



Antea USA, Inc.
40000 Grand River Ave. Suite 404
Novi, MI 48375
www.anteagroup.com

July 28, 2016

Brian Kelly
Federal On-Scene Coordinator
Environmental Protection Agency, Region 5
Detroit Field Office

Subject: Additional Assessment Work Plan

Dear Mr. Kelly:

Per your recent request and on behalf of Park Avenue \$2.75 Cleaners, Antea Group respectfully presents the below work plan for proposed additional assessment activities needed to more accurately define the nature and extent of subsurface impacts (PCE and related constituents) associated with at the Park Avenue \$2.75 Cleaners located at 260 South Cherry Hill Road, Canton MI 48188 (Figure 1 and 2). An updated project chronology is in Attachment 1 for reference. We would appreciate EPA's and MDEQ's feedback and/or concurrence regarding the below plan prior to execution. Also, please note that Antea Group cannot execute any of the below without the prior approval of Park Avenue \$2.75 Cleaners and their insurance carrier.

Proposed Additional Assessment Activities

1. Soil

- a. Approximately 14 soil borings will be completed throughout the three (3) spaces (Park Avenue \$2.75 Cleaners, Rite Aid and Paws Pet Groomers (Figure 3). Final number and placement of borings will be based on field observations and screening.
 - i. Approximately eight (8) "shallow" soil borings will be extended until approximately 10-12 feet below concrete flooring (BC). This depth corresponds to the depth of native clay encountered in historical soil borings.
 1. Soil borings will be described by a geologist and field screened for volatile organic compounds with a photo ionization detector (PID).
 2. Approximately two (2) soil samples will be collected from each boring corresponding to the depth of highest PID reading and the first interval with PID readings less than 50-units or directly above groundwater or at the terminus of the boring. All soil samples will be submitted under proper chain of custody (COC) to an environmental laboratory and analyzed for PCE, TCE, cis-1-2-DCE and vinyl chloride according to Method 8260.
 - ii. Approximately four (4) "deep" borings will extend to approximately 20-feet BC to establish lithology with depth and to attempt to vertically define impacts.
 1. Soil borings will be described by a geologist and field screened for volatile organic compounds with a photo ionization detector (PID).
 2. Approximately three (3) soil samples will be collected from each boring corresponding to the depth of highest PID reading, the first interval with PID readings less than 50-units and at the terminus of the boring. All soil samples will be submitted under proper chain of custody (COC) to an environmental laboratory and analyzed for PCE, TCE, cis-1-2-DCE and vinyl chloride according to Method 8260.

2. Groundwater



- a. The eight (8) shallow boring above in 1 will be converted into 2-inch PVC groundwater monitoring points.
 - i. After installation, development and acclimation, each newly installed well and all existing groundwater monitoring wells will be sampled (approximately 20 samples). All groundwater samples will be submitted under proper chain of custody (COC) to an environmental laboratory and analyzed for PCE, TCE, cis-1-2-DCE and vinyl chloride according to Method 8260.
3. Soil Gas
 - a. All existing soil vapor monitoring points (SVMP-1 thru 21) will be sampled and submitted under proper chain of custody (COC) to an environmental laboratory and analyzed for PCE, TCE, cis-1-2-DCE and vinyl chloride according to Method To-15 (Figure 3).
4. Indoor Air
 - a. Time weighted (8-hour) indoor air samples will be collected from six (6) locations corresponding to locations sampled in June of 2016. Samples collected will be with no "make up air" (ie doors closed). Collected indoor air samples will be submitted under proper chain of custody (COC) to an environmental laboratory and analyzed for PCE, TCE, cis-1-2-DCE and vinyl chloride according to Method To-15 (Figure 3).
 - i. Note: All sampling described in 2, 3 and 4 above will attempted to be sampled within the same week so that data from the three (3) media are consistent with the same approximate point in time.
5. Miscellaneous
 - a. The existing radon blower system that is connected to the historical soil vapor extraction (SVE) piping will be tested for vacuum and an exhaust air sample will be collected and submitted under proper chain of custody (COC) to an environmental laboratory and analyzed for PCE, TCE, cis-1-2-DCE and vinyl chloride according to Method 8260.
 - b. Locate and document the "air intakes" for all three (3) building spaces to show proximity to radon blower exhaust as well as dry cleaning vent exhaust.
6. Interim Response Measures (if needed):
 - a. If the additional assessment above suggests that an indoor air quality issue exists, the following steps can be taken as potential interim responses.
 - i. The remnants of the historical SVE system that is currently connected to a residential type "radon blower", which has shallow vertical extraction points within the Rite Aid and Park Avenue \$2.75 cleaners spaces, will be modified to further mitigate sub-slab vapor intrusion. The existing two inch SVE wells (SVE- 1 thru 6) will be removed and replaced with four inch PVC wells to increase air flow and the existing radon blower will be replaced with a higher capacity unit.
 - ii. A similar new (separate) system would be constructed in the Paws Grooming space with approximately one (1) to three (3) wells.
 - iii. Both systems would be tested for effectiveness by recoding the vacuum on the extraction points as well as sub-slab points away from the SVE wells.
 - iv. One (1) indoor air sampling event would be conducted in all three (3) spaces to further demonstrate effectiveness. Approximately five (5) time-weighted (24-hour) samples would be collected and analyzed for PCE, TCE, cis-1-2-DCE and vinyl chloride per Method TO-15.
 - v. If indoor air does not improve then the installation of heat recovery ventilation (HRV) systems would be further investigated for each of the three (3) spaces (Attachment 2).
 - vi. Once conditions are stable, seasonal indoor air samples (approximately quarterly) will be collected until a final remedy is implemented. Approximately five (5) time-weighted (8-hour) samples would be collected and analyzed for PCE, TCE, cis-1-2-DCE and vinyl chloride per Method TO-15.
7. Final Remedy Feasibility Study:
 - a. Based on the result of the additional assessment activities outlined above, Antea Group will re-evaluated a number of final remedies for this site including but not limited to: permanent-style

