



May 18, 2007

P07078E

**City of Port Colborne**  
66 Charlotte Street  
Port Colborne, Ontario  
L3K 3C8

Attention: Mr. Ron Hanson  
Manager of Engineering Services

**RE: Environmental Investigation Work Plan – Test Trench & Bedrock Well  
40-44 Killaly Street West, Port Colborne, Ontario**

Dear Mr. Hanson:

AMEC Earth & Environmental, a division of AMEC Americas Limited (“AMEC”) is pleased to provide you with this work plan to conduct an Environmental Investigation at the above-noted property (hereafter referred to as the “Site”). The following letter describes the scope of work to be conducted at this Site.

## **BACKGROUND**

It is AMEC’s understanding that a complaint was recently filed with the Ministry of the Environment (“MOE”) regarding an oily substance in the sump of the neighbouring residential property immediately adjacent to the south of the Site (409 Catharine Street). As such, AMEC met with the City of Port Colborne (the “City”) on May 16, 2007 to discuss the current status of the former automotive service station which the City currently owns. The City requested that AMEC prepare a work plan to complete additional environmental investigations at the Site which consisted of the following:

- The excavation of a test trench to bedrock in the southwest portion of the Site;
- The installation of one bedrock ground water monitoring well in the southern portion of the Site; and
- In addition, if the property owner at 409 Catharine Street provides access, the City will conduct an investigation on the sump well in order to determine where the discharge is directed (i.e., sanitary or storm sewer) possibly through the use of dye tracing.

As such, AMEC has developed the following Scope of Work.

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## **SCOPE OF WORK**

### **Test Trench**

AMEC proposes to retain an excavation subcontractor to excavate a test trench along the west portion of the south property line (adjacent to the neighbour's house). The test trench would be excavated to a depth of approximately 3 metres ('m") (the depth to bedrock in the nearest borehole drilled during the previous Phase II ESA). The test trench would be left open for several hours in order to observe whether or not any free phase petroleum hydrocarbons are present on the surface of any water seeping into the test trench.

The test trench would be backfilled with excavated materials, and nominally compacted to grade.

### **Bedrock Well Installation**

To address the potential environmental concerns related to contaminants seeping into the bedrock, AMEC proposes to drill one bedrock well, approximately 6 m into bedrock along the southwestern portion of the Site. A ground water monitoring well would be installed in the first bedrock aquifer.

The borehole will be drilled by a specialized drilling subcontractor with soil samples obtained from a split-spoon sampler while drilling in the overburden. The drilling and sampling equipment will be decontaminated prior to arrival on Site with the spilt spoon sampler cleaned between samples.

The well will be constructed using threaded PVC pipe with #10 slot screens. The annulus around the slotted portion and to approximately 0.5 m above will be backfilled with medium grained sand. This will be followed by a bentonite seal to prevent surface-contamination and a locked steel protective casing to provide protection and security. The monitoring well will be equipped with a dedicated Watera™ pump (foot valves and tubing) (for ground water sampling purposes) to reduce the possibility of cross contamination during future testing.

### **Field Sampling Activities**

All test trenching, drilling and field sampling activities conducted by AMEC personnel will follow AMEC's standard field protocols for environmental soil and ground water investigations, which generally reflect the requirements of the Ministry of the Environment and Energy ("MOEE") document entitled, "*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*" (December 1996) and the Canadian Council of Ministers of the Environment

(“CCME”) *“Guidance Manual Sampling, Analysis, and Data Management for Contaminated Site”* (1993) (hereafter referred to as the “applicable sampling guidelines”).

The geologic samples will be visually classified according to the American Society for Testing and Materials (“ASTM”) standard for the description and identification of soils (ASTM, 1990). Detailed excavation / borehole logs containing geologic description will be constructed for the test trench and bedrock well, and will include soil type, colour, relative density, moisture, structure, and visual or olfactory evidence of impacts (if any). The logs will also contain observations noted during the excavation and drilling activities, the location from which soil samples were recovered and notes on sample recovery.

Each sample will be placed in a laboratory provided container and the remainder will be put in a plastic bag. The bagged samples will be allowed to stabilize at room temperature (minimum of 2 hours) and then a GasTector™ 1238ME Hydrocarbon Surveyor probe will be used to measure concentrations of petroleum parameters in the head space in the recovered soil samples. The results of these readings can provide an effective means of both on-site contaminant delineation as well as field screening in preparation for laboratory sample submission.

All sample bottles will be labelled and placed on ice in insulated coolers. The samples will be shipped to the laboratory within 24 hours.

### **Laboratory Analytical Program**

AMEC will submit selected ‘worst-case’ and representative soil and ground water samples for laboratory analyses of pH, volatile organic compounds (“VOCs”), and petroleum hydrocarbons (“PHCs”).

### **MOE Site Condition Standards**

The results of the laboratory analyses will be compared to the applicable Site Condition Standards (“SCS”), provided in the supporting document *“Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act,”* dated March 9, 2004 (“SCS standards”).

### **Reporting**

AMEC will prepare a factual report, which will incorporate the findings of the investigation, as well as recommendations. The investigation proposed will provide information for the southwest portion of the Site, including the determination of the presence / absence of contaminants of concern in that area, both in the overburden soils and the bedrock. The investigation will

determine if the oily substance in the neighbouring property's sump is likely coming from the Site, either through the overburden soils or the bedrock.

## **SCHEDULE**

AMEC will organize public underground utility locates prior to initiating the subsurface program. It is so recognized that AMEC will undertake all reasonable measures to locate all public services and potential underground site features prior to locating the proposed boreholes and will take due care in performance of the work. The property owner will be responsible for identifying any private underground utilities not located by the public/private utility companies. It will be necessary to retain a private utility locator to locate any services not covered above. The additional cost for a private utility contractor has been included in our pricing.

Following the clearing of underground services, the test trench and borehole sampling program will be undertaken. Normal lab turnaround time is five working days, however faster turn around time is available at a premium (48 hours at 50% of unit costs per analyses), if requested. A draft report for your review would be available shortly after the receipt of the laboratory data. Thus it is expected that the draft report would be available approximately four to five weeks after the job is initiated. This time frame is dependent on the time required for the utility clearances and the availability of the specialist-drilling rig.

## **CLOSURE**

This work plan has been developed from the available information provided to AMEC. We trust that this work plan is sufficient for your needs. However, should additional information be required, please contact the undersigned.

Regards,

**AMEC Earth & Environmental,  
A division of AMEC Americas Limited.**

  
Tracy Shute, B.Sc.  
Environmental Scientist

  
Patrick Shriner, P.Geo.  
Senior Environmental Geoscientist