

File: 292-30/OGC2022-011

November 6, 2022

VIA ELECTRONIC MAIL:

Dear

Re: Request for Access to Records – Response
Freedom of Information and Protection of Privacy Act (FOIPPA)

I am writing further to your request received by the BC Oil and Gas Commission (Commission) for records related to the Coastal GasLink project.

Please find enclosed a copy of the records located in response to your request. Some information has been withheld pursuant to section(s): 19 [Disclosure harmful to individual or public safety] and 22 [Disclosure harmful to personal privacy]. A complete copy of FOIPPA is available online at: [Table of Contents - Freedom of Information and Protection of Privacy Act \(gov.bc.ca\)](https://www.bccogc.ca/foip/foip-table-of-contents)

These records will be published on the Commission's website within 72 hours after release. To find out more about proactive disclosure of requests, please access the BCOGC website: [Freedom of Information | BC Oil and Gas Commission \(bccogc.ca\)](https://www.bccogc.ca/foip/foip-table-of-contents)

Your file is now closed.

Pursuant to section 52 of FOIPPA, you may ask the Office of the Information and Privacy Commissioner (OIPC) to review any decision, act, or failure to act with regard to your request under FOIPPA. **Please note that you have thirty (30) business days from the date of this letter to request a review by writing to:**

Information and Privacy Commissioner
PO Box 9038 Stn Prov Govt
4th Floor, 947 Fort Street
Victoria BC V8W 9A4
Phone: 250.387.5629 Fax: 250.387.1696
Email: info@oipc.bc.ca

If you request a review, please provide the OIPC with a copy of your original request, a copy of the Commission's response, and the reasons or grounds upon which you are requesting the review. Further information on the complaint and review process is available on OIPC's website: <https://www.oipc.bc.ca>. Please write FOIIntake@bcogc.ca, if you have any questions regarding your request or require any further clarification.

Sincerely,

D. Keough

BC Oil and Gas Commission

August 11, 2022

Coastal GasLink Pipeline Ltd.
450 - 1st Street SW Calgary, AB T2P5H1

Attention: Coastal GasLink Pipeline Ltd.

RE: Determination of Application Number 100116166

Permit Holder: Coastal GasLink Pipeline Ltd.
Date of Issuance: August 11, 2022
Effective Date: August 11, 2022
Application Submission Date: June 27, 2022
Application Determination Number: 100116166
Approved Disturbance Footprint: 0.0 ha

ACTIVITIES APPROVED

Short Term Water Use No.: 0006258	Points of Diversion No.: 001, 002
Changes In and About a Stream: 0007561	

AUTHORIZATIONS

Water Sustainability Act

1. The Commission, pursuant to section 10 of the *Water Sustainability Act*, hereby authorizes the diversion, storage and use of Crown water from the point(s) of diversion detailed in the Short Term Water Use Details table below.
2. The Commission, pursuant to section 11 of the *Water Sustainability Act*, authorizes the Changes In and About a stream, as detailed in the Activities Approved table above, within the activity area for construction and maintenance activities, unless otherwise restricted by this authorization:
 - a. Instream works must be carried out in accordance with the methods and any mitigations, as specified in the application.

CONDITIONS

Notification

3. The Permit Holder must notify the First Nation(s) copied on this permit/authorization at least 5 (five) working days prior to project commencement.

Environmental

4. Instream works and/or riparian clearing are only permitted to occur between July 01 and August 01 within Bull Trout habitat at PODs 001 & 002.
5. Instream works and/or riparian clearing are only permitted to occur between September 01 and November 01 within Cutthroat Trout habitat at PODs 001 & 002.

Clearing/Forest Act

7. 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.

Water Course Crossings and Works

8. Stream, lake and wetland crossings must be constructed in accordance with the methods and any mitigations, as specified in the application.
9. 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 Skeena Region - Reduced Risk Work Windows;
 - 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;

If activities are to occur in accordance with b or c above, the documentation must be submitted to the Commission prior to commencement of activities.

10. At any time, the Commission may suspend instream works authorized under this permit. Suspensions on instream works will remain in place until such time as the Commission notifies permit holders that works may resume. Reasons for suspension of works may include, but are not limited to, drought conditions and increased environmental or public safety risks.
11. Equipment used for activities under this Permit must not be situated in a stream channel unless it is dry or frozen to the bottom at the time of the activity.

ACTIVITY SPECIFIC DETAILS, PERMISSIONS AND CONDITIONS

SHORT TERM WATER USE

Short Term Water Use Number - 0006258

Approval Period – From: August 11, 2022, **To:** August 10, 2024

ACTIVITY DETAILS

Point of Diversion No.: 001	Water Source Name: Morice River (POD 4a)
Type: Stream/River Purpose: Oil and Gas, Industrial & Storage Location (UTM): Zone 09, Northing 6007290, Easting 630447.9 Daily Withdrawal Volume (m³/day): 2160 Total Withdrawal Volume (m³): 14400	
Point of Diversion No.: 002	Water Source Name: Morice River (POD 11a)
Type: Stream/River Purpose: Oil and Gas, Industrial & Storage Location (UTM): Zone 09, Northing 6004861, Easting 606582 Daily Withdrawal Volume (m³/day): 14400 Total Withdrawal Volume (m³): 54400	

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

Short Term Water Use Conditions

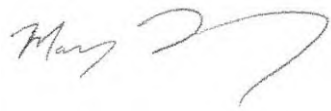
12. No instream works are permitted under this authorization.

13. A copy of this authorization must be available for inspection at the point of diversion and use location(s).
14. Water withdrawn under this authorization must only be used for the purposes of carrying out the oil and gas activities or related activities.
15. Water must not be diverted or withdrawn from any beaver pond.
16. Water withdrawal must not occur where:
 - a. stream discharge is less than 55 L/s;
 - b. the diversion will cause the stream discharge to fall below 55 L/s;
 - c. stream (wetted) depth is less than 0.30 metres (12 inches) at the withdrawal location; or
 - d. the diversion will cause the stream (wetted) depth to fall below 0.30 metres (12 inches) at the withdrawal location.
17. End-of-pipe intakes must be screened with maximum mesh sizes in accordance with the Fisheries and Oceans Canada guideline.
18. The permit holder must maintain accurate records of all water withdrawal activities throughout the term authorized. Water withdrawal records for each diversion point, including '0' values for months where no water was withdrawn, must be recorded monthly. Water withdrawal records must be submitted to the Commission on a quarterly basis via eSubmission. Quarterly reports are due on or before April 25, July 25, October 25 and January 25.
19. At any time, the Commission may suspend short term water use previously authorized. Water use suspensions will remain in place until such time as the Commission notifies permit holders that water withdrawals may resume.
20. The approval holder is authorized to store fresh water diverted under this use approval in dugouts or other fresh water storage structures provided:
 - a. the approval holder holds a valid permit or authorization to occupy the land on which the dugout or structure is located on unless a permit or authorization is not required, and
 - b. the dugout or structure is not subject to the Dam Safety Regulation unless the approval holder has a valid Water Licence and Leave to Operate the water storage structure

ADVISORY GUIDANCE

1. Diversion Map - CGW4703-MCSL-G-MP-2494-POD_4-Sketch-Rev2.pdf, Diversion Map - t8282_OGC_WP4_S10_100115995_POD 11a.pdf is for the permit holder's internal reference only and was not reviewed as a decision tool for this permit, nor does it form an integral part of this permit.
2. 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.
3. 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.



May Fong
Authorized Signatory
Commission Delegated Decision Maker

Copied to:

First Nations – Office Of The Wet'suwet'en, Skin Tyee Nation, Wet'suwet'en First Nation, Nee Tahi Buhn Indian Band (NTBIB)

APPLICATION OVERVIEW

Application Type:	New OGAA	Application Number:	100116166	Revision Number:	0
Created Date:	06-24-2022	Submitted Date:	06-27-2022		
List of Activities:	Changes In and About a Stream, Short Term Water Use (POD)				
Application Description:					
<p>The proposed POD locations within this application were previously permitted under AD100110956, AA100113574, and AA100114146. However, this work was postponed due to construction delays as the result of COVID-19 and the BC Public Health Order. Therefore, Coastal Gaslink is re-applying for the POD locations. Once approved, Coastal will withdraw/cancel the previously approved permit and abide by the new 2022 permit and conditions within.</p>					
<p>Coastal GasLink Pipeline Ltd. (Coastal GasLink) will construct and operate a natural gas pipeline from the area near the community of Groundbirch (about 40 km west of Dawson Creek, British Columbia [BC]) to the LNG Canada Development Inc. (LNG Canada) liquefied natural gas (LNG) export facility (LNG Canada export facility) near Kitimat, BC.</p> <p>The Coastal GasLink Pipeline Project (Project) involves the construction and operation of:</p> <ul style="list-style-type: none">• approximately 670 km of 48-inch (NPS 48) (1,219 mm) diameter pipeline• metering facilities at the receipt and delivery points at up to three locations• compressor stations at up to eight locations					
<p>The Project will have an initial capacity of about 2 to 3 billion cubic feet/day (bcf/d) (56 million cubic metres per day [mmcm/d] to 85 mmcm/d), with the potential for expansion up to about 5 bcf/d (142 mmcm/d). The expansion scenarios do not involve the construction of additional pipeline; only the number of compressor stations would change.</p> <p>This section 10 is required in support of construction of pipeline Section 7 permitted under OGC permit AD 100082423/Legacy OGC file No. 9708371 and other OGC related activities permits (e.g. ancillary, access) issued for the Project.</p>					
OGC Operational Zones:	South West				

PROPONENT INFORMATION

Proponent Name:	Coastal GasLink Pipeline Ltd.		
Proponent Address:	450 - 1st Street SW Calgary, AB. T2P5H1 CA		
Proponent Phone Number:	(403) 920-6296	Proponent Email:	dan_wyman@tcenergy.com
Proponent Fax:	(403) 920-2347	Proponent File Reference:	
Contact Name:	Joseph Campbell	Contact Phone:	(403) 920-5324
Contact Fax:	null	Contact Email:	joseph_campbell@tcenergy.com
Contact Address:			

AREA DETAILS

Total Application Area (ha):	0
Total Area of Crown Land (ha):	0
Total Area of Private Land (ha):	0

ADMINISTRATIVE INFORMATION

Representative Name:	Kelsey Tunney		
Type:	Other		
File Reference:			
Phone:	(403) 726-7177	Email:	kelsey.tunney@jacobs.com
Address:			
Company:			
Representative Description	Jacobs Canada Ltd.		
Representative Name:	Joseph Campbell		
Type:	Other		
File Reference:			
Phone:	(403) 920-5324	Email:	joseph_campbell@tcenergy.com
Address:			
Company:	Coastal GasLink Pipeline Ltd.		
Representative Description	Coastal GasLink Pipeline Project Ltd.		
SHORT TERM WATER USE - POINT OF DIVERSION			
Short Term Water Use Number:	0006258		
BCGS Map:	93L.015 93L.014		
Proposed Start Date:	08-14-2022	Proposed Completion Date:	08-13-2024
Activity Description:	<p>This section 10 and section 11 is required in support of construction of pipeline Section 7 permitted under OGC permit AD 100082423/Legacy OGC file No. 9708371 and other OGC related activities permits (e.g. ancillary, access) issued for the Project. The specific details of this application are as follows:</p> <p>Point of Diversions identified in this application are required to facilitate pipeline construction activities, such as:</p> <ul style="list-style-type: none"> • Access Works: Freezing in of construction access, ice bridges, and snow fill as required • Clearing: Water trucks for fire control during burning, freezing in of clearing access, ice bridges, and snow fill as required • Grading: Dust control • Bores, Direct Pipe Installation, and other trenchless crossings: Drilling mud and fluids • Hydrostatic testing <p>The Water Supply Demand Analysis that is provided with this application identifies average monthly discharges of the source and flow sensitivity for all months indicating where there should be potential allocations throughout the year for the particular water source. There are PODs where water is not available during some months based on Risk Management Level identified in the report. Coastal GasLink acknowledges OGC may incorporate permit conditions restricting withdrawal during certain periods of the year.</p> <p>Please see the Project Description Form for Site-Specific information.</p>		
Has every point of diversion been verified to sustain water withdrawal?	Yes		
Has previous approval been issued for the water withdrawal?	Yes		
Previous Short Term Water Use Application Determination Number:	100110956		

STREAM/RIVER POINT OF DIVERSION: 001			
POINT OF DIVERSION DETAILS			
Name:	Morice River (POD 4a)		
Are temporary works required for distribution of fresh water on Crown land?	No		
Average Stream Depth (m):	1.39	Wetted Stream Width (m):	80.7
Purpose:	Oil & Gas Purpose: Other	Flow (m³/s):	102
	Zone	Northing	Easting
Point of Diversion(UTM) Location:	09	6007290	630447.9
Date of Measurement:	11-12-2020		
Year One Volume (m³):	7200	Year Two Volume (m³):	7200
Proposed Volume/Day (m³):	2160	Proposed Total Volume(m³):	14400
STREAM/RIVER POINT OF DIVERSION: 002			
POINT OF DIVERSION DETAILS			
Name:	Morice River (POD 11a)		
Are temporary works required for distribution of fresh water on Crown land?	No		
Average Stream Depth (m):	1.39	Wetted Stream Width (m):	80.7
Purpose:	Industrial: Pressure Testing	Flow (m³/s):	75.4
	Zone	Northing	Easting
Point of Diversion(UTM) Location:	09	6004861	606582
Date of Measurement:	11-12-2020		
Year One Volume (m³):	1	Year Two Volume (m³):	54399
Proposed Volume/Day (m³):	14400	Proposed Total Volume(m³):	54400
CHANGES IN AND ABOUT A STREAM			
Changes In and About a Stream Number:	0007561		
BCGS Map:	93L.014		
Proposed Start Date:	08-14-2022	Proposed Completion Date:	08-13-2024
Activity Description:	<p>A section 11 is required in the event the sump needs to be inserted in the bed of the stream to prevent pump cavitation. The pump screen or mesh size will be smaller than 2.54 mm to prevent fish passage through the screen. The sump will be created by an excavator and the instream works will be completed from outside the stream channel to mitigate streambed disturbance. Boom arm and buckets will be checked and cleaned prior to instream works ensuring all equipment is clean and clear of any oils, lubricants, and soils that may have an impact on the water source.</p>		
STREAM IMPACT: 1			
STREAM IMPACT SPECIFICATION			
Primary Activity Type:	N/A	File XREF Number:	Other
If other, please specify:	9708371		
Location ID Number:	1		
Stream / Watercourse Name:	Morice River (POD 11a)		
Duration:	Temporary	Riparian Class:	S1

Riparian Class Verification:	Field Verified		
Bank Full Stream Width(m):	80.67	Stream Gradient:	3
	Zone	Northing	Easting
Impact Location (UTM):	09	6004861	606582
Primary Crossing Method:	Gravel Removal		
Crossing method Rationale (Optional):			
Note that Coastal will not be removing gravel. Instead, Coastal requires a small sump in-stream to facilitate pump placement for POD water withdrawal. Gravel removal is the closest option of a crossing method out of the options provided in AMS.			
Is a mechanical crossing required at this location?	No		

STREAM EXEMPTIONS

Does Stream Crossing Methods Meet Best Management Practice?	Yes
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MAPS & PLANS DETAILS

Survey Company:	Coastal GasLink Pipeline Ltd.		
Job Number:	CE769503.A.CS.EV.RP.11		
Sheet Number:	2	Original Plan Date:	05-06-2022
Revised Plan Date:		Revision Number:	0

Watercourse Crossing Section 11 CIAS – Description of Works

Section 11 Duration: Work associated with this Section 11, if approved, is anticipated to occur shortly after receipt and for the full two-year approved term. The duration of works will be temporary.

Affected watercourse:

- 558 at POD11a

Reasoning & Description of Works Summary: Coastal GasLink requires a Section 11 at one POD location in order to work within an S1B stream, classified through field verification, which intersects with the activity footprint. A section 11 may be required in the event the sump needs to be inserted in the bed of the stream to prevent pump cavitation. The pump screen or mesh size will be smaller than 2.54mm to prevent fish passage through the screen. The sump will be created by an excavator and the in-stream works will be completed from outside the stream channel to mitigate streambed disturbance. Boom arm and buckets will be checked and cleaned prior to instream works ensuring all equipment is clean and clear of any oils, lubricants, and soils that may have an impact on the water source.

Project Monitoring: The work will be monitored in accordance with the Coastal GasLink Environmental Management Plan. Water monitoring will follow the requirements in Appendix E.2 Water Quality Monitoring Plan. Erosion and Sediment Control (ESC) measures will be implemented throughout construction. ESC measures will be implemented for the duration of the works and routinely monitored throughout.

Standards and Specifications:

- Environmental Management Plan - CGL4703-CGP-ENV-PLN-008
- Engineering Manual - Revision Date: January 23, 2019
- BC fish-stream_crossing_web 2012 September 2012
- Completing Changes In & About a Stream - BC - OGC - Chapter 4.8
- BC OGC Oil & Gas Activity Application Manual December 2019

PROJECT DESCRIPTION FORM

Company Name: Coastal GasLink Pipeline Ltd.

OGC File No: 100116166

Company File No.: 120496

PROJECT DESCRIPTION

1. **What is the scope of the proposed activity?** (Include infrastructure and equipment, and geospatial data on anticipated total land disturbance.)

Coastal GasLink Pipeline Ltd. (Coastal GasLink) will construct and operate a natural gas pipeline from the area near the community of Groundbirch (about 40 km west of Dawson Creek, British Columbia [BC]) to the LNG Canada Development Inc. (LNG Canada) liquefied natural gas (LNG) export facility (LNG Canada export facility) near Kitimat, BC.

The Coastal GasLink Pipeline Project (Project) involves the construction and operation of:

- approximately 670 km of 48-inch (NPS 48) (1,219 mm) diameter pipeline
- metering facilities at the receipt and delivery points at up to three locations
- compressor stations at up to eight locations

The Project will have an initial capacity of about 2 to 3 billion cubic feet/day (bcf/d) (56 million cubic metres per day [mmcm/d] to 85 mmcm/d), with the potential for expansion up to about 5 bcf/d (142 mmcm/d). The expansion scenarios do not involve the construction of additional pipeline; only the number of compressor stations would change.

This section 10 and section 11 is required in support of construction of pipeline Section 7 permitted under OGC permit AD 100082423/Legacy OGC file No. 9708371 and other OGC related activities permits (e.g. ancillary, access) issued for the Project. The specific details of this application are as follows:

Point of Diversions identified in this application are required to facilitate pipeline construction activities, such as:

- **Access Works:** Freezing in of construction access, ice bridges, and snow fill as required
- **Clearing:** Water trucks for fire control during burning, freezing in of clearing access, ice bridges, and snow fill as required
- **Grading:** Dust control
- **Bores, Direct Pipe Installation, and other trenchless crossings:** Drilling mud and fluids
- **Hydrostatic testing**

The Water Supply Demand Analysis that is provided with this application identifies average monthly discharges of the source and flow sensitivity for all months indicating where there should be potential allocations throughout the year for the particular water source. There are PODs where water is not available during some months based on Risk Management Level identified in the report. Coastal GasLink acknowledges OGC may incorporate permit conditions restricting withdrawal during certain periods of the year.

The proposed POD locations within this application were previously permitted under AD 100110956, AA100113574 and AA100114146. However, this work was postponed due to construction delays as the result of COVID-19 and the BC Public Health Order. Therefore, Coastal Gaslink is re-applying for the POD locations. Once approved, Coastal will withdraw/cancel the previously approved permit and abide by the new 2022 permit and conditions within.

Site Specific Activities:

POD 4a (AMS POD 001): All workspace required will use existing access routes (RW-540.0, Morice West Forest Service Road (FSR)) to access the S1B watercourse, Morice River. Water withdrawal volumes requested at this location are required for roadway construction, upgrades and maintenance, pipeline construction and reclamation activities. Above ground, storage may be used at this POD location, as required. The storage volume would be up to the full volume requested within the application. Storage location will be determined during construction-specific activities and will be located within the approved temporary access area. An above ground temporary water line may be required to transport water from the POD location to the storage location.

The site will be accessed directly north off of Morice West FSR road from an existing pullout. The pullout is placed at the top of a steep bank which descends to the water's edge approximately 15m to the north. Installation of a pump is required for water intake; this pump will avoid shallow areas and the screen or mesh size will be smaller than 2.54mm to prevent fish passage through the screen. The pullout may require minor upgrades including adding gravel. Additionally, stairs or a ladder may also be required within the 15m north of the road surface to safely access the water's edge for hose placement.

POD 11a (AMS POD 002): All workspace required will be within the approved project footprint. Water storage tanks if required will be used by Coastal GasLink's contractor and storage locations will be located on the approved Project footprint. Location(s) will be determined during construction specific activities. The storage volume would be up to the full volume requested within the application. An above ground temporary water line may be required to transport water from the POD location to the storage location. Water withdrawal volumes requested are required for: hydrostatic testing, dust suppression, freeze down activities, roadway construction, upgrades and maintenance, ROW construction and reclamation activities. A maximum daily withdrawal rate of 14,000 m³/day will be required to facilitate hydrostatic testing. Typical maximum daily withdrawal rate for construction purposes will not exceed 120 m³/day.

A section 11 may be required in the event the sump needs to be inserted in the bed of the stream to prevent pump cavitation. The pump screen or mesh size will be smaller than 2.54 mm to prevent fish passage through the screen. The sump will be created by an excavator and the instream works will be completed from outside the stream channel to mitigate streambed disturbance. Boom arm and buckets will be checked and cleaned prior to instream works ensuring all equipment is clean and clear of any oils, lubricants, and soils that may have an impact on the water source.

2. Provide information about any roads required to carry out the proposed activity:

Existing or permitted access roads will be utilized for access and to carry out the activity, when applicable.

3. Detail the order in which the proposed activities will be carried out, including timeframes:

Work associated with this proposed activity, if approved, could be anticipated to occur shortly after receipt of the permit and for the full two-year approved term.

Once approved, Coastal will withdraw/cancel the previously approved permit and abide by the new 2022 permit and conditions within.

4. If the activity is planned in phases, describe each phase of the activity:

The proposed activity will support the construction of the Coastal GasLink Pipeline Project.

5. What are the estimated increases to dust, noise and odours from the proposed activity?

There will be noise and odor associated with the equipment used to withdraw and transport water, which is anticipated to be temporary in nature.

6. Detail any mitigation activities that will be carried out:

An Environmental Management Plan (EMP) has been produced for the Coastal GasLink Pipeline Project. The mitigation measures outlined in this plan will be implemented and adhered to.

7. Detail the nature and extent of vehicle traffic required to carry out the proposed activity:

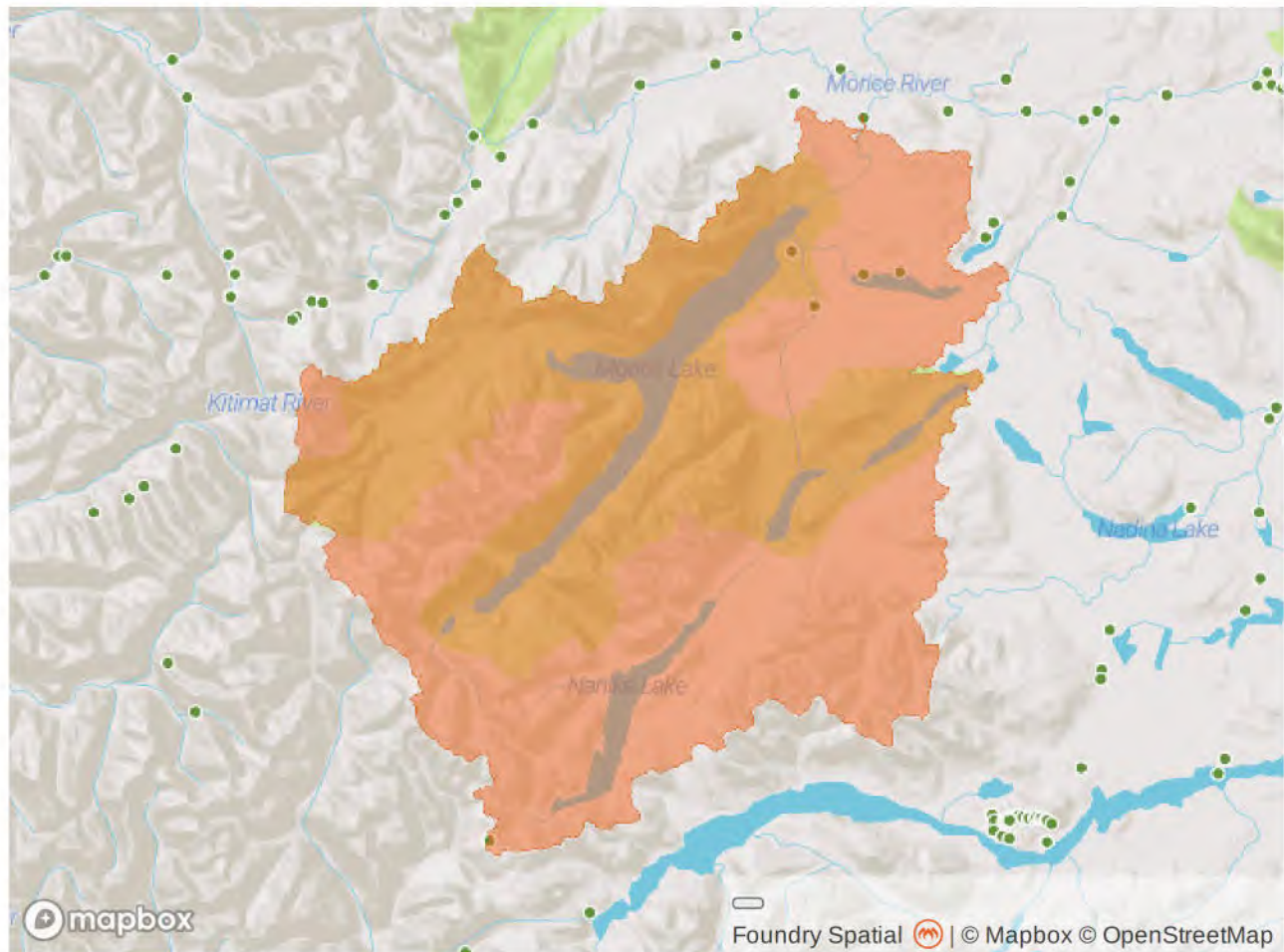
Increased traffic will be temporary in nature and associated with the construction of these activities. An Environmental Management Plan (EMP) which includes a Traffic Management Control Plan has been developed for the Coastal GasLink Pipeline Project. Applicable mitigation in the EMP will be adhered to.

Watershed Summary

Morice River

Watershed Number: 7662424

May 9, 2022



Introduction

Thank you for generating a report using the Northwest Water Tool! In this report, you'll find a detailed water resource evaluation for the watershed you selected. Naturally, the information in the report is contextual; based on the stream, river or lake you selected, the report describes:

- The quantity and timing of water flow;
- Existing water allocations;
- The needs of the environment, and sustainable withdrawal thresholds; and
- Other characteristics of the watershed, such as landcover, climate, and topography.

Some of the information presented in this report was generated by hydrology models using large data sets of streamflow measurements, and physical and environmental characteristics. In general, this report estimates what the average conditions are like – not necessarily what may be happening at this moment or this year in particular.

As you read through the material, if you find yourself wanting to know more, all of the details regarding our methods, data sources, and the performance of the Northwest Water Tool are provided at the end of the report, along with contact information to reach government departments with any questions about water rights or water management in BC¹.

I hope that you find the information very useful. If you have any questions, comments, or ideas on how to improve the information presented, we would love to talk. You can reach the Northwest Water Tool team at bcwatertool@foundryspatial.com.

Sincerely,

Ben Kerr, P.Ag.

Foundry Spatial



Overview

Coordinates: 54.174° N, -127.366° W

Watershed Area: 1,977 km²

Watershed Elevation: 2,509 m (max), 1,237 m (mean), 743 m (min)

Mean Annual Discharge: 75.4 m³/s

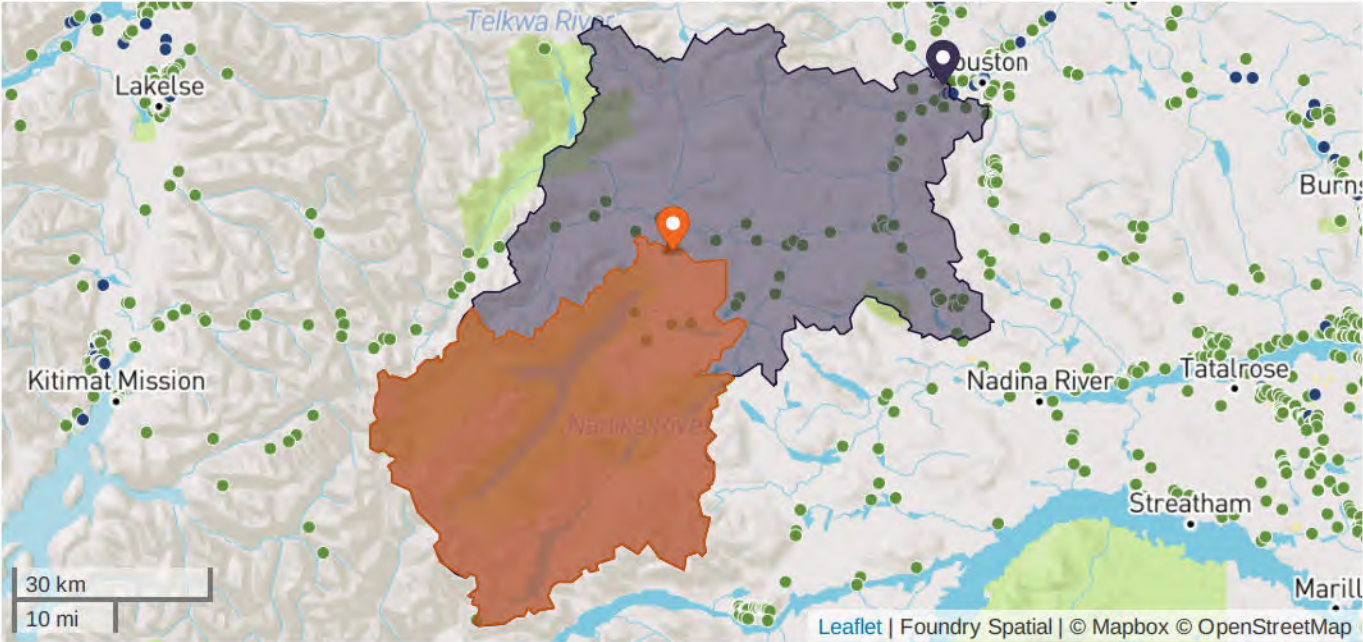
Estimates of water supply represent long-term average conditions. These estimates were generated from hydrology models³. The models incorporate information about climate, terrain, land cover, evapotranspiration, watershed boundaries and connectivity, and observed hydrology, and are calibrated using long-term streamflow monitoring data collected by the Water Survey of Canada, United States Geological Survey, and other organizations. Detailed information on models and performance is provided in the methods section of this report. Environmental flow needs calculations identify the amount of water rivers require to maintain healthy aquatic ecosystems. The calculations presented in this report are based on the Province of BC's *Environmental Flow Needs Policy*⁷.

Water allocations represent existing water rights and are sourced directly from government databases. These allocations include both short-term (temporary diversion) and long-term licences at the time of licence extract as noted within the report. Volumes of water indicated as consumptive use associated with these allocations are summarized and integrated with the estimates of water supply to provide a complete picture of the resource. Licences for all purposes are included. Both surface water and groundwater allocations within the watershed have been summarized. In some cases, assumptions have been made around timing of use (e.g. agriculture) where that information is not explicitly supplied with the source data. Information on all licences are included in this report along with notes indicating any assumptions made.

This report was generated by the BC Water Tool, an automated water resource reporting engine powered by Foundry Spatial at nwwt.bcwatertool.ca. This report contains information generated from hydrologic models, government databases, and other sources. All data sources may contain errors. As such, no warranty or representation is expressed or implied, and all liability from any decision made, based in whole or in part on the information contained within this report, is the sole responsibility of the party making said decision. Concerns or inquiries may be directed to bcwatertool@foundryspatial.com.

Annual Water Supply and Demand

This section describes the annual water supply and demand, for the location (Morice River) that you selected. The watershed is outlined in orange on the map below. The watershed associated with the next downstream confluence² (Morice River (Downstream)) has also been outlined in purple, with summary statistics for both watersheds provided in the table below. Please note that all values presented are estimates and are subject to error³.



Legend

Query Watershed ■

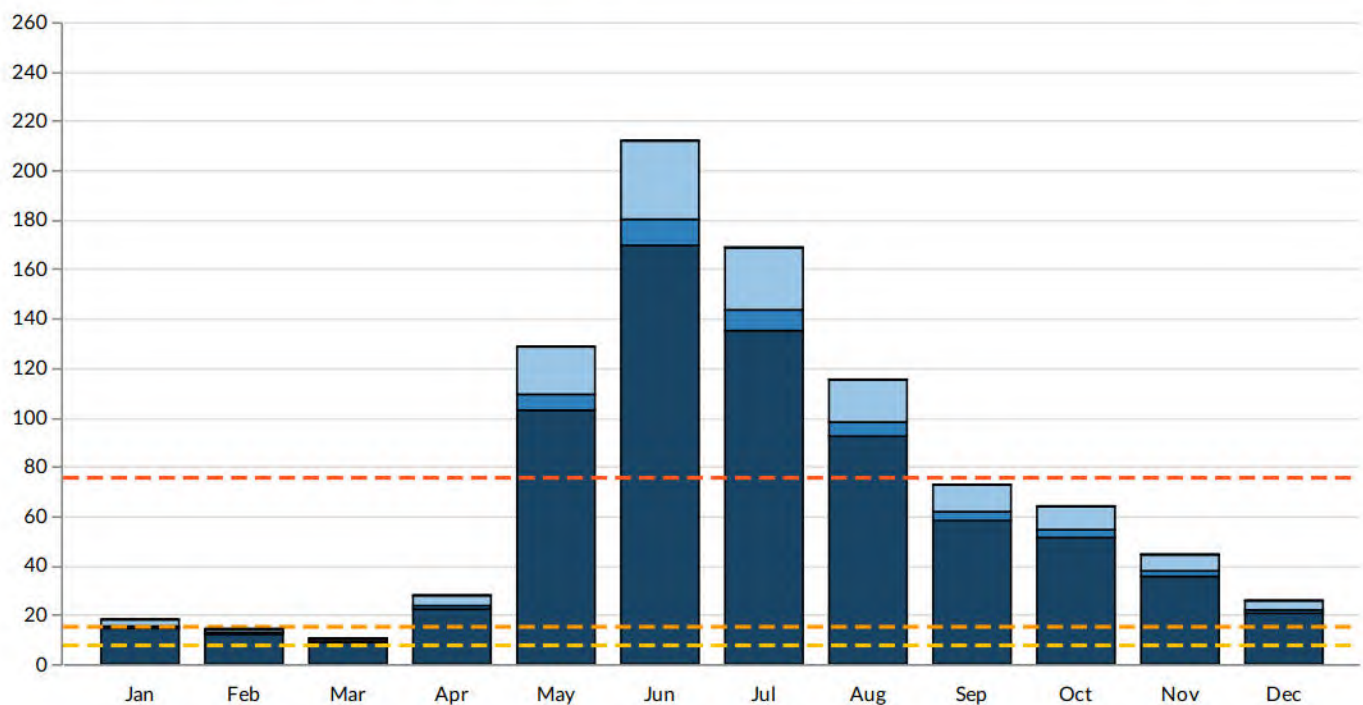
Downstream Watershed ■

Annual Statistics	Morice River	Morice River (Downstream)
Area (km ²)	1,977	4,379
Mean Annual Discharge (MAD, m ³ /s)	75.413	111.869
Allocations (average, m ³ /s) ⁹	0.020	0.044
Allocations (average, % of MAD)	< 0.1	< 0.1
Reserves & Restrictions ⁴	Present	Present
Volume Runoff (m ³ /yr)	2,379,847,894	3,530,329,373
Volume Allocations (m ³ /yr)	645,745	1,391,055
Seasonal Flow Sensitivity ⁵	Winter	Winter, Summer

Monthly Water Supply and Demand - Morice River

Hydrologic models⁶ have been developed to produce estimates of mean monthly flows. The Province of BC's *Environmental Flow Needs Policy*⁷ has been applied to these estimates, identifying risk management levels⁸ to support water management decisions. Information on active water licences and approvals (collectively, 'allocations') in the watershed have been extracted and summarized from government databases⁹ and integrated with the hydrology model data and risk management level calculations, to account for the volume of water already allocated.

In the chart below, the height of each column represents the mean monthly discharge - the long term, estimated average flow for that month of the year. The dark, medium, and light blue areas of the columns show the potential amount of water allocations within each risk management level. When allocations exist in the watershed, a red box hangs down from the top of each column to represent the volume of existing allocations in the context of mean monthly supply. The table below corresponds to the data shown on the chart.



Legend

Existing Allocations ■

Risk Management 1 ■

Risk Management 2 ■

Risk Management 3 ■

MAD 10% 7.54 m³/s ---

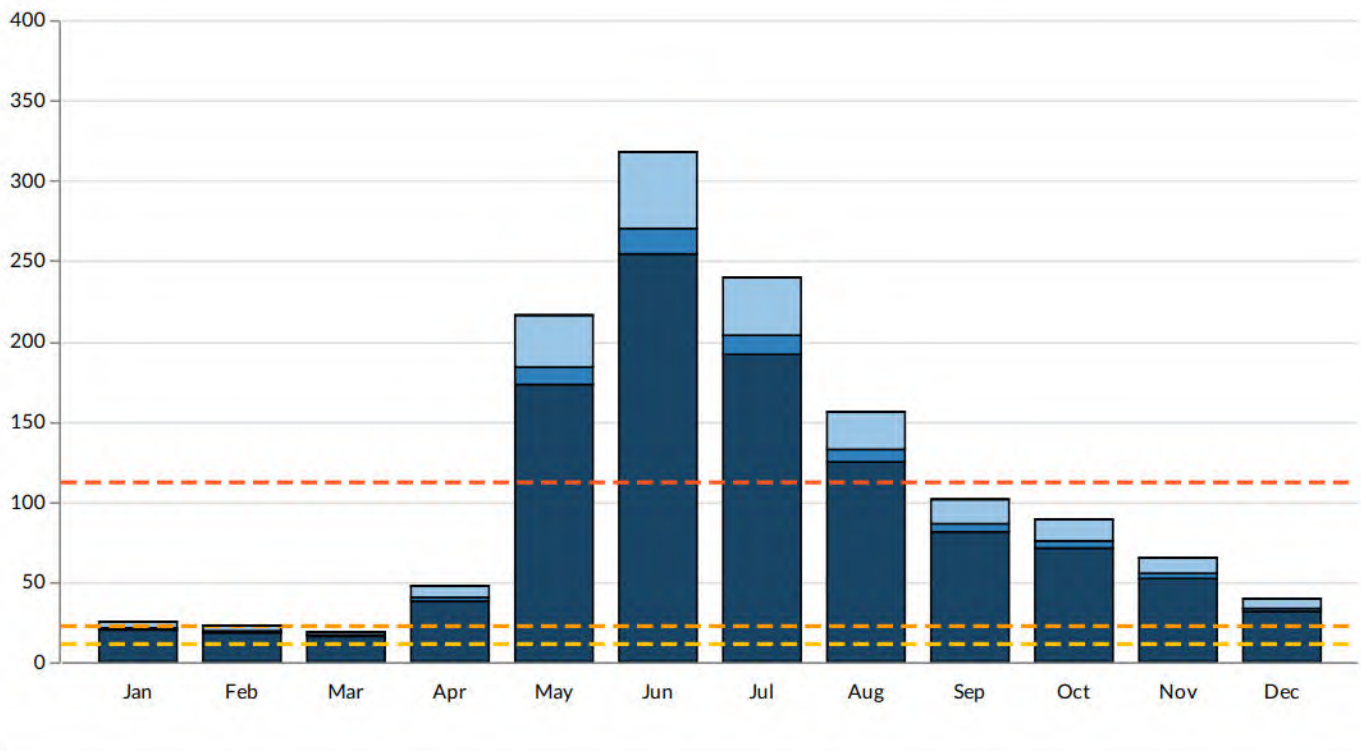
MAD 20% 15.08 m³/s ---

MAD 75.41 m³/s ---

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% of MAD	23.85	18.87	13.82	36.85	170.34	280.96	223.72	152.83	96.20	84.80	58.81	34.08
Flow Sensitivity	Low	Mod	Mod	Low	Low	Low	Low	Low	Low	Low	Low	Low
Existing Water Licences* (m³/s)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Existing Short Term Approvals* (m³/s)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Mean Monthly Discharge (m³/s)	17.99	14.23	10.42	27.79	128.46	211.88	168.72	115.25	72.54	63.95	44.35	25.70
Potential Allocation (m³/s, Risk Mgmt 1)	2.68	1.40	1.02	4.15	19.25	31.76	25.29	17.27	10.86	9.57	6.63	3.84
Potential Allocation (m³/s, Risk Mgmt 2)	3.58	2.11	1.54	5.54	25.67	42.36	33.72	23.03	14.49	12.77	8.85	5.12
Potential Allocation (m³/s, Risk Mgmt 3)	≥ 3.58	≥ 2.11	≥ 1.54	≥ 5.54	≥ 25.67	≥ 42.36	≥ 33.72	≥ 23.03	≥ 14.49	≥ 12.77	≥ 8.85	≥ 5.12

Monthly Water Supply and Demand - Morice River (Downstream)

Similar to the previous section, which described the water supply and demand for the location that you selected, this section describes the water supply and demand for the downstream basin. The hydrology model and risk management calculations are the exact same, but the calculation logic for existing allocations is different, taking into account non-consumptive, or 'flow-through' water rights.⁹



Legend

Existing Allocations ■

Risk Management 1 ■

Risk Management 2 ■

Risk Management 3 ■

MAD 10% 11.19 m³/s ■







MAD 20% 22.37 m³/s ■

MAD 111.87 m³/s ■

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% of MAD	22.35	20.37	16.78	42.32	193.16	284.03	214.04	139.24	90.57	79.32	58.09	35.08
Flow Sensitivity	Low	Low	Mod	Low	Low	Low	Low	Low	Low	Low	Low	Low
Existing Water Licences* (m³/s)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.03	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Existing Short Term Approvals* (m³/s)	0.01	0.01	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01
Mean Monthly Discharge (m³/s)	25.00	22.79	18.77	47.34	216.09	317.75	239.44	155.77	101.33	88.74	64.99	39.25
Potential Allocation (m³/s, Risk Mgmt 1)	3.74	3.41	1.84	7.06	32.39	47.63	35.87	23.33	15.18	13.30	9.73	5.87
Potential Allocation (m³/s, Risk Mgmt 2)	4.99	4.54	2.78	9.43	43.20	63.52	47.84	31.12	20.24	17.73	12.98	7.84
Potential Allocation (m³/s, Risk Mgmt 3)	≥ 4.99	≥ 4.54	≥ 2.78	≥ 9.43	≥ 43.20	≥ 63.52	≥ 47.84	≥ 31.12	≥ 20.24	≥ 17.73	≥ 12.98	≥ 7.84

Allocations By Industry

Water licences and approvals (allocations) in British Columbia are administered under the Water Sustainability Act. Existing, active water allocations in the watershed are summarized by water source, type, and term in the table below. On the following pages, each individual water allocation is listed with information on the specific water source and quantity, ordered by seniority.

