REMEDIAL ACTION WORK PLAN

and

REMEDIAL ACTION REPORT

for

RICK'S AUTO REDEVELOPMENT

136 – 138 East Genesee Street
Village of Baldwinsville, Onondaga County, New York
Brownfield Cleanup Program No. B7-0652-04-01
DEC BCP Site No. C734085

Prepared for:

CL DEVELOPMENT, L.L.C.
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Project No. 2003115

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EXECUTIVE SUMMARY

A 2.2-acre Brownfield redevelopment site, associated with the former Rick's Auto and located at 136 – 138 East Genesee Street in the Village of Baldwinsville, Onondaga County, New York, has been investigated and remediated. This commercial redevelopment site (Site) is comprised of portions of three previously separate parcels. In 2003, CL Development, L.L.C. (Volunteer) acquired three parcels: the former Rick's Auto (approximately 0.5 acres), a single family residence and undeveloped woodland. These parcels were subsequently rezoned and subdivided into a 2.2-acre commercial parcel (Site) and a 5.3-acre residential parcel. The commercial parcel entirely contains the former Rick's Auto parcel. Prior to purchase by the Volunteer, Rick's Auto was shown to contain petroleum compounds in the soils and groundwater on the building's west side. The petroleum compounds were associated with underground storage and dispensing of gasoline, and with automotive repair activities over a 30 plus year period.

During the site investigation, six interim remedial measures (IRMs) were completed. These actions have significantly improved the environmental condition of the Site by removing petroleum-affected media. These IRMs were performed at the following locations:

1. The former gasoline storage tanks and dispenser island (contaminated soils/groundwater removed).

2. The hydraulic lifts (contaminated soils removed).

3. The floor drains within the building (contaminated soils removed).

4. The underground sanitary septic system (contaminated soils removed).

5. The alignment pit within the building(contaminated soils/groundwater removed).

6. The 500-gallon underground storage tank (UST) (contaminated soils/groundwater removed).

These IRM actions removed petroleum-affected soil source areas, however, groundwater contamination remains.

The remedial investigation established the following:

- Soil contamination is significantly reduced, to levels where active remediation is not warranted.
- The site poses no risk to fish and wildlife.
- Groundwater is impacted above Standards, Criteria and Guidance (SCGs), but is improving as a result of the IRMs.
- Exposure pathways to humans can be readily managed by institutional and engineering controls.

Investigation and Assessment Conclusions

The Site soils consist of fine sands and silts with some clay. Depth to groundwater is shallow across the Site (approximately 2 to 6 feet below ground surface). Subsurface soil contamination associated with automotive activities was remediated at discrete locations. Groundwater flow direction across the Site is toward the west-northwest, generally following local topography.

The following remedial action is recommended:

- ***Surface/Subsurface Soil:*** Existing and landscaping cover.
  Natural attenuation.
- ***Groundwater:*** Natural attenuation.
  Four quarters of groundwater monitoring for contaminants of concern.
- ***Soil Vapor:*** Active sub-slab depressurization system.

1.0 PURPOSE

1.1 Purpose of Report

This report summarizes the evaluation of remedial alternatives and presents a recommended remedy for the Rick's Garage Redevelopment Project at 136 – 138 East Genesee Street in the Village of Baldwinsville, Onondaga County, New York. The Site is being redeveloped under the New York State Department of Environmental Conservation (DEC) Brownfield Cleanup Program (BCP).

This report combines the required elements of the Alternatives Analysis Report and the Remedial Work Plan. The intent of this report is to provide sufficient detail to review, approve, and construct the remedy.

1.2 Report Organization

This report generally follows the outline presented in Section 4.9 of the DEC Brownfield Cleanup Program Guide (draft May 2004). Section 2 presents a summary of the current environmental conditions following the completion of several interim remedial measures. This information, including the nature and extent of contamination, fate and transport characteristics and risk assessment results, is presented in greater detail in the Remedial Investigation Report.[1] Section 3 proposes a site remedy and provides an analysis of the critical aspects of the recommended remedial alternative. Section 4 presents technical plans for construction and implementation of the remedy.

1.3 Site Description

The project site (Site) is a 2.2-acre commercially zoned parcel, formed by combining portions of the former Rick's Garage property, an adjacent residential property and the northernmost portion

[1] *Remedial Investigation Report*, prepared by Plumley Engineering, P.C., dated December 2005.

of an undeveloped property. CL Development, L.L.C. (Volunteer) acquired the former Rick's Auto in 2003, with the intent of redeveloping this and the adjacent land under the Brownfield Cleanup Program. Refer to *Figure 1 – Site Location Map* and *Figure 2 – Site Plan* for additional information. The renovated commercial building includes portions of the foundation and walls of the former Rick's Garage building.

1.4 Previous Remedial Investigations and Interim Remedial Measures

Environmental assessment work (unrelated to this project) was completed at the 138 East Genesee Street parcel in 1999, 2002[2] and 2003.[3] This earlier work provided preliminary information regarding subsurface conditions. This information was discussed and documented in the Remedial Investigation Work Plan.[4]

Several interim remedial measures (IRMs) were completed on the site in 2004, in conjunction with the Remedial Investigation. The measures significantly improved the environmental status of the Site by removing the remaining petroleum-affected media associated with:

- The former location of gasoline storage tanks and dispenser island (contaminated soils and groundwater removed).
- The hydraulic lifts and floor drains within the building (contaminated soils removed).
- The underground sanitary septic system (contaminated soils removed).
- The alignment pit within the building and a 500-gallon underground storage tank (UST) outside the building (contaminated soil and groundwater removed).

[2] *Preliminary Subsurface Investigation Report*, prepared by Nature's Way Environmental Consultants and Contractors, Inc., dated August 6, 2002 and *Supplemental Subsurface Investigation Report*, prepared by Nature's Way Environmental Consultants and Contractors, Inc., dated September 17, 2002.

[3] *April 2003 Quarterly Groundwater Monitoring Report/Remedial Options*, prepared by Nature's Way Environmental Consultants and Contractors, Inc., dated May 21, 2003.

[4] *Remedial Investigation Work Plan*, prepared by Plumley Engineering, P.C., dated September 2004.

The IRMs resulted in the removal of approximately 2,640 cubic yards of contaminated soil and approximately 8,000 gallons of contaminated water from the Site. These IRMs significantly reduced petroleum source areas of impacted soils at concentrations above the DEC recommended soil cleanup levels.

The Remedial Investigation confirmed that affected groundwater contamination remains as a Site issue. The investigation established the nature and extent of site contamination. It concluded that for contaminants of concern (COCs) potential human exposure pathways exist, however, fish and wildlife exposure pathways do not exist. The primary and secondary COCs identified in the DEC-approved Remedial Investigation Work Plan included both halogenated and non-halogenated volatile organic compounds (VOCs), petroleum and non-petroleum semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals. The Remedial Investigation and IRM scope included soil borings, test pits, monitoring well installation and replacement, surface and subsurface soil removal, and soil, soil vapor and groundwater sampling. Soil vapor sampling conducted inside the commercial building and across and off the 2.2-acre Site assessed the potential indoor air quality impacts.

Based on the actions completed, the following conclusions were reached.

- The areas of significant impact to soils from the petroleum tanks and dispenser island have been reduced to concentrations below DEC cleanup guidance values in all but three of 26 post-excavation soil samples (one compound exceeded the DEC soil guidance value in each of these three samples).

- Post-IRM soil sampling of the hydraulic lifts, septic system soils and from beneath a 500-gallon UST (removed as part of an IRM) indicates soil constituents for VOCs, SVOCs, RCRA metals and PCBs are all below the DEC recommended soil cleanup levels, except for one septic system soil sample displaying an elevated lead concentration.

- Post-IRM soil sampling of the floor drains indicates soil constituents for VOCs, SVOCs, RCRA metals and PCBs are all below the DEC recommended soil cleanup levels, except for three of six samples displaying elevated mercury concentrations.