mitigation, chemical injections as well as excavation. Results of this feasibility study (FS) will be summarized in the Additional Assessment Report outlined above. It should be noted that any proposed remedy would need to be vetted and approved by all project stakeholders (Federal/state/local authorities, property owner, Rite Aid, Pet Groomer, Park Avenue \$2.75 cleaners) prior to implementation.

8. Reporting:

- a. Following the completion of the above an Additional Assessment Report will be submitted. The report will detail all additional work completed, summarize all data collected and present recommendations for a final remedy.

Schedule

- The additional assessment activities proposed above cannot commence without the prior authorization of the affected stakeholders (Property owner, Park Avenue \$2.27 Cleaners, Rite Aid and Paws Pet Groomers).
- Additional Assessment Activities could be completed in approximately one (1) week pending access for additional work secured.
- Additional Assessment Summary Report will be completed within approximately 4 weeks of receiving all final analytical reports.

Please contact Chris Michalek at (248) 699-0277 with any questions, comments, or concerns regarding the above proposed.

Sincerely,

Fred Koenigbauer
Project Professional
(248) 699 0278
Alyssa.Olson@anteagroup.com

Chris Michalek, P.G.
Senior Project Manager
(248) 699-0277
Chris.Michalek@anteagroup.com

CC: Beth Vens (MDEQ)
John Doe (Colony Group)
Amanda Hayden (VERTEX)
Ann Marie Rockov
Project file

Attachments:

Figure 1 – Site location Map

Figure 2 – Site Map

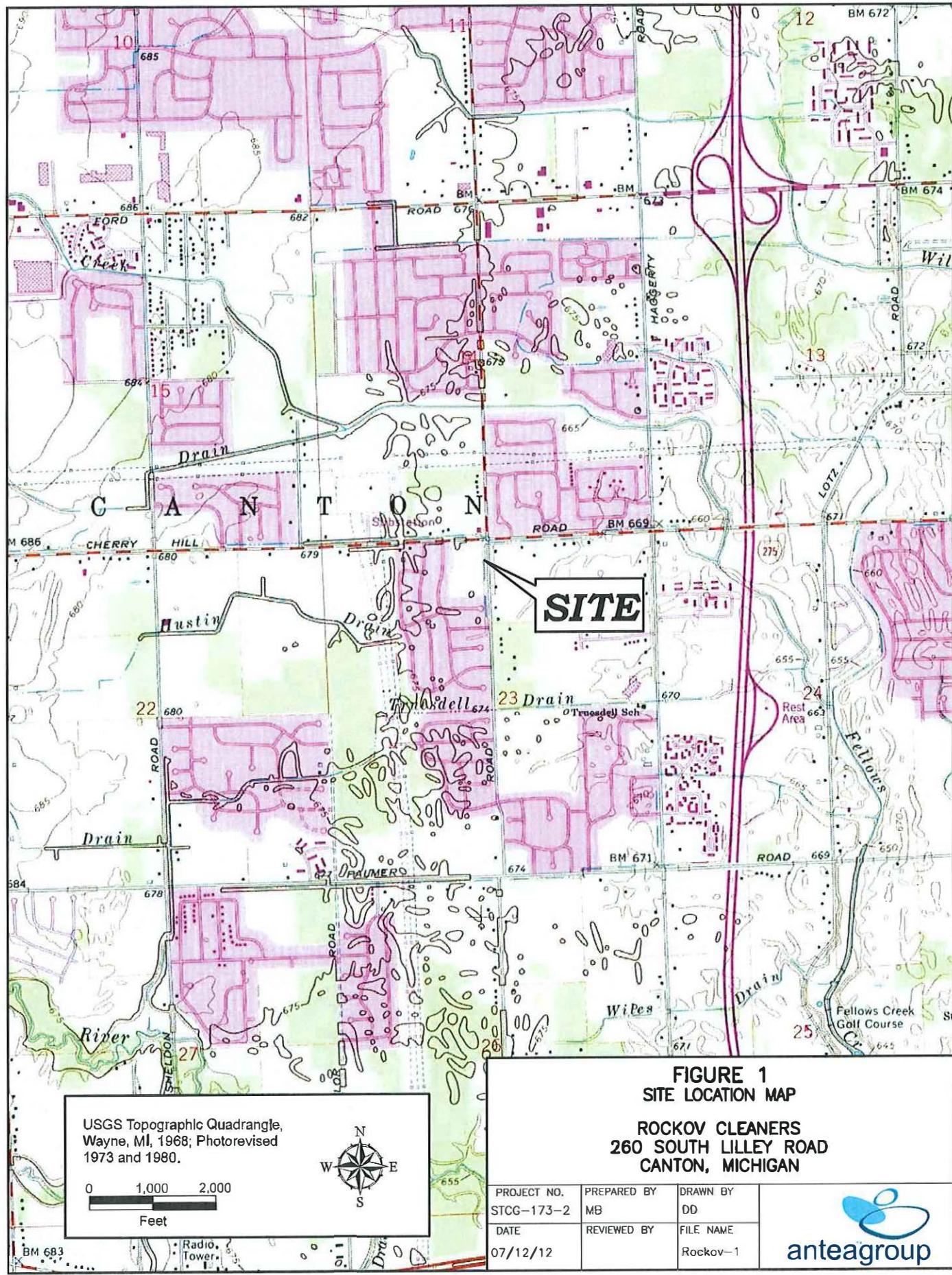
Figure 3 – Proposed Boring Location Map

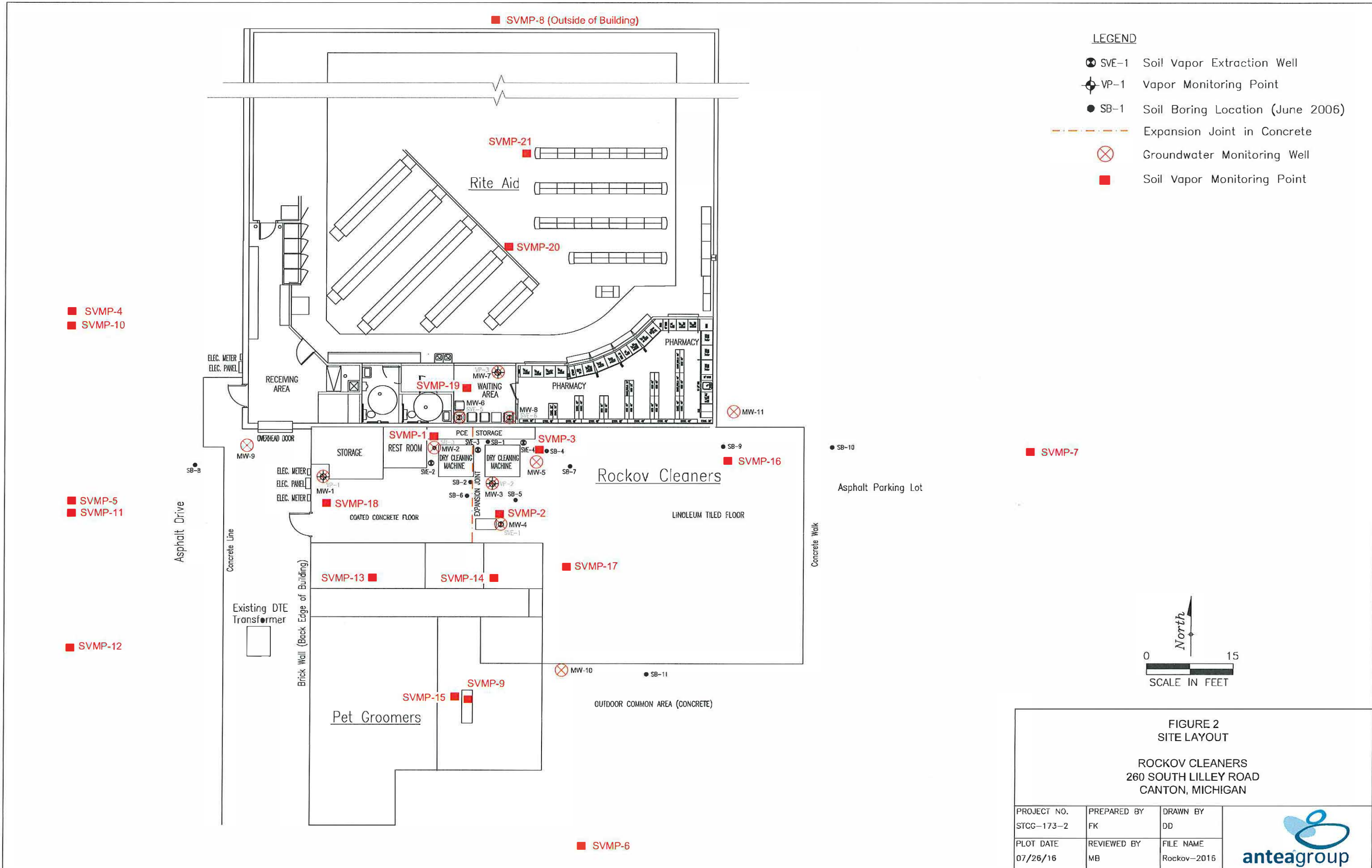
Attachment 1 – Project Chronology

Attachment 2 – HRV Info

FIGURES

.....





