Fording River Extension Project

Detailed Project Description

July 2021

Teck

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Abbreviations

Abbreviations	Definition
ANFO	ammonium nitrate/fuel oil
ATV	all-terrain vehicle
AWTF	Active Water Treatment Facility
BC	British Columbia
BC CDC	British Columbia Conservation Data Centre
BC EAA	British Columbia *Environmental Assessment Act*
BC EAO	British Columbia Environmental Assessment Office
BC EMLI	British Columbia Ministry of Energy, Mines and Low Carbon Innovation
BC MECCS	British Columbia Ministry of Environment and Climate Change Strategy
BC FLNRORD	British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development
BF	blast furnace
BOF	basic oxygen furnace
C-3 Permit	C-3 Permit issued under the *Mines Act*
CCFR	combined coarse and fine refuse
CCUS	carbon capture usage and storage
COI	Community of Interest
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DPD	Detailed Project Description
EAF	electric arc furnace
EMC	Environmental Monitoring Committee
EPT	Ephemeroptera (mayflies), Plecoptera (stoneflies) and Trichoptera
EV-CEMF	Elk Valley Cumulative Effects Management Framework
EVFFHC	Elk Valley Fish and Fish Habitat Committee
EVO	Elkview Operations
EVWQP	Elk Valley Water Quality Plan
FRO	Fording River Operations
FRO-S AWTF	Fording River Operations South Active Water Treatment Facility
FRO-N SRF	Fording River Operations North Saturated Rock Fill
FRX	Fording River Extension
GBA+	gender-based analysis plus
GHG	greenhouse gas
GHO	Greenhills Operations
HSDA	Health Service Delivery Area

Abbreviations	Definition
HSEC	Health, Safety, Environment and Community
IAA	*Impact Assessment Act*
IAAC	Impact Assessment Agency of Canada
IMBA	Impact Management and Benefits Agreement
IPA	Implementation Plan Adjustment
IPD	Initial Project Description
IS/A	Impact Statement/Application
TISG/AIR	Joint Tailored Impact Statement Guidelines/Application Information Requirements
KNC	Ktunaxa Nation Council
LAEMP	Local Aquatic Effects Monitoring Program
LCO	Line Creek Operations
MRC	Mine Review Committee
MYAB	Multi-Year Area Based
NO_2	nitrogen dioxide
NPI	net positive impact
OEMP	Operational Environmental Monitoring Program
OGMA	Old Growth Management Area
PAG	potentially acid generating
PM	particulate matter
Project	Fording River Extension Project
RAEMP	Regional Aquatic Effects Monitoring Program
SARA	*Species at Risk Act*
SBC	Statutes of British Columbia
SC	Statute of Canada
SO_2	sulphur dioxide
SOR	Statuary Orders and Regulations
SRF	Saturated Rock Fill
STP	South Tailings Pond
TAG	Technical Advisory Group
TBE	Turnbull Mountain East
TCE	terrestrial cumulative effects
Teck	Teck Coal Limited
TMP	Tributary Management Plan
TSF	tailings storage facility
US	United States of America

Abbreviations	Definition
VC	Valued Component
WBP	whitebark pine
WCT	westslope cutthroat trout

Units of Measure

Units	Definition
%	percent
>	greater than
≤	less than or equal to
$	Canadian dollars
Bbcm	billion bank cubic metres
ha	hectare
km	kilometre
km^2	square kilometre
m	metre
m/m	metres per metre
masl	metres above sea level
mm	millimetre
Mmtcc	million metric tonnes of clean coal
Mt/yr	million tonnes per year
t/d	tonnes per day
t/yr	tonnes per year
t CO_2e/yr	tonnes carbon dioxide equivalent per year

Detailed Project Description Preparation and Credits

Professionals, reviewers, and authors with primary responsibility for preparing this Detailed Project Description are listed below.

