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Project 615850

July 6, 2015

Fraser Surrey Docks Limited Partnership  
11060 Elevator Road  
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**ATTENTION:** Jurgen Franke, Director of Engineering and Terminal Development

**REFERENCE:** **Proposed Amendment to the Fraser Surrey Docks Direct to Barge Coal Transfer Facility Project – Addendum to the Environmental Impact Assessment**

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## 1. INTRODUCTION

Fraser Surrey Docks (FSD or the 'Facility'), located on the Fraser River in Surrey, BC, is the largest multi-purpose marine terminal on the west coast of North America. FSD has been operating in the same community since 1962. The Facility currently handles containers, forest products, steel, bulk agricultural products, project cargo and is permitted to handle coal.

FSD is requesting an Amendment to the existing Port Metro Vancouver (PMV) Project Permit No. 2012-072 which allows for FSD to construct and operate the Direct To Barge Coal Facility (Project) at the existing Facility to facilitate the transshipment of coal. The Amendment proposes to replace the barge loader infrastructure with a taller vessel loader to accommodate ocean going vessels (OGV's)<sup>1</sup> with barge loading as a possible secondary option. The annual throughput will remain at 4 million tonnes (MT) of coal.

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<sup>1</sup> OGVs calling on FSD will have an 80,000 dead weight tonne (DWT) capacity.



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In consideration of the Amendment and as follow-up to the SNC-Lavalin Inc. (SNC-Lavalin) memoranda (dated March 30 and April 17, 2015), a review of the [Environmental Impact Assessment for the Direct Transfer Coal Facility](#)<sup>2</sup> was carried out to confirm the relevance of the environmental impacts and mitigation described in the EIA to the proposed Project changes.

## **2. SCOPE OF WORK**

SNC-Lavalin's scope of work included the following:

- Review of changes to the Project under the Amendment;
- Review of environmental regulations which may apply to the Amendment and/or vessel size;
- Discussion on the extent to which the EIA adequately describes the potential environmental impacts, taking into account the proposed Project changes; and
- Discussion on the extent to which the potential impacts should be reconsidered or re-assessed, where applicable.

## **3. UNDERSTANDING OF THE PROPOSED CHANGES TO THE PROJECT**

SNC-Lavalin understands that the main proposed change is an increase to the current size and height of the vessel loader which will allow for direct loading to OGVs. To accommodate this change, a number of engineering and design modifications will be made (Refer to CWA Engineers Drawings 50 to 53), including the following:

- The vessel loader will now be designed with a 27.4 m outreach and a height of 36.2 m. The original barge loader was designed with a 14.3 m outreach (length of boom) and a maximum height of 15.0 m.
  - The transfer point between the Out Feed Conveyor and the vessel loader will be relocated back away from the Berth face by approximately 23.8 m and downriver by 55 m;
  - The Out Feed Conveyor angle will be re-aligned in respect to the Receiving Pit by 24° which in turn will increase the length of the conveyor by approximately 40 m;
  - The Loader Spout will be lengthened by approximately 6.4 m;

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<sup>2</sup> SNC-Lavalin Inc., Triton Env. Consultants Ltd., Levelton Consultants, Soleil Env. Consultants Ltd. and Ritter, L. 2013. Environmental Impact Assessment for the Direct Transfer Coal Facility. Prepared for Fraser Surrey Docks LP. Submitted to Port Metro Vancouver. November 18, 2013. 220 pp + appendices.



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- The Loader Control Room will be mounted above the Out Feed-to-Loader transfer point. The Cabin will be elevated to provide a field of view for the Operator;
- The Wastewater settling basins (~300 m<sup>3</sup> capacity) will be shifted 37 m west and rotated 90° counter clockwise. The basin dimensions remain unchanged. Both basins will be located under the Out Feed Conveyor;
- A 560,000 litre (L) tank for contingency storage will be installed to address storm events; and
- The Receiving Pit (17 m in length with 125 tonne surge bin) and Rail Receiving Building will be shifted 12 m east and 16 m south from original design. The building will be metal-clad rather than fabric. The pit dimensions remain unchanged. Additional changes necessary to accommodate the shift include:
  - A shift in the Coal Rail Loop to the north, closer to the Bekaert office building as the rail enters the Facility near the front gate, which will decrease the curvature from 12.5° to 12.1°;
  - A re-alignment and partial infilling of the two green coded<sup>3</sup> ditches which run between Elevator Road and pre-Bekaert leasehold boundary;
  - Removal of Shed 4 and the corresponding valve station instead of relocating the Front Gate; and
  - Relocation of the power and domestic sanitary lines running near and on the pre-Bekaert/FSD leasehold areas instead of the relocation of the utilities described in the Permit.

