #3 is located against the wall in the utility space at the intersection of the dryer banks. The photo below shows the systems' Magnehelics and Alarms.

Magnehelics and RadonAway Air Flow Alarm

9. System Labeling

At least every 20 feet of exposed contaminant vent pipe length has a label that reads "Active Soil Depressurization System, Do Not Alter" attached to the pipe. All labels are readable from three feet away. Each riser pipe is also labeled with a riser number that corresponds to the As-built drawing. The Systems #1, #2 and #3 Blowers were labeled both on the roof and below the corresponding Magnehelic vacuum gauges.

System Labeling and Test Port on a Riser Pipe

10. Permanent Sub Slab Ports

Nine (9) permanent sub slab test ports were installed for the purpose of verifying sub slab vacuum at Operations and Maintenance visits. The locations of these ports are shown in the As-built Drawings.

Permanent Sub Slab Test Port

11. Warranties

All system components, workmanship, and a sub slab pressure differential of -0.004" w.c. are warrantied for a period of one year from June 2, 2017. The client will not incur any cost for warranty work performed during this period. Fluctuating water tables, sink holes, and other unforeseen sub slab anomalous conditions that may affect sub slab soil gas channeling after commissioning values have been achieved may be considered outside of the warranty. Repairing system damage caused by others is not included in the warranty.

12. Operations and Maintenance

Vapor intrusion mitigation systems should be quarterly inspected for the first year and annually thereafter. All maintenance on the system should be performed by qualified maintenance personnel. The following items should be inspected and the checklist on the following page should be filled out.

- **Pipe:** Pipe should be checked to ensure no damage or leaks have occurred.
- **Permanent Sub Slab Test Ports:** The sub slab vacuum at each permanent test port should be measured and recorded to ensure that the sub slab vacuum has not dropped below -0.004 inches of water column.
- **Risers:** The static vacuum and gate valve position should be recorded.
- **Blowers:** The blowers should be checked for any visual signs of damage. The static vacuum and airflow of the blower should be measured and recorded.

Operations and Maintenance Checklist:

Component	Date	Condition/Reading		Date	Condition/Reading		Date	Condition/Reading	
Sealing	6/2/2017	New							
Pipe	6/2/2017	New							
Blowers	6/2/2017	New							
Blower Number	**Date**	**Static Vac**	**Airflow cfm**	**Date**	**Static Vac**	**Airflow cfm**	**Date**	**Static Vac**	**Airflow cfm**
Blower #1	6/2/2017	-3.5”	34						
Blower #2	6/2/2017	-4.6”	168						
Blower #3	6/2/2017	-3.1”	54						
Riser Number	**Date**	**Static Vac**	**Gate Valve**	**Date**	**Static Vac**	**Gate Valve**	**Date**	**Static Vac**	**Gate Valve**
1-1	6/2/2017	-3.5	100						
2-1	6/2/2017	-2.4	100						
2-2	6/2/2017	-2.6	100						
3-1	6/2/2017	-3.1	100						
3-2	6/2/2017	-3.0	100						
Permanent Port	**Date**	**Vacuum "w.c.**		**Date**	**Vacuum "wc**		**Date**	**Vacuum "wc**	
PT-1	6/2/2017	-0.0560							
PT-2	6/2/2017	-0.0847							
PT-3	6/2/2017	-0.0921							
PT-4	6/2/2017	-0.1440							
PT-5	6/2/2017	-0.2980							
PT-6	6/2/2017	-0.1860							
PT-7	6/2/2017	-0.1052							
PT-8	6/2/2017	-0.3050							
T-15	6/2/2017	-0.1710							

13.Project Licenses and Certifications

DOCUMENT CERTIFICATION

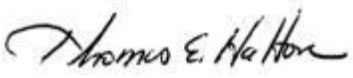
Vapor Intrusion Mitigation Report

416 Clinton Street Hempstead, NY 11550

June 13, 2017

I certify that the mitigation system described in this report and shown in the As-built drawings, at 416 Clinton Street in Hempstead, New York, is effectively addressing the vapor intrusion pathways associated with the sub slab vapors. I certify that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete.