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	Strahan Loken	Manager, FRX Project
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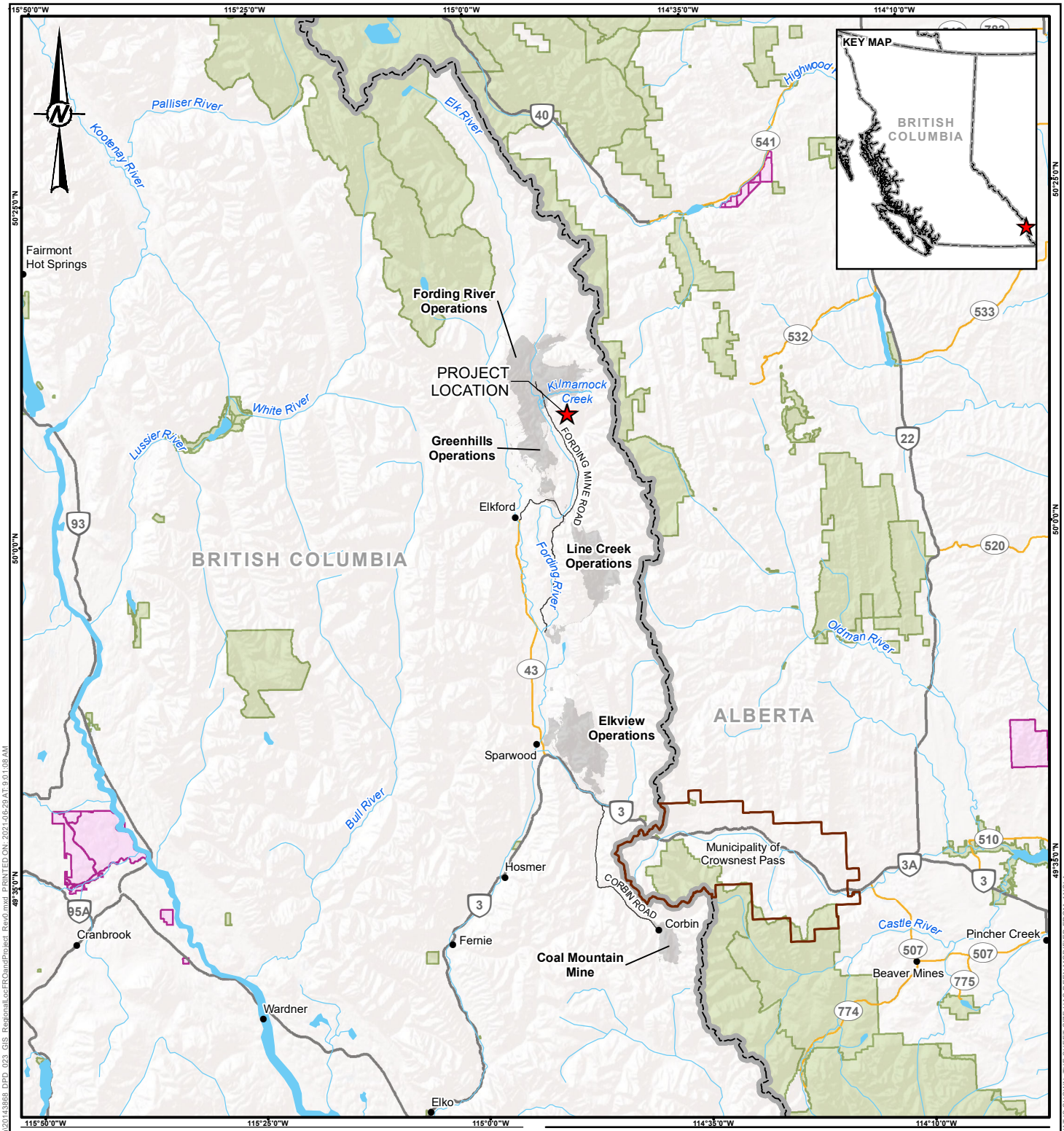
1 Introduction

This document is the Detailed Project Description (DPD) for the Teck Coal Limited (Teck) Fording River Operations (FRO) proposed Fording River Extension Project (FRX Project, or the Project; formerly the "Castle Project"). The FRX Project is being reviewed under the *Impact Assessment Act,* SC 2019, c 28, s1 (IAA) of Canada and the *Environmental Assessment Act* SBC 2018, c 51 (EAA) of British Columbia (BC) . The assessment is being conducted by the Impact Assessment Agency of Canada (IAAC) and the BC Environmental Assessment Office (EAO) in accordance with the Impact Assessment Cooperation Agreement Between Canada and British Columbia (IAAC 2019).

