



Environment Environnement  
Canada Canada

Environmental Protection Operations  
Environmental Stewardship Branch  
Pacific and Yukon  
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January 3, 2012

CEAR: 10-01-53860  
ECPT: 09-0307

Rachel Shaw  
Project Assessment Director  
Environmental Assessment Officer  
2<sup>nd</sup> Fl., 836 Yates Street  
Victoria, BC V8W 1L8

Dear Ms. Shaw:

**Re: Environmental Assessment of the Proposed Vancouver Airport Fuel Delivery Project – Environment Canada Comments on the Issues Tracking Table (dated November 18, 2011)**

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Environment Canada has reviewed the following information provided to the Vancouver Airport Fuel Delivery Project working group by the Environmental Assessment Office:

- Issues Tracking Table (dated November 18, 2011).

Please find Environment Canada's comments and recommendations on the Issues Tracking Table below.

### **General Message**

As outlined in detail in previous correspondence (in particular, see letter dated August 17, 2011 attached again here), Environment Canada remains of the view that the behaviour, fate and potential ecological effects of jet fuel in the Fraser River Estuary have not been adequately characterized by the Proponent to date, whether within the Application or supporting documents. Environment Canada acknowledges that bulk movements of jet fuel already occur off the Fraser River Estuary as part of the existing approach to supplying jet fuel to the Vancouver Airport, but contends that the ecological risks of this existing approach have not been well-studied. Now that a new Project has been proposed and is subject to environmental assessment, information on jet fuel behaviour, fate and effects is required in order to ascertain whether spills that may result from the proposed Project could have adverse environmental effects, and to characterize the potential significance of those effects.

Environment Canada notes that the proposed relocation of bulk jet fuel movements to the South Arm of the Fraser River (i.e. from the current situation of vessels moving past the Estuary) does not necessarily imply that either the likelihood or the environmental effects of a spill would be reduced. Should containing and managing a spill be more challenging in the Fraser River than in the open water of the Georgia Strait, for example, then it is reasonable to assume that the environmental effects of a spill might be increased, not decreased. Although Environment

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Canada notes the commitment by Western Canada Marine Response Corporation (WCMRC) to enhance spill response capability in the Fraser River Estuary regardless of whether the Project proceeds, it is well established that current spill response technologies are limited in their ability to contain the spread of fuel released into the natural environment. This would be particularly true in dynamic environments such as the Fraser River.

For these reasons, Environment Canada continues to recommend that the Proponent complete additional studies of the behaviour, fate and effects of jet fuel (including analysis of proprietary additives, and biofilm dynamics and toxicity), as outlined in the Department's Preliminary Jet Fuel Fate and Effects Proposal included in the attached August 17, 2011 letter, and as discussed in various meetings with the Proponent since then. The total cost and time required to complete such studies need not be prohibitive.

Environment Canada notes that the Proponent shared a draft study plan on December 15, 2011, but that we have not yet reviewed it in detail. Environment Canada will be meeting with the Proponent on January 5, 2012 to discuss this study plan and the proposed next steps in further detail.

### **Specific responses**

**11b** Environment Canada met with WCMRC on November 22, 2011 and found the meeting useful. The Department acknowledges the Proponent's efforts to improve their proposed spill response plan. Environment Canada, as an expert agency in emergency spill response, and as a Regional Environmental Emergencies Team (REET) co-chair, remains of the opinion, however, that containing and managing a spill in the Fraser River would pose far greater challenges than in the open water of the Georgia Strait. Under most if not all potential scenarios, it appears the best a spill response could achieve would be to effectively shunt some product to the Strait; the opportunity for containment at that point would be low.

The range of conditions (turbidity, salinity, temperature, etc) in the Fraser River would likely have marked effects on the fate of jet fuel, especially the proportion entrained in the below-surface aquatic environment (either in dissolved state or attached to particles). Vertical mixing would render booming, skimming and other such spill response technologies less than effective in an already difficult-to-contain environment.

1) Environment Canada understands that modelling and field tests will be conducted to help assess spill fate and effects, and effectiveness. The Department would like to know when the modelling and field tests will be conducted and would like to review the results of these studies, when complete.

2) Environment Canada has and continues to recommend that studies be completed in a timely fashion to inform the environmental assessment regarding jet fuel behaviour and fate in the Fraser River Estuary. The results of the recommended studies would improve our current rudimentary understanding of the potentially adverse effects to sensitive estuary habitats, including biofilm. At the same time, they would likely improve the spill response plan and remediation strategies. In Environment Canada's view, all of the aforementioned are important for the environmental assessment of the proposed project.

**11d** (1) In reference to 'shorter marine route', this holds true in the context of a narrow scope only (the real distance travelled by tankers is clearly much greater (i.e. Asian markets) than the

existing situation). Environment Canada agrees that using Panamax class tankers would result in fewer ships (though this could change with predicted increase demand over time); however, the consequences of a catastrophic spill would be much greater.

(2) The department does not share the Proponent's confidence on the effectiveness of using deflective booming and other such spill technologies in the Fraser River, and recommends that evidence of the effectiveness of such a system be provided for review and comment. It is Environment Canada's opinion that spill response in the estuary would be less effective than in open water; on that basis, locating the Project in the Fraser River would not provide increased protection to the estuary.

