

December 21, 2016

Ref. No.: 10-3245T06

Imperial Oil Limited  
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Attention: Environmental Services

Re: Performance Verification Plan for  
Ministry of Transportation and Infrastructure Lands to the South of  
33321 1<sup>st</sup> Avenue  
Mission, British Columbia  
Location No.: 88002741/JF.00185

Further to your request, Parsons Inc. (Parsons) is pleased to provide this Performance Verification Plan (PVP) in support of an application for a risk-based Certificate of Compliance (CofC) for the Ministry of Transportation and Infrastructure (MOTI) property located to the south of 33321 1<sup>st</sup> Avenue in Mission, British Columbia (the MOTI Property). The PVP presents the principal risk management measures that apply within the Management Area on the MOTI Property for the CofC to remain valid (i.e. the key risk management controls of Schedule B of the CofC which must remain in place within the Management Area on the MOTI Property). The PVP was prepared in accordance with British Columbia Ministry of Environment (BCMOE) Procedure 12: Procedures for preparing and issuing contaminated sites legal instruments (Procedure 12).

A plan indicating the areal extent of the the Management Area on the MOTI Property, relevant to this PVP, is indicated in Schedule A of the CofC.

## **PRINCIPAL RISK MANAGEMENT CONTROLS**

A human health and ecological risk assessment (HHERA) was conducted for the MOTI Property, and the results presented in the Parsons reports, "Supplemental Preliminary Site Investigation/Detailed Site Investigation/Confirmation of Remediation, 33321 1<sup>st</sup> Avenue, Mission, British Columbia (December 21, 2016)" and "Detailed Risk Assessment,



33321 1<sup>st</sup> Avenue, Mission, British Columbia (December 21, 2016)". The principal risk management measures on which the risk assessment were based, as presented in Schedule B of the CofC, are as follows:

- (a) Drinking water wells must not be installed within the Management Area on the MOTI Property.
- (b) Plants with roots expected to extend to below 1.2 mbgs must not be planted within the Management Area on the MOTI Property.
- (c) The grade of the Management Area on the MOTI Property must remain approximately at the same elevation as the current conditions (i.e. at least 1 m of clean soil must remain above the shallowest depth of soil impacts within the Management Area on the MOTI Property).

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

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Based on the risk management measures within the Management Area on the MOTI Property, (i.e. the use of institutional controls to mitigate/eliminate risks within the Management Area on the MOTI Property and lack of imminent risks in the event that controls were not implemented) the Remediation Type applicable within the Management Area on the MOTI Property is considered to be Type 2.

Under a Remediation Type 2 scenario, Procedure 12 indicates that a PVP is required, while an operations and maintenance plan may be required.

## **PERFORMANCE VERIFICATION PLAN**

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A PVP is required to document that the principal risk management measures upon which the risk assessment is based are met within the Management Area on the MOTI Property.

If requested by the Director, the responsible person(s) must provide a signed statement on whether the principle risk management controls outlined in (a) through (c) above are being met.

Performance verification actions for the MOTI Property include the following:

- (a) Communication with the MOTI Property owner that drinking water wells must not be constructed within the Management Area on the MOTI Property.

Imminent risks to drinking water receptors are not anticipated based on the following:

- the absence of drinking water wells at the MOTI Property and developments in the vicinity of the MOTI Property;
- the MOTI Property is utilized as a sidewalk and a roadway; and
- potable water within the District of Mission is sourced from Cannel Lake and Norrish Creek. To our knowledge, there are no plans to install water wells in the area of the MOTI Property.

As such, an advisory for the Management Area on the MOTI Property that drinking water wells must not be constructed within the Management Area on the MOTI Property is considered sufficient to meet this risk management measure. The listing of this risk management measure in Schedule B of the CofC meets this requirement.

- (b) Communication with the MOTI Property owner that plants with roots expected to extend to below 1.2 mbgs must not be planted within the Management Area on the MOTI Property.

Based on the current absence of deep-rooting plants (the MOTI Property is largely covered by sidewalk and roadway), the anticipated future commercial developments, and the considerable time (years) required to establish deep rooting vegetation, imminent risks to ecological receptors are not anticipated in the event that this risk management measure was not met.

As such, an advisory for the Management Area on the MOTI Property that: “plants with roots expected to extend to below 1.2 mbgs shall not be planted within the Management Area on the MOTI Property” is considered appropriate to meet this risk management measure. The listing of this risk management measure in Schedule B of the CofC meets this requirement.

- (c) Communication with the MOTI Property owner that the grade of the Management Area within the MOTI Property must remain at approximately the same elevation as the current conditions (i.e. at least 1 m of clean soil must remain above the shallowest depth of soil impacts within the Management Area on the MOTI Property).

The assumptions in the risk assessment regarding no direct exposure pathway to the residual contamination in soil was based on the depth of the remaining soil, and consistent with the elevation of the MOTI Property and surrounding properties which are at approximately the same elevations.

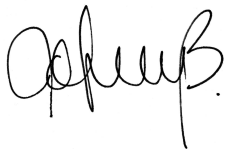
As such, an advisory for the Management Area on the MOTI Property that: “the grade of the Management Area within the MOTI Property must remain at approximately the same elevation as the current conditions (i.e. at least 1 m of clean soil must remain above the shallowest depth of soil impacts within the Management Area on the MOTI Property)” is considered appropriate to meet this risk management measure. The listing of this risk management measure in Schedule B of the CofC meets this requirement.

In summary, it is our opinion that the advisories listed in Schedule B of the CofC are sufficient for the risk management measures required for the MOTI Property.

We trust that the foregoing information is satisfactory for your present requirements. Should you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,

PARSONS INC.

A handwritten signature in black ink, appearing to read 'J.A. Bright', with a period at the end.

J.A. Bright, P.Eng.

JAB/cer

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

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The investigations undertaken by Parsons with respect to this report and any conclusions or recommendations made in this report reflect Parsons' judgment 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 examined 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 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 this 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.

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### **BRITISH COLUMBIA MINISTRY OF ENVIRONMENT'S RELIANCE**

Notwithstanding the above, the British Columbia Ministry of Environment is permitted to rely on this report and the information contained herein to the extent necessary to confirm that Imperial Oil has met their statutory obligations with respect to the Performance Verification Plan.