

April 10, 2017

Vancouver Airport Fuel Facilities Corporation
Unit 108- 12300 Horseshoe Way
Richmond, BC, V7A 4Z1

Attention: Vancouver Airport Fuel Facilities Corporation

RE: Commission Initiated Amendment of a Pipeline Permit

Application Determination Number: 100100195

Issuance Date: April 10, 2017

The BC Oil and Gas Commission (the Commission), under section 26(1)(d) of the Oil and Gas Activities Act, proposed amending Vancouver Airport Fuel Facilities Corporation's permit to replace a permit condition. After offering an oral opportunity to be heard, it was indicated by Vancouver Airport Fuel Facilities Corporation that the permit holder has no concerns with the proposed amendment. The Commission hereby amends the Permit and any associated authorizations referenced therein, subject to the original permit, any subsequent amendments and any additional or revised conditions as set out herein:

CONDITIONS

Notification

The Permit is amended to remove condition 12 stating:

The Permit Holder must notify Tsleil-Waututh Nation of any in-stream works at the marine terminal site a minimum of five (5) working days prior to commencement of activities.

to be replaced with the following:

The Permit Holder must notify any First Nations who may have aboriginal interests identified, as per the BC First Nations Consultative Areas Database, of any in-stream works at the marine terminal site a minimum of five (5) working days prior to commencement of activities.

This amendment forms an integral part of your permit(s) and should be attached thereto.



James O'Hanley
Vice President
Permitting & Authorizations

Commission Delegated Decision Maker

Copied to:

Land Agent: CCI Solutions

First Nations: Seabird Island First Nation, Squamish Nation, Katzie First Nation, Stz'uminus First Nation, Tsleil-Waututh Nation, Penelakut Tribe, Cowichan Tribes, Lyackson First Nation, Musqueam Indian Band, Semiahmoo First Nation, Lake Cowichan First Nation, Halalt First Nation, Tsawwassen First Nation, People Of The River Referrals Office, Sto:lo Nation, Sto:lo Tribal Council, Soowahlie First Nation, Skawahlook First Nation, Shxw'ow'hamel First Nation, Hwlitsum



April 3, 2017

Vancouver Airport Fuel Facilities Corporation
 Unit 108- 12300 Horseshoe Way
 Richmond, BC, V7A 4Z1

Attention: Vancouver Airport Fuel Facilities Corporation

RE: Determination of Application Area Number 100100195

Permit Holder: Vancouver Airport Fuel Facilities Corporation
Date of Issuance: April 3, 2017
Effective Date: April 3, 2017
Application Submitted Date: February 15, 2017
Application Determination Number: 100100195
Approved Disturbance Footprint: 17.127 ha

ACTIVITIES APPROVED

Pipeline Project No.: 000024381	Segment No.: 1, 2, 3, 4, 5
Associated Oil & Gas Activity No.: 00156632 to 00156652	Type: Workspace
Changes In and About a Stream: 0003774	

TECHNICAL SPECIFICATIONS

Seg No.: 001	From: d-65-H/92-G-3 To: a-75-H/92-G-03
Flow Direction: Uni-Directional	
Product: Jet Fuel	
Pipe Outer Diameter (mm): 609.6	
Maximum Operating Pressure (kpa): 1035	
Installation Number(s): 1, 2	
Seg No.: 002	From: a-75-H/92-G-03 To: d-65-H/92-G-3
Flow Direction: Uni-Directional	
Product: Jet Fuel	
Pipe Outer Diameter (mm): 355.6	
Maximum Operating Pressure (kpa): 3102	
Installation Number(s): 3, 4	
Seg No.: 003	From: d-65-H/92-G-3 To: a-43-J/92-G-03
Flow Direction: Uni-Directional	
Product: Jet Fuel	
Pipe Outer Diameter (mm): 355.6	
Maximum Operating Pressure (kpa): 3102	
Installation Number(s): 5, 6, 7, 8, 9	
Seg No.: 004	From: d-65-H/92-G-3 To: a-75-H/92-G-03

