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**Attn: Fred Babyn, Doug Babyn, Della Hanson, and Aldeena Babyn**

**Re: Performance Verification Plan for 2649 Highway 3 East, Keremeos, BC, BC Site ID# 19719**

## **1.0 INTRODUCTION**

Hemmera Envirochem Inc. (“Hemmera”) was retained by Mr. Fred Babyn, Mr. Doug Babyn, Ms. Della Hanson and Ms. Aldeena Babyn c/o Lawson Lundell LLP (Client) to prepare this Performance Verification Plan (PVP) in support of an application for a “risk-based” Certificate of Compliance (CoC) for the residential property located at 2649 Highway 3 East, Keremeos, BC (the “Site”), BC Site ID# 19719.

This PVP identifies: (a) risk controls recommended in the *Human Health and Ecological Risk Assessment 2649 Highway 3 East, Keremeos, BC* (Hemmera, 2016); and (b) recommended actions to ensure that these risk controls are implemented and maintained, in order that the Site continues to meet Contaminated Sites Regulation (CSR) risk-based standards for remediation in the future.

This PVP was prepared in accordance with BC Ministry of Environment (BCMOE) *Administrative Guidance 14: Performance Verification Plans, Contingency Plans, and Operations and Maintenance Plans, Version 1.0* (BCMOE, 2015) and *Procedure 12: Procedures for Preparing and Issuing Contaminated Site Legal Instruments* (BCMOE, 2016).

## **2.0 SITE TYPE**

**Type 1B**, based on the intrinsic risk control recommended in the human health and ecological risk assessment (HHERA), presented and discussed below.

## **3.0 RISK CONTROLS**

The following single risk control was recommended in the HHERA (Hemmera, 2016):

1. Maintain the intrinsic exposure barrier to subsurface soil contamination (> 5 m bgs) for the risk control area (see attached Figure 3 from HHERA report).

## **4.0 RATIONALE FOR RISK CONTROLS**

Following extensive remediation at this site there remains a small amount of low level hydrocarbon contamination in subsurface soils (> 5 m bgs) near the northern property boundary. Site contamination has been reported for samples at 7 and 7.5 m bgs, and was vertically delineated by an uncontaminated sample at 4.8 m bgs. While the HHERA determined three substances (VPHs, LEPHs, naphthalene) to be contaminants of potential concern (COPC), human health and terrestrial biota exposure risks were not quantified in the HHERA. The HHERA, through simple exposure pathway evaluation, concluded that there appears to be no potential that any of the human or ecological receptors at this Site will be exposed to soil COPCs provided this soil remains at depth.

## **5.0 RECOMMENDED ACTIONS**

The above risk control pertains to future Site use and management. It should be communicated to the present Site owner/leasee, i.e. those managing the Site, as well as future Site owners by the selling Site owner. Such communication could be via provision of this PVP, or the CoC to the Site owner or purchaser. No formal verification or records keeping of such communication or adherence to the risk controls is needed. If the intrinsic control becomes compromised or no longer remains in effect, the Site owner should notify the Director (BCMOE). In addition, if requested by the Director, the responsible persons must provide a signed statement indicating whether the principal risk control continues to be met.

## **6.0 CLOSURE**

This Work was performed in accordance with the Professional Service Agreements between Hemmera Envirochem Inc. ("Hemmera") and Mr. Fred Babyn, Mr. Doug Babyn, Ms. Della Hanson and Ms. Aldeena Babyn ("Client"), dated July 7 – 10, 2016 ("Contracts"). This Report has been prepared by Hemmera, based on fieldwork conducted by Hemmera, for sole benefit and use by the Client, BC MOE, and the Contaminated Sites Approved Professional (CSAP). In performing this Work, Hemmera has relied in good faith on information provided by others, and has assumed that the information provided by those

individuals is both complete and accurate. This Work was performed to current industry standard practice for similar environmental work, within the relevant jurisdiction and same locale. The findings presented herein should be considered within the context of the scope of work and project terms of reference; further, the findings are time sensitive and are considered valid only at the time the Report was produced. The conclusions and recommendations contained in this Report are based upon the applicable guidelines, regulations, and legislation existing at the time the Report was produced; any changes in the regulatory regime may alter the conclusions and/or recommendations.

Prepared by:  
**Hemmera Envirochem Inc.**

Peer reviewed by:  
**Hemmera Envirochem Inc.**

**ORIGINAL SIGNED  
AND STAMPED**



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*This document represents an electronic version of the original hard copy document, sealed, signed and dated by Michael McLeay, M.A.Sc., R.P.Bio., CSAP and retained on file. The content of the electronically transmitted document can be confirmed by referring to the original hard copy and file. This document is provided in electronic format for convenience only. Hemmera Envirochem Inc. shall not be liable in any way for errors or omissions in any electronic version of its report document.*

## **7.0 REFERENCES**

BCMOE (2015). Administrative Guidance on Contaminated Sites: Performance Verification Plans, Contingency Plans, and Operations and Maintenance Plans, Version 3.0, December, 2015.

BCMOE (2016). BC Ministry of Environment Procedure 12: Procedures for Preparing and Issuing Contaminated Site Legal Instruments, Version 3.0 Draft 7, February, 2016.

Hemmera (2016). Human Health and Ecological Risk Assessment, 2649 Highway 3 East, Keremeos, BC, BC Site ID# 19719, December, 2016.

**FIGURE**



**Approximate Location of Risk Control to Retain Soil Cover Atop Contamination**



**Legend**

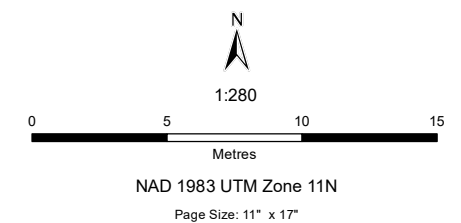
- Approximate Location of Risk Control to Retain Soil Cover Atop Contamination
- Area of Deep Excavation
- Excavation Perimeter
- Site Feature
- Former Site Feature
- Site Boundary

**Notes**

1. This map is not intended to be a "stand-alone" document, but a visual aid of the information contained within the referenced Report. It is intended to be used in conjunction with the scope of services and limitations described therein.

**Sources**

- Aerial Image: ESRI World Imagery



**Metes and Bounds of Approximate Extent of Risk Control to Retain Soil Cover Atop Contamination**

Commencing from the northwest corner of Lot 3, Plan KAP4681, District Lot 110, Land District Similkameen Div of Yale thence along the bearing S87° 46' 53.76"E a distance of 28.8 metres;  
 Thence along the bearing S0° 0' 0"E a distance of 1.038 metres to the point of beginning;  
 Thence along the bearing S0° 0' 0"E a distance of 5.347 metres;  
 Thence along the bearing S90° 0' 0"E a distance of 5.145 metres;  
 Thence along the bearing S0° 0' 0"E a distance of 2.558 metres;  
 Thence along the bearing S90° 0' 0"E a distance of 3.392 metres;  
 Thence along the bearing N0° 0' 0"E a distance of 7.819 metres;  
 Thence along the bearing N90° 0' 0"W a distance of 8.595 metres to the point of beginning, containing an approximate area of 54.257m<sup>2</sup>.