- Five surface soil samples were collected from areas identified as likely receptors of contaminants of concern. These samples were analyzed for SVOCs, RCRA metals and PCBs. One sample displayed two slightly elevated SVOC compound concentrations and an elevated lead concentration. Five follow-up surface soil samples collected in the vicinity of the initial sample did not display unacceptable lead concentrations.

- Petroleum products in concentrations above the State groundwater standards currently impact groundwater. Since completion of the IRMs, however, the groundwater quality trend is improving.

- Soil vapor sampling results suggest indoor air quality in Site buildings will not be adversely impacted. Good engineering judgment, however, dictates that subsurface vapors be controlled until Site conditions show further improvement. A sub-slab ventilation system has been installed under the commercial building as a precautionary measure to inhibit soil vapor intrusion.

Refer to the Remedial Investigation Report and Section 2 for additional information.

1.5 Contemplated Site Use

The Site is zoned Business (B-1) by the Village of Baldwinsville. The Village has approved a plan by the developer to construct two commercial office buildings on the Site. One building has been partially completed (complete except for interior finishing). A road to be dedicated to the Village has been constructed between the two commercial lots.

2.0 SUMMARY OF ENVIRONMENTAL CONDITIONS

2.1 Nature and Extent of Contamination

Based on the results of groundwater sampling, a continued presence of VOC and SVOC contaminants at concentrations above the Standards, Criteria and Guidance (SCGs) exist. Since

completion of the IRMs, the concentrations are in decline. Soil contamination was substantially reduced through completion of six IRMs. Soil vapors are present at the site.

2.2 Fate and Transport

The results of the successful completion of the IRMs and investigation of soil, soil vapor and groundwater indicate the bulk of soil contamination has been removed from the Site. This information indicates that source areas capable of leaching contaminants to groundwater or volatilizing compounds for vapor intrusion have been significantly reduced. Residual VOC/ SVOC contamination does exist, however, remaining compounds either have very low mobility due to low water solubility or affinity for adherence to soil particles, or are readily biodegradable. The reduction of VOC/SVOC concentrations in former source areas to or below DEC recommended cleanup levels enhances the ability of naturally extenuative processes to further reduce concentrations.

As a result of the six IRMs completed at this Site, the only remaining VOC/ SVOC concern for this Site are the potential exposure pathways from soil contact and soil vapor intrusion. The significant reduction of contaminants in source areas and results from the groundwater sampling suggest that groundwater concentrations of VOC/SVOC are in decline.

2.3 Risk Assessment

The Remedial Investigation Report concluded that the only potentially completed exposure pathways relate to on-site construction workers and indoor commercial workers. The exposure risks to on-site construction workers are minimal and easily managed through a site-specific Soil Management Plan. The exposure risks to on-site commercial workers are also minimal and will be mitigated by a sub-slab depressurization system.

The Remedial Investigation Report presented evaluation details leading to these conclusions.

3.0 ALTERNATIVES ANALYSIS

3.1 Remedial Action Objectives

The IRMs removed the source areas. The Remedial Investigation Report presented the IRM actions and results, and indicated residual contamination remains. Post IRM soil and groundwater quality data indicate the contaminant concentration trend is in decline. Continued decline in groundwater concentrations is anticipated, however, the actual response needs to be documented. As this site is brought back into productive use, the recommended remedial goal is active site management to minimize potential exposures. Therefore, the remedial action objectives are the documentation of contaminant trends and minimization of potential exposures to residual contamination through implementation of specific engineering and institutional controls.

- Monitoring and reporting of groundwater concentrations on a quarterly basis to document the concentration trend. Brief quarterly data reports and an annual summary report with recommendations based on site trends will be submitted to DEC.

- Implementation of engineering and institutional controls to actively manage potential exposure pathways.

3.2 Recommended Remedial Alternative

The recommended remedial approach is proposed as the preparation and implementation of an Operation, Monitoring and Maintenance (OM&M) Plan with specific elements of:

- A soil management plan to guide in the future disturbance and handling of subsurface soil.

- A sub-slab depressurization (SSD) system at the commercial building to assure that soil vapors do not impact the building occupants.

- Eight consecutive quarters of groundwater monitoring to document the concentration trends for groundwater contaminants.

- Collection of one additional limited round of soil vapor samples from SV-6, SV-10, SV-11 and SV-12.

The OM&M Plan shall identify and govern ongoing implementation of these critical elements. The SSD system will mitigate the potential soil vapor exposure pathway. The Soil Management Plan will mitigate the potential dermal exposure pathway. An Environmental Easement placed on the property deed will act as a mechanism to guide the property owner to follow prescribed steps when handling soil, groundwater, and for continuous operation and maintenance of the SSD system.

These measures are designed to protect human health and to render the site suitable for use per its municipal zoning designation. No additional active remediation is recommended for this site. The approach set forth above addresses all residual risk identified in the risk assessment presented within the Site Investigation Report, pending demonstration of the anticipated declining trend in groundwater contaminant concentrations.

In the event that groundwater concentrations do not continue to show decline over the eight quarters of monitoring, then a short program of chemical oxidation can be evaluated. This may require the collection of select samples to determine the total oxidant demand (the sum of contaminant and background) in soils and groundwater. The injection location or locations can be evaluated at that time. Currently, the existing well, MW-1, is not on the sample schedule and is installed within the area of excavation that was backfilled with clean soils. This location could be an ideal injection point to introduce a chemical oxidant into the former source area. Another injection point further to the north could also be considered. The number of injections and quantity would be evaluated based on groundwater quality data and trends from the eight quarterly samples. Prior to any treatment, geo-chemical parameters (Oxidation Reduction Potential, pH, conductivity and dissolved oxygen) would be measured in the quarterly monitoring well network and this data used to indicate when post treatment water quality sampling can be performed.

3.2.1 Evaluation of Recommended Alternatives

The following subsections address issues related to the various aspects of implementing the recommended remedial alternative discussed in the preceding Section.

3.2.1.1 Overall Protection of Human Health and the Environment

The remedial alternative identified a limited number of human health issues: groundwater ingestion and dermal contact; inhalation of volatilized vapors from soil and groundwater; and dermal contact with impacted soils. The location of this site within the Village boundaries is an area served by municipal sewer and water utilities. This leaves the primary potential health exposure to building occupants as inhalation of indoor vapors. This potential exposure pathway will remain incomplete through operation of the sub-slab depressurization system installed beneath the building foundation slab. Another potential exposure pathway of contact with impacted soil will be addressed through a soil management plan to protect utility workers and workers handling site soils. Institutional prohibitions on groundwater discharge or use without appropriate pretreatment will be applied to the site through the environmental easement.

Taken together, these engineering and institutional controls will act to protect public health. In addition, a program of monitoring groundwater concentrations will be implemented to document the trend of groundwater concentrations for the contaminants of concern.

3.2.1.2 Compliance with Standards, Criteria and Guidance (SCGs)

Remediation at this Site entails addressing both soil and groundwater contamination.

Soil / Soil Vapor

The site remediation completed, including the six IRMs, has substantially met soil cleanup objectives. Residual contamination remains in isolated locations, but the SCGs were met with minor exceptions across the site. Contaminant concentrations were reduced by one to two orders of magnitude and the source areas have been removed. In addition, soil vapor gas sampling at sensitive locations downgradient of the source areas has not shown excessive impact, an important measure of the effectiveness of the IRMs.

Groundwater

Groundwater at the Site is impacted above the State groundwater quality standards. Significant improvement in groundwater quality after remediation has been shown in the source area. Declining contaminant concentrations are also evident in the plume outside the source area. The source of contamination has been removed and further decline in the groundwater plume is expected through natural attenuation processes.

3.2.1.3 Long-Term Effectiveness and Performance

Soils

The source area soils were excavated, disposed, and replaced with clean backfill. Soil residuals remain, but no further active remediation is warranted to protect human health and ecological resources.

Groundwater

Groundwater concentrations at the site exhibit the impact of historical releases. The source of the plume has effectively been removed. The remnant plume is

now actively degrading and dissipating. A declining contaminant concentration trend in wells proximal to the former source areas is beginning to emerge. Groundwater monitoring is necessary to document this concentration trend.

