



OGC File: 9640868

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

Attention: Coastal GasLink Pipeline Ltd.

Re: Approval for Changes in and About a Stream

Date of issuance: January 15, 2016

The Oil and Gas Commission hereby authorizes the holder under section 9 of the *Water Act* to make changes in and about streams, as shown on sketch plan: Water Act Section 9 Application Proposed Stuart River Microtunnel Geotechnical Investigative Program, Revision 0, dated September 9, 2014, subject to the following conditions:

1. Any substance, sediment, debris or material that could adversely impact the stream
 - a. must not be allowed or permitted to enter or leach or seep into the stream from an activity, construction, worksite, machinery or from components used in the construction of any works, or
 - b. must not be placed, used or stored within the stream channel;
2. Instream works associated with this project must not prevent the movement of fish, nor impede the movement of fish to the extent that it is harmful to the survival of the fish.
3. During the construction of a snow fill or ice bridge across a stream, the authorization holder must ensure that:
 - a. the sides of the stream are protected at the stream crossing location,
 - b. naturally occurring stream flow is not obstructed or prevented from flowing under the crossing, and
 - c. the crossing is removed at the end of the period of use at a time, before the next freshet, when the removal can proceed without causing harm to fish, wildlife or habitat.
4. During the installation, maintenance or removal of a stream culvert for crossing a stream, the authorization holder must ensure that:
 - a. equipment used for site preparation, construction, maintenance or removal of the culvert is operated from the top of the bank,
 - b. in fish bearing waters, the culvert allows fish in the stream to pass up or down stream under all flow conditions,
 - c. the culvert inlet and outlet incorporate measures to protect the structure and the stream channel against erosion and scour,
 - d. if debris cannot safely pass, provision is made to prevent the entrance of debris into the culvert,
 - e. the installation, maintenance or removal does not destabilize the stream channel,
 - f. the culvert and its approach roads do not produce a backwater effect or increase the head of the stream,

- g. the culvert capacity is equivalent to the hydraulic capacity of the stream channel or is capable of passing the 1 in 10 year maximum daily flow without the water level at the culvert inlet exceeding the top of the culvert,
 - h. the culvert has a minimum equivalent diameter of 600 mm,
 - i. a culvert having an equivalent diameter of 2 metres or greater, or having a design capacity to pass a flow of more than 6 cubic metres a second, is designed by a professional engineer and is constructed in conformance with that design,
 - j. the stream channel, located outside the cleared width, is not altered,
 - k. embankment fill materials do not and will not encroach on culvert inlets and outlets,
 - l. the culvert has a depth of fill cover which is at least 300 mm or as required by the culvert manufacturer's specifications,
 - m. the maximum fill heights above the top of the culvert do not exceed 2 m, and
 - n. the culvert is fabricated in compliance with the Canadian Standards Association standard CSA G401, Corrugated Steel Pipe Products, or section B182.2 of the Canadian Standards Association standard CSA B1800, whichever is applicable;
5. During the construction, maintenance or removal of a clear span bridge, the authorization holder must ensure that:
 - a. the bridge and its approach roads do not produce a back water effect or increase the head in the stream,
 - b. the equipment used for construction, including site preparation, maintenance or removal of the bridge, is situated in a dry stream channel or is operated from the top of the bank,
 - c. the hydraulic capacity of the bridge is equivalent to the hydraulic capacity of the stream channel, or is capable of passing the 1 in 10 year maximum daily flow, whichever is greater, and the height under the bridge will provide free passage of flood debris and ice flows, and
 - d. the bridge is designed and fabricated in compliance with the Canadian Bridge Design Code, CAN/CSA-86, of the Canadian Standards Association;
6. During the restoration of a change in and about a stream, the authorization holder must ensure that:
 - a. any structures constructed to cross the stream are removed,
 - b. the channel is restored to its natural state, to the extent practicable,
 - c. the site of the crossing and associated approaches (including cut and fill slopes and ditch lines) are restored by:
 - i. stabilizing any waste materials removed from the site to above the high water mark to prevent them from entering the stream,
 - ii. re-vegetating disturbed areas associated with the crossing using seed or vegetative propagules of an ecologically suitable species,
 - iii. redistributing coarse wood debris in a manner that aids soil stabilization, and
 - iv. ensuring that surface drainage associated with approaches will not transport sediments into the stream.
7. No works are authorized within the wetted width of any watercourse.
8. The Permit holder must have written consent of the landowner prior to commencement of stream crossing operations on Private Land.



