MEMORANDUM

To: Josephine Class/Tim Zengen, Orthopedic Associates

From: Emily Pereira/Dan Michaud

Date: July 16, 2009

Re: 25 Field Court Property: Supplemental Phase II Summary

Job #: 20910.00

Josephine and Tim,

Thank you for taking the time to discuss the results of our supplemental field investigation of the 25 Field Court property in Kingston, NY. As we mentioned during our discussion, our investigation resulted in the discovery of chlorinated volatile organic compound (CVOC) contamination in groundwater wells across the site as well as elevated concentrations of CVOCs in air samples collected from beneath and within the site's structure. Environmental Conservation Law (ECL) requires that a spill be reported to the NYSDEC if the reportable quantity (RQ) for any spilled chemical has been exceeded according to limits published in NYSDEC's 6 NYCRR Part 595. The RQ for PCE is 1 pound, and so, due the site-wide distribution of PCE in groundwater and air documented by our laboratory sampling, and soils documented by our field GC sampling, we feel the RQ for PCE has been exceeded. The obligation to report this spill occurrence extends to the site owner and "any knowledgeable party", which could include any of the parties involved in this project. We recommend that this spill now be promptly reported to the New York State Department of Environmental Conservation (NYSDEC). We can assist with this reporting obligation if all parties agree.

Based on the distribution of CVOCs detected in site wells, and the historical use of this property for automobile repair activities, it is possible that the contamination detected in groundwater wells originated from a historical on-site spill, and so, the site may satisfy NYSDEC's applicability criteria allowing entry into their Brownfield Clean-up Program (BCP). As a BCP site, the volunteer (in this case the purchaser) would clean-up the spill to the satisfaction of the NYSDEC guidelines. Once the site meets program requirements, the volunteer would receive a "Certificate of Completion", followed by qualified NYS tax credits to offset the clean-up and also potentially redevelopment costs you would be incurring by purchasing this contaminated property.

There are additional potential benefits to purchasing and remediating a contaminated site, which our team can discuss further with you and your environmental counsel prior to purchase. We offer the following preliminary summary of our Supplemental Phase II field investigation.

Supplemental Phase II Field Sampling:

On July 8, 2009, TCC's field crew installed six additional soil borings throughout the site. TCC utilized a portable Gas Chromatograph (GC) during the field investigation to measure CVOC concentrations in real-time from discrete sampling depths at each boring location. Our goal was to locate shallow (0 to 10 foot below grade) CVOC-impacted soils that would indicate either past surface spilling or impacts from past shallow drywells utilized during the operation of the auto repair facility. Our GC data identified low levels of tetrachloroethane (PCE) throughout the borings, at which shallow (less than 10 feet below grade) concentrations were identified at the SB-9, SB-10, SB-11 and SB-12 locations. SB-9 and SB-12 are not shown on the attached figure because these borings were not converted to monitoring wells. Those two locations are located in the vicinity of the former auto garage area, and will be shown in our final report.

One soil sample from each of two locations yielding the highest GC concentrations was sent to a NYS Department of Health (NYSDOH) certified laboratory. The laboratory analyses resulted in no detections of CVOCs in either soil sample. It is not uncommon for a field GC to detect CVOCs, but have the laboratory samples return non-detect due to the low concentrations detectable by the field GC (parts per billion), as well as differences in standard operating procedures differentiating analytical methods.

Four of the borings (SB's 8, 10, 11 and 13, Attached Figure) were converted to formal monitoring wells. The borings were finished as one-inch diameter groundwater wells containing ten foot long well screens spanning the approximate depth interval between 15 and 25 feet below grade. The three wells installed during the initial Phase II and four new wells were finished with flush-mount manholes for future access and sampling, if needed.

All seven wells were surveyed to determine the relative elevations across the site. Groundwater depths measured during sampling were converted to elevations, and a groundwater flow map was generated (see attached). Groundwater flow through the site was identified to move southwest towards the corner of Broadway and O'Neil Streets. Monitoring wells were sampled using low flow methods. The groundwater samples were submitted to a NYSDOH certified laboratory for VOC analysis via EPA Method 8260.