3.2.1.4 Reduction of Toxicity, Mobility or Volume with Treatment

Completion of the six IRMs caused significant contaminant volume (mass) reduction through soil removal. This mass reduction left residual concentrations much less likely to overwhelm organic matter retardation effects. Overall toxicity is reduced for contaminants subject to a dose-response relationship, which applies to most constituents, through removal of overall mass and reduction of concentrations to residual levels.

3.2.1.5 Short-Term Effectiveness

The IRMs have excellent short-term effectiveness, as the source area contaminants have been removed from the site through the IRMs. There is also high long-term effectiveness, as the likelihood of a rebound effect in the former source areas is low now that the source soils are removed. The intent of the IRMs was to interrupt the cycle of ongoing releases to surrounding soils and groundwater from these source areas and to allow for the full site characterization, as documented in the Remedial Investigation Report. However, the results obtained from the IRMs indicate the bulk of the site impacts are removed and improvement to the remaining groundwater contamination is already underway.

3.2.1.6 Implementability

The proposed remedial actions are easily implemented. They require the development of an OM&M Plan that in turn establishes both engineering and institutional controls. A Soil Management Plan will limit exposure to subsurface soils and is presented within this Report as part of the OM&M Plan in Appendix A. The

engineering control of sub-slab depressurization system piping is fully installed beneath the building's new foundation slab and needs only to be connected to a fan to complete its operability. SSD operation and maintenance is governed by the OM&M Plan. The OM&M Plan for this site is included with this Report as Appendix A. The environmental easement criteria will require operation and maintenance of the SSD and that soil disturbances below 1 foot in depth conform to the Soil Management Plan.

4.0 TECHNICAL PLANS

4.1 Project Plans and Specifications

4.1.1 Sub-Slab Depressurization System

Piping for a sub-slab depressurization (SSD) system has been installed beneath the slab on grade floor of the renovated commercial building. During renovation of the existing structure, the original floor grade slab was removed. Prior to pouring of a new concrete slab on grade, a piping network configured into two rectangles, with a common side in the center, of 2-inch diameter Schedule 40 polyvinyl chloride (PVC) 0.020-inch slotted pipe was installed into the underlying stone and soil. The slotted piping was installed in trenches approximately 12 inches wide and 6 inches deep. The trenches were then backfilled with clean # 2 stone to an approximate height of 2 inches above the trench top. Plastic sheeting was then laid over the entire floor slab area and covered with another 2 inches of clean # 2 stone. Finally, 4 inches of concrete were poured to form the building floor slab. Solid Schedule 40 PVC riser pipe is connected to the collection piping for attachment to the suction side of the blower (fan) that will provide the motive force to collect the sub-slab vapors and discharge them to the atmosphere through the rooftop discharge point. Detailed plans and specifications for this system are presented in Appendix C.

4.2 Institutional and Engineering Controls

Institutional controls consist of environment easement prohibitions on the use or discharge of site groundwater without proper approvals and/or treatment, and guidance on safe soil handling procedures when site soils below 1 foot in depth are to be disturbed. Soil handling procedures are addressed in the Soil Management Plan. This Plan will also be referenced in the property deed and maintained by the site owner.

Engineering controls consist of the installation and operation of the SSD system. The SSD system installation will be completed prior to occupation of the building. This system will be operated at all times and must be periodically inspected and maintained by the property owner.

4.2.1 Soil Management Plan

A Soil Management Plan has been prepared to govern disturbance of site soils from greater than 1 foot in depth. This Plan addresses segregation and stockpiling, removal from the site, backfilling and final re-grading with clean topsoil (1-foot depth). This document is presented as part of the OM&M Plan in Appendix A.

4.3 Health and Safety Plan

As no active remediation for this Site is proposed, no Health and Safety Plan (HASP) is required. The exception is that handling of Site soils from below 1 foot in depth does require that the Soil Management Plan be reviewed and followed. Adherence to this Plan will direct and provide protective measures and guidance for handling of soils.

4.4 Quality Assurance/Quality Control (QA/QC) Plan

The institutional controls require the performance of quarterly groundwater monitoring at this site. Calendar quarters 1, 2, and 4 will include collection of groundwater quality samples for a

limited number of wells. These wells will include MW-4, MW-5, MW-7, MW-10R, MW-12 and MW-13. Calendar quarter 3 will require collection of a full round of groundwater samples from the entire network of onsite and offsite monitoring wells. For QA/QC purposes, 90% of the samples collected in calendar quarter 3 will be analyzed and reported by the analytical laboratory with Category A documentation and 10% with Category B documentation. The third quarter round will also include four additional QA/QC samples in the form of a trip blank, field blank, a matrix spike and a matrix spike duplicate. The groundwater monitoring plan is included as Appendix B.

4.5 Schedule

As there is no active remediation proposed, there is no implementation schedule. This document addresses the proposed institutional and engineering controls, and presents both a written Soil Management Plan and an OM&M Plan that address all aspects of the proposed controls. All controls will be operational prior to occupancy of the commercial building.

4.6 Reporting

The quarterly groundwater monitoring requires reporting of results and an annual summary report. The SSD system is an engineering control that requires annual certification by a professional engineer or qualified environmental professional.

4.7 Project Organization

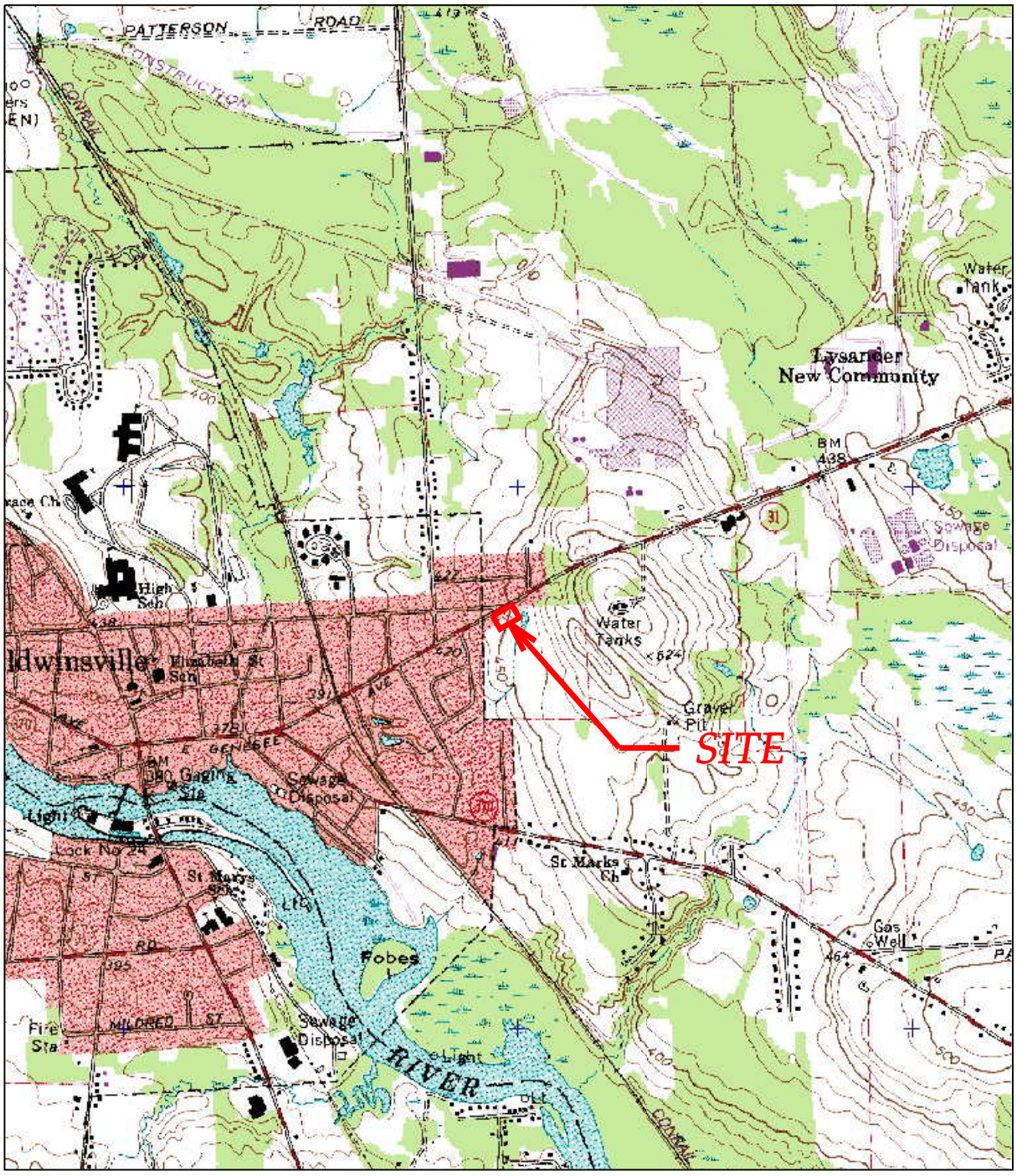
No specific organization is required to implement the proposed institutional and engineering controls for this site. Based on site knowledge gained during the site investigation, there are a number of individuals qualified to provide the required annual certification of the SSD system, as discussed in the previous section.

