

July 27, 2022

Coastal GasLink Pipeline Ltd.
450 - 1st Street SW
Calgary, AB T2P 5H1

Attention: Coastal GasLink Pipeline Ltd.

RE: Determination of Application Number 100116223

Permit Holder: Coastal GasLink Pipeline Ltd.
Date of Issuance: July 27, 2022
Effective Date: July 27, 2022
Application Submission Date: July 13, 2022
Application Determination Number: 100082252

AUTHORIZATIONS and CONDITIONS

AUTHORIZATIONS

Forest Act

1. 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 permit(s) associated with the Master Licence(s) as follows:

Master Licence to Cut No.: M02614
Cutting Permit No.: 36
Timber Mark No.: MTD641
Total New Cut: 125.28
Forest District: (DPG) Prince George Natural Resource District
Region: Interior

Master Licence to Cut No.: M02615
Cutting Permit No.: 21
Timber Mark No.: MTD642
Total New Cut: 178.85
Forest District: (DVA) Vanderhoof Natural Resource District
Region: Interior

2. The cutting permit(s) 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

3. A notice of construction start must be submitted, as per the relevant Commission process at the time of submission, at least 48 hours prior to the commencement of activities under this permit.

Clearing/Forest Act

4. 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.

5. 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.
6. 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.
7. All harvested Crown Timber must be marked with the cutting permit's associated Timber Mark.
8. 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.
9. Stumpage will be calculated in accordance with the Interior Appraisal Manual as amended from time to time. In the current version of the Interior Appraisal Manual, stumpage will be determined in accordance with Table 6-3.

ADVISORY GUIDANCE

1. Unless a condition or its context suggests otherwise, terms used in this approval have the same meaning as the Environmental Protection and Management Regulation under the *Oil and Gas Activities Act*.

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



Corey Scofield
Authorized Signatory
Commission Delegated Decision Maker

Copied to:

Land Agent – Roy Northern Land Service Ltd.
Ministry of Forests District Office - (DPG) Prince George Natural Resource District
Ministry of Forests District Office - (DVA) Vanderhoof Natural Resource District

October 21, 2019

Coastal GasLink Pipeline Ltd.
450 – 1st Street SW
Calgary, Alberta T2P 5H1

Attention: Coastal GasLink Pipeline Ltd.

RE: Permit Extension for Application Determination No. 100082252, OGC Legacy No. 9708368

Permit Holder: Coastal GasLink Pipeline Ltd.
Permit Date of Issuance: May 15, 2015
Extended Expiration Date: October 23, 2020
Application Determination No.: 100082252
Pipeline Project No.: 000023572

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission (the "Commission"), under section 32(5) of the *Oil & Gas Activities Act*, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments and any additional conditions as set out herein.
3. The prescribed period of this permit has been extended and will expire on October 23, 2020 if the Permit Holder has not begun the activity by this date.

This extension forms an integral part of the permit and should be attached thereto.



James O'Hanley
Vice President, Applications

Copied to:

OGC, Compliance & Enforcement

April 10, 2019

Coastal GasLink Pipeline Ltd.
450 – 1st Street SW
Calgary, Alberta T2P 5H1

Attention: Coastal GasLink Pipeline Ltd.

RE: Permit Extension for Application Determination No. 100082252, OGC Legacy No. 9708368

Permit Holder: Coastal GasLink Pipeline Ltd.

Permit Date of Issuance: May 15, 2015

Extension Date of Issuance: April 10, 2019

Extended Expiration Date: October 23, 2019

Application Determination No.: 100082252

Pipeline Project No.: 000023572

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission (the "Commission"), under section 32(5) of the *Oil & Gas Activities Act*, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments, corrections, and any additional conditions as set out herein.
3. The prescribed period of this permit has been extended and will expire on October 23, 2019 if the Permit Holder has not begun the activity by this date.

This extension forms an integral part of the permit and should be attached thereto.



James O'Hanley
Vice President, Applications

Copied to:

OGC Compliance & Enforcement



November 5, 2018

Coastal GasLink Pipeline Ltd.
450 - 1st Street SW
Calgary, Alberta T2P 5H1

Attention: Coastal GasLink Pipeline Ltd.

RE: Pipeline Permit (Section 4)

Permit Holder: Coastal GasLink Pipeline Ltd.
Date of Issuance: November 5, 2018
Effective Date: November 5, 2018
Application Submitted Date: January 31, 2015
Application Determination Number: 100082252
Legacy OGC File Numbers: 9708368

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, indicated in the Approved Activities table above, subject to the conditions contained herein, any applicable exemptions and authorizations:
 - a) To construct and operate a pipeline as detailed in the Technical Specification Details tables below.

Seg No.: 1	From: c-2-F/93-J-6 To: c-80-G/93-K-1
Flow Direction: Uni-Directional	Maximum Operating Pressure (kpa): 13375
Product: Natural Gas - Sweet	Max H₂S (mol%): 0.002

2. The permissions and authorizations granted under this permit are limited to the areas described in the following construction plans by Midwest Surveys Land Surveying Ltd. submitted January 31, 2015:

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-001, Revision 0, Sheet 1 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-002, Revision 0, Sheet 2 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-003, Revision 0, Sheet 3 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-004, Revision 0, Sheet 4 of 23, dated October 8, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-005, Revision 0, Sheet 5 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-006, Revision 0, Sheet 6 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-007, Revision 0, Sheet 7 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-008, Revision 0, Sheet 8 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-009, Revision 0, Sheet 9 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-010, Revision 0, Sheet 10 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-011, Revision 0, Sheet 11 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-012, Revision 0, Sheet 12 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-013, Revision 0, Sheet 13 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-014, Revision 0, Sheet 14 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-015, Revision 0, Sheet 15 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-016, Revision 0, Sheet 16 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-017, Revision 0, Sheet 17 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-018, Revision 0, Sheet 18 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-019, Revision 0, Sheet 19 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-020, Revision 0, Sheet 20 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-021, Revision 0, Sheet 21 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-022, Revision 0, Sheet 22 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-023, Revision 0, Sheet 23 of 23, dated October 8, 2014.

3. The permission to occupy and use Crown land excludes the area within *Land Act* section 16 map reserve 7404780 and 7405556.

Land Act

4. The Commission, pursuant to section 39 of the *Land Act*, hereby authorizes the occupation and use of any Crown land located within the activity area.
 - a) A licence authorized under section 39 of the *Land Act* for the Crown land portion of this application will follow. The Permit Holder is subject to the conditions contained in the Licence.
 - b) The authorization to occupy and use Crown land under the Licence expires two years from the date of issuance, unless the Commission has received notice of construction start, or this permit is otherwise extended, suspended, cancelled, surrendered or declared spent.
 - c) The authorization to occupy and use Crown land does not entitle the Permit Holder to exclusive possession of the activity area.

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.: M02341

Cutting Permit No.: 14

Timber Mark No.: MTB 287

Total New Cut: 125.28

Forest District: (DPG) Prince George Natural Resource District

Region: Interior

Master Licence to Cut No.: M02342

Cutting Permit No.: 6

Timber Mark No.: MTB 288

Total New Cut: 178.85

Forest District: (DVA) Vanderhoof Natural Resource District

Region: Interior

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.
7. The cutting permit does not include any areas that are located within:
 - a) a Community Forest Agreement, First Nations Woodland Licence, Tree Farm Licence, Timber Licence, Occupant Licence to Cut or Woodlot Licence unless there is an agreement with the Agreement or Licence holder to harvest the timber located within the Agreement or Licence area under the relevant Master Licence to Cut and associated cutting permit indicated below, or
 - b) a subsisting cutting permit issued to another party.

CONDITIONS

Notification

8. At least 30 days prior to commencing any construction activities under this permit, the permit holder must provide the Carrier Sekani Tribal Council, Lheidli T'enneh First Nation, Nadleh Whut'en First Nation, Nak'azdli Band, Saik'uz First Nation, and Yekooche First Nation the proposed construction schedule.

9. At least one week prior to the beginning of each month, the permit holder must submit a schedule to the Commission indicating the location and timing of horizontal directional drilling, microtunnelling or in-stream work planned to commence the following month.
10. Unless a submission has been made under condition 11, the permit holder must annually, on or before March 31 of each year, submit to the Commission a Post Construction Plan map showing the location and nature of any construction activities completed under this permit during the previous calendar year.
11. Within 60 days of completion of construction activities under this permit, the permit holder must submit to the Commission a Post Construction Plan as a shape file and PDF plan accurately identifying the location of the total area actually disturbed under this permit, and a written statement indicating whether the permit holder has complied with the permit conditions and applicable legislation relating to the design and construction of the activities authorized under this permit. The written statement must be signed by the permit holder and specify the date on which it was made. The shapefile and plan must be submitted via eSubmission.
12. 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.
13. 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.

First Nations

14. At the completion of construction activities the permit holder must restore any identifiable trails traditionally used by First Nations that were impacted by construction, to the level of access that existed prior to construction, if the location of the trail is made known to the permit holder by a First Nation or the Commission prior to the permit holder's notice of construction start.
15. Prior to commencement of construction activities on any portion of the pipeline right of way or work space, the permit holder must consider relevant information made available by a First Nation in the development of site specific mitigation plans. Relevant information includes culturally modified trees, cache pits, house pits, grave sites, pictograph sites, smoke houses, cabins, artifacts and areas traditionally used for camping, hunting, fishing and berry picking located within the pipeline right of way or work space.

The permit holder must submit, at least 30 days prior to the commencement of construction, the information, along with site-specific mitigation plans for any of the specified items identified that may be impacted by construction activities, to the satisfaction of the Commission.

