

February 28, 2017

XCG File No.: 1-4155-01-01

Mr. Justin Safayeni
Stockwoods Barristers
77 King Street West, Suite 4130
Toronto, ON M5K 1H1

Re: Peer Review of Application for Amendment to the Certificate of Property Use (CPU 6676-9CWHB7-2S) for the INVISTA South Parcel, Kingston, Ontario

Dear Mr. Safayeni:

1. INTRODUCTION

XCG Consulting Limited (XCG) was retained by Stockwoods Barristers (Stockwoods) to conduct a peer review of the following document prepared by INVISTA (Canada) Company and AECOM related to the INVISTA South Parcel located on the south side of Highway 33 (the “Site”):

- “Application for Minor Amendment to CPU 6676-9CWHB7-2S,” dated January 23, 2017 [Referred to in this letter as the “CPU Amendment”].

The Site is bounded by Highway 33 to the north, and Lake Ontario to the south, west, and east.

In addition to the above-referenced document, XCG reviewed a number of related documents obtained from Stockwoods and from the Ministry of the Environment and Climate Change (MOECC). The other documents reviewed are referenced, where appropriate, throughout this letter.

In summary, based on the documents reviewed, it is XCG’s view that the CPU Amendment should not be approved in its current form, as it fails to address several key environmental risks. Without further information and details, it is impossible to conduct a full and proper assessment of these risks, and what mitigation measures (if any) might address them.

XCG’s more detailed comments are provided below.

2. BACKGROUND INFORMATION

It is XCG’s understanding that Stockwoods is in the process of assisting the Association to Protect Amherst Island (APAI) in reviewing and providing comments with regards to the CPU Amendment.

The CPU Amendment states that the Owner of the Site (i.e., INVISTA) is applying for an “administrative amendment” to the CPU to clarify that the following work can be done at the INVISTA South Parcel:

- The laying of underground cable to transmit electricity; and



- The temporary use of an existing access road (with minor upgrades) to transport materials to and from a temporary dock that would be constructed at the edge of the Property.

The Owner is requesting that Section 4.3 of the CPU be amended to read as follows: “Refrain from using the Property for any of the following use(s): Any type of Property use specified in O.Reg.153/04, other than “Parkland Use” and the laying of underground cable to transmit electricity; the temporary use of an existing access road (with minor upgrades) to transport materials to and from a temporary dock to be constructed and located at the edge of the Property, as described in the attached January 12, 2017 letter from Stantec, including attachments.”

3. COMMENTS ON APPLICATION FOR CPU AMENDMENT

The objective of the Application for CPU Amendment is to allow for work to be conducted on the South Parcel that would otherwise be restricted due to the Section 4.3 in CPU 6676-9CWHB7-2S, which prohibits specifically defined uses other than Parkland use at the South Parcel.

Based on XCG’s review, the following comments are provided:

1. **Key information as to location of underground cable is missing, precluding assessment of contamination risk.** Details of the alignment and depth of bury of the underground cable on the main INVISTA property, north of Highway 33, have not been provided. In addition, the alignment of the underground cable is not clearly shown on the small inset detail on Drawing No. E702 in Attachment A of the application document. These details are needed so it can be determined whether the underground cable trench could potentially be affected by some of the identified Areas of Potential Environmental Concern (APECs) and/or Areas of Environmental Concern (AECs) on either the North INVISTA Parcel or the South INVISTA Parcel. According to XCG’s review of the AECOM report entitled “Phase 1 Environmental Site Assessment, 5275 Bath Road, Bath, Ontario,” dated September 2009, a total of 40 APECs were identified. If the proposed route of the underground cable will pass through or near one or more of these APECs, there is a potential for contaminants to enter the cable trench and migrate along it towards Lake Ontario. This potential for creating a preferential pathway for contaminant migration is further exacerbated by the significant width of the planned trench, which XCG understands will be approximately 10 metres. Therefore, the route of the cable and depth of bury of the cable need to be clearly defined, and the contaminants present in the soil and groundwater in areas along the route of the cable need to be fully delineated and characterized to assess their potential impacts on the cable trench.
2. **Deficient environmental investigations must be remedied prior to any amendment to the CPU.** XCG reviewed the MOECC’s comments on a Record of Site Condition (RSC) that was submitted for the INVISTA property in 2014. These comments were provided in a letter from the MOECC dated June 2, 2014, entitled “Notice That Record of Site Condition (Confirmation Number 43146941) Cannot Be Filed, 5275 Bath Road, Millhaven.” This letter indicates that there were a number of deficiencies in the environmental investigations completed on both the North and South INVISTA Parcels. These deficiencies included failure to do any investigations in a number of the APECs, failure to adequately delineate the contaminants, and presence of free product (i.e. pure