The modifications will reduce the overall water catchment area (or Facility footprint) to 3,680 m<sup>2</sup> from the original footprint of 5,340 m<sup>2</sup>.

The changes will not require additional structural works (i.e., pilings) on, in front of, or behind the berth with the proposed larger ship loader. All other parameters including railcars per day, production per hour, number of conveyers, and dust suppression equipment will remain the same.

Pending the length of time required for the PMV approval process, FSD may request a change to the Project permitted completion timeline (from August 31, 2015 to September 14, 2018) as stated in the conditions of the Project Permit.

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<sup>3</sup> City of Surrey Mapping Online System (COSMOS) classifies the two ditches as green-coded / Class C which indicates they are non-fish bearing and provide insignificant nutrients and flow downstream. Their purpose is for the conveyance of stormwater and typically dry within 3 days following a significant rainfall event according to the City of Surrey Engineering Department's *A General Guide to Construction Over or Near Watercourses*.



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#### 4. REGULATORY REQUIREMENTS WHICH MAY BE RELEVANT TO THE PROPOSED PROJECT CHANGES

SNC-Lavalin reviewed environment-related laws and regulations to verify if the proposed Project changes may be subject to additional legal permit requirements other than the PMV Project Approval, or to address increased vessel size. Below is a summary of our review:

**Canadian Environmental Assessment Act, 2012 (CEAA 2012):** The Project is not designated under the Regulations Designating Physical Activities because the Facility is pre-existing. New marine terminal facilities with the ability to handle ships larger than 25,000 DWT are subject to environmental assessment review and approval under CEAA 2012. The provisions under Section s.67 of CEAA 2012 continue to apply.

**Navigation Protection Act:** An approval from Transport Canada is not required because no incremental dredging is planned.

**Canada Environmental Protection Act (CEPA):** A Disposal at Sea Permit is not required for the Project changes because no incremental dredging is planned at berth.

#### 5. REVIEW OF THE EIA

The following discusses the review that SNC-Lavalin undertook to determine if the environmental impacts of the proposed changes are adequately described in the EIA, and if the mitigation measures identified in the EIA correspondingly address those impacts. The potential environmental impacts which have been identified as requiring re-assessment are also discussed.

EIA Section	Modification to EIA
<b>1. Introduction</b>	
Proponent Identification	This EIA section remains accurate.
Project Overview	The proposed changes described in Section 3 should be reflected in this EIA section.
Jurisdiction and Regulatory Framework	This EIA section remains accurate.
<b>2. Project Description</b>	
Project Components	The proposed changes described in Section 3 should be reflected in this EIA section.
Project Schedule	Pending the length of time required for the PMV approval process, FSD may request a change to the Project permitted completion timeline (from August 31, 2015 to September 14 <sup>th</sup> , 2018) as stated in the conditions of the Project Permit.



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EIA Section	Modification to EIA
Project Construction	The construction activities described in the EIA remain the same but should reflect the proposed changes described in Section 3.
Project Operation	The coal conveyance system will load coal into a closed hatch on the OGV rather than onto an open-air barge. All other operational activities described in the EIA remain the same.
Project Decommissioning	This EIA section remains accurate.
Economics and Labour Force	An increase of up to 20 full-time jobs from the original estimate of 20 – 25 full-time jobs will be added as a result of the proposed changes. A total of 40 - 45 full-time jobs is anticipated.
Alternative Means of Carrying out the Project	This EIA section remains accurate; however, the addition of a 560,000 L tank for additional stormwater storage, and the use of closed-hatch OGVs should be added to this EIA section.



EIA Section	Modification to EIA
<b>3. Consultation</b>	
Overview of Consultation Program	FSD undertook additional consultation with external stakeholders from May 4 to 19, 2015 support the Amendment. Public consultation will also be provided during the PMV amendment application review. Refer to <a href="http://www.fsd.bc.ca/amendment">http://www.fsd.bc.ca/amendment</a> for community and stakeholder feedback from Round 1 of the Public Comment Period.
Overview of Materials Distributed	As above.
<b>4. EIA Methodology</b>	
Scope of the Project	The proposed changes described in Section 3 should be reflected in this EIA section.
Scope of the EIA	This EIA section remains accurate.
Spatial and Temporal Boundaries	As above.
General Methodology	As above.
Residual Effects Characteristics	As above.
Determination of Significance	As above.
Cumulative Effects	As above.
<b>5. Environmental Effects Assessment</b>	
Project Area	This EIA section remains accurate.
Air Quality	For a detailed description of the air quality re-assessment refer to <i>Levelton Consultants Air Quality Assessment</i> . Updates to air quality mitigation and monitoring are found in <i>Air Quality Mitigation Changes and Improvements Table</i> .
Soil	The removal of Shed 4 and any works which could result in an encounter with contaminated soil is relevant to this EIA section. The mitigation measures and conclusions reached in the EIA remain applicable with respect to the project changes. No adverse residual effects are expected from the project changes following the implementation of the proposed mitigation measures described in the EIA.