Clearing

16. Clearing and site preparation must:
 - a) be limited to areas needed for the pipeline right of way and work space;
 - b) inclusive of work space, be confined to the construction corridor; and
 - c) not exceed 600.92 ha on Crown land.
17. Except with leave of the Commission, clearing and site preparation, inclusive of work space, must not occur within:
 - a) 100 metres of where water is diverted by a waterworks, water supply well or water storage reservoir;
 - b) an area containing a mineral lick, bald eagle, osprey, goshawk or great blue heron nest unless the mineral lick or nest is not damaged by activities authorized under this permit;
 - c) a permanent sample site on Crown Land used as a snow course;
 - d) an area that would require harvest or disturbance of whitebark pine trees; and
 - e) a wetland classified as W2, except WL-2023 and WL-2333, as identified in the construction plans, or to facilitate crossing of that wetland.
18. Clearing and site preparation must not occur within a RMA except:

- a) the pipeline right of way, temporary workspace and shooflies, as shown on the construction plans;
 - b) to facilitate a stream or wetland crossing;
 - c) where it does not involve new clearing and existing clearings do not have a reestablished vegetative cover; or
 - d) with leave of the Commission.
19. Clearing and site preparation, inclusive of work space, must not occur within a wildlife tree retention area except:
- a) as shown on the construction plans; or
 - b) with leave of the Commission.
20. Except as shown on the construction plans or with leave of the Commission, incremental clearing for additional work space is not permitted within:
- a) a wildlife habitat area;
 - b) an ungulate winter range; or
 - c) old growth management areas.
21. Except with leave of the Commission, incremental clearing for additional work space is not permitted within the riparian reserve zone of streams with a riparian classification of S1-S3.
22. Clearing and site preparation, except shooflies identified in the construction plans referenced in Permissions, must be confined to the area approved in the Certified Project Description of the associated Environmental Assessment Certificate.
23. Clearing and site preparation must be limited to the area necessary to safely construct the pipeline, taking into account the influence of terrain, safe equipment operations, clearing debris, worker safety and egress, protection of adjacent infrastructure, and other conditions relevant to safe construction operations.
24. Clearing and site preparation, other than those identified in the construction plans referenced in Permissions, must be located on any previously disturbed areas located within the construction corridor unless:
- a) a previously disturbed area is less than 2 hectares;
 - b) such clearing and site preparation is required to avoid one or more of the areas or features identified in Conditions 17, 18, 19, or 20; or
 - c) the permit holder is granted leave by the Commission to carry out such clearing and site preparation.
25. The permit holder must maintain vegetation and minimize stumping or ground disturbance within 10 metres of the high water mark of a fish bearing watercourse and delay grading of the banks of watercourses until immediately before construction of either pipeline crossings or crossings for vehicle access, except where necessary to address terrain related constraints, safe equipment operations, clearing debris, worker safety and egress, protection of adjacent infrastructure or environmental values, and other conditions relevant to safe construction operations. Appropriate erosion and sediment control structures must be installed as necessary to ensure debris and soil are not deposited into watercourses.
26. The permit holder must fall any tree that is harvested within its tree length of a stream or a wetland away from the stream or wetland, and must immediately remove any debris or soil deposited below the high water mark.
27. 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.
28. All harvested Crown Timber must be marked with the cutting permit's associated Timber Mark.
29. Timber harvesting under the above cutting permits must not commence until the Permit Holder has submitted the relevant appraisal documents to the Ministry of Forests, Lands and Natural Resource Operations and Rural Development and received confirmation of the stumpage rate.

30. Any timber removed from the Permit Area must be scaled in accordance with scaling requirements of the *Forest Act*.
31. Stumpage for cutting permits falling within the Interior Area, as defined in the Interior Appraisal Manual (Manual) will be calculated in accordance with the Manual as amended from time to time. In the current version of the Manual, stumpage will be determined in accordance with Table 6-3 (volume based).
32. 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.

Wildlife

33. Except with leave of the Commission, the permit holder must not undertake clearing activities between May 1 and July 31 unless pre-clearing surveys are completed and, where appropriate, mitigation is implemented as per the methods outlined in the Wildlife and Wildlife Habitat Management Plan.
34. Except with leave of the Commission, the permit holder must implement the setbacks that are identified in Table 4-1-Section 10 of the Wildlife and Wildlife Habitat Management Plan (Summary of Mitigation for Wildlife and Wildlife Habitat-Bird Nests) for any clearing or significant maintenance activities within a wetland where an active waterfowl nest is present.
35. Except with leave of the Commission, the permit holder must not undertake any clearing activities within the Stuart River and associated RRZ between July 1 and June 15.
36. Except with leave of the Commission, the permit holder:
 - a) must not undertake clearing or significant maintenance activities within 200 metres of any active grizzly bear or black bear den that was identified by the survey conducted in accordance with condition 63, between December 1 and April 30; and
 - b) must implement the mitigations outlined in the Wildlife and Wildlife Habitat Management Plan and section 7 of the Environmental Management Plan.
37. Except with leave of the Commission, the permit holder:
 - a) must not undertake clearing or significant maintenance activities within 500 metres of any active wolverine den that was identified by the survey conducted in accordance with condition 63, between February 1 and August 1; and
 - b) must implement the mitigations outlined in the Wildlife and Wildlife Habitat Management Plan and section 7 of the Environmental Management Plan.
38. Except with leave of the Commission, the permit holder must not:
 - a) undertake clearing or significant maintenance activities within 200 metres of any fisher den that was identified by the survey conducted in accordance with condition 63;
 - b) undertake clearing or significant maintenance activities within 400 metres of any active fisher den that was identified by the survey conducted in accordance with condition 63, between March 15 and July 31; and
 - c) must implement the mitigations outlined in the Wildlife and Wildlife Habitat Management Plan and section 7 of the Environmental Management Plan.
39. When using aircraft to undertake activities associated with the permit, the permit holder must provide written instructions to the pilot specifying that flights must not, except in the event of an emergency situation:
 - a) directly approach, hover over, circle, or land near mountain goats, moose, elk, or caribou; and
 - b) directly approach, hover over or circle near, or land within 500 metres of known wolverine den between February 1 and June 30.
40. The permit holder must implement appropriate measures to minimize the obstruction of wildlife movement across the pipeline right of way during construction and operations.
41. The permit holder must collect and store garbage in a manner that does not attract bears or other wildlife.

Terrain Stability, Acid Rock Drainage and Mineral Leaching

42. Prior to operating the pipeline, the permit holder must submit a report, to the satisfaction of the Commission, for the monitoring and maintenance of ground and slope stability on areas where the stability:
- may be affected by clearing or construction of the pipeline; or
 - may affect the safe operation of the pipeline.

The report must be prepared by a qualified professional and must include an assessment of and monitoring plan for any areas where karst or ground subsidence may be located.

43. Prior to construction, the permit holder must submit an acid rock assessment and mitigation plan, to the satisfaction of the Commission, with respect to potentially acid generating (PAG) rock along the proposed pipeline route. The assessment and mitigation plan must include:
- the criteria used to classify acid rock drainage/metal leaching potential;
 - the process used to delineate PAG rock including desktop and field/laboratory assessments;
 - results of engineering evaluation of expected PAG rock locations and associated construction-related quantities;
 - additional planned characterization to complement initial assessment results;
 - protocols to be followed during construction to verify results of PAG characterization and engineering assessments;
 - a flowchart outlining material handling steps for confirmed PAG rock;
 - associated mitigation and monitoring programs for exposed in situ and disposed PAG rock;
 - mitigation selection criteria;
 - typical drawings and typical specifications for mitigation such as soil covers and rock slope face barriers (e.g., shotcrete and synthetic spray cover); and
 - gradational specifications for cover layer barriers composed of glacial till and/or other materials.

The assessment and mitigation plan must be prepared by a qualified professional. The permit holder must implement any protocols, steps, mitigation measures, monitoring, or recommended specifications in the assessment and mitigation plan that relate to items (e) through (j) above.

Stream, Wetland and Lake Crossings

44. Subject to sections 11 and 12 of the EPMR, crossings of non-fish bearing streams and wetlands must be constructed in accordance with the methods and any mitigations that are specified in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission.
45. Subject to sections 11 and 12 of the EPMR, crossings of fish bearing streams and wetlands must be constructed in accordance with the timing, methods and any mitigations that are specified in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission. Any contingency method specified in Construction Section 4 Supplemental Stream Crossings Submission may only be utilized with leave of the Commission.
46. Following initial construction, stream, lake and wetlands crossings are authorized for necessary pipeline maintenance activities on the activity area except for:
- works within the boundary of a provincial park;
 - 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;
 - works within a Temperature Sensitive Stream established by order under s. 27 of the Environmental Protection and Management Regulation; or

- f) works within a Fisheries Sensitive Watershed established by order under s. 28 of the Environmental Protection and Management Regulation.
47. 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:
- a) fish or important fisheries habitat;
 - b) species identified as special concern, threatened, or endangered under the federal *Species at Risk Act*, or
 - c) 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.