Industry	Annual Volume	Ground Water (m³)		Surface Water (m³)	
		STUA 	Licence 	STUA 	Licence 
Agriculture		0	0	0	0
Commercial 		0	0	645,745	0
Domestic		0	0	0	0
Municipal		0	0	0	0
Oil & Gas		0	0	0	0
Other 		0	0	0	4,467,925
Power		0	0	0	0
Storage		0	0	0	0

Purpose Use Code Groupings

Agriculture

Crop Harvest, Protect & Compost, Crops: Crop Suppression, Crops: Flood Harvesting, Crops: Frost Protection, Greenhouse & Nursery, Greenhouse & Nursery: Greenhouse, Greenhouse & Nursery: Nursery, Irrigation: Local Provider, Irrigation: Private, Livestock & Animal, Livestock & Animal: Game Farm, Livestock & Animal: Kennel, Livestock & Animal: Stockwatering

Commercial

Bulk Shipment for Marine Transfer, Camps & Pub Facil, Camps & Pub Facil: Church/Com Hall, Camps & Pub Facil: Exhibition Grounds, Camps & Pub Facil: Institutions, Camps & Pub Facil: Non-Work Camps, Camps & Pub Facil: Public Facility, Camps & Pub Facil: Work Camps, Camps and Public Facilities, Comm. Enterprise, Comm. Enterprise: Amusement Park, Comm. Enterprise: Enterprise, Fish Hatchery, Fresh Water Bottling, Heat Exchanger, Ind'l & Comm., Ice & Snow Making, Ind'l Waste Mgmt: Effluent, Ind'l Waste Mgmt: Garbage Dump, Ind'l Waste Mgmt: Sewage Disposal, Industrial Waste Mgmt, Industrial (Well Drill/Transp Mgmt), Industrial-dewatering, Mineralized Water: Bottling & Dist, Mineralized Water: Comm. Bathing Pool, Mining: Hydraulic, Mining: Placer, Mining: Processing Ore, Mining: Washing Coal, Misc Ind'l, Misc Ind'l: Dewatering, Misc Ind'l: Fire Protection, Misc Ind'l: Overburden Disposal, Misc Ind'l: Sediment Control, N/A, Pond & Aquaculture, Processing & Mfg, Processing & Mfg: Fire Prevention, Processing & Mfg: Processing, Processing & Mfg: Wharves, Pulp Mill, Transport Mgmt: Dust Control, Transport Mgmt: Road Maint, Vehicle & Eqpt, Vehicle & Eqpt: Brake Cooling, Vehicle & Eqpt: Mine & Quarry, Vehicle & Eqpt: Truck & Eqpt Wash, Well Drilling/Transport Management

Domestic

Domestic, Incidental - Domestic

Municipal

Heat Exchanger, Residential, Land Improvement: General, Land Improvement: Ind'l for Rehab or Remed, Lwn, Fairway & Grdn, Lwn, Fairway & Grdn: Res L/G, Lwn, Fairway & Grdn: Watering, Swimming Pool, Waterworks (other than LP), Waterworks: Local Provider, Waterworks: Water Delivery, Waterworks: Water Sales

Oil & Gas

Industrial: Fire Suppression, Industrial: Pressure Testing, Industrial: Road Maintenance, Industrial: Work Camp, Oil & Gas Purpose: Hydraulic Fracturing, Oil & Gas Purpose: Oil Field Injection, Oil & Gas Purpose: Other, Oil & Gas Purpose: Well Drilling, Oil & Gas: Drilling, Oil & Gas: Hydraulic Fracturing (deep GW), Oil & Gas: Hydraulic Fracturing (non-deep GW), Oil & Gas: Oil field inject. (non-deep GW)

Other

Conservation: Construction Works, Conservation: Use of Water, Ice & Snow Making: Ice, Ice & Snow Making: Snow, Permit to Occupy Crown Land, River Improvement

Power

Cooling, Power: Commercial, Power: General, Power: Residential

Storage

Aquifer Storage: Non-Power, Conservation: Storage, Stream Storage: Non-Power, Stream Storage: Power

Water Licences (Surface Water)

Water licences²¹ and short term use approvals^{20, 21} (collectively, 'allocations') for surface water and groundwater in British Columbia are managed under the Water Sustainability Act¹⁰. These allocations are authorized by the Ministry of Forests, Lands, Natural Resource Operations, and Rural Development, and the BC Oil and Gas Commission (associated with activities regulated under the Oil and Gas Activities Act¹¹). Existing allocations, and active applications²² for water licences within the query basin, are summarized and listed in the charts and tables below.

BC Water Sustainability Act - Water Licences - 3 Licences, 0 m³ Total Annual Volume⁹

Existing Allocations

Current approved surface water rights. Volumes are included in calculations on pages 2, 3, and 4 unless an 'N' is present in Flag column

Licence	Number	POD	Date	Quantity	Flag ¹²
Fisheries & Oceans Canada (14120) Conservation: Use of Water from Nanika River (Surface water)	C026200	PD34501	Priority: Jul 26, 1960 Status: Mar 15, 1991	max rate: 0.142 m ³ /sec	T, N

Short Term Use Approvals (Surface Water)

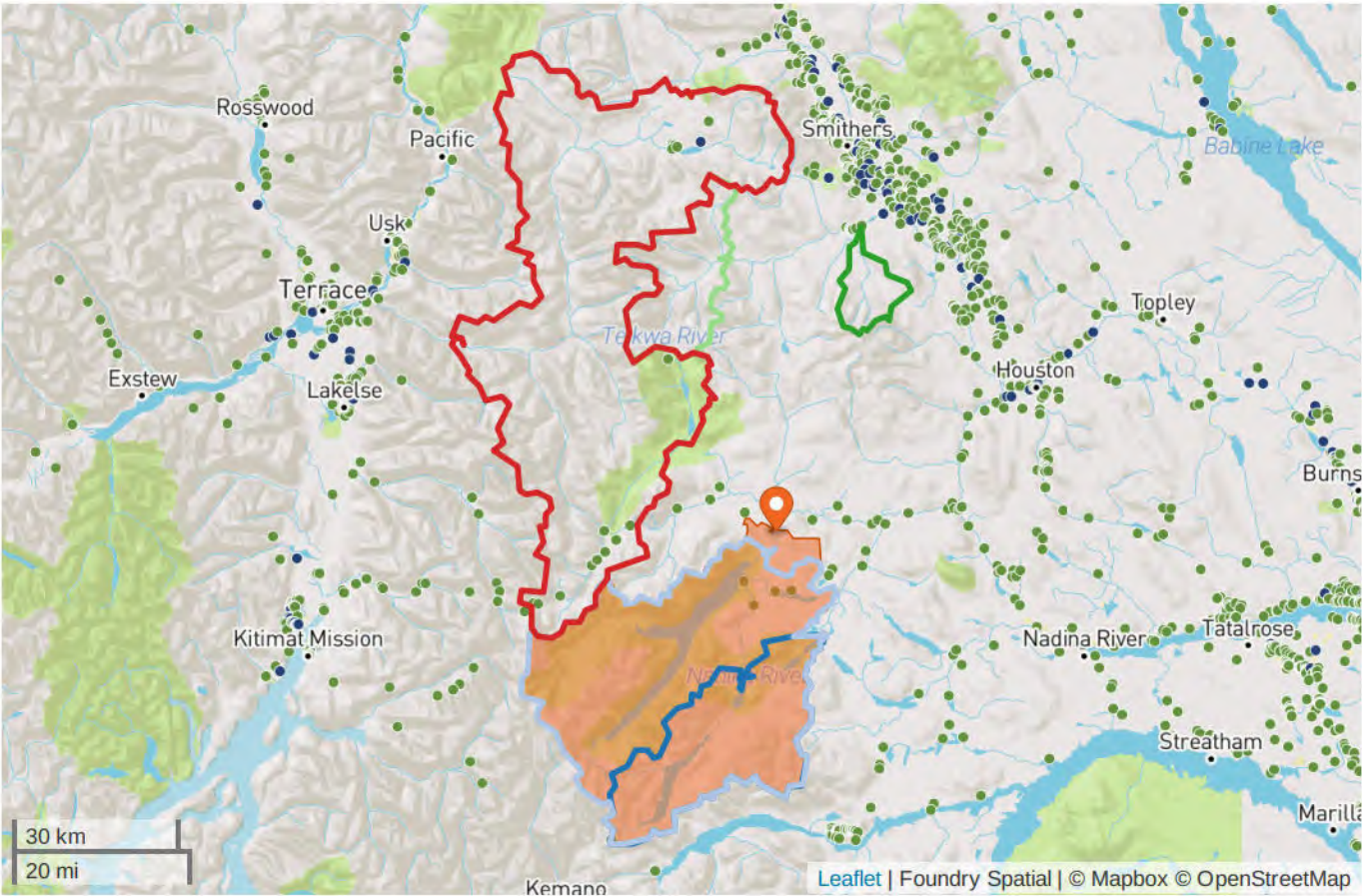
Existing Allocations

Active short term use approvals, max. 24-month term. Volumes are included in calculations on pages 2, 3, and 4 unless source is Water Storage Site

Licence	Number	POD	Date	Quantity	Flag ¹²
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from McBride Lake (Unknown source)	App ID: 6002217	PD192719	Start: May 01, 2021 Exp.: Apr 30, 2023	12,500 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from McBride Lake (Unknown source)	App ID: 6002217	PD192720	Start: May 01, 2021 Exp.: Apr 30, 2023	12,500 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Nanika River (Unknown source)	App ID: 6002217	PD192721	Start: May 01, 2021 Exp.: Apr 30, 2023	7,500 m³/year (max rate: 0.027 m³/sec)	
N/A N/A from Tahtsa Lake (Unknown source)	App ID: 6002295	N/A	Start: May 01, 2022 Exp.: Apr 03, 2024	547,500 m³/year (max rate: 1,500 m³/day)	
N/A N/A from Tahtsa Lake (Unknown source)	App ID: 6002295	N/A	Start: May 01, 2022 Exp.: Apr 03, 2024	120 m³/day	
N/A N/A from Tahtsa Lake (Unknown source)	App ID: 6002295	N/A	Start: May 01, 2022 Exp.: Apr 03, 2024	60.0 m³/day	

Hydrologic Variability

The potential variability of flows in the query basin has been estimated by comparing its physical and environmental characteristics to other watersheds which have hydrometric monitoring records. A similarity score was used to quantify the basin comparisons using multiple physical and environmental metrics¹³. The statistical distribution of streamflows for each month from the monitored watersheds, was then used to estimate a potential range of flows for the query basin. The physical and hydroclimatic characteristics and comparisons are based on those used for hierarchical clustering of river ecosystems in BC¹⁴. The location of the basins is shown on the map below.

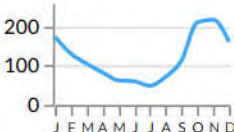
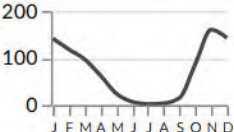
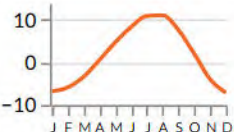


Legend

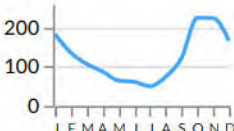
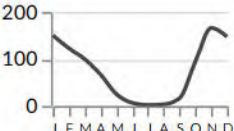
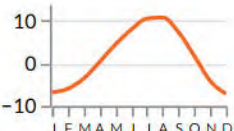
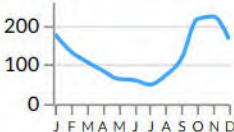
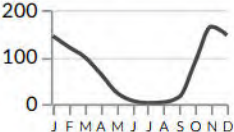
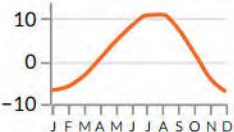
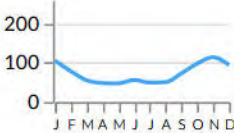
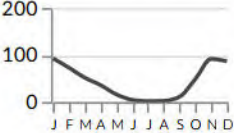
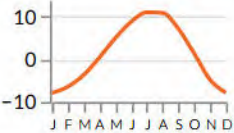
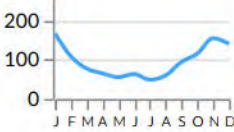
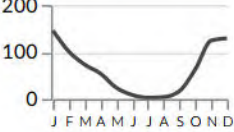
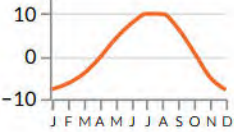
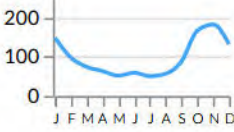
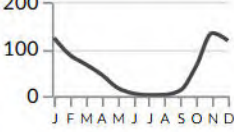
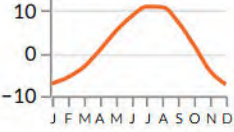
Query Watershed	08EE008	08ED001	08EE020	08ED002	08EF005

The watersheds shown on the map above have been identified as the most similar to the watershed described in this report. The table below shows key characteristics of these watersheds in relation to the watershed described in this report.

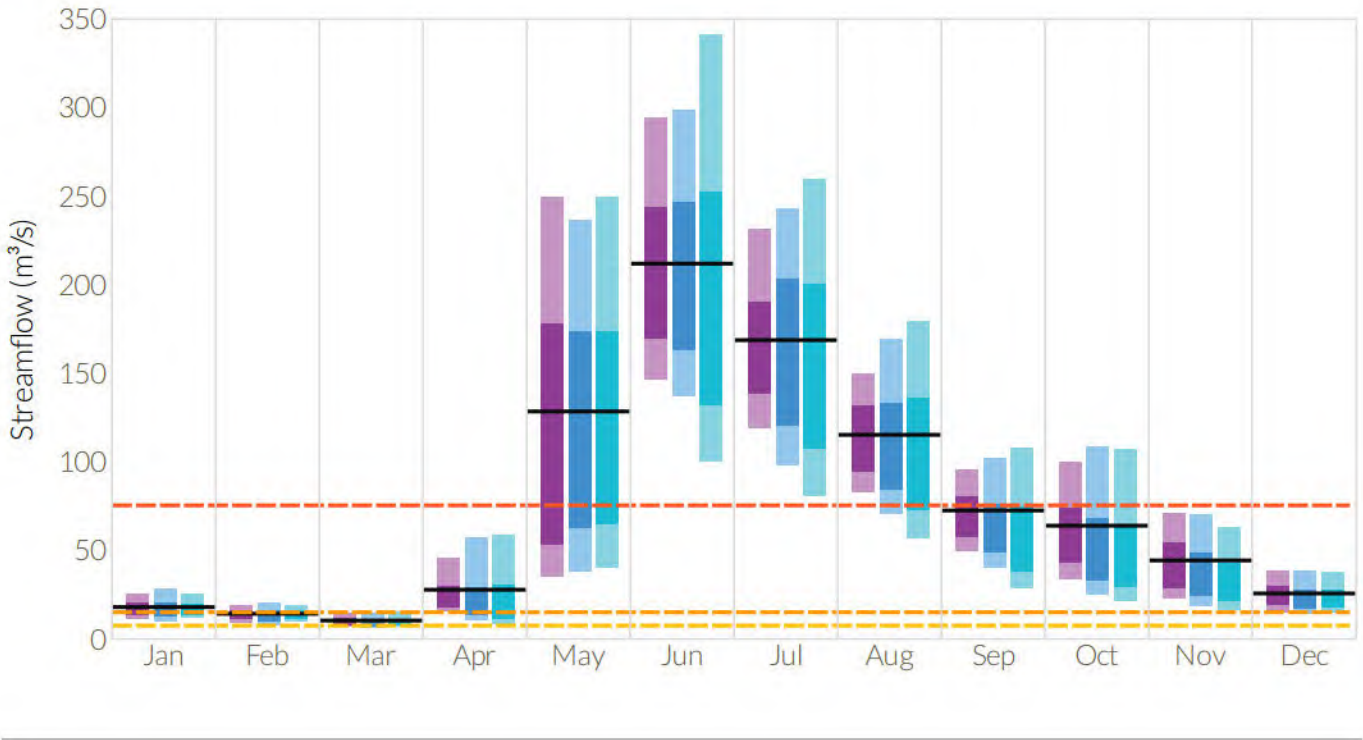
Query Watershed

Watershed	Location (lat, long)	Area (km²)	Elevation (m: min, mean, max)	Precipitation (mm/mo)	Precip. as snow (mm/mo)	Temperature (°C)
Morice River	54.174, -127.366	1,977	743, 1,237, 2,509			

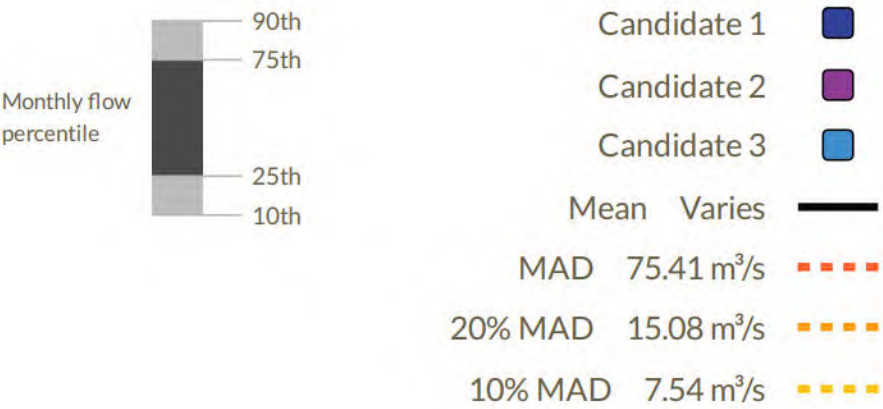
Candidate Watershed(s)

Watershed	Location (lat, long)	Area (km²)	Elevation (m: min, mean, max)	Precipitation (mm/mo)	Precip. as snow (mm/mo)	Temperature (°C)
● 08ED001 Nanika River At Outlet Of Kidprice Lake	53.930, -127.455	719	909, 1,303, 2,263			
● 08ED002 Morice River Near Houston	54.129, -127.406	1,903	766, 1,250, 2,509			
● 08EE008 Goathorn Creek Near Telkwa	54.638, -127.130	122	693, 1,242, 2,241			
● 08EE020 Telkwa River Below Tsai Creek	54.602, -127.503	368	714, 1,358, 2,512			
● 08EF005 Zymoetz River Above O.K. Creek	54.480, -128.248	2,846	163, 1,178, 2,545			

The statistical distribution of flows, from the top 3 candidate basins, has been applied to the estimated mean monthly flows of the watershed described in this report¹⁵. The chart and table below show the potential variability of flows using the flow duration curve replacement approach.



Legend




Tabular Data - Hydrologic Variability

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Watershed	08ED002	08ED002	08ED002	08ED002	08ED002	08ED002	08ED002	08ED002	08ED002	08ED002	08ED002	08ED002
90th	25.74	19.34	14.28	45.35	249.34	294.52	231.66	149.84	95.94	100.43	70.66	38.30
75th	17.99	14.23	10.42	27.79	128.46	211.88	168.72	115.25	72.54	63.95	44.35	25.70
Mean	16.55	13.16	9.41	21.53	106.73	200.66	159.94	111.11	66.79	54.50	38.66	23.08
25th	13.38	11.18	7.99	17.68	53.59	169.38	138.55	94.19	57.65	43.12	28.88	19.00
10th	11.55	9.35	6.82	15.54	35.27	146.72	119.19	82.87	49.96	33.99	22.91	14.91

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Watershed	08ED001	08ED001	08ED001	08ED001	08ED001	08ED001	08ED001	08ED001	08ED001	08ED001	08ED001	08ED001
90th	28.41	20.55	14.61	57.07	236.32	298.44	242.77	168.96	101.88	108.88	70.28	38.30
75th	17.99	14.23	10.42	27.79	128.46	211.88	168.72	115.25	72.54	63.95	44.35	25.70
Mean	15.32	12.46	8.78	17.67	114.03	201.76	157.14	105.24	60.73	47.45	34.01	21.28
25th	12.57	9.79	7.36	13.13	63.08	162.97	120.39	84.12	49.22	33.08	24.29	17.10
10th	10.00	7.89	6.29	10.69	38.16	136.86	97.89	70.50	40.01	25.21	18.69	14.02

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Watershed	08EE020	08EE020	08EE020	08EE020	08EE020	08EE008	08EE008	08EE008	08EE008	08EF005	08EE020	08EE020
90th	25.28	19.18	15.02	58.76	249.68	341.34	260.14	179.07	108.20	107.28	62.60	37.66
75th	17.99	14.23	10.42	27.79	128.46	211.88	168.72	115.25	72.54	63.95	44.35	25.70
Mean	15.59	13.27	8.78	17.31	106.16	182.66	147.78	99.92	49.68	41.72	29.89	21.62
25th	13.85	11.55	7.82	11.44	64.97	132.00	107.30	73.31	37.97	29.75	21.15	17.78
10th	12.05	10.29	6.88	8.61	40.35	100.51	80.98	56.64	28.82	21.46	16.34	14.66

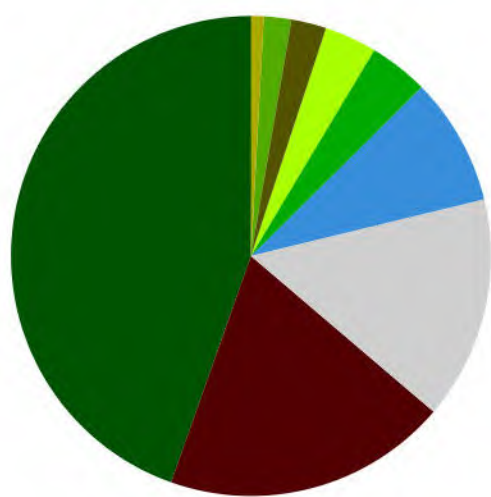
Candidate 1 

Candidate 2 

Candidate 3 

Landcover

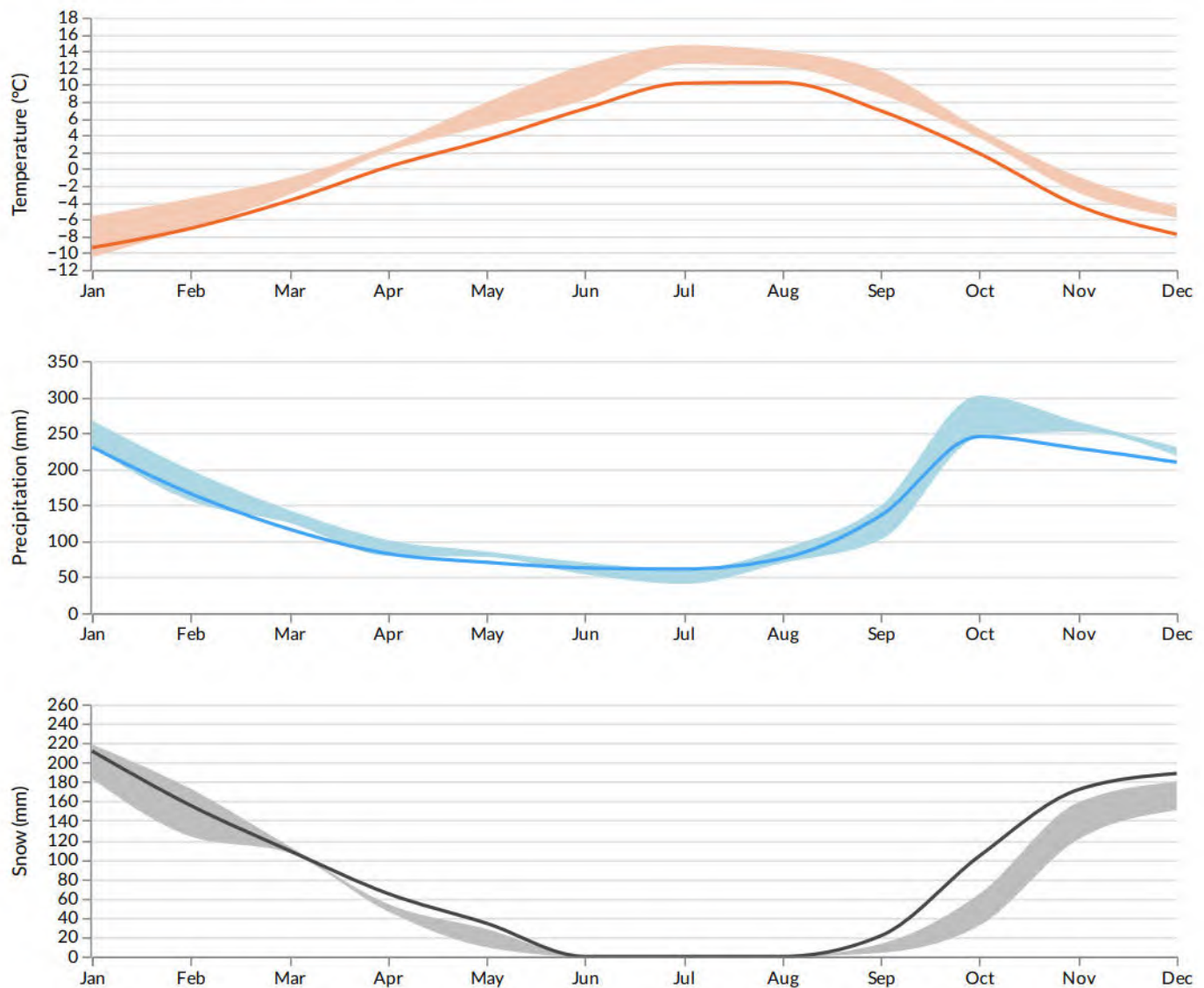
The landcover¹⁶ characteristics influence hydrologic processes in a watershed¹⁷. The chart below shows the landcover makeup of the Morice River watershed. These components were incorporated in the hydrologic model that produces the water supply estimates in this report, primarily influencing the evapotranspiration component of the water budget calculations, which represent the amount of water that moves directly back to the atmosphere through direct evaporation or transpiration by vegetation.



Type	Area (km²)	% of Watershed
Barren	378.4	19.1%
Coniferous	883.0	44.7%
Cropland	0.0	0.0%
Deciduous	36.6	1.8%
Developed	0.0	0.0%
Grassland	0.1	0.0%
Herb	78.7	4.0%
Mixed	46.6	2.4%
Shrub	69.8	3.5%
Snow / Glacier	296.8	15.0%
Water	170.4	8.6%
Wetland	16.7	0.8%

Climate

The climate of the Morice River watershed has been characterized using gridded climate models¹⁸. These models have been used to calculate long term average temperature, rain and snow accumulations. The timing and amount of precipitation is a strong indicator of water availability, and the state it falls in (rain or snow) determines what happens when it reaches the ground - whether it accumulates and melts when temperatures warm, or infiltrates and runs off rapidly after reaching the ground. Three estimates of future climate for the 2041-2070 time period have been assessed and used to illustrate a range of potential future conditions. The shaded areas on each chart show a range of future conditions, and the relationship with the solid line (showing the historical average) helps understand at what time of the year the temperature, precipitation, and precipitation as snow may be different.



Normal / Historical Average

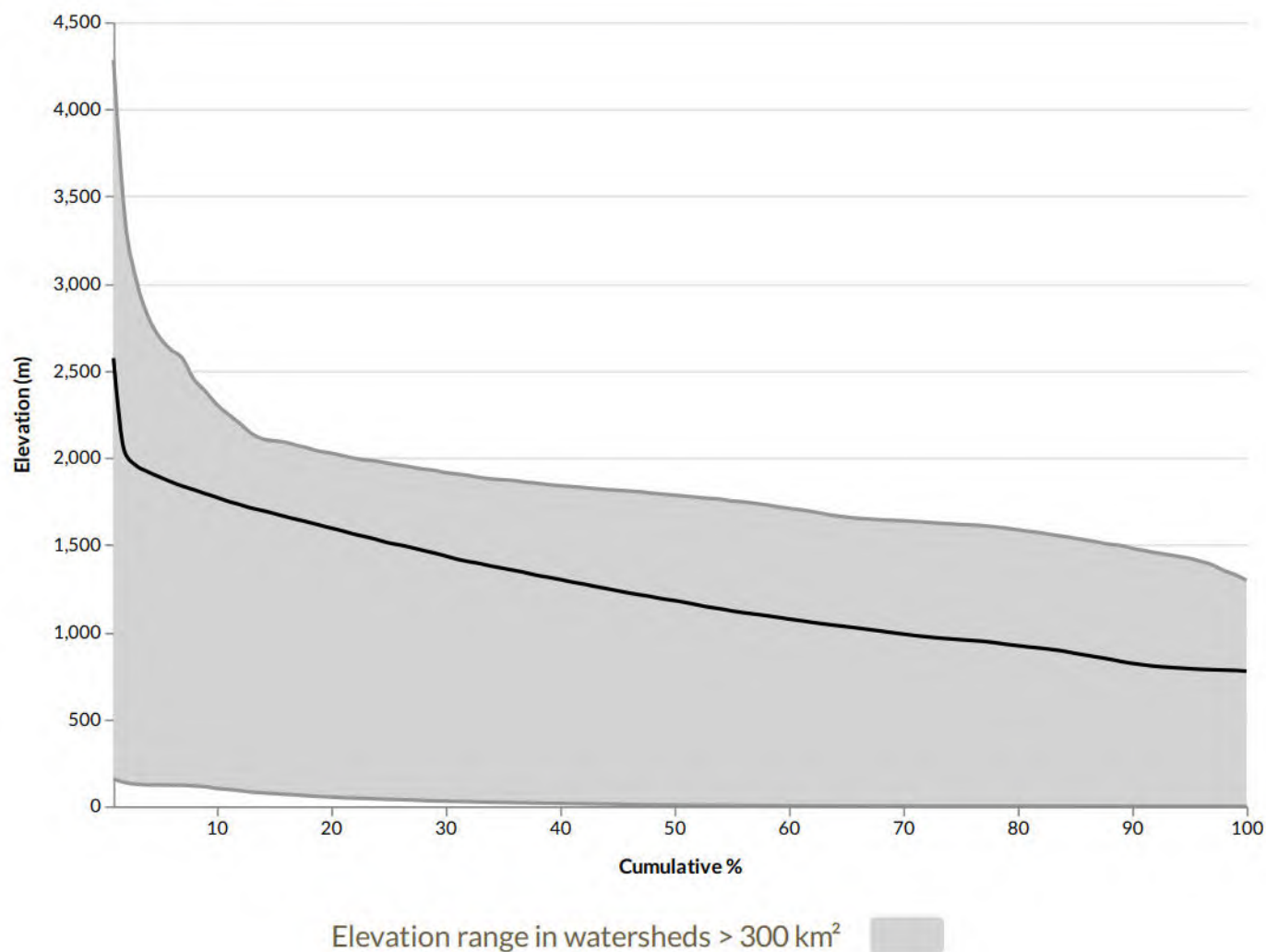


Projected Average for the 2050s



Topography

The elevation of a watershed is a primary control on climate, vegetation, and timing of hydrologic processes such as onset of spring melt. The amount, and state of precipitation changes with elevation. Temperatures vary by elevation, with gradients typically differing in direction between winter and summer (with valley bottoms typically colder in winter than higher elevations, and higher alpine areas colder in summer than the valley bottoms). The hypsometric curve shown in the chart below, shows the cumulative distribution of elevation by area in the watershed. Percent values on the x-axis can be used to determine the percentage of the watershed above a given elevation value.



Notes

1. For more information please contact Frontcounter BC

✉ Email: frontcounterbc@gov.bc.ca

☎ Toll Free: 1-877-855-3222

☎ Outside North America: ++1-778-372-0729

🌐 On the web: <http://www.frontcounterbc.gov.bc.ca/>

2. The downstream watershed is defined at the mouth of the queried stream. If that downstream watershed's area is within 15% of the queried drainage area, then the watershed at the mouth of the next downstream stream is chosen as the downstream watershed. For information further downstream, please generate an additional report at a location of interest. Predictions for small watersheds (generally smaller than 50 sq. km.) may be less accurate due to the lack of hydrometric data available for watersheds of this size. These small watersheds are highly sensitive to localized weather events, resulting in highly variable conditions both within and between years.
3. The hydrologic model employed a water balance approach to estimate runoff in ungauged basins. The model was calibrated using stream flow measurements from the Water Survey of Canada, and validated using a leave-one-out cross validation. The model used 123 watersheds with hydrometric gauges, and included detailed information on climate, evapotranspiration, topography, vegetation and land cover. Error metrics calculated for mean annual discharge for the entire model domain are: Mean error = -2.8%, Median Error = -4.2%, Mean Absolute Error = 13.9%, Watersheds within +/- 20% = 80.5%.
4. Information on water reserves and restrictions can be found at the following links:

Water Reserves:
<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/water-reservations>

Water Restrictions:
<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/water-allocation-restrictions>
5. *Ptolemy, 2015.*
6. The hydrology model was developed following similar methods to those described in Chapman et al, 2018.
7. <https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/water-policies/environmental-flow-needs>

8. Water volumes presented as "Potential Allocations" within this report are determined in consideration of the Province of BC's *Environmental Flow Needs Policy*⁷. Within the Policy, risk management measures are suggested to assess or mitigate potential effects of withdrawals from a stream, and provide an ecosystem perspective on environmental flow needs. The measures are associated with risk levels 1, 2, and 3 and are intended to guide where more caution may be needed in reviewing an application or making a decision.

Where there are known species or habitat sensitivities, more detailed, site-specific studies may be required. Where detailed assessments or studies exist, they will supersede policy recommendations.

Risk management levels, for assessing new applications to withdraw water, are determined for each month using the relationship of mean monthly flows to the mean annual discharge, and also using a stream size threshold based on mean annual flows. The calculations presented within this report assume all streams are fish-bearing. Where no water is indicated as available under a risk level, the stream may be very flow sensitive during that time, or the stream may have existing allocations in excess of the relevant threshold.

Inter-annual hydrologic variability may affect the amount of water available in a given year. The impact of this variability on water allocations should be considered separately from the information presented in this report.

The following risk management measures may be appropriate for consideration before a decision is made, could be completed by regional staff to inform a decision, or could be a condition of the licence or approval.

Risk management measures may differ for short-term approvals vs. licences and may vary in relation to withdrawal amounts.

Risk Management Level 1:

Measures to assess or mitigate potential effects on low sensitivity flow periods:

- Assess veracity of information and ensure appropriate methods are used, (e.g., [RISC](#))
- Consider downstream users and species/habitats

Risk Management Level 2:

Measures to assess or mitigate potential effects on moderate sensitivity flow periods (In addition to Level 1 measures):

- Establish adequate baseline hydrological data before withdrawals
- Prepare reconnaissance-level fish and fish habitat impact assessment (e.g., Section 4.1.10.1 in Lewis et al. 2004)
- Issue seasonal licence, or restrictions during low flow periods
- Development of off-stream storage

- Inclusion of a daily maximum or inst. withdrawal e.g., greater consideration of instantaneous demand over averages
- Limit pump intake size
- Monitor and report water use during higher risk flow periods, e.g., install flow gauge
- Monitor low flows and limit withdrawals when flows drop below a certain level
- Ministry staff to conduct audit of basin use/beneficial use review
- Refuse application to withdraw water

Risk Management Level 3:

Measures to assess or mitigate potential effects on high sensitivity flow periods (In addition to Level 2 measures):

- Issue limited licence term, allowing for review and potential adjustment (e.g., 5 years)
- Prepare detailed habitat assessment (e.g., Lewis et al. 2004; Hatfield et al. 2007)

9. The annual allocation estimate for the queried basin is the sum of surface and groundwater short term use approvals^{19, 20} and surface water long term licences²¹ located within the queried basin. Long term licences and short term approvals with a non-consumptive or 'flow-through' water purpose as well as long term licences in an application stage were excluded from the summed annual estimate. The same rules apply to the downstream basin with one addition; for non-consumptive water use licences that are in the downstream basin but not in the query basin, the quantities are included in the allocation estimates. Stream or aquifer storage water use licences or approvals are not included in either the query or downstream calculations as it was assumed they have an associated consumptive licence or approval that uses the water from storage. The non-consumptive purposes are Aquifer Storage: Non-Power, Aquifer Storage: Power, Conservation: Construction Works, Conservation: Storage, Conservation: Use of Water, Land Improvement: General, Land Improvement: Ind'l for Rehab or Remed, Power: Commercial, Power: Dams, Power: General, Power: Residential, Stream Storage: Non-Power and Stream Storage: Power.

10. <https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/laws-rules/water-sustainability-act>

11. http://www.bclaws.ca/civix/document/id/complete/statreg/08036_01

12. Water Licence Flag Descriptions:

- D : Multiple PODs for PUC, qty at each are known, PODs on different sources
- M : Max licenced demand for purpose, multiple PODs, qty at each POD unknown
- P : Multiple PODs for PUC, qty at each are known, PODs on same source
- T : Total demand for PUC, one POD

Other:

- N : Licence volumes not used in annual or monthly allocation calculations

13. Physical and hydroclimatic characteristics of basins

Description	Source
Upstream area	Freshwater Atlas (Province of BC, 2020c)
Mean, max/min, and range elevation	Shuttle Radar Topography Mission (SRTM) (Farr 2007)
PCA axis 1 and 2 of Landcover	Land Cover of North America at 250 meters (2010)
Mainstem slope	Freshwater Atlas (Province of BC, 2020c)
Average monthly temperature	Climate WNA (version 5.6) – (Wang 2012)
Average monthly precipitation	Climate WNA (version 5.6) – (Wang 2012)
Average monthly evaporation	Climate WNA (version 5.6) – (Wang 2012)
Average monthly precipitation as snow	Climate WNA (version 5.6) – (Wang 2012)
Average no of monthly frost-free days	Climate WNA (version 5.6) – (Wang 2012)
Latitude and Longitude	HYDAT (2019) and Freshwater Atlas (Province of BC, 2020c)

14. *Ciruna et al, 2009.*

15. A flow duration curve (FDC) was estimated for the current ungauged basin, by substituting a dimensionless FDC from an observed gauged basin with the lowest dissimilarity measure (multi-dimensional Euclidean space) or highest similar physical and hydroclimatic properties. This is a modified approach to FDC substitution methods described in the literature (*Booker & Snelder, 2012; Ganora et al., 2009*) All hydrometric stations in Northern BC with at least five years of data for a given month, were used as the pool of candidates for ungauged basins. Recorded flows were normalized using the station's mean flow for the corresponding month. Once a candidate basin was selected, the substituted, normalized/dimensionless FDC was multiplied by the ungauged basin's modeled mean monthly flow.
16. The land cover data for BC was sourced from the 2000-Land Cover Vector product, produced and distributed by Natural Resources Canada. For Alaska, the land cover data was sourced from the 2001 national land cover database for the United States. Where the previous two sources were missing data, the land cover data was infilled with the 2013 North American Land Change Monitoring System Land Cover.

BC: *Geobase, 2009.*

AK: *Homer et al, 2004.*

Infill: *CEC, 2013.*

17. *Pike and Wilford, 2013.*

18. ClimateWNA v4.72 (*Hamann et al, 2013*) was used to produce estimates for the 1961-90 climate normal as well as 2041-2070 future climate scenarios. The three future climate scenarios used are the HadGEM A1B, CGCM3 A2, and HadCM3 B1. These represent a range of generally hot/dry, warm/very wet, and moderately warm/wet future climates, respectively.

19. FLNRORD Water Approval Points imported May 08, 2022 from <https://catalogue.data.gov.bc.ca/dataset/water-approval-points>
20. OGC Short term Approvals imported May 09, 2022 from https://data-bcogc.opendata.arcgis.com/datasets/fcc52c0cfb3e4bffb20518880ec36fd0_0
21. Water Rights Licences imported May 08, 2022 from <https://catalogue.data.gov.bc.ca/dataset/water-rights-licences-public>
22. Water Rights Applications imported May 08, 2022 from <https://catalogue.data.gov.bc.ca/dataset/water-rights-applications-public>
23. Variability is defined as $(Q90 - Q10) / Q50$. This represents how variable flows are in a given month in relation to the median flow in that month.

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Methods

Modeling

The hydrologic model driving the Northwest Water Tool was produced following similar methods to those described in:

Chapman A, Kerr B, Wilford D (2018) A water allocation decision-support model and tool for predictions in ungauged basins in northeast British Columbia. J Am Water Resour Assoc 54 (3): 676–693. <https://doi.org/10.1111/1752-1688.12643>

The Northwest Water Tool uses climate drivers from:

ClimateWNA v4.72 Normal 1971-2000

Calibration and validation was performed using hydrometric records which were selected based on length of record, seasonality, and other characteristics.

Hydrometric stations used: 123

Annual model performance:

Mean Error: -2.8%

Median Error: -4.2%

Mean Absolute Error: 13.9%

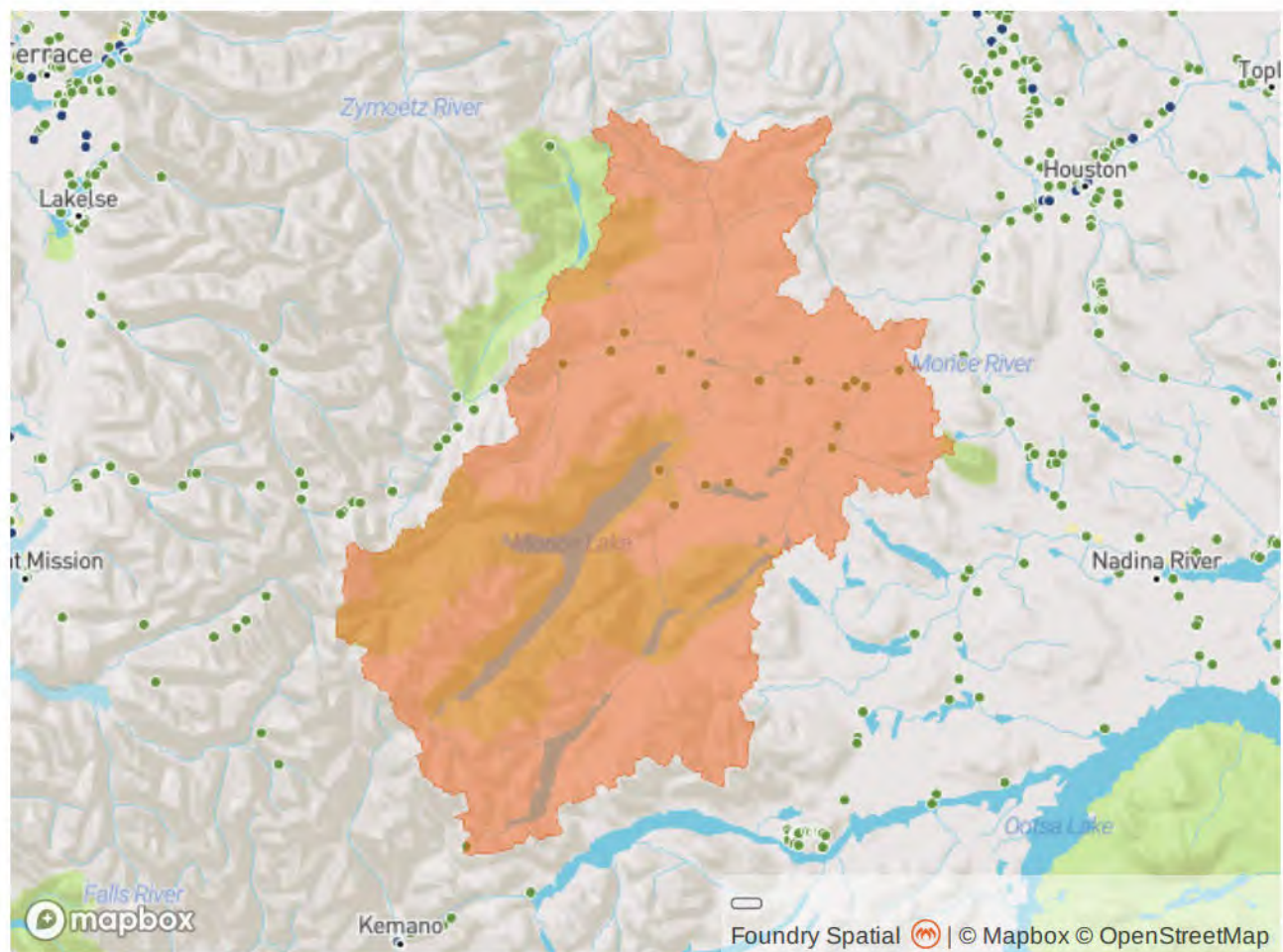
% of stations within +/- 20%: 80.5%

Watershed Summary

Morice River

Watershed Number: 7662462

May 9, 2022



Powered by:



<https://nwwt.bcwatertool.ca/watershed>

Introduction

Thank you for generating a report using the Northwest Water Tool! In this report, you'll find a detailed water resource evaluation for the watershed you selected. Naturally, the information in the report is contextual; based on the stream, river or lake you selected, the report describes:

- The quantity and timing of water flow;
- Existing water allocations;
- The needs of the environment, and sustainable withdrawal thresholds; and
- Other characteristics of the watershed, such as landcover, climate, and topography.

Some of the information presented in this report was generated by hydrology models using large data sets of streamflow measurements, and physical and environmental characteristics. In general, this report estimates what the average conditions are like – not necessarily what may be happening at this moment or this year in particular.

As you read through the material, if you find yourself wanting to know more, all of the details regarding our methods, data sources, and the performance of the Northwest Water Tool are provided at the end of the report, along with contact information to reach government departments with any questions about water rights or water management in BC¹.

I hope that you find the information very useful. If you have any questions, comments, or ideas on how to improve the information presented, we would love to talk. You can reach the Northwest Water Tool team at bcwatertool@foundryspatial.com.

Sincerely,

Ben Kerr, P.Ag.