phase hydrocarbons) in the subsurface as well as PHC concentrations exceeding the property specific standards (PSSs)¹ that were derived in the risk assessment. These deficiencies are a concern in that undiscovered contamination may exist that could migrate into the cable trench and then potentially migrate to the lakeshore and into Lake Ontario. Before any changes to the CPU are approved, additional subsurface investigations must be completed in the areas of APECs in the vicinity of the underground cable that have not yet been investigated, or that have been inadequately investigated. Of particular concern would be any inadequately delineated groundwater contamination or free product contamination that the cable may pass near or through.

3. **No measures in place to mitigate transport of contaminated groundwater from North Parcel.** Given that the cable trench may act as a potential conduit to Lake Ontario from the North Parcel, measures must be implemented in the trench design to prevent the transport of potentially contaminated groundwater from the North Parcel to the South Parcel. Such measures may include permeable reactive barriers (PRBs), regular ongoing groundwater sampling within the trench bedding, and potentially others. The CPU Amendment fails to address such measures.
4. **Erosion and sediment control plan is insufficient and incomplete.** There is the potential for soil to erode and run off during construction and negatively impact Lake Ontario. The CPU Amendment includes a proposed erosion and sediment control plan (Attachment C) that involves the installation of a double layer silt fence on the downstream sides of disturbed areas and around the entirety of temporarily stockpiled soils, installation of temporary straw bale check dams, and placement of topsoil stockpiles sufficiently distant from watercourses to preclude sediment inputs due to erosion. Additionally, all in-water work will be completed within the Ministry of Natural Resources (MNR) timing windows to protect local fish populations during their spawning and egg incubation periods. The plan calls for inspections of the erosion and sediment controls either weekly or after each significant rainfall event, whichever is more frequent. Based on presence of contaminated soil on the Site and the proximity of Lake Ontario (immediately adjacent), XCG recommends daily inspections of the erosion and sediment controls. Furthermore, some of the work, including the dock construction and transition of the electrical cable from the lake bed into the trench on-site, will take place right on the shoreline. This will preclude the possibility of placing silt fence downgradient of these work zones (i.e. silt fence cannot be installed in the water). The erosion and sediment control plan must provide details on how this work will be completed in order to avoid the release of soil, and in particular contaminated soil, into the lake.
5. **Heat effects of underground cable are unaccounted for.** According to discussions with the MOECC, the underground cable is anticipated to produce heat. This will have the effect of warming up the soil surrounding the cable. This heat could have a number of effects, including:

¹ Property specific standards (PSSs) are risk-based soil and/or groundwater quality standards that are derived in a risk assessment. The presence of contaminant concentrations exceeding the PSSs indicates that these contaminants have the potential to pose unacceptable risks to human and/or ecological receptors, based on the modelling conducted in the risk assessment.



- Enhanced volatilization of volatile or semi-volatile contaminants present in the soil near the cable trench,
- During the winter, creation of an unfrozen zone of soil along the cable trench during a time when the surrounding land may have frost down to a depth of up to a metre, which could result in increased infiltration of water into the ground over the trench and potentially enhanced flow of groundwater along the trench.

A detailed technical review and evaluation of these potential effects must be undertaken, and further characterization of the contamination present in the soil and groundwater along the alignment of the trench should be completed to assess whether there are any contaminants whose mobility could increase due to the heat.