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EIA Section	Modification to EIA
Surface Water and Groundwater	<p>The changes relevant to this EIA section include: reduction in the overall water catchment area, the relocation of wastewater settling basins directly beneath the Out Feed Conveyor, re-alignment and infilling of the green coded ditches which is a result of the removal of Shed 4, and a shift in the Receiving Pit and Rail Receiving Building.</p> <p>A reduction in the overall catchment area from 5,340 m<sup>2</sup> to 3,680 m<sup>2</sup>, which is estimated to reduce water runoff by 10-15%.</p> <p>The relocation of the settling ponds beneath the Out Feed Conveyor is also expected to improve water collection from the vessel loader spill trays and the Out Feed Conveyor. FSD is proposing to discharge approximately 9,000 tonnes annually to the Annacis Island Treatment Facility, which is a fraction of the 172 million tonnes of regional wastewater received annually at the facility, undergoing similar treatment.</p> <p>There will no longer be impacts to Shadow Brook channel, a red-coded water course (inhabited/potentially inhabited by salmonids year round); however, there will be partial infilling and realignment impacts to two-green coded (non-fish bearing) watercourses instead of one as a result of the removal of Shed 4 and a shift in the Receiving Pit and Rail Receiving Building. There are standard and proven mitigations which apply when working in or near watercourses that are discussed in the EIA.</p> <p>The mitigation measures and conclusions reached in the EIA remain applicable with respect to the project changes. No adverse residual effects are expected from the project changes following the implementation of the proposed mitigation measures described in the EIA.</p>
Fish and Fish Habitat	<p>As above.</p> <p>Furthermore, the project changes result in the avoidance of impacts to Shadow Brook channel; therefore, a loss of salmonid habitat in Shadow Brook is no longer expected.</p> <p>In-water Fraser River construction will remain the same; therefore, the mitigation measures and conclusions reached in the EIA remain applicable with respect to the proposed project changes. Residual effects on fish or fish habitat are not expected from the project changes.</p>
Vegetation and Wildlife	<p>The changes relevant to this EIA section include the re-alignment and infilling of the green coded ditches which is a result of the removal of Shed 4 and a shift in the Receiving Pit and Rail Receiving Building.</p> <p>Riparian habitat consisting pre-dominantly of invasive species (e.g., Himalayan blackberry [<i>Rubus armeniacus</i>]) will be removed as a result of the ditch work; however, is discussed in the EIA, along with the effects to local wildlife and species at risk (streambank lupine [<i>Lupinus rivularis</i>]) which may be present. The remainder of the project footprint is considered to be of negligible value to wildlife and vegetation because of pre-existing industrial land use and, therefore, the mitigation measures and conclusions reached remain applicable with respect to the proposed project changes.</p> <p>Residual impacts to native vegetation, wildlife and at-risk species are not anticipated with the implementation of the mitigation measures described in the EIA.</p>



EIA Section	Modification to EIA
<b>6. Socio-Community Effects Assessment</b>	
Project Area	This EIA section remains accurate.
Local Communities - Noise and Vibration	<p>The change in rail curvature from 12.5° to 12.1° is relevant to this EIA section. The effects of noise from project activities and proposed mitigation described are expected to be similar or less for the project changes due to the reduction in rail curvature from 12.5° to 12.1°.</p> <p>The mitigation measures and conclusions reached remain applicable with respect to the project changes. Following the application of the mitigation measures described in the EIA, it is expected that the project changes will result in no significant residual noise or vibration effects on marine life and surrounding communities.</p>
Local Communities - Lighting	<p>The change in the loader size is relevant to this EIA section because of increased lighting requirements.</p> <p>Additional lighting will be required for the length of the vessel loader. The lighting is planned to be direct and localized. Lighting is not required for a majority of the Out Feed Conveyor because it is below grade. Lighting will be installed in accordance with the Facility's <i>Occupational Health and Safety Regulation</i> as specified in the EIA.</p> <p>The effects of localized light from project activities and proposed mitigation described in the EIA are expected to be similar for the Amendment. The conclusion reached remains applicable with respect to the project change. No significant light effects from the project change are anticipated.</p>
Vessel Traffic	<p>The change in the loader size is relevant to this EIA section.</p> <p>A vessel loader will allow OGVs to call at the Facility, resulting in a reduction of barge traffic on the Fraser River. One vessel movement for every eight barge movements is anticipated.</p> <p>Refer to <i>Marine Navigational</i> for updates on potential impacts and mitigation from the operation of larger vessels on the Fraser River.</p>
Road and Rail Traffic	<p>A shift in rail alignment is relevant to the EIA section. The shift in rail alignment is due to the shift in the Receiving Pit and Rail Receiving Building. The number of rail cars per day will remain the same.</p> <p>The mitigation measures and conclusions reached in the EIA remain applicable with respect to the project changes. No adverse residual effects are expected from the project changes following the implementation of the proposed mitigation measures described in the EIA.</p>
Recreational and Commercial Fishing	<p>The change in loader size is relevant to this EIA section.</p> <p>A reduction in barge movements on the Fraser River is expected with the increased shipping capacity from OGVs. The effects on recreational and commercial fishing are expected to be similar for the Amendment.</p> <p>The mitigation measures and conclusions reached in the EIA remain applicable with respect to the project changes. No adverse residual effects are expected from the</p>





