

February 14, 2022  
PGL File: 4369-03.04

KG2 Developments Ltd.  
Suite No. 4, 3318 Oak Street  
Victoria, BC  
V8X 1R1

And

643257 B.C. Ltd.  
4043 Braefoot Road  
Victoria, BC  
V8X 2B8

**RE: PERFORMANCE VERIFICATION PLAN - 5120 CORDOVA BAY ROAD, DISTRICT OF SAANICH, BC  
ENV SITE: 5184**

This document presents the Performance Verification Plan (PVP) for risk management measures to be maintained at 5120 Cordova Bay Road, District of Saanich, BC (the Site; Table A).

**Table A: Site Identification Information**

<b>Civic Address</b>	5120 Cordova Bay Road, District of Saanich, BC
<b>PID</b>	030-547-849
<b>Legal Description</b>	Lot A Section 31 Lake District Plan EPP85061
<b>Owner</b>	KG2 Development Ltd. and 643257 B.C. Ltd.
<b>Land Use</b>	Commercial
<b>Zoning</b>	C-3 Shopping Centre
<b>Proposed Land Use</b>	Commercial
<b>Latitude*</b>	48° 31' 21.3"
<b>Longitude*</b>	123° 22' 5.0"
<b>Site Area</b>	11,873m <sup>2</sup>
<b>ENV Site #</b>	5184

\* Source: Google Earth

The irregularly shaped lot is approximately 11,870m<sup>2</sup>, and the Site is at the southwest corner of Doumac Avenue and Cordova Bay Road, in a residential area of Cordova Bay in the District of Saanich, BC. Redevelopment of the Site as three mixed-use buildings with street-level commercial activities, multiple storeys of residential condominiums, and one level of underground parking is expected to be complete in early 2022. This PVP is intended to support both current and future Site use.

Previous environmental investigations identified soil, groundwater, and vapour contamination exceeding standards to protect human health and ecological health (Table B).

More information is provided in PGL’s investigation and risk assessment reports:

- *Stage 1 PSI Update, Supplemental Detailed Site Investigation and Confirmation of Remediation Report, 5120 Cordova Bay Road, District of Saanich, BC*, prepared by PGL Environmental Ltd., dated February 2022; and
- *Human Health and Ecological Risk Assessment, 5120 Cordova Bay Road, District of Saanich, BC*, prepared by PGL Environmental Ltd., dated February 2022.

**Table B – Summary of Contamination**

AEC	COC	Medium	Maximum Measured Concentration	Extent of Contamination	
				Area (m <sup>2</sup> )	Depth Range (m)
1	VPHs	Soil	3,500 ug/g	1,500	4.5–5.5
	Benzene	Soil	0.341 ug/g		
	Ethylbenzene	Soil	23 ug/g		
	Toluene	Soil	11.1 ug/g		
	Xylenes, total	Soil	45.5 ug/g		
	VPHw	Groundwater	8,000 ug/L	3,100	4.6–10.4
	LEPHw	Groundwater	1,740 ug/L		
	Benzene	Groundwater	11.4 ug/L		
	Ethylbenzene	Groundwater	790 ug/L		
	Toluene	Groundwater	343 ug/L		
	Xylenes, total	Groundwater	2,900 ug/L		
	Tetraethyl lead	Groundwater	0.001 ug/L		
	Trimethylbenzene, 1,3,5	Groundwater	510 ug/L		
	Methylnaphthalene, 1-	Groundwater	18.7 ug/L		
	Methylnaphthalene, 2-	Groundwater	34.5 ug/L		
	Benzo (a)pyrene	Groundwater	0.012 ug/L	200	4.6–10.4
	Naphthalene	Groundwater	82.1 ug/L		
	Arsenic	Groundwater	10.7 ug/L	3,100	4.3–4.6
	VPHv	Soil Vapour	460,000 ug/m <sup>3</sup> *		
	Benzene	Soil Vapour	6,800 ug/m <sup>3</sup> *		
Ethylbenzene	Soil Vapour	7,200 ug/m <sup>3</sup> *			
Toluene	Soil Vapour	54,000 ug/m <sup>3</sup> *			
Xylenes, total	Soil Vapour	58,000 ug/m <sup>3</sup> *			
Naphthalene	Soil Vapour	46 ug/m <sup>3</sup> *			
N-hexane	Soil Vapour	74,000 ug/m <sup>3</sup> *			
Methylcyclohexane	Soil Vapour	12,000 ug/m <sup>3</sup> *			
Trimethylbenzene, 1,2,4-	Soil Vapour	5,600 ug/m <sup>3</sup> *			
Trimethylbenzene, 1,3,5-	Soil Vapour	2,800 ug/m <sup>3</sup> *			

\* Maximum vapour concentrations estimated from pre-remediation soil-vapour concentrations using a sub-slab attenuation factor (0.02)

Notes: AEC – area of environmental concern  
VPH – volatile petroleum hydrocarbons

COC – contaminant of concern  
LEPHw – light extractable petroleum hydrocarbons

Post-excavation vapour samples were collected from beneath the building slab. Concentrations from these samples were compared to the parkade vapour standard (using the subslab attenuation factor) and were found to be compliant.