Fording River Operations is a steelmaking coal mine in the Elk Valley of southeast BC and been operating since 1972. The Project would be an extension to FRO's mining area that would extend the life of the mining operation from the mid-2020s through to the early 2070s. Located directly to the south of the existing operations (Figure 1-1 and Figure 1-2), the Project would use existing infrastructure at FRO while mining in the proposed new mining area. The Project would be located within ʔamakʔis Ktunaxa, the territory of the Ktunaxa Nation and on lands of interest to other Indigenous Peoples.



LEGEND

- CITY / TOWN / COMMUNITY
- PROJECT LOCATION
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- ROAD
- WATERCOURSE
- BRITISH COLUMBIA - ALBERTA BOUNDARY
- COAL MINING OPERATION
- FIRST NATIONS RESERVE
- MUNICIPALITY OF CROWSNEST PASS
- PROVINCIAL PARK / PROTECTED AREA
- WATERBODY

0 10 20
1:750,000 KILOMETRES

REFERENCE(S)

BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.
DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REGIONAL LOCATION OF FORDING RIVER OPERATIONS AND THE PROJECT (NTS 082G/082J)

Teck

YYYY-MM-DD	2021-06-29
DESIGNED	SH
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
20143868	DPD_023	0	1-1

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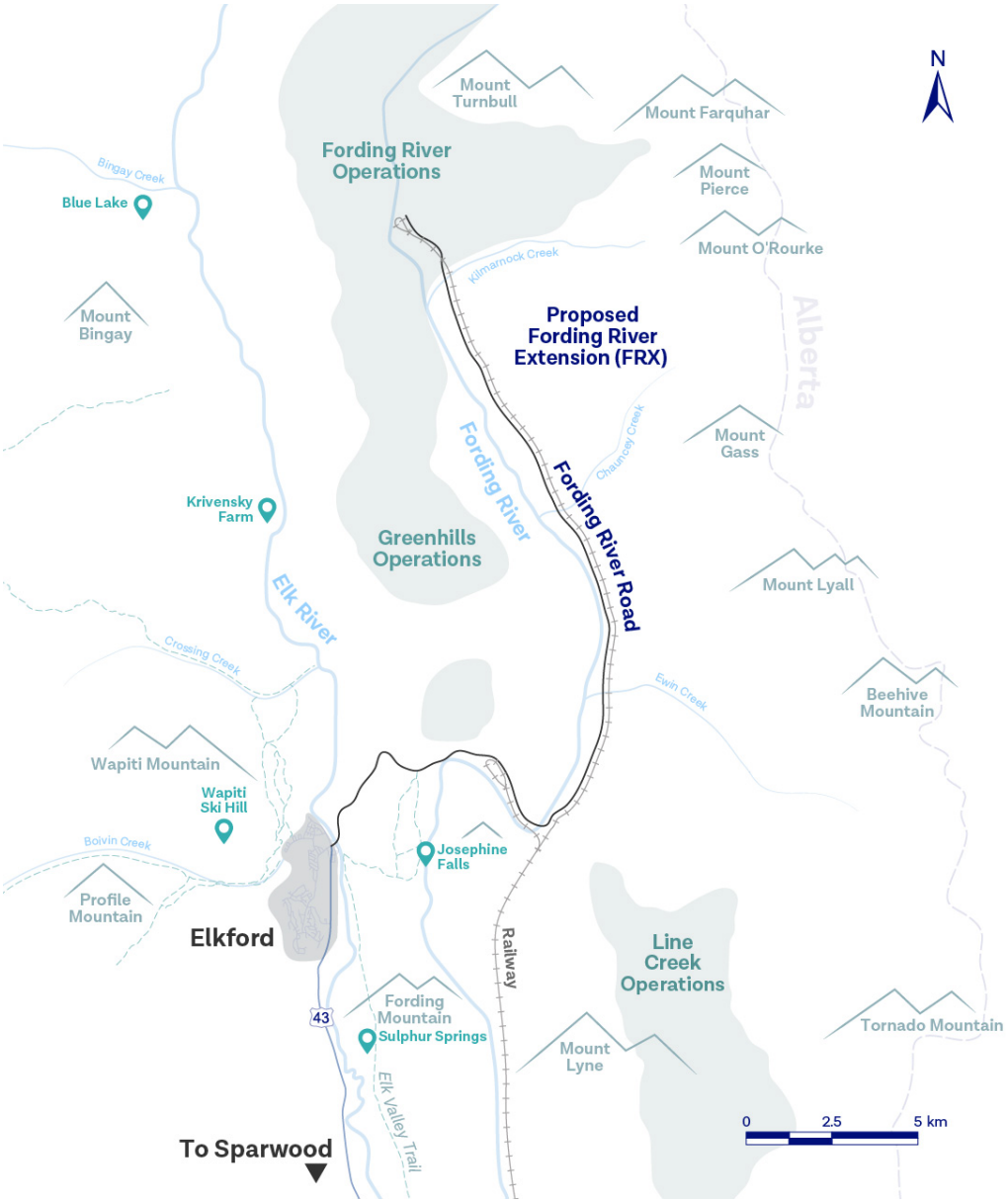
Figure 1-2: Location of Proposed Fording River Extension