48. Open cut crossings of watercourses must be planned and conducted in accordance with the relevant detail in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission, and the following requirements:
- a) an open cut of a stream classified as S1, S2, S3, S4, S5 or S6 may only occur with leave of the Commission, unless the stream is frozen to its bed or is completely dry with no evidence of subsurface flow;
 - b) where the streambed consists of rocks, pebbles or coarse gravel overlaying finer material, this material must be removed and stockpiled separately above the high water mark of the stream for replacement during restoration;
 - c) 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;
 - d) excavated materials must be contained using appropriate techniques, so that sediment-laden water and spoil do not re-enter the watercourse;
 - e) any sediment-laden trench water must be pumped onto stable surfaces in a manner that does not cause erosion of soils or release of suspended sediments to watercourses;
 - f) where feasible, aquatic vegetation and organic debris removed from the construction area must be salvaged and returned following trench backfilling; and
 - g) channels, banks and beds of streams or wetlands, 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. Fish streams must be restored based on pre-construction surveys, including restoration of areas containing rearing potential with adequate stream depth and in-stream structures and restoration of spawning areas with gravel placement.
49. Open cut crossings of wetlands must be planned and conducted in accordance with the relevant detail in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission, and the following requirements:
- a) where the wetland substrate consists of rocks, pebbles or coarse gravel overlaying finer material, this material must be removed and stockpiled separately above the high water mark of the wetland for replacement during restoration;
 - b) materials referred to in (a) must be excavated and stockpiled in a manner that minimizes sediment dispersal within the wetland and must be replaced in a manner that minimizes disturbance to the wetland following pipeline installation;
 - c) channels, banks and beds of wetlands, 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;
 - d) excavated materials must be contained using appropriate techniques, so that that sediment-laden water and spoil do not re-enter the wetland; and

- e) any sediment-laden trench water must be pumped onto stable surfaces in a manner that does not cause erosion of soils or release of suspended sediments to watercourses.
50. Flow isolation crossings must be planned and conducted in accordance with the relevant detail in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission, and in accordance with (b) to (g) of condition 48 and the following additional requirements:
- a) crossings of fish-bearing streams may commence only after confirming that sufficient equipment and supplies are available to complete the crossing in an efficient and timely manner;
 - b) after the installation or removal of flow isolation works, crossing construction within the stream channel, including the location and operation of any equipment, must be isolated from water flowing in the stream;
 - c) activities must be assessed by a qualified professional for suspension if high stream flows present an increased risk to effectively completing the intended crossing installation technique;
 - d) welding, coating, weighting and, where applicable testing, of the pipe must be completed prior to commencement of trenching within fish-bearing water bodies;
 - e) water from flumes, pump-arounds, diversions, or other methods must be released to downstream areas using dissipation structures to avoid causing erosion or sediment release;
 - f) except with leave of the Commission, pump intakes must not disturb beds of streams or wetlands 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", as amended from time to time;
 - g) water flows downstream of in-stream construction sites must be maintained consistent with upstream flows; and
 - h) ditch plugs must be maintained at or near the banks of the crossing and left in place until the crossing has been initiated.
51. Construction or maintenance activities within a fish bearing stream or wetland must occur:
- a) during the applicable reduced risk work windows as specified in the Region 7 Omineca – Reduced Risk Timing Windows for Fish and Wildlife;
 - b) in accordance with alternative timing and associated mitigation recommended by a qualified professional and accepted by the Commission; or
 - c) in accordance with an authorization or letter of advice from Fisheries and Oceans Canada that is provided to the Commission.
52. Equipment to be used in or adjacent to a stream, lake or wetland must be clean or otherwise free of external grease, oil or other fluids, excessive muds, soil and vegetation, prior to entering the waterbody.
53. Within the RMA, generators and other stationary equipment that require refueling must be situated in secondary containment capable of containing the fuel capacity of the generators.
54. Except with leave of the Commission, prior to construction activities in a stream classified as S1, S2, S3 or S4; or the RRZ of a stream classified as S1, S2, or a S3 stream, the permit holder must develop a Water Quality Monitoring Program to the satisfaction of the Commission. The Water Quality Monitoring Program must:
- a) be developed, implemented and supervised by a qualified professional;
 - b) be consistent with the Ministry of Environment's approved water quality guidelines, as amended from time to time (the BC Water Quality Guidelines);
 - c) include environmental water quality monitoring, including field monitoring of turbidity, pH and total suspended solids for potential exceedance of BC Water Quality Guidelines for the protection of aquatic life or, where they exist, the Water Quality Objectives for a specific watercourse, as they may be amended from time to time;

- d) require pre and post construction monitoring upstream (baseline) and downstream of the location of potential disturbance from construction activities;
 - e) require sampling that is representative of water quality variation across the stream; and
 - f) require documentation of pre and post construction monitoring completed under e.
55. Except with leave of the Commission, prior to construction activities in a wetland, the permit holder must develop a wetland Water Quality Monitoring Program to the satisfaction of the Commission. The wetland Water Quality Monitoring Program must:
- a) be developed, implemented and supervised by a qualified professional;
 - b) be consistent with the BC Water Quality Guidelines;
 - c) include environmental water quality monitoring for potential exceedance of the BC Water Quality Guidelines for the protection of aquatic life or, where they exist, the Water Quality Objectives for a specific wetland, as they may be amended from time to time;
 - d) where appropriate, require pre and post construction monitoring proximal to the location of potential disturbance from construction activities;
 - e) require sampling that is representative of water quality variation across the pipeline right of way through wetlands with a riparian classification of W1; and
 - f) require documentation of pre and post construction monitoring completed under (d).
56. The permit holder must implement the Water Quality Monitoring Programs developed as per conditions 54 and 55 and do each of the following:
- a) provide records of documentation of all pre and post construction monitoring to the Commission;
 - b) immediately report to the Commission any exceedance of the BC Water Quality Guidelines for aquatic life or, where they exist, the Water Quality Objectives for a specific watercourse or wetland that persist for a period of 24 hours or greater, relative to the baseline; and
 - c) immediately take steps to address the factors producing any exceedance of the BC Water Quality Guidelines for aquatic life, relative to the baseline, should any exceedance persist for a period of 24 hours or greater, and where such steps do not result in addressing the turbidity exceedance, promptly suspend construction operations at the site of activities causing the exceedance until effective solutions, satisfactory to the Commission, have been developed and implemented.
57. As part of the post construction monitoring program, the permit holder must, for all watercourse and wetland crossings:
- a) inspect and provide a report to the Commission that includes assessment of:
 - i. RMA stability;
 - ii. erosion risk to the watercourse;
 - iii. vegetation re-establishment within the RMA, including species composition, percent establishment, and presence of invasive plant species; and
 - iv. identify where contingency measures may be required to address the items in (i), (ii) or (iii).
- Where contingency measures are required, the permit holder must develop and implement an appropriate plan to the satisfaction of the Commission.
58. Prior to commencing construction on any pipeline stream crossing, the permit holder must:
- a) identify any new streams not described in the Construction Section 4 Supplemental Stream Crossings Submission;
 - b) for new streams or where there was outstanding fieldwork required for a stream described in the Construction Section 4 Supplemental Stream Crossings Submission, conduct the field work needed to complete stream classifications and identify the fish species presence for that stream, including any required confirmation of fish species presence in streams that were surveyed prior to issuance of this permit; and

- c) submit the results of any field work required under (b) to the satisfaction of the Commission. The results must clearly describe the management and mitigation measures that will be employed in order to minimize impacts to the species present and their habitat.
59. The permit holder must construct, maintain, and deactivate all mechanical stream crossings constructed for access within the operating area according to the following requirements, as applicable:
- a) To facilitate construction of a crossing, a machine is permitted to ford the stream a maximum of one time in each direction at the crossing location;
 - b) Only bridges, culverts, ice bridges, snow fills, or log fills may be constructed at stream crossings;
 - c) Notwithstanding (b), matting or steel plates may be used to cross streams classified as NCD, S4 or S6;
 - d) Permanent bridges must be 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.
 - e) Except with leave of the Commission,
 - i. any culverts used must be designed and fabricated in compliance with the Canadian Standards Association CSA G401, Corrugated Steel Pipe Products; or the Canadian Standards Association Standard CSA B1800, Section B182.2, Plastic Non-pressure Pipe Compendium, as applicable; and
 - ii. Any pipe installed in lieu of a culvert must be of at least equivalent standard and strength as any culvert specified above.
 - f) Except with leave of the Commission, bridges and culverts must 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 crossing structure will remain on site, as set out in column 1 in 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:
 - 1. is designed to pass expected flows during the period the bridge is anticipated to remain on the site;
 - 2. is constructed, installed and used only in a period of low flow; and
 - 3. is removed before any period of high flow begins.
- iii. the culvert:
 - 1. is a temporary installation, and the permit holder does not expect to subsequently install a replacement culvert at that location;
 - 2. is not installed in a stream, when the stream contains fish;

3. is sufficient to pass flows that occur during the period the culvert remains on the site;
 4. is installed during a period of low flow; and
 5. is removed before any period of high flow begins.
- g) Snow fills must consist of clean snow and may only be located on streams that are dry or frozen to the bottom during the period of construction, maintenance and use. Where periodic thaws are anticipated, measures must be in place to allow meltwater to pass through the snow fill, to ensure movement of fish is not impeded, and to prevent pooling on the upstream side of the snow fill. Snow fill and any installed culverts must be removed prior to spring snow melt.
- h) Ice bridges on fish bearing streams may only be constructed where sufficient water depth and stream flows prevent the bridge structure from coming in contact with the stream bottom.
- i) Water applied to construct an ice bridge on a water body must be sourced in accordance with the Water Sustainability Act unless:
- i. the water body is a stream with a stream channel width of at least 5 metres and is not designated as a sensitive stream under the Fish Protection Act, or has a riparian class of W1, W3, or L1;
 - ii. the water is sourced from the same water body proximal to the location on which the ice bridge is constructed;
 - iii. the water body is not within the boundaries of a public park;
 - iv. pump intakes do not disturb beds of streams or wetlands except as necessary to ensure safe installation and operation of equipment and are screened with a maximum mesh size and approach velocity in accordance with the Fisheries and Oceans Canada Freshwater Intake End-of-Pipe Fish Screen Guideline; and
 1. where the water body is a stream, the flow of water in the stream at the time and location of pumping exceeds 60 litres per second and the instantaneous pumping rate does not exceed 1% of the water flowing in the water body at the time and location the pumping occurs; or
 2. where the water body is a lake or pond, the cumulative volume of water withdrawn does not exceed 10 cm of lake or pond depth, calculated as the product of lake or pond surface area x 10 cm;
 - v. records of water withdrawal and corresponding streamflow measurements are maintained and provided to the Commission upon request.
- j) Bridge or culvert abutments, footings and associated scour protection must be located outside the wetted stream channel and must not constrict the channel width.
- k) Log fill stream crossings must be must be planned and conducted in accordance with the following requirements:
- i. Log fill crossings are authorized to be used in streams with a riparian classification of S6 only;
 - ii. Must not occur unless the stream is frozen to its bed or is completely dry;
 - iii. A separation layer of clean snow or geotextile must be placed in the stream prior to installation of log bundles;
 - iv. The crossing does not impede melt water from periodic thaws;
 - v. Log fills must be removed prior to spring snow melt; and
 - vi. Logs must be free from dirt and debris.
- l) 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