In addition to the soil and groundwater sampling, TCC collected three sub-slab vapor samples from beneath the building slab and one indoor air quality sample from inside the approximate center of the building to assess whether on-site contamination of shallow groundwater has resulted in a vapor intrusion condition within the building. The samples were collected using protocols established by the NYSDOH's "Guidance for Evaluating Soil Vapor Intrusion in the State of New York". The samples were collected over an approximate eight-hour period in locations depicted on the attached figure. The air samples were submitted to Spectrum Analytical for VOC analysis via EPA Method T0-15.

Findings:

Field sampling during this supplemental investigation resulted in the following:

- CVOC concentrations (PCE/TCE) in existing wells 2, 3 and 5 returned at approximately the same concentration during the initial and supplemental rounds of well sampling.

- Newly installed wells 8, 10, 11, 13 contained PCE at concentrations of 460, 190, 220 and 930, respectively (attached figure). The occurrence of PCE in all onsite wells indicate a historical spill occurred that has affected the site's groundwater aquifer.

- Trichloroethene (TCE) was detected in wells only on the northwestern portion of the site, in the area of the former auto garage. This is not an unusual finding because TCE is commonly associated with automobile repair operations and is also a breakdown product of PCE.

- Groundwater flow through the site occurs in a southwesterly direction, towards the corner of Broadway and O'Neil Street.

- GC soil screening indicated potential surface spilling of PCE in the vicinity of SB-9, SB-10, SB-11 and SB-12 at shallow depths, however the concentrations of PCE in soils were low. Our soil boring locations may have been positioned marginal to the actual former spill location. Impacted soils at the surface could indicate poor housekeeping related to former temporary storage of waste oils and chemicals, and/or be related to former subsurface disposal systems such as a drywell. More sampling is needed to locate the source of subsurface contamination.

- Sub-slab air sampling revealed elevated concentrations of PCE in all three locations and the detection of various other VOCs. The highest PCE concentration (SS-01 at 8,137 ug/m3) was collected from beneath the northwestern portion of the structure. Coupled with the indoor air PCE concentration of 49 ug/m3, the NYSDOH and NYSDEC will most likely require that sub-slab depressurization system (SSDS) be installed at part or all of this structure. Several additional samples are needed to determine whether the entire building must be depressurized.

NYSDOH V-PCE intrusion guidance

- Elevated PCE in groundwater near and just downgradient of the former auto garage corresponds well to the highest concentration of PCE detected in air samples beneath the slab of the building. The combined datasets point to a historical onsite spill near the southeast corner of the former garage; however, given the highest PCE concentration at the south end of the site, more soil and groundwater sampling would be needed to seek the origin of the spill.

Next Steps:

We previously recommended that a spill be reported to the NYSDEC after the initial findings of PCE in groundwater. It does not appear that a spill has yet been reported for the site. Based on groundwater and air sampling data collected at the site from both stages of the investigation, we now again recommend that these findings be reported to the NYSDEC's Division of Environmental Remediation Region 3 office or by contacting the NYSDEC's general Spill Hotline. By calling the Region 3 office directly to report the spill, we can discuss with them whether your organization could qualify as a volunteer in

the BCP prior to conducting any additional site investigation/mitigation activities and also prior to your purchasing the site. We can make the call on behalf of the site owner, if all parties agree.

If you wish for us to pursue this option, we would also recommend that we generate and submit a BCP application as soon as possible, and ask for a meeting at Region 3 offices to determine if the BCP is a viable option prior to your purchase of the site. Your environmental counsel should be included in this conversation. We are available to discuss or meet on this project anytime, so please let us know how you wish to proceed.

Sincerely,

Emily Pereira/Dan Michaud

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Spada Property

Draft Figure - Groundwater/Vapor Sample Locations

25 Field Court
City of Kingston
Ulster County, New York

Source: NYS OCSCIC. 2004. Ulster County 12-inch Resolution Natural Color Orthoimagery.

Drawn:	EOB
Date:	July 2009
Scale:	1:600
Project:	20910.00
Figure:	3

Map Document: (X:\2\20900-21000\20910.00_Orthopedic Assoc. of DC\Figures\maps\20910_Well Locations_8x11_revised07162009.mxd)
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