Foundry Spatial



Overview

Coordinates: 54.199° N, -126.989° W

Watershed Area: 3,501 km²

Watershed Elevation: 2,509 m (max), 1,176 m (mean), 678 m (min)

Mean Annual Discharge: 102 m³/s

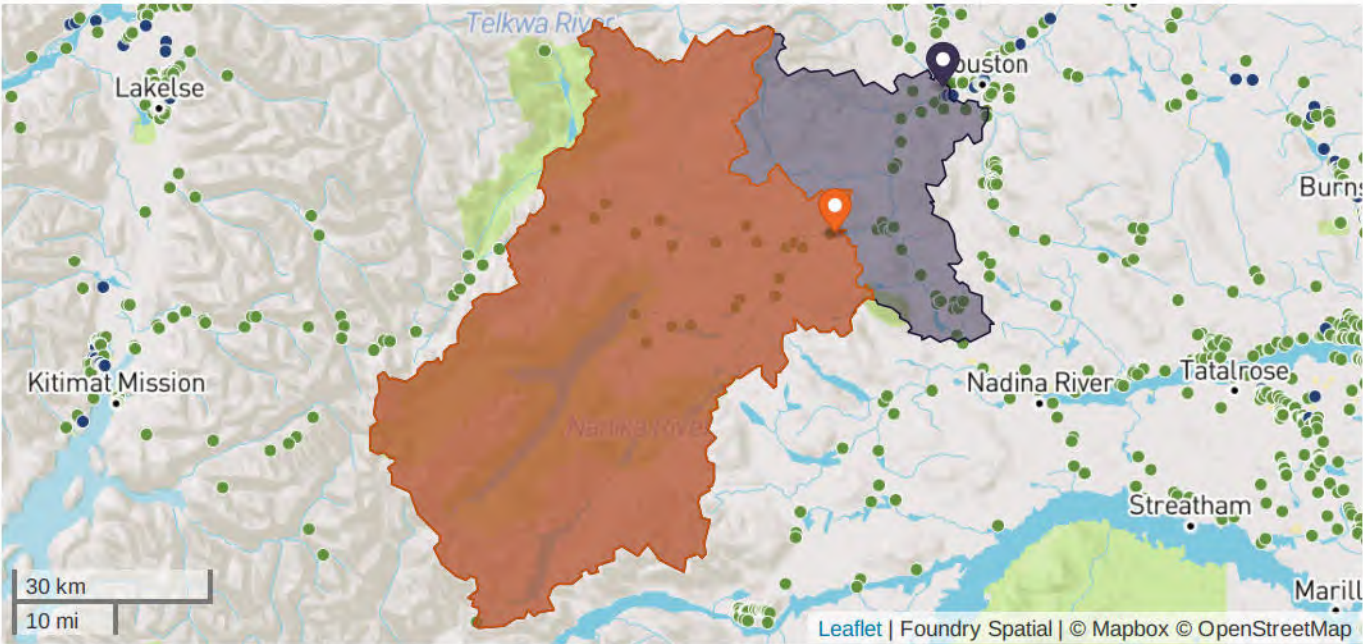
Estimates of water supply represent long-term average conditions. These estimates were generated from hydrology models³. The models incorporate information about climate, terrain, land cover, evapotranspiration, watershed boundaries and connectivity, and observed hydrology, and are calibrated using long-term streamflow monitoring data collected by the Water Survey of Canada, United States Geological Survey, and other organizations. Detailed information on models and performance is provided in the methods section of this report. Environmental flow needs calculations identify the amount of water rivers require to maintain healthy aquatic ecosystems. The calculations presented in this report are based on the Province of BC's *Environmental Flow Needs Policy*⁷.

Water allocations represent existing water rights and are sourced directly from government databases. These allocations include both short-term (temporary diversion) and long-term licences at the time of licence extract as noted within the report. Volumes of water indicated as consumptive use associated with these allocations are summarized and integrated with the estimates of water supply to provide a complete picture of the resource. Licences for all purposes are included. Both surface water and groundwater allocations within the watershed have been summarized. In some cases, assumptions have been made around timing of use (e.g. agriculture) where that information is not explicitly supplied with the source data. Information on all licences are included in this report along with notes indicating any assumptions made.

This report was generated by the BC Water Tool, an automated water resource reporting engine powered by Foundry Spatial at nwwt.bcwatertool.ca. This report contains information generated from hydrologic models, government databases, and other sources. All data sources may contain errors. As such, no warranty or representation is expressed or implied, and all liability from any decision made, based in whole or in part on the information contained within this report, is the sole responsibility of the party making said decision. Concerns or inquiries may be directed to bcwatertool@foundryspatial.com.

Annual Water Supply and Demand

This section describes the annual water supply and demand, for the location (Morice River) that you selected. The watershed is outlined in orange on the map below. The watershed associated with the next downstream confluence² (Morice River (Downstream)) has also been outlined in purple, with summary statistics for both watersheds provided in the table below. Please note that all values presented are estimates and are subject to error³.



Legend

Query Watershed ■

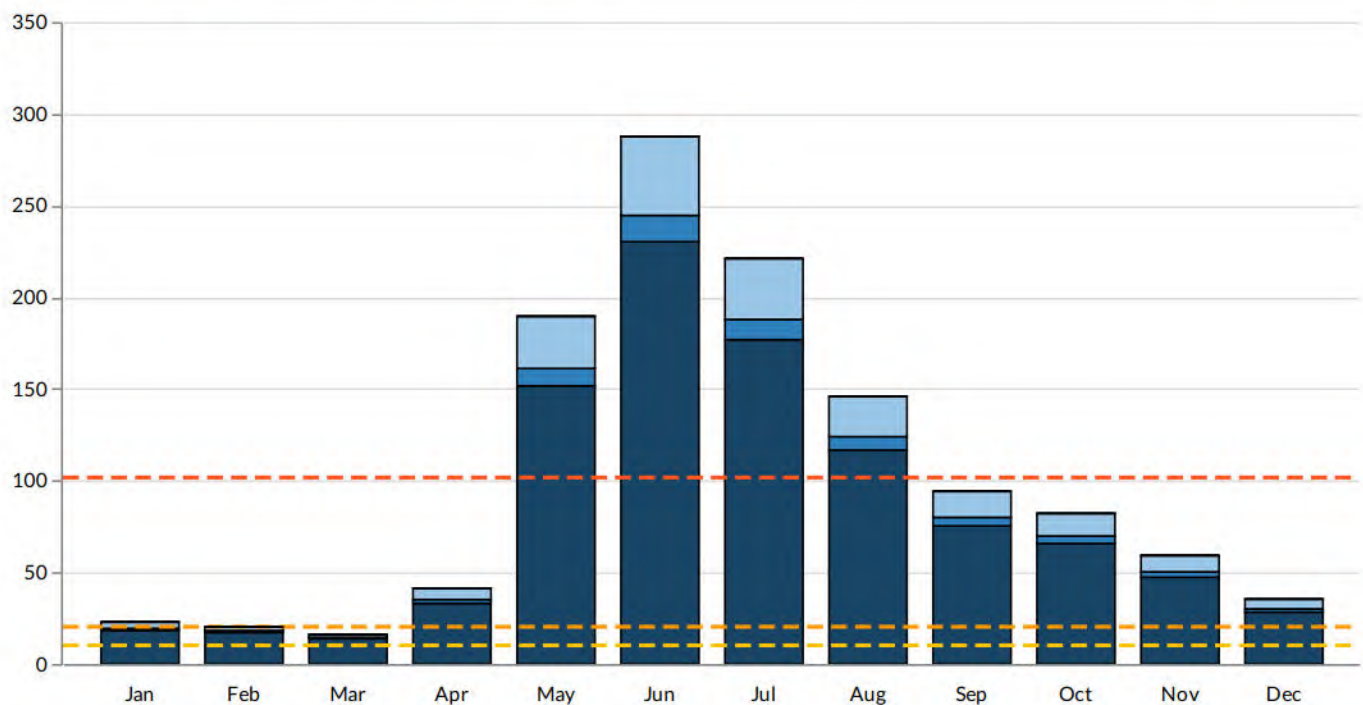
Downstream Watershed ■

Annual Statistics	Morice River	Morice River (Downstream)
Area (km ²)	3,501	4,379
Mean Annual Discharge (MAD, m ³ /s)	101.674	111.869
Allocations (average, m ³ /s) ⁹	0.013	0.044
Allocations (average, % of MAD)	< 0.1	< 0.1
Reserves & Restrictions ⁴	Present	Present
Volume Runoff (m ³ /yr)	3,208,599,262	3,530,329,373
Volume Allocations (m ³ /yr)	407,142	1,391,055
Seasonal Flow Sensitivity ⁵	Winter, Summer	Winter, Summer

Monthly Water Supply and Demand - Morice River


Hydrologic models⁶ have been developed to produce estimates of mean monthly flows. The Province of BC's *Environmental Flow Needs Policy*⁷ has been applied to these estimates, identifying risk management levels⁸ to support water management decisions. Information on active water licences and approvals (collectively, 'allocations') in the watershed have been extracted and summarized from government databases⁹ and integrated with the hydrology model data and risk management level calculations, to account for the volume of water already allocated.


In the chart below, the height of each column represents the mean monthly discharge - the long term, estimated average flow for that month of the year. The dark, medium, and light blue areas of the columns show the potential amount of water allocations within each risk management level. When allocations exist in the watershed, a red box hangs down from the top of each column to represent the volume of existing allocations in the context of mean monthly supply. The table below corresponds to the data shown on the chart.




Legend

Existing Allocations 

Risk Management 1 

Risk Management 2 

Risk Management 3 

MAD 10% 10.17 m³/s 

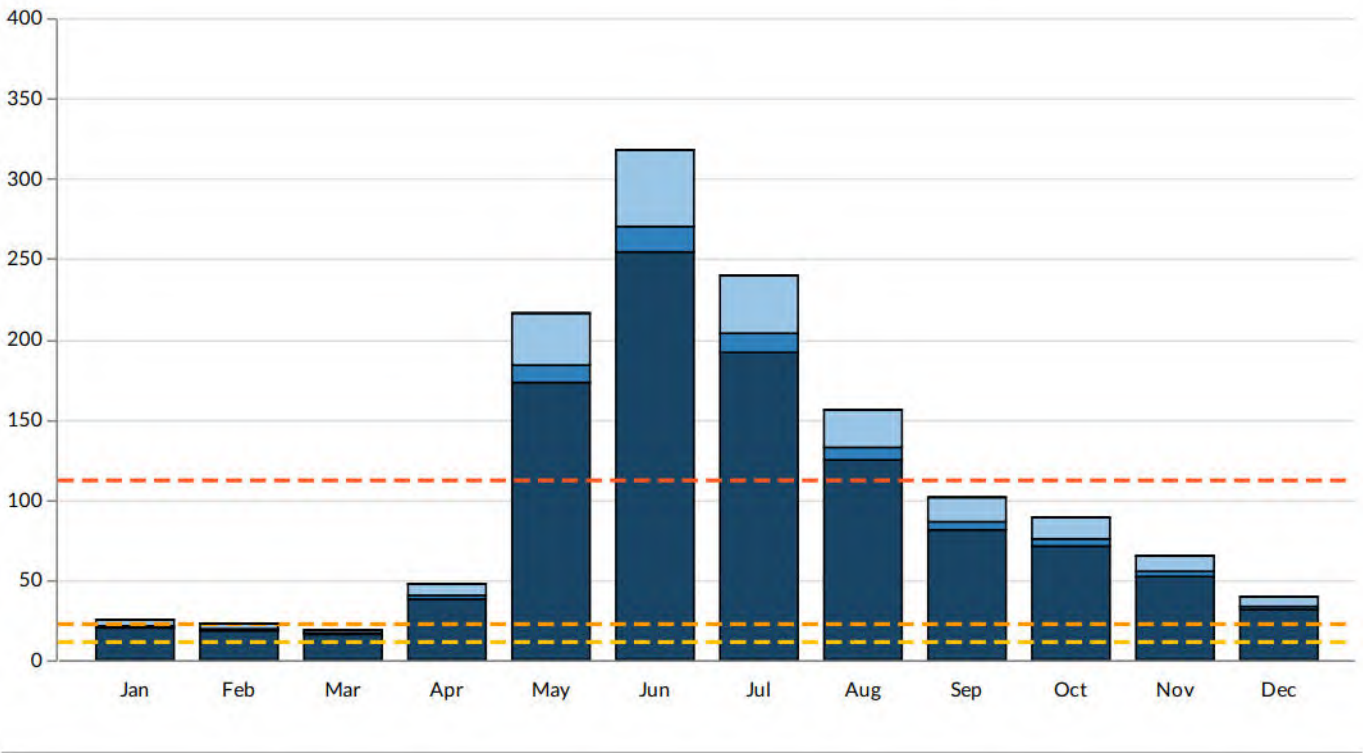
MAD 20% 20.33 m³/s 

MAD 101.67 m³/s 

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% of MAD	22.47	19.91	15.93	40.64	186.43	282.95	217.37	143.41	92.52	80.75	58.14	34.78
Flow Sensitivity	Low	Mod	Mod	Low	Low	Low	Low	Low	Low	Low	Low	Low
Existing Water Licences* (m³/s)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Existing Short Term Approvals* (m³/s)	< 0.01	< 0.01	< 0.01	0.01	0.01	0.01	0.01	0.01	0.01	< 0.01	< 0.01	< 0.01
Mean Monthly Discharge (m³/s)	22.85	20.24	16.20	41.32	189.55	287.69	221.01	145.81	94.06	82.10	59.11	35.36
Potential Allocation (m³/s, Risk Mgmt 1)	3.42	2.02	1.61	6.18	28.42	43.14	33.14	21.86	14.10	12.31	8.86	5.30
Potential Allocation (m³/s, Risk Mgmt 2)	4.56	3.03	2.42	8.25	37.90	57.52	44.19	29.15	18.80	16.41	11.82	7.07
Potential Allocation (m³/s, Risk Mgmt 3)	≥ 4.56	≥ 3.03	≥ 2.42	≥ 8.25	≥ 37.90	≥ 57.52	≥ 44.19	≥ 29.15	≥ 18.80	≥ 16.41	≥ 11.82	≥ 7.07

Monthly Water Supply and Demand - Morice River (Downstream)

Similar to the previous section, which described the water supply and demand for the location that you selected, this section describes the water supply and demand for the downstream basin. The hydrology model and risk management calculations are the exact same, but the calculation logic for existing allocations is different, taking into account non-consumptive, or 'flow-through' water rights.⁹










Legend

- Existing Allocations ■
- Risk Management 1 ■
- Risk Management 2 ■
- Risk Management 3 ■
- MAD 10% 11.19 m³/s ---
- MAD 20% 22.37 m³/s ---
- MAD 111.87 m³/s ---

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% of MAD	22.35	20.37	16.78	42.32	193.16	284.03	214.04	139.24	90.57	79.32	58.09	35.08
Flow Sensitivity	Low	Low	Mod	Low	Low	Low	Low	Low	Low	Low	Low	Low
Existing Water Licences* (m³/s)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.03	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Existing Short Term Approvals* (m³/s)	0.01	0.01	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01
Mean Monthly Discharge (m³/s)	25.00	22.79	18.77	47.34	216.09	317.75	239.44	155.77	101.33	88.74	64.99	39.25
Potential Allocation (m³/s, Risk Mgmt 1)	3.74	3.41	1.84	7.06	32.39	47.63	35.87	23.33	15.18	13.30	9.73	5.87
Potential Allocation (m³/s, Risk Mgmt 2)	4.99	4.54	2.78	9.43	43.20	63.52	47.84	31.12	20.24	17.73	12.98	7.84
Potential Allocation (m³/s, Risk Mgmt 3)	≥ 4.99	≥ 4.54	≥ 2.78	≥ 9.43	≥ 43.20	≥ 63.52	≥ 47.84	≥ 31.12	≥ 20.24	≥ 17.73	≥ 12.98	≥ 7.84

Allocations By Industry

Water licences and approvals (allocations) in British Columbia are administered under the Water Sustainability Act. Existing, active water allocations in the watershed are summarized by water source, type, and term in the table below. On the following pages, each individual water allocation is listed with information on the specific water source and quantity, ordered by seniority.

Industry	Annual Volume	Ground Water (m³)		Surface Water (m³)	
		STUA 	Licence 	STUA 	Licence 
Agriculture		0	0	0	0
Commercial 		0	0	114,000	0
Domestic		0	0	0	0
Municipal		0	0	0	0
Oil & Gas 		0	0	293,142	0
Other 		0	0	0	4,467,925
Power		0	0	0	0
Storage		0	0	0	0

Purpose Use Code Groupings

Agriculture

Crop Harvest, Protect & Compost, Crops: Crop Suppression, Crops: Flood Harvesting, Crops: Frost Protection, Greenhouse & Nursery, Greenhouse & Nursery: Greenhouse, Greenhouse & Nursery: Nursery, Irrigation: Local Provider, Irrigation: Private, Livestock & Animal, Livestock & Animal: Game Farm, Livestock & Animal: Kennel, Livestock & Animal: Stockwatering

Commercial

Bulk Shipment for Marine Transfer, Camps & Pub Facil, Camps & Pub Facil: Church/Com Hall, Camps & Pub Facil: Exhibition Grounds, Camps & Pub Facil: Institutions, Camps & Pub Facil: Non-Work Camps, Camps & Pub Facil: Public Facility, Camps & Pub Facil: Work Camps, Camps and Public Facilities, Comm. Enterprise, Comm. Enterprise: Amusement Park, Comm. Enterprise: Enterprise, Fish Hatchery, Fresh Water Bottling, Heat Exchanger, Ind'l & Comm., Ice & Snow Making, Ind'l Waste Mgmt: Effluent, Ind'l Waste Mgmt: Garbage Dump, Ind'l Waste Mgmt: Sewage Disposal, Industrial Waste Mgmt, Industrial (Well Drill/Transp Mgmt), Industrial-dewatering, Mineralized Water: Bottling & Dist, Mineralized Water: Comm. Bathing Pool, Mining: Hydraulic, Mining: Placer, Mining: Processing Ore, Mining: Washing Coal, Misc Ind'l, Misc Ind'l: Dewatering, Misc Ind'l: Fire Protection, Misc Ind'l: Overburden Disposal, Misc Ind'l: Sediment Control, N/A, Pond & Aquaculture, Processing & Mfg, Processing & Mfg: Fire Prevention, Processing & Mfg: Processing, Processing & Mfg: Wharves, Pulp Mill, Transport Mgmt: Dust Control, Transport Mgmt: Road Maint, Vehicle & Eqpt, Vehicle & Eqpt: Brake Cooling, Vehicle & Eqpt: Mine & Quarry, Vehicle & Eqpt: Truck & Eqpt Wash, Well Drilling/Transport Management

Domestic

Domestic, Incidental - Domestic

Municipal

Heat Exchanger, Residential, Land Improvement: General, Land Improvement: Ind'l for Rehab or Remed, Lwn, Fairway & Grdn, Lwn, Fairway & Grdn: Res L/G, Lwn, Fairway & Grdn: Watering, Swimming Pool, Waterworks (other than LP), Waterworks: Local Provider, Waterworks: Water Delivery, Waterworks: Water Sales

Oil & Gas

Industrial: Fire Suppression, Industrial: Pressure Testing, Industrial: Road Maintenance, Industrial: Work Camp, Oil & Gas Purpose: Hydraulic Fracturing, Oil & Gas Purpose: Oil Field Injection, Oil & Gas Purpose: Other, Oil & Gas Purpose: Well Drilling, Oil & Gas: Drilling, Oil & Gas: Hydraulic Fracturing (deep GW), Oil & Gas: Hydraulic Fracturing (non-deep GW), Oil & Gas: Oil field inject. (non-deep GW)

Other

Conservation: Construction Works, Conservation: Use of Water, Ice & Snow Making: Ice, Ice & Snow Making: Snow, Permit to Occupy Crown Land, River Improvement

Power

Cooling, Power: Commercial, Power: General, Power: Residential

Storage

Aquifer Storage: Non-Power, Conservation: Storage, Stream Storage: Non-Power, Stream Storage: Power

Water Licences (Surface Water)

Water licences²¹ and short term use approvals^{20, 21} (collectively, 'allocations') for surface water and groundwater in British Columbia are managed under the Water Sustainability Act¹⁰. These allocations are authorized by the Ministry of Forests, Lands, Natural Resource Operations, and Rural Development, and the BC Oil and Gas Commission (associated with activities regulated under the Oil and Gas Activities Act¹¹). Existing allocations, and active applications²² for water licences within the query basin, are summarized and listed in the charts and tables below.

BC Water Sustainability Act - Water Licences - 9 Licences, 0 m³ Total Annual Volume⁹

Existing Allocations

Current approved surface water rights. Volumes are included in calculations on pages 2, 3, and 4 unless an 'N' is present in Flag column

Licence	Number	POD	Date	Quantity	Flag ¹²
Fisheries & Oceans Canada (14120) Conservation: Use of Water from Nanika River (Surface water)	C026200	PD34501	Priority: Jul 26, 1960 Status: Mar 15, 1991	max rate: 0.142 m ³ /sec	T, N

Short Term Use Approvals (Surface Water)

Existing Allocations

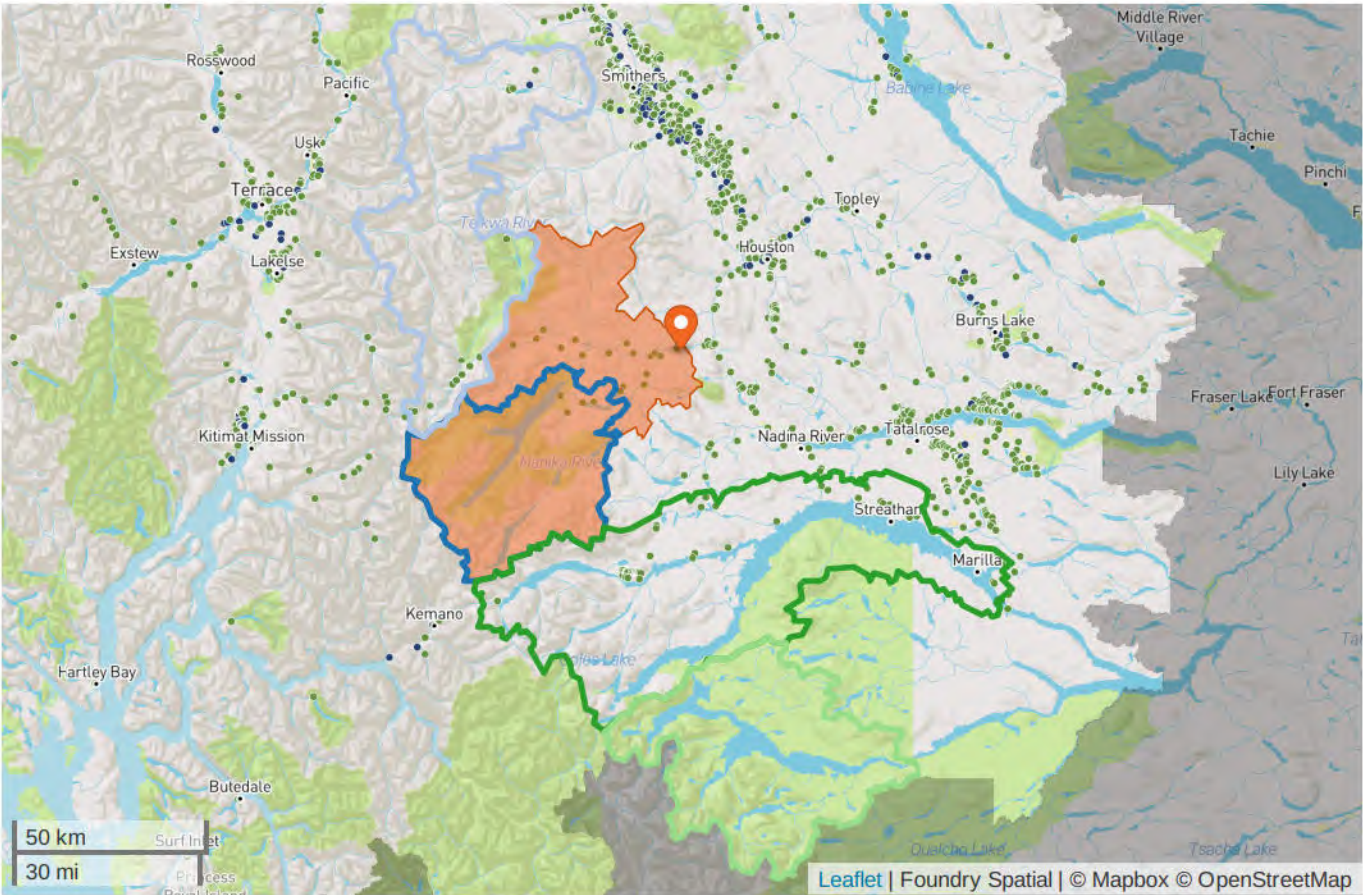
Active short term use approvals, max. 24-month term. Volumes are included in calculations on pages 2, 3, and 4 unless source is Water Storage Site

Licence	Number	POD	Date	Quantity	Flag ¹²
Coastal GasLink Pipeline Ltd. Oil & Gas Purpose: Other from POD9: Gosnell Creek (Stream/River)	App ID: 0005609	001	Start: Sep 24, 2020 Exp.: Sep 24, 2022	199 m³/day up to 31,980 m³	
Coastal GasLink Pipeline Ltd. Oil & Gas Purpose: Other from POD13: Unnamed Basin (Stream/River)	App ID: 0005609	004	Start: Sep 24, 2020 Exp.: Sep 24, 2022	199 m³/day up to 31,980 m³	
Coastal GasLink Pipeline Ltd. Oil & Gas Purpose: Other from Crystal Creek (POD8) (Stream/River)	App ID: 0005614	007	Start: Sep 29, 2020 Exp.: Sep 29, 2022	199 m³/day up to 18,000 m³	
Coastal GasLink Pipeline Ltd. Oil & Gas Purpose: Other from Gosnell Creek (POD9) (Stream/River)	App ID: 0005614	008	Start: Sep 29, 2020 Exp.: Sep 29, 2022	150 m³/day up to 18,000 m³	
Coastal GasLink Pipeline Ltd. Oil & Gas Purpose: Other from Unamed Lake (POD3) (Lake/Pond)	App ID: 0005614	002	Start: Sep 29, 2020 Exp.: Sep 29, 2022	120 m³/day up to 14,400 m³	
Coastal GasLink Pipeline Ltd. Industrial: Pressure Testing from Morice River (POD11) (Stream/River)	App ID: 0005619	002	Start: Aug 12, 2020 Exp.: Aug 12, 2022	14,400 m³/day up to 54,400 m³	
Coastal GasLink Pipeline Ltd. Oil & Gas Purpose: Other from Morice River (POD4) (Stream/River)	App ID: 0005619	001	Start: Aug 12, 2020 Exp.: Aug 12, 2022	2,160 m³/day up to 14,400 m³	
Coastal GasLink Pipeline Ltd. Oil & Gas Purpose: Other from Shea Creek (POD10) (Stream/River)	App ID: 0005979	001	Start: Aug 22, 2021 Exp.: Aug 21, 2023	199 m³/day up to 31,980 m³	
Coastal GasLink Pipeline Ltd. Industrial: Pressure Testing from Gosnell Creek (POD22) (Stream/River)	App ID: 0005991	001	Start: Sep 01, 2021 Exp.: Aug 31, 2023	14,400 m³/day up to 30,001 m³	
Coastal GasLink Pipeline Ltd. Industrial: Pressure Testing from Gosnell Creek (POD23) (Stream/River)	App ID: 0006002	001	Start: Sep 01, 2021 Exp.: Aug 31, 2023	14,400 m³/day up to 30,001 m³	
Coastal GasLink Pipeline Ltd. Oil & Gas Purpose: Other from Crystal Creek (POD25) (Stream/River)	App ID: 0006031	001	Start: Oct 01, 2021 Exp.: Sep 29, 2023	200 m³/day up to 18,000 m³	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Morice River (Unknown source)	App ID: 6002217	PD191221	Start: May 01, 2021 Exp.: Apr 30, 2023	12,500 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Collins Lake (Unknown source)	App ID: 6002217	PD191239	Start: May 01, 2021 Exp.: Apr 30, 2023	12,500 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Collins Lake (Unknown source)	App ID: 6002217	PD191240	Start: May 01, 2021 Exp.: Apr 30, 2023	12,500 m³/year (max rate: 0.027 m³/sec)	

Licence	Number	POD	Date	Quantity	Flag ¹²
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from McBride Lake (Unknown source)	App ID: 6002217	PD192719	Start: May 01, 2021 Exp.: Apr 30, 2023	12,500 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from McBride Lake (Unknown source)	App ID: 6002217	PD192720	Start: May 01, 2021 Exp.: Apr 30, 2023	12,500 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Chisholm Lake (Unknown source)	App ID: 6002217	PD192746	Start: May 01, 2021 Exp.: Apr 30, 2023	12,500 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Nanika River (Unknown source)	App ID: 6002217	PD192721	Start: May 01, 2021 Exp.: Apr 30, 2023	7,500 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Lamprey Creek (Unknown source)	App ID: 6002217	PD191224	Start: May 01, 2021 Exp.: Apr 30, 2023	6,000 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Poseidon-MORR-139079515 (Unknown source)	App ID: 6002217	PD191227	Start: May 01, 2021 Exp.: Apr 30, 2023	6,000 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Lamprey Creek (Unknown source)	App ID: 6002217	PD191228	Start: May 01, 2021 Exp.: Apr 30, 2023	5,000 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Pimpernel Creek (Unknown source)	App ID: 6002217	PD191232	Start: May 01, 2021 Exp.: Apr 30, 2023	5,000 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Morice River (Unknown source)	App ID: 6002217	PD192722	Start: May 01, 2021 Exp.: Apr 30, 2023	2,500 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Gosnell Creek (Unknown source)	App ID: 6002217	PD192728	Start: May 01, 2021 Exp.: Apr 30, 2023	2,000 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Crystal creek (Unknown source)	App ID: 6002217	PD192731	Start: May 01, 2021 Exp.: Apr 30, 2023	2,000 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Shea Creek (Unknown source)	App ID: 6002217	PD192734	Start: May 01, 2021 Exp.: Apr 30, 2023	2,000 m³/year (max rate: 0.027 m³/sec)	
Canadian Forest Products Industrial(Well Drill/Transp Mgmt from Ishka- MORR-139033409 (Unknown source)	App ID: 6002217	PD192724	Start: May 01, 2021 Exp.: Apr 30, 2023	1,000 m³/year (max rate: 0.027 m³/sec)	

Hydrologic Variability

The potential variability of flows in the query basin has been estimated by comparing its physical and environmental characteristics to other watersheds which have hydrometric monitoring records. A similarity score was used to quantify the basin comparisons using multiple physical and environmental metrics¹³. The statistical distribution of streamflows for each month from the monitored watersheds, was then used to estimate a potential range of flows for the query basin. The physical and hydroclimatic characteristics and comparisons are based on those used for hierarchical clustering of river ecosystems in BC¹⁴. The location of the basins is shown on the map below.

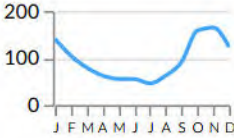
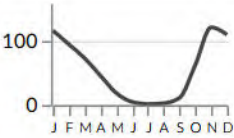
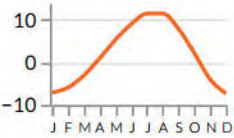


Legend

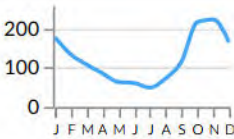
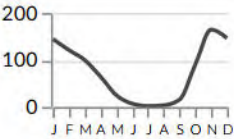
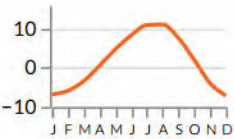
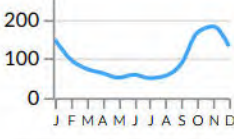
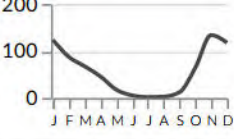
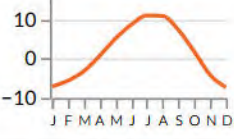
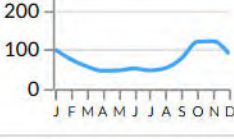
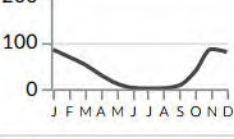
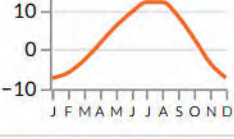
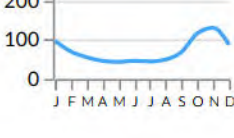
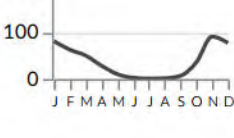
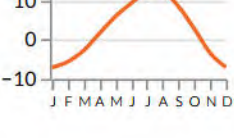
Query Watershed	08ED002	08EF005
08JA002	08JA028	

The watersheds shown on the map above have been identified as the most similar to the watershed described in this report. The table below shows key characteristics of these watersheds in relation to the watershed described in this report.

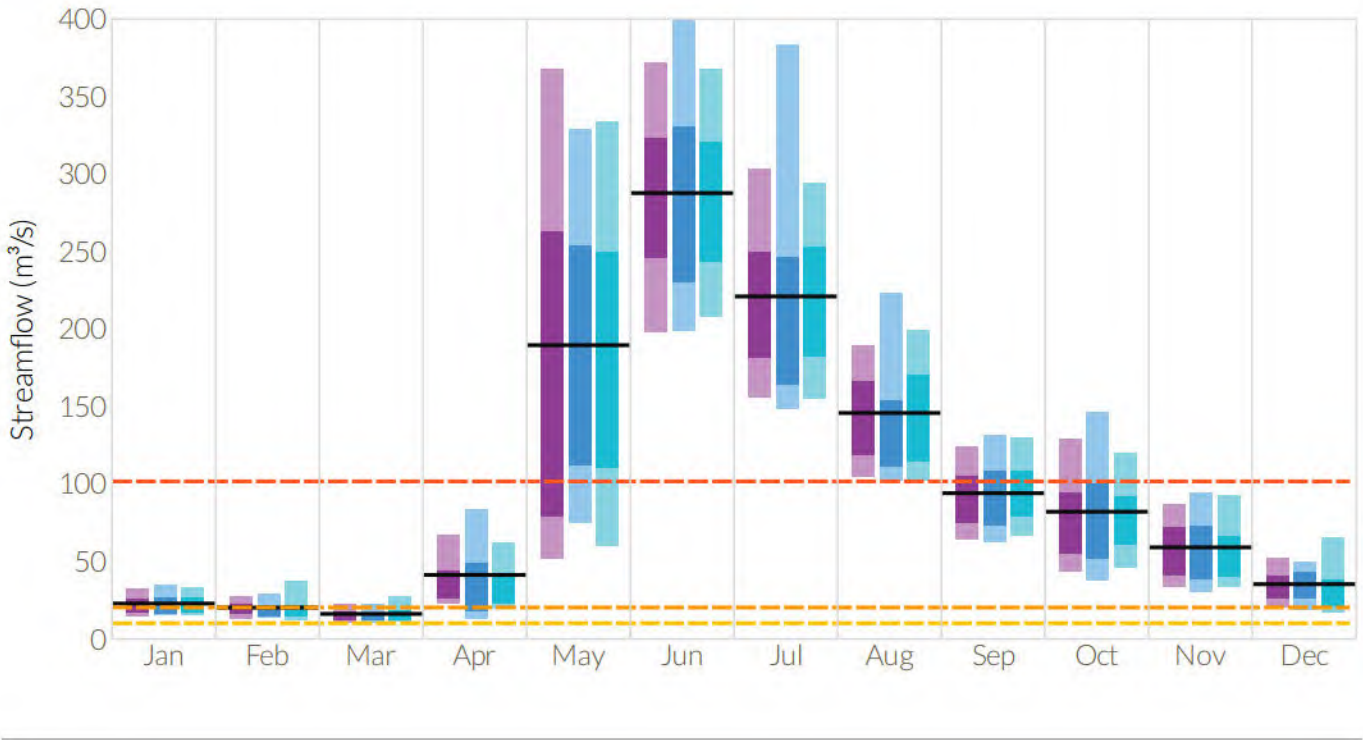
Query Watershed

Watershed	Location (lat, long)	Area (km²)	Elevation (m: min, mean, max)	Precipitation (mm/mo)	Precip. as snow (mm/mo)	Temperature (°C)
Morice River	54.199, -126.989	3,501	678, 1,176, 2,509			

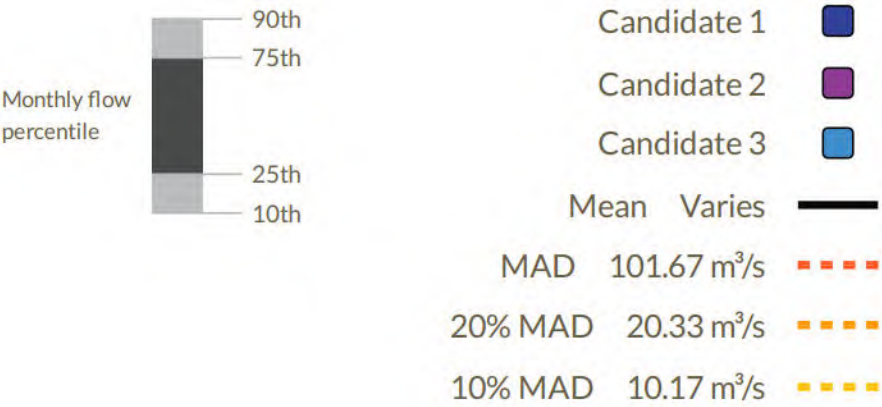
Candidate Watershed(s)

Watershed	Location (lat, long)	Area (km²)	Elevation (m: min, mean, max)	Precipitation (mm/mo)	Precip. as snow (mm/mo)	Temperature (°C)
● 08ED002 Morice River Near Houston	54.129, -127.406	1,903	766, 1,250, 2,509			
● 08EF005 Zymoetz River Above O.K. Creek	54.480, -128.248	2,846	163, 1,178, 2,545			
● 08JA002 Ootsa River At Ootsa Lake	53.625, -125.732	4,244	841, 1,111, 2,170			
● 08JA028 Eutsuk River At Outlet Of Eutsuk Lake	53.244, -126.100	2,571	858, 1,176, 2,449			

The statistical distribution of flows, from the top 3 candidate basins, has been applied to the estimated mean monthly flows of the watershed described in this report¹⁵. The chart and table below show the potential variability of flows using the flow duration curve replacement approach.



Legend



Tabular Data - Hydrologic Variability

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Watershed	08ED002	08ED002	08ED002	08ED002	08ED002	08JA028	08ED002	08ED002	08ED002	08ED002	08JA028	08ED002
90th	32.70	27.52	22.19	67.43	367.91	371.52	303.46	189.57	124.40	128.94	86.66	52.69
75th	22.85	20.24	16.20	41.32	189.55	287.69	221.01	145.81	94.06	82.10	59.11	35.36
Mean	21.03	18.73	14.61	32.02	157.48	266.86	209.51	140.57	86.61	69.97	61.76	31.75
25th	16.99	15.91	12.42	26.29	79.08	246.01	181.49	119.16	74.76	55.36	41.29	26.14
10th	14.68	13.30	10.59	23.11	52.05	197.58	156.13	104.85	64.78	43.63	33.74	20.51

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Watershed	08JA028	08JA028	08JA028	08EF005	08JA028	08ED002	08JA028	08JA028	08JA028	08JA028	08ED002	08JA028
90th	34.73	29.11	22.58	83.49	328.98	399.89	383.67	223.01	132.07	146.23	94.18	50.03
75th	22.85	20.24	16.20	41.32	189.55	287.69	221.01	145.81	94.06	82.10	59.11	35.36
Mean	20.98	17.43	13.73	28.05	185.32	272.45	191.93	128.40	86.36	72.39	51.53	36.29
25th	16.77	14.98	12.68	18.05	111.89	229.97	164.39	111.46	73.50	51.79	38.50	25.98
10th	14.95	13.47	10.30	12.94	75.11	199.21	148.40	102.09	62.86	37.50	30.53	19.41

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Watershed	08JA002	08JA002	08JA002	08JA002	08JA002	08JA002	08JA002	08JA002	08JA002	08JA002	08JA002	08JA002
90th	33.34	37.20	27.20	62.60	333.92	368.01	294.72	199.35	130.41	120.31	92.88	65.91
75th	22.85	20.24	16.20	41.32	189.55	287.69	221.01	145.81	94.06	82.10	59.11	35.36
Mean	21.02	17.63	13.76	32.92	183.46	279.88	214.60	137.31	90.13	70.91	51.12	27.13
25th	17.09	14.12	12.08	22.77	110.21	243.28	182.68	114.42	78.93	60.92	40.84	21.42
10th	15.28	12.00	10.91	20.06	60.18	208.23	155.17	102.22	66.85	46.39	33.92	17.38

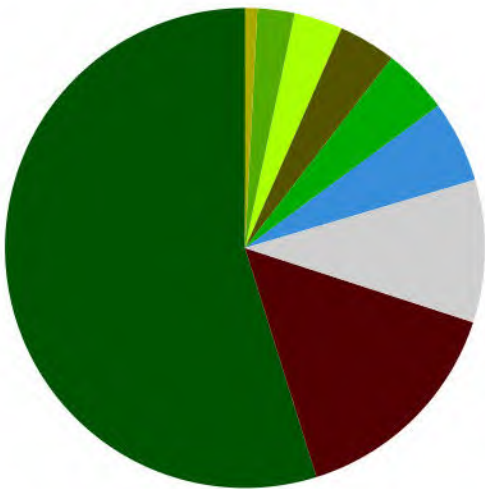
Candidate 1 

Candidate 2 

Candidate 3 

Landcover

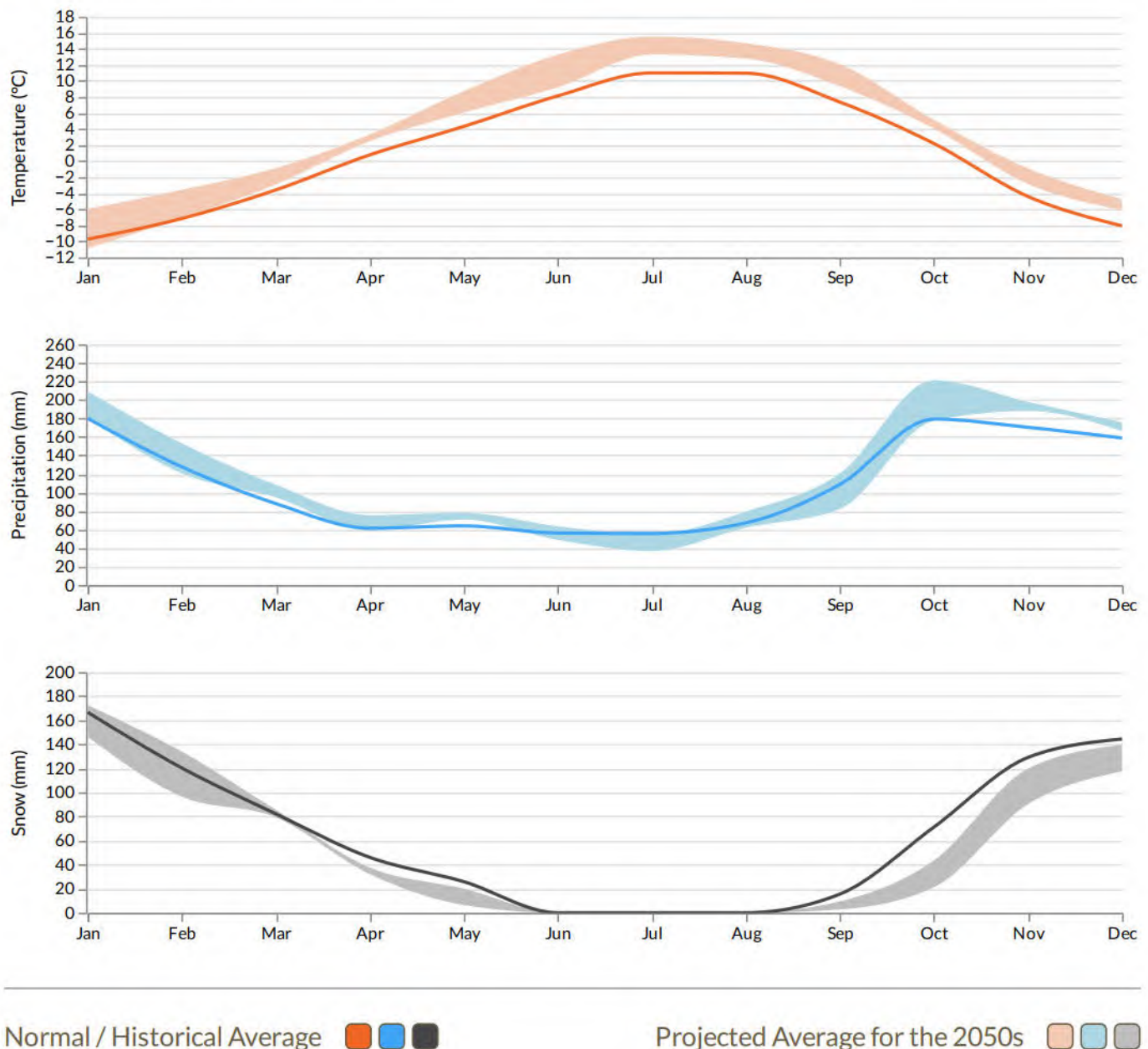
The landcover¹⁶ characteristics influence hydrologic processes in a watershed¹⁷. The chart below shows the landcover makeup of the Morice River watershed. These components were incorporated in the hydrologic model that produces the water supply estimates in this report, primarily influencing the evapotranspiration component of the water budget calculations, which represent the amount of water that moves directly back to the atmosphere through direct evaporation or transpiration by vegetation.