LEGEND

- ⊗ SVE-1 Soil Vapor Extraction Well
- ⊕ VP-1 Vapor Monitoring Point
- SB-1 Soil Boring Location (June 2006)
- Expansion Joint in Concrete
- ⊗ Groundwater Monitoring Well
- Soil Vapor Monitoring Point

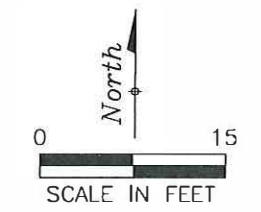
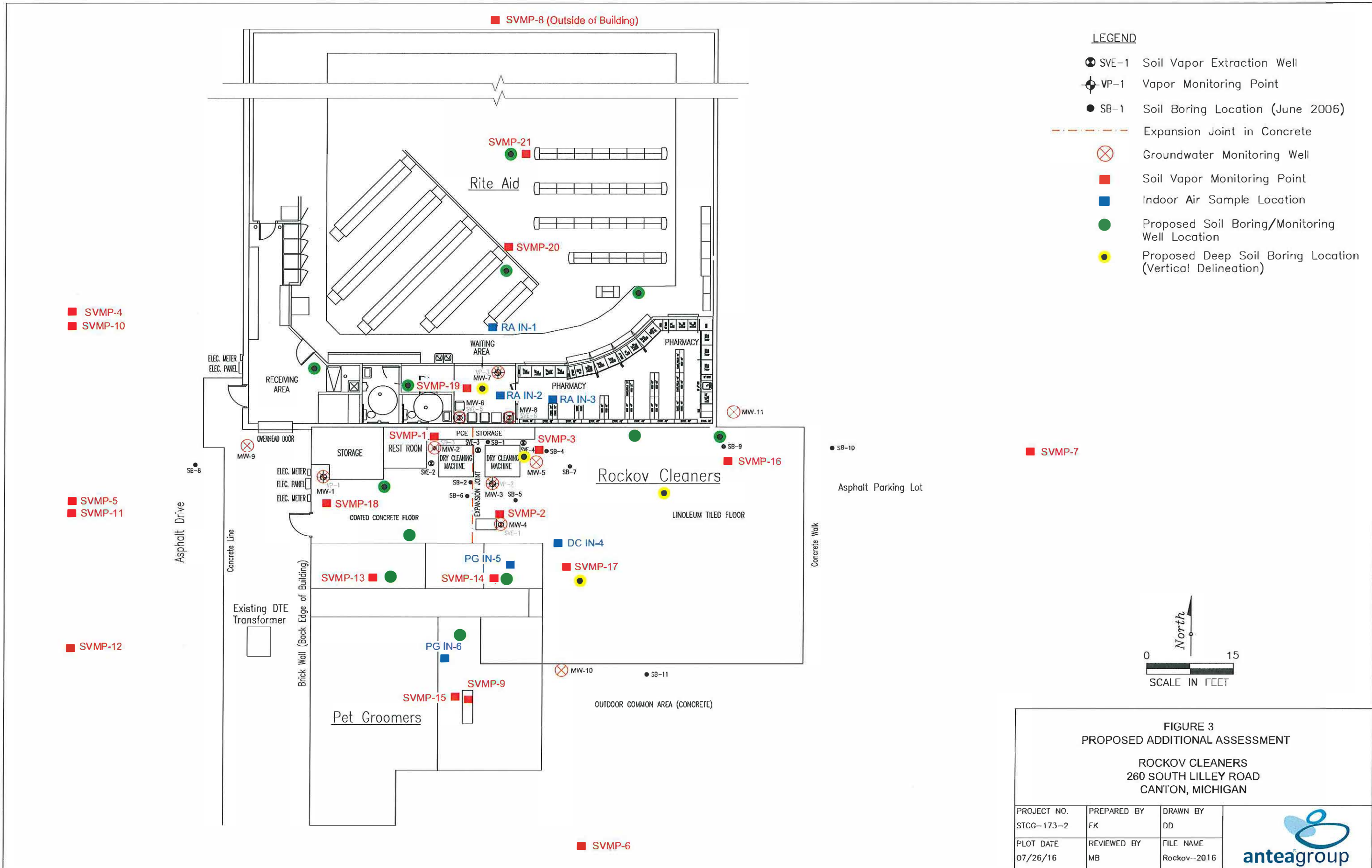


FIGURE 2
SITE LAYOUT
ROCKOV CLEANERS
260 SOUTH LILLEY ROAD
CANTON, MICHIGAN

PROJECT NO. STCG-173-2	PREPARED BY FK	DRAWN BY DD
PLOT DATE 07/26/16	REVIEWED BY MB	FILE NAME Rockov-2016





LEGEND

- ⊗ SVE-1 Soil Vapor Extraction Well
- ⊕ VP-1 Vapor Monitoring Point
- SB-1 Soil Boring Location (June 2006)
- - - Expansion Joint in Concrete
- ⊗ Groundwater Monitoring Well
- Soil Vapor Monitoring Point
- Indoor Air Sample Location
- Proposed Soil Boring/Monitoring Well Location
- Proposed Deep Soil Boring Location (Vertical Delineation)

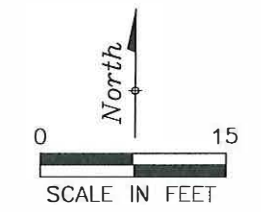


FIGURE 3
PROPOSED ADDITIONAL ASSESSMENT

ROCKOV CLEANERS
260 SOUTH LILLEY ROAD
CANTON, MICHIGAN

PROJECT NO. STCG-173-2	PREPARED BY FK	DRAWN BY DD
PLOT DATE 07/26/16	REVIEWED BY MB	FILE NAME Rockov-2016



ATTACHMENT 1

.....