- 60. An Archaeological Impact Assessment (AIA) must be completed for all pipeline right of way and work space areas prior to commencement of construction activities.
- 61. The permit holder must, as soon as practicable, submit an AIA report to the Commission and provide a copy of the AIA report to the First Nations listed in condition 8.
- 62. 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
 - 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 Commission.

Environment

- 63. Prior to commencing clearing or site preparation on any portion of the pipeline right of way or work space, the permit holder must conduct a survey identifying any:
 - a) Bear, fisher or wolverine dens located within 200 metres of the pipeline right of way and work space, and within the construction corridor;
 - b) Western Toad breeding areas located within 100 metres of the pipeline right of way or workspaces, and any associated migration corridors;
 - c) vascular plants, mosses or lichens listed under the *Species at Risk Act* as endangered, threatened or special concern and located within the construction corridor; and
 - d) individual plants, plant communities or residences species identified as species at risk in a subsisting order issued under the *Forest and Range Practices Act* or the *Oil and Gas Activities Act* and located within or adjacent to the construction corridor.

The permit holder must submit the survey results, along with site-specific mitigation plans for any of items identified in a to d that may be impacted by construction activities, to the satisfaction of the Commission prior to notice of construction start.

- 64. 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 site prior to the construction activities taking place.
- 65. The permit holder must, as soon as practicable, restore recreation sites, recreation trails or recreation facilities established or authorized under the *Forest and Range Practices Act* that are affected by construction activities to their pre-construction condition to the Commission's satisfaction.
- 66. The permit holder must, as soon as practicable, restore range developments defined under the *Forest and Range Practices Act* that are affected by construction activities to their pre-construction condition to the Commission's satisfaction.
- 67. At the completion of construction activities the permit holder must restore any identifiable trails used by trappers that were impacted by pipeline construction, to the level of access that existed prior to construction, if the location of the trail is made known to the permit holder by the registered trapper for the area specific to the trail or by the Commission prior to the permit holder's notice of construction start.
- 68. In all locations where run-off from the area of the pipeline right of way or work space may flow into a watercourse, the permit holder must contour and stabilize banks and approach slopes and install berms, silt

fences, cross ditches, or implement other alternative effective measures as appropriate to minimize erosion and avoid sediment deposit into the watercourse.

69. The permit holder must undertake dust control measures to ensure that dust resulting from construction activities does not affect safe travel on a road or significantly impair the use and enjoyment of lawfully occupied permanent dwellings, significant public use areas or other similar areas.
70. The permit holder must undertake reasonable measures to mitigate noise from construction activity that has the potential to affect public safety or significantly impair the use and enjoyment of lawfully occupied permanent dwellings, significant public use areas during periods of use or other similar areas.
71. Upon completion of construction activities authorized under this permit, the permit holder must:
 - a) re-vegetate, using seed or vegetative propagules of an ecologically suitable species or implement other measures, to the satisfaction of the Commission, that promote the restoration of the wildlife habitat that existed on the area before the commencement of any works authorized under this permit, and stabilize the soil if it is highly susceptible to erosion; and
 - b) take reasonably practicable measures to limit or prevent vehicular access to and along, and to reduce sightlines along the pipeline right of way.
72. The permit holder must adhere to all timber hauling restrictions pertaining to the management of beetle infested timber recommended by the BC Ministry of Forests, Land, and Natural Resource Operations unless otherwise specified by the Commission.
73. The permit holder must ensure shooflies are constructed in a manner that provides for proper surface drainage, prevents pooling on the surface, and maintains slope integrity.

ACTIVITY SPECIFIC DETAILS PERMISSIONS, and CONDITIONS

PIPELINES

Pipeline Project Number: 000023572

Technical Pipeline Permissions

74. The permit holder is authorized to construct and operate the pipeline segment to transmit natural gas under a maximum operating pressure of 13375 kPa, and under a maximum concentration of H₂S of 0.002¹ mol% unidirectionally, and in accordance with piping & Instrumentation Diagram(s), 4703-03-LA-0S-002, revision RE-IFP, dated September 29rd, 2014. Notwithstanding the foregoing, changes may be made to pigging design, and to above ground valves and piping, provided that:
 - 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 a consultation under the Consultation and Notification Regulation; and
 - d) the design and operation of the pipeline continues to meet all regulatory requirements and the requirements of CSA Z662, as amended from time to time.

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

Pipeline Conditions:

75. Before beginning construction activities on any crossing of a road by the pipeline, the permit holder must submit, to the satisfaction of the Commission information, in tabular or other format, describing:

¹ Note: 0.002 mol% means 0.0016, mol%, rounded.

- a) the crossing location;
 - b) summary, including any outcomes, of engagement with the road tenure holder, primary road user or road owner;
 - c) whether the crossing will be constructed using trenchless methods;
 - d) the approximate dates and maximum time that traffic at the crossing is expected to be restricted or obstructed;
 - e) pipeline specifications at the crossings, including pipeline diameter, wall thickness, depth of cover and grade; and
 - f) maximum vehicular weights expected at the crossing location.
76. The permit holder must construct any road crossing consistent with information accepted by the Commission under condition 75.
77. At least 45 days prior to commencement of welding, the permit holder must submit to the Commission's satisfaction, a fracture arrest and mitigation program.
78. Where the hoop stress during the pressure test exceeds 100% SMYS, the permit holder must submit to the Commission the P-V test and the pressure test results before beginning operation of a pipeline.
79. At least 90 days prior to pipe-stringing activities in areas where geohazards are present, the permit holder must submit, to the satisfaction of the Commission:
- a) a geohazard assessment that includes:
 - i. a description of the geohazard(s) identified that have reasonable probability of impacting the pipeline, with the location of each geohazard illustrated on either a map or in a table; and
 - ii. specific design measures, such as materials to be used, installation procedures, protective structures, depth of cover, and monitoring that will be implemented to mitigate the geohazard(s) identified in (i); and
 - b) a field changes manual for geohazards that includes:
 - i. criteria for measures, including those identified in a(ii) above, that will be implemented to mitigate any additional geohazards identified during construction; and
 - ii. qualification requirements for field staff who will implement the field changes manual.
80. Except with leave of the Commission, within 12 months of commencement of gas transmission to the Kitimat Metering Station, 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.

ADVISORY GUIDANCE

1. Instructions for submitting notice of construction start, as required by regulation, can be found in the Oil and Gas Activity Operations Manual on the Commission's website.
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.
5. The permit holder must provide notices required by the Pipeline Regulation prior to beginning construction, maintenance or repair of the pipeline.
6. As required by section 4 of the Pipeline Regulation, the permit holder must design, construct, operate and maintain the pipeline in accordance with CSA Z662, as amended from time to time.

7. As required by section 4(2) of the Pipeline Regulation, the permit holder must submit to the Commission the pipe and component specifications and the as-built drawings for the pipeline within 3 months after completion of construction of a pipeline.
8. As required by section 24(1) of the *Oil and Gas Activities Act* General Regulation, the permit holder must complete the surveying and posting of the pipeline right of way within 16 months after completing construction of the pipeline.
9. As required by section 7 of the Pipeline Regulation, the permit holder must include the pipeline authorized by this permit in its Integrity Management Plan and Damage Prevention Program.
10. Trenchless crossing must be planned and conducted in accordance with the Directional Drilling Procedures and Drilling Mud Release Contingency Plan and the relevant detail in the Typical Drawings of the Environmental Management Plan and any plans accepted by the Commission under condition 54 and 55 above.
11. The permit holder must avoid all archaeology sites unless issued a site alteration permit by the Commission, pursuant to section 12 of the *Heritage Conservation Act*.
12. All archaeological reports submitted to the Commission must also be provided to the archaeology branch of the Ministry of Forests, Lands and Natural Resource Operations.

DEFINITIONS

Unless the condition or its context indicates otherwise, the terms in this permit have the same meaning as defined in the *Oil and Gas Activities Act* or the regulations under that Act.

“additional work space” work space, other than temporary work space, needed to facilitate pipeline construction. These include shooflies, log decks, log storage sites, laydown areas and stockpile sites.

“construction activities” or “construction” means clearing, site preparation, trench excavation, pipe installation and any other activities required to construct a pipeline.

“construction corridor” means, the area of land extending on either side of the centerline of the pipeline as indicated in the application for this permit, and is labelled as either “construction corridor” or “review corridor” on the construction plans.

“environmental management plan” means, the environmental management plan as revised, that supports the application for this permit, the relevant components of which are acceptable to the Commission.