Assessment of the Project was initiated under the BC EAA in April 2020 when the BC EAO accepted Teck's Initial Project Description (IPD) and Engagement Plan[1] and posted them to the BC Environmental Assessment Project Information Centre. Following the posting, the BC EAO requested input from potentially affected Indigenous nations[2] and the public, as well as technical advisors from provincial and federal government agencies, local governments, United States of America (US) state and federal agencies, and US tribes. A public comment period was held from May 8, 2020 to June 22, 2020, and included two virtual open houses. After the public comment period, the BC EAO issued a Summary of Engagement (dated July 31, 2020) summarizing the comments, concerns and interests identified through the early engagement process.

Also following the posting of the provincial IPD, the IAAC received eight letters requesting that the Project be required to undergo a federal impact assessment. On August 19, 2020, the federal Minister of Environment and Climate Change issued an Order designating the Project pursuant to section 9(1) of the IAA. Reasons for the decision are summarized in Section 4.2.

Following the designation under the IAA, Teck submitted a federal IPD[3] and IPD Summary to the IAAC that provided information regarding the Project and its interactions with areas of federal jurisdiction. These documents were posted to the Canadian Impact Assessment Registry in October 2020. Following a 20-day period of consultation to engage with federal authorities, Indigenous Peoples and the public, the IAAC delivered its Summary of Issues (dated November 13, 2020) describing the comments, concerns and interests.

Throughout these early steps in the assessment process, Teck has also engaged directly with various organizations and groups including potentially affected Indigenous Peoples. A description of the consultation conducted prior to the provincial IPD submission was included in the provincial Engagement Plan. Engagement that has occurred since preparation of the Engagement Plan is described in the DPD (refer to Sections 5 and 6).

Submission of the DPD is the next step in the coordinated assessment process under both the BC EAA and the IAA. It has been developed taking into account feedback received to date from the BC EAO and the IAAC, as well as feedback received from potentially affected Indigenous Peoples and other interested parties, in addition to updates to the Project that have been made by Teck. The purpose of the DPD is further discussed in the next section.

[1] Referred to as the provincial IPD and provincial Engagement Plan in the DPD, or collectively as the provincial and federal IPD documents.
[2] Note that the BC EAO's assessment policy and documents refer to Indigenous Nations, while the IAAC and Teck's policies and documents refer to Indigenous Peoples. The Ktunaxa Nation, Shuswap Nation, Stoney Nakoda Nation, Piikani Nation, Siksika Nation and Kainai (Blood Tribe) have self-identified as participating Indigenous Nations for the review being conducted under the BC EAA. The federal assessment process has identified the above nations, as well as Tsuut'ina Nation, Métis Nation of Alberta, and Métis Nation British Columbia as potentially affected by the Project. Throughout this document, both participating Indigenous Nations under BC EAA and the Indigenous Peoples identified through the federal process are identified as potentially affected Indigenous Peoples.
[3] Comprising the provincial IPD and an addendum focused on federal IPD requirements.

1.1 Purpose of the Detailed Project Description

The DPD is submitted in accordance with section 15(1) of the federal IAA and section 15(1) of the BC EAA. The information provided in this Detailed Project Description provides the basis upon which IAAC and the BC EAO determine whether an assessment of the Project is required and, if so, in determining:

- The scope of the factors to be assessed and the information or studies necessary for the conduct of the impact assessment, as required under ss. 18 and 22(2) of the federal IAA.
- The scope of the required assessment of the Project, as required under s. 19(2)(a) of the BC EAA.