Flow Direction: Uni-Directional		Maximum Operating Pressure (kpa): 1035
Product: Jet Fuel		Installation Number(s): 10, 11
Pipe Outer Diameter (mm): 609.6		
Seg No.: 005	From: a-75-H/92-G-03 To: a-43-J/92-G-03	
Flow Direction: Uni-Directional		Maximum Operating Pressure (kpa): 3102
Product: Jet Fuel		Installation Number(s): 12, 13, 14
Pipe Outer Diameter (mm): 355.6		
Technical Pipeline Permissions		
<p>Segment 1: Liquid Hydrocarbons, MOP: 1035 kPa, Unidirectional Segment 2: Liquid Hydrocarbons, MOP: 3102 kPa, Unidirectional Segment 3: Liquid Hydrocarbons, MOP: 3102 kPa, Unidirectional Segment 4: Liquid Hydrocarbons, MOP: 1035 kPa, Unidirectional Segment 5: Liquid Hydrocarbons, MOP: 3102 kPa, Unidirectional</p> <p>Piping & Instrumentation Diagram(s), MS-601 Revision B, dated January 16, 2017, MS-610 Revision B, dated January 16, 2017, MS-611 Revision B, dated January 16, 2017, MS-612 Revision B, dated January 16, 2017, MS-620 Revision B, dated January 16, 2017, MS-630 Revision B, dated January 16, 2017, MS-672 Revision A, dated August 31, 2016, MS-690 Revision A, dated August 31, 2016, submitted by Vancouver Airport Fuel Facilities Corporation.</p>		

GENERAL PERMISSIONS, AUTHORIZATIONS and CONDITIONS

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission, under section 25 (1) of the *Oil and Gas Activities Act*, hereby permits the Permit Holder referenced above to carry out the following activities subject to the conditions contained herein, any applicable exemptions and authorizations to construct and operate a pipeline to transmit jet fuel, as detailed in the Technical Specification Details table above.
2. The permissions and authorizations granted under this permit are limited to the area identified in the spatial data submitted to the Commission in the permit application as identified and dated above; herein after referred to as the 'activity area'.
3. In the area where two route options are proposed, the permit holder is authorized to construct the pipeline within one of the route options, but not both.

Petroleum and Natural Gas Act

4. Pursuant to section 138(1) of the *Petroleum and Natural Gas Act*, the Permit Holder is permitted to enter, occupy and use any unoccupied Crown land located within the activity area to carry out the oil and gas activities and related activities permitted, or authorized herein.
 - a) The permission to occupy and use Crown land does not entitle the Permit Holder to exclusive possession of the area.
 - b) The total disturbance within the activity area must not exceed the total approved disturbance footprint as referenced above.

AUTHORIZATIONS

Forest Act

5. The Commission, pursuant to section 47.4 of the *Forest Act*, hereby authorizes the removal of Crown timber from the activity area under the cutting permits associated with the Master Licence(s) as follows:

Master Licence to Cut No.: M02416

Cutting Permit No.: 1

Timber Mark No.: MTB969

Total New Cut: 3.4 ha.

Forest District: (DCK) Chilliwack Natural Resource District

Region: Coastal

6. The cutting permits are deemed spent upon the submission of the post-construction plan or upon either the cancellation or expiry of the activities authorized under the permit.

CONDITIONS

Notification

7. A notice of construction start must be submitted prior to the commencement of activities under this permit 48 hours before or as per the relevant legislation if longer than 48 hours. Notification must be submitted via Kermit for pipelines and facilities.
8. Within 60 days of the completion of construction activities under this permit, the Permit Holder must submit to the Commission a post-construction plan as a shapefile and PDF plan accurately identifying the location of the total area actually disturbed under this permit. The shapefile and plan must be submitted via eSubmission.
9. At least ten (10) working days prior to the commencement of any changes in or about a stream associated with maintenance activities, the Permit Holder must provide a notice of works to any First Nation(s) who may have Aboriginal Interests identified, as per the BC First Nations Consultative Areas Database, within the area in which the works are to occur.
10. A notice of maintenance activities must be submitted, as per the relevant Commission process at the time of submission, at least two (2) working days prior to the commencement of any changes in or about a stream associated with maintenance activities.
11. The Permit Holder must notify any First Nations who may have aboriginal interests identified, as per the BC First Nations Consultative Areas Database, a minimum of five (5) working days prior to commencement of construction.
12. The Permit Holder must notify Tsleil-Waututh Nation of any in-stream works at the marine terminal site a minimum of five (5) working days prior to commencement of activities.