4.8 Citizen Participation Plan for Construction Activities

Minimal construction activity is proposed with the engineering control. As stated previously, the piping for the SSD system has already been installed. There was no large-scale soil disturbance that warranted public notification prior to its implementation. However, the proposed remedial action of no active remediation coupled with the institutional and engineering controls warrants that public notice in the Baldwinsville Messenger, a division of Eagle Newspapers, be made to inform the public that this proposed Remedial Action Work Plan and Remedial Action Report will be available for public review and comment at the Baldwinsville Public Library. The timing of this notice should follow the submittal of this Report to the DEC.

TABLE 1 – REMEDIAL ACTION OBJECTIVES

Media	Potential Exposure Point/Receptors	Remedial Action Objectives (RAOs)	Remedial Design
Soil	Direct contact with, or ingestion of, contaminated soil during on-site construction activities. Residual contaminated soil or groundwater contamination may act as a source of soil vapor.	Prevent ingestion/direct contact with contaminated soil.	The IRMs effectively removed high level source areas.
			Site is paved or covered with a landscaped cap preventing contact with the limited residual soil contamination.
			A Soil Management Plan is incorporated into the remedy.
		Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.	The IRMs effectively removed high level source areas.
			A sub-slab depressurization system is incorporated into the building design.
		Prevent migration of contaminants resulting in groundwater contamination.	The IRMs effectively removed high level source areas.
Groundwater	Direct human contact with groundwater during on-site construction activities. No human or significant biota receptors have been identified.	Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.	Area is served by public drinking water. An Environmental Easement restricts groundwater use.
		Prevent contact with, or inhalation of vapors from, contaminated groundwater.	Institutional Controls restrict groundwater use or discharge.
		Remove the source of groundwater contamination.	The IRMs effectively removed high level source areas.
		Restore groundwater to pre-release conditions to the extent practical.	The IRMs effectively removed high level source areas. Monitored natural attenuation is expected to achieve groundwater standards to the extent practical.
Soil Vapor	Potential for inhalation of contaminated soil vapors by commercial workers and on-site construction workers.	Prevent inhalation of contaminated soil vapors.	A sub-slab depressurization system is incorporated into the building design and a Soil Management Plan is incorporated into the site remedy.
		Remove the source of soil vapor contamination.	The IRMS effectively removed high level source areas.



REF.: USGS - BALDWINSVILLE (NY) QUAD., 1978, 7.5 MIN. SCALE: 1"=2000'

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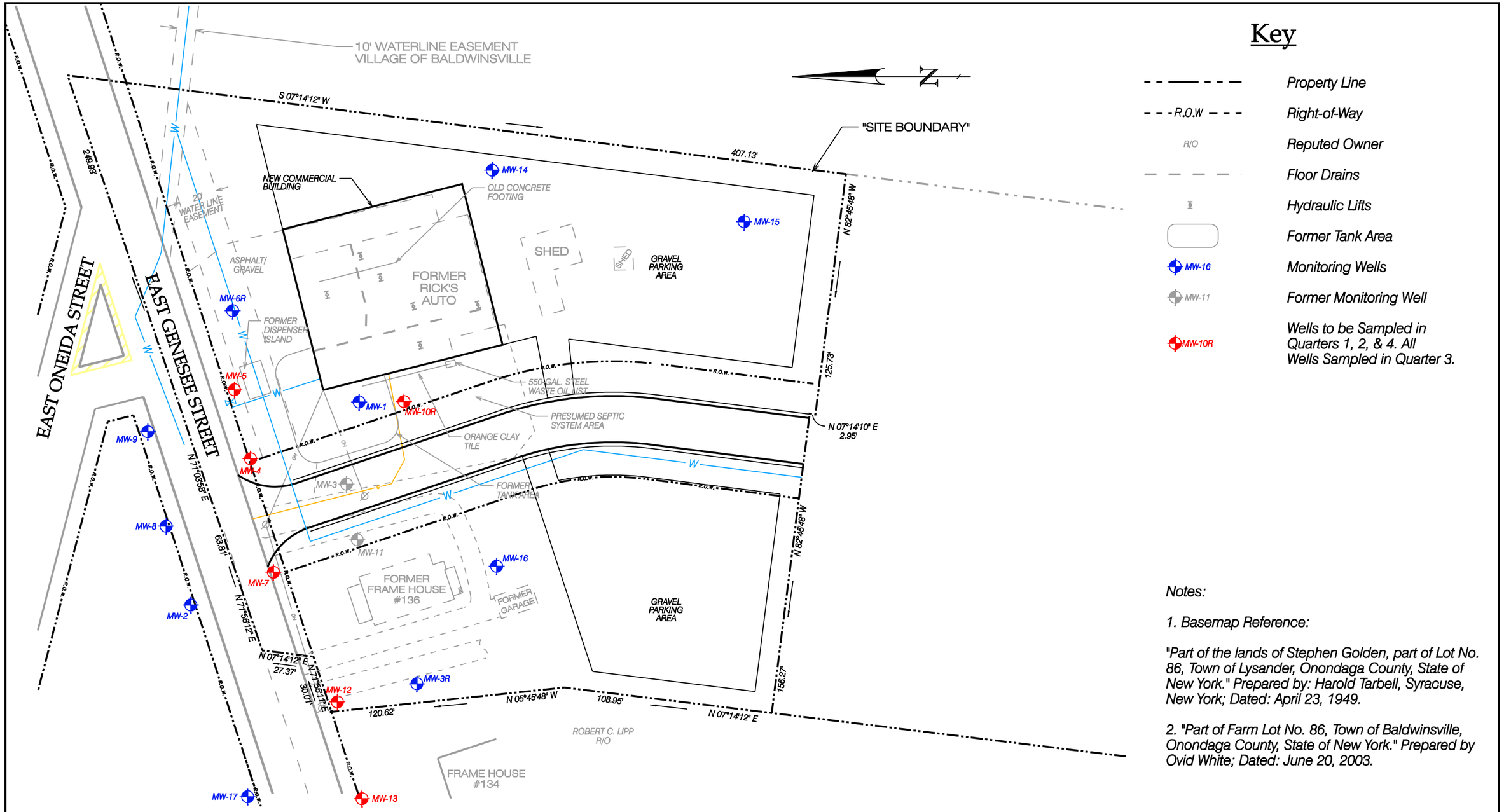
SITE LOCATION MAP

RICK'S AUTO REDEVELOPMENT

CL DEVELOPMENT, LLC

TOWN OF LYSANDER, ONONDAGA COUNTY, NEW YORK

PROJECT No.: 2003115
FILE NAME.: FIGURE 1
SCALE: 1" =2000'
DATE: JUNE 2005
ENG'D BY: SAZ
DRAWN BY: JMD
CHECKED BY: DRV



Key

- Property Line
- R.O.W — Right-of-Way
- R/O — Reputed Owner
- Floor Drains
- Hydraulic Lifts
- Former Tank Area
- MW-16 — Monitoring Wells
- MW-11 — Former Monitoring Well
- MW-10R — Wells to be Sampled in Quarters 1, 2, & 4. All Wells Sampled in Quarter 3.