Type ↑	Area (km²)	% of Watershed
Barren	530.5	15.2%
Coniferous	1,920.6	54.9%
Cropland	0.1	0.0%
Deciduous	87.3	2.5%
Developed	0.0	0.0%
Grassland	0.1	0.0%
Herb	154.5	4.4%
Mixed	135.3	3.9%
Shrub	114.6	3.3%
Snow / Glacier	335.8	9.6%
Water	192.9	5.5%
Wetland	28.7	0.8%

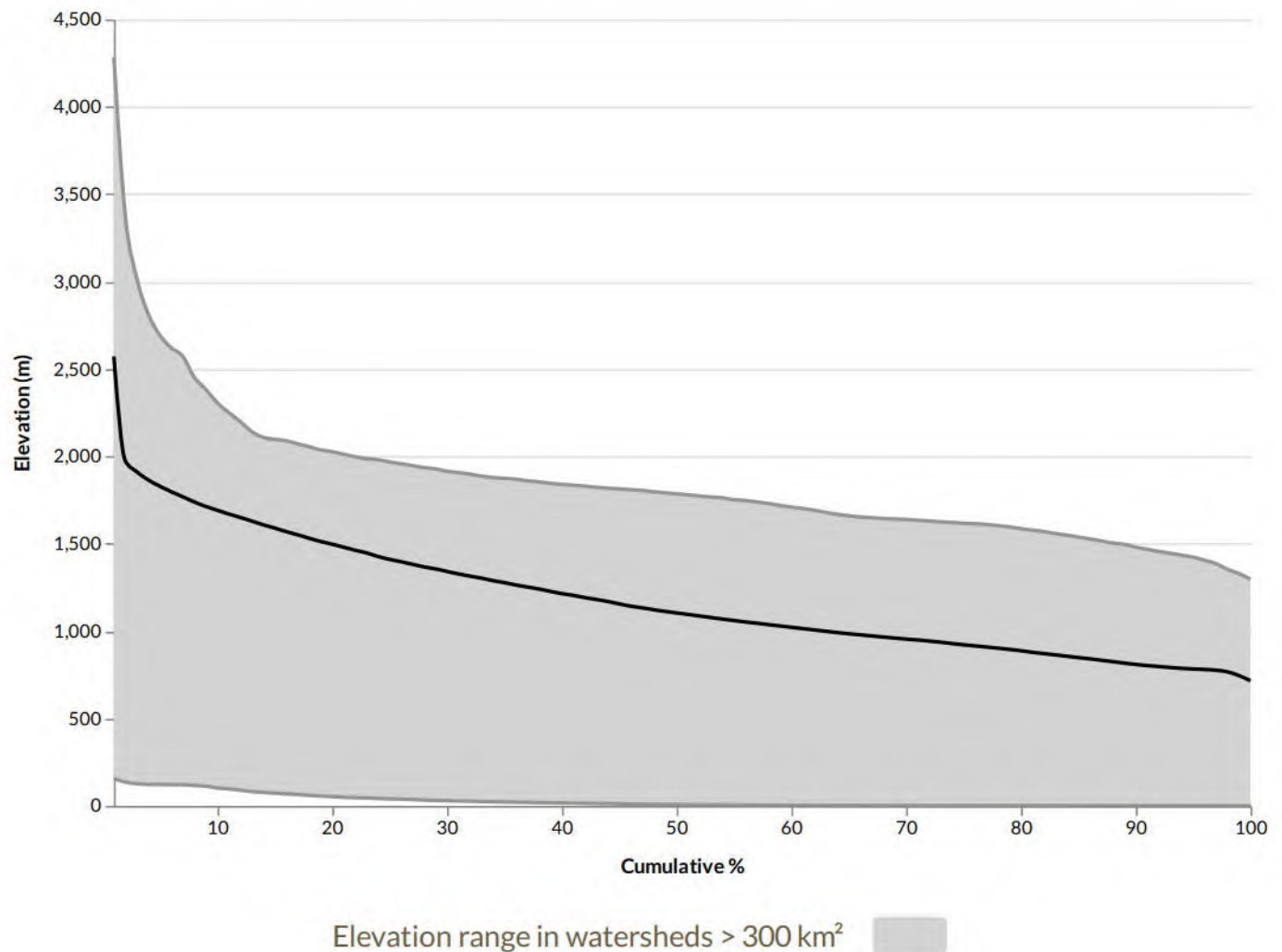
Climate

The climate of the Morice River watershed has been characterized using gridded climate models¹⁸. These models have been used to calculate long term average temperature, rain and snow accumulations. The timing and amount of precipitation is a strong indicator of water availability, and the state it falls in (rain or snow) determines what happens when it reaches the ground - whether it accumulates and melts when temperatures warm, or infiltrates and runs off rapidly after reaching the ground. Three estimates of future climate for the 2041-2070 time period have been assessed and used to illustrate a range of potential future conditions. The shaded areas on each chart show a range of future conditions, and the relationship with the solid line (showing the historical average) helps understand at what time of the year the temperature, precipitation, and precipitation as snow may be different.



Topography

The elevation of a watershed is a primary control on climate, vegetation, and timing of hydrologic processes such as onset of spring melt. The amount, and state of precipitation changes with elevation. Temperatures vary by elevation, with gradients typically differing in direction between winter and summer (with valley bottoms typically colder in winter than higher elevations, and higher alpine areas colder in summer than the valley bottoms). The hypsometric curve shown in the chart below, shows the cumulative distribution of elevation by area in the watershed. Percent values on the x-axis can be used to determine the percentage of the watershed above a given elevation value.



Notes

1. For more information please contact Frontcounter BC

✉ Email: frontcounterbc@gov.bc.ca

☎ Toll Free: 1-877-855-3222

☎ Outside North America: ++1-778-372-0729

🌐 On the web: <http://www.frontcounterbc.gov.bc.ca/>

2. The downstream watershed is defined at the mouth of the queried stream. If that downstream watershed's area is within 15% of the queried drainage area, then the watershed at the mouth of the next downstream stream is chosen as the downstream watershed. For information further downstream, please generate an additional report at a location of interest. Predictions for small watersheds (generally smaller than 50 sq. km.) may be less accurate due to the lack of hydrometric data available for watersheds of this size. These small watersheds are highly sensitive to localized weather events, resulting in highly variable conditions both within and between years.
3. The hydrologic model employed a water balance approach to estimate runoff in ungauged basins. The model was calibrated using stream flow measurements from the Water Survey of Canada, and validated using a leave-one-out cross validation. The model used 123 watersheds with hydrometric gauges, and included detailed information on climate, evapotranspiration, topography, vegetation and land cover. Error metrics calculated for mean annual discharge for the entire model domain are: Mean error = -2.8%, Median Error = -4.2%, Mean Absolute Error = 13.9%, Watersheds within +/- 20% = 80.5%.
4. Information on water reserves and restrictions can be found at the following links:

Water Reserves:
<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/water-reservations>

Water Restrictions:
<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/water-allocation-restrictions>
5. *Ptolemy, 2015.*
6. The hydrology model was developed following similar methods to those described in Chapman et al, 2018.
7. <https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/water-policies/environmental-flow-needs>

8. Water volumes presented as "Potential Allocations" within this report are determined in consideration of the Province of BC's *Environmental Flow Needs Policy*⁷. Within the Policy, risk management measures are suggested to assess or mitigate potential effects of withdrawals from a stream, and provide an ecosystem perspective on environmental flow needs. The measures are associated with risk levels 1, 2, and 3 and are intended to guide where more caution may be needed in reviewing an application or making a decision.

Where there are known species or habitat sensitivities, more detailed, site-specific studies may be required. Where detailed assessments or studies exist, they will supersede policy recommendations.

Risk management levels, for assessing new applications to withdraw water, are determined for each month using the relationship of mean monthly flows to the mean annual discharge, and also using a stream size threshold based on mean annual flows. The calculations presented within this report assume all streams are fish-bearing. Where no water is indicated as available under a risk level, the stream may be very flow sensitive during that time, or the stream may have existing allocations in excess of the relevant threshold.

Inter-annual hydrologic variability may affect the amount of water available in a given year. The impact of this variability on water allocations should be considered separately from the information presented in this report.

The following risk management measures may be appropriate for consideration before a decision is made, could be completed by regional staff to inform a decision, or could be a condition of the licence or approval.

Risk management measures may differ for short-term approvals vs. licences and may vary in relation to withdrawal amounts.

Risk Management Level 1:

Measures to assess or mitigate potential effects on low sensitivity flow periods:

- Assess veracity of information and ensure appropriate methods are used, (e.g., [RISC](#))
- Consider downstream users and species/habitats

Risk Management Level 2:

Measures to assess or mitigate potential effects on moderate sensitivity flow periods (In addition to Level 1 measures):

- Establish adequate baseline hydrological data before withdrawals
- Prepare reconnaissance-level fish and fish habitat impact assessment (e.g., Section 4.1.10.1 in Lewis et al. 2004)
- Issue seasonal licence, or restrictions during low flow periods
- Development of off-stream storage

- Inclusion of a daily maximum or inst. withdrawal e.g., greater consideration of instantaneous demand over averages
- Limit pump intake size
- Monitor and report water use during higher risk flow periods, e.g., install flow gauge
- Monitor low flows and limit withdrawals when flows drop below a certain level
- Ministry staff to conduct audit of basin use/beneficial use review
- Refuse application to withdraw water

Risk Management Level 3:

Measures to assess or mitigate potential effects on high sensitivity flow periods (In addition to Level 2 measures):

- Issue limited licence term, allowing for review and potential adjustment (e.g., 5 years)
- Prepare detailed habitat assessment (e.g., Lewis et al. 2004; Hatfield et al. 2007)

9. The annual allocation estimate for the queried basin is the sum of surface and groundwater short term use approvals^{19, 20} and surface water long term licences²¹ located within the queried basin. Long term licences and short term approvals with a non-consumptive or 'flow-through' water purpose as well as long term licences in an application stage were excluded from the summed annual estimate. The same rules apply to the downstream basin with one addition; for non-consumptive water use licences that are in the downstream basin but not in the query basin, the quantities are included in the allocation estimates. Stream or aquifer storage water use licences or approvals are not included in either the query or downstream calculations as it was assumed they have an associated consumptive licence or approval that uses the water from storage. The non-consumptive purposes are Aquifer Storage: Non-Power, Aquifer Storage: Power, Conservation: Construction Works, Conservation: Storage, Conservation: Use of Water, Land Improvement: General, Land Improvement: Ind'l for Rehab or Remed, Power: Commercial, Power: Dams, Power: General, Power: Residential, Stream Storage: Non-Power and Stream Storage: Power.

10. <https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/laws-rules/water-sustainability-act>

11. http://www.bclaws.ca/civix/document/id/complete/statreg/08036_01

12. Water Licence Flag Descriptions:

- D : Multiple PODs for PUC, qty at each are known, PODs on different sources
- M : Max licenced demand for purpose, multiple PODs, qty at each POD unknown
- P : Multiple PODs for PUC, qty at each are known, PODs on same source
- T : Total demand for PUC, one POD

Other:

- N : Licence volumes not used in annual or monthly allocation calculations

13. Physical and hydroclimatic characteristics of basins

Description	Source
Upstream area	Freshwater Atlas (Province of BC, 2020c)
Mean, max/min, and range elevation	Shuttle Radar Topography Mission (SRTM) (Farr 2007)
PCA axis 1 and 2 of Landcover	Land Cover of North America at 250 meters (2010)
Mainstem slope	Freshwater Atlas (Province of BC, 2020c)
Average monthly temperature	Climate WNA (version 5.6) – (Wang 2012)
Average monthly precipitation	Climate WNA (version 5.6) – (Wang 2012)
Average monthly evaporation	Climate WNA (version 5.6) – (Wang 2012)
Average monthly precipitation as snow	Climate WNA (version 5.6) – (Wang 2012)
Average no of monthly frost-free days	Climate WNA (version 5.6) – (Wang 2012)
Latitude and Longitude	HYDAT (2019) and Freshwater Atlas (Province of BC, 2020c)

14. *Ciruna et al, 2009.*

15. A flow duration curve (FDC) was estimated for the current ungauged basin, by substituting a dimensionless FDC from an observed gauged basin with the lowest dissimilarity measure (multi-dimensional Euclidean space) or highest similar physical and hydroclimatic properties. This is a modified approach to FDC substitution methods described in the literature (*Booker & Snelder, 2012; Ganora et al., 2009*) All hydrometric stations in Northern BC with at least five years of data for a given month, were used as the pool of candidates for ungauged basins. Recorded flows were normalized using the station's mean flow for the corresponding month. Once a candidate basin was selected, the substituted, normalized/dimensionless FDC was multiplied by the ungauged basin's modeled mean monthly flow.
16. The land cover data for BC was sourced from the 2000-Land Cover Vector product, produced and distributed by Natural Resources Canada. For Alaska, the land cover data was sourced from the 2001 national land cover database for the United States. Where the previous two sources were missing data, the land cover data was infilled with the 2013 North American Land Change Monitoring System Land Cover.

BC: *Geobase, 2009.*

AK: *Homer et al, 2004.*

Infill: *CEC, 2013.*

17. *Pike and Wilford, 2013.*

18. ClimateWNA v4.72 (*Hamann et al, 2013*) was used to produce estimates for the 1961-90 climate normal as well as 2041-2070 future climate scenarios. The three future climate scenarios used are the HadGEM A1B, CGCM3 A2, and HadCM3 B1. These represent a range of generally hot/dry, warm/very wet, and moderately warm/wet future climates, respectively.

19. FLNRORD Water Approval Points imported May 08, 2022 from <https://catalogue.data.gov.bc.ca/dataset/water-approval-points>
20. OGC Short term Approvals imported May 09, 2022 from https://data-bcogc.opendata.arcgis.com/datasets/fcc52c0cfb3e4bffb20518880ec36fd0_0
21. Water Rights Licences imported May 08, 2022 from <https://catalogue.data.gov.bc.ca/dataset/water-rights-licences-public>
22. Water Rights Applications imported May 08, 2022 from <https://catalogue.data.gov.bc.ca/dataset/water-rights-applications-public>
23. Variability is defined as $(Q90 - Q10) / Q50$. This represents how variable flows are in a given month in relation to the median flow in that month.

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Methods

Modeling

The hydrologic model driving the Northwest Water Tool was produced following similar methods to those described in:

Chapman A, Kerr B, Wilford D (2018) A water allocation decision-support model and tool for predictions in ungauged basins in northeast British Columbia. *J Am Water Resour Assoc* 54 (3): 676–693. <https://doi.org/10.1111/1752-1688.12643>

The Northwest Water Tool uses climate drivers from:

ClimateWNA v4.72 Normal 1971-2000

Calibration and validation was performed using hydrometric records which were selected based on length of record, seasonality, and other characteristics.

Hydrometric stations used: 123

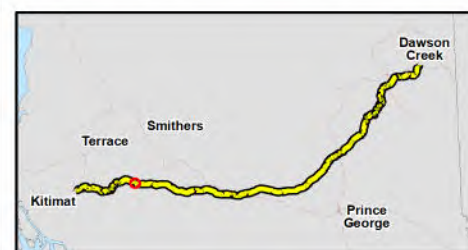
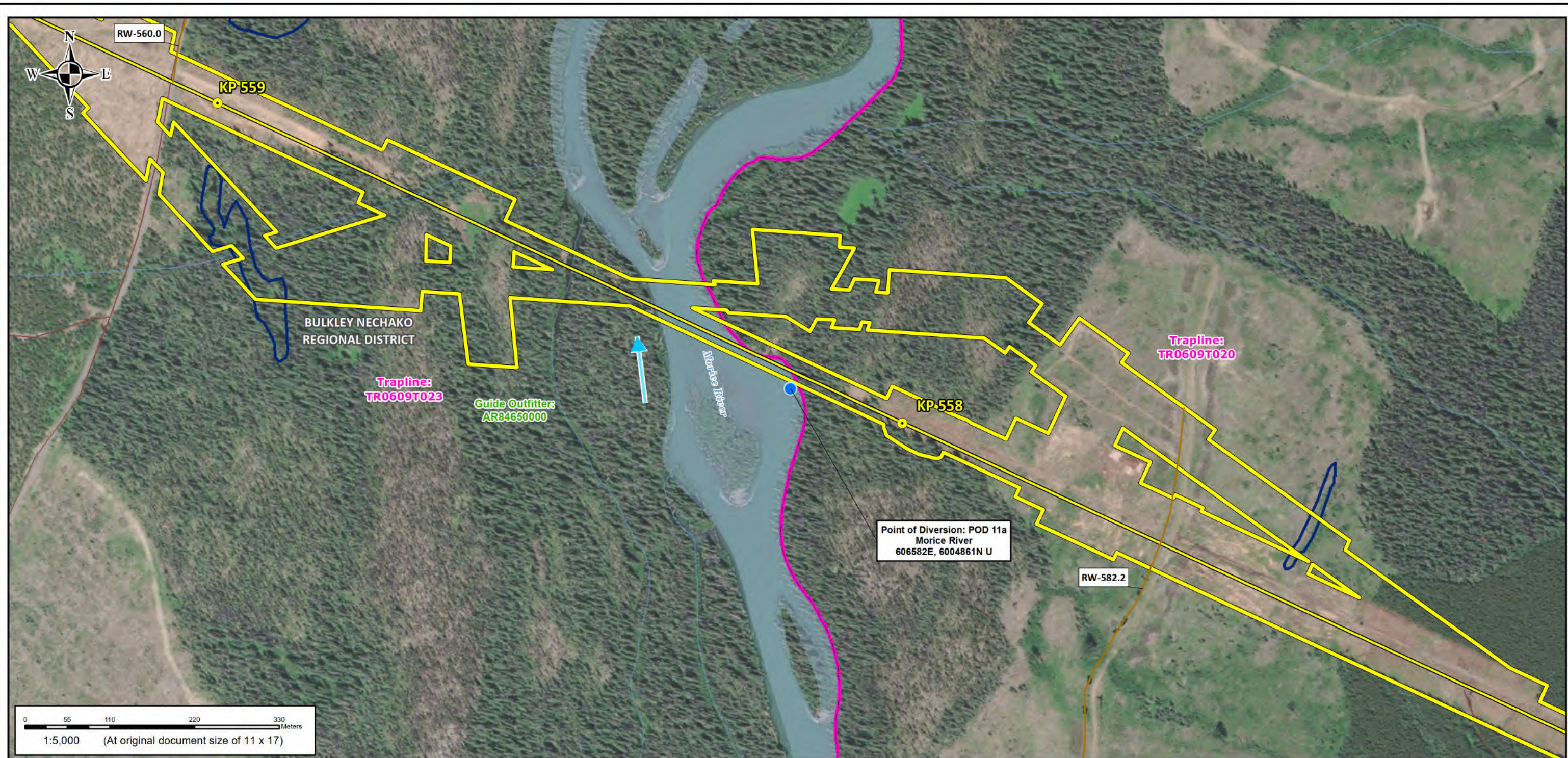
Annual model performance:

Mean Error: -2.8%

Median Error: -4.2%

Mean Absolute Error: 13.9%

% of stations within +/- 20%: 80.5%



Notes

1. Coordinate System: NAD 1983 UTM Zone 9N
2. Data Sources: DataBC, Government of British Columbia (GovBC); Natural Resources Canada, Government of Canada (GC); TransCanada Pipeline Corp.
3. Data Limitations: The proposed centerline (CGW4703-MSI-G-SHP-117_Section7_CalibratedRoute_Rev1) has not been field-surveyed. The information shown on this figure have been obtained from various sources and are subject to change without notice. Parcel data is unadjusted as provided by DataBC. Chainage markers are two dimensional.
4. The Watercourse Crossing is within Range Tenure: NA, Trapline ID: TR0609T023 and Guide Outfitter: AR8465000.
5. Range Tenure, Trapline, or Guide Outfitter boundary may not be visible when map extent is completely contained within. In these instances the data will still be indicated in legend.

Disclaimer Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

Jacobs: I8282_OGC_WP4_S10_100115995.mxd

- | | | | | | |
|--|---|--|-------------------|--|--------------------------|
| | Approximate Point of Diversion Location | | Road | | Guide Outfitter Boundary |
| | Kilometre Post (KP) | | Watercourse | | Wetland |
| | Proposed Pipeline Route | | Flow Direction | | Coastal GasLink |
| | Access | | Trapline Boundary | | |

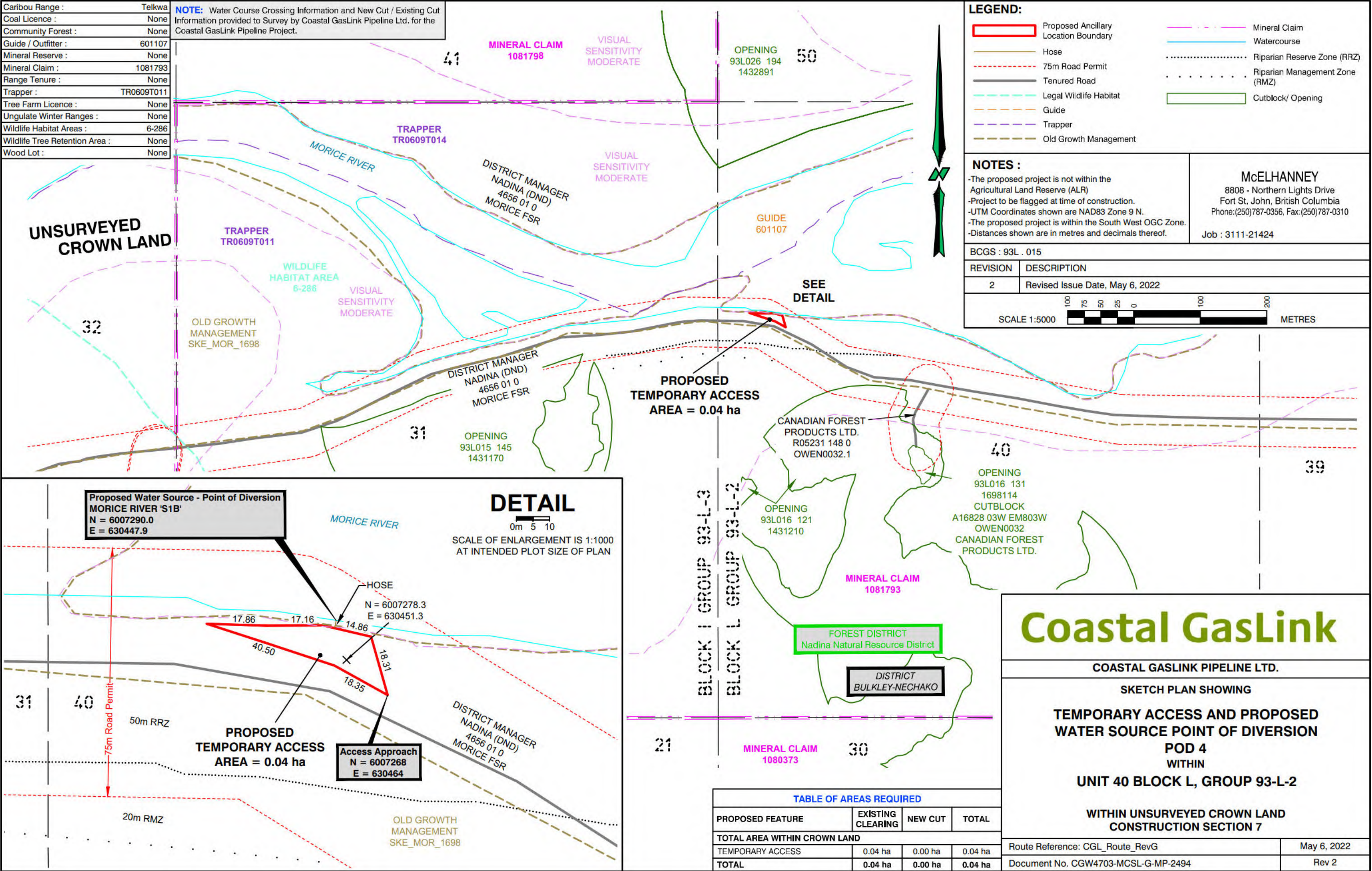
Coastal GasLink Point of Diversion POD 11a

Figure No.	Rev.	Page No.	AMS No.
1	0	1 of 1	100115995
Location Information		Project Number: CE769503	
BCGS: 93L.014		Prepared by: KA	
NTS: 93L3		Checked by: AH	
		May 2022	
Project		Project Contact	
Coastal GasLink		Narges Boroujerdi	
Water Sustainability Act		403-920-8409	
Section 10 Permit Applications		450 1 St SW	
		Calgary, AB T2P 5H1	

Coastal GasLink

Caribou Range :	Telkwa
Coal Licence :	None
Community Forest :	None
Guide / Outfitter :	601107
Mineral Reserve :	None
Mineral Claim :	1081793
Range Tenure :	None
Trapper :	TR0609T011
Tree Farm Licence :	None
Ungulate Winter Ranges :	None
Wildlife Habitat Areas :	6-286
Wildlife Tree Retention Area :	None
Wood Lot :	None

NOTE: Water Course Crossing Information and New Cut / Existing Cut Information provided to Survey by Coastal GasLink Pipeline Ltd. for the Coastal GasLink Pipeline Project.



Coastal GasLink

COASTAL GASLINK PIPELINE LTD.

SKETCH PLAN SHOWING
**TEMPORARY ACCESS AND PROPOSED
WATER SOURCE POINT OF DIVERSION
POD 4
WITHIN
UNIT 40 BLOCK L, GROUP 93-L-2**

**WITHIN UNSURVEYED CROWN LAND
CONSTRUCTION SECTION 7**

Route Reference: CGL_Route_RevG

May 6, 2022

Document No. CGW4703-MCSL-G-MP-2494

Rev 2

October 24, 2022

Shannon Weatherill
Director, Landowner & Tenured Rights Engagement
BC Oil and Gas Commission
6534 Airport Road
Fort St. John, B.C. V1J 4M6

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450 – 1st Street S.W.
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CGL4703-CGP-BCOGC-REG-LTR-5738

Dear Ms. Weatherill,

**Re: Coastal GasLink Pipeline Project (Project)
Scheduled Watercourse Crossings Report #31
References: AD 100082292 Condition 9, AD 100082299 Condition 8, AD 100082251 Condition 9, AD 100082422 Condition 9, AD 100082423 Condition 8, and AD 100084230 Condition 9**

As cited in the above conditions Coastal GasLink is required to:

At least one week prior to the beginning of each month, the permit holder must submit a micro-tunneling or in-stream work planned to commence the following month.

Coastal GasLink is submitting the following monthly Watercourse Crossing Schedules to the BC Oil and Gas Commission (OGC) for November 2022:

- Table 1: Horizontal Directional Drill (HDD) and Direct Pipe Installation (DPI) Status and Schedule
- Table 2: Section 2 (AD 100082292) Watercourse Crossings Status and Schedule
- Table 3: Section 3 (AD 100082299) Watercourse Crossings Status and Schedule
- Table 4: Section 5 (AD 100082251) Watercourse Crossings Status and Schedule
- Table 5: Section 6 (AD 100082422) Watercourse Crossings Status and Schedule
- Table 6: Section 7 (AD 100082423) Watercourse Crossings Status and Schedule
- Table 7: Section 8 (AD 100084230) Watercourse Crossings Status and Schedule

Coastal GasLink notes that all watercourse crossings in Sections 1 (AD100082293) and 4 (AD 100082252) are complete.

Coastal GasLink notes the timing of construction provided in the attached tables are based on the current Project schedule and the best information available to Coastal GasLink on the date of filing. These dates are, however, subject to change without notice due to changing site conditions, final execution plans, permitting and other external factors.

Should you have any questions do not hesitate to contact me at 403-920-6296 or dan_wyman@tcenergy.com.

Sincerely,



Daniel RK Wyman
Manager, Regulatory Services
Coastal GasLink

Table 1: HDD and DPI Schedule

Watercourse Name HDD/DPI	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	Easting	Northing	Work Scheduled to Start	Work Scheduled to End	Summary of Activities Planned for the month
Murray River	1	61.00-WC	10B1	S1A	HDD	25+217	617896.01 e	6172089.74 n	28-Sep-20	10-Jul-21	Complete
Sukunka River	1	186.00-WC	51B1	S1A	HDD	64+431	617896.01 e	6157225 n	15-Jun-21	15-Nov-21	Complete
Burnt River	2	270.00-WC	72	S1B	DPI	96+886	617896.01 e	6131508.33 n	3-Aug-21	21-Sep-21	Complete
Parsnip River	3	560.00-WC	205	S1A	DPI	189+659	617896.01 e	6069086 n	25-Oct-21	28-Feb-22	Complete
Crooked River	3	654.00-WC	235	S1B	DPI	212+345	617896.01 e	6056162 n	13-Nov-20	28-Nov-20	Complete
Salmon River	4	781.00-WC	277	S1A	DPI	254+104	617896.01 e	6027443 n	23-Sep-21	17-Nov-21	Complete
Stuart River	4	880.00-WC	SRR9	S1A	DPI	298+052	617896.01 e	6004956.59 n	13-Oct-20	11-Dec-20	Complete
Morice River	7	1677.00-WC	558	S1A	Microtunnel	558+400	617896.01 e	6004956.59 n	Sept 2022	Nov 2022	Ongoing tunneling works
Kitimat River	8	2098.00-WC	191C	S1A	DPI	667+162	617896.01 e	5989905.36 n	13-Jul-20	31-Aug-20	Complete
Crocker Creek	2	482.00-WC	55C	S2	DPI	165+033	548700 e	6084591 n	30-Aug-22	18-Sep-22	Complete

Table 2: Section 2 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Burnt River)	2	384.0-WC	110	S5	Isolate if flowing, Open Cut if dry or frozen	133+381	10	558292	6110718	21-Nov-22	5-Dec-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Anzac River)	2	401.2-WC	J120.50	S6	Isolate if flowing, Open Cut if dry or frozen	139+602	10	557023.559	6105714.317	7-Nov-22	21-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Anzac River)	2	0407.0-WC	123	S5	Trenchless - Bore	142+012	10	555972.1718	6103851.525	8-Nov-22	25-Nov-22	Prep trenchless crossing
Unnamed Tributary (Anzac River)	2	0409.0-WC	125	S3	Trenchless - Bore	142+416	10	555728.2644	6103535.232	8-Nov-22	16-Nov-22	Prep trenchless crossing
Unnamed Tributary (Anzac River)	2	0414.1-WC	J138.88	S4	Isolate if flowing, Open Cut if dry or frozen	143+590	10	555295.474	6102510.363	28-Nov-22	6-Dec-22	Tie in
Unnamed Tributary (Anzac River)	2	0417.0-WC 0418.0-WC	J140.99	S4	Trenchless - Bore	144+385	10	555061.2114	6101761.197	29-Oct-22	3-Dec-22	Prep trenchless crossing, trenchless crossing
Unnamed Tributary (Anzac River)	2	0420.0-WC	132	S3	Trenchless - Bore	145+115	10	554509.7883	6101322.246	16-Nov-22	22-Nov-22	Trenchless crossing
Unnamed Tributary (Anzac River)	2	0432.0-WC	J153.03	S4	Trenchless - Bore	147+789	10	553730.027	6099300.9	7-Nov-22	12-Nov-22	Trenchless crossing
Unnamed Tributary (Anzac River)	2	0435.0-WC	141	S4	Trenchless - Bore	149+383	10	553727.5315	6097609.228	29-Oct-22	4-Nov-22	Trenchless crossing
Anzac River	2	0445.0-WC	143	S1B	Trenchless - Bore	154+828	10	552714.8151	6093038.418	28-Nov-22	5-Dec-22	Prep trenchless crossing
Unnamed Tributary (Anzac River)	2	0447.0-WC	46C	S4	Isolate if flowing, Open Cut if dry or frozen	155+722	10	552702.3398	6092176.048	1-Oct-22	4-Nov-22	Install sheet pile, install struts and walers
Unnamed Tributary (Anzac River)	2	0448.0-WC	47C	S6	Isolate if flowing, Open Cut if dry or frozen	156+089	10	552594.2124	6091832.207	17-Nov-22	16-Dec-22	Install sheet pile
Unnamed Tributary (Anzac River)	2	0451.1-WC	J183.01	S6	Isolate if flowing, Open Cut if dry or frozen	156+809	10	552408.8507	6091141.086	17-Oct-22	8-Nov-22	Install sheet pile
Unnamed Tributary (Anzac River)	2	0453.0-WC	51C	S5	Isolate if flowing, Open Cut if dry or frozen	157+114	10	552346.6801	6090846.887	9-Nov-22	6-Dec-22	Install sheet pile
Unnamed Tributary (Anzac River)	2	0460.0-WC	154	S6	Isolate if flowing, Open Cut if dry or frozen	158+953	10	551992.2042	6089159.714	8-Nov-22	22-Nov-22	Install sheet pile, install struts and walers
Unnamed Tributary (Anzac River)	2	0464.0-WC	156	S6	Isolate if flowing, Open Cut if dry or frozen	159+327	10	551940.8262	6088795.751	24-Oct-22	25-Nov-22	Install sheet pile, install struts and walers, remove sheet pile
Unnamed Tributary (Anzac River)	2	0465.0-WC	157	S6	Isolate if flowing, Open Cut if dry or frozen	159+515	10	551921.6038	6088613.786	15-Nov-22	8-Dec-22	Install sheet pile
Unnamed Tributary (Anzac River)	2	0467.0-WC	157.2T	S6	Isolate if flowing, Open Cut if dry or frozen	159+754	10	551836.3233	6088394.726	22-Nov-22	5-Dec-22	Install struts and walers
Unnamed Tributary (Anzac River)	2	0482.0-WC	55C	S2	Isolate if flowing, Open Cut if dry or frozen	165+034	10	555295.474	6102510.363	22-Oct-22	7-Dec-22	Enviro prep, ditch, tie in, exit side sheet pile removal
Unnamed Tributary (Anzac River)	2	0485.0-WC	56C	S3	Isolate if flowing, Open Cut if dry or frozen	166+957	10	547664.5185	6083157.692	12-Nov-22	22-Nov-22	Tie in
Unnamed Tributary (Anzac River)	2	0492.0-WC	172	S3	Isolate if flowing, Open Cut if dry or frozen	169+180	10	545615.4946	6082858.407	24-Nov-22	30-Nov-22	Tie in
Unnamed Tributary (Anzac River)	2	0498.1-WC	J234.99	S4	Isolate if flowing, Open Cut if dry or frozen	171+231	10	544158.5026	6081506.216	19-Nov-22	26-Nov-22	Tie in

Table 3: Section 3 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Anzac River)	3	0536.0-WC	194	S2	Trenchless - Bore	180+698	10	537167	6075894	9-Nov-22	17-Dec-22	Tie in, remove sheet piling
Unnamed Tributary (Anzac River)	3	0548.0-WC	199	S2	Isolate if flowing, Open Cut if dry or frozen	186+429	10	533683	6071622	27-Nov-22	16-Dec-22	Tie in, remove sheet piling
Parsnip River	3	0560.0-WC	205	S1A	Trenchless - Bore	189+793	10	532180	6069090	18-Nov-22	5-Nov-22	Remove sheet piling
Unnamed Tributary (Crooked River)	3	0661.0-WC	237	S3	Isolate if flowing, Open Cut if dry or frozen	213+950	10	514487	6055431	28-Oct-22	16-Dec-22	Tie in, remove sheet piling and sand points
Unnamed Tributary (Crooked River)	3	0664.0-WC	239	S3	Isolate if flowing, Open Cut if dry or frozen	214+797	10	513985	6054814	31-Oct-22	7-Nov-22	Tie in

Table 4: Section 5 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Endako River	5E	1179.00-WC	403	S1B	Trenchless - Guided Bore Machine	391+078	10	369277	5993881	24-Oct-22	24-Nov-22	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Trankle Creek)	5E	1003.00-WC_R0	72B1	S6	Isolated Open Cut	339+245	10	416747	6001390	24-Oct-22	10-Nov-22	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1141.00-WC_R0	42C2A	S6	Isolated Open Cut	378+720	10	380277	5997593	24-Oct-22	10-Nov-22	Isolate, Dig, Install, Backfill and Reclaim

Table 5: Section 6 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Parrott Creek)	6.1	67.00-WC-SH	SHAR-28	S3	Isolate if flowing, Open Cut if dry or frozen	028+926	9	667580	5999621	7-Nov-22	21-Nov-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	78.00-WC-SH	SHAR-31	S3	Isolate if flowing, Open Cut if dry or frozen	030+952	9	665660	5999988	1-Nov-22	7-Nov-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	99.00-WC-SH	SHAR-39	S6	Isolate if flowing, Open Cut if dry or frozen	039+666	9	658275	6004039	21-Nov-22	30-Nov-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Allin Creek	6.1	9.00-WC-SH	SHAR-5	S2	Isolate if flowing, Open Cut if dry or frozen	002+334	9	691604	6000525	21-Nov-22	10-Dec-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	88.30-WC-SH	J357.03	S6	Isolate if flowing, Open Cut if dry or frozen	035+269	9	662322	6002532	7-Nov-22	21-Nov-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6	1532.00-WC	123C1	S6	Isolate if flowing, Open Cut if dry or frozen	506+195	9	655742	6005761	28-Nov-22	5-Dec-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Tchesinkut Creek)	6	1334.00-WC	92C1	S3	Isolate if flowing, Open Cut if dry or frozen	440+000	10	324225	6002418	1-Nov-22	7-Nov-22	Isolate, Repair Stream Flow

Table 6: Section 7 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Owen Creek)	7	1580.00-WC	134C1	S4	Isolate if flowing, Open Cut if dry or frozen	522+527	9	640374.5203	6005129.794	26-Oct-2022	15-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1583.00-WC	J383.01	S6	Isolate if flowing, Open Cut if dry or frozen	524+302	9	638661.592	6004798.195	31-Oct-2022	18-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Owen Creek	7	1577.00-WC	133C1	S2	Isolate if flowing, Open Cut if dry or frozen	521+706	9	641170.3367	6005231.378	4-Oct-2022	16-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1587.00-WC	137C1	S6	Isolate if flowing, Open Cut if dry or frozen	525+140	9	637825.9389	6004761.896	28-Oct-2022	16-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1587.10-WC	J385.01	S6	Isolate if flowing, Open Cut if dry or frozen	525+676	9	637296.7867	6004732.618	2-Nov-2022	20-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1588.00-WC	138C1	S6	Isolate if flowing, Open Cut if dry or frozen	525+718	9	637256.2334	6004741.319	2-Nov-2022	20-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1589.00-WC	139C1	S6	Isolate if flowing, Open Cut if dry or frozen	526+007	9	636974.3146	6004782.488	7-Nov-2022	10-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1593.10-WC	J388.01	S4	Isolate if flowing, Open Cut if dry or frozen	527+788	9	635326.7095	6005429.768	7-Nov-2022	10-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Fenton Creek	7	1593.00-WC	140C1	S3	Isolate if flowing, Open Cut if dry or frozen	527+784	9	635342.9761	6005426.659	7-Nov-2022	21-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1597.00-WC	141C1	S5	Isolate if flowing, Open Cut if dry or frozen	529+918	9	633276.0993	6005324.538	22-Nov-2022	25-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1600.20-WC	J390.01	S6	Isolate if flowing, Open Cut if dry or frozen	531+084	9	632215.249	6005599.327	12-Nov-2022	16-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1601.00-WC	20C2	S6	Isolate if flowing, Open Cut if dry or frozen	531+291	9	632015.029	6005641.831	26-Nov-2022	30-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1607.00-WC	531	S3	Isolate if flowing, Open Cut if dry or frozen	533+123	9	630271.327	6005892.182	17-Nov-2022	23-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Lamprey Creek)	7	1630.00-WC	536	S3	Isolate if flowing, Open Cut if dry or frozen	537+568	9	625988.8224	6005226.741	24-Nov-2022	30-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Lamprey Creek	7	1632.00-WC	538	S2	Isolate if flowing, Open Cut if dry or frozen	538+702	9	625090.9892	6004800.504	11-Oct-2022	12-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Crystal Creek	7	1687.00-WC	565	S1B	Isolate if flowing, Open Cut if dry or frozen	564+019	9	601045	6006580	17-Oct-2022	28-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1723.00-WC	587B	S4	Isolate if flowing, Open Cut if dry or frozen	579+094	9	587816.8237	6006405.147	28-Nov-2022	1-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1724.00-WC	J449.09	S6	Isolate if flowing, Open Cut if dry or frozen	579+438	9	587560.9786	6006166.414	23-Nov-2022	26-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1725.00-WC	588B	S4	Isolate if flowing, Open Cut if dry or frozen	579+777	9	587316.195	6005931.305	18-Nov-2022	22-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required

Table 6: Section 7 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Gosnell Creek)	7	1725.10-WC	588F1	S6	Isolate if flowing, Open Cut if dry or frozen	579+860	9	587264.1216	6005875.904	14-Nov-2022	17-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1725.20-WC	J451.04	S6	Isolate if flowing, Open Cut if dry or frozen	579+892	9	587240.4517	6005854.308	8-Nov-2022	12-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1725.40-WC	J451.01	S4	Isolate if flowing, Open Cut if dry or frozen	579+931	9	587212.6268	6005826.423	3-Nov-2022	7-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1725.50-WC	J452.01	S4	Isolate if flowing, Open Cut if dry or frozen	579+971	9	587179.7653	6005803.891	29-Oct-2022	15-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1726.00-WC	588F4	S4	Isolate if flowing, Open Cut if dry or frozen	580+031	9	587147.346	6005752.668	25-Oct-2022	15-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1726.10-WC	J453.02	S6	Isolate if flowing, Open Cut if dry or frozen	580+151	9	587062.0114	6005665.369	20-Oct-2022	15-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1648.00-WC	28C2	S6	Isolate if flowing, Open Cut if dry or frozen	544+015	9	619925.5131	6004110.263	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1650.00-WC	36D1	S3	Isolate if flowing, Open Cut if dry or frozen	544+956	9	619127.4411	6004591.513	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1651.00-WC	29C2	S6	Isolate if flowing, Open Cut if dry or frozen	545+107	9	618993.0409	6004658.117	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Cedric Creek	7	1652.00-WC	549	S3	Isolate if flowing, Open Cut if dry or frozen	545+922	9	618211.6439	6004779.031	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1718.00-WC	585B	S3	Isolate if flowing, Open Cut if dry or frozen	578+391	9	588352.021	6006845.266	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1714.00-WC	583B	S2	Isolate if flowing, Open Cut if dry or frozen	577+681	9	588914.0126	6007271.661	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1710.50-WC	J443.05	S3	Isolate if flowing, Open Cut if dry or frozen	576+907	9	589530.1877	6007740.073	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1710.30-WC	J443.02	S6	Isolate if flowing, Open Cut if dry or frozen	576+738	9	589650.9473	6007832.163	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1710.00-WC	582B	S4	Isolate if flowing, Open Cut if dry or frozen	576+699	9	589690.8983	6007861.537	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1707.20-WC	J441.02	S6	Isolate if flowing, Open Cut if dry or frozen	576+103	9	590170.2112	6008203.59	1-Nov-2022	16-Dec-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required