General

13. The rights granted by this permit in relation to unoccupied Crown land are subject to all subsisting grants to or rights of any person made or acquired under the *Coal Act, Forest Act, Land Act, Mineral Tenure Act, Petroleum and Natural Gas Act, Range Act, Water Sustainability Act* or *Wildlife Act*, or any extension or renewal of the same.
14. The Permit Holder must not assign, sublicense or permit any person other than its employees, contractors or representatives, to use or occupy any Crown land within the activity area without the Commission's written consent.
15. The Permit Holder must ensure that any Crown land within the activity area is maintained in a condition so as to minimize hazards, including but not limited to hazards associated with storage of materials and equipment.

16. The Permit Holder must ensure that any Crown land within the activity area is maintained free of garbage, debris and unused equipment.
17. The Permit Holder must prepare a Security Management Plan before the commencement of activities, and must make a copy of the Security Management Plan available upon the request of the Commission.
18. The Permit Holder must keep a copy of the Security Management Plan on the activity area, and ensure that the security management measures identified in the Security Management Plan are implemented during activities.

Environmental

19. Construction activities must not result in rutting, compaction or erosion of soils that cannot be reasonably rehabilitated to similar levels of soil productivity that existed on the activity area prior to the construction activities taking place.
20. Any temporary access must be constructed and maintained in a manner that provides for proper surface drainage, prevents pooling on the surface, and maintains slope integrity.
21. The Permit Holder must make reasonable efforts to prevent establishment of invasive plants on the activity area set out in the Authorized Activities table above resulting from the carrying out of activities authorized under this permit.
22. Following completion of construction associated with the associated activities set out in the Activities Approved table above, the Permit Holder must, as soon as practicable:
 - a) decompact any soils compacted by the activity;
 - b) if natural surface drainage pattern was altered by the carrying out of the activity, the Permit Holder must restore, to the extent practicable, to the drainage pattern and its condition before the alteration; and
 - c) re-vegetate any exposed soil on the activity area including, where necessary, using seed or vegetative propagules of an ecologically suitable species that:
 - (i) promote the restoration of the wildlife habitat that existed on the area before the oil and gas activity was begun; and
 - (ii) stabilize the soil if it is highly susceptible to erosion.
 - d) Following completion of construction activities authorized under this permit, any retrievable surface soils removed from the activity area must be redistributed so that the soil structure is restored, to the extent practicable, to its condition before the activity was begun.

Clearing

23. The Permit Holder is permitted to fell any trees located on Crown land within 1.5 tree lengths of the activity area that are considered to be a safety hazard according to *Workers Compensation Act* regulations and must be felled in order to eliminate the hazard. Trees or portions of these trees that can be accessed from the activity area without causing damage to standing timber may be harvested.
24. The holder of the cutting permit must pay to the government, stumpage and any waste billing determined in accordance with the terms of this authorization.
25. The authorized cutting permit does not grant the Permit Holder the exclusive right to harvest Crown timber from the activity area. Authority to harvest some or all of the timber may be granted to other persons. The Permit Holder's right to harvest timber applies to any timber found on the site at the time they undertake harvesting activities.
26. All harvested Crown Timber must be marked with the cutting permit's associated Timber Mark.
27. Stumpage for cutting Permits falling within the Coast Area, as defined in the Coast Appraisal Manual (Manual) will be calculated in accordance with the Manual (volume based).
28. Any waste assessments applied under the Master Licence to Cut are subject to the merchantability specifications and monetary waste billing requirements in the Provincial Logging Residue and Waste Manual specific to the region associated with the Cutting Permit authorization.

