

# Berninger Environmental, Inc.

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June 18, 2008

Ms. Kiera Becker  
Project Manager  
New York State Department of Environmental Conservation  
Division of Environmental Remediation  
Remedial Bureau C  
625 Broadway, 11<sup>th</sup> Floor  
Albany, New York 12233-7015

Re: Schmukler's Dry Cleaners, Brownfield Cleanup Agreement Site No. C360088  
City of New Rochelle, Westchester County  
Revised Supplemental Remedial Investigation Work Plan

Dear Ms. Becker:

Berninger Environmental, Inc. (BEI) on behalf of our client, HNJ Realty, LLC, is providing a Revised Supplemental Work Plan to the Remedial Investigation for Schmukler's Dry Cleaners, Brownfield Cleanup Agreement Site No. C360088.

## **Project Background**

This project is being conducted in accordance with the requirements of an executed Brownfield Cleanup Agreement (dated February 27, 2006), between the New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Remediation (DER) and HNJ Realty, LLC, the Volunteer. The Site is a commercial property located at 358 through 364 North Avenue, New Rochelle, New York (see Figures 1-2), fully described as Section 4 - Block 1206 - Lot 19 of the tax maps of City of New Rochelle.

As per NYSDEC DER correspondence dated January 23, 2008 a work plan was required for supplemental RI Work. The supplemental RI was submitted to NYSDEC and NYSDOH on March 28, 2008 for review. Comments were received from NYSDEC dated May 21, 2008 and this work plan reflects revisions based upon the incorporation of those comments.

## **BCP Remedial Investigation**

A remedial site investigation has been performed pursuant to the requirements of the Brownfield Cleanup Agreement between the NYSDEC DER and HNJ Realty, LLC, the Volunteer. Task 1a (Indoor Air Testing), Task 1b (Soil Gas Investigation), Task 2 (Soil Investigation), and Task 3 (Groundwater Investigation) of the approved BCP Work Plan were performed by Berninger Environmental Inc. (BEI) in August of 2007. The primary purpose of the remedial investigation was to delineate the lateral and vertical extent of VOC contamination (tetrachloroethene and its breakdown products) in all media that may be emanating from the subject property. The dry-cleaning operations previously occurred in a self-contained small portion of the property, comprised of a small added-on extension to the main building.

Two types of contaminants of concern were identified which were the following:

- Halogenated VOCs in sub-slab vapor, soil gas, outdoor air, soils and groundwater; and
- Petroleum-related VOCs (and SVOCs- groundwater only) in sub-slab vapor, soil gas, soil and groundwater.

Based upon the data developed during the Remedial Investigation, BEI has identified the need for remediation of site soils and groundwater, with continued monitoring of all media.

All data collection procedures will be performed in accordance with the NYSDEC- approved work plans. The findings of the initial and subsequent supplemental investigation to the RI will be included in a complete overall RI report at the completion of this phase of testing.

### **Supplemental RI Work Plan**

#### **1) Installation of Monitoring Wells - See Revised Figure 3 for location of proposed monitoring wells.**

Scope: A total of nine (9) monitoring wells will be installed in order to determine groundwater flow direction and the extent of groundwater contamination. At least four (4) of those monitoring wells will be installed as bedrock wells due to the shallow nature of the water table and fractured nature of the shallow bedrock on-site. At least two rounds of groundwater samples will be collected from these wells subsequent to installation, development and equilibrium. The location of the bedrock wells are as follows: two along North Avenue, one to the north of the site along Lockwood Avenue, and one to the west of the site, along May Street.

Specification: Well construction within the unconsolidated saturated soil zone will consist of 2-inch diameter, Schedule 40 PVC riser pipe with a ten-foot 0.020 inch slotted well screen, set approximately three feet above and seven feet below the water table. Depth to groundwater was measured at approximately 10.5 to 11 ft below grade surface (bgs) during the RI. Therefore, the anticipated screened interval will be 7.5 - 17.5 feet bgs. Total depth of the well is estimated at approximately 18 feet bgs.

These shallow unconsolidated soil wells will be set via either a Geoprobe or Hollow stem auger rig. No split-spoon sampling will be performed. The screen interval will be backfilled with No. 0 Morie sand to a depth of two feet above the screen. A two-foot bentonite seal followed by a cement-bentonite grout will be installed to complete the annulus space backfill. Depths of the above materials will be confirmed by measuring same using a steel tape during construction. As necessary, the materials will be conveyed into the borehole by mechanical means using methodology to prevent bridging. Two-inch diameter, schedule 40, flush joint threaded riser pipe will finish the well to grade. A 5-inch cast iron manhole and cover will be cemented in place to complete the installation.