Antea USA, Inc.
40000 Grand River Ave. Suite 404
Novi, MI 48375
www.anteagroup.com

July 27, 2016

Subject: **Project Summary to Date**
Park Avenue \$2.75 Cleaners
260 S. Lilley Road
Canton, Michigan 48188

2005: Phase I

- December 2005: The landowner of the property located at 260 S. Lilley Road was in the process of refinancing. A Phase I Environmental Site Assessment was conducted by Land America Assessment Corporation of the Cherry Hill Court Shopping Center at 260 S. Lilley Road in Canton, Michigan. The Phase I concluded that the dry cleaning operations of the Park Ave. \$2.25 Cleaners Inc. (now Park Ave. \$2.75 Cleaners Inc.), an active tenant since construction of site in 1998, warranted a Phase II investigation.

2006: Phase II and Release Report

- January 2006: A Phase II Assessment was conducted to address possible environmental concerns associated with the dry cleaning activities. The Phase II investigation established that a dry cleaning solvent containing tetrachloroethene (PCE) is used at this facility. PCE product and waste generated as a result of the dry cleaning process are stored onsite in 30-gallon drums on pallets until picked up by Safety Kleen. The report noted that there was minimal staining on the epoxy coated concrete floor; however, the epoxy coating was breached in several areas. Due to the ability of PCE to penetrate concrete in those areas, the potential for PCE contamination was considered a REC. Soil samples obtained under the building exceeded Michigan Part 201 criteria for drinking water protection and volatilization to indoor air. The Phase II recommended that a release be reported to the Michigan Department of Environmental Quality (MDEQ), the concrete floor be resealed with a coat of epoxy, and the required remedial action be performed.
- August 2006: Delta Environmental Consultants (Delta), now Antea Group, completed a Site Assessment Report for the Park Ave. \$2.25 Cleaners Inc. client and insurance provider, Colony Group. The assessment found that the soil impacted with PCE and its breakdown products with concentrations above acceptable criteria was limited to the fill material immediately below the concrete floor under the dry cleaning machines. Groundwater was not encountered during the site investigation. Delta recommended excavation of subsurface impacted soils, however due to business considerations, the client requested an alternative solution. Therefore, Delta recommended an insitu remedial approach.
- October 2006: the Park Ave. \$2.75 cleaners Inc. reported to the Michigan Department of Environmental Quality to the Waste and Hazardous Materials Division that an accidental release of ten (10) gallons of PCE occurred.

2007: SVE Remedial Work Plan

- June 2007: Delta submitted a Remedial Work Plan to the client detailing the proposed soil treatment conceptual design. The system design consisted of a Soil Vapor Extraction (SVE) system with activated carbon treatment.

2008: SVE Design and Specifications

- August 2008: Delta completed Remedial Design Plans and Specifications for installing recovery and monitoring wells and remedial piping for the SVE system. The system design included six (6) SVE recovery wells and three (3) vertical vapor monitoring points.



2009: SVE Installation and Operation

- April 2009: The SVE system was installed onsite. Two (2) of the six (6) SVE recovery wells and one (1) of the three (3) vapor monitoring wells were installed inside of the Rite Aid store neighboring the dry cleaning facility. A pre-fabricated, temporary trailer mounted SVE treatment system was installed behind the Rite Aid building. The treatment system in the trailer included three (3) carbon vessels in series to treat the extracted vapors.
- Subsequent to the SVE system installation, perched water was observed beneath the concrete floor of the building and greatly reduced soil vapor recovery. Delta then attempted to increase recovery by attempting dual phase extraction events to recover both vapors and liquids via high vacuum truck. These attempts also proved unsuccessful.
- July 2009: A *SVE System Installation and Initial Operation Report* was completed by Delta and submitted to the MDEQ. The report detailed the system operations since start up occurred in May 2009 including performance monitoring through bi-weekly operation and maintenance visits. Additionally, the report indicated that the moisture content in the soil/fill material inhibited air flow and consequently mass removal for the system.

2010: SVE Decommissioning

- April 2010: Delta submitted a proposal to the insured to discontinue operations of the existing SVE system due to the problems associated with the unforeseen perched groundwater. It was proposed that a bio-enhancement be applied to the subsurface through the existing SVE wells.
- Late April 2010: A low-vacuum sub-slab depressurization system (Radon Blower) was installed in order to continue venting PCE vapors from beneath the floor. The blower was installed on the exterior of the building where existing SVE piping penetrates the wall. The blower continues to operate as an interim response.

2011: Alternatives Analysis

- Antea Group (formerly Delta) conducted an alternatives analysis to determine another insitu remedial approach to address the PCE impacted subsurface soils.

2012: Chemical Reduction Work Plan

- February 2012: Antea Group submitted a corrective action proposal to the client to pursue the application of a bioremediation/chemical reduction to the subsurface. This system involves a compound called EHC-L[®], which is a chemical reduction material in liquid form that promotes dechlorination reactions to treat soil and groundwater contaminated with chlorinated solvents. This rapid chemical reduction of chlorinated solvents minimizes the formation of daughter products, especially vinyl chloride. The material is a two part solution to be mixed together with water onsite.
- April 2012: A pilot study was conducted to determine the feasibility of injection of water into the subsurface utilizing the existing infrastructure from the SVE system. The test yielded positive results with 85 gallons of water added to a single well over the course of a two-hour period, without causing significant changes in the groundwater elevation beneath the building slab. The test was necessary to conduct prior to proceeding with the injection of the amendment to verify that sufficient movement of the fluid (and hence the amendment) across the impacted area would occur.
- July 2012: An *Interim Response Work Plan* was submitted to the MDEQ Insitu Committee for approval to proceed with the application of EHC-L[®] to the subsurface to act as a chemical reduction agent. The Work Plan detailed the proposed injection of EHC-L[®] through the existing SVE system infrastructure.
- November 2012: Per informal correspondence with MDEQ, Antea Group submitted a letter rescinding the *Interim Response Work Plan* in order to resubmit an amended version of the work plan to include additional assessment.