Under the Impact Assessment Cooperation Agreement Between Canada and British Columbia (IAAC 2019), the information requirements for Teck's Impact Statement/Application (IS/A) will be set out in the joint Tailored Impact Statement Guidelines/Application Information Requirements (TISG/AIR) that will be issued as a single document that meets the requirements of the federal IAA and the BC EAA.

The DPD has been developed in accordance with guidance set out in the IAAC's Guide to Preparing an Initial Project Description and a Detailed Project Description (IAAC 2020) and the BC EAO's Early Engagement Policy – Appendix 3 – Detailed Project Description Guidelines (BC EAO 2019). The DPD builds on the provincial and federal IPD documents developed to date (Teck 2020a,b), the information gathered through early engagement on the Project, including by considering the issues raised in the Summary of Engagement and the Summary of Issues, and Teck's ongoing efforts to refine the Project.

This Detailed Project Description is not intended to and does not provide an assessment of potential impacts of the Project, nor does it describe all of the measures that may be required to mitigate potential impacts.

1.2 Input from Engagement on Teck's Initial Project Description

In accordance with requirements under section 15(1) of the BC EAA and section 15(1) of the IAA, Teck is required to describe how issues identified during early engagement and documented in the Summary of Engagement and in the Summary of Issues can or should be addressed in the assessment process. Teck's responses to the issues are summarized in Sections 1.2.1 and 1.2.2 and presented in more detail in Appendices A and B. Responses to each comment category describe either:

- how the comment, input, interest, or concern is accounted for in the DPD and reference to where in the DPD the comment is addressed; or
- how the issue or comment may be more appropriately addressed in subsequent phases of the coordinated assessment.

Changes made to the Project based on the feedback received during early engagement are identified in the DPD to illustrate to readers how and why the Project has evolved since publication of the provincial and federal IPD documents. To highlight key feedback and how it is being addressed, the DPD uses Early Engagement Feedback Notes in the right-hand page margin. These feedback notes summarize key issues from the Summary of Engagement or in the Summary of Issues, or from feedback that Teck has

received through other avenues of engagement. The feedback notes help highlight where Teck has made updates to the information about the Project since the provincial and federal IPD documents were published.

Note that Teck has also prepared a draft TISG/AIR document for consideration by the IAAC and BC EAO in setting the information requirements for the IS/A. This draft document has been prepared in an effort to support the approach to addressing issues identified for consideration during subsequent phases of the coordinated assessment. This draft document may be further updated by the IAAC and BC EAO before finalization during the Process Planning Phase of the assessment process.

1.2.1 Feedback from the Early Engagement Phase of the Provincial Assessment Process

Set out below are the categories of key issues and comments described in the Summary of Engagement, along with Teck's response to each:

- **Summary Comment Category 1**: Water quality impacts (e.g., selenium) that could cause subsequent impacts to aquatic biophysical resources (e.g., westslope cutthroat trout and other aquatic species) and human health.

  Teck acknowledges concerns about water quality in the watersheds of the Elk Valley, Koocanusa Reservoir and waters downstream and has developed and is implementing the Elk Valley Water Quality Plan (EVWQP; Teck 2014) and various related regional initiatives, plans and programs (refer to Section 7.1.2). The objectives of the EVWQP are protection of aquatic ecosystem health, management of bioaccumulation of identified constituents in the receiving environment, protection of human health, and protection of groundwater. The EVWQP will be updated to take the Project into account, provided the Project it is approved under the IAA and the BC EAA.

  In response to comments in this category, expanded details about the proposed water quality management plan for the Project are included in the DPD (refer to Sections 3.3.6 and 3.4.4). Concerns about potential water quality impacts (refer to Sections 5 and 6) and potential for interaction between the Project and water quality (refer to Section 12) are identified. Finally, Teck will propose that an assessment of the potential impacts to water quality and other valued components (VCs) that may be affected by changes to water quality be included as a requirement in the draft TISG/AIR to be submitted to the IAAC and the BC EAO.

- **Summary Comment Category 2**: Impacts to species at risk, including westslope cutthroat trout, Rocky Mountain bighorn sheep, high elevation grasslands, and whitebark pine.