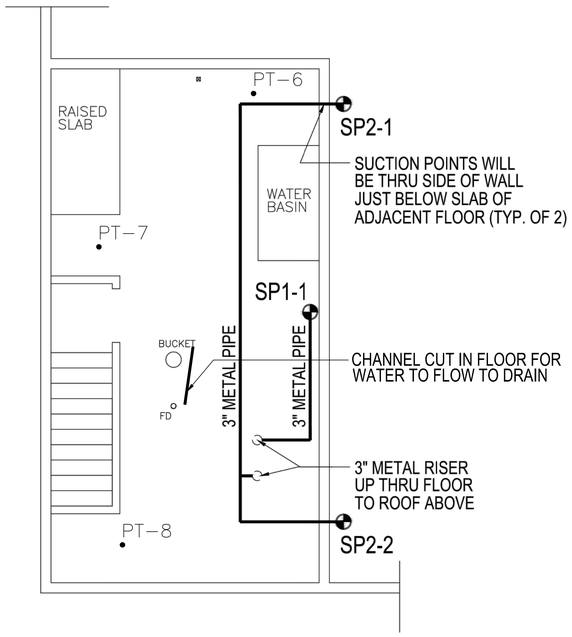
BY: Thomas E. Hatton

SIGNATURE: 

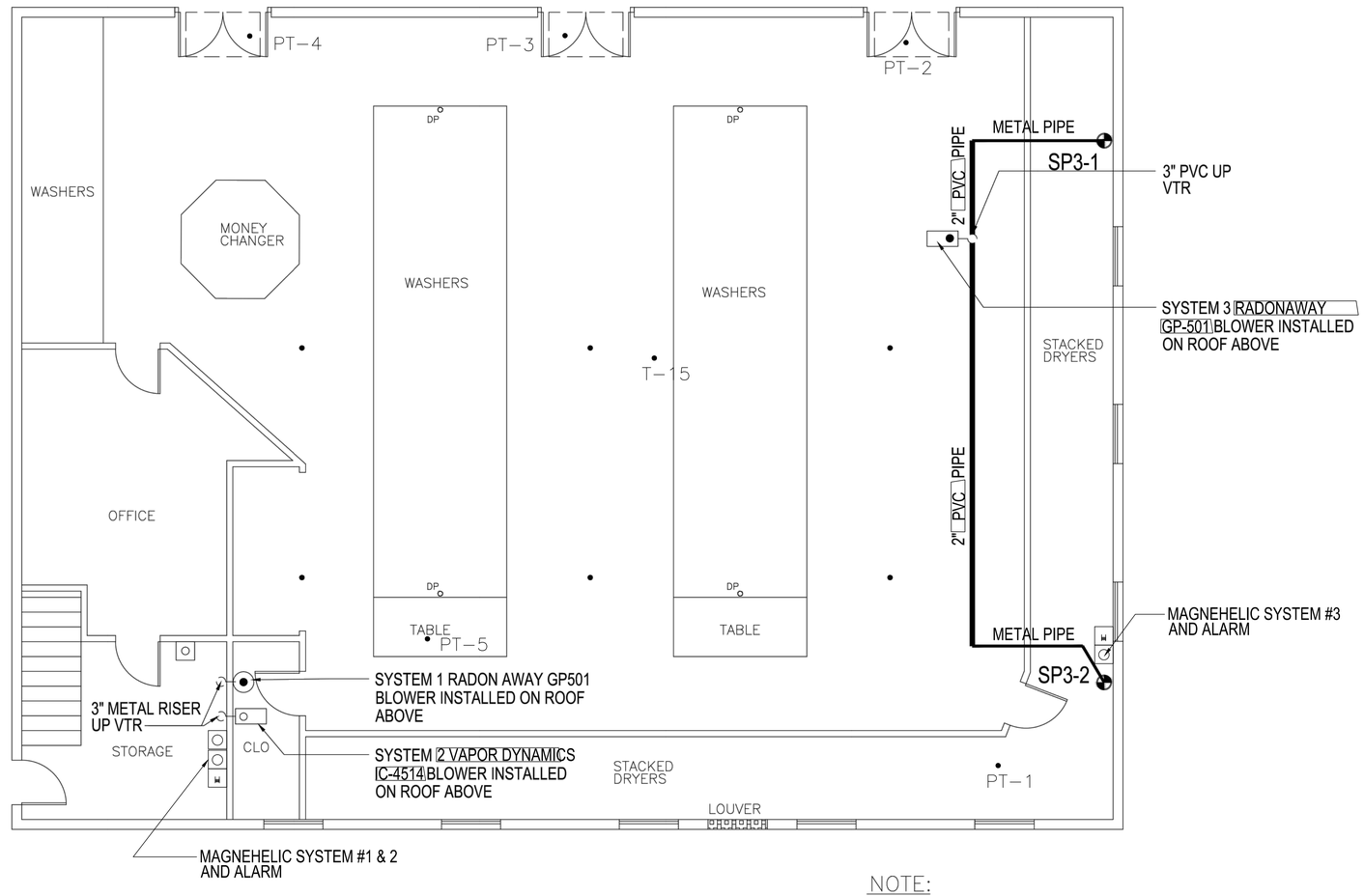
TITLE: Project Director

NRPP ID# 104705

14. As-Built Drawings



BASEMENT PLAN



FLOOR PLAN

NOTE:

WINDOWS TO REMAIN IN PRESENT OPEN CONDITION OR OPEN LOUVERED VENT 100%

AS-BUILTS

0 4' 12'
2' 8' 16'
GRAPHIC SCALE

LEGEND

- SP#x-x — SUCTION POINT
- PT–X — PERMANENT TEST HOLE
- VAPOR DYNAMICS IC–4514
- RADONAWAY GP501
- MAGNEHELIC PANEL
- ALARM PANEL
- FIRE COLLAR

CLEAN VAPOR LLC
P.O. BOX 688, BLAIRSTOWN, NJ 07825
Ph. 908 362-5616 Fax. 908 362-5433
www.cleanvapor.com
CLEAN VAPOR LLC
V.O.C. & RADON PEAK DESIGN AND REMEDIATION

ACTIVE SOIL DEPRESSURIZATION
LOVE CLEANERS
416 CLINTON STREET
HEMPSTEAD, NY 11550

REVISION	DATE
AS–BUILTS	6–19–17
	9–13–16
DRAWN BY	DAB
APPROVED	TEH
SCALE	1/4"=1'
CHECKED BY	TEH

SHEET TITLE
SUCTION PTS & BLOWERS

SHEET NO.
3

Import Sys Data

Mitigation System Installation Record

☒ Structure was sampled previously

System Information

Site No: 130187

System ID:

Site Name: Love Cleaners

Owner Name: Mark Weiboldt ☐ Owner Occupied

System Address: 416 Clinton Street Telephone: 516-236-5846

City: Hempstead Zip: 11550 Alt. Telephone: 516-697-4756

Contractor Information

Installer Name: Amber Caputo Company: Optima Environmental Services

Telephone: 845-561-1512

Building Conditions

Building Type: Dry Cleaner

Slab Integrity: ○ Poor ◉ Average ○ Good ○ Excellent

Slab Penetrations: ☐ Sump ☒ Floor drain ☐ Perimeter drain ☐ Other

Describe:

Floor drain with drainage channels in basement

Observed Water: ○ Dry ○ Damp ○ Sump only ○ Standing

Describe:

System Installation

Installation Type: Sub-Slab Depressurization (Active) Date Installed: June 2, 2017

Slab Thickess (inches): 3 to 5 in.

Subslab Material: Sand Subslab Moisture: Dry

Number of Suction Points: 5 Number of Fans Installed: 3

	☒ Fan #1 Operating	☒ Fan #2 Operating	☒ Fan #3 Operating
Fan Model No(s):	RadonAway GP501	Vapor Dynamics IC4	RadonAway GP501
Fan Serial No(s):	NA	NA	NA
Final U-Tube Levels:	3.5"w.c.	4.6"w.c.	3.1"w.c.