Notes:

1. Basemap Reference:

"Part of the lands of Stephen Golden, part of Lot No. 86, Town of Lysander, Onondaga County, State of New York." Prepared by: Harold Tarbell, Syracuse, New York; Dated: April 23, 1949.

2. "Part of Farm Lot No. 86, Town of Baldwinsville, Onondaga County, State of New York." Prepared by Ovid White; Dated: June 20, 2003.

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Civil and Environmental Engineering

PROJECT: **RICK'S AUTO REDEVELOPMENT**

CLIENT: CL DEVELOPMENT, L.L.C

LOCATION: VILLAGE OF BALDWINSVILLE, ONONDAGA COUNTY, NEW YORK

DWG. TITLE: SITE PLAN

PROJECT No. 2003115
FILE NAME.: Figure 2
SCALE: 1' = 50'
DATE: JUNE 2005
ENG'D BY: SAZ
DRAWN BY: JMD
CHECKED BY: DRV

SHEET NO.: FIGURE 2

APPENDIX A

OPERATION, MAINTENANCE AND MONITORING PLAN

INTRODUCTION AND PURPOSE

This Operation, Maintenance and Monitoring (OM&M) Plan is prepared for the former Rick's Auto site located at 136-138 East Genesee Street in the Village of Baldwinsville.

This OM&M Plan is required for the former Rick's Auto site due to the placement of institutional and engineering controls on the site in accordance with the Brownfield Cleanup Program. These controls allow the site to be brought back into productive use. They are intended to protect the public from potential exposure to residual compounds in the ground. These controls require that this manual be kept at the site and be available to maintenance personnel for their use in performing maintenance and in directing utility or other workers who may disturb soils from beneath 1 foot below the ground surface.

The institutional controls for this site are the following:

- Specific requirements for personal protection and soil handling procedures for excavation into or removal of soils from beneath 1 foot below ground surface.

- Prohibition on groundwater consumption, use, or discharge to sewer or offsite.

The engineering control for this site is the following:

- Operation and maintenance of a sub-slab depressurization system.

SOIL MANAGEMENT PLAN

Applicability

This plan shall apply to any disturbance of soils below 1 foot in depth on the commercial property known as the former Rick's Auto in the Village of Baldwinsville, County of Onondaga, New York. Disturbance shall mean any digging, excavation (whether manual or mechanically), trenching, dozing, landscaping, natural or other activity that results in exposing or bringing to the surface of soils located 1 foot or more below the land surface before the disturbance began.

Soil Handling Procedure

The following steps shall be taken to minimize the potential exposure hazard at this site.

1. Before disturbance of soils that will penetrate 1 foot or more into the ground, this document shall be reviewed to identify the required steps to safely and appropriately handle subsurface soils at this site.

2. The top foot of soils can be scraped over the area of excavation and set aside for replacement.

3. All site workers who may come into physical contact with site soils from below 1 foot in depth shall wear Level D protective gloves on the hands (i.e. nitrile, chemical resistant or equivalent) suitable for handling petroleum-impacted soils. Workers in direct contact with subsurface soils should change the gloves every one to two hours, or whenever the glove becomes punctured, torn or tacky on the outside surface.

4. Plastic sheeting (thickness 6 mil or greater) shall be spread over a sufficient area and be bounded with a perimeter berm at least 3 inches high. The sheeting shall overlap the top of the perimeter berm.

5. Excavated soils taken from below 1 foot in depth shall be stockpiled on the plastic sheeting.

6. If the excavated soils are to remain on the sheeting overnight, the soil pile shall be covered by plastic sheeting that is weighted around the perimeter to prevent precipitation from infiltrating into the soil.

7. At the conclusion of the excavation activity, the soil on the plastic sheeting may be replaced into the ground. This soil must then be covered with 1 foot of clean topsoil. The soil scraped from the land surface initially may be used for this purpose, with additional clean soil brought to the site, as needed.

8. Removal of Stockpiled Soil from the Site: If all or some of the stockpiled soil cannot be returned to the subsurface, the following additional actions are required:

   a. If the soil exhibits any petroleum odor, it must be taken to a landfill. Soil testing shall be performed per specification of the landfill.

   b. If the soil exhibits no petroleum odor or other indication of petroleum contamination, the soil should be evaluated according to the New York State Department of Environmental Conservation (DEC) Spill Technology and Remediation Series (STARS) Memo #1 criteria. The appropriate number of samples shall be collected according to the table under Subsection B – Soil Piles. A fresh surface shall be exposed just prior to sample collection.

- The samples shall be analyzed for STARS volatile organic compounds (VOCs) by EPA Method 8260 and STARS semi-volatile organic compounds (SVOCs) by EPA Method 8270. If the soil does not meet the STARS Memo #1 criteria (concentrations and nuisance odors), the soil must be disposed of at a landfill (refer to item a, above).

- All soils meeting the STARS Memo #1 criteria (concentrations and nuisance odors) for soil quality can be located onsite without restriction. A 1-foot cover of clean topsoil must be placed over this soil. Contact the DEC for direction in assessing nuisance odor in soil. Offsite relocation of soils is only allowed to DEC pre-approved locations and requires a DEC determination that the soil meets the STARS Memo #1 criteria.

SUB-SLAB DEPRESSURIZATION SYSTEM: OPERATION AND MAINTENANCE

The sub-slab depressurization (SSD) system is to operate continuously except during routine maintenance, interruption of electrical service, mechanical failure or other temporary condition that inhibits the system function.

System Description

The SSD piping consists of sub-slab Schedule 40 PVC 0.020-slot piping and risers. An exhaust fan capable or producing approximately 1.00 to 1.25 inches of water vacuum at a flow rate of approximately 120 cubic feet per minute (cfm), such as a Fantech FR-160-PDS, Product No. 03-022-1, or equivalent, is specified for installation. This fan will draw vapors from beneath the building and discharge them to the atmosphere through a 4-inch diameter pipe penetrating the roof. The system also includes a manometer/vacuum gauge, a fan speed controller and an audible/visible alarm located in the utility closet where the SSD piping penetrates the floor slab.

Maintenance

This system is simple, with few parts. The fan, riser piping, discharge point and manometer/ vacuum gauge are the important system elements. The fan shall be inspected at least annually and maintained in accordance with the manufacturer's recommendations. The exposed run of the riser piping shall be inspected annually to assure that no cuts, cracks or punctures exist. All necessary repairs shall be made in a timely manner. The discharge point of the piping on the rooftop shall be inspected to assure that no blockage has occurred due to nesting insects. This

end of the pipe has been fitted with a mesh screen with a mesh opening suitable to prevent nesting insects from crawling into the pipe to build a nest. However, an annual inspection and repair/action will assure the discharge point remains unimpeded to the discharge of air/vapor from the fan. The manometer/vacuum gauge (located in a utility closet at the floor slab level) shall be checked annually to assure it is in working order and has no deficiency that prevents it from displaying the vacuum in the system piping. The flexible tubing shall be visually inspected for cracks, punctures or abrasions, and replaced as necessary. The fan speed controller can be checked by moving it from its setpoint and observing a change in the manometer/vacuum gauge. The visible/audible alarm can be checked by temporarily shutting off the fan to trip the alarm.

Recordkeeping

Records of the repair, inspection and maintenance actions taken to sustain the SSD system operation must be made and retained at the site for review during preparation of the annual inspection report to be prepared by a licensed professional engineer or qualified environmental professional. A *Maintenance and Inspection Log* is attached to this Plan for this purpose.