2013: Amended Chemical Reduction Work Plan

- March 2013: Antea Group submitted an amended *Interim Response Work Plan* that included additional assessment designed to define the nature and extent of any water impact. This amended work plan still proposed use of enhanced reductive dechlorination for remediation pending results of the additional assessment.

- August 2013: The MDEQ requested an extension to review to March 25th 2013 amended *Interim Response Work Plan* and additional site figures. Antea Group submitted a letter of extension to the MDEQ to review the work plan along with additional site figures showing the vertical and horizontal plume delineation soil and groundwater data.
- November 2013: The MDEQ requested an additional extension to review to March 25th 2013 amended *Interim Response Work Plan*. Antea Group submitted a second letter of extension to the MDEQ to review the work plan.

2014: Comments from MDEQ on Amended Work Plan

- January 2014: The MDEQ submitted a letter of conditional approval of the March 25th 2013 amended *Interim Response Work Plan*, with comments for additional site assessment work and bench-scale testing of proposed chemical reduction remedy.
- Winter of 2014: The fire suppression water main burst resulting in flooding inside of the client's space and two adjoining spaces. Antea Group was notified of this incident by the client in July 2014.
- July 2014: Antea Group prepared a proposal to client for additional assessment per the March 25th 2013 amended *Interim Response Work Plan*.
- August 2014: Utility mapping and scoping of the sewer drain was completed in preparation of assessment work. No obvious leaks were detected during the sewer scoping within the cleaners.
- August through December 2014: Access negotiations with land owner and Rite Aid were ongoing for approval to conduct the additional assessment work.

2015: Additional Assessment

- January 2015: Assessment activities per the March 25th 2013 amended *Interim Response Work Plan* were completed including the installation of groundwater and soil vapor monitoring wells. Additionally, the material needed to conduct bench-scale testing of the proposed chemical reduction remedy was collected at this time.
- April 2015: Results of the additional assessment identified that groundwater concentrations exceed MDEQ Volatilization to Indoor Air Inhalation Criteria and soil gas concentrations exceed MDEQ screening levels.
- July 2015: Groundwater and soil gas monitoring wells were resampled to confirm the analytical results from the initial sampling event in March 2015. Analytical data matched results from the previous sampling event.
- August 2015: Results from the bench-scale testing of the proposed chemical reduction remedy were received. Overall, the bench-testing results were favorable, demonstrating the degradation of contaminants of concern in groundwater and soil samples from the subject site up to 99.8% - 100%.
- September 2015: Met with new MDEQ PM Beth Vens. Discussed work conducted to date, recent results, and potential future actions for the site. She was concerned about potential vapor intrusion issues and requested that be further investigated and mitigations developed. Requested proposed next steps by October 23, 2015.
- October 2015: VI assessment activities (outside, inside Rite Aid, inside cleaners and inside pet groomer) approved by MDEQ and Colony.
- December 2015: New outside soil vapor monitoring wells installed and sampled. All results below applicable criteria.

2016:

- Further VI assessment (soil vapor monitoring wells) to be installed in Rite Aid and pet groomer pending access. After data reviewed an indoor air mitigation feasibility study (FS) to be conducted.
- April 2016: Vapor point installed in Pet Groomers. Approved by MDEQ and Colony
- May 4, 2016: Indoor vapor points in Pet Groomers and Dry Cleaners sampled. New leak detection system used, all points failed leak detection test. Beth Vens and Site owners (dry cleaner and pet groomer) notified.
- May 11, 2016: Antea Group requests and receives approval for safety variance to use Fibertec and reinstall vapor pins. Antea Group waits for access to Rite Aid which was requested on February 15, 2016.
- June 15, 2016: Michigan Department of Environmental Quality, Remediation & Redevelopment Division Project manager Beth Vens notifies Antea Group of heightened concern concerning the environmental conditions and requests a meeting on June 20, 2016. All parties notified (Rite Aid, Pet Groomer, Vertex, Colony, Landlord/counsel).