“qualified professional” means a member in good standing of a profession regulated in British Columbia and who is recognized by that profession as being qualified to work in area of practice for which an opinion or advice is required.

“qualified specialist” means a person who possesses an appropriate combination of formal education, knowledge, skills, and experience to conduct a technically sound and rational assessment for the area of practice, and be familiar with applicable regulations, standards, policies, protocols and guidelines.

“residence” means a dwelling-place, such as a den, nest or other similar area or place, that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding or hibernating.

“road” means, an existing road:

- a) that is a highway as defined in the Transportation Act and is currently being maintained by an agency of the provincial government or a local government, either directly or by agreement,
- b) that is a Forest Service Road,
- c) for which there is a subsisting permit under the Forest Act, Land Act or Oil and Gas Activities Act,
- d) that is an industrial road as defined under the Industrial Roads Act, or
- e) that is privately owned.

“temporary work space” means the work space that runs adjacent to the pipeline right of way (generally 13 – 15 meters wide along the length of either side of the pipeline right of way), which may be used to accommodate vehicle traffic as well as stringing, welding and placing pipe.

Permit Holder: Coastal GasLink Pipeline Ltd.
Application Determination number: 100082252

Application Submission Date: January 31, 2015
Date Issued: November 5, 2018

“**work space**” includes both temporary work space and additional work space.

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



James O'Hanley
Vice President, Permit Adjudication
Authorized Signatory
Commission Delegated Decision Maker

CC: Roy Northern Land Services Ltd.
MFLNRO, Prince George Forest District, Vanderhoof Forest District
First Nations (Carrier Sekani Tribal Council, Lheidli T'enneh Band, Nadleh Whut'en First Nation, Nak'azdli First Nation, Saik'uz First Nation, Yekooche First Nation)
WorkSafe BC
OGC File: 9708368
BC Environmental Assessment Office

April 16, 2018

Coastal GasLink Pipeline Ltd.
450 – 1st Street SW
Calgary, Alberta T2P 5H1

Attention: Coastal GasLink Pipeline Ltd.

RE: Permit Extension for Application Determination No. 100082252, OGC Legacy No. 9708368

Permit Holder: Coastal GasLink Pipeline Ltd.
Permit Date of Issuance: May 15, 2015
Extension Effective Date: May 15, 2018
Extended Expiration Date: May 15, 2019
Application Determination No.: 100082252
Pipeline Project No.: 000023572

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission (the "Commission"), under section 32(5) of the *Oil & Gas Activities Act*, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments, corrections, and any additional conditions as set out herein.
3. The prescribed period of this permit has been extended for one year and will expire on May 15, 2019 if the Permit Holder has not begun the activity by this date.

This extension forms an integral part of the permit and should be attached thereto.



James O'Hanley
Vice President, Applications

Pc: OGC Compliance & Enforcement

May 3, 2017

Coastal GasLink Pipeline Ltd.
450 – 1st Street SW
Calgary, Alberta
T2P 5H1

Attention: Coastal GasLink Pipeline Ltd.

Re: Correction to Permit Extension for Application Determination Number 100082252, OGC Legacy # 9708368

Permit Holder: Coastal GasLink Pipeline Ltd.
Date of Extension Issuance: May 1, 2017
Application Determination Number: 100082252
Date of Correction: May 3, 2017

The BC Oil and Gas Commission hereby corrects the Permit Extension identified and dated above as follows:

- Correct the Legacy OGC # from 9708386 to 9708368

The Permit Holder must comply with any permissions, authorizations, approvals and conditions set out in the original permit, any subsequent amendments to the permit and any additional corrections as set out herein.

This letter forms an integral part of your permit and should be attached thereto.



Tarilee Rauscher
Authorized Signatory
Commission Delegated Decision Maker

May 1, 2017

Coastal GasLink Pipeline Ltd.
450 - 1st Street SW
Calgary, AB T2P 5H1

Attention: Coastal GasLink Pipeline Ltd.

RE: Permit Extension for Application Determination Number 100082252, OGC Legacy 9708386

Permit Holder: Coastal GasLink Pipeline Ltd.
Permit Date of Issuance: May 15, 2015
Extension Date of Issuance: May 1, 2017
Extended Expiration Date: May 15, 2018
Application Determination No.: 100082252
Pipeline Project No.: 000023572

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission (the "Commission"), under section 32(5) of the *Oil & Gas Activities Act*, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.

Petroleum and Natural Gas Act

2. Pursuant to Section 138(1) of the *Petroleum and Natural Gas Act*, the Permit Holder is authorized to enter, occupy and use any unoccupied Crown land located within the operating area to carry out the oil and gas activity and related activities authorized under this permit.

CONDITIONS

3. The rights granted by this authorization 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.
4. The Permit Holder must not assign or sublicense this permit or permit any person to use or occupy the land, other than its employees, contractors, or representatives, without the Commission's written consent.
5. The Permit Holder must ensure that the area is maintained in a condition so as to minimize hazards, including but not limited to hazards associated with storage of materials and equipment.
6. The Permit Holder must ensure that the area is free of garbage, debris and unused equipment.

ADVISORY GUIDANCE

1. On September 21, 2015, section 14 of the *Land Act* was repealed. Accordingly, the section 14 *Land Act* authorization originally granted to enter, occupy and use any unoccupied Crown land for the purposes of carrying out this oil and gas activity is now authorized under section 138(1) of the *Petroleum and Natural Gas Act*, and the original authorization will be cancelled.
2. Appropriate *Land Act* tenure will be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered application for all subsequent *Land Act* tenures; no further applications for replacement tenure is required.
3. The term “unused equipment” has the same definition as in the Drilling and Production Regulation.

This extension forms an integral part of the permit and should be attached thereto.



James O'Hanley
Vice President, Permitting & Authorizations

May 15, 2015

Coastal GasLink Pipeline Ltd.
450 - 1st Street SW
Calgary, Alberta T2P 5H1

Attention: Coastal GasLink Pipeline Ltd.

RE: Pipeline Permit (Section 4)

Date of Issuance: May 15, 2015

Commission File No: 9708368

Job No.: 014331812-001

**NOTE: This permit was amended and replaced on November 5, 2018
under Section 26(1)(d) of the Oil & Gas Activities Act**

PERMISSIONS

The BC Oil and Gas Commission (the "Commission"), under section 25(1) of the Oil and Gas Activities Act, hereby permits the holder to construct and operate a pipeline for the purpose of conveying natural gas subject to the following conditions, any applicable exemptions and authorizations:

1. The permissions and authorizations granted under this permit are limited to the areas described in the following construction plans by Midwest Surveys Land Surveying Ltd. Submitted January 31, 2015:

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-001, Revision 0, Sheet 1 of 23, dated October 8, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-002, Revision 0, Sheet 2 of 23, dated October 8, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-003, Revision 0, Sheet 3 of 23, dated October 8, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-004, Revision 0, Sheet 4 of 23, dated October 8, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-005, Revision 0, Sheet 5 of 23, dated October 8, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-006, Revision 0, Sheet 6 of 23, dated October 8, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-007, Revision 0, Sheet 7 of 23, dated October 8, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-008, Revision 0, Sheet 8 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-009, Revision 0, Sheet 9 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-010, Revision 0, Sheet 10 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-011, Revision 0, Sheet 11 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-012, Revision 0, Sheet 12 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-013, Revision 0, Sheet 13 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-014, Revision 0, Sheet 14 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-015, Revision 0, Sheet 15 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-016, Revision 0, Sheet 16 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-017, Revision 0, Sheet 17 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-018, Revision 0, Sheet 18 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-019, Revision 0, Sheet 19 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-020, Revision 0, Sheet 20 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-021, Revision 0, Sheet 21 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-022, Revision 0, Sheet 22 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-023, Revision 0, Sheet 23 of 23, dated October 8, 2014.

2. This permit expires two years from the date of issuance as per section 8 of the *Oil and Gas Activities Act* General Regulation if the permit holder has not begun the construction of the pipeline permitted unless the permit has been extended.
3. The permit holder is authorized to construct and operate the pipeline segment to transmit natural gas under a maximum operating pressure of 13375 kPa, and under a maximum concentration of H₂S of 0.002 mol% unidirectionally, and in accordance with piping & Instrumentation Diagram(s), 4703-03-LA-0S-002, revision RE-IFP, dated September 29rd, 2014. Notwithstanding the foregoing, changes may be made to pigging design, and to above ground valves and piping, provided that:
 - 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 a consultation under the Consultation and Notification Regulation; and
- d. the design and operation of the pipeline continues to meet all regulatory requirements and the requirements of CSA Z662, as amended from time to time.

CONDITIONS

Notification and Reporting

1. At least 30 days prior to commencing any construction activities under this permit, the permit holder must provide the Carrier Sekani Tribal Council, Lheidli T'enneh First Nation, Nadleh Whut'en First Nation, Nak'azdli Band, Saik'uz First Nation, and Yekooche First Nation the proposed construction schedule.
2. At least one week prior to the beginning of each month, the permit holder must submit a schedule to the Commission indicating the location and timing of horizontal directional drilling, microtunnelling or in-stream work planned to commence the following month.
3. Unless a submission has been made under condition 4, the permit holder must annually, on or before March 31 of each year, submit to the Commission's KERMIT system, a Post Construction Plan map showing the location and nature of any construction activities completed under this permit during the previous calendar year.
4. Within 60 days of completion of construction activities under this permit, the permit holder must submit to the Commission a Post Construction Plan as an ePASS shape file accurately identifying the location of the total area actually disturbed under this permit.