Contingency Plan

The SSD system contains four main parts: a fan, a fan speed controller, an audible/visible alarm and a manometer/vacuum gauge. If a failure occurs, repair or replacement needs to be made. These components are available from Professional Discount Supply at 1-800-688-5776. The table below provides ordering information.

PDS Part Number	Description
03-022-1	Fantech FR-160 Outdoor Exhaust Fan
05-020-1	Dwyer Mark II Magnehelic Pressure Gauge
03-019-1	Fantech Speed Control
05-025-1	Check Point Mitigation Alarm

Post Mitigation System Confirmation Testing

Post-installation confirmation testing will be performed to demonstrate proper installation and effectiveness of the SSD system, per New York State Department of Health (DOH) soil vapor mitigation guidance. The DOH guidance requires that a differential in pressure between the indoor air and the sub-slab must be a minimum of 0.002 inches of water column with the indoor air pressure being greater. After installation of the SSD system, the actual sub-slab pressure will be measured and if it does not exhibit a vacuum of equal to or greater than 0.002 inches of water column (relative to indoor air), then the system fan will be replaced with a fan capable of generating a larger static vacuum beneath the slab. If the sub-slab does not exhibit a vacuum of equal to or greater than 0.025 inches of water column relative to the indoor air, then four quarters of seasonal differential pressure monitoring are required by the DEC. This seasonal pressure monitoring would determine if the seasonal sub-slab pressure remains a minimum of 0.002 inches lower than the indoor air pressure year-round.

APPENDIX B

GROUNDWATER MONITORING PLAN

Quarterly groundwater monitoring for eight consecutive quarters shall be performed to document the trend of groundwater concentrations. Institutional controls require the performance of quarterly groundwater monitoring at this site. Calendar quarters 1, 2 and 4 will include groundwater quality sampling and analysis for a limited number of wells. These wells include MW-4, MW-5, MW-7, MW-10R, MW-12 and MW-13.

Calendar quarter 3 will require collection of a full round of groundwater samples from the entire network of onsite and offsite monitoring wells. Samples will be collected from monitoring wells MW-1 through MW-10 and MW-12 through MW-17. [Note: Well MW-11 no longer exists.] For QA/QC purposes, 90% of the samples collected in calendar quarter 3 will be analyzed and reported by the analytical laboratory with Category A documentation and 10% with Category B documentation. The third quarter round will also include four additional QA/QC samples in the form of a trip blank, field blank, a matrix spike and a matrix spike duplicate. Groundwater elevation readings will be collected during this round only.

REPORTING

Reported results of sampling for calendar quarters 1, 2 and 3 shall include raw and tabular "hits" data only. Reporting of calendar quarter 4 results shall include an annual summary of groundwater quality results and the overall trend observed since completion of the IRMs in the summer of 2004. The annual report will also include a groundwater contour map based on the third quarter groundwater elevation measurements.

SAMPLING PROCEDURE

Sample collection shall be performed in accordance with the following standard operating procedure for groundwater sampling. These procedures ensure that a groundwater sample

collected is representative of the hydrogeologic formation and will be utilized anytime a monitoring well is sampled. There are no specific definitions for this procedure. Consult the Equipment Checklist for required materials. Precautions on the chemical preservative Material Safety Data Sheets must be followed.

Instructions

1. Obtain appropriate sample containers from the laboratory.

2. Prepare sampling equipment necessary for the program.

    a. Consult the Equipment Checklist.

    b. Reserve equipment, if necessary. NOTE: Try to have enough equipment on-site to avoid decontamination while sampling.

    c. Check, test and clean all equipment before leaving for the site.

    d. Always bring more than enough personal protective equipment and expendables (ex. gloves, tyvek, rope etc.) on-site to complete the program.

3. Examine the monitoring well.

    a. Confirm the well identification.

    b. Note any damage in the groundwater field log.

4. Place a plastic sheet around the monitoring well so the field equipment (bailer, rope, meters, etc.) is not in direct contact with the ground, avoiding contamination.

5. Wipe the monitoring well's outer casing cover clean of any foreign material which might enter the well when it is opened.

6. If locked, unlock the monitoring well. NOTE: Securely lock the monitoring well when it is left unattended and is not in direct view.

7. If organic contamination is suspected in the groundwater, monitor the well headspace with a photoionization detection (PID) meter.

   a. Open the outer well casing cover just enough to insert the PID probe.

   b. Monitor the well headspace for organic vapors.

   c. Remove the probe and close the casing cover.

   d. Record the results in the groundwater field log.

   e. Establish appropriate levels of personal protection.

8. Remove the outer well casing cover.

9. Put on a new pair of disposable gloves before doing any field measurements, preventing cross-contamination.

10. Measure the depth to water and the total depth of the monitoring well with an electronic water level indicator.

11. Calculate the volume of water within the well and determine how much must be evacuated.

    Monitoring Well Volume Calculation:

SWL =	Depth to Water	C =	Conversion Factor
TD =	Total Depth of Well	N =	Number of Volumes to Evacuate
L =	Length of Water Column	TV =	Total Volume to Evacuate

TD - SWL = L L x C = 1 well volume

1 well volume x N = TV

Common Conversion Factors:

0.16 2 inch well 0.65 4 inch well

NOTE: Quick field calculations for 3 well volume evacuation.

2-inch well: divide the length of the water column (L) by 2

4 inch well: multiply the length of the water column (L) by 2

12. The monitoring wells shall be evacuated by manual bailing. Dedicated bailers are provided in each well. In the event any bailer is missing, a new bailer shall be dedicated to that well.

13. If initial field readings (i.e. eh, temperature, pH, specific conductivity, etc.) are necessary:

    a. Measurements are taken from the first water evacuated from the well. NOTE: Always calibrate field meters on site daily before initial use and check the calibration periodically.

    b. Field reading are taken in the following order:

        eh

        temperature

        pH

        specific conductivity

c. Record the readings in the groundwater field log.

14. If a bailer is going to be used to evacuate the monitoring well:

a. Push only the bailer loop through the protective polyethylene wrap, leaving the rest of the bailer covered.

b. Attach a spool of 3/16-inch polypropylene rope to the bailer, using at least two half hitches, and weave the rope end through the main rope several times.

c. Keep the bailer in the protective wrap until just before it is lowered into the monitoring well.

d. Gently lower the bailer into the well until it contacts the water surface. NOTE: The contact is felt through the rope and may be audible.

e. An immiscible layer check will be done prior to evacuation with the bailer:

- Lower the bailer about 2 feet into the water (skim the surface).
- Retrieve the bailer.

  NOTE: The bailer rope is still attached to the spool and care must be taken to avoid contamination of the rope spool. In addition, the retrieved rope must not come in contact with sources of contamination.

- Pour the bailer contents into a clear glass container for observation.
- Return the bailer to the well.
- Record any amount of free product and associated observations in the field log (i.e. odor, sheen).

f. Gently lower the bailer to the bottom of the well.

NOTE: The bailer must go all the way to the bottom to ensure there is enough rope if the well must be bailed dry.

g. Cut the bailer rope from the spool.

h. Begin bailing.

- Gently retrieve the bailer.
- Empty the bailer into a graduated 5-gallon bucket.
- Gently lower the bailer 1 or 2 feet below the surface of the water.
- Repeat steps 1, 2 and 3 until the required water volume has been removed or the well is dry.

15. Evacuated well water is dumped away from the well so it doesn't flow back toward any monitoring well.

NOTE: If the evacuated water is contaminated (i.e. free product, strong odor or sheen), the purge water shall be stored on-site in a 55-gallon drum. Notify the client of the status of the drum after each sampling event and arrange appropriate disposal.

16. a. For samples collected for analysis by volatile parameters, 95% well recovery is not required. Sampling for VOCs should be performed as soon as sufficient volume of a sample can be collected without disturbing any sediment that may be present at the bottom of the well.