  In alignment with federal and provincial guidance, Teck proposes to apply a mitigation hierarchy that describes the sequence in which different mitigation strategies be considered for the Project to avoid, minimize or rehabilitate impacts to species at risk. If assessment of the Project demonstrates that potential impacts are not sufficiently mitigated through avoidance, minimization and rehabilitation, Teck will identify a plan to offset impacts. In response to this comment category, and to assist the BC EAO and the IAAC in setting the TISG/AIR, regional initiatives, plans and programs dedicated to evaluating and managing

impacts to VCs are described in the DPD (refer to Sections 7.1.2 and 7.1.3). Specific reference to these concerns is presented in Sections 5 and 6, and the potential for the Project to impact westslope cutthroat trout, bighorn sheep, high elevation grasslands, whitebark pine and other species or ecosystems at risk is identified in Section 12. Appendix E also includes a list of ongoing studies of these important ecosystems, species and their habitats. Teck will propose that an assessment of the potential for the Project to alter these ecosystems and species be included as a requirement in the draft TISG/AIR, to be submitted to the IAAC and the BC EAO.

- **Summary Comment Category 3**: Cumulative effects on water quality, air quality, soil, terrestrial wildlife and ecosystems and the transmission of Indigenous knowledge and cultural practices.

  In response to this comment category, references to concerns about potential cumulative effects to water quality, air quality, soil, terrestrial and aquatic wildlife and ecosystems have been incorporated into the DPD (refer to Sections 5 and 6), and the potential for the Project to interact with these aspects of the environment are identified (refer to Section 12). Information about existing conditions and Teck's regional initiatives is also provided in Section 7. Under the IAA and the BC EAA, the potential for the Project to contribute to cumulative effects must be assessed, and in the draft TISG/AIR to be submitted to the IAAC and the BC EAO, Teck will propose that a cumulative effects assessment be required. Teck will also propose that interactions between the Project and the biophysical environment and rights and interests of Indigenous Peoples, including transmission of knowledge and cultural practices, and factors related to health, economy and social environment, be accounted for in the cumulative effects assessment.

  Teck's intention is to consult with potentially affected Indigenous Peoples, the IAAC and the BC EAO for the assessment of the Project effects to the rights and interests of potentially affected Indigenous Peoples. Similarly, Teck proposes that Indigenous Peoples be engaged on the evaluation and selection of measures to mitigate the potential effects on their rights and interests. This approach will be proposed in the draft TISG/AIR being prepared for submission to the IAAC and the BC EAO.

- **Summary Comment Category 4**: Importance of mining to the economy.

  In response to this comment category, Teck has expanded the DPD description of the role of steelmaking coal and transition to low carbon economy (refer to Section 3.1.1) and potential benefits of the Project to the local, regional, provincial and national economies (refer to Section 3.1.8). The draft TISG/AIR, to be submitted to the IAAC and the BC EAO, will also outline the scope of the proposed health, social, cultural and economic assessment, including identification and assessment of mitigations proposed to enhance benefits.

- **Summary Comment Category 5**: Impacts to traditional and current land use practices for Indigenous ceremonial, cultural, medicinal, harvesting and subsistence purposes, including those involving plants and vegetation, wildlife and wildlife habitat; fish and fish habitat; and specific sites of archaeological and ceremonial importance.

Teck is committed to engaging with potentially affected Indigenous Peoples to understand their rights and interests related to the Project. Teck proposes that assessment of the Project's impacts to the rights and interests of Indigenous Peoples be conducted in consultation with potentially affected Indigenous Peoples. Similarly, Teck proposes that Indigenous Peoples be engaged on the evaluation and selection of measures to mitigate potential effects on their rights and interests. This approach to the assessment of the Project will be outlined in the draft TISG/AIR to be submitted to the IAAC and the BC EAO. Teck's proposed engagement with potentially affected Indigenous Peoples will include developing an understanding of how to incorporate traditional and community knowledge, and cultural perspectives in the assessment.

1.2.2 Feedback from the Initial Planning Phase of the Federal Assessment Process

The full list of issues described in the Summary of Issues, along with Teck's response to each issue, is included in Appendix B. Teck has reviewed the Summary of Issues and identified what it understands are the key issues described in that document. Below, Teck describes how the key issues (themes that were frequently identified in comments) are addressed in the DPD or will be addressed in later phases of the assessment:

- **Summary Comment Category 1**: Inclusion of federal lands and transboundary environments in the assessment study area (e.g., US and Alberta) particularly related to greenhouse gas (GHG) emissions, water quality, fish and fish habitat, species at risk and their habitats and Indigenous Peoples.