Water Course Crossings and Works

29. Stream, lake and wetland crossings must be constructed in accordance with the methods and any mitigations, as specified in the application.
30. In-stream activities within a fish bearing stream, lake or wetland must occur:
- during the applicable reduced risk work windows as specified in the Guidelines for Reduced Risk Instream Work Windows Ministry of Environment, Lower Mainland Region (March, 2006);
 - in accordance with alternative timing and associated mitigation recommended by a Qualified Professional and accepted by the Commission; or
 - in accordance with an authorization or letter of advice from Fisheries and Oceans Canada that is provided to the Commission.
31. At any time, the Commission may suspend instream works authorized under this permit. Suspensions on instream works will remain in place until such time as the Commission notifies permit holders that works may resume. Reasons for suspension of works may include, but are not limited to, drought conditions and increased environmental or public safety risks
32. Following initial construction, stream, lake and wetlands crossings are authorized for necessary pipeline maintenance activities on the activity area except for:
- stream bank or stream bed revetment works in a stream classified as S1, S2, S3, S4 or S5;
 - pipe replacement within the stream channel where the original application specified a trenchless crossing method and the planned works involve a trenched crossing method;
 - permanent alteration of a stream bank;
33. The Permit Holder must ensure any instream works related to pipeline maintenance are planned and overseen by a qualified professional. This individual must assess and determine whether planned works pose a risk to any of the features listed below, and is responsible for developing and implementing mitigation measures to reduce any potential impacts on these features, as required:
- Fish or important fisheries habitat;
 - Species identified as special concern, threatened, or endangered under the federal *Species at Risk Act*, or
 - Species identified by Order as a species at risk under the *Forest and Range Practices Act* or the *Oil and Gas Activities Act*.
- This assessment must be provided to the Commission upon request.
34. Open cut crossings and works within streams, lakes or wetlands must be planned and conducted in accordance with the following requirements:
- An open cut of a stream classified as S1, S2, S3 or S4 must not occur, unless the stream is frozen to its bed or is completely dry with no evidence of subsurface flow;
 - Unless otherwise authorized by Fisheries and Oceans Canada, spawning gravels must not be disturbed when redds that contain eggs or alevins are present. The authorization must be provided to the Commission; and
 - Channels, banks and beds of streams, including any disturbed stable natural material must be restored, to the extent practicable, to the structure and conditions that existed before the crossing construction was initiated.
35. Flow isolation crossings and works must be planned and conducted in accordance with (b) and (c) of the previous condition and the following additional requirements:
- Construction of the crossing or works, including the location and operation of any equipment, must be isolated from water flowing in the stream;
 - Water from flumes, pump-arounds, diversions, or other methods must be released to downstream areas in a manner that avoids erosion or sediment release;

- c) Pump intakes must not disturb beds of fish bearing streams, except as necessary to ensure safe installation and operation of equipment, and must be screened with maximum mesh sizes and approach velocities in accordance with the Fisheries and Oceans Canada Freshwater Intake End-of-Pipe Fish Screen Guideline; and
 - d) Water flows downstream of in-stream construction sites must be maintained at volume and discharge consistent with upstream flows.
36. Mechanical stream crossings for temporary access along pipeline right of way, must be constructed, maintained and deactivated according to the following requirements, as applicable:
- a) Only bridges and culverts, may be constructed at stream crossings;
 - b) The Permit Holder must ensure that permanent bridges are designed and fabricated in compliance with:
 - (i) the Canadian Standards Association Canadian Bridge Design Code, CAN/CSA-S6; and
 - (ii) soil property standards, as they apply to bridge piers and abutments; set out in the Canadian Foundation of Engineering Manual.
 - c) Except with leave of the Commission, the Permit Holder must ensure that:
 - (i) culverts are designed and fabricated in compliance with the applicable:
 - (a) Canadian Standards Association CSA G401, Corrugated Steel Pipe Products; or
 - (b) Canadian Standards Association Standard CSA B1800, Section B182.2, Plastic Non-pressure Pipe Compendium; or
 - (ii) Any pipe installed in lieu of a culvert is of at least equivalent standard and strength as any culvert as specified above.
 - d) Except with leave of the Commission, the Permit Holder must ensure that bridges or culverts meet the criteria set out in (i), (ii) or (iii) below:
 - (i) the bridge or culvert is designed to pass the highest peak flow of the stream that can reasonably be expected within the return periods set out in column 2 the table below for the period the Permit Holder anticipates the structure will remain on site, as set out in column 1 of the table below:

Column 1 Anticipated period crossing structure will remain on site	Column 2 Peak flow period
Bridge or culvert, 3 years or less	10 years
Bridge other than a bridge within a community watershed, more than 3 years but less than 15	50 years
Bridge within a community watershed, more than 3 years	100 years
Bridge, 15 years or more	100 years
Culvert, more than 3 years	100 years

- (ii) The bridge, or any component of the bridge:
 - (a) is designed to pass expected flows during the period the bridge is anticipated to remain on the site;
 - (b) is constructed, installed and used only in a period of low flow; and
 - (c) is removed before any period of high flow begins.

- (iii) The culvert:
 - (a) is a temporary installation, and the Permit Holder does not expect to subsequently install a replacement culvert at that location;
 - (b) is not installed in a stream, when the stream contains fish;
 - (c) is sufficient to pass flows that occur during the period the culvert remains on the site;
 - (d) is installed during a period of low flow; and
 - (e) is removed before any period of high flow begins.
- e) Bridge or culvert abutments, footings and associated scour protection must be located outside the natural stream channel and must not constrict the channel width;
- f) Wetland crossings must be constructed, maintained and removed in accordance with the following:
 - (i) Organic cover within and adjacent to the wetland must be retained;
 - (ii) Minimize erosion or release of sediment within the wetland;
 - (iii) Any padding materials must be placed on the wetland surface only and must not be used for infilling;
 - (iv) Any padding materials must be removed as soon as practicable following construction, considering weather and ground conditions; and
 - (v) The wetland, including banks and bed, must be restored, to the extent practicable, to the condition that existed before the crossing was initiated.

Archaeology

37. An Archaeological Impact Assessment (AIA) is required for the proposed development area prior to any development activities taking place.

An AIA report must be submitted to the Commission as soon as practicable.

If artifacts, features, materials or things protected under section 13(2) of the Heritage Conservation Act are identified the permit holder must, unless the permit holder holds a permit under section 12 of the Heritage Conservation Act issued by the Commission in respect of that artifact, feature, material or thing:

- a. immediately cease all work in the vicinity of the artifacts, features, materials or things;
- b. immediately notify the Commission and the Archaeology Branch of the Ministry of Forests, Lands and Natural Resource Operations; and
- c. refrain from resuming work in the vicinity of the artifacts, features, materials or things except in accordance with an appropriate mitigation plan that has been prepared in accordance with the Heritage Conservation Act and approved by the Archaeology Branch of the Ministry of Forests, Lands and Natural Resource Operations.

ACTIVITY SPECIFIC DETAILS PERMISSIONS, and CONDITIONS

PIPELINES

Land Area Number: 100003118

Pipeline Project Number: 000024381

All permissions for this activity are subject to the following conditions:

Pipeline Conditions

38. Changes must not be made to pigging design, and to above ground valves and piping, unless:

- a. the changes do not affect direct connections to pipelines and facilities;

