

July 21, 2015

Ms. Nancy Ryan Ms. Pamela Mylotta Wisconsin Department of Natural Resources 2300 North Martin Luther King, Jr. Drive Milwaukee, Wisconsin 53212

RE: Request Change Order - Soil Remediation Pilot Test Former Express Cleaners Racine, Wisconsin BRRTS Number 02-52-547631

Dear Ms. Ryan and Ms. Mylotta:

Approval is requested for a change order to the Site Investigation to perform a Pilot Test at the Former Express Cleaners site in Racine, Wisconsin. This letter presents the proposed scope of work for the Cool- $Ox^{TM}$  Pilot Test at the above site. The test will be conducted in the location shown on Figure 1. This location was selected because it is adjacent to the location of sample B-4, which had the highest tetrachloroethene (PCE) concentration discovered above the water table during the former site investigation.

### Pilot Test Procedures

During completion of the Pilot Test, all field activities will be observed, photo-documented and recorded in a field log book by Huntoon Environmental Consulting, LLC (HEC). The remediation contractor, Deep Earth Technologies (DET) will remove the pavement in a 5-foot by 5-foot area. DET will excavate 2.5 feet of soil from that area using a backhoe. As part of the in-situ treatment, the excavated soil will be temporarily laid down on plastic within the Area of Contamination before being returned to the excavation for consolidation and in-situ treatment.

Prior to additional work, HEC will collect a soil sample from a depth of approximately 4.5 feet below ground surface (bgs), and another sample from the soil excavated from approximately the 2.5 to 3 foot depth. These samples will be collected in laboratory-supplied containers, and shipped on ice to the Test America laboratory in College Park, Illinois, for analysis of chlorinated volatile organic compounds (CVOCs).

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Utilizing a small backhoe, DET will mix a solution of the Cool-Ox<sup>TM</sup> reagent in the pump rig and apply the reagent, blending it into the soil using the excavator bucket to achieve a good blend and ensure contact with the soil. The reagent will be blended into soils from a depth of 2.5 feet bgs to the top of the water table, which is estimated to be at a depth of approximately 5 feet bgs. The intent is not to mix below the water table. DET will then incorporate the excavated soil that had been piled on plastic, mixing in a solution of Cool-Ox<sup>TM</sup> as the soil is returned to the excavation until the soil is mixed thoroughly. Cool-Ox<sup>TM</sup> will be applied at the approximate rate of 10 gallons per cubic yard of soil, for an estimated total of 50 gallons, which is the same application rate proposed for the full-scale remediation. After all the soil has been placed back into the excavated area and mixed, the area will be covered with plastic and snow fencing will be placed around the treatment area. HEC will record the actual application rate and total amount of Cool-Ox<sup>TM</sup> used in the Pilot Test.

After a period of 2 weeks, HEC will return to the site to conduct confirmation sampling. Using a hand auger, two soil samples will be collected: one from a depth of 2.5 feet bgs and one from a depth of 5 feet bgs (or immediately above the water table, whichever is encountered first). As with the earlier samples, these samples will be placed in laboratory-supplied containers and shipped on ice to Test America for analyses of CVOCs.

The non-residential direct contact residual contaminant level (RCL) for PCE is 30.7 mg/kg. For this site, our proposed RCL is an order of magnitude lower, at 3 mg/kg. Consequently, we propose a successful Pilot Test be indicated by post-test contaminant concentrations of 3 mg/kg or less.

Following performance of the field activities, HEC will draft a letter report describing and documenting the field activities, locations and depths of soil mixing, amount and application rate of Cool- $Ox^{TM}$  reagent used, locations and depths of soil sampling and other pertinent information. After the final analytical report is received from the laboratory, soil sample results will be evaluated and compared with former concentrations detected in site soils to determine effectiveness. The final letter report will be provided to the Department for evaluation.

EXPENSE	COST						
Deep Earth	\$10,600						
Laboratory	\$400						
Huntoon Environmental	\$2,000						
Total	\$13,000						

Based on a guote from DET, HEC estimates the following costs for the Pilot Test:

The estimated costs are also provided on the attached Drycleaner Environmental Repair Fund Reimbursement Cost Detail Linking Spreadsheet (Form 4400), as required.

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HEC did not request a Pilot Test for the injection. DET has an extensive track record of injecting the Cool-Ox<sup>TM</sup> reagent to treat groundwater. Injection is only used to deliver the reagent below the water table, in several locations within the designated area, in order to treat the shallow groundwater. The reagent is placed in the subsurface utilizing direct push technology. After delivery, the reagent is spread in the subsurface by means of both mechanical and chemical dispersion. Testing the effectiveness of injection into groundwater is a long-term process not suited to Pilot Testing, in that it could take months after the injection for treated groundwater to reach a monitoring well. Consequently, it is HEC's opinion, as well as that of DET, that a Pilot Test on the injection aspect of the project is impractical.

We believe that this plan outlines a satisfactory approach to test the effectiveness of Cool-Ox<sup>™</sup> for the remediation of the former Express site. We request approval to perform the Pilot Test on July 24, 2015, as DET, the remedial contractor, will be on a large project out of the area and unavailable to perform the Pilot Test for 1 to 2 months. If the Pilot Test is postponed, we will lose the remediation schedule arranged with DET, jeopardizing our ability to remediate the site this calendar year. To allow timely commencement of the remedial action, we need immediate approval of this Pilot Test to allow DET to perform the work on July 24, 2015.

If you have any questions or require additional information, please contact us.

Sincerely,

HUNTOON ENVIRONMENTAL CONSULTING, LLC

Lori Huntoon, P.G. Principal Hydrogeologist

Attachments: Figure 1 – Treatment Area of Pilot Test Pilot Test Cost Estimate on DERF Cost Spreadsheet (Form 4400-214D)



Site Name: Former Express Cleaners, Racine, WI BRRTS #: 02-52-547631 Type of Action: Site Investigation Change Order - Pilot Test

## Dry Cleaner Environmental Response Program Reimbursement Cost Detail Linking Spreadsheet Form 4400-214D (R 08/12)

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 Site Name:
 Former Express Cleaners, Racine, WI

 BRRTS #:
 02-52-547631

 Type of Action:
 Site Investigation Change Order - Pilot Test

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# Dry Cleaner Environmental Response Program Reimbursement Cost Detail Linking Spreadsheet Form 4400-214D (R 08/12)