

March 16, 2015
File: 448-091.04

Chevron Canada Limited
1500 – 1050 West Pender Street
Vancouver, BC V6E 3T4

Attn: Kristi Thornhill, P.Eng., MBA – Site Remediation Specialist

Dear Ms. Thornhill,

Re: Performance Verification Plan for OMA 1 Portion of Smithers Mall, 3664 Highway #16, Smithers, BC (adjacent to Chevron-branded service station #VC61131)

1.0 INTRODUCTION

Hemmera was retained by Chevron Canada Limited (Chevron) to prepare this Performance Verification Plan (“PVP”) in support of an application for a Certificate of Compliance (CoC) for Off-Site Management Area 1 (“OMA 1”) located at the Smithers Mall, 3664 Highway 16, Smithers, BC. OMA 1 is situated in the entrance and parking lot portion of the Smithers Mall property, and is an affected parcel (BC Site ID 17056) which contains petroleum hydrocarbon contamination that originated from the Chevron branded service station at 3696 Highway 16, Smithers, BC (BC Site ID 16750).

This PVP identifies: (a) the principal risk controls that were recommended in the *Screening Level Risk Assessment, Off-Site Management Area 1, 3664 Highway 16 Smithers, BC* (Hemmera, 2014); and (b) recommended actions to ensure that these risk controls are implemented and maintained, to ensure OMA 1 continues to meet 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 2014a) and *Procedure 12: Procedures for Preparing and Issuing Contaminated Site Legal Instruments* (BCMOE 2014b).

2.0 RISK CONTROL TYPE

Per Administrative Guidance 14 (BCMOE 2014a), based on the exposure pathway assumptions of the Screening Level Risk Assessment (“SLRA”) (Hemmera, 2015) and the nature of site contamination and the required institutional and engineered risk controls, the site is considered to be a **Type 2** Risk Control Type, i.e., “no immediate risk if intrinsic, institutional or engineering controls fail to be sustained”.

3.0 RISK CONTROLS

The following risk controls were recommended in the SLRA:

1. OMA 1 groundwater must not be used as potable water; and
2. Retain the exposure barrier (i.e., pavement) to contaminated soils in OMA 1.

4.0 PERFORMANCE VERIFICATION

With respect to the risk controls for OMA 1 the following actions are required:

1. Communication of the risk controls to the OMA 1 owner/lessee/operator. Whenever the site is sold in the future, the then-current owner will need to notify the subsequent owner of these PVP requirements.

Note that no formal reporting to BCMOE is recommended with respect to the risk controls and performance verification. However, performance verification records may be requested by a Director (BCMOE 2014a).

5.0 RATIONALE FOR SELECTING PVP ELEMENTS

OMA 1 groundwater must not be used as potable water (i.e. do not install a drinking water well) given groundwater in OMA 1 contains benzene, ethylbenzene, xylenes, and benzo(a)pyrene at concentrations exceeding CSR Schedule 6 drinking water standards. Monitoring of site use to ensure no potable wells are installed is not warranted given the low probability a mall parking lot immediately adjacent to a service station in an area where potable water is supplied by the Town of Smithers would be the site of a future potable water well.

A barrier (i.e., pavement) is required over OMA 1 to prevent exposure of human receptors to soil VPHs concentrations that exceed the CSR Schedule 4 generic standard in the top 1 m of soil. This risk control is also intended to prevent exposure of terrestrial ecological receptors (vegetation, soil invertebrates, and wildlife) to VPHs concentrations that exceed the Schedule 4 generic standard in the top 1 m of soil. It is worth noting two other pieces of information with respect to this risk control. The DSI suggests that soil contamination is at 0.9 m bgs making exposure by most human and ecological receptors extremely unlikely. In addition, OMA 1 is only 350 m² in size and is therefore unlikely “potential terrestrial habitat” (Protocol 13 question TS-4) or suitable habitat for most wildlife (Protocol 13 question TS-5) in the event of pavement breakage or altogether removal. Consequently, monitoring of pavement presence or integrity is not warranted. The current Mall owner has advised that OMA 1 is part of the driveway access into the Mall property and will remain as such for the foreseeable future.

6.0 CLOSURE

Hemmera appreciates the opportunity of working with you on this project and trusts that this report is satisfactory to your requirements for applying for a CoC for OMA 1.

Report prepared by:
Hemmera Envirochem Inc.

**ORIGINAL SIGNED
AND STAMPED**

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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 Karey Dow, P.Ag., PMP 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 STATEMENT OF LIMITATIONS

This report was prepared by Hemmera Envirochem Inc. ("Hemmera"), based on previous investigations reports, for the sole benefit and exclusive use of Chevron Canada Limited (Client). For the purpose of the work product herein, Hemmera extends reliance on the report to the BC Ministry of the Environment (MOE), provided that the MOE is bound to the same terms and conditions as Client. The material in it reflects Hemmera's best judgment in light of the information available to it at the time of preparing this report. Any use that a third party makes of this report, or any reliance on or decision made based on it, is the responsibility of such third parties. Hemmera accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

Hemmera has performed the work as described above and made the findings and conclusions set out in this report in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession practicing under similar conditions at the time the work was performed.

This report represents a reasonable review of the information available to Hemmera within the established scope, work schedule and budgetary constraints. It is possible that the levels of contamination or hazardous materials may vary across the Site, and hence currently unrecognised contamination or potentially hazardous materials may exist at the Site. No warranty, expressed or implied, is given concerning the presence or level of contamination on the Site, except as specifically noted in this report. The conclusions and recommendations contained in this report are based upon applicable legislation existing at the time the report was drafted. Any changes in the legislation may alter the conclusions and/or recommendations contained in the report. Regulatory implications discussed in this report were based on the applicable legislation existing at the time this report was written.

In preparing this report, Hemmera has relied in good faith on information provided by others as noted in this report, and has assumed that the information provided by those individuals is both factual and accurate. Hemmera accepts no responsibility for any deficiency, mis-statement or inaccuracy in this report resulting from the information provided by those individuals.

The liability of Hemmera to Chevron Canada Limited shall be limited to injury or loss caused by the negligent acts of Hemmera. The total aggregate liability of Hemmera related to this agreement shall not exceed the lesser of the actual damages incurred, or the total fee of Hemmera for services rendered on this project.

8.0 REFERENCES

BCMOE (2014a). Administrative Guidance on Contaminated Sites: Performance Verification Plans, Contingency Plans, and Operations and Maintenance Plans, Version 1.0, February 2014.

BCMOE (2014b). BC Ministry of Environment Procedure 12: Procedures for Preparing and Issuing Contaminated Site Legal Instruments, January 14, 2014.

Hemmera (2014). Screening Level Risk Assessment, Off-Site Management Area 1, 3664 Highway 16 Smithers, BC, February, 2015.