Table 7: Section 8 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Clore River)	8E	1827.00-WC	54C2A	S3	Isolate if flowing, Open Cut if dry or frozen	609+556	9	567754	5990944	31-Oct-22	7-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1822.00-WC	49C2A	S4	Isolate if flowing, Open Cut if dry or frozen	608+747	9	568521	5991063	2-Nov-22	16-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1819.00-WC	164C	S6	Isolate if flowing, Open Cut if dry or frozen	607+366	9	569886	5990901	3-Nov-22	13-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1818.00-WC	162C	S6	Isolate if flowing, Open Cut if dry or frozen	607+272	9	569977	5990909	3-Nov-22	13-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1817.00-WC	160C	S6	Isolate if flowing, Open Cut if dry or frozen	607+068	9	570175	5990930	3-Nov-22	13-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1816.00-WC	640	S6	Isolate if flowing, Open Cut if dry or frozen	606+519	9	570688	5991098	3-Nov-22	13-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1815.00-WC	639	S6	Isolate if flowing, Open Cut if dry or frozen	606+418	9	570782	5991130	3-Nov-22	13-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1813.00-WC	157C	S6	Isolate if flowing, Open Cut if dry or frozen	605+862	9	571283	5991300	10-Nov-22	20-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1812.10-WC	UN21-83	S6	Isolate if flowing, Open Cut if dry or frozen	605+781	9	571359	5991326	10-Nov-22	20-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1812.00-WC	637	S6	Isolate if flowing, Open Cut if dry or frozen	605+559	9	571567	5991397	10-Nov-22	20-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1811.00-WC	636	S6	Isolate if flowing, Open Cut if dry or frozen	605+328	9	571782	5991470	10-Nov-22	20-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1809.00-WC	635	S6	Isolate if flowing, Open Cut if dry or frozen	605+100	9	571988	5991553	10-Nov-22	20-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1934.00-WC	696.3F	S6	Isolate if flowing, Open Cut if dry or frozen	632+783	9	548841.8651	5991627.02	19-Oct-22	1-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1935.00-WC	UN12-28	S6	Isolate if flowing, Open Cut if dry or frozen	632+924	9	548707.7001	5991667.45	2-Nov-22	16-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1936.10-WC	1N203	S6	Isolate if flowing, Open Cut if dry or frozen	633+109	9	548534.3175	5991729.92	11-Oct-22	2-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Pine Creek)	8W	2077.00-WC	739.1T	S3	Isolate if flowing, Open Cut if dry or frozen	663+992	9	523575	5987651	3-Oct-21	4-Jun-23	Dig, Install, Backfill and Reclaim

Keough, Dana

From: Shelley McInnis (Contractor) <shelley_mcinnis@tcenergy.com>
Sent: Friday, October 21, 2022 4:32 PM
To: Post Permit Requests
Cc: Weatherill, Shannon M; Dan Wyman
Subject: CGL October watercourse crossing update (Report #30)
Attachments: Coastal GasLink Section 8 updated Oct Watercourse Crossing Report 30.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon Shannon,

Please find attached an updated Section 8 West (AD# 100084230) October #30 monthly watercourse crossing report. Due to re-alignment of the construction schedule the below watercourses have been added:

1858.00 at KP 615+983
CB-001 at KP616+000

These two were on September's report and were missed extending into October:

1860.00 at KP616+496
1914.00 at KP 629+880

Thank you,

Shelley McInnis
Regulatory Analyst
Coastal GasLink
Cell: s22
Contractor representing TC Energy

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Table 7: Section 8 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Clore River)	8E	1800.00-WC	632	S6	Isolate if flowing, Open Cut if dry or frozen	603+448	9	572844	5992926	1-Oct-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1802.00-WC	45D1	S6	Isolate if flowing, Open Cut if dry or frozen	603+748	9	572667	5992688	1-Oct-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1805.00-WC	632.1T	S6	Isolate if flowing, Open Cut if dry or frozen	603+855	9	572604	5992603	1-Oct-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1807.00-WC	634	S6	Isolate if flowing, Open Cut if dry or frozen	604+648	9	572261	5991904	6-Oct-22	16-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1809.00-WC	635	S6	Isolate if flowing, Open Cut if dry or frozen	605+100	9	571988	5991553	6-Oct-22	16-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1811.00-WC	636	S6	Isolate if flowing, Open Cut if dry or frozen	605+328	9	571782	5991470	6-Oct-22	16-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1812.00-WC	637	S6	Isolate if flowing, Open Cut if dry or frozen	605+559	9	571567	5991397	7-Oct-22	17-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1812.10-WC	UN21-83	S6	Isolate if flowing, Open Cut if dry or frozen	605+781	9	571359	5991326	7-Oct-22	17-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1813.00-WC	157C	S6	Isolate if flowing, Open Cut if dry or frozen	605+862	9	571283	5991300	7-Oct-22	17-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1815.00-WC	639	S6	Isolate if flowing, Open Cut if dry or frozen	606+418	9	570782	5991130	12-Oct-22	22-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1816.00-WC	640	S6	Isolate if flowing, Open Cut if dry or frozen	606+519	9	570688	5991098	12-Oct-22	22-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1817.00-WC	160C	S6	Isolate if flowing, Open Cut if dry or frozen	607+068	9	570175	5990930	16-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1818.00-WC	162C	S6	Isolate if flowing, Open Cut if dry or frozen	607+272	9	569977	5990909	16-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1819.00-WC	164C	S6	Isolate if flowing, Open Cut if dry or frozen	607+366	9	569886	5990901	16-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1822.00-WC	49C2A	S4	Isolate if flowing, Open Cut if dry or frozen	608+747	9	568521	5991063	22-Oct-22	2-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1827.00-WC	54C2A	S3	Isolate if flowing, Open Cut if dry or frozen	609+556	9	567754	5990944	29-Oct-22	9-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1843.00-WC	UN21-48	S6	Isolate if flowing, Open Cut if dry or frozen	612+661	9	565455	5989537	18-Oct-22	28-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8W	1852.00-WC	657.2T	S6	Isolate if flowing, Open Cut if dry or frozen	614+657	9	563510	5989610	12-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8W	1853.00-WC	657.3T	S5	Isolate if flowing, Open Cut if dry or frozen	614+750	9	563416	5989608	11-Sep-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1856.10-WC	UN21-46	S6	Isolate if flowing, Open Cut if dry or frozen	615+448	9	562864.4081	5989282.04	27-Oct-22	6-May-23	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1872.10-WC	S1024	S6	Isolate if flowing, Open Cut if dry or frozen	620+083	9	559082.4909	5988109.07	5-Sep-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1877.00-WC	673	S6	Isolate if flowing, Open Cut if dry or frozen	621+842	9	557771	5988545	27-Oct-22	13-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1892.00-WC	684	S6	Isolate if flowing, Open Cut if dry or frozen	626+360	9	554602	5990235	20-Sep-22	5-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1934.00-WC	696.3F	S6	Isolate if flowing, Open Cut if dry or frozen	632+783	9	548841.8651	5991627.02	28-Sep-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1935.00-WC	UN12-28	S6	Isolate if flowing, Open Cut if dry or frozen	632+924	9	548707.7001	5991667.45	13-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1936.10-WC	1N203	S6	Isolate if flowing, Open Cut if dry or frozen	633+109	9	548534.3175	5991729.92	5-Oct-22	16-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1937.00-WC	697	S5	Isolate if flowing, Open Cut if dry or frozen	633+141	9	548503	5991729	26-Sep-22	4-Oct-22	Dig, Install, Backfill and Reclaim

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Hirsch Creek)	8W	1938.00-WC	697.1T	S6	Isolate if flowing, Open Cut if dry or frozen	633+294	9	548362.3959	5991781.94	22-Oct-22	2-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1940.00-WC	698	S5	Isolate if flowing, Open Cut if dry or frozen	633+470	9	548196.8319	5991831.83	17-Oct-22	28-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1950.00-WC	701.3T	S4	Isolate if flowing, Open Cut if dry or frozen	634+976	9	546854.8955	5992442.57	28-Oct-22	11-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1953.00-WC	702.1T	S6	Isolate if flowing, Open Cut if dry or frozen	635+478	9	546416	5992673	29-Oct-22	13-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1956.00-WC	704	S5	Isolate if flowing, Open Cut if dry or frozen	635+828	9	546082	5992749	29-Oct-22	10-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1958.00-WC	705	S6	Isolate if flowing, Open Cut if dry or frozen	636+038	9	545879	5992778	13-Oct-22	28-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1960.00-WC	706	S6	Isolate if flowing, Open Cut if dry or frozen	636+546	9	545375	5992810	23-Sep-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Pine Creek)	8W	2077.00-WC	739.1T	S3	Isolate if flowing, Open Cut if dry or frozen	663+992	9	523575	5987651	3-Oct-21	10-May-23	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1858.00-WC	252-Z	S6	Isolate if flowing, Open Cut if dry or frozen	615+983	9	562548.5519	5988891.54	2-Oct-22	18-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	TBD	CB-001	S6	Isolate if flowing, Open Cut if dry or frozen	616+000	9	562536	5988880	2-Oct-22	18-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Lake (Kitimat River)	8W	1860.00-WC	661	L3	Isolate if flowing, Open Cut if dry or frozen	616+496	9	562254	5988502	7-Aug-22	8-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1914.00-WC	S1032	S6	Isolate if flowing, Open Cut if dry or frozen	629+880	9	551640.1986	5991695.01	6-Sep-22	10-Oct-22	Dig, Install, Backfill and Reclaim

September 23, 2022

Shannon Weatherill
Director,
Landowner & Tenure Right Engagement
BC Oil and Gas Commission
6534 Airport Road
Fort St. John, B.C. V1J 4M6

Coastal GasLink LLP
450 – 1st Street S.W.
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CGL4703-CGP-BCOGC-REG-LTR-5654

Dear Ms. Weatherill,

**Re: Coastal GasLink Pipeline Project (Project)
Scheduled Watercourse Crossings Report #30
References: AD 100082292 Condition 9, AD 100082299 Condition 8, AD 100082251 Condition 9, AD 100082422 Condition 9, AD 100082423 Condition 8, and AD 100084230 Condition 9**

As cited in the above conditions Coastal GasLink is required to:

At least one week prior to the beginning of each month, the permit holder must submit a micro-tunneling or in-stream work planned to commence the following month.

Coastal GasLink is submitting the following monthly Watercourse Crossing Schedules to the BC Oil and Gas Commission (OGC) for October 2022:

- Table 1: Horizontal Directional Drill (HDD) and Direct Pipe Installation (DPI) Status and Schedule
- Table 2: Section 2 (AD 100082292) Watercourse Crossings Status and Schedule
- Table 3: Section 3 (AD 100082299) Watercourse Crossings Status and Schedule
- Table 4: Section 5 (AD 100082251) Watercourse Crossings Status and Schedule
- Table 5: Section 6 (AD 100082422) Watercourse Crossings Status and Schedule
- Table 6: Section 7 (AD 100082423) Watercourse Crossings Status and Schedule
- Table 7: Section 8 (AD 100084230) Watercourse Crossings Status and Schedule

Coastal GasLink notes that all watercourse crossings in Sections 1 (AD100082293) and 4 (AD 100082252) are complete.

Coastal GasLink notes the timing of construction provided in the attached tables are based on the current Project schedule and the best information available to Coastal GasLink on the date of filing. These dates are, however, subject to change without notice due to changing site conditions, final execution plans, permitting and other external factors.

Should you have any questions do not hesitate to contact me at 403-920-6296 or dan_wyman@tcenergy.com.

Sincerely,



Daniel RK Wyman
Team Lead, Regulatory
Coastal GasLink

Table 1: HDD and DPI Schedule

Watercourse Name HDD/DPI	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	Easting	Northing	Work Scheduled to Start	Work Scheduled to End	Summary of Activities Planned for the month
Murray River	1	61.00-WC	10B1	S1A	HDD	25+217	617896.01 e	6172089.74 n	28-Sep-20	10-Jul-21	Complete
Sukunka River	1	186.00-WC	51B1	S1A	HDD	64+431	617896.01 e	6157225 n	15-Jun-21	15-Nov-21	Complete
Burnt River	2	270.00-WC	72	S1B	DPI	96+886	617896.01 e	6131508.33 n	3-Aug-21	21-Sep-21	Complete
Parsnip River	3	560.00-WC	205	S1A	DPI	189+659	617896.01 e	6069086 n	25-Oct-21	28-Feb-22	Complete
Crooked River	3	654.00-WC	235	S1B	DPI	212+345	617896.01 e	6056162 n	13-Nov-20	28-Nov-20	Complete
Salmon River	4	781.00-WC	277	S1A	DPI	254+104	617896.01 e	6027443 n	23-Sep-21	17-Nov-21	Complete
Stuart River	4	880.00-WC	SRR9	S1A	DPI	298+052	617896.01 e	6004956.59 n	13-Oct-20	11-Dec-20	Complete
Morice River	7	1677.00-WC	558	S1A	Microtunnel	558+400	617896.01 e	6004956.59 n	Sept 2022	Nov 2022	Microtunnel equipment set-up, site preparation and initiation of crossing.
Kitimat River	8	2098.00-WC	191C	S1A	DPI	667+162	617896.01 e	5989905.36 n	13-Jul-20	31-Aug-20	Complete
Crocker Creek	2	482.00-WC	55C	S2	DPI	165+033	548700 e	6084591 n	30-Aug-22	18-Sep-22	Complete

Table 2: Section 2 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Sukunka River)	2	0361.0-WC	97	S6	Isolate if flowing, Open Cut if dry or frozen	120+519	10	568584.8213	6113604.518	20-Sep-22	10-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	0384.0-WC	110	S5	Isolate if flowing, Open Cut if dry or frozen	133+381	10	558292	6110718	1-Sep-22	6-Sep-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Sukunka River)	2	361.0-WC	97	S6	Isolate if flowing, Open Cut if dry or frozen	120+519	10	568584.8213	6113604.518	26-Sep-22	15-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	384.0-WC	110	S5	Isolate if flowing, Open Cut if dry or frozen	133+381	10	558292	6110718	1-Oct-22	6-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	0395.0-WC	117	S6	Isolate if flowing, Open Cut if dry or frozen	137+510	10	557233.8782	6107395.714	7-Oct-22	12-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	397.0-WC	38C	S6	Isolate if flowing, Open Cut if dry or frozen	137+979	10	557348.0963	6107034.154	13-Oct-22	18-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hamilton Creek)	2	0472.1-WC	1C035	S4	Trenchless - Bore	161+141	10	551427.0157	6087083.529	1-Oct-22	7-Oct-22	Set up, Install Pilot Pipe, Pull Product
Hamilton Creek	2	0473.0-WC	159	S2	Trenchless - Bore	161+183	10	551420.0998	6087051.414	1-Sep-22	16-Oct-22	Set up, Install Pilot Pipe, Pull Product

Table 3: Section 3 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Anzac River)	3	0507.0-WC	65C	S3	Trenchless - Bore	173+784	10	542105	6080443	1-Sep-22	8-Sep-22	Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Anzac River)	3	0508.0-WC	66C	S3	Trenchless - Bore	173+871	10	542019	6080411	3-Sep-22	9-Sep-22	Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Anzac River)	3	0536.0-WC	194	S2	Isolate if flowing, Open Cut if dry or frozen	180+698	10	537167	6075894	1-Sep-22	24-Oct-22	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Redrocky Creek)	3	0622.0-WC	97C	S4	Isolate if flowing, Open Cut if dry or frozen	206+782	10	520563	6058702	3-Sep-22	18-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0661.0-WC	237	S3	Isolate if flowing, Open Cut if dry or frozen	213+950	10	514487	6055431	1-Sep-22	13-Oct-22	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0664.0-WC	239	S3	Isolate if flowing, Open Cut if dry or frozen	214+797	10	513985	6054814	1-Sep-22	21-Oct-22	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0667.0-WC	242	S2	Isolate if flowing, Open Cut if dry or frozen	215+646	10	513439	6054192	1-Sep-22	24-Oct-22	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Anzac River)	3	0546.0-WC_R0	197	S3	Isolation if flowing. Open cut if dry or frozen	184+760	10	534665	6072930	12-Sep-22	1-Nov-22	Isolate, trench, install, backfill, reclaim
Unnamed Tributary (Anzac River)	3	0547.0-WC	198	S4	Isolation if flowing. Open cut if dry or frozen	185+400	10	534288	6072406	12-Sep-22	29-Oct-22	Isolate, trench, install, backfill, reclaim

Table 4: Section 5 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Nine Mile Creek	5E	1052.00-WC_R0	15C2A	S3	Isolated Open Cut	353+516	10	403283	6003944	20-Sep-22	8-Oct-22	Isolate, Dig, Install, Backfill and Reclaim
Endako River	5E	1179.00-WC	403	S1B	Trenchless - Guided Bore Machine	391+078	10	369277	5993881	1-Oct-22	28-Oct-22	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Stern Creek	5E	1151.00-WC	397	S2	Trenchless - Guided Bore Machine	383+447	10	375950	5996492	21-Jul-2022	4-Oct-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Trankle Creek)	5E	1003.00-WC_R0	72B1	S6	Isolated Open Cut	339+245	10	416747	6001390	15-Oct-22	30-Oct-22	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1141.00-WC_R0	42C2A	S6	Isolated Open Cut	378+720	10	380277	5997593	28-Oct-22	15-Nov-22	Isolate, Dig, Install, Backfill and Reclaim

Table 5: Section 6 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Tchesinkut Creek)	6	1361.00-WC	106C1	S4	Isolate if flowing, Open Cut if dry or frozen	447+172	10	317916	6002770	26-Sep-22	1-Oct-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	67.00-WC-SH	SHAR-28	S3	Isolate if flowing, Open Cut if dry or frozen	028+926	9	667580	5999621	17-Oct-22	29-Oct-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	78.00-WC-SH	SHAR-31	S3	Isolate if flowing, Open Cut if dry or frozen	030+952	9	665660	5999988	11-Oct-22	25-Oct-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	99.00-WC-SH	SHAR-39	S6	Isolate if flowing, Open Cut if dry or frozen	039+666	9	658275	6004039	24-Oct-22	29-Oct-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Allin Creek	6.1	9.00-WC-SH	SHAR-5	S2	Isolate if flowing, Open Cut if dry or frozen	002+334	9	691604	6000525	11-Oct-22	4-Nov-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	88.30-WC-SH	J357.03	S6	Isolate if flowing, Open Cut if dry or frozen	035+269	9	662322	6002532	17-Oct-22	24-Oct-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required

Table 6: Section 7 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Parrott Creek)	7	1532.00-WC	123C1	S6	Isolate if flowing, Open Cut if dry or frozen	506+195	9	655742	6005761	24-Oct-22	31-Oct-22	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Owen Creek)	7	1580.00-WC	134C1	S4	Isolate if flowing, Open Cut if dry or frozen	522+527	9	640374.5203	6005129.794	24-Oct-2022	27-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1583.00-WC	J383.01	S6	Isolate if flowing, Open Cut if dry or frozen	524+302	9	638661.592	6004798.195	28-Oct-2022	1-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Owen Creek	7	1577.00-WC	133C1	S2	Isolate if flowing, Open Cut if dry or frozen	521+706	9	641170.3367	6005231.378	16-Oct-2022	24-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1587.00-WC	137C1	S6	Isolate if flowing, Open Cut if dry or frozen	525+140	9	637825.9389	6004761.896	28-Oct-2022	1-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1587.10-WC	J385.01	S6	Isolate if flowing, Open Cut if dry or frozen	525+676	9	637296.7867	6004732.618	1-Oct-2022	5-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1588.00-WC	138C1	S6	Isolate if flowing, Open Cut if dry or frozen	525+718	9	637256.2334	6004741.319	1-Oct-2022	5-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1589.00-WC	139C1	S6	Isolate if flowing, Open Cut if dry or frozen	526+007	9	636974.3146	6004782.488	1-Oct-2022	5-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1593.10-WC	J388.01	S4	Isolate if flowing, Open Cut if dry or frozen	527+788	9	635326.7095	6005429.768	29-Sep-2022	4-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Fenton Creek	7	1593.00-WC	140C1	S3	Isolate if flowing, Open Cut if dry or frozen	527+784	9	635342.9761	6005426.659	29-Sep-2022	14-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1597.00-WC	141C1	S5	Isolate if flowing, Open Cut if dry or frozen	529+918	9	633276.0993	6005324.538	24-Oct-2022	27-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1600.20-WC	J390.01	S6	Isolate if flowing, Open Cut if dry or frozen	531+084	9	632215.249	6005599.327	28-Oct-2022	1-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1601.00-WC	20C2	S6	Isolate if flowing, Open Cut if dry or frozen	531+291	9	632015.029	6005641.831	16-Oct-2022	24-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1607.00-WC	531	S3	Isolate if flowing, Open Cut if dry or frozen	533+123	9	630271.327	6005892.182	28-Oct-2022	1-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1608.00-WC	532	S3	Isolate if flowing, Open Cut if dry or frozen	533+697	9	629705.7593	6005891.18	24-Oct-2022	27-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Lamprey Creek)	7	1630.00-WC	536	S3	Isolate if flowing, Open Cut if dry or frozen	537+568	9	625988.8224	6005226.741	28-Oct-2022	1-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1639.00-WC	21C2	S3	Isolate if flowing, Open Cut if dry or frozen	540+749	9	623128	6004521	16-Oct-2022	24-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1642.00-WC	23C2	S6	Isolate if flowing, Open Cut if dry or frozen	542+384	9	621544.9323	6004208.545	28-Oct-2022	1-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1645.00-WC	26C2	S6	Isolate if flowing, Open Cut if dry or frozen	543+681	9	620254.7239	6004116.762	16-Oct-2022	24-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Morice River)	7	1647.00-WC	27C2	S6	Isolate if flowing, Open Cut if dry or frozen	543+876	9	620061.6708	6004116.146	28-Oct-2022	1-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1725.10-WC	588F1	S6	Isolate if flowing, Open Cut if dry or frozen	579+860	9	587264.1216	6005875.904	29-Oct-2022	2-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1725.20-WC	J451.04	S6	Isolate if flowing, Open Cut if dry or frozen	579+892	9	587240.4517	6005854.308	25-Oct-2022	28-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1725.40-WC	J451.01	S4	Isolate if flowing, Open Cut if dry or frozen	579+931	9	587212.6268	6005826.423	21-Oct-2022	25-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1725.50-WC	J452.01	S4	Isolate if flowing, Open Cut if dry or frozen	579+971	9	587179.7653	6005803.891	17-Oct-2022	20-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Gosnell Creek)	7	1726.00-WC	588F4	S4	Isolate if flowing, Open Cut if dry or frozen	580+031	9	587147.346	6005752.668	12-Oct-2022	15-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1726.10-WC	J453.02	S6	Isolate if flowing, Open Cut if dry or frozen	580+151	9	587062.0114	6005665.369	6-Oct-2022	9-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1727.00-WC	589B	S4	Isolate if flowing, Open Cut if dry or frozen	580+350	9	586934.7158	6005528.411	1-Oct-2022	5-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1728.00-WC	590B	S6	Isolate if flowing, Open Cut if dry or frozen	580+489	9	586837.8965	6005416.061	2-Sep-2022	1-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1728.10-WC	J456.01	S6	Isolate if flowing, Open Cut if dry or frozen	580+526	9	586818.2684	6005395.474	1-Oct-2022	5-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1732.40-WC	J459.97	S4	Isolate if flowing, Open Cut if dry or frozen	582+126	9	585859.5595	6004171.245	30-Sep-2022	4-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1732.50-WC	J459.98	S4	Isolate if flowing, Open Cut if dry or frozen	582+139	9	585850.9899	6004161.644	1-Oct-2022	5-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1732.60-WC	J459.99	S4	Isolate if flowing, Open Cut if dry or frozen	582+325	9	585727.0864	6004029.427	1-Oct-2022	5-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1733.00-WC	592B	S3	Isolate if flowing, Open Cut if dry or frozen	582+344	9	585711.7327	6004017.136	1-Oct-2022	7-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required

Table 7: Section 8 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Clore River)	8E	1800.00-WC	632	S6	Isolate if flowing, Open Cut if dry or frozen	603+448	9	572844	5992926	1-Oct-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1802.00-WC	45D1	S6	Isolate if flowing, Open Cut if dry or frozen	603+748	9	572667	5992688	1-Oct-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1805.00-WC	632.1T	S6	Isolate if flowing, Open Cut if dry or frozen	603+855	9	572604	5992603	1-Oct-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1807.00-WC	634	S6	Isolate if flowing, Open Cut if dry or frozen	604+648	9	572261	5991904	6-Oct-22	16-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1809.00-WC	635	S6	Isolate if flowing, Open Cut if dry or frozen	605+100	9	571988	5991553	6-Oct-22	16-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1811.00-WC	636	S6	Isolate if flowing, Open Cut if dry or frozen	605+328	9	571782	5991470	6-Oct-22	16-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1812.00-WC	637	S6	Isolate if flowing, Open Cut if dry or frozen	605+559	9	571567	5991397	7-Oct-22	17-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1812.10-WC	UN21-83	S6	Isolate if flowing, Open Cut if dry or frozen	605+781	9	571359	5991326	7-Oct-22	17-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1813.00-WC	157C	S6	Isolate if flowing, Open Cut if dry or frozen	605+862	9	571283	5991300	7-Oct-22	17-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1815.00-WC	639	S6	Isolate if flowing, Open Cut if dry or frozen	606+418	9	570782	5991130	12-Oct-22	22-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1816.00-WC	640	S6	Isolate if flowing, Open Cut if dry or frozen	606+519	9	570688	5991098	12-Oct-22	22-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1817.00-WC	160C	S6	Isolate if flowing, Open Cut if dry or frozen	607+068	9	570175	5990930	16-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1818.00-WC	162C	S6	Isolate if flowing, Open Cut if dry or frozen	607+272	9	569977	5990909	16-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1819.00-WC	164C	S6	Isolate if flowing, Open Cut if dry or frozen	607+366	9	569886	5990901	16-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1822.00-WC	49C2A	S4	Isolate if flowing, Open Cut if dry or frozen	608+747	9	568521	5991063	22-Oct-22	2-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1827.00-WC	54C2A	S3	Isolate if flowing, Open Cut if dry or frozen	609+556	9	567754	5990944	29-Oct-22	9-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1843.00-WC	UN21-48	S6	Isolate if flowing, Open Cut if dry or frozen	612+661	9	565455	5989537	18-Oct-22	28-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8W	1852.00-WC	657.2T	S6	Isolate if flowing, Open Cut if dry or frozen	614+657	9	563510	5989610	12-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8W	1853.00-WC	657.3T	S5	Isolate if flowing, Open Cut if dry or frozen	614+750	9	563416	5989608	11-Sep-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1856.10-WC	UN21-46	S6	Isolate if flowing, Open Cut if dry or frozen	615+448	9	562864.4081	5989282.04	27-Oct-22	6-May-23	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1872.10-WC	S1024	S6	Isolate if flowing, Open Cut if dry or frozen	620+083	9	559082.4909	5988109.07	5-Sep-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1877.00-WC	673	S6	Isolate if flowing, Open Cut if dry or frozen	621+842	9	557771	5988545	27-Oct-22	13-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1892.00-WC	684	S6	Isolate if flowing, Open Cut if dry or frozen	626+360	9	554602	5990235	20-Sep-22	5-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1934.00-WC	696.3F	S6	Isolate if flowing, Open Cut if dry or frozen	632+783	9	548841.8651	5991627.02	28-Sep-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1935.00-WC	UN12-28	S6	Isolate if flowing, Open Cut if dry or frozen	632+924	9	548707.7001	5991667.45	13-Oct-22	26-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1936.10-WC	1N203	S6	Isolate if flowing, Open Cut if dry or frozen	633+109	9	548534.3175	5991729.92	5-Oct-22	16-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1937.00-WC	697	S5	Isolate if flowing, Open Cut if dry or frozen	633+141	9	548503	5991729	26-Sep-22	4-Oct-22	Dig, Install, Backfill and Reclaim

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Hirsch Creek)	8W	1938.00-WC	697.1T	S6	Isolate if flowing, Open Cut if dry or frozen	633+294	9	548362.3959	5991781.94	22-Oct-22	2-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1940.00-WC	698	S5	Isolate if flowing, Open Cut if dry or frozen	633+470	9	548196.8319	5991831.83	17-Oct-22	28-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1950.00-WC	701.3T	S4	Isolate if flowing, Open Cut if dry or frozen	634+976	9	546854.8955	5992442.57	28-Oct-22	11-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1953.00-WC	702.1T	S6	Isolate if flowing, Open Cut if dry or frozen	635+478	9	546416	5992673	29-Oct-22	13-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1956.00-WC	704	S5	Isolate if flowing, Open Cut if dry or frozen	635+828	9	546082	5992749	29-Oct-22	10-Nov-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1958.00-WC	705	S6	Isolate if flowing, Open Cut if dry or frozen	636+038	9	545879	5992778	13-Oct-22	28-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1960.00-WC	706	S6	Isolate if flowing, Open Cut if dry or frozen	636+546	9	545375	5992810	23-Sep-22	11-Oct-22	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Pine Creek)	8W	2077.00-WC	739.1T	S3	Isolate if flowing, Open Cut if dry or frozen	663+992	9	523575	5987651	3-Oct-21	10-May-23	Dig, Install, Backfill and Reclaim

September 22, 2022

Shannon Weatherill
Director, Landowner & Tenured Rights Engagement
BC Oil and Gas Commission
6534 Airport Road
Fort St. John, B.C. V1J 4M6

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CGL4703-CGP-BCOGC-REG-LTR-5718

Dear Ms. Weatherill

**Re: Coastal GasLink Pipeline Project (Coastal GasLink or Project)
Satisfaction of the Commission - Supplemental Stream Crossing Submission Addendum 15
Section 8W Pipeline Permit AD # 100084230 – Conditions 52, 53, 57, 58, 59, 67**

Coastal GasLink Pipeline Ltd (Coastal GasLink) is requesting satisfaction of the Commission for the above noted condition in BC Oil and Gas Commission (OGC) Section 8W permit, Conditions 52, 53, 57, 58, 59 and 67 – Supplemental Stream Crossing Submission Addendum 15.

Addendum 15 is required by the referenced conditions on the Pipeline Permit Section 8 (AD# 100084230) and addresses additional information identified since the original Supplemental Stream Crossing submission and subsequent filings of Addendums 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14 which received satisfaction from the commission on February 5, 2019, June 4, 2019, July 3, 2019, April 15, 2020, September 10, 2020, January 28, 2021, July 6, 2021, July 27, 2021, August 17, 2021, October 29, 2021 January 11, 2022, March 10, 2022, May 3, 2022 and August 22, 2022 respectfully.

Addendum 15 has been modified to include additional information identified through ongoing construction and regulatory planning.

- Attached is Table 2. Stream Crossings List (Addendum 15) – Ditchline
- Table 3. Stream Crossings List (Addendum 15) – Right-of-Way (Workspace)
- Appendix A describes the effects assessment process used to evaluate the likelihood of serious harm to fish so that a QEP can identify alternate timing and mitigation as required by Condition 60 b). Where the report identifies crossings where there may be serious harm to fish after applying avoidance and mitigation measures, Coastal GasLink has/will seek advice from Fisheries and Oceans Canada (DFO) through a Request for Review (RFR). If the RFR process determines a Fisheries Act Authorization is required, the authorization will be provided to the Commission as required by Permit Condition 60c).

In order to provide certainty to our construction contractors Coastal GasLink is seeking a determination from the OGC prior to September 30, 2022.

Should you have any further questions please do not hesitate to contact me at 403-920-5324 or joseph_campbell@tcenergy.com.

Sincerely,



Joseph Campbell
Senior Regulatory Analyst
Coastal GasLink



OGC Construction Section 8 Supplemental Stream Crossings Submission Addendum 15

Work Package 4

CGL4703-JEG4-ENV-RPT-0028

September 16, 2022

Revision 0

Issued for Use

Jacobs



Revision Log

Rev	Section	Revision Description
0	All	Issued for Use

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Acronyms and Abbreviations

BC OGC	British Columbia Oil and Gas Commission
Coastal GasLink	Coastal GasLink Pipeline Ltd.
DPI	Direct Pipe Installation
DV	Dolly Varden (<i>Salvelinus malma</i>)
EMP	Environmental Management Plan
HDD	Horizontal Directional Drill
KP	Kilometre Post
LRW	Least Risk Window
MT	Microtunnelling
the Pipeline Permit	Coastal GasLink Pipeline Ltd. Pipeline Permit (Application 100084230) for British Columbia Oil and Gas Commission Construction Section 8
QEP	Qualified Environmental Professional
QP	Qualified Professional
RB	Rainbow Trout (<i>Oncorhynchus mykiss</i>)
UTM	universal transverse Mercator

1. Introduction

The British Columbia Oil and Gas Commission (BC OGC) issued the Coastal GasLink Pipeline Ltd. (Coastal GasLink) Pipeline Permit (Application 100084230) for BC OGC Construction Section 8 (the Pipeline Permit) on April 29, 2016, which was reissued on November 5, 2018. Conditions 52, 53, 57, 58, 59, and 67 of the Pipeline Permit require Coastal GasLink to receive Satisfaction of the Commission for Supplemental Stream Crossings Submissions. On June 2, 2016, the BC OGC confirmed that the original submission was to the Satisfaction of the Commission in form and content.

Since that time, construction planning has progressed, including additional field surveys and desktop studies requiring the preparation of further Supplemental Stream Crossings Submissions. These were submitted to the BC OGC as amendments or addendums to the original Supplemental Stream Crossings Submission. Table 1 provides a summary of submissions since Satisfaction of the Commission was received for the original Supplemental Stream Crossings Submission.

Table 1. List of Supplemental Stream Crossings Submissions

Submission Name	Date of Submission to the BC OGC	Date of Satisfaction from the BC OGC	Description
Amendment 1	January 24, 2019	February 5, 2019	Updates to streams and wetlands
Addendum 1	April 5, 2019	June 4, 2019	Updates to streams only
Addendum 2	June 27, 2019	July 3, 2019	Updates to streams only
Addendum 3	April 13, 2020	April 15, 2020	Updates to streams only
Addendum 4	April 13, 2020	April 15, 2020	Updates to wetlands only
Addendum 5	September 4, 2020	September 10, 2020	Updates to streams and wetlands
Addendum 6	January 27, 2021	January 28, 2021	Updates to streams only
Addendum 7	June 29, 2021	July 6, 2021	Updates to streams only
Addendum 8	July 27, 2021	July 27, 2021	Updates to streams and wetlands
Addendum 9	August 9, 2021	August 17, 2021	Updates to streams only
Addendum 10	October 26, 2021	October 29, 2021	Updates to streams only
Addendum 11	December 22, 2021	January 11, 2022	Updates to streams only
Addendum 12	March 3, 2022	March 10, 2022	Updates to streams only
Addendum 13	April 14, 2022	May 3, 2022	Updates to streams only
Addendum 14	July 12, 2022	August 22, 2022	Updates to streams only

2. Stream Crossings List

As required by the Pipeline Permit, changes to stream crossings not described in the original Supplemental Stream Crossings Submission or addendums must be identified prior to starting construction. This addendum includes one new site and updates to six sites based on route revisions and additional fieldwork. Tables 2 and 3 include the information for these sites, which is provided for Satisfaction of the Commission.



Table 2. Stream Crossings List (Addendum 15) – Ditchline

Site Identifier ^a	Site Name ^b	Kilometre Post (KP)	Universal Transverse Mercator (UTM) Easting ^c	UTM Northing ^c	Project Mitigation	Average Channel Width (metres)	Stream Classification ^d	Fish Presence ^e	Least Risk Window (LRW)	Qualified Environmental Professional (QEP) Window ^f	Approximate Pipeline Construction Timing ^g	Pipeline Crossing Method	Pipeline Crossing Drawing Type	Vehicle Crossing Method (Frozen and Non-frozen Conditions)	Vehicle Crossing Method Drawing Type	Beaver Dam	Comments
Streams with Updated Information																	
NR004.99	Unnamed Tributary (Hirsch Creek)	640+267	542468	5991339	Implement the applicable measures identified in Sections 6, 7, and 8 of the Environmental Management Plan (EMP) (Coastal GasLink 2021).	5.03	S5	None	Not applicable	Not applicable	April 1 to 8	Isolate if flowing, open cut if dry or frozen to bed, or trenchless at any time	Typical (site-specific if trenchless method is Direct Pipe Installation [DPI], Microtunnelling [MT], or Horizontal Directional Drill [HDD])	Open bottom structure, closed bottom structure, clear span bridge, ice bridge, or snowfill	Typical	No	The project component changed to ditchline (previously right-of-way) due to the ditchline realignment. The KP was updated.
NR005	Unnamed Tributary (Hirsch Creek)	640+274	542464	5991333	Implement the applicable measures identified in Sections 6, 7, and 8 of the EMP (Coastal GasLink 2021).	3.83	S5	None	Not applicable	Not applicable	April 1 to 8	Isolate if flowing, open cut if dry or frozen to bed, or trenchless at any time	Typical (site-specific if trenchless method is DPI, MT, or HDD)	Open bottom structure, closed bottom structure, clear span bridge, ice bridge, or snowfill	Typical	No	The project component changed to ditchline (previously right-of-way) due to the ditchline realignment. The KP was updated.
714	Unnamed Tributary (Hirsch Creek)	640+462	542265	5991334	Implement the applicable measures identified in Sections 6, 7, and 8 of the EMP (Coastal GasLink 2021). Prior to construction, cover potential spawning habitat that may be impacted, if water levels and velocity allow, to prevent fish from spawning in areas potentially affected by project construction. Install spawning deterrents in advance of the species spawning timing and remove them after the spawning period has concluded, before freeze-up (if applicable) or when impacts from construction are no longer expected. For use in spring, the feasibility of using spawning deterrents will be assessed.	34.60	S1B	Dolly Varden (DV) and Rainbow Trout (RB)	No window	July 15 to August 15 and November 15 to March 1	November 15 to February 17	Isolate if flowing, open cut if dry or frozen to bed, or trenchless at any time	Typical (site-specific if trenchless method is DPI, MT, or HDD)	Clear span bridge, engineered bridge, ice bridge, or snowfill	Typical (design if engineered bridge)	No	Spawning deterrents were added to the mitigation due to the proximity of spawning habitat to construction activities. The approximate construction timing was updated.



Table 2. Stream Crossings List (Addendum 15) – Ditchline

Site Identifier ^a	Site Name ^b	Kilometre Post (KP)	Universal Transverse Mercator (UTM) Easting ^c	UTM Northing ^c	Project Mitigation	Average Channel Width (metres)	Stream Classification ^d	Fish Presence ^e	Least Risk Window (LRW)	Qualified Environmental Professional (QEP) Window ^f	Approximate Pipeline Construction Timing ^g	Pipeline Crossing Method	Pipeline Crossing Drawing Type	Vehicle Crossing Method (Frozen and Non-frozen Conditions)	Vehicle Crossing Method Drawing Type	Beaver Dam	Comments
Newly Identified Stream																	
J674.02	Unnamed Tributary (Kitimat River)	622+144	557639	5988783	Implement the applicable measures identified in Sections 6, 7, and 8 of the EMP (Coastal GasLink 2021).	1.09	S6	None	Not applicable	Not applicable	June 22 to August 31	Isolate if flowing, open cut if dry or frozen to bed, or trenchless at any time	Typical (site-specific if trenchless method is DPI, MT, or HDD)	Open bottom structure, closed bottom structure, clear span bridge, ice bridge, or snowfill	Typical	No	This stream was identified during June and July 2022 fieldwork

^a Sites were assessed using the Revision 10 Construction Footprint in Construction Section 8 West.

^b Streams are located in the Skeena Region.

^c UTM Zone 9.

^d If a pipeline or vehicle crossing installation is required at an S6 stream that has not been listed in permit applications filed with the BC OGC, Coastal GasLink will:

- Confirm the stream classification with a Fish and Fish Habitat Resource Specialist prior to crossing activities
- Apply appropriate mitigation and crossing methods for S6 streams, per the EMP (Coastal GasLink 2021) and the crossing methods identified in this table
- Maintain downstream water quality if surface water is present, verify that drainage paths are maintained, reduce the disturbance footprint, and use winter (that is, frozen ground) construction, if practical
- Add the stream crossings to the Master Watercourse Crossing List and the postconstruction plans for as-built record keeping

^e Fish species that have the potential to be present, based on McPhail (2007), connectivity, habitat types, and queries from Fish Inventories Data Queries (Government of British Columbia 2022a) and HabitatWizard (Government of British Columbia 2022b).

^f See Section 3 for more information on the QEP timing windows and additional mitigation to meet Condition 60(b) of the Pipeline Permit.

^g Dates are approximate and subject to change. Based on Condition 9 of the Pipeline Permit, Coastal GasLink will submit a schedule to the BC OGC at least 1 week prior to the beginning of each month indicating the location and timing of trenchless or instream work planned to start the following month.

Table 3. Stream Crossings List (Addendum 15) – Right-of-Way (Workspace)

Site Identifier ^a	Site Name ^b	KP	UTM Easting ^c	UTM Northing ^c	Project Mitigation	Average Channel Width (metres)	Stream Classification ^d	Fish Presence ^e	LRW	QEP Window ^f	Vehicle Crossing Method (Frozen and Non-frozen Conditions)	Vehicle Crossing Method Drawing Type	Beaver Dam	Comments
Streams with Updated Information														
S1010.a	Unnamed Tributary (Hirsch Creek)	640+286	542435	5991353	Implement the applicable measures identified in Sections 6, 7, and 8 of the EMP (Coastal GasLink 2021).	1.34	S6	None	Not applicable	Not applicable	Open bottom structure, closed bottom structure, clear span bridge, logfill, ice bridge, or snowfill	Typical	No	The project component changed to right-of-way (previously ditchline) due to the ditchline realignment.
S1075	Unnamed Tributary (Hirsch Creek)	647+414	535967	5992307	Implement the applicable measures identified in Sections 6, 7, and 8 of the EMP (Coastal GasLink 2021).	1.14	S4	DV and RB	No window	January 1 to December 31	Open bottom structure, closed bottom structure, clear span bridge, ice bridge, or snowfill	Typical	No	The project component changed to right-of-way (previously ditchline) due to the ditchline realignment.
S1013	Unnamed Tributary (Hirsch Creek)	647+517	535884	5992371	Implement the applicable measures identified in Sections 6, 7, and 8 of the EMP (Coastal GasLink 2021).	1.60	S3	DV and RB	No window	January 1 to December 31	Open bottom structure, closed bottom structure, clear span bridge, ice bridge, or snowfill	Typical	Yes	The project component changed to right-of-way (previously ditchline) due to the ditchline realignment.

^a Sites were assessed using the Revision 10 Construction Footprint in Construction Section 8 West.

^b Streams are located in the Skeena Region.

^c UTM Zone 9.

^d If a vehicle crossing installation is required at an S6 stream that has not been listed in permit applications filed with the BC OGC, Coastal GasLink will:

- Confirm the stream classification with a Fish and Fish Habitat Resource Specialist prior to crossing activities
- Apply appropriate mitigation and crossing methods for S6 streams, per the EMP (Coastal GasLink 2021) and the crossing methods identified in this table
- Maintain downstream water quality if surface water is present, verify that drainage paths are maintained, reduce the disturbance footprint, and use winter (that is, frozen ground) construction, if practical
- Add the stream crossings to the Master Watercourse Crossing List and the postconstruction plans for as-built record keeping

^e Fish species that have the potential to be present, based on McPhail (2007), connectivity, habitat types, and queries from Fish Inventories Data Queries (Government of British Columbia 2022a) and HabitatWizard (Government of British Columbia 2022b).

^f See Section 3 for more information on the QEP timing windows and additional mitigation to meet Condition 60(b) of the Pipeline Permit.

3. Qualified Environmental Professional Timing Windows and Additional Mitigation

3.1 Overview

Several factors were considered when determining QEP alternative timing windows and associated mitigation recommended by a Qualified Professional (QP) (Permit Condition 60b) for BC OGC Construction Section 8, including:

- Provincial LRWs for the Skeena Region
- Proposed construction activities
- Fish presence and habitat potential near the stream crossing

Site-specific mitigation, recommended by a QP, is provided in addition to the standard measures identified in the EMP (Coastal GasLink 2021).

3.2 Qualified Environmental Professional Timing Windows

Fish stream crossings were assigned a provincial LRW for the Skeena Region based on the expected species presence (British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development 2018). The expected species presence was based on previous fish sampling information in the watershed and fish habitat assessments, Fish Inventories Data Queries (Government of British Columbia 2022a), HabitatWizard (Government of British Columbia 2022b), and species distribution information (McPhail 2007). Field study results and desktop review were used to develop and recommend alternative, site-specific reduced risk timing windows, termed as QEP timing windows.