Four monitoring wells will be completed into the shallow upper fractured bedrock zone. BEI will use a hollow stem auger rig to drill to the top of the bedrock surface. The top of the bedrock is expected to be more than 11 feet below grade surface. At the bedrock interface, an air hammer will be introduced interior to the steel augers and used to drill a bedrock "socket," approximately 7-8 feet deep, below the top of the bedrock. Provisions will be made to incorporate a 1-foot minimum potential Dense Non-Aqueous Phase Liquid (DNAPL) sump in the bottom of the borehole, as part of well construction.

A five-foot 2-inch stainless steel PVC well #20 slot screen will be placed approximately 2 feet below the top of the bedrock, with solid stainless steel riser to grade. As per the NYSDEC, stainless steel materials of construction are specified due to the presence of solvents and potential for petroleum free phase product. A sand/gravel pack will be set around the annular space exterior to the well screen to the bottom of the well, followed by a 5-foot bentonite pellet seal. The bentonite pellets will then be hydrated to seal the upper portion of the well above the screen, into the solid riser. The remainder of the annular space within the borehole will be grouted to seal the bedrock well from surface water and shallow groundwater infiltration.

Any drill cuttings from soils within projected source areas will be containerized on-site in a 55-gallon drum until sampling and disposal arrangements are completed. If drill cuttings are generated in areas not identified as a concern, same will be screened with the PID and cuttings retained on-site with the permission of the NYSDEC representative.

The wells will be developed using a decontaminated submersible well pump or dedicated disposable polyethylene bailer after the well seal and grout have set (48 hour minimum). The pump/bailer will be moved up and down throughout the screen interval during well development. A geologist will supervise the well development and record procedures, quantities and characteristics of water removed in a field notebook. A minimum of five wellbore volumes will be removed during development. The turbidity, pH, temperature and conductivity of successive well volumes will be recorded during development. Efforts will be undertaken to develop the wells until turbidity is less than 50 NTUs and pH, temperature and conductivity stabilize within 10% on successive well volumes. Purge development waters will be discharged upgradient /proximate to each of the well locations, if approved by the NYSDEC. If discharge of these waters is not feasible due to runoff or groundwater conditions, development waters will be containerized for off-site disposal, in accordance with applicable regulations for same.

Upon completion of the wells, a small v-shaped notch will be placed at the north side of the well casing as a future measuring point. The location and casing elevations will be determined by a New York State licensed surveyor using an arbitrary datum point, in absence of proximate NGVD datum. The elevation of the top of the well casing will be provided to 0.01 foot and the well location to 0.10 foot. Depth to groundwater will be measured from each well to the nearest 0.01 foot using a sonic interface probe. The presence, absence of sheens, free product, thickness, etc. will be noted at the time of sampling and/or groundwater elevation measurement. The collected data will be used to generate a groundwater elevation map; same will be used to ascertain the direction of groundwater flow relative to the measurement date. At least two rounds of groundwater elevation data will be generated.

At least two rounds of groundwater samples will be collected from these wells and submitted for laboratory analysis. If free product is present, no groundwater sample will be collected at that specific well location. If deemed useful, a free product sample may be collected for fingerprinting by EPA Method 8015. The first round will be collected a minimum of one week after well development. Groundwater samples will be analyzed for Target Compound List (TCL) VOCs by EPA Method 8260 and TCL SVOCs by EPA Method 8270, by an NYSDOH-ELAP certified laboratory in accordance with the requirements for an NYSDEC ASP B deliverable. The second round of groundwater samples will be collected approximately one month later for confirmation of data.

## **2) Petroleum-Related Source Area Evaluation & Evaluation of Free Phase Product**

At least three of the shallow monitoring wells to be installed shall be strategically placed along site boundaries, or other relevant locations, which will aid in the determination of whether the petroleum-related source is located on- or off-site (see Figure 3).