  In the draft TISG/AIR to be submitted to the IAAC and the BC EAO, Teck will propose that the assessment of the Project consider the potential for both direct and cumulative effects to areas of federal jurisdiction, including the potential for effects to transboundary (Alberta and US) environments through changes to air quality (including GHGs), fish and fish habitat, water quality, migratory birds and species at risk and Indigenous Peoples. The geographic and temporal boundaries to be considered in the assessment will be proposed in the draft TISG/AIR.

- **Summary Comment Category 2**: Consideration of potential for the Project to cause incremental and cumulative effects on water quality, fish and fish habitat, wildlife habitat, sensitive ecosystems (e.g., high elevation grasslands, wetlands, old growth and mature forests), species at risk, and migratory birds and their habitat.

  As noted in Section 1.2.1, Teck proposes to apply a mitigation hierarchy, which describes the sequence in which different mitigation strategies are to be considered for the Project. If the assessment demonstrates that it is necessary, a plan to offset impacts will be identified.

  In response to this comment category, concerns about potential cumulative effects on water quality, fish and fish habitat, terrestrial wildlife, sensitive ecosystems, species at risk and migratory birds are identified in the DPD (refer to Sections 5 and 6), and the potential interactions of the Project with relevant aspects of the environment are identified (refer to Section 12). Information about existing conditions and Teck's regional initiatives is also

provided in Section 7. Teck will propose the scope of the assessment of the potential for the Project to impact these aspects of the environment in the draft TISG/AIR to be submitted to the IAAC and the BC EAO.

- **Summary Comment Category 3**: Water quality impacts (e.g., selenium) that could cause subsequent impacts to aquatic biophysical resources (e.g., westslope cutthroat trout, white sturgeon and other aquatic species) and human health. Effectiveness of water quality mitigation technology and interest in evidence-based water treatment measures.

  Teck acknowledges concerns about water quality in the watersheds of the Elk Valley, Koocanusa Reservoir and waters downstream, and has developed and is implementing the EVWQP (Teck 2014) and various related regional initiatives, plans and programs (refer to Section 7.1.2). Teck expects to propose a Project-specific water quality mitigations. Should the Project be approved, the Project-specific water quality mitigations would be integrated into future updates to the regional water quality model and adjustments of the water quality implementation plan for the Elk Valley.

  Regarding implementation of effective water quality mitigation, the Project's water quality management plan leverages Teck's existing water quality management experience, including incorporation of learnings from ongoing operations, research and development, regional and local monitoring and adaptive management. So that the Project can adapt to technology advancements, Project plans include the use of new and innovative technologies, such as source control, as they become proven such that they meet regulatory requirements and are technically and economically feasible for use in the Elk Valley.

  In response to this comment category, expanded details about the proposed water quality management plan for the Project are included in the DPD (refer to Sections 3.3.6 and 3.4.4). Concerns about potential water quality impacts are described (refer to Sections 5 and 6) and potential for interaction between the Project and water quality is identified in Section 12. Finally, Teck will propose that an assessment of the potential impacts to water quality and other valued components (VCs) that may be affected by changes to water quality be included as a requirement in the draft TISG/AIR to be submitted to the IAAC and the BC EAO.

- **Summary Comment Category 4**: Concerns regarding potential Project-related and/or cumulative impacts to Indigenous Peoples' current use of lands and resources and impacts to Indigenous People's Aboriginal and Treaty Rights through changes to access, sensory disturbance, changes to places of spiritual, cultural or traditional importance, loss of opportunities to carry out cultural practices including transmission of traditional knowledge and subsistence practices, impacts to harvested resources, changes to food security and health, changes to land and resource stewardship.

  Teck is committed to engaging with the potentially affected Indigenous Peoples to understand and mitigate the Project's potential effects to current land use and impacts to the rights of Indigenous Peoples. Teck proposes that assessment of the Projects effects to the rights and interests of Indigenous be conducted in consultation, and where practicable, in collaboration with Indigenous Peoples. Similarly, Teck proposes that Indigenous Peoples be engaged on

the evaluation and selection of measures to mitigate potential effects on their rights and interests. This approach to the assessment of the Project will be proposed in the draft TISG/AIR to be submitted to the IAAC and the BC EAO. Teck's proposed engagement with potentially affected Indigenous Peoples will include developing an understanding of how to incorporate traditional and community knowledge and cultural perspectives in the assessment. While this engagement will continue throughout the assessment process, it will be of most value if traditional and community knowledge is available early in the assessment process.