- b. there are no changes to approved pressure protection, H2S protection or isolation;
 - c. there is no substantive impact to any aspect of the project that was included in the consultation;
and
 - d. the design and operation of the pipeline continues to meet all regulatory requirements and the requirements of CSA Z662.
39. At least 14 days prior to the start-up of the marine terminal, the permit holder must contact the Commission by email (OGCPipelines.Facilities@bcogc.ca, referencing the application area number) to coordinate and complete an inspection.
40. The permit holder must complete and submit a noise survey for the marine terminal, as directed in the BC Noise Control Best Practices Guideline, to the Commission (OGCPipelines.Facilities@bcogc.ca, referencing the application area number) within 6 months of commencement of operations. The Commission may require additional sound monitoring surveys or noise impact assessments to be completed at any time once the facility is in operation.
41. Prior to commencement of operations at the marine terminal, the permit holder must provide to the Commission (OGCPipelines.Facilities@bcogc.ca, referencing the application area number) a copy of the facility Emergency Shutdown Systems Logic Chart stamped by a Professional Engineer indicating that the shutdown systems have been inspected and tested.
42. The permit holder must submit the post HAZOP Issued for Construction (IFC) Piping and Instrumentation Drawings (P&IDs), and a list documenting any design differences between IFC P&IDs and the P&IDs submitted to the Commission for the issuance of this permit, to the Commission (OGCPipelines.Facilities@bcogc.ca, referencing the application area number) at least 2 weeks prior to the commencement of any field construction of process equipment and piping at the marine terminal.
43. Except with leave of the Commission, within 12 months of commencement of liquid hydrocarbons transmission to Tank Farm 2 at YVR Airport, the permit holder must submit to the Commission the results and interpretation of a high resolution in-line inspection tool run to establish an accurate position of the pipeline (GEOPIG) and to detect pipe deformation and defects.
44. The permit holder must contact the Commission via email at OGCPipelines.Facilities@bcogc.ca (referencing the application area number) at least 48 hours in advance of the start of construction of the pipeline. A Commission representative may coordinate an inspection prior to or during construction of the pipeline.
45. Prior to start of construction of the marine terminal, the Geotechnical report, stamped by a Professional Engineer registered in BC, must be submitted to the Commission (OGCPipelines.Facilities@bcogc.ca, referencing the application area number).
46. The permit holder must conduct a facility start up meeting prior to commencing operations to review the Emergency Response Plan with all potential permit holder emergency responders. The BCOGC must be notified in writing at least 30 days prior to the meeting by submitting the, "OGC Notification of Facility/Producing Well Start-up Modification Meeting" form found at: <http://www.bcogc.ca/industry-zone/documentation/Emergency-Response-and-Safety>.

ADVISORY GUIDANCE

1. Construction plan 17647, Sheet 1-21 is for the Permit Holder's internal reference only and was not reviewed as a decision tool for this permit, nor does it form an integral part of this permit.
2. The permit holder should be aware that there may be First Nation's traditional, cultural, or spiritual activities occurring concurrently with maintenance activities, as well as areas of current use or cultural resources that overlap the activity area. All reasonable efforts should be made to minimize interference with those activities while carrying out the activities authorized herein.
3. Appropriate tenure may be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered an application for all subsequent applicable *Land Act* tenures. Upon the Commission's acceptance of the post-construction plan no further applications for replacement tenure are required.
4. The term "unused equipment" has the same definition as in the Drilling and Production Regulation.

5. The activity area, with the exception of temporary workspace ancillary numbers 00156648, 00156632, and 00156649, must be confined to the area approved in the Certified Project Description of the associated Environmental Assessment Certificate.

All pages included in this permit and any attached documents form an integral part of this permit.



Ken Paulson, P. Eng
Executive Vice President and Chief Operating Officer
Authorized Signatory and Commission Delegated Decision Maker

Copied to:

Land Agent: CCI Solutions

First Nations: Seabird Island First Nation, Squamish Nation, Katzie First Nation, Stz'uminus First Nation, Tsleil-Waututh Nation, Penelakut Tribe, Cowichan Tribes, Lyackson First Nation, Musqueam Indian Band, Semiahmoo First Nation, Lake Cowichan First Nation, Halalt First Nation, Tsawwassen First Nation, People Of The River Referrals Office, Sto:lo Nation, Sto:lo Tribal Council, Soowahlie First Nation, Skawahlook First Nation, Shxw'ow'hamel First Nation, Hwlitsum

Landowners/Rights Holders

Ministry of Forests District Office: (DCK) Chilliwack Natural Resource District

Work Safe BC

OGC Compliance and Enforcement

OGC Community Relations