Furthermore, approximately five additional borings will be installed specifically for the evaluation of free-phase product in groundwater. If feasible, one or more of the well location boreholes may be used as a substitute, in order to provide the same information. These boring locations will be selected based upon the results of the installation of the monitoring wells and the presence or absence of free phase product. During the prior BCP RI soil boring locations B-1, B-5 and B-12 noted field evidence of fuel oil impacts (see prior RI report figures). Concentrations of petroleum-related VOCs appeared to decrease with increased distance to the north, south, east and west of the GW-4 sampling location. Selected SVOCs were detected in groundwater at concentrations exceeding applicable SGVs in samples GW-1, GW-2, GW-4, GW-5 and GW-9. The highest concentrations of SVOCs were detected in the GW-2 sample location, which correlates to the location where an approximate three-inch thick layer of degraded fuel oil was observed floating atop of the water table. Therefore, as per Figure 3, the projected locations of monitoring wells and additional borings have been focused on this specific area of the study property to both identify the petroleum-related source area, as well as to delineate the lateral extent of any free phase product.

The field work will result in a generation of a figure(s) and tables for the Final RI Report which depicts depth, thickness, and location of any free-phase product found on-site. This will also be evaluated with respect to established groundwater flow direction.

### **3) Groundwater Elevation Contour Map/Top of Bedrock Contour Map**

As discussed prior, subsequent to the installation of monitoring wells, a groundwater elevation contour map will be prepared and included within the Final RI Report. A top-of-bedrock contour map will also be prepared, data dependent upon the number of borings to bedrock and the information provided by the shallow bedrock wells.

### **4) Additional Soil Vapor Investigation**

BEI has attempted to conduct additional soil vapor investigation work during the prior heating season. BEI had canvassed the adjoining properties for permission and access to perform this investigation. On March 26, 2008, only one supplemental interior sub-slab sampling location was accessed at the 17 May Street, New Rochelle Residence. This work was performed in accordance with the scope of work in the approved BCP work plan. As the field work discussed above, will be performed outside the heating season, BEI respectfully requests that any additional soil vapor investigation be performed next heating season. BEI will provide an updated plan for additional soil vapor investigation based upon the implementation of the supplemental RI.

### **Field Schedule for Implementation**

The field work program will be initiated within 7 working days of the NYSDEC approval. When an actual date is finalized, BEI will provide a detailed schedule based upon the following relative time frames for each of the individual elements of the work plan. NYSDEC will be provided with a minimum of five days field notice of the field portion of the supplemental investigation.

Several of the monitoring wells require off-site access permits be procured. It is anticipated that this process will take approximately one month. The installation of the nine wells will be completed within two-three weeks

of mobilization. The interior soil borings will be completed within this time frame. The wells will be developed after 24 hours of installation to allow for the grout/seals to harden. The wells will be surveyed within three weeks of installation. The first round of groundwater sampling will be scheduled for two weeks after the

installation of the wells. The second round of sampling will be conducted after one month of the first round of sampling.

Groundwater elevations will be measured after well development, and prior to both rounds of groundwater sampling. It is anticipated that three sets of groundwater elevation data and mapping will be performed for inclusion in the final report. This elevation mapping will differentiate between the unconsolidated saturated zone and the shallow bedrock wells.

### **Deliverable Schedule**

Routine laboratory testing data deliverables are typically received within 30-45 days of receipt of the samples in the laboratory. Data validation typically is completed within 30-45 days of receipt of the testing data to the third party independent validator. At that point in time, BEI starts our data analysis predicated on the validated data. Prior to that time frame, site data is manipulated into figures, top of bedrock mapping, etc. while awaiting the test data. The finalized RI report, inclusive of the supplemental information will be provided to the department within 60 days after receipt of the validated data.

**BEI respectfully requests that any additional soil vapor investigation be performed next heating season. BEI will provide an updated proposed plan for additional soil vapor investigation based upon the implementation of the supplemental RI, as soon as the validated analytical data is received, groundwater flow direction confirmed, etc. but prior to the final RI.**

Please feel free to call this office with any questions.

Sincerely,  
***Berninger Environmental, Inc.***

Jill S. Haimson, CGWP, PG  
Project Manager

Walter Berninger  
President/Consultant

cc: Hal Shapiro  
S. Avena - Garfunkel, Wild, & Travis, P.C.  
C. Obermeyer - NYSDOH



- ⊗ - Proposed Groundwater Monitoring Well to be installed into Bedrock
- ⊙ - Proposed Soil Boring Location
- ⊕ - Proposed Groundwater Monitoring Well

**Figure 3- Proposed Supplemental IRM Sampling Locations**

**Schmuklers Cleaners**  
 358 - 364 North Avenue  
 New Rochelle, NY  
 Site #C360088  
 Index# A3-0542-0306

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