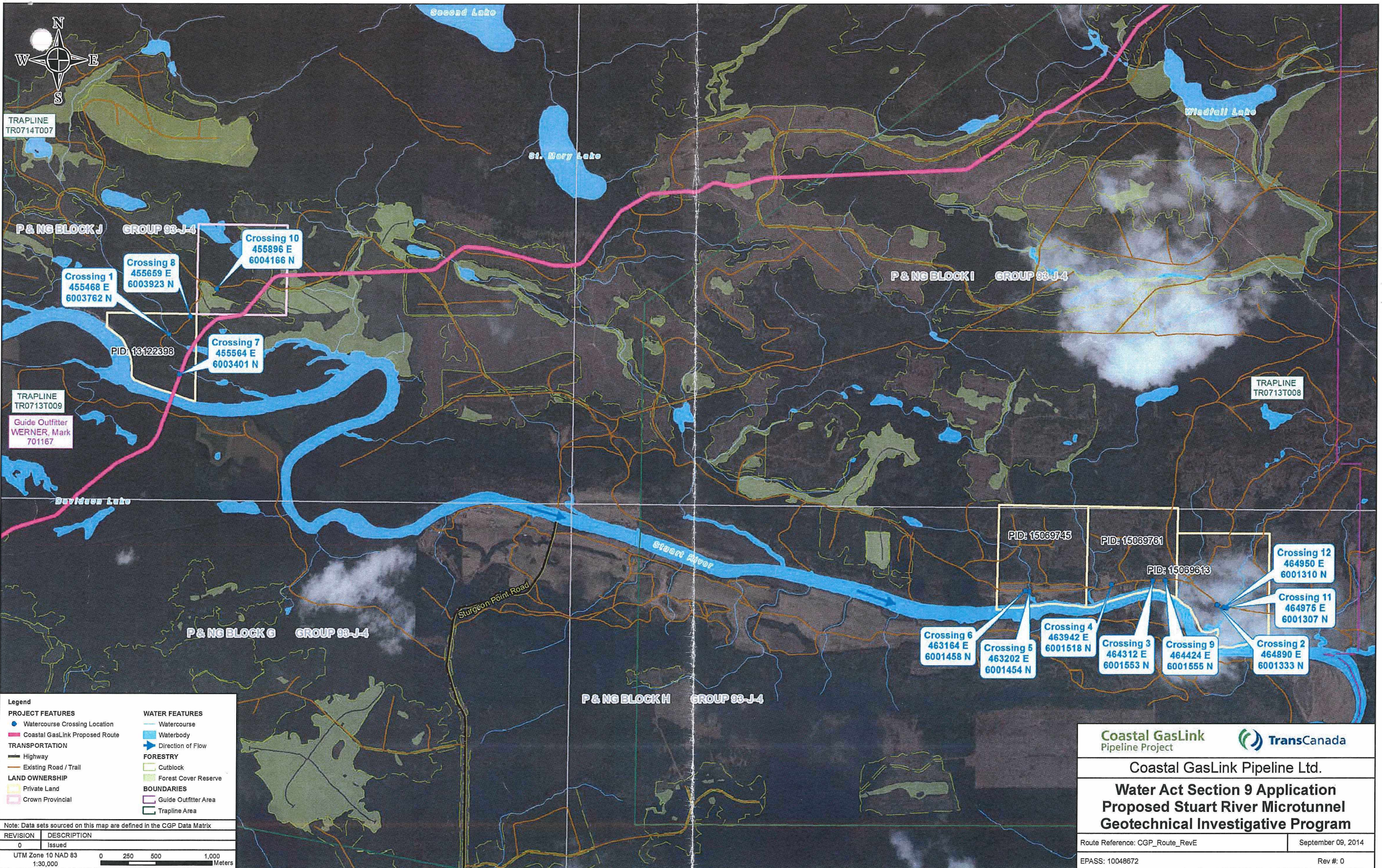
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9. The Permit Holder must notify the Nak'azdli Band office a minimum of two (2) working days prior to commencement of activities.
 10. The Permit Holder must notify Carrier Sekani Tribal Council a minimum of two (2) working days prior to commencement of activities.

The attached plan(s) form an integral part of this authorization

A handwritten signature in black ink, appearing to read 'Justin Anderson'.

Justin Anderson
Review Approval Resource Officer

cc: Roy Northern Land Service Ltd.
OGC File: 9640868
OGC First Nations: Nak'azdli First Nation, Carrier Sekani Tribal Council



Legend

PROJECT FEATURES	WATER FEATURES
Watercourse Crossing Location	Watercourse
Coastal GasLink Proposed Route	Waterbody
TRANSPORTATION	FORESTRY
Highway	Direction of Flow
Existing Road / Trail	Cutblock
LAND OWNERSHIP	Forest Cover Reserve
Private Land	BOUNDARIES
Crown Provincial	Guide Outfitter Area
	Trapline Area

Note: Data sets sourced on this map are defined in the CGP Data Matrix

REVISION	DESCRIPTION
0	Issued

UTM Zone 10 NAD 83
1:30,000
0 250 500 1,000
Meters

Coastal GasLink Pipeline Project

Coastal GasLink Pipeline Ltd.

**Water Act Section 9 Application
Proposed Stuart River Microtunnel
Geotechnical Investigative Program**

Route Reference: CGP_Route_RevE September 09, 2014

EPASS: 10048672 Rev #: 0

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