NOTE: VOC samples must be collected within 2 hours of well evacuation.

b. For samples collected for analysis by semi-volatile parameters, 95% well recovery is required prior to sampling. If 95% recovery is not noted within 24 hours, the DEC shall be consulted for proper sample collection procedure. This procedure is likely to consist of collecting the sample while taking care not to disturb any sediment that may be present at the bottom of the well.

17. If samples for both volatile and semi-volatile analysis are to be collected from the same well and 95% well recovery is not noted within 2 hours of well evacuation, the DEC shall be consulted for proper sample collection procedure. This will likely consist of collecting the samples separately by the procedures outlined in item 16.

18. Before collecting any samples:

    a. Check the sample containers are properly labeled as to client name, sample location, analysis to be performed and container preservation.

    b. Check sample containers are stored in a contaminant-free environment.

19. Samples are collected from the screened portion of the monitoring well in the order of the parameters' volatilization sensitivity unless otherwise specified in the scope of work.

    a. Volatile organics

    b. Field readings

    c. Total organic carbon

    d. Extractable organics

    e. Total metals

f. Dissolved metals

g. Phenols

h. Cyanides

i. Sulfate and chloride

j. Turbidity

k. Nitrate and ammonia

l. Radionuclides

20. Begin sample collection.

a. Do not overfill preserved sample containers. This may result in inadequately preserved samples.

b. Containers for volatile analysis are filled slowly in such a way that the sample runs down the inner wall of the container, reducing volatilization of the sample.

c. Containers for alkalinity and volatile analysis are filled with no headspace.

NOTE: If headspace is present in the container after it is capped, it is emptied out and refilled. The label is corrected to read "unpreserved", if necessary.

d. Containers for semi-volatile analysis are filled with as little headspace as possible.

e. Keep the quality control requirements of the program in mind and collect adequate sample volumes.

21. Immediately after sampling:

    a. Store all collected samples in a cooler maintained at approximately 4 degrees Celsius.

    b. Place the custody seals on the containers or coolers if the scope of work calls for them.

    c. Fill out the chain of custody form.

    d. Check to be sure the groundwater field log is complete.

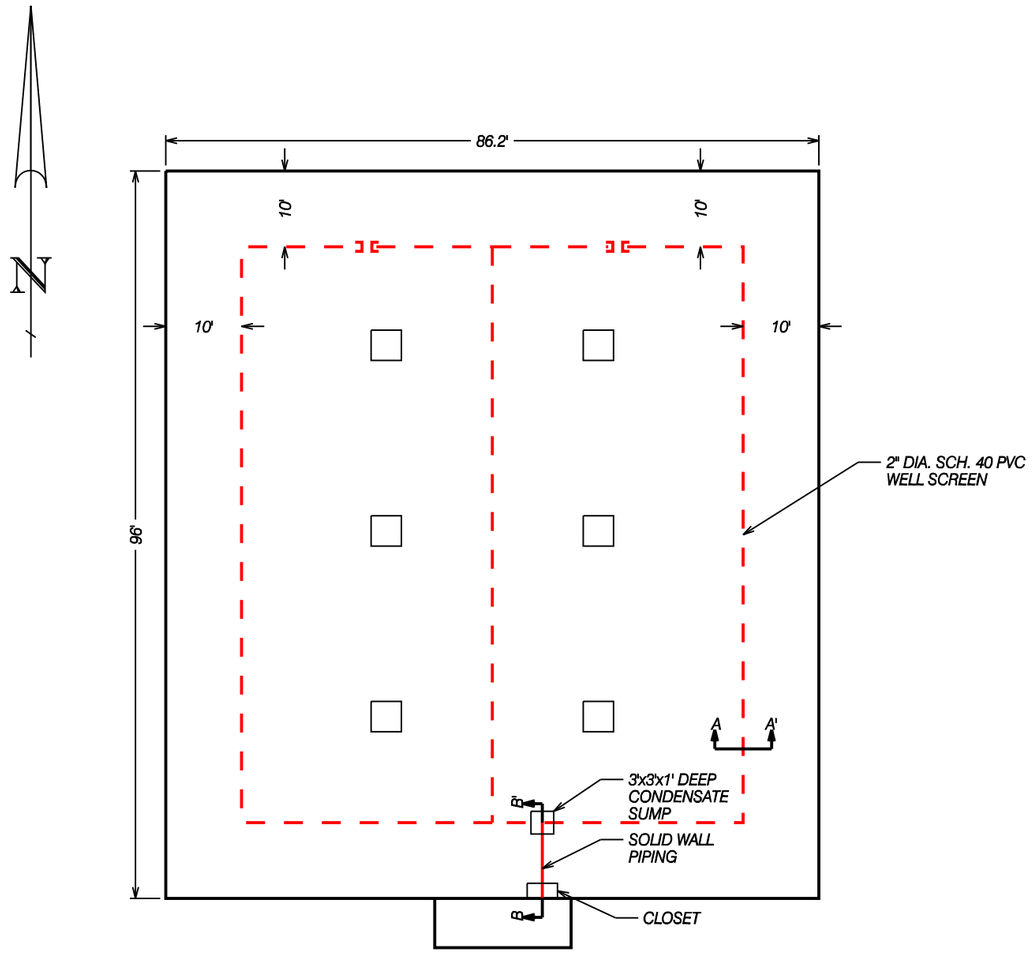
    NOTE: Field notes are critical to inform the client and laboratory personnel about the conditions of the well and other observations (i.e. weather, strange odors, bent casing or flooded wells). These notes may help in running the samples, as well as interpreting the analytical results.

22. Collect the used expendables (i.e. gloves, rope etc.) in a plastic bag and properly dispose of them.

23. Lock the monitoring well.

24. Deliver the samples to the laboratory within all appropriate holding times for the parameters to be analyzed.

25. Clean all the used sampling equipment per Standard Procedures for Decontamination.



Plan View

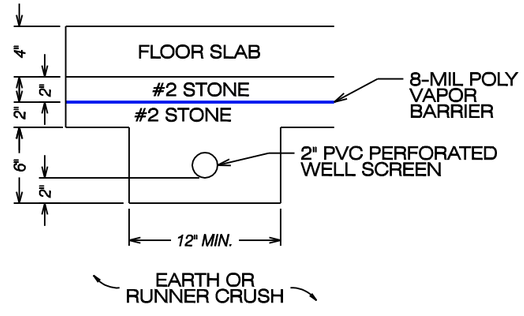
1" = 20'

20 0 20 40

SCALE FEET

Notes:

1. *Sub-slab depressurization (SSD) system piping shall consist of 2-inch diameter schedule 40 PVC well screen.*
2. *The well screen shall have a width of 0.020 inch (commonly referred to as 20-slot well screen).*
3. *The SSD system shall be aligned as shown on the drawing and placed within the No. 2 stone base material below the floor slab. End caps shall be installed at the end of each lateral that run parallel to the north building wall.*
4. *All piping and connections shall be threaded or slipped and fastened using stainless steel screws. No solvents or cement shall be used in any portion of the SSD system prior to entering the exhaust fan.*
5. *A "tee" fitting shall be installed into the portion of the SSD system that traverses parallel to the southern wall opposite the location where a utility closet will be located along the southern wall. The utility closet is anticipated to be located adjacent to the main entryway.*
6. *A portion of solid wall 2-inch diameter schedule 40 PVC pipe will traverse from the "tee" fitting to the location of the utility closet where the SSD system will penetrate the floor slab and continue to an exhaust fan to be located by the owner on the roof.*
7. *All piping located beneath the floor slab shall be placed within a shallow trench as shown in cross-section A-A'.*
8. *See sheet SSD 2 of 2 for cross-section B-B'.*



Cross-Section A-A'

SCALE: 1"=40'

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Civil and Environmental Engineering

REVISIONS: DATE: BY:

NOTE: NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

PROJECT: RICK'S AUTO REDEVELOPMENT

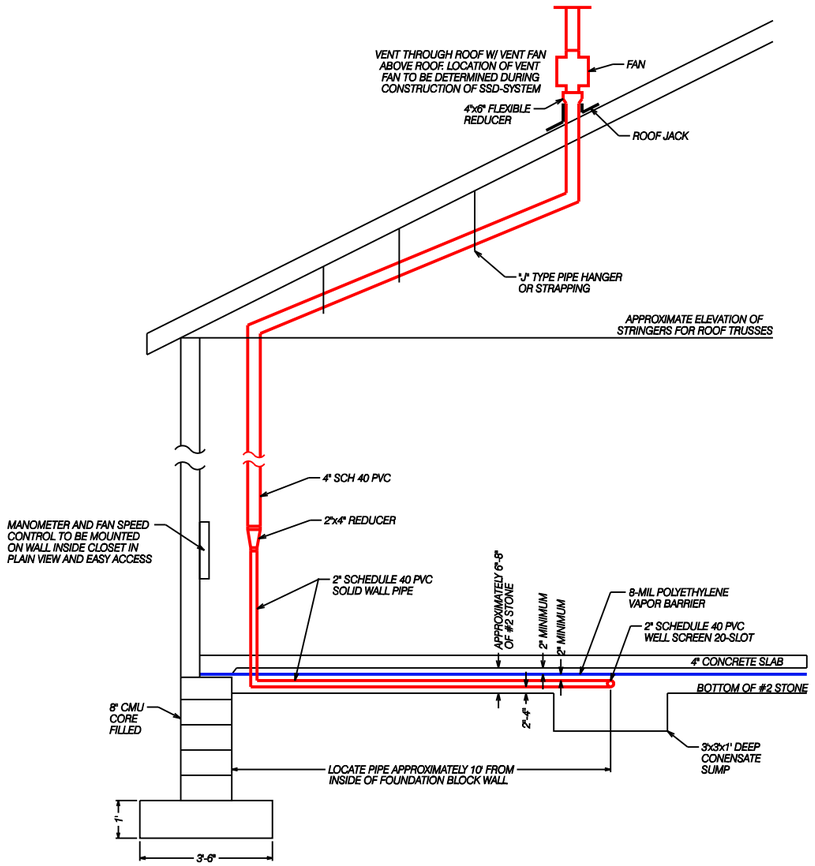
DWG. TITLE: 8,275 SQ. FT. BUILDING SUB-SLAB DEPRESSURIZATION SYSTEM

CLIENT: CL DEVELOPMENT, L.L.C.

LOCATION: VILLAGE OF BALDWINSVILLE, ONONDAGA COUNTY, NEW YORK

PROJECT No.:	2003115
FILE NAME.:	BuildingPiping
SCALE:	AS NOTED
DATE:	MAR. 2006
ENG'D BY:	CTB
DRAWN BY:	JMD
CHECKED BY:	DRV

SHEET NO.: SSD 1 OF 2



Cross-Section B-B'

4 0 4 8

1" = 4'

SCALE FEET

General Notes

1. *All piping located beneath the slab shall be placed in a shallow trench as depicted in cross-section A-A' on sheet SSD 1 of 2.*
2. *A condensate sump measuring approximately 3-feet by 3-feet in plan dimension by 1-foot deep shall be excavated where the well screen portion of the SSD system laterals terminate at the "tee" fitting. This sump shall be filled with No. 2 stone.*
3. *A 2- to 4-inch thick layer of No. 2 stone shall be placed on the prepared subgrade throughout the entire floor slab footprint.*
4. *The SSD system (consisting of 2-inch well screen - see Sheet SSD 1 of 2 for piping specifications and alignment) shall be placed on top of 2- to 4-inch thick No. 2 stone layer.*
5. *The top of the SSD system shall be covered with a minimum of 2-inches of No. 2 stone within the floor slab footprint.*
6. *A vapor barrier consisting of polyethylene sheeting a minimum 8-mil in thickness shall be placed over the No. 2 stone and extend onto the top of the foundation wall. Enough sheeting should be used so that it will not be stressed and pull away from the foundations wall. The polyethylene sheeting shall cover the entire floor slab footprint and shall be sealed at seams (with a minimum of a 12-inch overlap), penetrations, around the perimeter of interior piers and along the top of the foundation wall using a non-shrink elastomeric caulk (such as Permathane SM7108 - Professional Discount Supply [PDS] product No. 06-026-1 or equivalent).*
7. *All floor slab construction joints shall be sealed using closed cell foam backer rod (PDS product No. 09-044-1 or equivalent) and/or a non-shrink caulk (PDS product No. 06-021-1 or equivalent).*
8. *All floor drains shall be Dranjer type drains with the appropriate seals to prevent vapors from entering the building.*
9. *Beginning at the "tee" fitting as shown on Figure SSD 1 of 2, 2-inch diameter solid wall schedule 40 PVC piping shall be installed to penetrate the floor slab within the utility closet adjacent to the main entry way.*
10. *Within the utility closet the 2-inch diameter solid wall schedule 40 PVC piping shall be connected to 4-inch diameter solid wall schedule 40 PVC piping using a 2"x4" reducer.*
11. *From the reducer, 4-inch diameter solid wall schedule 40 PVC pipe will extend through the ceiling of the utility closet, traverse through the attic space to a location to be determined by the owner where it will penetrate through the roof and be connected to the exhaust fan that will be located above the roof. To avoid introduction of vapors vented from beneath the building from entering the building, the fan exhaust must be:*
    - *A. Above the eave of the roof, preferably 12-inches above the surface of the roof;*
    - *B. A minimum of 10 feet above ground level;*
    - *C. A minimum of 10 feet away from any opening that is less than 2 feet below the top of the exhaust vent; and*
    - *D. A minimum of 10 feet from any adjoining or adjacent buildings, HVAC intakes or supply registers.*
12. *The 4-inch diameter solid wall schedule 40 PVC piping that traverses through the attic shall be fastened to the roof joists using appropriate hangers and/or strapping a minimum of every 6-feet or as local code requires for hanging duct work/piping.*
13. *The 4-inch diameter solid wall schedule 40 PVC piping that traverses through the attic shall not be laid horizontal in order to facilitate drainage of condensate to the condensate sump located beneath the slab.*
14. *A roof jack capable of accommodating the 4-inch diameter solid wall schedule 40 PVC piping shall be installed on the exterior of the roof where the pipe will penetrate the roof.*
15. *An exhaust fan capable of producing approximately 1.25 inches of water vacuum at a flow rate of approximately 120 cfm (such as Fantech FR-160 - PDS product No. 03-022-1 or equivalent) shall be installed to the open exposed end of the 4-inch diameter solid wall schedule 40 PVC pipe. A flexible reducer/coupler shall be used to connect the fan to the pipe.*
16. *A rain deflector/cap (such as PDS product No. 05-081-1R or equivalent) shall be installed at the discharge point to minimize rainwater from entering the system. Wire mesh insert screen (18X14) or equivalent shall be affixed to the rain cap with an exterior clamp.*
17. *The vent fan shall be protected with a shroud (such as EHS Fan Shroud - PDS product No. 05-010-1).*
18. *The vent fan shall be hard-wired on a dedicated circuit with a circuit breaker and conform to the provision of the National Electric Code and any other local electrical codes.*
19. *A fan speed control (such as Fantech Speed Control - PDS product No. 03-019-1 or equivalent) shall be incorporated within the electrical circuit to the vent fan and shall be located within the utility closet where the SSD system penetrates the floor slab.*
20. *A manometer/vacuum gauge (such as Dwyer Mark II Magnehelic Pressure Gauge - PDS product No. 05-020-1 or equivalent) shall be installed to measure the vacuum within the SSD system and shall be located in plain view within the utility closet where the SSD system penetrates the floor slab.*
21. *An audible and visual alarm (such as PDS product no. 05-025-1 or equivalent) shall be installed in the utility closet, in plain view, where the SSD system penetrates the floor slab.*
22. *The piping, manometer, fan speed control switch, audible/visible alarm, and dedicated circuit breaker shall be clearly marked and labeled to identify these as components of the vapor mitigator system.*

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SHEET NO.: SSD 2 OF 2