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EIA Section	Modification to EIA
	project changes following the implementation of the proposed mitigation measures described in the EIA.



EIA Section	Modification to EIA
<b>7. Health Effects Assessment</b>	
Human Health	For a detailed description of the human health risk re-assessment refer to <i>SNC-Lavalin Human Health Risk Assessment Report Update</i> .
Ecological	This EIA section remains accurate. Furthermore, in-water Fraser River construction will remain the same; therefore, the mitigation measures and conclusions reached in the EIA remain applicable with respect to the proposed project changes.
<b>8. Heritage Effects Assessment</b>	
	The heritage effects and proposed mitigation described in the EIA are expected to be similar for the Amendment. No residual effects are expected as a result of the project changes.
<b>9. Accidents and Malfunctions</b>	
	The effects from accidents, malfunctions and proposed mitigation described in the EIA are similar for the Amendment.
<b>10. Effects of the Environment on the Project</b>	
	The effects of the environment on the Project and proposed mitigation described in the EIA are expected to be similar for the Amendment.
<b>11. Sustainability</b>	
Emissions Reductions	This EIA section remains accurate. Larger vessels will be calling on the Facility, resulting in a reduction of barge traffic on the Fraser River. One vessel movement for every eight barge movements is anticipated and therefore a reduction in air emissions is predicted. <i>Levelton Consultants Air Quality Assessment</i> describes the change in impact from air emissions (particulate and contaminant) in detail. Project changes have resulted in an increase in the overall length of the conveyor system, which is estimated to increase annual power consumption by 5%.
Materials Handling	The operational logistics of material handling are not expected to change as a result of the Amendment; therefore, this EIA section remains accurate.
<b>12. Cumulative Effects Assessment</b>	
	The results of the cumulative effects assessment take into account the air quality assessment which has concluded that the change in air emissions as a result of the Amendment are at acceptable levels according to Metro Vancouver <i>Ambient Air Quality Objectives</i> therefore this EIA section remains accurate. No significant cumulative effects are expected from the project changes.



EIA Section	Modification to EIA
<b>13. Environmental Management Plans and Follow-Up Programs</b>	
	For a detailed description of updates to management plans for Project, refer to the <i>Environmental Management Plan Addendum, Air Quality Assessment Addendum, Water Management Plan Addendum, updated Spill Response Plan, Fire Life Safety Plan.</i>
<b>14. Summary of Project Effects, Mitigation Measures and Residual Effects</b>	
	The potential effects and proposed mitigation described in this EIA section are applicable and relevant to the proposed Project changes described in Section 3 of this addendum. The conclusions made in this section remain accurate.
<b>15. Conclusion</b>	
	Refer to Section 6 of this addendum.

## 6. CONCLUSION

The changes to the Project described in this addendum have been made for the purpose of functional efficiencies at the Facility. The environmental effects and proposed mitigation identified within the EIA are adequate to address the project changes and, therefore, results in no change to the overall conclusion of the EIA. The annual coal throughput at FSD will still be permitted for 4MT and, therefore, the mix of vessels used for coal shipment can be considered an improvement to the Project because the number of Project-specific vessel movements on the Fraser River will be reduced. Furthermore, the closed containment of the OGVs is expected to abate dust generation during transit and loading at the Facility.

SNC-Lavalin has concluded that the Amendment is not likely to cause significant adverse environmental, socio-economic, or health effects, taking into account the implementation of appropriate effect management measures, as identified in the EIA and in the technical re-assessments which have been undertaken. These include the Air Quality Assessment, Human Health Risk Assessment and Marine Assessment, as well as updates to various management plans.



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We trust the presented information meets your needs. If you have any questions or concerns, please contact the undersigned at your convenience.

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