Additional Mitigation Elements (check all that apply):

☐ Drainjer ☐ Membrane ☒ Sealed cracks ☐ New floor ☐ Rain cap ☐ Other

Comments:

See Clean Vapor, Vapor Intrusion Mitigation Commissioning Report, June 5, 2017

Export Data

Mitigation System Installation

Print Form

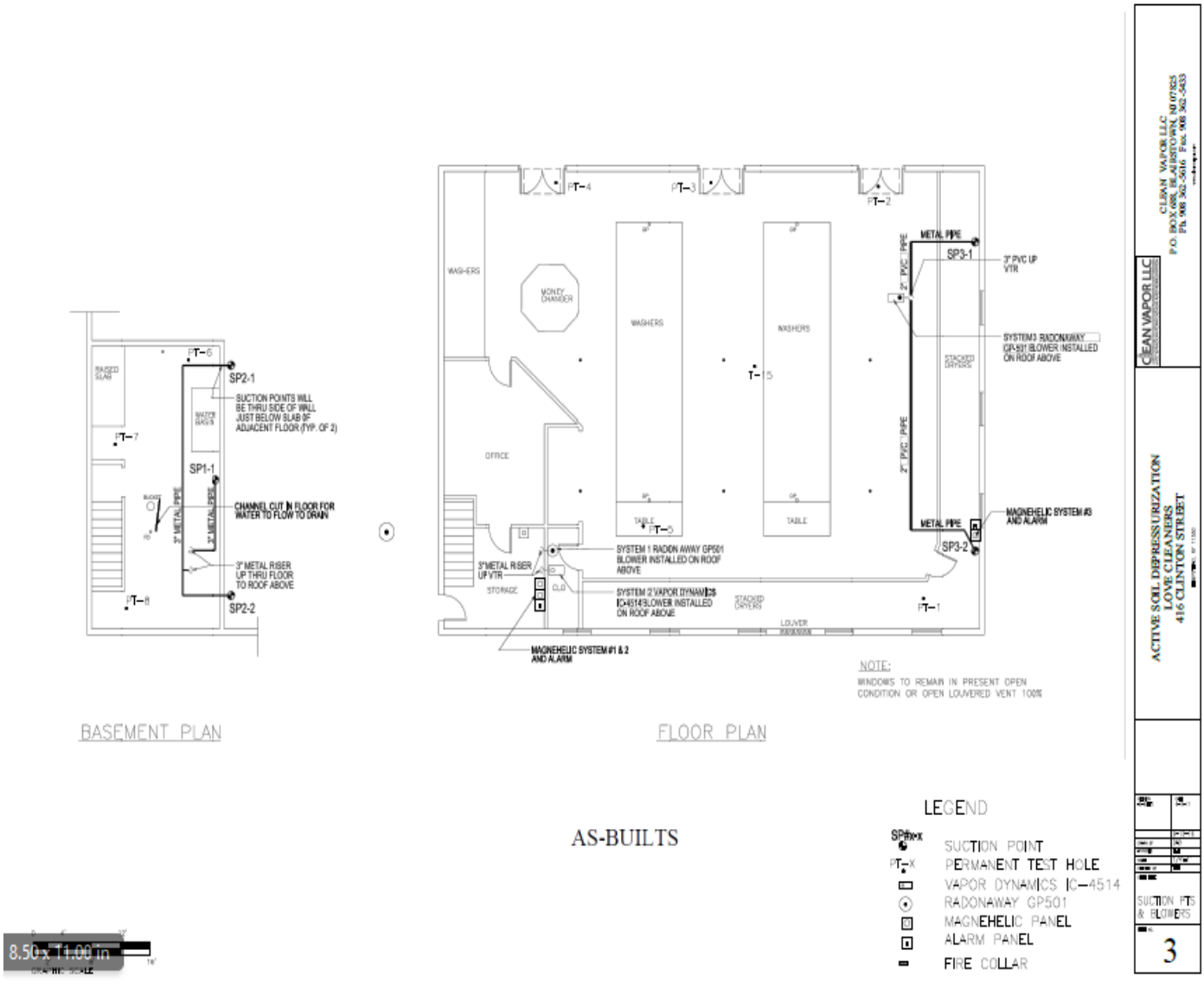
Communication Testing

Test Method: Micromanometer Meter Type/Manufacturer: Energy Conservatory DG-700

Location	Reading/Result	Dist. From Suction Point (ft)	Passed?
Pt-1 First Floor	-0.0560	8'	☒
Pt-2 First Floor	-0.0874	16'	☒
Pt-3 First Floor	-0.0921	36'	☒
Pt-4 First Floor	-0.1440	30'	☒
Pt-5 First Floor	-0.2989	19'	☒

System Sketch
(indicate notable features, location of extraction points, and communication test holes)

NORTH



Export Data

Submit by Email