- June 16, 2016: Antea Group takes indoor samples at the Rite Aid and Pet Groomers. Results below chronic and acute criteria in Rite Aid but above acute criteria in Pet Groomers.
- June 17, 2016: Antea Group meets with Peak Environmental (David Scott) and discusses installation of HRV (heat recovery systems) in all three spaces to remediate indoor air concerns.
- June 20, 2016: Antea Group speaks with Jim at Mobile Air Supply. He is ready with filtration or mechanical supply and exhaust systems as soon as requested. Meeting with MDEQ with stakeholders took place at 1:00 PM. Proposed during the meeting were:
 - Immediately:
 - The HVAC systems in all 3 spaces of the building will be inspected and adjusted to have the fan in the “on” position until further notice. This will be completed tomorrow 6-21-16.
 - A portable air “scrubbers” will be deployed in the pet groomer space tomorrow (6-21-16).
 - The cleaners ventilation system (separate from the HVAC) will also be placed in the “on” position tomorrow (6-21-16) until further notice.
 - The operational cleaning machine will be inspected by a knowledgeable cleaning machine maintenance person on Thursday to confirm the machine is in proper operating condition and not potentially contributing to indoor air quality issues.
 - Collect another round of indoor air samples in Rite Aid and the pet groomers before end of the week to investigate effective of 1a and 1b above. Pending results discuss with you additional immediate mitigation efforts.
 - Within 30 days:
 - Reconfigure, expand (in pet groomer and potentially in Rite Aid) and enhance existing sub slab depressurization system per recommendations from Peak Environmental.
 - Also per Peak’s recommendation, investigate the installation of heat recovery ventilation units (HRVs) in each of the 3 spaces to further enhance air exchanges.
 - Collect indoor air samples to show effectiveness of 2a and 2b above.
 - Submit to MDEQ a written work plan to complete the assessment work needed to define the nature and extent of remaining impacts (including additional sampling of exterior soil vapor wells).
 - Within 90 days:
 - Submit to MDEQ a report that summarizes the results of the additional investigation in 2d above and proposes a final remedy.
 - The above are contingent upon support and access needed from all stakeholders as well as approval by the Rockov’s insurance carrier.
 - Those in attendance of the meeting:
 - Michigan Department of Environmental Quality
 - Beth Vens-Project Manager
 - Gerald Terran- Assistant Remediation Director
 - Paul Owens-Remediation Director
 - Krista Reed- Vapor Expert
 - Antea Group
 - Chris Michalek-Project Manager
 - Alyssa Olson- Staff Professional
 - Stakeholders
 - Amanda Hayden- Vertex Consultant
 - Ann Marie Rockov-Cry Cleaner Site Owner
 - Mark Jacobs- Dykema (Bob Goldman’s Counsel)
 - Bob Goldman- Cherry Hill Property Owner
 - Alissa Smith- Paws Grooming Business Owner
 - Deanna Bomgardener- Rite Aid Environmental Services
- June 22, 2016: On-site meeting with Brian Kelly (Federal On-Scene Coordinator for the EPA), EPA Tetra Tech (subcontractor), MDEQ, Antea Group, Property owner and attorney, Rockov to discuss ER actions.
- June 23, 2016: Indoor air samples collected from each of the 3 spaces. All results reported below both chronic and acute PCE levels.

- June 29, 2016: Antea Group submits draft plan for next steps (including a final remedy feasibility analysis) to EPA/MDEQ.
- July 13, 2016: Deeper SVMPs installed west of dry cleaner near residential properties and vapor pins installed in dry cleaner and pet groomer. Access to Rite Aid for vapor pins under construction.
- July 15, 2016: Newly installed vapor pins in dry cleaner and pet groomer as well as SVMPs to west sampled.
- July 20, 2016: Results for 7-15-16 sampling: SVMPs to west ND, vapor pins in pet groomer <applicable criteria, vapor pins in dry cleaner 1 of 2 samples above applicable criteria.
- July 20, 2016: Access to Rite Aid for 3 vapor pins (only) approved/executed.
- July 20, 2016: 3 vapor pins installed in Rite Aid.
- July 22, 2016: SVMP(s)-14, 16, 19, 20, 21 were sampled. SVMP-3 was re-installed.
- July 26, 2016: SVMP-3 sampled; SVMP(s)-1 and 2 re-installed.

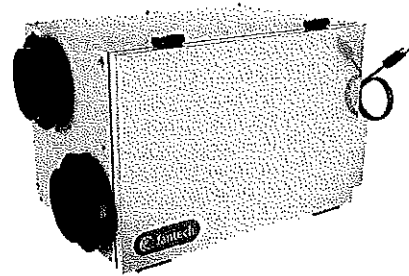
ATTACHMENT 2

.....

SHR 2004

Heat Recovery Ventilator

Product #: 40077



Fantech's larger residential, full-featured HRV for budget conscious large house projects, the SHR 2004 is designed for higher static pressure and higher airflow applications. The unit brings a continuous supply of fresh air into a home while exhausting an equal amount of contaminated air. During winter, fresh incoming air is tempered by the heat that is transferred from the outgoing air so you save on energy costs, while during summer, the incoming air is pre-cooled if the house is equipped with an air cooling system. The SHR 2004 is equipped with automatic defrost mechanisms so you can use your HRV all year long.

Features

- Compact design
- Fans with backward curved RadICAL blade
- Electrostatic filters (washable)
- Aluminum heat recovery core
- External screw type dry contacts
- Easy Core Guide Channels For Removing Core
- Weighs 61lbs (28Kg)

Optional Controls

- ECO-Touch™ (#44929) – Programmable Touch Screen Wall Control
- EDF7 (#44883) – Electronic multi-function dehumidistat
- RTS3 (#40376) – 20/40/60 minute over-ride
- RTS2 (#40164) – 20 minute over-ride
- MOEH1 (#40172) – Dehumidistat

Specifications

- Duct size – 6" (152 mm)
- Voltage/Phase – 120/1
- Power rated – 150 W
- Amp – 2.1 A
- Average airflow – 201 cfm (95 L/s)
@ 0.4" P_s (100Pa)

Fans

Two (2) factory-balanced fans with backward curved blades. Motors come with permanently lubricated, sealed ball-bearings to guarantee long life and maintenance-free operation.