3.2.1 No Timing Restrictions (Open Qualified Environmental Professional Timing Windows)

The QP recommended no timing restrictions where there was an absence of suitable spawning habitat within the construction footprint and low potential for migration to upstream locations. These streams were generally small, had poor or nil habitat potential, were located high in the upper watershed, or had drop structures or other impediments to fish migration. Implementation of the applicable mitigation described in the EMP (Coastal GasLink 2021) is anticipated to avoid negative effects to fish and fish habitat at these stream crossings. In this addendum, two sites have a QEP timing window for instream work that is open all year, from January 1 to December 31.

3.2.2 Qualified Environmental Professional Timing Windows to Avoid Potential Fish Migration Periods

QEP timing windows that avoid potential fish migration periods were recommended, based on a literature review (McPhail 2007), previous inventory information, and the potential presence of spring or fall spawners, or both. In this addendum, there is one site (that is, Site 714) where QEP windows to avoid potential migration periods were recommended. Two QEP timing windows were recommended: one from July 15 to August 15 and one from November 15 to March 1. These windows are intended to avoid impeding fish passage with instream work.

3.2.2.1 Instream Work Outside Qualified Environmental Professional Timing Windows

Additional mitigation is recommended where instream construction occurs outside of the QEP timing windows and during a period of potential fish migration. If the stream channel is obstructed (for example, for an isolated, trenched crossing installation), an Aquatic Biologist will monitor for fish congregations upstream and downstream of the obstruction. If fish congregations are observed, fish will be moved around the obstruction so that fish migration is not impeded.

Capture methods used to facilitate migration may include backpack electrofishing, minnow traps, seine netting, or dip netting. Backpack electrofishing will only be used after other sampling methods are exhausted to reduce the potential for harm to fish during sensitive time periods. Fish will be handled and moved in a suitable manner to reduce the risk of injuries or casualties. Transportation efforts will continue until fish congregations are no longer observed or until fish migration is no longer impeded, as determined by the Aquatic Biologist.

3.3 Spawning Deterrents

At some stream crossings, there is potential spawning habitat within (or near) the construction footprint. Where feasible and practical, Coastal GasLink will potentially shift the alignment of the construction footprint and construct within the LRW or QEP windows to avoid negative effects to potential spawning habitat; however, this may not be feasible because of flow regime, terrain, and construction and permitting limitations. The use of spawning deterrents as a mitigation measure could help to avoid potential negative impacts to spawning fish, redds, and incubating eggs, and has been used on other projects (for example, the Trans Mountain Pipeline Project). Spawning deterrents may be used where there are alternate spawning locations for redd-building species outside of the construction footprint and where the deterrents can be physically installed and maintained, considering water depth and flow. Where approved for use, spawning deterrents are installed and secured on the streambed, prior to spawning and before the start of construction. Spawning deterrents are removed at the end of the spawning period, or at the time of construction. Spawning deterrent installation, inspections, maintenance, and removal are conducted by, or under the direction of, a QP.

At Site 714, there is potential spawning habitat near the construction footprint that may be impacted by construction activities. Spawning deterrents are a mitigation measure for this site, as construction activities are planned during the spawning and incubation period.

4. References

British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development. 2018. *Terms and Conditions for Water Sustainability Act Changes In and About a Stream as specified by Ministry of Forests, Lands, Natural Resource Operations, and Rural Development (FLNRORD) Habitat Officers, Skeena Region*. April. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/working-around-water/terms_conditions_skeena.pdf.

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McPhail, J. D. 2007. *The Freshwater Fishes of British Columbia*. Edmonton, Alberta: The University of Alberta Press, Ring House 2, p. 392-397.

Keough, Dana

From: Shelley McInnis (Contractor) <shelley_mcinnis@tcenergy.com>
Sent: Tuesday, September 13, 2022 10:05 AM
To: Post Permit Requests; Weatherill, Shannon M
Cc: Dan Wyman; Kevin Bagnall; Joseph Campbell (Contractor); CGL Compliance & Commitments; CGL Regulatory
Subject: CGL Revised September Watercourse Crossing Report #29
Attachments: revised Table 3_OGC Monthly Watercourse Crossings Report # 29_Sept 2022.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning Shannon,

The below two watercourses have been added to September's Table 3 monthly watercourse crossing report #29. Attached is a revised Table 3: Section 3 (AD 100082299).

WC	Section	CGL ID	Site Id	Designation	Method	KP	UTM Zone	Easting	Northing	Start	End	Summary
Unnamed Tributary (Anzac River)	3	0546.0-WC_R0	197	S3	Isolation if flowing. Open cut if dry or frozen	184+760	10	534665	6072930	12-Sep-22	1-Oct-22	Isolate, trench, install, backfill, reclaim
Unnamed Tributary (Anzac River)	3	0547.0-WC	198	S4	Isolation if flowing. Open cut if dry or frozen	185+400	10	534288	6072406	12-Sep-22	1-Oct-22	Isolate, trench, install, backfill, reclaim

Thank you,

Shelley McInnis
Regulatory Analyst
Coastal GasLink
Cell s22
Contractor representing TC Energy

Table 3: Section 3 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Anzac River)	3	0507.0-WC	65C	S3	Trenchless - Bore	173+784	10	542105	6080443	1-Sep-2022	8-Sep-2022	Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Anzac River)	3	0508.0-WC	66C	S3	Trenchless - Bore	173+871	10	542019	6080411	3-Sep-2022	9-Sep-2022	Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Anzac River)	3	0536.0-WC	194	S2	Isolate if flowing, Open Cut if dry or frozen	180+698	10	537167	6075894	1-Sep-2022	24-Oct-2022	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Redrocky Creek)	3	0621.0-WC	96C	S3	Isolate if flowing, Open Cut if dry or frozen	206+474	10	520839	6058823	3-Sep-2022	9-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Redrocky Creek)	3	0622.0-WC	97C	S4	Isolate if flowing, Open Cut if dry or frozen	206+782	10	520563	6058702	3-Sep-2022	9-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0661.0-WC	237	S3	Isolate if flowing, Open Cut if dry or frozen	213+950	10	514487	6055431	1-Sep-2022	13-Oct-2022	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0664.0-WC	239	S3	Isolate if flowing, Open Cut if dry or frozen	214+797	10	513985	6054814	1-Sep-2022	13-Oct-2022	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0667.0-WC	242	S2	Isolate if flowing, Open Cut if dry or frozen	215+646	10	513439	6054192	1-Sep-2022	24-Oct-2022	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Anzac River)	3	0546.0-WC_R0	197	S3	Isolation if flowing. Open cut if dry or frozen	184+760	10	534665	6072930	12-Sep-2022	1-Oct-2022	Isolate, trench, install, backfill, reclaim
Unnamed Tributary (Anzac River)	3	0547.0-WC	198	S4	Isolation if flowing. Open cut if dry or frozen	185+400	10	534288	6072406	12-Sep-2022	1-Oct-2022	Isolate, trench, install, backfill, reclaim

Keough, Dana

From: Shelley McInnis (Contractor) <shelley_mcinnis@tcenergy.com>
Sent: Thursday, July 7, 2022 11:08 AM
To: Post Permit Requests; Weatherill, Shannon M; Pancera, Norberto
Cc: Dan Wyman; CGL Compliance & Commitments
Subject: Revised CGL July Watercourse Crossing Report #27
Attachments: CGL4703-CGP-BCOGC-REG-LTR-5558_July WCC Report 27_Sec 5 Rev.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning,

Attached is a revised Section 5 AD# 100082251 watercourse crossing report for July #27. Endako River crossing has been added and several dates have been updated.

Table 4: Section 5 Watercourse Crossings Schedule										
Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date
Ormond Creek	SE	1130.00-WC_R0	59C1	S2	Trenchless - Guided Bore Machine	374+650	10	384244	5998062	25-Jul-2022
Endako River	SE	1179.00-WC	403	S1B	Trenchless - Guided Bore Machine	391+078	10	369277	5993881	11-Jul-2022
Stern Creek	SE	1151.00-WC	397	S2	Trenchless - Guided Bore Machine	383+447	10	375950	5996492	30-Jul-2022

Thank you,

Shelley McInnis
Regulatory Analyst
Coastal GasLink
Contractor representing TC Energy

shelley_mcinnis@tcenergy.com

cell s22 desk: 403-920-1370



450 – 1 Street S.W. Calgary, AB
Canada, T2P 5H1

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Table 4: Section 5 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Nine Mile Creek)	5E	1067.00-WC_R0	34C1	S3	Isolated Open Cut	357+766	10	399396	6004123	28-Jun-2022	6-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nine Mile Creek)	5E	1069.00-WC_R0	5800	S4	Isolated Open Cut	358+152	10	399053	6003953	7-Jul-2022	12-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Tatsutnai Creek)	5E	1082.00-WC_R0	21C2A	S3	Isolated Open Cut	361+639	10	395952	6002732	13-Jul-2022	20-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Nine Mile Creek	5E	1052.00-WC_R0	15C2A	S3	Isolated Open Cut	353+516	10	403283	6003944	21-Jul-2022	27-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Kluk Creek	5E	1030.00-WC_R0	11C2A	S3	Isolated Open Cut	346+266	10	410416	6003184	28-Jul-2022	6-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1124.00-WC_R0	58C1	S4	Isolated Open Cut	371+676	10	387127	5998691	28-Jun-2022	9-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Ormond Creek)	5E	1132.10-WC_R0	388.01	S3	Isolated Open Cut	375+600	10	383357	5997725	9-Jul-2022	17-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Ormond Creek)	5E	1133.00-WC_R0	388	S3	Isolated Open Cut	375+670	10	383303	5997710	18-Jul-2022	27-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Ormond Creek	5E	1130.00-WC_R0	59C1	S2	Trenchless - Guided Bore Machine	374+650	10	384244	5998062	25-Jul-2022	15-Aug-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Endako River	5E	1179.00-WC	403	S1B	Trenchless - Guided Bore Machine	391+078	10	369277	5993881	11-Jul-2022	29-Jul-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Stern Creek	5E	1151.00-WC	397	S2	Trenchless - Guided Bore Machine	383+447	10	375950	5996492	30-Jul-2022	24-Aug-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product

Keough, Dana

From: Shelley McInnis (Contractor) <shelley_mcinnis@tcenergy.com>
Sent: Friday, August 26, 2022 8:29 AM
To: Weatherill, Shannon M; Post Permit Requests
Cc: Crystal Begin; CGL Regulatory; Dan Wyman; Joseph Campbell (Contractor); Kirsten MacKenzie (Contractor)
Subject: CGL revised August Water course crossing report #28
Attachments: revised_OGC Monthly Watercourse Crossings Report #28_25_Aug_22.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning Shannon,

As I mentioned in my email yesterday there is a tentative revision to the start date for the DPI at Crocker Creek in Section 2 (AD# 100082292) that I want to make you aware of. Our construction team moved the start date up to August 30 on September's report from September 8 based on site preparation readiness. I am told that they will have an absolute confirmation for me on Saturday and since the new start date could possibly be next Tuesday I wanted to give you the heads up today. I will send you another email Monday morning to let you if they decide to start on the 30th or not.

Table 1: HDD and DPI Schedule										
Watercourse Name HDD/DPI	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	Easting	Northing	Work Scheduled to Start	Work Status
Crocker Creek	2	482.00-WC	55C	S2	DPI	165+034	548702 e	6084604 n	30-Aug-2022	19

The other revision is the additional four watercourses that were inadvertently missed on August's report in Section 5 (AD# 100082251): 21C2A, 31C2A, 33C2A and 38C2A. Please see attached for revisions to Table 1 and Table 4.

Thank you,

Shelley McInnis
Regulatory Analyst
Coastal GasLink
Cell s22
Contractor representing TC Energy

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Table 1: HDD and DPI Schedule

Watercourse Name HDD/DPI	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	Easting	Northing	Work Scheduled to Start	Work Scheduled to End	Summary of Activities Planned for the month
Murray River	1	61.00-WC	10B1	S1A	HDD	25+217	617896.01 e	6172089.74 n	28-Sep-2020	10-Jul-2021	Complete
Sukunka River	1	186.00-WC	51B1	S1A	HDD	64+431	617896.01 e	6157225 n	15-Jun-2021	15-Nov-2021	Complete
Burnt River	2	270.00-WC	72	S1B	DPI	96+886	617896.01 e	6131508.33 n	3-Aug-2021	21-Sep-2021	Complete
Parsnip River	3	560.00-WC	205	S1A	DPI	189+659	617896.01 e	6069086 n	25-Oct-2021	28-Feb-2022	Complete
Crooked River	3	654.00-WC	235	S1B	DPI	212+345	617896.01 e	6056162 n	13-Nov-2020	28-Nov-2020	Complete
Salmon River	4	781.00-WC	277	S1A	DPI	254+104	617896.01 e	6027443 n	23-Sep-2021	17-Nov-2021	Complete
Stuart River	4	880.00-WC	SRR9	S1A	DPI	298+052	617896.01 e	6004956.59 n	13-Oct-2020	11-Dec-2020	Complete
Morice River	7	1677.00-WC	558	S1A	Microtunnel	558+400	617896.01 e	6004956.59 n	1-Aug-2022	18-Oct-2022	Commence microtunnel
Kitimat River	8	2098.00-WC	191C	S1A	DPI	667+162	617896.01 e	5989905.36 n	13-Jul-2020	31-Aug-2020	Complete
Crocker Creek	2	482.00-WC	55C	S2	DPI	165+034	548702 e	6084604 n	30-Aug-2022	19-Sep-2022	Set up, drill, begin demobilization.

Table 4: Section 5 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Nine Mile Creek	5E	1052.00-WC_RO	15C2A	S3	Isolated Open Cut	353+516	10	403283	6003944	10-Aug-2022	16-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Trankle Creek)	5E	1003.00-WC_RO	72B1	S6	Isolate if flowing, Open Cut if dry or frozen	339+248	10	416747	6001390	26-Aug-2022	27-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Ormond Creek)	5E	1133.00-WC_RO	388	S3	Isolated Open Cut	375+670	10	383303	5997710	10-Aug-2022	19-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Ormond Creek)	5E	1132.10-WC_RO	388.01	S3	Isolated Open Cut	375+600	10	383357	5997725	10-Aug-2022	16-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Kluk Creek	5E	1030.00-WC_RO	11C2A	S3	Isolated Open Cut	346+266	10	410416	6003184	4-Aug-2022	10-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Ormond Creek	5E	1130.00-WC_RO	59C1	S2	Trenchless - Guided Bore Machine	374+650	10	384244	5998062	21-Jul-2022	16-Aug-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Stern Creek	5E	1151.00-WC	397	S2	Trenchless - Guided Bore Machine	383+447	10	375950	5996492	19-Jul-2022	12-Aug-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Endako River	5E	1179.00-WC	403	S1B	Trenchless - Guided Bore Machine	391+078	10	369277	5993881	13-Aug-2022	2-Sep-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Tatsutnai Creek)	5E	1082.00-WC_RO	21C2A	S3	Isolated Open Cut	361+639	10	395952	6002732	8-Aug-22	2-Sep-22	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1107.00-WC_RO	31C2A	S6	Isolated Open Cut	369+072	10	389304	6000031	29-Aug-22	10-Sep-22	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1109.00-WC_RO	33C2A	S6	Isolated Open Cut	369+288	10	389106	5999950	26-Aug-22	10-Sep-22	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1116.00-WC_RO	38C2A	S6	Isolated Open Cut	369+915	10	388580	5999626	24-Aug-22	10-Sep-22	Isolate, Dig, Install, Backfill and Reclaim

August 25, 2022

Shannon Weatherill
Applications Manager
BC Oil and Gas Commission
6534 Airport Road
Fort St. John, B.C. V1J 4M6

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Web: www.TCenergy.com

CGL4703-CGP-BCOGC-REG-LTR-5690

Dear Ms. Weatherill,

**Re: Coastal GasLink Pipeline Project (Project)
Scheduled Watercourse Crossings Report #29
References: AD 100082292 Condition 9, AD 100082299 Condition 8, AD 100082251 Condition 9, AD 100082422 Condition 9, AD 100082423 Condition 8, and AD 100084230 Condition 9**

As cited in the above conditions Coastal GasLink is required to:

At least one week prior to the beginning of each month, the permit holder must submit a micro-tunneling or in-stream work planned to commence the following month.

Coastal GasLink is submitting the following monthly Watercourse Crossing Schedules to the BC Oil and Gas Commission (OGC) for September 2022:

- Table 1: Horizontal Directional Drill (HDD) and Direct Pipe Installation (DPI) Status and Schedule
- Table 2: Section 2 (AD 100082292) Watercourse Crossings Status and Schedule
- Table 3: Section 3 (AD 100082299) Watercourse Crossings Status and Schedule
- Table 4: Section 5 (AD 100082251) Watercourse Crossings Status and Schedule
- Table 5: Section 6 (AD 100082422) Watercourse Crossings Status and Schedule
- Table 6: Section 7 (AD 100082423) Watercourse Crossings Status and Schedule
- Table 7: Section 8 (AD 100084230) Watercourse Crossings Status and Schedule

Coastal GasLink notes that all watercourse crossings in Sections 1 (AD100082293) and 4 (AD 100082252) are complete.

Coastal GasLink notes the timing of construction provided in the attached tables are based on the current Project schedule and the best information available to Coastal GasLink on the date of filing. These dates are, however, subject to change without notice due to changing site conditions, final execution plans, permitting and other external factors.

Should you have any questions do not hesitate to contact me at 403-920-6296 or dan_wyman@tcenergy.com.

Sincerely,



for Daniel RK Wyman
Team Lead, Regulatory
Coastal GasLink

Table 1: HDD and DPI Schedule

Watercourse Name HDD/DPI	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	Easting	Northing	Work Scheduled to Start	Work Scheduled to End	Summary of Activities Planned for the month
Murray River	1	61.00-WC	10B1	S1A	HDD	25+217	617896.01 e	6172089.74 n	28-Sep-2020	10-Jul-2021	Complete
Sukunka River	1	186.00-WC	51B1	S1A	HDD	64+431	617896.01 e	6157225 n	15-Jun-2021	15-Nov-2021	Complete
Burnt River	2	270.00-WC	72	S1B	DPI	96+886	617896.01 e	6131508.33 n	3-Aug-2021	21-Sep-2021	Complete
Parsnip River	3	560.00-WC	205	S1A	DPI	189+659	617896.01 e	6069086 n	25-Oct-2021	28-Feb-2022	Complete
Crooked River	3	654.00-WC	235	S1B	DPI	212+345	617896.01 e	6056162 n	13-Nov-2020	28-Nov-2020	Complete
Salmon River	4	781.00-WC	277	S1A	DPI	254+104	617896.01 e	6027443 n	23-Sep-2021	17-Nov-2021	Complete
Stuart River	4	880.00-WC	SRR9	S1A	DPI	298+052	617896.01 e	6004956.59 n	13-Oct-2020	11-Dec-2020	Complete
Morice River	7	1677.00-WC	558	S1A	Microtunnel	558+400	617896.01 e	6004956.59 n	15-Sep-2022	30-Nov-2022	Entry Shaft construction is complete, ongoing transport of RCJP to site and continue installation of brackets inside the RCJP, setting up separation plant and electrical equipments.
Kitimat River	8	2098.00-WC	191C	S1A	DPI	667+162	617896.01 e	5989905.36 n	13-Jul-2020	31-Aug-2020	Complete
Crocker Creek	2	482.00-WC	55C	S2	DPI	165+033	548700 e	6084591 n	30-Aug-22	18-Sep-22	Set up, drill, begin demobilization.

Table 2: Section 2 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Sukunka River)	2	0361.0-WC	97	S6	Isolate if flowing, Open Cut if dry or frozen	120+519	10	568584.821	6113604.52	September 20, 2022	October 10, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	0384.0-WC	110	S5	Isolate if flowing, Open Cut if dry or frozen	133+381	10	558292	6110718	September 1, 2022	September 6, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	0390.0-WC	113	S6	Isolate if flowing, Open Cut if dry or frozen	135+465	10	557235.457	6109211.25	September 7, 2022	September 12, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	0391.0-WC	36C	S6	Isolate if flowing, Open Cut if dry or frozen	135+583	10	557201.41	6109102.99	September 13, 2022	September 12, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	0393.1-WC	J108.94	S6	Isolate if flowing, Open Cut if dry or frozen	136+910	10	557138.84	6107971.71	September 13, 2022	September 17, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	0395.0-WC	117	S6	Isolate if flowing, Open Cut if dry or frozen	137+510	10	557233.878	6107395.71	September 19, 2022	September 23, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	0397.0-WC	38C	S6	Isolate if flowing, Open Cut if dry or frozen	137+914	10	557348.096	6107034.15	September 24, 2022	September 29, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hamilton Creek)	2	0472.1-WC	1C035	S4	Trenchless - Bore	161+141	10	551427.016	6087083.53	September 1, 2022	September 7, 2022	Set up, Install Pilot Pipe, Pull Product
Hamilton Creek	2	0473.0-WC	159	S2	Trenchless - Bore	161+183	10	551420.1	6087051.41	September 1, 2022	September 7, 2022	Set up, Install Pilot Pipe, Pull Product

Section 3 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Anzac River)	3	0507.0-WC	65C	S3	Trenchless - Bore	173+784	10	542105	6080443	1-Sep-2022	8-Sep-2022	Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Anzac River)	3	0508.0-WC	66C	S3	Trenchless - Bore	173+871	10	542019	6080411	3-Sep-2022	9-Sep-2022	Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Anzac River)	3	0536.0-WC	194	S2	Isolate if flowing, Open Cut if dry or frozen	180+698	10	537167	6075894	1-Sep-2022	24-Oct-2022	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Redrocky Creek)	3	0621.0-WC	96C	S3	Isolate if flowing, Open Cut if dry or frozen	206+474	10	520839	6058823	3-Sep-2022	9-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Redrocky Creek)	3	0622.0-WC	97C	S4	Isolate if flowing, Open Cut if dry or frozen	206+782	10	520563	6058702	3-Sep-2022	9-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0661.0-WC	237	S3	Isolate if flowing, Open Cut if dry or frozen	213+950	10	514487	6055431	1-Sep-2022	13-Oct-2022	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0664.0-WC	239	S3	Isolate if flowing, Open Cut if dry or frozen	214+797	10	513985	6054814	1-Sep-2022	13-Oct-2022	Sheetpile, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0667.0-WC	242	S2	Isolate if flowing, Open Cut if dry or frozen	215+646	10	513439	6054192	1-Sep-2022	24-Oct-2022	Sheetpile, Dig, Install, Backfill and Reclaim

Table 4: Section 5 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Nine Mile Creek	5E	1052.00-WC_R0	15C2A	S3	Isolated Open Cut	353+516	10	403283	6003944	25-Aug-2022	9-Sep-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Ormond Creek)	5E	1132.10-WC_R0	388.01	S3	Isolated Open Cut	375+600	10	383357	5997725	24-Aug-2022	9-Sep-2022	Isolate, Dig, Install, Backfill and Reclaim
Endako River	5E	1179.00-WC	403	S1B	Trenchless - Guided Bore Machine	391+078	10	369277	5993881	1-Sep-2022	21-Sep-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Stern Creek	5E	1151.00-WC	397	S2	Trenchless - Guided Bore Machine	383+447	10	375950	5996492	19-Jul-2022	8-Sep-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Ormond Creek	5E	1130.00-WC_R0	59C1	S2	Trenchless - Guided Bore Machine	374+650	10	384244	5998062	21-Jul-2022	5-Sep-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Unnamed Tributary (Ormond Creek)	5E	1133.00-WC_R0	388	S3	Isolated Open Cut	375+670	10	383303	5997710	17-Aug-2022	3-Sep-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Tatsutnai Creek)	5E	1082.00-WC_R0	21C2A	S3	Isolated Open Cut	361+639	10	395952	6002732	8-Aug-22	2-Sep-22	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1107.00-WC_R0	31C2A	S6	Isolated Open Cut	369+072	10	389304	6000031	29-Aug-22	10-Sep-22	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1109.00-WC_R0	33C2A	S6	Isolated Open Cut	369+288	10	389106	5999950	26-Aug-22	10-Sep-22	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1116.00-WC_R0	38C2A	S6	Isolated Open Cut	369+915	10	388580	5999626	24-Aug-22	10-Sep-22	Isolate, Dig, Install, Backfill and Reclaim

Table 5: Section 6 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Beach Creek)	6	1383.00-WC	459	S6	Isolate if flowing, Open Cut if dry or frozen	453+171	10	312385	6001419	6-Sep-2022	10-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Beach Creek)	6	1381.00-WC	458	S6	Isolate if flowing, Open Cut if dry or frozen	452+231	10	313315	6001498	12-Sep-2022	16-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Tchesinkut Creek)	6	1361.00-WC	106C1	S4	Isolate if flowing, Open Cut if dry or frozen	447+172	10	317916	6002770	17-Sep-2022	22-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Beach Creek)	6	1398.00-WC	462	S3	Isolate if flowing, Open Cut if dry or frozen	457+097	10	308590	6001456	22-Aug-2022	1-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Beach Creek)	6	1391.00-WC	461	S3	Isolate if flowing, Open Cut if dry or frozen	455+586	10	309991	6001283	26-Aug-2022	8-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	67.00-WC-SH	SHAR-28	S3	Isolate if flowing, Open Cut if dry or frozen	028+926	9	667580	5999621	12-Sep-2022	24-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	78.00-WC-SH	SHAR-31	S3	Isolate if flowing, Open Cut if dry or frozen	030+952	9	665660	5999988	19-Sep-2022	3-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	6.1	99.00-WC-SH	SHAR-39	S6	Isolate if flowing, Open Cut if dry or frozen	039+666	9	658275	6004039	26-Sep-2022	1-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Allin Creek	6.1	9.00-WC-SH	SHAR-5	S2	Isolate if flowing, Open Cut if dry or frozen	002+334	9	691604	6000525	28-Sep-2022	4-Nov-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required

Table 6: Section 7 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Parrott Creek	7	1541.00-WC	510	S3	Isolate if flowing, Open Cut if dry or frozen	509+823	9	652359	6006984	19-Aug-2022	2-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Owen Creek)	7	1553.00-WC	18C2	S6	Isolate if flowing, Open Cut if dry or frozen	514+006	9	648292.0181	6006946.584	15-Aug-2022	2-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Owen Creek)	7	1557.00-WC	129C1	S6	Isolate if flowing, Open Cut if dry or frozen	515+417	9	646892.1145	6006793.132	27-Aug-2022	7-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Owen Creek)	7	1562.00-WC	130C1	S6	Isolate if flowing, Open Cut if dry or frozen	517+256	9	645126.3886	6006457.455	19-Aug-2022	2-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Owen Creek)	7	1565.00-WC	131C1	S6	Isolate if flowing, Open Cut if dry or frozen	518+479	9	643939.4054	6006652.472	1-Sep-2022	6-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1587.00-WC	137C1	S6	Isolate if flowing, Open Cut if dry or frozen	525+140	9	637825.9389	6004761.896	20-Sep-2022	23-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1587.10-WC	J385.01	S6	Isolate if flowing, Open Cut if dry or frozen	525+676	9	637296.7867	6004732.618	20-Sep-2022	23-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1588.00-WC	138C1	S6	Isolate if flowing, Open Cut if dry or frozen	525+718	9	637256.2334	6004741.319	24-Sep-2022	28-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1589.00-WC	139C1	S6	Isolate if flowing, Open Cut if dry or frozen	526+007	9	636974.3146	6004782.488	24-Sep-2022	28-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Fenton Creek)	7	1593.10-WC	J388.01	S4	Isolate if flowing, Open Cut if dry or frozen	527+788	9	635326.7095	6005429.768	29-Sep-2022	4-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Fenton Creek	7	1593.00-WC	140C1	S3	Isolate if flowing, Open Cut if dry or frozen	527+784	9	635342.9761	6005426.659	29-Sep-2022	14-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1726.00-WC	588F4	S4	Isolate if flowing, Open Cut if dry or frozen	580+031	9	587147.346	6005752.668	29-Sep-2022	4-Oct-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1726.10-WC	J453.02	S6	Isolate if flowing, Open Cut if dry or frozen	580+151	9	587062.0114	6005665.369	24-Sep-2022	28-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1727.00-WC	589B	S4	Isolate if flowing, Open Cut if dry or frozen	580+350	9	586934.7158	6005528.411	29-Aug-2022	8-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1728.00-WC	590B	S6	Isolate if flowing, Open Cut if dry or frozen	580+489	9	586837.8965	6005416.061	24-Aug-2022	3-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1728.10-WC	J456.01	S6	Isolate if flowing, Open Cut if dry or frozen	580+526	9	586818.2684	6005395.474	19-Aug-2022	2-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1732.40-WC	J459.97	S4	Isolate if flowing, Open Cut if dry or frozen	582+126	9	585859.5595	6004171.245	20-Sep-2022	23-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1732.50-WC	J459.98	S4	Isolate if flowing, Open Cut if dry or frozen	582+139	9	585850.9899	6004161.644	15-Sep-2022	19-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1732.60-WC	J459.99	S4	Isolate if flowing, Open Cut if dry or frozen	582+325	9	585727.0864	6004029.427	10-Sep-2022	14-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1733.00-WC	592B	S3	Isolate if flowing, Open Cut if dry or frozen	582+344	9	585711.7327	6004017.136	2-Sep-2022	9-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required

Table 7: Section 8 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Clore River)	8E	1818.00-WC	162C	S6	Isolate if flowing, Open Cut if dry or frozen	607+272	9	569977	5990909	13-Sep-2022	15-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1809.00-WC	635	S6	Isolate if flowing, Open Cut if dry or frozen	605+100	9	571988	5991553	23-Aug-2022	16-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1811.00-WC	636	S6	Isolate if flowing, Open Cut if dry or frozen	605+328	9	571782	5991470	29-Aug-2022	19-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1819.00-WC	164C	S6	Isolate if flowing, Open Cut if dry or frozen	607+366	9	569886	5990901	16-Sep-2022	19-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1839.00-WC	173C	S6	Isolate if flowing, Open Cut if dry or frozen	611+801	9	566161	5989762	7-Sep-2022	20-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1812.00-WC	637	S6	Isolate if flowing, Open Cut if dry or frozen	606+559	9	571567	5991397	2-Sep-2022	21-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1812.10-WC	UN21-83	S6	Isolate if flowing, Open Cut if dry or frozen	605+781	9	571359	5991326	2-Sep-2022	23-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1813.00-WC	157C	S6	Isolate if flowing, Open Cut if dry or frozen	605+862	9	571283	5991300	3-Sep-2022	26-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1815.00-WC	639	S6	Isolate if flowing, Open Cut if dry or frozen	606+418	9	570782	5991130	9-Sep-2022	28-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1816.00-WC	640	S6	Isolate if flowing, Open Cut if dry or frozen	606+519	9	570688	5991098	10-Sep-2022	30-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1817.00-WC	160C	S6	Isolate if flowing, Open Cut if dry or frozen	607+068	9	570175	5990930	13-Sep-2022	3-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1822.00-WC	49C2A	S4	Isolate if flowing, Open Cut if dry or frozen	608+747	9	568521	5991063	31-Jul-2022	4-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1830.00-WC	56C2A	S6	Isolate if flowing, Open Cut if dry or frozen	610+167	9	567530	5990391	22-Sep-2022	7-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1831.00-WC	UN22-53	S6	Isolate if flowing, Open Cut if dry or frozen	610+195	9	567521	5990364	19-Sep-2022	8-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1833.00-WC	650	S6	Isolate if flowing, Open Cut if dry or frozen	610+739	9	567148	5989994	23-Sep-2022	11-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1834.00-WC	UN22-36	S6	Isolate if flowing, Open Cut if dry or frozen	611+087	9	566828	5989901	26-Sep-2022	12-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1835.00-WC	651	S6	Isolate if flowing, Open Cut if dry or frozen	611+259	9	566657	5989888	27-Sep-2022	13-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1836.00-WC	170C	S6	Isolate if flowing, Open Cut if dry or frozen	611+506	9	566411	5989868	28-Sep-2022	14-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1843.00-WC	UN21-48	S6	Isolate if flowing, Open Cut if dry or frozen	612+661	9	565455	5989537	24-Sep-2022	15-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1827.00-WC	54C2A	S3	Isolate if flowing, Open Cut if dry or frozen	609+556	9	567754	5990944	25-May-2022	22-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Sumgas Creek)	8W	2090.00-WC	UN22-19	S2	Auger Bore	665+920	9	521834	5987439	1-May-2022	25-Oct-2022	Excavate Bore Bays and Set up, Install Casing, Pull Product
Unnamed Lake (Kitimat River)	8W	1860.00-WC	661	L3	Isolate if flowing, Open Cut if dry or frozen	616+496	9	562254	5988502	10-Aug-2022	27-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1943.00-WC	699	S3	Isolate if flowing, Open Cut if dry or frozen	633+924	9	547757	5991942	22-Aug-2022	1-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1867.00-WC	665	S5	Isolate if flowing, Open Cut if dry or frozen	618+400	9	560658.861	5987897.53	23-Aug-2022	26-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8W	1852.00-WC	657.2T	S6	Isolate if flowing, Open Cut if dry or frozen	614+657	9	563510	5989610	25-Aug-2022	5-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1914.00-WC	S1032	S6	Isolate if flowing, Open Cut if dry or frozen	629+880	9	551640.199	5991695.01	26-Aug-2022	3-Sep-2022	Dig, Install, Backfill and Reclaim

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Hirsch Creek)	8W	1940.00-WC	698	S5	Isolate if flowing, Open Cut if dry or frozen	633+470	9	548196.832	5991831.83	29-Aug-2022	7-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1892.00-WC	684	S6	Isolate if flowing, Open Cut if dry or frozen	626+360	9	554602	5990235	31-Aug-2022	13-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1960.00-WC	706	S6	Isolate if flowing, Open Cut if dry or frozen	636+546	9	545375	5992810	2-Sep-2022	18-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1937.00-WC	697	S5	Isolate if flowing, Open Cut if dry or frozen	633+141	9	548503	5991729	4-Sep-2022	12-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8W	1853.00-WC	657.3T	S5	Isolate if flowing, Open Cut if dry or frozen	614+750	9	563416	5989608	6-Sep-2022	6-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1950.00-WC	701.3T	S4	Isolate if flowing, Open Cut if dry or frozen	634+976	9	546854.896	5992442.57	8-Sep-2022	21-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1936.10-WC	1N203	S6	Isolate if flowing, Open Cut if dry or frozen	633+109	9	548534.318	5991729.92	13-Sep-2022	22-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1893.00-WC	684.1T	S6	Isolate if flowing, Open Cut if dry or frozen	626+455	9	554520	5990278	14-Sep-2022	25-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1951.00-WC	701.4T	S3	Isolate if flowing, Open Cut if dry or frozen	635+019	9	546817.363	5992461.61	17-Sep-2022	4-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1958.00-WC	705	S6	Isolate if flowing, Open Cut if dry or frozen	636+038	9	545879	5992778	19-Sep-2022	2-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1958.00-WC	705	S6	Isolate if flowing, Open Cut if dry or frozen	636+038	9	545879	5992778	19-Sep-2022	2-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1893.20-WC	8176	S6	Isolate if flowing, Open Cut if dry or frozen	626+483	9	554494	5990286	23-Sep-2022	5-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1935.00-WC	UN12-28	S6	Isolate if flowing, Open Cut if dry or frozen	632+924	9	548707.7	5991667.45	23-Sep-2022	5-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1955.00-WC	703.1F	S3	Isolate if flowing, Open Cut if dry or frozen	635+699	9	546230	5989628	4-Oct-2022	22-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1956.00-WC	704	S5	Isolate if flowing, Open Cut if dry or frozen	635+828	9	546082	5992749	4-Oct-2022	16-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1954.00-WC	703	S3	Isolate if flowing, Open Cut if dry or frozen	635+582	9	546314	5992688	5-Oct-2022	28-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1856.10-WC	UN21-46	S6	Isolate if flowing, Open Cut if dry or frozen	615+448	9	562864.408	5989282.04	7-Oct-2022	19-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1934.00-WC	696.3F	S6	Isolate if flowing, Open Cut if dry or frozen	632+783	9	548841.865	5991627.02	7-Oct-2022	20-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1872.10-WC	S1024	S6	Isolate if flowing, Open Cut if dry or frozen	620+083	9	559082.491	5988109.07	22-Oct-2022	3-Nov-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1933.00-WC	696.2F	S6	Isolate if flowing, Open Cut if dry or frozen	632+713	9	548910.164	5991613.69	22-Oct-2022	4-Nov-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1962.00-WC	706.1F	S6	Isolate if flowing, Open Cut if dry or frozen	636+776	9	545148	5992835	22-Oct-2022	1-Nov-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1953.00-WC	702.1T	S6	Isolate if flowing, Open Cut if dry or frozen	635+478	9	546416	5992673	23-Oct-2022	7-Nov-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Sumgas Creek)	8W	2089.00-WC	741.1T	S2	Auger Bore	665+614	9	522139.119	5987441.73	27-Oct-2022	13-Feb-2023	Excavate Bore Bays and Set up, Install Casing, Pull Product
Unnamed Tributary (Hirsch Creek)	8W	1961.00-WC	706.1T	S6	Isolate if flowing, Open Cut if dry or frozen	636+743	9	545180	5992829	28-Oct-2022	11-Nov-2022	Dig, Install, Backfill and Reclaim

July 25, 2022

Shannon Weatherill
Applications Manager
BC Oil and Gas Commission
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CGL4703-CGP-BCOGC-REG-LTR-5547

Dear Ms. Weatherill,

**Re: Coastal GasLink Pipeline Project (Project)
Scheduled Watercourse Crossings Report #28
References: AD 100082292 Condition 9, AD 100082299 Condition 8, AD 100082251 Condition 9, AD 100082422 Condition 9, AD 100082423 Condition 8, and AD 100084230 Condition 9**

As cited in the above conditions Coastal GasLink is required to:

At least one week prior to the beginning of each month, the permit holder must submit a micro-tunneling or in-stream work planned to commence the following month.

Coastal GasLink is submitting the following monthly Watercourse Crossing Schedules to the BC Oil and Gas Commission (OGC) for August 2022:

- Table 1: Horizontal Directional Drill (HDD) and Direct Pipe Installation (DPI) Status and Schedule
- Table 2: Section 2 (AD 100082292) Watercourse Crossings Status and Schedule
- Table 3: Section 3 (AD 100082299) Watercourse Crossings Status and Schedule
- Table 4: Section 5 (AD 100082251) Watercourse Crossings Status and Schedule
- Table 5: Section 6 (AD 100082422) Watercourse Crossings Status and Schedule
- Table 6: Section 7 (AD 100082423) Watercourse Crossings Status and Schedule
- Table 7: Section 8 (AD 100084230) Watercourse Crossings Status and Schedule

Coastal GasLink notes that all watercourse crossings in Sections 1 (AD100082293) and 4 (AD 100082252) are complete.

Coastal GasLink notes the timing of construction provided in the attached tables are based on the current Project schedule and the best information available to Coastal GasLink on the date of filing. These dates are, however, subject to change without notice due to changing site conditions, final execution plans, permitting and other external factors.

Should you have any questions do not hesitate to contact me at 403-920-6296 or dan_wyman@tcenergy.com.