First Nations

5. At the completion of construction activities the permit holder must restore any identifiable trails traditionally used by First Nations that were impacted by construction, to the level of access that existed prior to construction, if the location of the trail is made known to the permit holder by a First Nation or the Commission prior to the permit holder's notice of construction start.
6. Prior to commencement of construction activities on any portion of the pipeline right of way or work space, the permit holder must consider relevant information made available by a First Nation in the development of site specific mitigation plans. Relevant information includes culturally modified trees, cache pits, house pits, grave sites, pictograph sites, smoke houses, cabins, artifacts and areas traditionally used for camping, hunting, fishing and berry picking located within the pipeline right of way or work space.

The permit holder must submit, at least 30 days prior to the commencement of construction, the information, along with site-specific mitigation plans for any of the specified items identified that may be impacted by construction activities, to the satisfaction of the Commission.

Clearing

7. Clearing and site preparation must be limited to areas needed for the pipeline right of way and work space.
8. Clearing and site preparation, inclusive of work space, must be confined to the construction corridor and must not exceed 600.92 ha on Crown land and must not, without leave of the Commission, occur within:
 - a. 100 meters of where water is diverted by a waterworks, water supply well or water storage reservoir;
 - b. an area containing a mineral lick, bald eagle, osprey, goshawk or great blue heron nest unless the mineral lick or nest is not damaged by activities authorized under this permit;
 - c. a permanent sample site on Crown Land used as a snow course;
 - d. an area that would require harvest or disturbance of whitebark pine trees;
 - e. a riparian management area (RMA), except to facilitate a stream or wetland crossing, or where it does not involve new clearing;
 - f. a wildlife tree retention area other than those identified in the construction plans referenced in Permissions; and
 - g. a wetland classified as W2, except WL-2023 and WL-2333, as identified in the construction plans reference in Permissions, or to facilitate crossing of that wetland.
9. Except with leave of the Commission, new cut for additional work space is not permitted within a wildlife habitat area, ungulate winter range, riparian reserve zone (RRZ), or old growth management area as defined in the Environmental Protection and Management Regulation (EPMR) or the *Forest and Range Practices Act* and its regulations.
10. Clearing and site preparation, except shooflies identified in the construction plans referenced in Permissions, must be confined to the area approved in the Certified Project Description of the associated Environmental Assessment Certificate.
11. Clearing and site preparation must be limited to the area necessary to safely construct the pipeline taking into account the influence of terrain, safe equipment operations, clearing debris, worker safety and egress, protection of adjacent infrastructure, and other conditions relevant to safe construction operations.
12. Clearing and site preparation, other than those identified in the construction plans referenced in Permissions, must be located on any previously disturbed areas located within the construction corridor unless:
 - a. a previously disturbed area is less than 2 hectares;
 - b. it is required to avoid one or more of the areas or features identified in condition 8 (a) to (g); or
 - c. the permit holder is granted leave by the Commission.
13. Where practicable, the permit holder must maintain vegetation and minimize stumping or ground disturbance within 10 metres of the high water mark of a fish bearing watercourse and delay grading of the banks of watercourses until immediately before construction of either pipeline crossings or crossings for vehicle access. Appropriate erosion and sediment control

structures must be installed as necessary to ensure debris and soil are not deposited into watercourses.

14. Any trees harvested within the RMA of a stream or wetland must be felled away from the stream or wetland, and any trees, debris or soil deposited below the high water mark must be removed immediately.

Wildlife

15. Except with leave of the Commission, the permit holder must not undertake clearing activities between May 1 and July 31 unless pre-clearing surveys are completed and clearing activities do not occur within 100 metres of any stick nest, and within 30 metres of any songbird nest.
16. Except with leave of the Commission, the permit holder must not undertake any construction activities within a wetland when an active waterfowl nest is present within 200 metres of the pipeline right of way and work spaces in that wetland.
17. Except with leave of the Commission, the permit holder must not undertake any construction activities within the Stuart River and associated RRZ between July 1 and June 15.
18. Except with leave of the Commission, the permit holder must not undertake construction or significant maintenance activities within 200 meters of an active grizzly bear or black bear den between December 1 and April 30.
19. Except with leave of the Commission, the permit holder must not undertake construction activities within 500 meters of an active wolverine den between February 1 and August 1.
20. Except with leave of the Commission, the permit holder must not, with respect to fisher:
 - a. undertake construction activities within 200 metres of any known den; and
 - b. undertake construction or significant maintenance activities within 400 metres of an active den between March 15 and July 31.
21. When using aircraft to undertake activities associated with the permit, the permit holder must provide written instructions to the pilot specifying that flights must not, except in the event of an emergency situation directly approach, hover over, circle, or land near mountain goats, moose, elk, or caribou.
22. When using aircraft to undertake activities associated with the permit, the permit holder must provide written instructions to the pilot specifying that flights must not, except in the event of an emergency situation directly approach, hover over or circle near, or land within 500 meters of known wolverine den sites between February 1 and June 30.
23. The permit holder must implement appropriate measures to reduce the obstruction of wildlife movement across the pipeline right of way during construction and operations.
24. The permit holder must collect and store garbage in a manner that does not attract bears.

Terrain Stability, Acid Rock Drainage and Mineral Leaching

25. Prior to operating the pipeline, the permit holder must prepare and file with the Commission a report satisfactory to the Commission for the monitoring and maintenance of ground and slope stability on areas where the stability
- a. may be affected by clearing or construction of the pipeline; or
 - b. may affect the safe operation of the pipeline.

The report must be prepared by a qualified professional and must include an assessment of and monitoring plan for any areas where karst or ground subsidence may be located.

26. The permit holder must submit prior to construction an acid rock assessment and mitigation information to the Commission, all to the satisfaction of the Commission, with respect to potentially acid generating (PAG) rock along the proposed pipeline route. The information must include the following elements:
- a. the criteria used to classify acid rock drainage/metal leaching potential;
 - b. the process used to delineate PAG rock including desktop and field/laboratory assessments;
 - c. results of engineering evaluation of expected PAG rock locations and associated construction-related quantities;
 - d. additional planned characterization to complement initial assessment results;
 - e. protocols to be followed during construction to verify results of PAG characterization and engineering assessments;
 - f. a flowchart outlining material handling steps for confirmed PAG rock;
 - g. associated mitigation and monitoring programs for exposed in situ and disposed PAG rock;
 - h. mitigation selection criteria;
 - i. typical drawings and typical specifications for mitigation such as soil covers and rock slope face barriers (e.g., shotcrete and synthetic spray cover); and
 - j. gradational specifications for cover layer barriers composed of glacial till and/or other materials.

The above information must be prepared by a qualified professional and any protocols, mitigation or monitoring associated with e through j must be implemented by permit holder.

Stream, Wetland and Lake Crossings

27. Subject to sections 11 and 12 of the EPMR, crossings of non-fish bearing streams and wetlands must be constructed in accordance with the methods and any mitigations that specified in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission.
28. Subject to sections 11 and 12 of the EPMR, crossings of fish bearing streams and wetlands must be constructed in accordance with the timing, methods and any mitigations that are specified in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission. Any contingency method specified

Construction Section 4 Supplemental Stream Crossings Submission may only be utilized with leave of the Commission.

29. Open cut crossings of watercourses must be planned and conducted in accordance with the relevant detail in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission, and the following requirements:
 - a. An open cut of a stream classified as S1, S2, S3, S4, S5 or S6 may only occur with leave of the Commission, unless the stream is frozen to its bed or is completely dry with no evidence of subsurface flow;
 - b. where the streambed consists of rocks, pebbles or coarse gravel overlaying finer material, this material must be removed and stockpiled separately above the high water mark of the stream for replacement during restoration;
 - c. excavated materials must be contained using appropriate techniques, so that sediment-laden water and spoil do not re-enter the watercourse;
 - d. any sediment-laden trench water must be pumped onto stable surfaces in a manner that does not cause erosion of soils or release of suspended sediments to watercourses;
 - e. where feasible, aquatic vegetation and organic debris removed from the construction area must be salvaged and returned following trench backfilling; and
 - f. channels, banks and beds of streams or wetlands, 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. Fish streams must be restored based on pre-construction surveys, including restoration of areas containing rearing potential with adequate stream depth and in-stream structures and restoration of spawning areas with gravel placement.
30. Open cut crossings of wetlands must be planned and conducted in accordance with the relevant detail in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission, and the following requirements:
 - a. where the wetland substrate consists of rocks, pebbles or coarse gravel overlaying finer material, this material must be removed and stockpiled separately above the high water mark of the stream for replacement during restoration;
 - b. excavated materials must be contained using appropriate techniques, so that that sediment-laden water and spoil do not re-enter the wetland; and
 - c. any sediment-laden trench water must be pumped onto stable surfaces in a manner that does not cause erosion of soils or release of suspended sediments to watercourses.
31. Flow isolation crossings must be planned and conducted in accordance with the relevant detail in the Construction Section 4 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission, and in accordance with b to f of condition 32 and the following additional requirements:
 - a. crossings of fish-bearing streams may commence only after confirming that sufficient equipment and supplies are available to complete the crossing in an efficient and timely manner;

