



Saga  
Environmental &  
Engineering, Inc.

April 8, 2013

Mr. Jim Delwiche  
Wisconsin Department of Natural Resources  
141 NW Barstow Street, Room 180  
Waukesha, Wisconsin 53188

RE: Change Order Request – Additional Groundwater Investigation  
Klinke Cleaners - Fox Run  
Waukesha, Wisconsin

Dear Mr. Delwiche:

Pursuant to our meeting on March 14, 2013, Saga Environmental and Engineering, Inc. (Saga) has prepared this change order and cost estimate for additional groundwater investigation beneath the Fox Run Shopping Center building. As discussed at our meeting and in the March 28, 2013 *Sub-Slab Vapor Sampling and 2012 Groundwater Quality Report*, recent sub-slab soil vapor analytical results suggest that a groundwater plume is present beneath the building that requires characterization. Only one groundwater sample has been collected from beneath the building, from temporary monitoring well P-4. Considering the distribution and magnitude of vapor-phase PCE concentrations beneath the building, the historic PCE concentration detected in the groundwater sample collected from temporary monitoring well P-4, and the direction of groundwater flow, it appears likely that substantial contaminant mass remains in the saturated zone below the building. Characterization of the saturated source zone beneath the building is critical for evaluating future attenuation or the need for additional action.

**Scope of Work:**

Saga recommends installation of an additional water table monitoring well beneath the Fox Run Shopping Center building, near the location of the former drycleaning machine at the former Klinke Cleaners facility. Well drilling will be completed using a compact, low-clearance hollow stem auger drilling rig to a depth approximately 7 feet below the water table, anticipated to be approximately 8 feet bgs, for a total depth of 15 feet. Soil descriptions will be logged by a staff geologist. One to two soil samples will be collected based on field observations and submitted to an analytical laboratory for VOC analyses.

Drill cuttings will be contained in 55 gallon drums pending disposal. The monitoring well will be constructed in accordance with the requirements of Wisconsin Administrative Code ch. NR 141, with 2-inch Schedule 40 flush-threaded PVC and a 10-foot factory-slotted screen. The well will be completed with a lockable flush-mounted traffic-rated protective cover.

The well will be developed by purging and surging, and well construction and development forms will be completed. A minimum of 3 days after development Saga will return to the site to measure the groundwater elevation, purge the well and collect a groundwater sample to be submitted to a WDNR-certified environmental laboratory for analysis of VOCs. Additionally, depth to water measurements

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and groundwater VOC samples will be collected from shallow site monitoring MW-2, MW-5 and MW-6 at that time.

All purge water will be contained in clean DOT-approved 55 gallon drums pending groundwater analyses. After the well is installed, its elevation will be surveyed to the nearest 0.01 foot, relative to a local datum.

In addition to the monitoring well, two groundwater grab samples will be collected from soil borings advanced between the new monitoring well and current monitoring well MW-6 (behind the former hardware store), to evaluate plume characteristics in this direction and the possible source of increasing PCE concentrations at upgradient monitoring well MW-6. For cost estimating purposes, it is anticipated that two soil borings will be advanced outside the building to depths of approximately 10 feet bgs, and that two groundwater samples will be collected. Soil samples will not be collected from these borings as these areas were addressed by previous soil remediation activities.

**Schedule and Cost:**

It is estimated that the drilling could be completed in less than 1 day and the sampling can be completed in 1 additional day. The attached Table 1 summarizes the estimated costs for well installation and sampling.

Saga is prepared to schedule the work immediately following receipt of WDNR approval of this work scope.

Sincerely,

**Saga Environmental & Engineering, Inc.**



Paula A. Richardson, P.G.  
Vice President/ Senior Hydrogeologist

Attachments:

Table 1 – Cost Estimate

cc: Richard Klinke



TABLE 1  
WELL INSTALLATION AND GROUNDWATER SAMPLING ESTIMATED COSTS  
KLINKE CLEANERS - FOX RUN  
WAUKESHA, WISCONSIN

TASK	UNITS	QTY.	RATE	COST
<i>Task 1: Planning, Reporting &amp; Project Management</i>				
Hydrogeologist	Hours	25	\$120	\$3,000
CADD	Hours	4	\$85	\$340
Expenses	Estimate	1	\$150	\$150
<b>Subtotal:</b>				<b>\$3,490</b>
<i>Task 2: Monitoring Well Installation and Groundwater Sampling</i>				
Hydrogeologist	Hours	20	\$120	\$2,400
Driller	Estimate	1	\$1,725	\$1,725
Removal of Store front for access	Estimate	1	\$380	\$380
Laboratory - groundwater VOCs	Each	7	\$75	\$525
Laboratory - soil VOCs	Each	2	\$75	\$150
Investigative Waste Disposal <sup>1</sup>	Estimate	1	\$615	\$615
Expenses/Equipment	Estimate	1	\$250	\$250
<b>Subtotal:</b>				<b>\$6,045</b>
<b>TOTAL:</b>				<b>\$9,535</b>

<sup>1</sup> Disposal estimate is based on 2 drums of soil and 2 drums of water, non-hazardous.