Sincerely,



Daniel RK Wyman
Team Lead, Regulatory
Coastal GasLink

Table 1: HDD and DPI Schedule

Watercourse Name HDD/DPI	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	Easting	Northing	Work Scheduled to Start	Work Scheduled to End	Summary of Activities Planned for the month
Murray River	1	61.00-WC	10B1	S1A	HDD	25+217	617896.01 e	6172089.74 n	28-Sep-2020	10-Jul-2021	Complete
Sukunka River	1	186.00-WC	51B1	S1A	HDD	64+431	617896.01 e	6157225 n	15-Jun-2021	15-Nov-2021	Complete
Burnt River	2	270.00-WC	72	S1B	DPI	96+886	617896.01 e	6131508.33 n	3-Aug-2021	21-Sep-2021	Complete
Parsnip River	3	560.00-WC	205	S1A	DPI	189+659	617896.01 e	6069086 n	25-Oct-2021	28-Feb-2022	Complete
Crooked River	3	654.00-WC	235	S1B	DPI	212+345	617896.01 e	6056162 n	13-Nov-2020	28-Nov-2020	Complete
Salmon River	4	781.00-WC	277	S1A	DPI	254+104	617896.01 e	6027443 n	23-Sep-2021	17-Nov-2021	Complete
Stuart River	4	880.00-WC	SRR9	S1A	DPI	298+052	617896.01 e	6004956.59 n	13-Oct-2020	11-Dec-2020	Complete
Morice River	7	1677.00-WC	558	S1A	Microtunnel	558+400	617896.01 e	6004956.59 n	1-Aug-2022	18-Oct-2022	Commence microtunnel
Kitimat River	8	2098.00-WC	191C	S1A	DPI	667+162	617896.01 e	5989905.36 n	13-Jul-2020	31-Aug-2020	Complete
Crocker Creek	2	482.00-WC	55C	S2	DPI	165+034	548702 e	6084604 n	8-Sep-2022	19-Sep-2022	Pad preparation and casing installation

Table 2: Section 2 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Rocky Creek)	2	315.00-WC	83	S3	Isolate if flowing, Open Cut if dry or frozen	109+794	10	572792	6122383	August 1, 2022	August 12, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Sukunka River)	2	328.00-WC	88	S6	Isolate if flowing, Open Cut if dry or frozen	111+850	10	571571	6120783	August 13, 2022	August 19, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Sukunka River)	2	342.00-WC	30C	S6	Isolate if flowing, Open Cut if dry or frozen	115+847	10	570137	6117376	August 20, 2022	August 26, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Sukunka River)	2	355.00-WC	95.1T	S6	Isolate if flowing, Open Cut if dry or frozen	118+145	10	569998	6115264	August 1, 2022	August 6, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Sukunka River)	2	367.00-WC	99	S5	Isolate if flowing, Open Cut if dry or frozen	122+135	10	567182	6113248	August 1, 2022	August 12, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Baker Creek)	2	376.1-WC	J85.01	S6	Isolate if flowing, Open Cut if dry or frozen	128+297	10	562024	6112860	August 1, 2022	August 6, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	N/A	J91.97	S6	Isolate if flowing, Open Cut if dry or frozen	131+833	10	559769	6110576	August 8, 2022	August 13, 2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Burnt River)	2	384.00-WC	110	S5	Isolate if flowing, Open Cut if dry or frozen	133+381	10	558292	6110718	August 15, 2022	August 24, 2022	Dig, Install, Backfill and Reclaim

Section 3 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Anzac River)	3	0547.0-WC	198	S4	Isolate if flowing, Open Cut if dry or frozen	185+400	10	534288.34	6072406	26-Aug-2022	9-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Anzac River)	3	0548.0-WC	199	S2	Isolate if flowing, Open Cut if dry or frozen	186+429	10	533682.79	6071622	22-Aug-2022	5-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Redrocky Creek)	3	0611.0-WC	221	S4	Isolate if flowing, Open Cut if dry or frozen	203+349	10	522895.8	6060264	22-Jul-2022	5-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Redrocky Creek)	3	0621.0-WC	96C	S3	Isolate if flowing, Open Cut if dry or frozen	206+474	10	520838.91	6058823	1-Aug-2022	15-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Redrocky Creek)	3	0622.0-WC	97C	S4	Isolate if flowing, Open Cut if dry or frozen	206+782	10	520563.12	6058702	1-Aug-2022	15-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0628.0-WC	230	S3	Isolate if flowing, Open Cut if dry or frozen	208+519	10	519162.69	6057751	6-Aug-2022	20-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Crooked River)	3	0664.0-WC	239	S3	Isolate if flowing, Open Cut if dry or frozen	214+797	10	513984.54	6054814	1-Aug-2022	15-Aug-2022	Dig, Install, Backfill and Reclaim

Table 4: Section 5 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Nine Mile Creek	5E	1052.00-WC_R0	15C2A	S3	Isolated Open Cut	353+516	10	403283	6003944	10-Aug-2022	16-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Trankle Creek)	5E	1003.00-WC_R0	72B1	S6	Isolate if flowing, Open Cut if dry or frozen	339+248	10	416747	6001390	26-Aug-2022	27-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Ormond Creek)	5E	1133.00-WC_R0	388	S3	Isolated Open Cut	375+670	10	383303	5997710	10-Aug-2022	19-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Ormond Creek)	5E	1132.10-WC_R0	388.01	S3	Isolated Open Cut	375+600	10	383357	5997725	10-Aug-2022	16-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Kluk Creek	5E	1030.00-WC_R0	11C2A	S3	Isolated Open Cut	346+266	10	410416	6003184	4-Aug-2022	10-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Ormond Creek	5E	1130.00-WC_R0	59C1	S2	Trenchless - Guided Bore Machine	374+650	10	384244	5998062	21-Jul-2022	16-Aug-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Stern Creek	5E	1151.00-WC	397	S2	Trenchless - Guided Bore Machine	383+447	10	375950	5996492	19-Jul-2022	12-Aug-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Endako River	5E	1179.00-WC	403	S1B	Trenchless - Guided Bore Machine	391+078	10	369277	5993881	13-Aug-2022	2-Sep-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product

Table 5: Section 6 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Tchesinkut Creek)	6	1361.00-WC	106C1	S4	Open Cut	447+172	10	317916	6002770	13-Aug-2022	18-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Tchesinkut Creek	6	1371.00-WC	7C2	S3	Open Cut	450+422	10	315045	6001811	19-Jul-2022	6-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Beach Creek)	6	1391.00-WC	461	S3	Open Cut	455+586	10	309991	6001283	28-Jul-2022	13-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Beach Creek)	6	1398.00-WC	462	S3	Open Cut	457+097	10	308590	6001456	8-Aug-2022	19-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Beach Creek)	6	1381.00-WC	458	S6	Open Cut	452+231	10	313315	6001498	20-Aug-2022	25-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Beach Creek)	6	1383.00-WC	459	S6	Open Cut	453+171	10	312385	6001419	26-Aug-2022	31-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required

Table 6: Section 7 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Parrott Creek)	7	1534.10-WC	J1535.02	S6	Isolate if flowing, Open Cut if dry or frozen	507+265	9	654749.8381	6006119.173	30-Jul-2022	4-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Parrott Creek)	7	1535.00-WC	124C1	S4	Isolate if flowing, Open Cut if dry or frozen	507+557	9	654490.0582	6006227.006	30-Jul-2022	4-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Owen Creek)	7	1553.00-WC	18C2	S6	Isolate if flowing, Open Cut if dry or frozen	514+006	9	648292.0181	6006946.584	5-Aug-2022	9-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Owen Creek)	7	1557.00-WC	129C1	S6	Isolate if flowing, Open Cut if dry or frozen	515+417	9	646892.1145	6006793.132	13-Aug-2022	17-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Owen Creek)	7	1562.00-WC	130C1	S6	Isolate if flowing, Open Cut if dry or frozen	517+265	9	645126.3886	6006457.455	10-Aug-2022	13-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Owen Creek)	7	1565.00-WC	131C1	S6	Isolate if flowing, Open Cut if dry or frozen	518+479	9	643939.4054	6006652.472	18-Aug-2022	22-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Parrott Creek	7	1541.00-WC	510	S3	Isolate if flowing, Open Cut if dry or frozen	509+823	9	652359	6006984	5-Aug-2022	12-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Owen Creek	7	1577.00-WC	133C1	S2	Isolate if flowing, Open Cut if dry or frozen	521+706	9	641170.3367	6005231.378	23-Aug-2022	1-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1726.10-WC	J453.02	S6	Isolate if flowing, Open Cut if dry or frozen	580+151	9	587062.0114	6005665.369	31-Aug-2022	3-Sep-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1727.00-WC	589B	S4	Isolate if flowing, Open Cut if dry or frozen	580+350	9	586934.7158	6005528.411	26-Aug-2022	30-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1728.00-WC	590B	S6	Isolate if flowing, Open Cut if dry or frozen	580+489	9	586837.8965	6005416.061	22-Aug-2022	25-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1728.10-WC	J456.01	S6	Isolate if flowing, Open Cut if dry or frozen	580+526	9	586818.2684	6005395.474	17-Aug-2022	20-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1732.40-WC	J459.97	S4	Isolate if flowing, Open Cut if dry or frozen	582+126	9	585859.5595	6004171.245	12-Aug-2022	16-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1732.50-WC	J459.98	S4	Isolate if flowing, Open Cut if dry or frozen	582+139	9	585850.9899	6004161.644	8-Aug-2022	11-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1732.60-WC	J459.99	S4	Isolate if flowing, Open Cut if dry or frozen	582+325	9	585727.0864	6004029.427	3-Aug-2022	6-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required
Unnamed Tributary (Gosnell Creek)	7	1733.00-WC	592B	S3	Isolate if flowing, Open Cut if dry or frozen	582+344	9	585711.7327	6004017.136	26-Jul-2022	2-Aug-2022	Isolate, Trench, Install Pipe, Backfill, Reclaim, Blasting if required

Table 7: Section 8 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Clore River)	8E	1757.00-WC	27D	S6	Isolate if flowing, Open Cut if dry or frozen	593+136	9	577930	6000851	3-Aug-2022	10-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1758.00-WC	608.1F	S6	Isolate if flowing, Open Cut if dry or frozen	593+507	9	577624	6000675	6-Aug-2022	13-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1814.00-WC	638	S6	Isolate if flowing, Open Cut if dry or frozen	605+946	9	571205	5991274	10-Aug-2022	20-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1779.00-WC	44D1	S6	Isolate if flowing, Open Cut if dry or frozen	598+519	9	574250	5997353	20-Aug-2022	27-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1780.00-WC	154C	S6	Isolate if flowing, Open Cut if dry or frozen	598+973	9	574002	5996978	23-Aug-2022	30-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1822.00-WC	49C2A	S4	Isolate if flowing, Open Cut if dry or frozen	608+747	9	568521	5991063	26-Aug-2022	6-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8E	1786.00-WC	158C	S6	Isolate if flowing, Open Cut if dry or frozen	600+281	9	573766	5995777	30-Aug-2022	6-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8W	1852.00-WC	657.2T	S6	Isolate if flowing, Open Cut if dry or frozen	614+657	9	563510	5989610	27-Jul-2022	6-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Clore River)	8W	1853.00-WC	657.3T	S5	Isolate if flowing, Open Cut if dry or frozen	614+750	9	563416	5989608	7-Aug-2022	2-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Lake (Kitimat River)	8W	1860.00-WC	661	L3	Isolate if flowing, Open Cut if dry or frozen	616+496	9	562254	5988502	16-Aug-2022	4-Oct-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1867.00-WC	665	S5	Isolate if flowing, Open Cut if dry or frozen	618+400	9	560659	5987898	13-Aug-2022	15-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1869.00-WC	667	S6	Isolate if flowing, Open Cut if dry or frozen	619+083	9	559993	5987971	2-Aug-2022	12-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Kitimat River)	8W	1878.00-WC	674	S5	Isolate if flowing, Open Cut if dry or frozen	622+098	9	557648	5988766	22-Jun-2022	1-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1890.00-WC	681	S6	Isolate if flowing, Open Cut if dry or frozen	625+380	9	555303	5989734	10-Jul-2022	3-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1891.00-WC	683	S5	Isolate if flowing, Open Cut if dry or frozen	625+497	9	555191	5989716	4-Aug-2022	12-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1892.00-WC	684	S6	Isolate if flowing, Open Cut if dry or frozen	626+360	9	554602	5990235	9-Aug-2022	22-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1893.00-WC	684.1T	S6	Isolate if flowing, Open Cut if dry or frozen	626+455	9	554520	5990278	23-Aug-2022	1-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1911.00-WC	691.1T	S6	Isolate if flowing, Open Cut if dry or frozen	629+418	9	552037	5991474	12-Aug-2022	22-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1913.00-WC	S1052	S6	Isolate if flowing, Open Cut if dry or frozen	629+710	9	551788	5991610	24-Jul-2022	2-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1914.00-WC	S1032	S6	Isolate if flowing, Open Cut if dry or frozen	629+880	9	551640	5991695	3-Aug-2022	11-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1915.60-WC	692.1T	S6	Isolate if flowing, Open Cut if dry or frozen	630+091	9	551447	5991769	1-Aug-2022	8-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1923.00-WC	694.1T	S6	Isolate if flowing, Open Cut if dry or frozen	631+229	9	550350	5991789	23-Aug-2022	7-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1924.00-WC	695	S5	Isolate if flowing, Open Cut if dry or frozen	631+322	9	550260	5991781	13-Aug-2022	22-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1936.10-WC	1N203	S6	Isolate if flowing, Open Cut if dry or frozen	633+109	9	548534	5991730	31-Aug-2022	8-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1937.00-WC	697	S5	Isolate if flowing, Open Cut if dry or frozen	633+141	9	548503	5991729	23-Aug-2022	29-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1956.00-WC	704	S5	Isolate if flowing, Open Cut if dry or frozen	635+828	9	546082	5992749	28-Aug-2022	7-Sep-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Hirsch Creek)	8W	1958.00-WC	705	S6	Isolate if flowing, Open Cut if dry or frozen	636+038	9	545879	5992778	16-Aug-2022	27-Aug-2022	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Pine Creek)	8W	2077.00-WC	739.1T	S3	Isolate if flowing, Open Cut if dry or frozen	663+992	9	523575	5987651	3-Oct-2021	29-Mar-2023	Dig, Install, Backfill and Reclaim
Unnamed Tributary (Sumgas Creek)	8W	2090.00-WC	UN22-19	S2	Auger Bore	665+920	9	521834	5987439	1-May-2022	4-Oct-2022	Excavate Bore Bays and Set up, Install Casing, Pull Product
Unnamed Tributary (Kitimat River)	8W	2091.00-WC	UN22-20	S2	Auger Bore	666+071	9	521684	5987438	19-Feb-2022	11-Aug-2022	Excavate Bore Bays and Set up, Install Casing, Pull Product

July 12, 2022

Shannon Weatherill
Authorization Manager
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CGL4703-CGP-BCOGC-REG-LTR-5635

Dear Ms. Weatherill

**Re: Coastal GasLink Pipeline Project (Coastal GasLink or Project)
Satisfaction of the Commission - Supplemental Stream Crossing Submission Addendum 14
Section 8 Pipeline Permit AD # 100084230 – Conditions 52, 53, 57, 58, 59, 67**

Coastal GasLink Pipeline Ltd (Coastal GasLink) is requesting satisfaction of the Commission for the above noted condition in BC Oil and Gas Commission (OGC) Section 8 permit, Conditions 52, 53, 57, 58, 59 and 67 – Supplemental Stream Crossing Submission Addendum 14.

Addendum 14 is required by the referenced conditions on the Pipeline Permit Section 8 (AD# 100084230) and addresses additional information identified since the original Supplemental Stream Crossing submission and subsequent filings of Addendums 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13 which received satisfaction from the commission on February 5, 2019, June 4, 2019, July 3, 2019, April 15, 2020, September 10, 2020, January 28, 2021, July 6, 2021, July 27, 2021, August 17, 2021, October 29, 2021 January 11, 2022, March 10, 2022 and May 3, 2022 respectfully.

Addendum 14 has been modified to include additional information identified through ongoing construction and regulatory planning.

- Attached is Table 2. Stream Crossings List (Addendum 14) – Ditchline
- Table 3. Stream Crossings List (Addendum 1*4) – Right-of-Way (Workspace)
- Appendix A describes the effects assessment process used to evaluate the likelihood of serious harm to fish so that a QEP can identify alternate timing and mitigation as required by Condition 60 b). Where the report identifies crossings where there may be serious harm to fish after applying avoidance and mitigation measures, Coastal GasLink has/will seek advice from Fisheries and Oceans Canada (DFO) through a Request for Review (RFR). If the RFR process determines a Fisheries Act Authorization is required, the authorization will be provided to the Commission as required by Permit Condition 60c).

In order to provide certainty to our construction contractors Coastal GasLink is seeking a determination from the OGC prior to July 19, 2022.

Should you have any further questions please do not hesitate to contact me at 403-920-5324 or joseph_campbell@tcenergy.com.

Sincerely,



Joseph Campbell
Senior Regulatory Analyst
Coastal GasLink



OGC Construction Section 8 Supplemental Stream Crossings Submission Addendum 14

Work Package 4

CGL4703-JEG4-ENV-RPT-0027

July 8, 2022

Revision 0

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Revision Log

Rev	Section	Revision Description
0	All	Issued for Use

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Acronyms and Abbreviations

BC OGC	British Columbia Oil and Gas Commission
CH	Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)
CM	Chum Salmon (<i>Oncorhynchus keta</i>)
CO	Coho Salmon (<i>Oncorhynchus kisutch</i>)
Coastal GasLink	Coastal GasLink Pipeline Ltd.
CT	Cutthroat Trout (<i>Oncorhynchus clarkii</i>)
DV	Dolly Varden (<i>Salvelinus malma</i>)
EMP	Environmental Management Plan
LRW	Least Risk Window
NCD	non-classified drainage
the Pipeline Permit	Coastal GasLink Pipeline Ltd. Pipeline Permit (Application 100084230) for British Columbia Oil and Gas Commission Construction Section 8
QEP	Qualified Environmental Professional
QP	Qualified Professional
RB	Rainbow Trout (<i>Oncorhynchus mykiss</i>)
ST	Steelhead (<i>Oncorhynchus mykiss</i>)
UTM	universal transverse Mercator

1. Introduction

The British Columbia Oil and Gas Commission (BC OGC) issued the Coastal GasLink Pipeline Ltd. (Coastal GasLink) Pipeline Permit (Application 100084230) for BC OGC Construction Section 8 (the Pipeline Permit) on April 29, 2016, which was reissued on November 5, 2018. Conditions 52, 53, 57, 58, 59, and 67 of the Pipeline Permit require Coastal GasLink to receive Satisfaction of the Commission for Supplemental Stream Crossings Submissions. On June 2, 2016, the BC OGC confirmed that the original submission was to the Satisfaction of the Commission in form and content.

Since that time, construction planning has progressed, including additional field surveys and desktop studies requiring the preparation of further Supplemental Stream Crossings Submissions. These were submitted to the BC OGC as amendments or addendums to the original Supplemental Stream Crossings Submission. Table 1 provides a summary of submissions since Satisfaction of the Commission was received for the original Supplemental Stream Crossings Submission.

Table 1. List of Supplemental Stream Crossings Submissions

Submission Name	Date of Submission to the BC OGC	Date of Satisfaction from the BC OGC	Description
Amendment 1	January 24, 2019	February 5, 2019	Updates to streams and wetlands
Addendum 1	April 5, 2019	June 4, 2019	Updates to streams only
Addendum 2	June 27, 2019	July 3, 2019	Updates to streams only
Addendum 3	April 13, 2020	April 15, 2020	Updates to streams only
Addendum 4	April 13, 2020	April 15, 2020	Updates to wetlands only
Addendum 5	September 4, 2020	September 10, 2020	Updates to streams and wetlands
Addendum 6	January 27, 2021	January 28, 2021	Updates to streams only
Addendum 7	June 29, 2021	July 6, 2021	Updates to streams only
Addendum 8	July 27, 2021	July 27, 2021	Updates to streams and wetlands
Addendum 9	August 9, 2021	August 17, 2021	Updates to streams only
Addendum 10	October 26, 2021	October 29, 2021	Updates to streams only
Addendum 11	December 22, 2021	January 11, 2022	Updates to streams only
Addendum 12	March 3, 2022	March 10, 2022	Updates to streams only
Addendum 13	April 14, 2022	May 3, 2022	Updates to streams only

2. Stream Crossings List

As required by the Pipeline Permit, changes to stream crossings not described in the original Supplemental Stream Crossings Submission or later addendums must be identified prior to starting construction. This addendum includes stream class updates for three sites and one new site due to additional assessments conducted. Tables 2 and 3 provide the updated information for these sites, which is provided for Satisfaction of the Commission.



Table 2. Stream Crossings List (Addendum 14) – Ditchline

Site Identifier ^a	Site Name ^b	Kilometre Post (KP)	Universal Transverse Mercator (UTM) Easting ^c	UTM Northing ^c	Project Mitigation	Average Channel Width (metres)	Stream Classification ^d	Fish Presence ^e	Least Risk Window (LRW)	Qualified Environmental Professional (QEP) Window ^f	Approximate Pipeline Construction Timing ^g	Pipeline Crossing Method	Pipeline Crossing Drawing Type	Vehicle Crossing Method (Frozen and Non-frozen Conditions)	Vehicle Crossing Method Drawing Type	Beaver Dam	Comments
Streams with Updated Information																	
S1037	Unnamed Tributary (Kitimat River)	621+345	557928	5988113	Implement the applicable measures identified in Sections 6, 7, and 8 of the Environmental Management Plan (EMP) (Coastal GasLink 2021).	2.50	S3 (previously a non-classified drainage [NCD])	Chinook Salmon (CH), Chum Salmon (CM), Coho Salmon (CO), Cutthroat Trout (CT), Dolly Varden (DV), Rainbow Trout (RB), and Steelhead (ST)	No window	January 1 to December 31	May 28 to June 4	Isolate if flowing, open cut if dry or frozen	Typical	Open bottom structure, closed bottom structure, clear span bridge, ice bridge, or snowfill	Typical	No	The stream class was updated based on the June 2022 fieldwork (from NCD to S3).
2F	Unnamed Tributary (Kitimat River)	621+375	557899	5988120	Implement the applicable measures identified in Sections 6, 7, and 8 of the EMP (Coastal GasLink 2021).	1.55	S3 (previously an NCD)	CH, CM, CO, CT, DV, RB, and ST	No window	January 1 to December 31	May 21 to 28	Isolate if flowing, open cut if dry or frozen	Typical	Open bottom structure, closed bottom structure, clear span bridge, ice bridge, or snowfill	Typical	No	The stream class was updated based on the May 2022 fieldwork (from NCD to S3).
CF005	Unnamed Tributary (Kitimat River)	621+424	557873	5988156	Implement the applicable measures identified in Sections 6, 7, and 8 of the EMP (Coastal GasLink 2021).	3.67	S3 (previously an NCD)	CH, CM, CO, CT, DV, RB, and ST	No window	January 1 to December 31	To be determined	Isolate if flowing, open cut if dry or frozen	Typical	Open bottom structure, clear span bridge, ice bridge, or snowfill	Typical	No	The stream class was updated based on the June 2022 fieldwork (from NCD to S3).

^a Sites were assessed using the Revision 9 Construction Footprint in Construction Section 8 West.

^b Streams are located in the Skeena Region.

^c UTM Zone 9.

^d If a pipeline or vehicle crossing installation is required at an S6 stream that has not been listed in permit applications filed with the BC OGC, Coastal GasLink will:

- Confirm the stream classification with a Fish and Fish Habitat Resource Specialist prior to crossing activities
- Apply appropriate mitigation and crossing methods for S6 streams, per the EMP (Coastal GasLink 2021) and the crossing methods identified in this table
- Maintain downstream water quality if surface water is present, verify that drainage paths are maintained, reduce the disturbance footprint, and use winter (that is, frozen ground) construction, if practical
- Add the stream crossings to the Master Watercourse Crossing List and the postconstruction plans for as-built record keeping

^e Fish species that have the potential to be present, based on McPhail (2007), connectivity, habitat types, and queries from Fish Inventories Data Queries (Government of British Columbia 2022a) and HabitatWizard (Government of British Columbia 2022b).

^f See Section 3 for more information on the QEP timing windows and additional mitigation to meet Condition 60(b) of the Pipeline Permit.

^g Dates are approximate and subject to change. Based on Condition 9 of the Pipeline Permit, Coastal GasLink will submit a schedule to the BC OGC at least 1 week prior to the beginning of each month indicating the location and timing of trenchless or instream work planned to start the following month.

Table 3. Stream Crossings List (Addendum 14) – Right-of-Way (Workspace)

Site Identifier ^a	Site Name ^b	KP	UTM Easting ^c	UTM Northing ^c	Project Mitigation	Average Channel Width (metres)	Stream Classification ^d	Fish Presence ^e	LRW	QEP Window ^f	Vehicle Crossing Method (Frozen and Non-frozen Conditions)	Vehicle Crossing Method Drawing Type	Beaver Dam	Comments
New Stream														
JCF005.01	Unnamed Tributary (Kitimat River)	621+400	557853	5988129	Implement the applicable measures identified in Sections 6, 7, and 8 of the EMP (Coastal GasLink 2021).	1.58	S3	CH, CM, CO, CT, DV, RB, and ST	No window	January 1 to December 31	Open bottom structure, closed bottom structure, clear span bridge, ice bridge, or snowfill	Typical	No	This stream was identified during June 2022 fieldwork.

^a Site was assessed using the Revision 9 Construction Footprint in Construction Section 8 West.

^b Stream is located in the Skeena Region.

^c UTM Zone 9.

^d If a vehicle crossing installation is required at an S6 stream that has not been listed in permit applications filed with the BC OGC, Coastal GasLink will:

- Confirm the stream classification with a Fish and Fish Habitat Resource Specialist prior to crossing activities
- Apply appropriate mitigation and crossing methods for S6 streams, per the EMP (Coastal GasLink 2021) and the crossing methods identified in this table
- Maintain downstream water quality if surface water is present, verify that drainage paths are maintained, reduce the disturbance footprint, and use winter (that is, frozen ground) construction, if practical
- Add the stream crossings to the Master Watercourse Crossing List and the postconstruction plans for as-built record keeping

^e Fish species that have the potential to be present, based on McPhail (2007), connectivity, habitat types, and queries from Fish Inventories Data Queries (Government of British Columbia 2022a) and HabitatWizard (Government of British Columbia 2022b).

^f See Section 3 for more information on the QEP timing windows and additional mitigation to meet Condition 60(b) of the Pipeline Permit.

3. Qualified Environmental Professional Timing Windows and Additional Mitigation

3.1 Overview

Several factors were considered when determining QEP alternative timing windows and associated mitigation recommended by a Qualified Professional (QP) (Permit Condition 60b) for BC OGC Construction Section 8, including:

- Provincial LRWs for the Skeena Region
- Proposed construction activities
- Fish presence and habitat potential near the stream crossing

Site-specific mitigation, recommended by a QP, is provided in addition to the standard measures identified in the EMP (Coastal GasLink 2021).

3.2 Qualified Environmental Professional Timing Windows

Fish stream crossings were assigned a provincial LRW for the Skeena Region based on the expected species presence (British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development 2018). The expected species presence was based on previous fish sampling information in the watershed and fish habitat assessments, Fish Inventories Data Queries (Government of British Columbia 2022a), HabitatWizard (Government of British Columbia 2022b), and species distribution information (McPhail 2007). Field study results and desktop review were used to develop and recommend alternative, site-specific reduced risk timing windows, termed as QEP timing windows.

3.2.1 No Timing Restrictions (Open Qualified Environmental Professional Timing Windows)

The QP recommended no timing restrictions where there was an absence of suitable spawning habitat within the construction footprint and low potential for migration to upstream locations. These streams were generally small, had poor or nil habitat potential, were located high in the upper watershed, or had drop structures or other impediments to fish migration. Implementation of the applicable mitigation described in the EMP (Coastal GasLink 2021) is anticipated to avoid negative effects to fish and fish habitat at these stream crossings. In this addendum, four sites have a QEP timing window for instream work that is open all year, from January 1 to December 31.

4. References

British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development. 2018. *Terms and Conditions for Water Sustainability Act Changes In and About a Stream as specified by Ministry of Forests, Lands, Natural Resource Operations, and Rural Development (FLNRORD) Habitat Officers, Skeena Region*. April. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/working-around-water/terms_conditions_skeena.pdf.

Coastal GasLink Pipeline Ltd. 2021. *Coastal GasLink Pipeline Project – Environmental Management Plan*. Version 5. Prepared for Coastal GasLink Pipeline Ltd. September 21.

Government of British Columbia. 2022a. "Fish Inventories Data Queries (FIDQ)." gov.bc.ca. Accessed June 2022. <http://a100.gov.bc.ca/pub/fidq/welcome.do>.

Government of British Columbia. 2022b. "HabitatWizard." gov.bc.ca. Accessed June 2022. <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/ecosystems/habitatwizard>.

McPhail, J. D. 2007. *The Freshwater Fishes of British Columbia*. Edmonton, Alberta: The University of Alberta Press, Ring House 2, p. 392-397.

Keough, Dana

From: Shelley McInnis (Contractor) <shelley_mcinnis@tcenergy.com>
Sent: Thursday, July 7, 2022 11:08 AM
To: Post Permit Requests; Weatherill, Shannon M; Pancera, Norberto
Cc: Dan Wyman; CGL Compliance & Commitments
Subject: Revised CGL July Watercourse Crossing Report #27
Attachments: CGL4703-CGP-BCOGC-REG-LTR-5558_July WCC Report 27_Sec 5 Rev.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning,

Attached is a revised Section 5 AD# 100082251 watercourse crossing report for July #27. Endako River crossing has been added and several dates have been updated.

Table 4: Section 5 Watercourse Crossings Schedule										
Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date
Ormond Creek	SE	1130.00-WC_R0	59C1	S2	Trenchless - Guided Bore Machine	374+650	10	384244	5998062	25-Jul-2022
Endako River	SE	1179.00-WC	403	S1B	Trenchless - Guided Bore Machine	391+078	10	369277	5993881	11-Jul-2022
Stern Creek	SE	1151.00-WC	397	S2	Trenchless - Guided Bore Machine	383+447	10	375950	5996492	30-Jul-2022

Thank you,

Shelley McInnis
Regulatory Analyst
Coastal GasLink
Contractor representing TC Energy

shelley_mcinnis@tcenergy.com

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Table 4: Section 5 Watercourse Crossings Schedule

Watercourse Name	Section	CGL ID	Site ID	Watercourse Designation	Crossing Method	KP	UTM Zone	Easting	Northing	Work Scheduled Start Date	Work Scheduled End Date	Summary of Activities Planned for the month
Unnamed Tributary (Nine Mile Creek)	5E	1067.00-WC_R0	34C1	S3	Isolated Open Cut	357+766	10	399396	6004123	28-Jun-2022	6-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nine Mile Creek)	5E	1069.00-WC_R0	5800	S4	Isolated Open Cut	358+152	10	399053	6003953	7-Jul-2022	12-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Tatsutnai Creek)	5E	1082.00-WC_R0	21C2A	S3	Isolated Open Cut	361+639	10	395952	6002732	13-Jul-2022	20-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Nine Mile Creek	5E	1052.00-WC_R0	15C2A	S3	Isolated Open Cut	353+516	10	403283	6003944	21-Jul-2022	27-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Kluk Creek	5E	1030.00-WC_R0	11C2A	S3	Isolated Open Cut	346+266	10	410416	6003184	28-Jul-2022	6-Aug-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Nechako River)	5E	1124.00-WC_R0	58C1	S4	Isolated Open Cut	371+676	10	387127	5998691	28-Jun-2022	9-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Ormond Creek)	5E	1132.10-WC_R0	388.01	S3	Isolated Open Cut	375+600	10	383357	5997725	9-Jul-2022	17-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Unnamed Tributary (Ormond Creek)	5E	1133.00-WC_R0	388	S3	Isolated Open Cut	375+670	10	383303	5997710	18-Jul-2022	27-Jul-2022	Isolate, Dig, Install, Backfill and Reclaim
Ormond Creek	5E	1130.00-WC_R0	59C1	S2	Trenchless - Guided Bore Machine	374+650	10	384244	5998062	25-Jul-2022	15-Aug-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Endako River	5E	1179.00-WC	403	S1B	Trenchless - Guided Bore Machine	391+078	10	369277	5993881	11-Jul-2022	29-Jul-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product
Stern Creek	5E	1151.00-WC	397	S2	Trenchless - Guided Bore Machine	383+447	10	375950	5996492	30-Jul-2022	24-Aug-2022	Excavate Bore Bays and Set up, Install Pilot Pipe, Pull Product



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022NOV03
Inspection No: 078748829-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on October 27, 2022.

The items listed below were inspected during this inspection.

Inspection with the operator of section 3, KP 212+500 to KP 215+700.

KP 213+950, WC 237, S3, clear-span bridge with ESC, ESC requires maintenance as discussed with the operator. Sheet piling installed, well pointing installed discharging to filter bag in vegetated area, WC is isolated by upstream and downstream plates, equilibrium with 6" pump to downstream diffuser, fish block nets and intake screens meet requirements and back up equipment in place for equilibrium.

WQM in place at 25m upstream and 50m and 75m downstream. Trench pump to filter bag (no secondary).

Pull section is completed with the pull head attached, water will be pumped into the trench for buoyancy during the install.

KP 214+797, WC 239, S3, clear-span bridge with ESC, ESC requires maintenance as discussed with the operator, sheet piling installed, WC is isolated by plates and sandbags upstream and downstream, fish block nets are installed, equilibrium by 2- 3" pumps to diffuser downstream, screened intakes meet requirements, redundancy in place, both side channel and main channel are isolated, WQM in place.

Travel lane has sediment laden water flowing onto the ROW and is being diverted into a sump and pumped off to filter bags, water is pooling along the sediment fence, discussed with the operator to prevent this water from leaving the ROW.

KP 215+646, WC 242, S2, clear-span bridge with ESC, ESC requires Maintenance as discussed with the operator, sheet piling installed, well pointing installed discharging to filter bag, Back filling in progress, WC is isolated by upstream and downstream plates, equilibrium by 1-3" pump to downstream diffuser, redundancy in place, fish block nets installed and intake screening meets requirements, WQM in place.

Tie in welding crew on location. Welding Inspector and 2 welders certificates provided, PQR's provided, procedure CGL-SAE-03-REV 2 provided, Repair Procedure 2020-01-06 provided, 100% visual and 100% UT. Note; Beveling completed on site after removal of the cover plates by welding crew (cutting band and crawler) with QC done by welding inspector - key measurement.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082299	000023581	1	NTS: C 046-F/093-J-16	NTS: C 090-G/093-J-10
100082299	000023581	2	NTS: C 090-G/093-J-10	NTS: C 072-F/093-J-10
100082299	000023581	3	NTS: D 072-F/093-J-10	NTS: C- 002-F/093-J-06

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100082299	0003200	35	
100082299	0003200	153	
100082299	0003200	38	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

INSPECTION REPORT

Letter Date: 2022NOV03
Inspection No: 078752533-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on October 26, 2022.

The items listed below were inspected during this inspection.

Inspection with the operator of section 2, KP 145+500 to KP 166+500, October 25 & 26, 2022.

KP 145+700, slide area, material has been pulled back from the WC, crib wall has been installed at the toe of the slope, informed that Geotech assessment is ongoing. Blasting crew is working in proximity to the slide location.

KP 147+300, admixing of snow and soils on ROW, woody debris pushed to the tree line has soils mixed in. Discussed with the operator. Madril grapple yarder pulling logs over installed ESC, discussed with the operator.

154+100, Set up crew completing prep and counter bore, beveling at the time of the inspection, 5 to 45 degrees, lands flat, internal at 37 1/2 degrees, 100% visuals and key checks 2 sides, QC completed by welding inspector and QC inspector (key checks) prior to welding.

Counter bore from 24.7ml to 18.5 ml with 1 ml tolerance.

External markings on the pipe include CB#, Trans#, Manufacturer, P#, Heat #, CBZ, date and chainage, Written reports by chainage located at office.

154+800. Anzac bore (west side), sheet piling installed with cross members, 3 aqua dams installed isolating across the wetland area, 4 of 12 wellpoints installed discharging to filter bags in secondary containment, 4" trench pump discharging to filter bag in secondary containment. The East side has slide rails installed.

KP 166+000, coating crew, procedure TES-CO-EPU-GL produced, Field Applied External Liquid for Steel Pipe Specifications produced, Coating Inspector NACE level 3, QC Inspector NACE level 2, temp range 10 - 100C normal is 85C, holiday at 2.3KV & 780 direct current, Sandblast 20/50 Green Diamond, SALT test on bare substrate and sand blast, Coating is SPC 2888 - brush grade - 2-part epoxy.

QC, Dry Film Thickness 20 - 70 ml, Shore D test 80 - 85 + or - 2 hardness on 1/25. cross hatch X cut on 1/50 and holiday at min 3.2 KV.

KP 166+500, mainline welding, fully automated, 3 shacks, goose and trouble shooter, procedures produced; 2020-01-10-R1 for 18.5 ml, 2020-01-11 for 20.6 ml, 2020-01-12 for 24.7 ml, 2020-01-13 for 29.6 ml, welding Inspector cert level 1 produced, 8 welders on site, certificates produced, PQR's produced, welders are field certified. There were no repair welders on site at the time of the inspection.

KP 166+500, UT crew, operator and scan tech on site, procedure produced, CGL-4703-RTD-QA-PRO-0001-2020-10-02-REV 0, documents on site weld journal and daily report. QC functions as auditor.

QC documents on site weld parameter sheet, welder qualification sheet, bevel and fit reports. (QC checks 3 bevels per day).

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

s19

Further questions regarding this inspection should be addressed to

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082292	000023577	1	NTS: D 031-F/093-P-05	NTS: C 046-F/093-J-16

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022NOV02

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

Inspection No: 078735101-001

Operator: Coastal GasLink Pipeline Ltd.

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on October 26, 2022.

The items listed below were inspected during this inspection.

Inspection with the operator of laydown 7A. Storage area is active with a mini warehouse on location and numerous items including heavy equipment, timber, pipe and bridges being stored there. there were no concerns noted at the time of the inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100084518	00132381	Storage Area
100084518	00132382	Storage Area

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022NOV02
Inspection No: 078733985-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on October 26, 2022.

The items listed below were inspected during this inspection.

Inspection with the operator of POD - 006, Crocker Creek. POD was not in use at the time of the inspection. Permit is on location and signage is in place. Fish screen on the intake meets requirements. Water depth at the location of the intake is less than 30 cm. Discussed with the operator the requirement of 30 cm depth and permitted flow rate. Operator is to ensure both requirements are met prior to use.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Short Term Water Use Inspected

AD #	STWU #	POD #	POD Type	Location
100115453	0006222	006	Stream/River	UTM: 10-548756E, 6084539N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022NOV02

Inspection No: 078733190-001

Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on October 26, 2022.

The items listed below were inspected during this inspection.

Inspection with the operator of Laydown 16. Site is active, storage of equipment and rig mats. Excavator and rock truck cleaning ditches along access road to storage area. There were no concerns noted at the time of the inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer

Authorized Commission Employee

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100084579	00146421	Storage Area

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022NOV02
Inspection No: 078734548-001

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

Operator: Coastal GasLink Pipeline Ltd.

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on October 25, 2022.

The items listed below were inspected during this inspection.

Inspection with operator of POD - 001, Anzac River. The POD was not in use at the time of the inspection. Signage is in place and the permit is on location. The fish screen on the intake meets requirements. Water levels at the intake are below the 30cm requirement and the operator immediately pulled the intake from the water. Discussed with the operator the requirements for water depth and flow. The operator is to ensure that both requirements are met prior to use.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Short Term Water Use Inspected

AD #	STWU #	POD #	POD Type	Location
100112121	0005788	001	Stream/River	UTM: 10-552711E, 6093013N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022NOV02
Inspection No: 078735688-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on October 21, 2022. The items listed below were inspected during this inspection.

Inspection with the operator of the storage area located at KP 127+500. A warehouse is in operation at this location. Hydrocarbon staining was observed in proximity to the plastic bins and parked equipment. Discussed with the operator to initiate clean-up. Several housekeeping issues were observed, and each was discussed with the operator during the inspection. Several items are required to be stored in secondary containment. These items were discussed with the operator at the time of inspection and included batteries, DEF fluid and windshield washer fluid. ESC on the site requires maintenance at several locations and was discussed with the operator.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100084668	00172897	Storage Area

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

INSPECTION REPORT

Letter Date: 2022NOV02	Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam
Inspection No: 078745661-001	
Operator: Coastal GasLink Pipeline Ltd.	

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on October 20, 2022.

The items listed below were inspected during this inspection.

Inspection with the operator of section 2 KP 138+500 to 133+350.

KP 138+500, Welding crew, 6 welders on site, welders are field certified, 2 welders certifications produced, welding inspector level 1 certification produced, PQR's produced, welding procedure WPDS-2020-01-Z1 produced, 100% visuals and 100% UT scan. There were no repair welders on site.

KP 138+500, Bending crew, Field bending method statement GA-SPEC-0007 produced, Inspection and test plan CGL4703-SMJV-QA-TP-0007 produced. Max 9 1/2-degree cols bends with 20-minute pull, visuals are completed before, during and after bend, A record of bends is kept in office and was not provided on site, QC for ovalities is completed after all bends, ovality tolerance is 30ml.

KP 138+500, Coating crew, specification sheet TES-CO-EPU-GL produced, Field Applied External Liquid Coating Systems for steel pipe provided, Sand blast with green diamond 20/50, salt test, 2" overlap on old coat, heat range is 70C to 90C, dry film thickness test, Shore D test 1/50, Adhesion test "X" cut, holiday at 3.0 KV.

KP 137+914, WC 38C, S6, in isolation sandbags upstream and downstream, Equilibrium to diffuser downstream.

KP 137+830, WL 9221, partially graded out, variance in place

KP 137+757, WL 2591, partially graded out, variance in place

KP 137+714, WL 2589, partially graded out, variance in place

KP 137+335, NCD J108.98, graded out at the time of inspection

KP 137+326, NCD J108.96, graded out at the time of inspection

KP 136+960, NCD J108.70, Culvert with ESC

KP 136+910, S6, J108.94, culvert with ESC

KP 136+236, S5, 37C, clear-span bridge with ESC, bridge deck and ESC require maintenance

KP 136+077, NCD J100.02, culvert with ESC

KP 135+644, NCD J100-01, culvert with ESC

KP 135+583, S6, 36C, clear-span bridge with ESC, bridge deck and ESC require maintenance

KP 135+465, S6, 113, Clear-span bridge with ESC, channel restored, ESC requires maintenance

KP 135+245, NCD, J96.07, culvert with ESC

KP 135+089, NCD, J96.06, culvert with ESC, ESC requires maintenance

KP 135+005, NCD, J96.04, culvert with ESC, ESC requires maintenance

KP 134+944, NCD, J96.02, culvert with ESC, ESC requires maintenance

KP 134+787, NCD, J96.08, culvert with ESC, ESC requires maintenance

KP 134+711, NCD, 112, graded out at the time of the inspection

KP 134+499, NCD, J96.09, culvert with ESC, ESC requires maintenance

KP 134+275, NCD, 111, culvert with ESC

KP 133+930, NCD, J94.97, culvert with ESC

KP 133+379, S5, 110, clear-span bridge with ESC, ESC requires Maintenance

KP 133+350, Ditch plug blown out, discussed with operator.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

s19

Further questions regarding this inspection should be addressed to

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082292	000023577	1	NTS: D 031-F/093-P-05	NTS: C 046-F/093-J-16

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

Letter Date: 2022OCT14
Inspection No: 078542977-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 27, 2022.

The items listed below were inspected during this inspection.

- WC 657.3T: crossing isolated at time of inspection. Extra hoses laid out and ready. Excellent housekeeping.
- WC CB-001 and WC 252-Z: No construction at time of inspection. Secondary containments to be checked. Viewed water discharge area, no concerns.
- Cable Crane Hill: base has been hydroseeded and berms installed. Minor housekeeping required on site. ESC is place. Secondary containment to be replaced.
- Kitimat River: crossing complete. Some vegetative re-growth.
- UN 13-1: No concerns
- WC 678: Sumps to be cleaned out. No concerns.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Oil & Gas Operations Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100084230	000023852	1	NTS: C 006-J/093-L-04	NTS: A 077-A/103-I-02

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

INSPECTION REPORT

Letter Date: 2022OCT14
Inspection No: 078541243-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 23, 2022. The items listed below were inspected during this inspection.

Routine inspection on CGL Section 7 with BCOGC pipeline technical advisor on September 23, 2022.

Marten Road/Morice River drill pad mix bury cover stripping and site preparation active at time of inspection. Discussed process that will be completed for the disposal of drilling mud. Additional road ROW clearing has occurred on Marten Road which is a Canfor Road permit road and not BCOGC. Clearing competed for safety reasons.

Morice River Drill pad discussed ongoing works and processes as well as future development of the site. Viewed equipment and materials to be used. BCOGC would like to make a few requests:

- SDS for the materials to be used in the drilling process.
- What is going to be remaining at the vertical entry shaft once drilling is complete (if already determined).
- Drill plan.

Travelled shoefly 14 to shoefly 10 KP 529+000 to 525+000. Stripping and most grade work complete, minor blasting still required. Noted a few sump outflows lined with wood mulch/chips without any backing. Wood will become buoyant if flows occur and this technique has questionable efficacy. No concerns at this time as area is very dry but will follow up once fall rains occur.

WC 140C1 and J388.01 KP 527+784 and 527+780 bridge crossing installed. Did not note any delineators nor load ratings on bridge but no concerns with the installation. Grubbing has occurred within 10m of these fish bearing watercourses. BCOGC requests the timing of the pipeline installation to ensure compliance with condition 24 of pipeline permit legacy BCOGC file #9708371. ESC measures in place as per approved WEP and has been inspected by third party monitors (IESCA). Shallow poly lined ditches are to direct water flows to approved sump locations. Noted check dams in place utilizing sandbags without overflow or "V" installation which would slow flows and assist in keeping the flow within the trench. No flow at time of inspection and no concerns but will follow up once flows occur. Structures appear to be temporary due to upcoming pipe installation.

Viewed blast at ~KP 524+800 from the recommended safe distance.

Owen Bluffs viewed west slope, stripping and grading in process. Significant blasting required to get slope to grade. East slope to grade and ESC measures in place, no concerns noted.

WC 134C1 KP 522+527 channel dry at time of inspection, bridge install looked good however no delineators noted.

Parrot Creek WC 510 pipe install complete and bed/bank restoration also complete and was advised that willow staking is still to be completed. Bridge install also completed and noted the delineators are not the appropriate type for a bridge crossing. No concerns noted and all crossings were well done.

No noncompliance noted during inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to

s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082423	000023597	1	NTS: A 002-I/093-L-02	NTS: B 018-K/093-L-03
100082423	000023597	2	NTS: B 018-K/093-L-03	NTS: A 021-L/093-L-03
100082423	000023597	3	NTS: A 021-L/093-L-03	NTS: C 006-J/093-L-04
100082423	000023597	4	NTS: B 018-K/093-L-03	NTS: A 021-L/093-L-03

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100082423	0003208	19	
100082423	0003208	92	
100082423	0003208	60	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

Letter Date: 2022OCT13
Inspection No: 078524093-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 22, 2022.
The items listed below were inspected during this inspection.

Routine inspection of CGL Section 8E with BCOGC pipeline technical advisor on September 22, 2022.

Viewed the camp 9A spill rehabilitation area. Seeding has taken well and getting close to complete coverage. Generally good survival on the planted trees, fairly consistent with minor small gaps noted, area does have pockets of non-productive ground. Seedlings generally performing well, minor poorer growth noted in extreme wet areas/NP ground. Also noted natural Cottonwood in seeding occurring.

Lake 1F deactivation ongoing during inspection. Archeologist onsite monitoring the deactivation. Two of three portions of the heritage trail have been reconstructed under the supervision of the Archeologist. Corduroy, matting and rock has been removed down to native ground, area to be seeded once completed except for trail area. Amphibian salvage activities occurring during inspection. Trail has been surveyed and marked prior to reclamation and post reclamation. Bridges have been removed. Silt curtain established in the lake as a preventative measure in case of sedimentation. No sediment laden water noted during inspection.

Wetland 2297 fill slope failure site. Wetland clear and free of sediment. Silt curtain was adjusted after previous BCOGC inspection. Natural regeneration of grass complex within impacted area is proceeding well. No further concerns with this site.

WC 643 KP 607+927 had previously been reported to the BCOGC as being in exceedance. Source was noted as being snow pile melt adjacent to construction boundary. Documented corrective actions that have been taken which include:

- Removal of snow pile
 - Established multiple sumps
 - Pump off occurring to stable ground
 - Hydroseeded
- Stream running clear and water quality monitoring has been removed.

WC 49C2A KP 608+747 had previously been reported to the BCOGC as being in exceedance. Source was road runoff pooling on the bridge deck. Documented corrective actions that have been taken which include:

- Negative approach has been regraded, positive slope to steep. Water now able to flow across bridge and off road surface.
 - Sump has been established and sediment laden water being pumped off to vegetation.
- Stream now running clean. Noted turbid water in non-connected sidechannel. Clean out overflow side channel prior to high water to prevent this water from entering the mainstem.

KP 599+500 Soil stockpile migration location. Two of three locations have been cleaned and third is likely to be completed summer 2023. No risks noted to any sensitive receptors.

Burnie Gorge 592+640 stream crossing and upchain pipe installation complete, downchain installation ongoing with welding in progress, trench complete.

No noncompliance noted during inspection.

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These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to

s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082423	000023597	1	NTS: A 002-I/093-L-02	NTS: B 018-K/093-L-03
100082423	000023597	2	NTS: B 018-K/093-L-03	NTS: A 021-L/093-L-03
100082423	000023597	3	NTS: A 021-L/093-L-03	NTS: C 006-J/093-L-04
100082423	000023597	4	NTS: B 018-K/093-L-03	NTS: A 021-L/093-L-03

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100084550	00144186	Campsite

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100082423	0003208	35	
100082423	0003208	95	
100082423	0003208	94	
100082423	0003208	41	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

Letter Date: 2022SEP27
Inspection No: 078244063-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 21, 2022. The items listed below were inspected during this inspection.