- b. instream activities, including the location and operation of any equipment must be isolated from water flowing in the stream;
 - c. spawning gravels must not be disturbed when redds that contain eggs are present;
 - d. activities must be suspended if high stream flows present an increased risk to effectively completing the intended crossing installation technique;
 - e. welding, coating, weighting and, where applicable testing, of the pipe must be completed prior to commencement of trenching within fish-bearing water bodies;
 - f. water from flumes, pump-arounds, diversions, or other methods must be released to downstream areas using dissipation structures to avoid causing erosion or sediment release;
 - g. pump intakes must not disturb beds of streams or wetlands and must be screened with a maximum mesh size of 2.54 mm and approach velocity of 0.038 m/s;
 - h. water flows downstream of in-stream construction sites must be maintained consistent with upstream flows; and
 - i. hard ditch plugs must be installed at or near the banks of the crossing and left in place until the crossing has been initiated.
32. Equipment to be used in or adjacent to a stream, lake or wetland must be clean or otherwise free of external grease, oil or other fluids, excessive muds, soil and vegetation, prior to entering the waterbody.
33. Within the RMA, generators and other stationary equipment that requires refueling, must be situated in secondary containment capable of containing the fuel capacity of the generators.
34. Except with leave of the Commission, prior to construction activities in a stream classified as S1, S2, S3 or S4; or the RRZ of a stream classified as S1, S2, S3, or a S4 stream, the permit holder must develop a Water Quality Monitoring Program to the satisfaction of the Commission. The Water Quality Monitoring Program must:
- a. be developed, implemented and supervised by a qualified professional;
 - b. be consistent with the Ministry of Environment's approved water quality guidelines;
 - c. include environmental water quality monitoring, including field monitoring of turbidity, pH and total suspended solids for potential exceedance of BC Water Quality Guidelines for the protection of aquatic life or, where they exist, the Water Quality Objectives for a specific watercourse, as they may be amended from time to time;
 - d. require pre and post construction monitoring upstream (baseline) and downstream of the location of potential disturbance from construction activities;
 - e. require sampling that is representative of water quality variation across the stream; and
 - f. require documentation of pre and post construction monitoring completed under e.
35. Except with leave of the Commission, prior to construction activities in a wetland, the permit holder must develop a Wetland Water Quality Monitoring Program to the satisfaction of the Commission. The Wetland Water Quality Monitoring Program must:
- a. be developed, implemented and supervised by a qualified professional;
 - b. be consistent with the Ministry of Environment's approved water quality guidelines;

- c. include environmental water quality monitoring for potential exceedance of the BC Water Quality Guidelines for the protection of aquatic life or, where they exist, the Water Quality Objectives for a specific wetland, as they may be amended from time to time;
 - d. where appropriate, require pre and post construction monitoring proximal to the location of potential disturbance from construction activities; and
 - e. require documentation of pre and post construction monitoring completed under d.
36. The permit holder must implement the Water Quality Monitoring Programs developed as per conditions 34 and 35 and do each of the following:
- a. provide records of documentation of all pre and post construction monitoring to the Commission;
 - b. immediately report to the Commission any exceedance of the BC Water Quality Guidelines for aquatic life or, where they exist, the Water Quality Objectives for a specific watercourse or wetland that persist for a period of 24 hours or greater, relative to the baseline; and
 - c. immediately take steps to address the factors producing any exceedance of the BC Water Quality Guidelines for aquatic life, relative to the baseline, should any exceedance persist for a period of 24 hours or greater, and where such steps do not result in addressing the turbidity exceedance, promptly suspend construction operations at the site of activities causing the exceedance until effective solutions, satisfactory to the Commission, have been developed and implemented.
37. As part of the post construction monitoring program, the permit holder must, for all watercourse and wetland crossings:
- a. inspect and provide a report to the Commission that includes assessment of:
 - i. RMA stability;
 - ii. erosion risk to the watercourse;
 - iii. vegetation re-establishment within the RMA, including species composition, percent establishment, and presence of invasive plant species; and
 - iv. identify where contingency measures may be required to address the items in i, ii or iii; and
 - b. where contingency measures are required, the permit holder must develop and implement an appropriate plan to the satisfaction of the Commission.

Engineering

38. Before beginning construction activities on any crossing of a road by the pipeline, the permit holder must submit, to the satisfaction of the Commission information, in tabular or other format, describing:
- a. the crossing location;
 - b. summary, including any outcomes, of engagement with the road tenure holder, primary road user or road owner;
 - c. whether the crossing will be constructed using trenchless methods;

- d. the approximate dates and maximum time that traffic at the crossing is expected to be restricted or obstructed;
 - e. pipeline specifications at the crossings, including pipeline diameter, wall thickness, depth of cover and grade; and
 - f. maximum vehicular weights expected at the crossing location.
39. The permit holder must construct any road crossing consistent with information accepted by the Commission under condition 38.
40. At least 45 days prior to commencement of welding, the permit holder must submit to the Commission's satisfaction, a fracture arrest and mitigation program.
41. Where the hoop stress during the pressure test exceeds 100% SMYS, the permit holder must submit to the Commission the P-V test and the pressure test results before beginning operation of a pipeline.
42. At least 90 days prior to pipe-stringing activities in areas where geohazards are present, the permit holder must submit, to the satisfaction of the Commission:
- a. a geohazard assessment that includes:
 - i. a description of the geohazard(s) identified that have reasonable probability of impacting the pipeline, with the location of each geohazard illustrated on either a map or in a table; and
 - ii. specific design measures, such as materials to be used, installation procedures, protective structures, depth of cover, and monitoring that will be implemented to mitigate the geohazard(s) identified in (i); and
 - b. a field changes manual for geohazards that includes:
 - i. criteria for measures, including those identified in a(ii) above, that will be implemented to mitigate any additional geohazards identified during construction; and
 - ii. qualification requirements for field staff who will implement the field changes manual.
43. Except with leave of the Commission, within 12 months of commencement of gas transmission to the Kitimat Metering Station, 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.

Archaeology

44. An Archaeological Impact Assessment (AIA) must be completed for the all pipeline right of way and work space areas prior to commencement of construction activities.
45. The permit holder must, as soon as practicable, submit an AIA report to the Commission.
46. 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
- 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 Commission.

Environment

47. Prior to commencing clearing or site preparation on any portion of the pipeline right of way or work space, the permit holder must conduct a survey identifying any:
 - a. Bear, fisher or wolverine dens located within 200 metres of the pipeline right of way and work space, and within the construction corridor;
 - b. Western Toad breeding areas located within 100 metres of the pipeline right of way or workspaces, and any associated migration corridors;
 - c. vascular plants, mosses or lichens listed under the Species at Risk Act as endangered, threatened or special concern and located within the construction corridor; and
 - d. individual plants, plant communities or residences species identified as species at risk in a subsisting order issued under the Forest and Range Practices Act or the Oil and Gas Activities Act and located within or adjacent to the construction corridor.

The permit holder must submit the survey results, along with site-specific mitigation plans for any of items identified in a to d that may be impacted by construction activities, to the satisfaction of the Commission prior to notice of construction start.

48. 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 site prior to the construction activities taking place.
49. The permit holder must, as soon as practicable, restore recreation sites, recreation trails or recreation facilities established or authorized under the *Forest and Range Practices Act* that are affected by construction activities to their pre-construction condition to the Commission's satisfaction.
50. The permit holder must, as soon as practicable, restore range developments defined under the *Forest and Range Practices Act* that are affected by construction activities to their pre-construction condition to the Commission's satisfaction.
51. At the completion of construction activities the permit holder must restore any identifiable trails used by trappers that were impacted by pipeline construction, to the level of access that existed prior to construction, if the location of the trail is made known to the permit holder by the registered trapper for the area specific to the trail or the Commission prior to the permit holder's notice of construction start.
52. In all locations where run-off from the area of the pipeline right of way or work space may flow into a watercourse, the permit holder must contour and stabilize banks and approach slopes and install berms, silt fences, cross ditches, or other alternative effective measures as appropriate.

53. The permit holder must undertake dust control measures to ensure that dust resulting from construction activities does not affect safe travel on a road or significantly impair the use and enjoyment of lawfully occupied permanent dwellings, significant public use areas or other similar areas.
54. The permit holder must undertake reasonable measures to mitigate noise from construction activity that has the potential to affect public safety or significantly impair the use and enjoyment of lawfully occupied permanent dwellings, significant public use areas during periods of use or other similar areas.
55. Upon completion of construction activities authorized under this permit, the permit holder must:
 - a. Re-vegetate, using seed or vegetative propagules of an ecologically suitable species or implement other measures, to the satisfaction of the Commission, that promote the restoration of the wildlife habitat that existed on the area before the commencement of any works authorized under this permit, and stabilize the soil if it is highly susceptible to erosion; and
 - b. take reasonably practicable measures to limit or prevent vehicular access to and along, and to reduce sightlines along the pipeline right of way.
56. The permit holder must determine timber hauling restrictions pertaining to the management of beetle infested timber recommended by the BC Ministry of Forests, Land, and Natural Resource Operations and adhere to all such restrictions unless otherwise specified by the Commission.

AUTHORIZATIONS ASSOCIATED WITH THE PERMIT

Temporary Permit under Section 14 of the *Land Act*

57. Subject to 58 through 64 below, the Commission, under section 14 of the *Land Act* and pursuant to Authorization Number 941015, hereby authorizes the permit holder to occupy and use Crown land limited to the areas described in the following construction plans by Midwest Surveys Land Surveying Ltd. submitted January 31, 2015:

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-001, Revision 0, Sheet 1 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-002, Revision 0, Sheet 2 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-003, Revision 0, Sheet 3 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-004, Revision 0, Sheet 4 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-005, Revision 0, Sheet 5 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-006, Revision 0, Sheet 6 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-007, Revision 0, Sheet 7 of 23, dated October 8, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-008, Revision 0, Sheet 8 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-009, Revision 0, Sheet 9 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-010, Revision 0, Sheet 10 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-011, Revision 0, Sheet 11 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-012, Revision 0, Sheet 12 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-013, Revision 0, Sheet 13 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-014, Revision 0, Sheet 14 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-015, Revision 0, Sheet 15 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-016, Revision 0, Sheet 16 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-017, Revision 0, Sheet 17 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-018, Revision 0, Sheet 18 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-019, Revision 0, Sheet 19 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-020, Revision 0, Sheet 20 of 23, dated October 8, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-021, Revision 0, Sheet 21 of 23, dated October 8, 2014, except <i>Land Act</i> section 16 map reserve 7404780.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-022, Revision 0, Sheet 22 of 23, dated October 8, 2014, except <i>Land Act</i> section 16 map reserves 7404780 and 7405556.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-288-023, Revision 0, Sheet 23 of 23, dated October 8, 2014.