A vapour management system was installed to address the potential for vapour intrusion from post-remedial conditions as a precautionary measure. The soil vapour mitigation (SVM) system was designed, installed, and tested as a passive system. The SVM system is combined with the subslab drainage system and extends under the entire parkade slab. The perforated drain pipes are installed in drain rock under the concrete slab and connected to vent headers that passively vent the system to the outside ambient air.

## **NECESSARY RISK CONTROLS**

The risk assessment identified the following risk controls that are to be maintained in order to prevent unacceptable risk to onsite receptors:

- Site groundwater must not be used for drinking water purposes; and
- The vapour management system must continue to operate as designed.

Limiting the use of Site groundwater as drinking water where the Site is serviced by a treated municipal water supply is considered an institution control for a Type 1 Site and typically does not require a PVP.

Ensuring no vapour intrusion using a vapour barrier is an engineering risk control as defined by Ministry of Environment and Climate Change Strategy (ENV) Guidance<sup>1</sup> and makes the Site Type 2. Maintaining the risk control is necessary to meet risk-based standards under current and future uses. Type 2 sites require a PVP.

## **ACTIONS REQUIRED TO IMPLEMENT RISK CONTROLS**

Risk controls are engineering works that need to be implemented or maintained to ensure compliance. The owner of the property will maintain this PVP on file and comply with the conditions of the Certificate of Compliance. The responsible persons must provide notification to the Site owner/operator/strata council that the SVM system must be maintained in accordance with this PVP.

## **IMMEDIATE RISK OF EXPOSURE TO HUMANS, THE AQUATIC RECEIVING ENVIRONMENT, AND TERRESTRIAL NON-HUMAN RECEPTORS TO CONTAMINANTS IF THERE IS A SUDDEN FAILURE OF RISK CONTROLS**

There is low to negligible likelihood of failure of the SVM system. There is no immediate risk to any receptors if risk controls are not complied with (or in the event of a system failure):

- Passive ventilation relied upon to increase air exchange within the parkade will provide attenuation and ensure protection of human health; and
- The risk control is not required or relevant to ecological receptors.

---

<sup>1</sup> < <https://www2.gov.bc.ca/gov/content/environment/air-land-water/site-remediation/guidance-resources/performance-verification-plans>>

## **MAINTENANCE ACTIONS**

No maintenance is required for this PVP.

## **REPORTING TO ENV**

Regular reporting to the ENV is not required because:

- There is a low risk that the risk control will not remain operational; and
- There is no immediate risk to human or environmental health if risk conditions are not complied with (or in the event of a system failure).

If requested by the (ENV) Director, the responsible persons must provide a signed statement indicating whether the principal risk controls have been and continue to be met. This may include providing a signed statement by an Approved Professional.

If through unforeseen events risk controls are not being met, the Director must be notified promptly by the persons responsible for the Site. The following information must be submitted to the Director with the notification, or as soon as practicable thereafter:

- The period over which institutional and engineering controls did not meet the requirements of Schedule B;
- The nature of the excursions;
- The temporary or permanent corrective measures implemented or to be implemented;
- An implementation schedule; and
- Supporting documentation.

## **RESPONSIBLE PERSONS**

As of the creation of this PVP, the entities responsible for maintaining the risk controls at the Site are:

KG2 Developments Ltd.  
Suite No. 4, 3318 Oak Street  
Victoria, BC  
V8X 1R1  
Email: bkang@kangandgill.com

643257 B.C. Ltd.  
4043 Braefoot Road  
Victoria, BC  
V8X 2B8  
Email: jgconstruction@shaw.ca

## STATEMENT OF LIMITATIONS AND CONDITIONS FOR REPORT

### Complete Report

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report, which is of a summary nature and is not intended to stand alone without reference to the instructions given to PGL by the Client, communications between PGL and the Client, and any other reports, proposals or documents prepared by PGL for the Client relative to the specific site described herein, all of which together constitute the Report.

In order to properly understand the suggestions, recommendations and opinions expressed herein, reference must be made to the whole of the Report. **PGL is not responsible for use by any part of portions of the Report without reference to the whole report.**

### Basis of Report

The Report has been prepared for the specific site and purposes that are set out in the contract between PGL and the Client. The findings, recommendations, suggestions, or opinions expressed in the Report are only applicable to the site and purposes in relation to which the Report is expressly provided, and then only to the extent that there has been no material alteration to or variation from the information provided or available to PGL.

### Use of the Report

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. No other party may use or rely upon the Report or any portion thereof without PGL's written consent, and such use shall be on terms and conditions as PGL may expressly approve. Ownership in and copyright for the contents of the Report belong to PGL. Any use which a third party makes of the Report, is the sole responsibility of such third party. **PGL accepts no responsibility whatsoever for damages suffered by any third party resulting from use of the Report.**

## CLOSING

We trust that this meets your needs. If you have any questions or require clarification, please contact Michael Shum or Ingo Lambrecht at 604-895-7656 and 250-220-2318, respectively.

## PGL ENVIRONMENTAL CONSULTANTS

Per:



Michael Shum, Ph.D., P.Ag., R.P.Bio.  
Senior Environmental Consultant



Ingo Lambrecht, P.Geo., CSAP  
Lead Consultant

MGS/IPL/neg

\\pgl-van-file1\Project Files\4300-4399\4369 - Kang and Gill\03-04\_Client Docs\HHERA Report\4369-03-04-HaroPVP-v2.docx