Heat Recovery Core

Aluminum heat recovery core covered by a limited lifetime warranty. Core dimensions are 12" x 12" (305 x 305 mm) with a 15" (380 mm) depth. Our heat exchangers are designed and manufactured to withstand extreme temperature variations.

Defrost

A preset defrost sequence is activated at an outdoor air temperature of 23°F (-5°C) and lower. During the defrost sequence, the supply blower shuts down & the exhaust blower switches into high speed to maximize the effectiveness of the defrost strategy. The unit then returns to normal operation, and continues cycle.

Serviceability

Core, filters, fans and drain pan can be easily accessed through latched door. Core conveniently slides out on our new easy glide core guides. 17" (432 mm) of clearance is recommended for removal of core.

Case

24 gauge galvanized steel. Baked powder coated paint.

Insulation

Cabinet is fully insulated with 1" (25 mm) high density expanded polystyrene.

Filters

Two (2) washable electrostatic panel type air filters 11.75" (298mm) x 15" (380mm) x 0.125" (3mm).

Controls

External three (3) position (Low/Stand By/Medium) rocker switch that will offer continuous ventilation. Fantech offers a variety of external controls. (see controls)

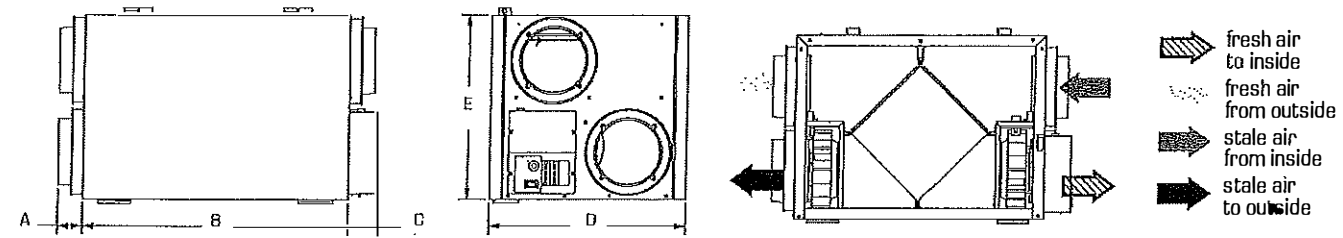
Installation

Unit is typically hung by using installation kit supplied with unit. Mounting bolts provided on top four (4) corners of unit.

Warranty

Limited lifetime on aluminum core, 7 year on motors, and 5 year on parts.

Dimensions & Airflow



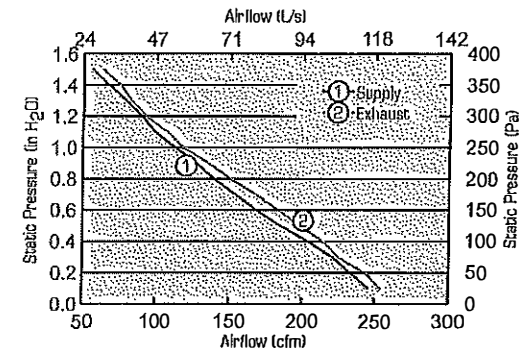
Model	A		B		C		D		E	
	in	mm	in	mm	in	mm	in	mm	in	mm

SHR2004 2 1/4 57 27 7/8 708 2 5/8 67 17 3/8 441 20 1/2 521

Clearance of 17" (432 mm) in front of the unit is recommended for removal of core. All units feature three foot plug-in power cord with 3-prong plug.

Ventilation Performance

In. wvg. (Pa)	0.3 (175)	0.6 (150)	0.9 (225)	1.2 (300)
Net supply airflow	218 (103)	158 (74)	101 (48)	59 (28)
Gross supply airflow	220 (104)	158 (75)	102 (48)	60 (28)
Gross exhaust airflow	227 (107)	176 (83)	124 (59)	86 (41)



Energy performance

Heating	Supply temperature		Net airflow		Consumed power	Sensible recovery efficiency	Apparent sensible effectiveness	Latent recovery/moisture transfer
	°F	°C	cfm	L/s	W	%	%	-
	32	0	60	28	108	62	77	0.03
	32	0	117	55	154	62	77	0.02
	32	0	193	91	246	58	68	0.02
	19	-25	117	55	154	59	77	0.01

Requirements and standards

- Complies with the UL 1812 requirements regulating the construction and installation of Heat Recovery Ventilators
- Complies with the CSA C22.2 no. 113 Standard applicable to ventilators
- Complies with the CSA F326 requirements regulating the installation of Heat Recovery Ventilators
- Technical data was obtained from published results of test relating to CSA C439 Standards
- HVI certified

Contacts

Submitted by:	Date:
Quantity:	Model:
Comments:	Project #:
Location:	
Architect:	
Engineer:	Contractor:

Distributed by:

United States 10048 Industrial Blvd. • Lenexa, KS 66215 • 1.800.747.1762 • www.fantech.net
 Canada 50 Kanallak Way • Bouctouche, NB E4S 3M5 • 1.800.565.3548 • www.fantech.net

Fantech reserves the right to modify, at any time and without notice, any or all of its products' features, designs, components and specifications to maintain their technological leadership position.

