

April 17<sup>th</sup>, 2014

Jim Crandles  
Director of Planning  
Port Metro Vancouver  
100 The Pointe, 999 Canada Harbour Place  
Vancouver, BC V6C 3T4

**Re: Fraser Surrey Docks Direct Transfer Coal Facility Design Changes**

Jim,

Fraser Surrey Docks remains confident that our proposed facility (the “Project”) can handle coal safely and without significant impact to stakeholders. Along with our customers, we remain committed to the Project and believe it will deliver economic benefit in an environmentally and socially responsible way.

Although we did not agree with some of the assertions being made regarding potential negative Project impacts, we understood the need to help build greater confidence amongst stakeholders. We carefully considered all the Project-related comments and feedback throughout the permit process and incorporated several enhancements.

As we incorporated these changes into the Project design and performed the required detailed engineering work, we started to identify potential design alternatives that could provide further risk mitigation and reduce the overall capital budget. After discussion with our Project partners and customers, we decided to do a detailed review of design alternatives.

In reviewing alternatives, we were committed to maintaining the previously discussed design enhancements. We also recognized that some different equipment options presented an opportunity to provide even further enhancements in the areas of concern. We carefully took to reviewing all options in detail to determine whether we could deliver an improved design within budget.

We are pleased to advise that we have achieved our goal. Although the new design is very similar in concept to the original, the new design now offers a reduction in Project footprint, total conveyor distance and number of conveyor transfer points. Each of these reductions significantly decreases the potential for emissions and the volume of water required in operating the proposed facility. The new design is also much simpler, allowing for an even greater level of control and certainty and further minimizing the risk in potential spills and fugitive dust emissions.

The proposed design changes only relate to the coal receiving pit and conveyor system. The proposed rail track configuration and all offsite modifications remain the same.

The key changes are listed below.

### Engineering Changes

1. Installation of a single bottom dump pit for rapid discharge operation, as opposed to dual “stop and go” bottom dump pits.
  - a. Installation of a shorter yet deeper single bottom dump pit 16.60m in length to accommodate a rapid discharge operation. The new receiving pit will be 7.6m deep and only be 6.4m wide. Maximum excavation (for the pit and out feed conveyor transfer point) will be approximately 11.5m. This is deeper than the 3.05m maximum excavation proposed in the original design. FSD has commissioned geotechnical studies to further develop details surrounding the construction and engineering of the deeper pit.
2. A reduction in the footprint of the rail receiving shed by 28% as well a reduction in height by one meter.
  - a. Installation of identical but smaller 430 m<sup>2</sup> fabric style rail car receiving shed 14m in height, which will house only one bottom dump pit. The building will still be enclosed except for openings on the east and west end in order for coal cars to enter and exit the shed.
3. A 70% reduction in overall conveyor length and a 75% reduction in transfer points and quantity of conveyors.
  - a. A reduction to two (2) conveyor segments from eight (8). A reduction to two (2) transfer points from eight (8). The conveyor segments will have a combined length of 125m, as opposed to 405m in the original design
4. Installation of two warping winches as oppose to only one. A winch is proposed to be located on either end of the berth.
  - a. To increase the safety of the warping system and to decrease the amount of cable used, the upgraded design proposes a winch on either end of the warping system, as opposed to only one winch in the center.
5. Removal of the Rail Receiving Control Room, such that all operations are monitored out of one central location, the Barge Control Room.
  - a. The Rail Receiving Control Room will be eliminated and replaced with four overhead cameras and empty rail car detection sensors. The electric indexer/positioner will remain automated. The operator in the Barge Control Room will monitor the operation of the rail car dumping via a matrix of monitors and will be in direct communication with rail and operations.
6. A 52% decrease in the water collection area required for runoff and wash down.
  - a. Water catchment area is now approximately 5,340 m<sup>2</sup> as opposed to 11,164 m<sup>2</sup>. The method of collecting and managing water remains unchanged.
7. A 50% decrease in the size of the settlement ponds required for grey water management.
  - a. Removal of the Dumper Area Settlement pond to only the Loading Area Settlement Pond. The Loading Area Settlement Pond volume will remain unchanged at 300 m<sup>3</sup>.
8. Rail unloading operations have changed from “stop and go” to a rapid discharge operation.
  - a. Rather than stopping to bottom dump two rail cars at a time, the cars will be pushed through at a speed of approximately ¼ mph and bottom dumped as a rapid discharge operation.

9. A 60% reduction in power consumption.
  - a. A 75% reduction in conveyors and a 70% reduction in conveyor lengths will require an estimated annual power consumption of 652MWh, as opposed to 1,740 MWh.
10. Minimal conflict with existing utilities
  - a. Minimal conflict with existing fiber line due to out feed conveyor tunnel lying underneath fiber lines
  - b. Minimal conflict with existing storm sewers due to out feed conveyor tunnel lying underneath storm sewer piping.
11. A 50% reduction in the area required to perform the same annual throughput
  - a. The relocation of dual unloading pits to a single pit in close proximity to the barge loader without compromising any environmental considerations or throughput of the facility has reduced the footprint to approximately 2.5 acres as opposed to 5.0 acres.

### **Mitigation Improvements**

1. Improved dust confinement through a more enclosed single pit with large surge capacity
  - a. The receiving area has been changed from two shallower pits to one deeper pit. The pit or hopper (below the rail) will be entirely enclosed apart from the grating at the top of the pit to allow for the entry of the coal from the bottom dump cars. The building overtop of the receiving pits will remain unchanged
  - b. Spray nozzles at rail car discharge level and water curtains at the entrance and exit of the receiving building will remain.
  - c. In addition to the three proposed spray bars, another two spray bar will be added. These will run along the length of the top vertical section of the hopper directly underneath the rail on either side. This spray will mitigate against dust build up and escape from the hopper and receiving area.
2. A reduction in potential dust generation of up to 75%. Reduction in dust generation is achieved through:
  - a. Reduced quantity of conveyors from eight to two (not including barge loader), a 75% reduction.
  - b. Reduced conveyor length from 405m to 125m, a 70% reduction.
  - c. Reduced number of transfer points from eight to two, a 75% reduction.
3. A 52% decrease in the water collection area required for runoff and wash down.
  - a. Water catchment area is now approximately 5,340 m<sup>2</sup> as opposed to 11,164 m<sup>2</sup>. The method of collecting and managing water remains unchanged.
4. A reduction in direct lighting requirements due to reduced infrastructure.
  - a. As the facility has decreased in size by 50% and shifted to below grade, less than half of the proposed direct low voltage lighting (i.e. along conveyor walkways) will be visible.
5. A reduction in the risk of fire due to 70% reduction in aggregate conveyor length.
6. A reduction in direct noise emissions and propagation due to reduced infrastructure and machinery.
  - a. The facility as decreased in size by 50% with the remain half being shifted to below grade, and the quantity of conveyors and transfer points by 75%

We are pleased to present these further considerations and project improvements. Fraser Surrey Docks has carefully reviewed stakeholder comments and concerns and believes these changes represent a significant improvement to our existing, low risk Project proposal.

Yours truly,

A handwritten signature in black ink, appearing to read 'Jeff Scott', with a long horizontal stroke extending to the right.

**FRASER SURREY DOCKS LP**

Jeff Scott  
President & CEO

CC: Greg Yeomans  
Tim Blair  
Jurgen Franke  
Wesley Marstaller  
Jill Buchanan