58. The permit holder will:

- a. indemnify the Province of British Columbia (the "Province") and the Commission against all losses, damages, costs, and liabilities arising out of any breach or non-performance of any condition or agreement set out in this permit, and any personal injury, death or property damage occurring on the site or happening by virtue of the permit holder's occupation of the site, and this obligation to indemnify will include all of the foregoing from the first day that such losses, damages, costs and liabilities arose; and
- b. immediately effect, and keep in force while occupying the site, insurance of an amount not less than \$1,000,000 protecting the Province, the Commission and the

permit holder (without any rights of cross-claim or subrogation) against claims for personal injury, death, property damage, or third party or public liability claims arising from any accident or occurrence on the site.

59. The authorization to occupy and use Crown land does not entitle the permit holder to exclusive possession of the area. The permit holder will not interfere with the activities of another person entering on and using the area under a prior or subsequent authorization issued under the *Land Act*.
60. The rights granted by this section 14 permit are subject to all subsisting grants to or rights of any person made or acquired under the *Coal Act*, *Forest Act*, *Mineral Tenure Act*, *Petroleum and Natural Gas Act*, *Range Act*, *Water Act* or *Wildlife Act*, or any extension or renewal of the same, any prior dispositions made under the *Land Act*, and the exceptions and reservations of rights and interests under section 50 of the *Land Act*.
61. The permit holder will acknowledge and agree that any interference with rights granted under this section 14 permit by virtue of the exercise or operation of the rights or interests set out in 59 or 60 above shall not constitute a breach of the Province's or the Commission's obligations under this permit and the permit holder will release and discharge the Province and/or the Commission from any claim for loss or damage arising directly or indirectly out of any such interference. The permit holder will also agree to pay all costs and expenses that arise out of the permit holder's interference with the rights or interests set out in sections 59 or 60 and that the permit holder will not commence or maintain proceedings under section 65 of the *Land Act* with respect to interference with the permit holder's rights arising out of exercise or operation of the rights set out in sections 59 or 60.
62. The permit holder must pay, when due, the Fees to the address set out in the attached covering letter.
63. The permit holder must not assign, sublicense or transfer this Permit or permit any person to use or occupy the land, other than its employees, contractors, or representatives, without the Commission's written consent.
64. This authorization of a permit to occupy and use Crown land expires two years from the date of issuance.

Changes in and about a Stream Authorization under section 9 of the *Water Act*

The Commission hereby authorizes the permit holder, under section 9 of the *Water Act*, to make changes in and about streams located in the areas described in the Construction Section 4 Supplemental Stream Crossings Submission.

Cutting Permit Authorization

65. Pursuant to section 47.4 of the *Forest Act*, the Commission hereby issues Cutting Permit No. 14, under Master License to Cut number M02341, Prince George Forest District; and Cutting Permit No. 6, under Master License to Cut number M02342, Vanderhoof Forest District; to cut and remove timber from the areas of Crown land within the area within the Site subject to the following conditions:
 - a. These cutting permits are deemed spent upon submission of the post-construction plan referenced in condition 4, or upon either the cancellation or the expiry of the permitted oil and gas activity;
 - b. These cutting permits are subject to the terms and conditions in the Master Licences to Cut;

- c. All harvested Crown timber within Master License to Cut number M02341, Prince George Forest District, must be marked with Timber Mark Number MTB 287;
- d. All harvested Crown timber within Master License to Cut number M02342, Vanderhoof Forest District, must be marked with Timber Mark Number MTB 288;
- e. The felling, bucking and utilization specifications in the Master Licenses to Cut apply to these cutting permits;
- f. Stumpage under these cutting permits is required to be paid to the Crown and will be determined with the Ministry of Forests Interior Appraisal Manual;
- g. These cutting permits do not grant the permit holder to the exclusive right to harvest timber from the license area and the Commission reserves the right to grants rights to other persons to harvest timber from the license area;
- h. In accordance with the Master Licences to Cut referenced above, "Within 60 days of completing operations on a cutting permit, the Licensee shall submit to the Commission a map showing all disturbances that have occurred pursuant to that cutting permit, at a scale of 1:20,000 or 1:50,000.";
- i. Prior to harvesting, any clearing authorized by these cutting permits must be clearly defined on the ground by ribboning or blazing; and
- j. This authorization is for a maximum total new cut area of 304.13 ha within the construction corridor.

ADVISORY GUIDANCE

1. The permit holder must provide notices required by the Pipeline Regulation prior to beginning construction, maintenance or repair of the pipeline.
2. As required by section 3 of the Pipeline Regulation, the permit holder must design, construct, operate and maintain the pipeline in accordance with CSA Z662, as amended from time to time.
3. As required by section 4(2) of the Pipeline Regulation, the permit holder must submit to the Commission the pipe and component specifications and the as-built drawings for the pipeline within 3 months after completion of construction of a pipeline.
4. As required by section 24(1) of the Oil and Gas Activities Act General Regulation, the permit holder must complete the surveying and posting of the pipeline right of way within 16 months after completing construction of the pipeline.
5. As required by section 7 of the Pipeline Regulation, the permit holder must include the pipeline authorized by this permit in its Integrity Management Plan and Damage Prevention Program.
6. Trenchless crossing must be planned and conducted in accordance with the Directional Drilling Procedures and Drilling Mud Release Contingency Plan and the relevant detail in the Typical Drawings of the Environmental Management Plan and any plans accepted by the Commission under condition 29 and 30 above.
7. The permit holder must avoid all archaeology sites unless issued a site alteration permit by the Commission, pursuant to section 12 of the *Heritage Conservation Act*.

8. All archaeological reports submitted to the Commission must also be provided to the archaeology branch of the Ministry of Forests, Lands and Natural Resource Operations.
9. All archaeological reports submitted to the Commission must also be provided to the First Nations listed in condition 1 of this permit.
10. Prior to commencing construction on any pipeline stream crossing, the permit holder must:
 - a. identify any new streams not described in the Construction Section 4 Supplemental Stream Crossings Submission;
 - b. for new streams or where there was outstanding fieldwork required for a stream described in the Construction Section 4 Supplemental Stream Crossings Submission, conduct the field work needed to complete stream classifications and identify the fish species presence for that stream, including any required confirmation of fish species presence in streams that were surveyed prior to issuance of this permit; and
 - c. submit the results of any field work required under (b) to the satisfaction of the Commission. The results must clearly describe the management and mitigation measures that will be employed in order to minimize impacts to the species present and their habitat.
11. Construction or maintenance activities within a fish bearing stream or wetland must occur:
 - a. during the applicable reduced risk work windows as specified in the Region 7 Omineca – Reduced Risk Timing Windows for Fish and Wildlife;
 - b. in accordance with alternative timing and associated mitigation recommended by a qualified professional and accepted by the Commission; or
 - c. in accordance with an authorization or letter of advice from Fisheries and Oceans Canada that is provided to the Commission.

DEFINITIONS

Unless the condition or its context indicates otherwise, the terms in this permit have the same meaning as defined in the *Oil and Gas Activities Act* or the regulations under that Act.

“additional work space” work space, other than temporary work space, needed to facilitate pipeline construction. These include shooflies, log decks, log storage sites, laydown areas and stockpile sites.

“construction activities” or “construction” means clearing, site preparation, trench excavation, pipe installation and any other activities required to construct a pipeline.

“construction corridor” means, the area of land extending on either side of the centerline of the pipeline as indicated in the application for this permit, and is labelled as either “construction corridor” or “review corridor” on the construction plans.

“environmental management plan” means, the environmental management plan as revised, that supports the application for this permit, the relevant components of which are acceptable to the Commission.

“qualified professional” means a member in good standing of a profession regulated in British Columbia and who is recognized by that profession as being qualified to work in area of practice for which an opinion or advice is required.

“qualified specialist” means a person who possesses an appropriate combination of formal education, knowledge, skills, and experience to conduct a technically sound and rational assessment for the area of practice, and be familiar with applicable regulations, standards, policies, protocols and guidelines.

“residence” means a dwelling-place, such as a den, nest or other similar area or place, that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding or hibernating.

“road” means, an existing road:

- a. that is a highway as defined in the Transportation Act and is currently being maintained by an agency of the provincial government or a local government, either directly or by agreement,
- b. that is a Forest Service Road,
- c. for which there is a subsisting permit under the Forest Act, Land Act or Oil and Gas Activities Act,
- d. that is an industrial road as defined under the Industrial Roads Act, or
- e. that is privately owned.

“temporary work space” means the work space that runs adjacent to the pipeline right of way (generally 13 – 15 meters wide along the length of either side of the pipeline right of way), which may be used to accommodate vehicle traffic as well as stringing, welding and placing pipe.

“work space” includes both temporary work space and additional work space.



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

CC: Roy Northern Land Services Ltd.
MFLNRO, Prince George Forest District, Vanderhoof Forest District
First Nations (Carrier Sekani Tribal Council, Lheidli T'enneh Band, Nadleh Whut'en First Nation, Nak'azdli First Nation, Saik'uz First Nation, Yekooche First Nation)
WorkSafe BC
OGC File: 9708368
BC Environmental Assessment Office