6. **Risk Assessment based on comparison to wrong standards and needs to be re-evaluated.** The Risk Assessment (RA) titled “A Risk Assessment of the Invista (Canada) Property, Millhaven, Ontario Revised Final Report, Appendices, October 2012” indicates that surficial soil samples were collected on the South Parcel. However, based on the information reviewed by XCG, these samples appear to have been collected in 2010 and the analytical results were compared at that time to the incorrect MOECC standards. The results should have been compared to the MOECC Table 8 Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition. Additionally, very limited surficial and subsurface soil and groundwater samples appear to be available for the area along the alignment of the proposed cable trench. This area requires more investigation to characterize the soil and groundwater quality to gain an understanding of the potential impacts of creating the proposed cable trench.
7. **Risk of groundwater contamination entering trench on South Parcel.** A boron groundwater exceedance was identified near where the proposed cable trench will run (i.e. adjacent to P20s). This is not a major concern if the groundwater will be below the trench bottom, but groundwater tables rise and fall seasonally. The water table has been measured as shallow as 0.3 metres below ground surface on the CPU South Parcel based on recent monitoring reports. At this level the groundwater table would be within the cable trench, and any contaminants in the groundwater would have an increased potential to migrate along the trench into Lake Ontario.
8. **Contingency Plan is missing from the CPU Amendment application.** The original CPU requires that a Health & Safety Plan, a Soil and Groundwater Management Plan, and a Contingency Plan be developed for the site. The Health & Safety Plan and Soil and Groundwater Management Plan were provided with the application, but the Contingency Plan was not made available for review. Any Contingency Plan that may currently exist will need to be updated to outline procedures to be followed in the event of the failure of any new risk management measures (RMMs) that need to be implemented due to the new features that are proposed to be added to the site (e.g., the electrical cable trench).
9. **Soil and Groundwater Management Plan is inadequate.** According to the Soil and Groundwater Management Plan, no testing of the soil along the alignment of the trench is planned before proceeding with the excavation work. This testing should be done to ensure that appropriate Health & Safety precautions are taken while the work is being done.
10. **Soil and groundwater results based on outdated standards and protocols, and need to be re-evaluated.** The soil and groundwater results for both the North and South Parcels



appear to have been primarily collected before 2011, with exception of the groundwater results collected for the annual monitoring in 2014 and 2015. The older results would be based on out-of-date MOECC standards and protocols. It is recommended that additional soil and groundwater samples be collected and analyzed to characterize the areas to be affected by the proposed work (cable trench installation, dock construction, access road upgrades) in a manner that conforms to current MOECC standards and protocols.

11. **Any soil excavated should be disposed of off-site.** If the work does proceed, it is recommended that all soil excavated during the proposed work be disposed of off-site at a licensed waste disposal site. These materials should not be re-used as backfill on-site.

4. LIMITATIONS

The comments and conclusions provided in this letter are based solely on the extent of information applicable to the Application for Minor Amendment to CPU 6676-9CWHB7-2S, dated January 23, 2017. As such, XCG cannot be held responsible for environmental conditions at the Site that were not apparent from the available information.

The scope of this letter is limited to the matters expressly covered. This letter was prepared to provide support for the peer review of the Application for Minor Amendment to CPU 6676-9CWHB7-2S, dated January 23, 2017, and may be relied upon by Stockwoods Barristers and the Association to Protect Amherst Island (APAI). It may not be relied upon by any other person or entity without the written authorization of XCG Consulting Limited. Any use or reuse of this document (or the findings and conclusions represented herein), by parties other than those listed above, is at the sole risk of those parties.

5. CLOSURE

If you have any questions regarding the above, or require anything further, please do not hesitate to contact me.

Yours very truly,

XCG CONSULTING LIMITED

A handwritten signature in black ink that reads "Erica Gray". The signature is written in a cursive, flowing style.

Erica Gray, B.E.S.
Project Specialist

A handwritten signature in blue ink that reads "Kevin Shipley". The signature is written in a cursive, flowing style.

Kevin Shipley, M.A.Sc., P.Eng., EP(CEA), EP, QP_{RA}
Partner