(3) Due to the challenges of containing and managing river-based spills, Environment Canada does not agree that the Project would necessarily reduce risk to biofilm. It is important for the proponent to fully appreciate the ecological values and sensitivities of the Fraser River Estuary.

(4) Environment Canada questions the reference that the Project would, through a reduction in tanker truck deliveries, reduce potential environmental risk to the estuary. What might be more accurate to state is that the risk to human health and safety would likely be reduced as a consequence of Project, and at the same time it would transfer and increase risk to the estuary.

**11e** Refer to response 11b. It continues to be Environment Canada's opinion that the Project would represent an increased risk to the estuary insofar as it is very challenging to effectively contain and manage spills in dynamic environments. As previously stated, significant science gaps exist regarding jet fuel behaviour and fate in the estuarine environment. With respect to the latter, professional conjecture will not resolve the existing science gaps.

**11f** Refer to responses 11b and 11e above.

**11h** The response provided does not alter Environment Canada's position on the issue.

**11i** It is not clear to Environment Canada why the Proponent would choose to wait until after the environmental assessment to, *'complete a more more sophisticated and robust quantitative assessment of pipeline risk during the detailed design stage, in accordance with industry standards and BC Oil and Gas Commission guidelines and protocols'*? It is Environment Canada's opinion that completion of this type of assessment would benefit the Working Group and inform the environmental assessment.

**11k** Response noted. Refer to response 11e.

**11m** Response noted.

**11r** Environment Canada remains of the opinion that the movement of bunker fuel on the *lower* Fraser River is not a routine activity (as opposed to the Fraser River in general). Perhaps Port Metro Vancouver can provide further clarification on this matter.

**11s** Refer to response 11b above.

**11t** Refer response 11b above.

**11u** Refer to response 11b above.

**11v** It will assist Environment Canada in assessing the Proponent's proposed spill response approach if the response capabilities at the Vancouver Airport facilities are known (both current capabilities and proposed changes to the storage facility). Environment Canada would like to have the opportunity to review the existing spill response plan at the Vancouver Airport as part of the current environmental assessment.

**11w** Refer to response 11v above.

**11y** Refer to response 11v above.

**11z** Refer to response 11b above.

**11aa** Refer to response 11v above.

**11ab** Refer to response 11b above.

**11ac** Response noted.

**11ae** Refer to response 11b and 11e.

**11af** Environment Canada appreciates that the Proponent contacted the author. Environment Canada referenced that spill event given that: 1) it is not discussed in the Application; and 2) it occurred in the Fraser River Estuary and therefore is relevant to the Project. While not acknowledged in the proponent's most recent response, and while caution must be applied in drawing inferences from the information contained in the author's report, the findings of the report are noteworthy for the following reasons:

- a) The effects of that spill may have endured longer than '*weeks to months*'; and,
- b) The volume of fuel spilled was in all likelihood much less than would occur in the event of a Project-related catastrophic spill.

We suggest it might have been more useful if the Proponent had reviewed the report through the lens of *potential lessons learned*, rather than take the contrary view and identify where the report may or may not apply to the Project.

**11ag** Response noted.

**11ah** (1) Although biofilm can be expected to occur throughout the Fraser River Delta, biofilm of the quality and quantity to support shorebird grazing is only known to occur in one particular area, on the upper inter-tidal zone of Roberts Bank. This restricted area is the only area where shorebirds have been observed to graze biofilm in the Fraser River Delta, with the exception of a small creek area within Boundary Bay. Whether or not biofilm of the quality and quantity to sustain shorebirds occurs in other areas of the Fraser River Delta is entirely speculative. For clarity, the shorebirds themselves demonstrate their preferences, and although extensive formal surveys for shorebirds grazing on biofilm have not taken place, the fact that there are no anecdotal reports, notwithstanding a huge community of bird watchers, suggest that the Roberts Bank biofilm is unique in supporting the needs of grazing birds. The Proponent has not offered credible, science-based evidence in support of their position.

(2) Refer to response 11b above.

**11ai** Refer to response 11b and 11ae above.

**11aj** Response noted.

**11ak** Refer to response 11af above.

**11al** Refer to response 11b and 11ae above.

**11am** Refer to response 11af above.

**11an** (a) Response noted. (b) For clarity, it is Environment Canada's opinion that the potential effect on Great Blue Heron would be significant.

**11ao** Refer to response 11b above.

**11ap** Response noted.

**11aq** Response noted.

**11ar** Refer to response 11b above.

**11as** Response noted.

**11at** Response noted.

**11au** Response noted.

**11av** Response noted.

**11aw** Response noted.

**11ax** Refer to Response 11b above.

**11ay** Refer to Response 11b and 11k above.

**11az** Refer to Response 11k above.

Environment Canada appreciates the opportunity to provide comments regarding this project. If you have any questions, please do not hesitate to contact me at 604-666-4478.

Yours sincerely,

*[ORIGINAL SIGNED BY]*

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Harp Gill  
Senior Environmental Assessment Officer

Attach. (1)

cc: Juergen Baumann, Port Metro Vancouver  
Carrie Brown, Port Metro Vancouver

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