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July 6, 2015

Project 131010

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**ATTENTION:** Nicholas J. McGregor

**REFERENCE:** Performance Verification Plan, Management Area associated with Former Gas Bar and Service Garage 8242 Oak Street, Vancouver, BC

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On behalf of Imperial Oil, the Environment & Water business unit of SNC-Lavalin Inc. (SNC-Lavalin) has prepared this Performance Verification Plan (PVP) in support of an application for a Certificate of Compliance (CofC) for the Management Area associated with the Former Gas Bar and Service Garage located at 8242 Oak Street, Vancouver, BC (herein referred to as the "MA"). The MA is owned and managed by the City of Vancouver (CoV). The PVP presents the principal risk controls that apply at the MA to ensure the CofC remains valid (i.e., the key risk controls of Schedule B of the CofC). The PVP was prepared in accordance with BC Ministry of Environment (BC MoE) Procedure 12: Procedures for preparing and issuing contaminated sites legal instruments (BC MoE, 2013) and Administrative Guidance 14: Performance Verification Plans, Contingency Plans and Operations and Maintenance Plans (BC MoE, 2014).

### PRINCIPAL RISK CONTROLS

A Human Health and Ecological Risk Assessment (HHERA) was conducted for the MA, the results are presented in the SNC-Lavalin report, *Human Health and Ecological Risk Assessment, Management Area associated with Former Gas Bar and Service Garage 8242 Oak Street, Vancouver, BC* prepared by SNC-Lavalin, dated June 18, 2015 (SNC-Lavalin, 2015a). The HHERA was prepared based on the findings and conclusions presented in the SNC-Lavalin report, *Detailed Site Investigation Former Gas Bar and Service Garage 8242 Oak Street, Vancouver, BC* dated June 17, 2015 (SNC-Lavalin, 2015b).

The principal risk controls on which the SNC-Lavalin (2015a) risk assessment was based, as presented in Schedule B of the CofC, are as follows:

- a) Groundwater at the MA must not be used for drinking water.

**THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE**

These documents and the information contained therein are confidential, property of Imperial Oil Limited and any disclosure of same is governed by the provisions of each of the applicable provincial or territorial freedom of information legislation, the *Privacy Act (Canada)* 1980-81-83, c. 111, Sch. II "1", and the *Access to Information Act (Canada)* 1980-81-82-83, c.111, Sch. I "1", as such legislation may be amended from time to time.



- b) A worker health and safety plan must be developed and implemented in the event that:
- Trenches (i.e., excavations that are deeper than 1.5 m bgs, deeper than they are wide and intended for human entry) are advanced, with the plan including provisions to prevent inhalation exposures; or,
  - Subsurface work is conducted at depths greater than 2.4 m bgs and LNAPL is encountered, with the plan including provisions to prevent dermal exposures.

### **DETERMINATION OF PROCEDURE 12 REMEDIATION TYPE**

Based on the principal risk controls for the MA (i.e., the use of an institutional controls to mitigate/eliminate risks at the MA and lack of imminent risks in the event that controls were either not implanted or were rendered ineffective), the Remediation Type applicable at the MA is considered to be Type 2.

Under a Remediation Type 2 scenario, MoE (2013 and 2014) indicates that a PVP is required, while an operations and maintenance plan may be required.

### **PERFORMANCE VERIFICATION PLAN**

A PVP is required to ensure that the principal risk controls upon which the HHERA is based are being met at the MA.

This includes the maintenance of up-to-date records of performance verification actions and results for the MA being maintained by the responsible person (or their agents). If requested by the Director, the responsible person (or their agents) will provide these records to the MoE. As well, if requested by the Director, responsible person(s) will provide a signed statement on whether conditions set out in this Schedule B are being met.

Performance verification actions for the MA include the following:

- a) Communication with the owner/operator that groundwater MA must not be used for drinking water purposes. The MA is currently a roadway (i.e., industrial land use) in a highly urban area in Vancouver, BC. It is anticipated that future use of the MA will remain the same (i.e., will continue to be used as a roadway). Drinking water wells are not currently present at the MA and as drinking water is supplied to the area via the Capilano Reservoir, it is considered highly unlikely that drinking water wells will be installed at the MA in the future.

Based on the above, an advisory that groundwater at the MA must not be used for drinking water purposes is considered appropriate to meet this risk control. The listing of this risk control in Schedule B of the CofC meets this requirement.

- b) Communication with the MA owner/operator that a worker health and safety plan must be developed and implemented if: trenches (i.e., excavations that are deeper than 1.5 m bgs, deeper than they are wide and intended for human entry) are advanced at the MA, with the plan including provisions to prevent inhalation exposures; or, subsurface work is conducted at depths greater than 2.4 m bgs and LNAPL is encountered, with the plan including provisions to prevent dermal exposures.



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An advisory that a worker health and safety plan is required under the above conditions is considered appropriate to meet this risk control. The listing of this risk control in Schedule B of the CofC meets this requirement.

In summary, it is our opinion that advisories in the form of the listing of the above risk controls on Schedule B of the CofC are sufficient for addressing the principal risk controls at the MA.

## REFERENCES

- MoE. 2013. Procedure 12. Procedures for preparing and issuing contaminated sites legal instruments. BC Ministry of Environment, Victoria, BC, February, 2013.
- MoE. 2014. Administrative Guidance 14: Performance Verification Plans, Contingency Plans and Operations and Maintenance Plans. BC Ministry of Environment, Victoria, BC, February, 2014.
- SNC-Lavalin. 2015a. *Human Health and Ecological Risk Assessment, Management Area associated with Former Gas Bar and Service Garage 8242 Oak Street, Vancouver, BC.* Prepared by SNC-Lavalin. Dated July 6, 2015.
- SNC-Lavalin. 2015b. *Detailed Site Investigation Former Gas Bar and Service Garage 8242 Oak Street, Vancouver, BC.* Prepared by SNC-Lavalin. Dated June 17, 2015.

## LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by the Environment & Water business unit of SNC-Lavalin Inc. (SNC-Lavalin) for Imperial Oil Limited. It is intended for the sole and exclusive use of Imperial Oil Limited, its affiliated companies and partners and their respective (insurers), agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and SNC-Lavalin make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigation undertaken by SNC-Lavalin with respect to this report and any conclusions or recommendations made in this report reflect SNC-Lavalin's judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which



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were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

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A handwritten signature in black ink, appearing to read "Tara Siemens Kennedy". The signature is fluid and cursive, with the first name "Tara" being the most prominent.

Tara Siemens Kennedy, MET, P.Chem., CSAP  
Senior Project Specialist, Environmental Toxicology  
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