Routine inspection of CGL Section 6 with BCOGC pipeline technical advisor on September 21, 2022.

WC 92C1 KP 440+000 previously completed water crossing by contractor not active in this area approximately two years ago. Currently flow being disrupted and entering trench, definite lack of connectivity in the S3 stream due to trench saturation. BCOGC requests CGL to restore stream connectivity and monitor in the interim after rain/increase flow due to risk of fish stranding. Please advise BCOGC once repairs to stream commence. BCOGC has considerable concerns with leaving these works uncompleted for an extended period of time.

WC 106C1 KP 447+172 Jacobs WQM onsite during inspection. Fish salvage traps were utilized and area has been e-fished with no fish captured. Fish salvage permit requested and provided to the BCOGC. Inspector confirmed appropriate personnel onsite for these works. Block nets in place and no concerns noted onsite.

Lacey FSR ROW KP 449+380 pipeline crossing complete. Road bypass still in place but road is open. Pipe is rock guarded, well bedded and site looked good. Underground pipe marking in place >1.0m from top of pipe.

WC 7C2 450+422 crossing complete and no concerns with crossing nor the bridge installation but it was noted that there were no delineators on the bridge.

WC 459 453+171 no flow at time of inspection. Riparian soils placed adjacent to stream with no ESC measures in place, no risk at time of inspection but this may increase during fall rains. Stream was not isolated during pipeline installation. I was told that isolation equipment was nearby in a vehicle, but the vehicle was not able to travel the ROW due to active pipeline installation. Recommend having isolation material adjacent or in closer proximity to the crossing. Active welding onsite. Discussed welding procedure (tie-in) with inspector onsite. Welding procedures provided immediately and no concerns with welding from BCOGC.

WC 461 KP 455+586 bridge installation complete and pipeline crossing completed. Organic top layer of stream has been returned as it was removed (in order) and crossing looked good. No concerns.

WC 462 KP 457+097 and WC 464 457+911 pipeline crossing complete and no concerns noted on each stream, crossings inspected during the day were well done.

No non-compliance noted during inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082422	000023596	1	NTS: B 003-E/093-K-03	NTS: A 002-I/093-L-02

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100082422	0003207	72	
100082422	0003207	75	
100082422	0003207	81	
100082422	0003207	104	
100082422	0003207	86	
100082422	0003207	91	
100082422	0003207	100	
100082422	0003207	82	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP27
Inspection No: 078242179-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022.

The items listed below were inspected during this inspection.

An aerial inspection with the operator of section 3, KP 172+250 to KP 263+250.

KP 184+800, ground inspection of isolation, WC 197, S3, clear span bridge with ESC, isolated with sandbags and poly, equilibrium by 3" pump in screened box to diffuser down stream, WQM by grab samples once per day at 50 up stream and 50 down stream. NOTE: Temp bridge still in place, discussed with the operator about removal.

KP 185, stripping and grading crews working

KP 185+400, ground inspection of isolation, WC 198, S4, clear span bridge with ESC, Bank sloughing in isolated area, isolation with sandbags and poly up stream and down stream, Equilibrium by 2- 3" pumps with screens to diffuser down stream, Block nets in place up stream and down stream, WQM sonns at 50 up stream and down stream. Trench pump to filter bag.

KP 188, sediment off ROW, discussed with the operator to ensure this site is on the clean up list

KP 208. machine clean up crew working

KP 210, sediment off ROW, discussed with the operator to ensure this site is on on the clean up list

KP 216, machine and final clean up crews working

KP 227, WL 1153, remediation work completed, sediment has been removed from the wetland and the slope leading to the WL has been cleaned up and woody debris placed on it. Discussed additional ESC / water management on the ROW to prevent re-occurrence.

KP 235 machine and final clean up crews working

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082299	000023581	1	NTS: C 046-F/093-J-16	NTS: C 090-G/093-J-10
100082299	000023581	2	NTS: C 090-G/093-J-10	NTS: C 072-F/093-J-10
100082299	000023581	3	NTS: D 072-F/093-J-10	NTS: C- 002-F/093-J-06
100082299	000023581	4	NTS: C 090-G/093-J-10	NTS: D- 072-F/093-J-10

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP27
Inspection No: 078241623-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022.

The items listed below were inspected during this inspection.

Aerial inspection with the operator of section 2, KP 148 to KP 172+250.

KP 158, Blasting and grade crews working.

KP 161, Hamilton Creek bore underway.

KP 167, Access crew working

KP 172, Grade crew working

There were no concerns noted during this portion of the flight.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082292	000023577	1	NTS: D 031-F/093-P-05	NTS: C 046-F/093-J-16

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP27
Inspection No: 078240820-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022. The items listed below were inspected during this inspection.

Aerial inspection with the operator of section 4, KP 263+500 to KP 330+500. There were no concerns noted during the inspection. Watercourses have been restored, Machine clean up or final clean up has been completed and roll back has been installed where required. Vegetation has started to come in and a aerial seeding plan is being prepared. Line of site barriers have been installed on the ROW. Where the ROW crosses forestry roads, barriers to prevent vehicle and ATV access have been put in place to prevent these vehicles from damaging the ROW.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082252	000023572	1	NTS: C 002-F/093-J-06	NTS: C 080-G/093-K-01

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP27
Inspection No: 078240463-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022. The items listed below were inspected during this inspection.

Routine inspection of CGL Section 5 with BCOGC pipeline technical advisor.

WC 11C2A KP 346+266 crossing is complete, and flows have been re-established and no concerns with the crossing. Approach slopes should either be put to bed or a site specific ESC plan implemented prior to fall rains.

WC 15C2A KP 353+516 fish salvage ongoing, passive traps being utilized. Block nets in place and open cut is planned to commence within the next week. Once complete ensure slope reconstruction utilizing RMA soils where feasible.

WC 21C2A KP 361+639 Archae site GBSD-62 intact and no disturbance noted and KP 361+590 Archae soils still intact on edge of ROW. Crossing is a four-channel braided crossing that is complete with minor touch ups ongoing. Two bridges and two culverts installed at the vehicle crossing location, only main channel has flow at this time of year.

Wetland 11264 trench water discharge directly into wetland. Pumps shut off immediately upon discovery but noticeable sediment laden water leaving active ROW and into wetland. Deficiency with EPMR Section 12 No deleterious materials into streams, wetland or lakes. Deficiency corrected on site and followed up photos shown to BCOGC officer the next day during further inspections. No further action required with this deficiency as it has been corrected prior to inspection being filed.

Pipe in trench at KP 360+240 noted skewed pipe in trench, elevated and touching sidewalls. Discussion with CGL GI onsite on next steps foreword in order to align pipe in trench. No BCOGC concerns once discussions completed with CGL GI.

Re-visited sedimentation leaving ROW South of KP 371+650 adjacent to WC 58C1. Regrowth occurring over silty/sand deposit off ROW. Area generally non-forested within a previously harvested cutblock and contains mainly Willow and Alder with an understory of sedges, grasses, and horsetail with very few conifers. Noted that any clean up activities would be detrimental to the establishing vegetation onsite, monitor regrowth to ensure that the area continues to fill in. This statement does not supersede any potential recommendations/follow up actions from the forestry tenure holder responsible for this area.

Ormond creek 59C1 KP 374+650 direct bore complete and pipe in place, trench excavation ongoing for tie in. Minor hydraulic leak noted (non reportable) as well as minor garbage and these were actioned immediately.

Fraser Lake cliff bore at approximately 380+700, discussed drainage on steep slope as well as bore path and technique. No concerns noted during discussions.

Highway rail crossing at approximate KP 390+500. Crossing complete and BCOGC was provided with the as built depth of coverage. Entry pit being prepped for tie in. Minor spill already being actioned at entry pit, site was clean and well maintained.

Endako River entrance pit KP 383+500 under construction and rock lining occurring during inspection. Discussed with GI and told that rock being sourced from ROW. No concerns.

Inspected POD 19 BCOGC permit #100111750. Permit with withdrawal records onsite and no concerns with the installation and location of the POD.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to

s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082251	000023571	1	NTS: C 080-G/093-K-01	NTS: B 003-E/093-K-03

Short Term Water Use Inspected

AD #	STWU #	POD #	POD Type	Location
100111750	0005716	001	Stream/River	UTM: 10-369272E, 5993900N

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100082251	0003195	23	
100082251	0003195	73	
100082251	0003195	45	
100082251	0003195	33	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

Letter Date: 2022SEP26
Inspection No: 078227454-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022. The items listed below were inspected during this inspection.

Inspection with the operator of Road 15. Road is active. Bridge requires maintenance as discussed with the operator. No other concerns were noted at the time of the inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Roads Inspected

AD #	Road #	Segment #	From Location	To Location
100105445	05264	001	NTS: B 069-D/093-J-16	NTS: C 058-D/093-J-16

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100105445	00195097	Deck Site
100105445	00195098	Deck Site

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100105445	0005171	1	UTM: 10-533648E, 6072298N
100105445	0005171	2	UTM: 10-533552E, 6072405N
100105445	0005171	3	UTM: 10-533646E, 6072302N
100105445	0005171	4	UTM: 10-533660E, 6072256N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP26
Inspection No: 078226895-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022.
The items listed below were inspected during this inspection.

Aerial inspection with operator.

KP 249+500, Raccoon Lake block valve site. Site is to grade with block valves installed. There were no concerns noted at the time of the inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100102300	00168114	Storage Area

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100102300	0003960	1	UTM: 10-492050E, 6030953N
100102300	0003960	3	UTM: 10-491903E, 6030671N
100102300	0003960	2	UTM: 10-491934E, 6030714N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP26
Inspection No: 078226274-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022.

The items listed below were inspected during this inspection.

Aerial inspection with operator.

KP 249+500, Access road construction to the Raccoon Lake block valve site. Road construction is completed or near completion and will be inspected by ground at a later time. There were no concerns noted at the time of the aerial inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Roads Inspected

AD #	Road #	Segment #	From Location	To Location
100101104	04347	001	NTS: D 001-J/093-J-06	NTS: A 020-I/093-J-06

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100101104	0003656	1	UTM: 10-491477E, 6030710N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP26
Inspection No: 078225494-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022.
The items listed below were inspected during this inspection.

Aerial inspection with operator.

KP 163+500, Mount Bracey storage area, site is to grade with matted access. There were no concerns noted at the time of the inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100084678	00182321	Storage Area

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100084678	0004360	1	
100084678	0004360	3	
100084678	0004360	2	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP26
Inspection No: 078224942-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022.

The items listed below were inspected during this inspection.

Aerial inspection with operator.

KP 330+500, Clear Creek block valve site. Site is to grade with block valves installed. No concerns were noted at the time of the inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100100769	00156725	Storage Area

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100100769	0003777	1	UTM: 10-425269E, 5999310N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP26
Inspection No: 078224374-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022.

The items listed below were inspected during this inspection.

Aerial inspection with operator.

KP 244+500, Storage area is active. and has ground disturbance. Discussed with operator and will be addressed in the machine and final clean up stages. No additional concerns were noted during the inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100084583	00147081	Storage Area

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP26
Inspection No: 078223824-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tommy Adair, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on September 20, 2022.

The items listed below were inspected during this inspection.

Aerial inspection with operator.

KP 162+200, Storage site has had ground disturbance that will require remedial work. Discussed with the operator and this site will be addressed in the machine clean up stage. There were no additional concerns noted at the time of the inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100084562	00145455	Storage Area

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

Letter Date: 2022SEP09 Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

Inspection No: 078120495-001

Operator: Coastal GasLink Pipeline Ltd.

A Routine inspection was conducted by s19 of the Oil and Gas Commission on September08, 2022. As a result of this inspection, the following deficiencies were found and must be corrected by the required correction dates indicated below. **Consideration should be given to checking your other locations for similar deficiencies.**

Notification must be received on or before the required correction date. If you are unable to correct any deficiency by the required correction date, you must request an extension.

Legislation (*)	Activity	Infraction Ranking	Required Correction Date
Oil & Gas Activities Act	Pipeline AD #: 100084230 Pipeline Project #: 000023852 Segment: 001 From: NTS: C 006-J/093-L-04 To: NTS: A 077-A/103-I-02	L14	2022SEP23
21 Subject to section 23, a person must not carry out an oil and gas activity unless (b) the person carries out the oil and gas activity in compliance with (ii) a permit issued to the person, if any			
Failure to follow condition 48 of pipeline permit (wildlife attractants)			

North Hirsch Inspection- September 8, 2022

- WC 176/WL 1901: follow up from previous inspection. No activity at time of inspection. Poly has been added to culvert inlet. Creek now flowing through culvert. Residual sediment remains in wetland.
- WL 1179: some residual sediment remaining in wetland
- WC 683: being pumped around for active pipe installation. No longer discharging grey water into pig pen. Creek running clear.
- Upper Lake: (626+100): some residual sediment remaining, but clearing up. No project related inputs.
- Lower Lake (626+150) no longer discharging into lake (changed location). Residual sediment in lake (still turbid).
- WC 684.2T: pipe has been installed. ESC blankets not keyed in, minimal staking (does not hold down installed measures. Plywood, straw, poly, and other construction related debris left at crossing. Sediment fencing needs maintenance but water running clear.
- KP 630+530: Site housekeeping unacceptable. Various garbage and debris, animal attractants, secondary containment issues (full of water, overfilled, partially filled bottles/containers floating on their side with open spouts/releases hanging over edge), propane bottle thrown on its side onto riprap (half full), bucket of hydraulic fluid (opened) with no secondary containment.
- KP 630+660: Housekeeping unacceptable. Various garbage and debris, animal attractants, (open)cleaning and chemical bottles adjacent to wetland (thrown into sediment fencing), no secondary containment under generator.
- All secondary containments from km 31.2 road junction to top of Cable Crane hill to be immediately checked for adequacy (every containment checked was either full of water, had holes, was not built adequately (would not hold fluids), walls collapsed, walls pushed down by hoses, inadequate lining (would not hold fluids), etc.) and repaired/replaced as needed.
- Deficiency: OGAA 21(b)(ii)- failure to follow condition of permit (pertaining to garbage/wildlife attractants). Garbage to be cleaned up and appropriately stored.

s19

Further questions regarding this inspection should be addressed to

s19

Oil & Gas Operations Officer

Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100084230	000023852	1	NTS: C 006-J/093-L-04	NTS: A 077-A/103-I-02

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100084230	0003282	16	
100084230	0003282	13	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022SEP02
Inspection No: 078028337-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A Routine inspection was conducted by s19 of the Oil and Gas Commission on August 31, 2022.

As a result of this inspection, the following deficiencies were found and must be corrected by the required correction dates indicated below. **Consideration should be given to checking your other locations for similar deficiencies.**

Notification must be received on or before the required correction date. If you are unable to correct any deficiency by the required correction date, you must request an extension.

Legislation (*)	Activity	Infraction Ranking	Required Correction Date
Environmental Protection & Management Regulation	Pipeline AD #: 100084230 Pipeline Project #: 000023852 Segment: 001 From: NTS: C 006-J/093-L-04 To: NTS: A 077-A/103-I-02	L14	2022SEP16
12 A person who carries out an oil and gas activity on an operating area must ensure that the oil and gas activity does not result in any deleterious materials being deposited into a stream, wetland or lake.			
Noted plume on West side of the lake and inspected that area next. Sediment boxes adjacent to the work area handling run-off from road surface. Two "big O" pipes running from sediment boxes, one perforated and wrapped in cloth has little to no flow, the second flow into a sediment bag then filter through vegetation. The flow through the sediment bag has oversaturated the adjacent vegetation and sediment laden water was noted entering the Lake. Sediment box also receiving clean water from WC 684.2T bypass, water not being directed into natural channel. This extra water was a contributing factor to the discharge location becoming oversaturated. Deficiency noted with EPMR section 12.			

Routine inspection of CGL Section 8W North Hirsch area with Haisla liaison on August 31, 2022.

WC 679 KP 625+213 pipeline crossing is complete, watercourse is running clean and no current active construction.

Wetland 9101 KP 625+300 minor sedimentation noted in wetland due to recent rain event. ESC work ongoing in the area. Minor culvert works requested as inlet is slightly raised and flow going under culvert and through the road base. Follow up photos requested once works are completed.

Wetland 9104 625+348 pipe installation is complete, and no noncompliance noted in this area.

WC 683 KP 625+534 S5 stream is isolated with pump around in place. Trench work ongoing, blasting required. Suggested relocation of grey water discharge further away from stream channel and this was completed during inspection. No further follow up required.

Upper Lake off project footprint at approximate KP 626+150 turbidity noted in Lake, clean water currently entering lake and no evidence of project related sediment causing this turbidity. Minor ESC maintenance requested on small drainage from ROW to Lake. Follow up photos requested once works are completed.

Lower Lake off project footprint at approximately 626+400 visibly turbid from the road. Hiked into the East side of the lake first to pig pen noted on ridge between two receptors and set up was not effective. Residual sedimentation noted throughout, but no plume noted from this side of the lake. During inspection of the area, it was noted that WC 684 had curlex blocks established instream that have become unstable, remove from stream as soon as possible.

Noted plume on West side of the lake and inspected that area next. Sediment boxes adjacent to the work area handling run-off from road surface. Two "big O" pipes running from sediment boxes, one perforated and wrapped in cloth has little to no flow, the second pipe flows into a sediment bag then filters through vegetation. The flow through the sediment bag has oversaturated the adjacent vegetation and sediment laden water was noted entering the Lake.

the sediment bag has oversaturated the adjacent vegetation and sediment laden water was noted entering the Lake. Sediment box also receiving clean water from WC 684.2T bypass, water not being directed into natural channel. This extra water was a contributing factor to the discharge location becoming oversaturated. Deficiency noted with EPMP section 12.

Further questions regarding this inspection should be addressed to

s19

s19

Compliance & Enforcement Officer

Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100084230	000023852	1	NTS: C 006-J/093-L-04	NTS: A 077-A/103-I-02

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100084230	0003282	12	
100084230	0003282	13	
100084230	0003282	14	
100084230	0003282	18	
100084230	0003282	16	
100084230	0003282	17	
100084230	0003282	15	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT UNACCEPTABLE RESPONSE

OGCR621_V03

Letter Date: 2022AUG22

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

Inspection No: 077835330-001

Operator: Coastal GasLink Pipeline Ltd.

A Routine inspection was conducted by s19 of the Oil and Gas Commission on August 18, 2022.

An inspection report was sent to your company on August 19, 2022. Your response, describing remedial action for the following deficiency, was unacceptable as described below. You must provide a subsequent response. Notification must be received on or before the required correction date. If you are unable to correct any deficiency by the required correction date, you must request an extension.

Legislation (*)	Activity	Infraction Ranking	Required Correction Date
Oil & Gas Activities Act	Change In & About a Stream AD #: 100082292 CIAS #: 0003198 Loc Id: 99 Location:	High	2022AUG20
21 Subject to section 23, a person must not carry out an oil and gas activity unless (b) the person carries out the oil and gas activity in compliance with (ii) a permit issued to the person, if any			
Isolation of an S4 water course, pump intakes were inside a box with fish screen wrapped around the outside. The fish screen has pulled away from the box creating an opening that fish could pass through. AD 100082292, condition 32 (g), 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			
Unacceptable Reason: Pictures provided do not clearly show the issues with the screen were addressed.			

Inspection with the operator of section 2 from KP 106+653 to KP 106+964.
KP 106+653, WC 79, S6, Clear-span with ESC, Note both slopes leading to the water course have substantial water management / ESC measures in place. There is some confusion on the placement of some of the water management/ ESC and why it leads back to the water course. An Information Request will be submitted to obtain clarity on these measures. Note: there has been a small amount of sediment overrun the ESC and enter the riparian zone of this water course, discussed with the operator
KP 106+700, small amount of sediment off ROW at the end of the water bar.
KP 106+820, J21.01, NCD, closed off by top soil pile, discussed with the operator
KP 106+964, WC 80.1F, S4, Rocky Creek, clear-span with ESC, ESC requires maintenance as discussed with the operator . The bridge deck is loaded with mud / dirt and has pushed the side boards out at the bottom causing dirt to fall into the riparian area.
The water course is in isolation with an up-stream plate and down stream sandbags and poly, Pump around with 2 - 8" pumps downsized to 4" lines to down stream diffuser. The pump intakes are inside a screened box and the screen has pulled away from the side of the box creating an opening that will allow fish to pass through. See deficiency. Fish barrier nets were placed up stream and down stream with the down stream having holes in it. Both nets appeared to larger mesh openings than the screening on the pump intake box.
WQM was installed at 25m up stream and 25m, 50m, 100m, and 200m down stream, with no unusual. spikes to date. Data is being downloaded once per day. Grab samples are being done 3 times per day.
Further questions regarding this inspection should be addressed to s19



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022AUG19
Inspection No: 077835330-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A Routine inspection was conducted by s19 of the Oil and Gas Commission on August 18, 2022.

As a result of this inspection, the following deficiencies were found and must be corrected by the required correction dates indicated below. **Consideration should be given to checking your other locations for similar deficiencies.**

Notification must be received on or before the required correction date. If you are unable to correct any deficiency by the required correction date, you must request an extension.

Legislation (*)	Activity	Infraction Ranking	Required Correction Date
Oil & Gas Activities Act	Change In & About a Stream AD #: 100082292 CIAS #: 0003198 Loc Id: 99 Location:	High	2022AUG20
21 Subject to section 23, a person must not carry out an oil and gas activity unless (b) the person carries out the oil and gas activity in compliance with (ii) a permit issued to the person, if any			
Isolation of an S4 water course, pump intakes were inside a box with fish screen wrapped around the outside. The fish screen has pulled away from the box creating an opening that fish could pass through. AD 100082292, condition 32 (g), 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			

Inspection with the operator of section 2 from KP 106+653 to KP 106+964.

KP 106+653, WC 79, S6, Clear-span with ESC, Note both slopes leading to the water course have substantial water management / ESC measures in place. There is some confusion on the placement of some of the water management/ ESC and why it leads back to the water course. An Information Request will be submitted to obtain clarity on these measures. Note: there has been a small amount of sediment overrun the ESC and enter the riparian zone of this water course, discussed with the operator

KP 106+700, small amount of sediment off ROW at the end of the water bar.

KP 106+820, J21.01, NCD, closed off by top soil pile, discussed with the operator

KP 106+964, WC 80.1F, S4, Rocky Creek, clear-span with ESC, ESC requires maintenance as discussed with the operator. The bridge deck is loaded with mud / dirt and has pushed the side boards out at the bottom causing dirt to fall into the riparian area.

The water course is in isolation with an up-stream plate and down stream sandbags and poly, Pump around with 2 - 8" pumps downsized to 4" lines to down stream diffuser. The pump intakes are inside a screened box and the screen has pulled away from the side of the box creating an opening that will allow fish to pass through. See deficiency. Fish barrier nets were placed up stream and down stream with the down stream having holes in it. Both nets appeared to larger mesh openings than the screening on the pump intake box.

WQM was installed at 25m up stream and 25m, 50m, 100m, and 200m down stream, with no unusual. spikes to date. Data is being downloaded once per day. Grab samples are being done 3 times per day.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082292	000023577	1	NTS: D 031-F/093-P-05	NTS: C 046-F/093-J-16

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100082292	0003198	99	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022AUG23
Inspection No: 077862217-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on August 18, 2022.
The items listed below were inspected during this inspection.

Inspection with the operator of CGL road 14A, RE 970.1, OGC Road 04501.

Winter snow plowing of the road has deposited gravel outside the ditch-line on the lower side of the road as well as onto the woody debris pile and the topsoil pile. The gravel has over run the sediment fence on the lower side of the road.

J5197-06, S6, culvert with ESC, ESC requires maintenance as discussed with the operator.

3B012, NCD, flume with ESC, ESC requires maintenance as discussed with the operator.

1B031, S6, clear-span with ESC, bridge deck and ESC requires maintenance as discussed with the operator.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Roads Inspected

AD #	Road #	Segment #	From Location	To Location
100101116	04501	001	NTS: A 072-C/093-P-05	NTS: D 062-C/093-P-05

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100101116	00163318	Deck Site
100101116	00163319	Deck Site
100101116	00163320	Deck Site

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100101116	0003866	1	UTM: 10-578335E, 6129386N
100101116	0003866	2	UTM: 10-578411E, 6129427N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcoqc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022AUG24
Inspection No: 077862976-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on August 17, 2022.

The items listed below were inspected during this inspection.

Inspection with the operator of section 2, KP 133 to KP 138.

It was observed during the inspection that several NCD's had been removed or channels blocked off for construction purposes. Please ensure that drainage channels are put back as expediently as possible, as discussed with the operator.

On most of the water course crossings the RBZ's have not been marked off, please ensure these are marked off, as discussed with the operator.

There are several areas where ESC requires maintenance, please ensure that all ESC is functional and in good repair, as discussed with the operator.

It was observed that ROW drainage ditches have been directed to flow into NCD channels crossing the ROW some of which feed directly into wet land areas. At KP 136+780, WL 8075, requires ESC installed along the ROW. Drainage ditches on the up hill side of the ROW feed to a flume crossing the ROW that feeds directly into WL 8075 with no ESC in place to trap sediment and or sediment laden water.

At KP 136+740, NCD 5D1, ROW drainage ditches feed directly into the NCD.

KP 133+504, J93.50, NCD, Active trenching through a flowing NCD with no isolation. CGL inspectors identified the problem and were dealing with it prior to the OGC inspection. CGL had stopped work at this site prior to the OGC inspection. Workers on site were not conversant in what procedures were required for this type of work and the supervisor was not at the site. Supervisor was requested to attend the site but was busy. An IR will be submitted for an explanation why there was a lack of qualified supervision at this site and how this will be corrected.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082292	000023577	1	NTS: D 031-F/093-P-05	NTS: C 046-F/093-J-16

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022AUG16
Inspection No: 077756528-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on August 10, 2022. The items listed below were inspected during this inspection.

Routine inspection of CGL Section 8W in and around the Municipality of Kitimat, the Wathl FSR and North Hirsch FSR on August 10, 2022 with Haisla liaison. WC 1073 666+450 dry S2 channel not being used for water discharge at this time, awaiting permit from BCOGC. Inspected C-Ring adjacent to WC 1073, water clean within c-ring and is being discharged into "pig pens" adjacent to site. Significant volume being pumped to this site and water running clear through adjacent vegetation. Inspected UN-22-20 and UN22-19 and, other than a sheen of road dust on the surface both were running clean. Direct bore on UN 22-20 active at time of inspection. Significant water infiltration noted in bore bays, water being pumped to C-Ring.

WC 6E additional works within streambed completed and minor surface flow noted. No flow noted upstream at the culvert crossing at 0.5km. ROW from Wathl to WC 6E topsoil has been replaced and is waiting to be seeded, minor housekeeping noted and was dealt with immediately.

WC 716 crews actively cleaning out isolated S6 crossing, soils/construction debris being removed from streambed downstream of isolation. Culvert outlet will flow directly onto debris and suggested culvert extension or flume be installed prior to removing isolation. BCOGC requests photo follow up of culvert outflow at this location once works complete and isolation has been removed.

WC 714 KP 640+462 (West side) inspected grade works in riparian zone, no inputs noted into WC 714. More drilling and blasting required for crossing, planned for January, to get site to grade for pipeline install. Spawning deterrents noted in stream channel. WC UN 11-97 KP 640+218 S6 stream above WC 714 was previously re-aligned around workspace. Recent works have placed a 90 degree bend in the stream that just terminates into worksite, no flow noted at time of inspection. Re-align channel through worksite as required and follow up photo documentation requested by the BCOGC.

UN 11-97 KP 640+218 no current in stream works, adjacent activities occurring. WC subsurface at vehicle crossing due to low flow at this time of year, no concerns noted at crossing. Temporary spans have been removed that were noted in a previous inspection.

WC 713 KP 639+682 pipeline crossing complete and adjacent bell hole has been filled in. Remaining ESC measures have been removed as per previous inspection and new ESC measures have been installed on the approach slope. Old discharge area poly lining has been replaced and is currently not in use. No non compliance noted during inspection.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100084230	000023852	1	NTS: C 006-J/093-L-04	NTS: A 077-A/103-I-02
100084230	000023852	2	NTS: A 077-A/103-I-02	NTS: D 025-B/103-I-02

Roads Inspected

AD #	Road #	Segment #	From Location	To Location
100106728	05196	001	NTS: C 081-D/103-I-01	NTS: D 071-D/103-I-01

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100084230	0003282	179	
100084230	0003282	180	
100084230	0003282	181	
100084230	0003282	182	
100084230	0003282	232	
100084230	0003282	184	
100084230	0003282	185	
100084230	0003282	225	
100084230	0003282	183	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022AUG16
Inspection No: 077759209-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on August 05, 2022.

The items listed below were inspected during this inspection.

Inspection with operator of POD's.

POD 005, Parsnip River, not in use at the time of the inspection. Permit on site, with-draw sheets on site, intake on site no Pump, discussed putting up a closed sign.

POD 006, Crocker Creek, Not in use at the time of the inspection, closed signage in place, permit on site, with-drawl records on site, no equipment on site.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Short Term Water Use Inspected

AD #	STWU #	POD #	POD Type	Location
100115453	0006222	005	Stream/River	UTM: 10-532438E, 6068933N
100115453	0006222	006	Stream/River	UTM: 10-548756E, 6084539N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022AUG16
Inspection No: 077758062-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on August 05, 2022.
The items listed below were inspected during this inspection.

Inspection with operator of POD,s

POD 003, Parsnip River, active POD with good signage, permit on site, with-drawl records on site. Pump with screened intake, screen has been dented. operator will replace to ensure adequate flow volumes. Access road has been rutted by water trucks and this road serves as a boat ramp for public use. Operator will have the road graded at first opportunity.

POD 001, Anzac River, not in use, no equipment on site.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Short Term Water Use Inspected

AD #	STWU #	POD #	POD Type	Location
100112121	0005788	001	Stream/River	UTM: 10-552711E, 6093013N
100112121	0005788	003	Stream/River	UTM: 10-532330E, 6068850N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022AUG16
Inspection No: 077757263-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on August 05, 2022.
The items listed below were inspected during this inspection.

Inspection with operator of section 2.

KP 165+024, Crocker Creek DPI site, DPI being mobbed in, Pad is constructed and pipe pull section is welded with sandblasting and coating being completed.

KP 165+000, DPI exit location, travel lane in place, corduroy and capped, with ESC

KP 161+158, WC 1C035, S4, Clear-span, no concerns noted at the time of the inspection

KP 161+189, WC 159 Hamilton Creek, S2, no concerns noted at the time of the inspection

KP 154+100, woody debris observed in top soil pile

KP 154+800, WC 143, S1B, no crossing installed at the time of the inspection. There are 3 aqua dams in place, 1 on WL 8078, 1 on WL 154.9 and 1 on NCD J175.03. WL 154.9 has amphibians (tadpoles) present There are 3 pump offs on the ROW with the intake hoses in screened boxes with lines to filter bags. Please ensure the screened boxes remain upright.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082292	000023577	1	NTS: D 031-F/093-P-05	NTS: C 046-F/093-J-16

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

INSPECTION REPORT

Letter Date: 2022AUG16
Inspection No: 077742645-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on August 04, 2022.

The items listed below were inspected during this inspection.

Inspection August 3 & 4 with operator of of section 3, KP 212+100 to KP 190+150.

KP 212+100, Several pile of metal and wood debris that had the following items mixed in, electrical wire, DEF containers, Geo fabric and misc. garbage. Discussed with operator about removal of the plastics and garbage.
KP 211+675, Sandpoint operation, 2 pump offs 4" lines to plastic diffusers (no filtering). Discussed with the operator filtering the discharge once trench excavation is started. The amphibian fence requires maintenance and was discussed with the operator.

KP 211+100, Housekeeping issues, discussed with the operator to be cleaned-up,
KP 208+600, Road 19A, RE 220.0.PTN.A, connects with the ROW. Sand was being stored and trucked at approximately KM 0.5. An information request was submitted for verification of the authorization to use this area.
KP 206+800, WC 97C, S4, Excavator working in the riparian area completing prep work for pipe installation.
KP 206+474, WC 96C, S3, Clear-span with ESC. this WC was previously blasted (for trenching) and rock removed in winter conditions. Excess rock is remaining in the channel and is impeding flow in low water conditions. Discussed the requirement to adhere to all site specific procedures for in-stream work for this S3.
KP 205+200, Crew daylighting the pipe and installing a bentonite plug. Conversation with the supervisor revealed that they were installing 11 plugs from KP 201+742 to KP 205+279. An information request was submitted for clarity on these installations after pipe is installed.

KP 201+564, WC 12B, pipe ends have been removed from the riparian area as discussed on a previous inspection. Pipe ends were placed on the ROW, discussed why these were not removed from the working area.
KP 201+250, Shoofly 18, RE 250.1, Sand being piled along the edge of the ROW, trucks hauling sand to and from the pile with an excavator loading trucks. The area of the sand pile does not show as permitted ground on my spatial data. An IR was submitted for clarity on the authorization to use this area.
KP 201+146, WC 11D, Red Rocky Creek, S2, clear span with ESC, bridge requires maintenance and was discussed with the operator.

KP 200+261, Arch site, HRC-5379 GERP - 17, Soil and Clay piles from this arch site are being stored on ROW. Piles are covered, fenced and have signage.

KP 200+209, WC 3243, S4, clear span with ESC requires maintenance as discussed with the operator, WC is in isolation, Up-stream meter bags and poly, down stream plate, WC is dry but pump around in place to diffuser down stream, if needed, trench has pipe in with weight bags, sand pointing active at site with approximately 36 points to headers and 2 lines to plastic diffusers with no filter bags. Discussed with operator that this is now considered trench water as the sand points are just below an open trench and require filter bags. 6" trench pump to 4" line to filter bag.

KP 201+169, WC 83.C.1, NCD, in isolation, dry no flow, backfilling at the time of the inspection.

KP 199+950, Area of previous sediment release off ROW that has been cleaned up by hand, Vegetation is starting to come through cleaned area, discussed raking the area.

KP 199+700, discussed with operator having the EI assess for sediment off ROW

KP 199+600, discussed with operator having the EI assess the upper bank on the ROW where there is some slumping occurring.

KP 191+762, WC 2128, trench sloughing, Deficiency has been issued previously.

KP 191+682, WC 207, S2, clear span with ESC, only one approach to bridge remaining, bridge is scheduled for removal with in two weeks.

KP 190+150, Old Mill site (CN/Parsnip contaminated site), 3 contaminated soil piles, WQ monitoring in place, application is at OGC for review.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082299	000023581	1	NTS: C 046-F/093-J-16	NTS: C 090-G/093-J-10
100082299	000023581	2	NTS: C 090-G/093-J-10	NTS: C 072-F/093-J-10
100082299	000023581	3	NTS: D 072-F/093-J-10	NTS: C- 002-F/093-J-06
100082299	000023581	4	NTS: C 090-G/093-J-10	NTS: D- 072-F/093-J-10

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022AUG26
Inspection No: 077888013-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Crystal Begin, Dan Wyman, Doug Rice, Joseph Campbell, Kirsten MacKenzie, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on July 20, 2022.

The items listed below were inspected during this inspection.

- WC 655 (KP 613+433): follow up from previous inspection. Bridge missing section of guardrails and all delineators. Stream channels are no longer infilled. Discussed culvert installation re: potential to wash out.
- UN 23.02 (KP 618+209): follow up from previous inspection. No fill across wetland. Water running clear. Sediment fence around soil pile to be keyed in (where possible)
- KP 618+350 (water discharge area): not pumping at time of inspection, frequent maintenance required.
- WC S10372FCF005 (621+645 to 621+424): unable to access due to high stream flow. Recently upgraded from NCD to S3. Follow up required.
- Cable Crane hill (623+550): working between towers 2-5, no work near bottom at time of inspection. Stable, but currently dry. Sumps functioning.
- WC 677 (Kitimat River)(KP 623+416): riparian vegetation established. No concerns.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Oil & Gas Operations Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100084230	000023852	1	NTS: C 006-J/093-L-04	NTS: A 077-A/103-I-02

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100084230	0003282	9	
100084230	0003282	112	
100084230	0003282	111	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.

Letter Date: 2022JUL22
Inspection No: 077470630-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Dan Wyman, Doug Rice, Joseph Campbell, Shelley McInnis, Tutran Lam

A Routine inspection was conducted by s19 of the Oil and Gas Commission on July 20, 2022.

As a result of this inspection, the following deficiencies were found and must be corrected by the required correction dates indicated below. **Consideration should be given to checking your other locations for similar deficiencies.**

Notification must be received on or before the required correction date. If you are unable to correct any deficiency by the required correction date, you must request an extension.

Legislation (*)	Activity	Infraction Ranking	Required Correction Date
Environmental Protection and Management Regulation	Change In & About a Stream AD #: 100084230 CIAS #: 0003282 Loc Id: 146 Location:	L14	2022AUG05
<p>12 A person who carries out an oil and gas activity on an operating area must ensure that the oil and gas activity does not result in any deleterious materials being deposited into a stream, wetland or lake.</p> <p>Wetland 2319 KP 634+500 Rockwork placement occurring at time of inspection to widen running track. Wetland disturbance caused sediment laden water to enter the wetland during inspection. Water was bypassing ESC measures and operator and ESC crews were onsite, but no actions were occurring to prevent this sedimentation. CGL Lead EI stopped works immediately and mustered crews to address the situation. Deficiency noted with EPMR Section 12 no deleterious materials into streams, wetlands or lakes. Rest of the streams in area running clean.</p>			

Routine inspection of Section 8W in the North Hirsch FSR on July 20th, 2022.

WC 28D KP 647+892 pipe install, bank restoration complete. Exceedance report follow up and beaver pond now running clean. Adjacent bell hole filled, and area appears to be holding water better. No further concerns in this area.

WC 718 KP 646+873 trenchless crossing now complete as well as the tie ins and backfilling is ongoing. Some minor trench water still being pumped into floc tank then to a sump and into vegetation. Signage has been updated for the STWU POD in the area.

UN 11-117 KP 647+279 alluvial fan with significant flow at this time of year. Banks holding and no issues noted in this area.

KP 636+100 additional temporary workspace where leave of the commission was granted for condition 24. ATWS cleared and ESC has been established adjacent to Hirsch Creek. No concerns with the extra clearing required.

Wetland 2319 KP 634+500 Rockwork placement occurring at time of inspection to widen running track. Wetland disturbance caused sediment laden water to enter the wetland during inspection. Water was bypassing ESC measures and operator and ESC crews were onsite, but no actions were occurring to prevent this sedimentation. CGL Lead EI stopped works immediately and mustered crews to address the situation. Deficiency noted with EPMR Section 12 no deleterious materials into streams, wetlands or lakes. Rest of the streams in area running clean.

WC 692 KP 629+507 bypass still in place, pipe in trench and crossing has been filled in. Bank restoration still to be completed once adjacent pipe is installed. No concerns noted in area.

Steep slope 10 preparations ongoing for cable crane installation at ~KP 627+500. Viewed current works and discussed potential use of ATWS in adjacent wetland. No concerns noted in area.

Further questions regarding this inspection should be addressed to

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100084230	000023852	1	NTS: C 006-J/093-L-04	NTS: A 077-A/103-I-02

Associated Oil & Gas Activity/Ancillary Inspected

AD #	AOGA/Ancillary #	Activity Type
100084230	00114935	Deck Site

Change In & About Stream Inspected

AD #	CIAS #	Loc Id	Location
100084230	0003282	32	
100084230	0003282	146	
100084230	0003282	199	
100084230	0003282	197	
100084230	0003282	196	

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022JUL11
Inspection No: 077281822-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Dan Wyman, Doug Rice, Joseph Campbell, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on July 07, 2022.
The items listed below were inspected during this inspection.

Inspection of section 1 with the operator by vehicle on July 6 and an aerial inspection July 7, 2022. KP 0 - KP 92.
KP 0- KP 14+500, completed with top soil and roll back in place , 2 areas of repair work required, KP 2 and KP 5
KP 24, areas of erosion, discussed with the operator
KP 29 slope areas of erosion, discussed with the operator
KP 40, The Gorge, erosion on slope, discussed with the operator
KP 40 - KP 47, areas of surface erosion, discussed with the operator
KP 47 , machine clean up crew working
KP 51 - KP 52+500, completed to top soil in place
KP 54+500 - KP 56+400, completed to top soil and roll back in place
KP 56+400 - KP 59+330, active sub soil work, machine clean up at KP 57
KP 59+330 - KP 61+349, completed to top soil and roll back in place
KP 89, soil movement on slope, ditch plug damaged, discussed with the operator.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082293	000023578	1	DLS: 13-28-078-19	DLS: 02-24-077-21
100082293	000023578	2	DLS: 02-24-077-21	DLS: 03-23-077-21
100082293	000023578	3	DLS: 03-23-077-21	NTS: D 031-F/093-P-05
100082293	000023578	4	DLS: 02-24-077-21	DLS: 03-23-077-21

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022JUL11
Inspection No: 077280659-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Dan Wyman, Doug Rice, Joseph Campbell, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on July 07, 2022.

The items listed below were inspected during this inspection.

Aerial inspection of section 2 with the operator, KP 92 - KP 130.

KP 98+500, Burnt Mountain slope, ditch breaker failure with soil movement on slope. Potential sediment off ROW.

Discussed with the operator sediment will be delineated to determine if its off ROW.

KP 100, area of previous deficiency remediation work in progress.

KP 100+500 to KP 103, settling has occurred along the trench, discussed with the operator.

KP 112, work space, asked operator to confirm all work at this work space area is within the permitted footprint.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082292	000023577	1	NTS: D 031-F/093-P-05	NTS: C 046-F/093-J-16

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022JUL11
Inspection No: 077281258-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Dan Wyman, Doug Rice, Joseph Campbell, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on July 06, 2022.

The items listed below were inspected during this inspection.

Inspection with operator on July 5th and 6th, 2022.

CGL POD 10, STWU 05583-07, Sukunka River. Active POD with signage and permit on location. Withdrawal records on location. Intake hose on site with appropriate fish screen. Truck on site at the time of the inspection has permit and load records that match on site records.

CGL POD 21, STWU 05583-10, Burnt River. At the time of inspection the POD equipment was being set up to with draw water for hydrostatic testing. 4-4" submersible pumps in screened baskets have been placed in the water with intake lines attached. a larger relay pump converts to 12" line to test head. There was no permit or signage on location, discussed with the operator to have these brought to site immediately. Discussed with operator the meter for water usage should be close to the point of withdrawal.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Short Term Water Use Inspected

AD #	STWU #	POD #	POD Type	Location
100110486	0005583	007	Stream/River	UTM: 10-589723E, 6162493N
100110486	0005583	010	Stream/River	UTM: 10-579746E, 6131521N

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.



INSPECTION REPORT

OGCR620_V03

Letter Date: 2022JUL11
Inspection No: 077280086-001
Operator: Coastal GasLink Pipeline Ltd.

Operator Insp. Rep: Allison Grant, Dan Wyman, Doug Rice, Joseph Campbell, Shelley McInnis, Tutran Lam

A satisfactory Routine inspection was conducted by s19 of the Oil and Gas Commission on July 05, 2022.

The items listed below were inspected during this inspection.

An Inspection with the operator was conducted in section 2 of the hydrostatic testing for CGL pipeline section 16, KP 91+100 to KP 97+570.

KP 91+100, hydrostatic test head has not been attached to the pipe at the time of the inspection. Trench pump dewatering to filter bag, no concerns. Located and viewed the hydrostatic test dewater site.

KP 97+570, welding crew attaching test head to pipe. 2 welders and welding inspector on site. Manual and semi-auto welding. Welding procedure CGL-SMJV-01 and repair procedure CGL-SMJV- RP-02, welders certification, and welders PQR's produced on site. Welding Inspectors Level 1 certification produced on site. 100% visuals and 100% UT.

These are the only items that were inspected during this Routine inspection and does not absolve the company of deficiencies which may not have been observed, nor any deficiencies which occur subsequent to this inspection.

Further questions regarding this inspection should be addressed to s19

s19

Compliance & Enforcement Officer
Authorized Commission Employee

Pipelines Inspected

AD #	Pipeline Project #	Segment #	From Location	To Location
100082292	000023577	1	NTS: D 031-F/093-P-05	NTS: C 046-F/093-J-16

(*) For Legislation Information please refer to the Compliance and Enforcement section of the Oil and Gas Commission website at www.bcogc.ca.