- **Summary Comment Category 5**: Impacts to air quality and climate change from GHG and other emissions from the Project.

  Teck will propose that an assessment of air quality, including assessment of potential change to the biophysical environment and human health and health practices that may result from changes to air quality, be included as a requirement in the draft TISG/AIR, to be submitted to the IAAC and the BC EAO. Teck will also propose assessment of the potential Project effects to climate, including assessment of GHG emissions in accordance with the Strategic Assessment of Climate Change. The Project is not anticipated to affect the province's ability to meet its targets under *the Climate Change Accountability Act* or Canada's ability to meet its GHG reduction target.

- **Summary Comment Category 6**: Sustainability and impacts on economy, including the need for environmentally sustainable and socially responsible mining projects to meet ongoing global demand for steel and the development of sustainable infrastructure, such as renewable energy infrastructure.

  In response to this comment category, Teck has expanded the DPD description of the role of steelmaking coal and transition to low carbon economy (refer to Section 3.1.1) and potential benefits of the Project to the local, regional, provincial and national economies (refer to Section 3.1.8). Teck will propose the scope of the social and economic assessment, including assessment of cumulative effects and identification and assessment of mitigations proposed to enhance benefits, in the draft TISG/AIR to be submitted to the IAAC and the BC EAO.

- **Summary Comment Category 7**: Impacts to human health and well-being as well as creation and exacerbation of differential impacts based on sex and gender, which may include groups identified by age, place of residence, ethnicity, socio-economic status, employment status or disability.

  In response to this comment category, the potential for the Project to differentially impact the health and well-being of diverse persons or groups is identified in the DPD (refer to Section 12). In the draft TISG/AIR to be submitted to the IAAC and the BC EAO, Teck will propose that assessment of the incremental and cumulative effects of health and well-being include various social determinants of health and consider the potential differential impacts to diverse groups of people.

- **Summary Comment 8**: Concern over reclamation progress and restoration efforts / environmental performance of existing operations and effect regulatory mechanisms for environmental protection.

  The Project's reclamation and closure plans will include progressive and interim reclamation and will incorporate learnings from Teck's existing reclamation and management efforts. In response to this comment category, additional information about reclamation has been included in the DPD (refer to Section 3.7). Teck will propose that monitoring and reporting to document environmental performance be identified as a requirement in the draft TISG/AIR to be submitted to the IAAC and the BC EAO. Teck also anticipates that monitoring and reporting requirements will be included in the permits required for the Project.

2 Company Information

Teck Coal Limited, a subsidiary of Teck Resources Limited, is the sole proponent of the Project. Company information is provided below.

2.1 Company Overview

Teck Resources Limited is a diversified resource company committed to responsible mining and mineral development with major business units focused on copper, zinc and steelmaking coal, as well as investments in energy assets. Headquartered in Vancouver, BC, we own or have interests in ten operating mines, a large metallurgical complex, and several major development projects in the Americas. We have expertise across a wide range of activities related to exploration, development, mining, and minerals processing, including smelting and refining, health and safety, environmental protection, materials stewardship, recycling, and research.

Our corporate strategy is focused on exploring for, developing, acquiring and operating world-class, long-life assets in stable jurisdictions that operate through multiple price cycles. We maximize productivity and efficiency at our existing operations, maintain a strong balance sheet, and are nimble in recognizing and acting on opportunities. The pursuit of sustainability guides our approach to business, and we recognize that our success depends on our ability to ensure safe workplaces, collaborative community relationships, and a healthy environment.

Teck Coal Limited (Teck) is the leading North American producer of steelmaking coal and the world's second largest seaborne exporter of steelmaking coal, a vital ingredient in the production of steel. Teck has four operating open-pit coal mines in the Elk Valley of southeastern BC (Figure 1-2)[4]:

- Fording River Operations (FRO)
- Greenhills Operations (GHO)
- Line Creek Operations (LCO)
- Elkview Operations (EVO)

Together, these operations account for an annual production capacity of 26 to 27 million metric tonnes of high-grade steelmaking coal, which is sold to consumers around the world (e.g., North America, Europe, Korea, Japan, China, and India).

Teck has been the sole owner of FRO since 2008.

[4]Coal Mountain mine in BC and Cardinal River mine in Alberta are now in care and maintenance.

2.2 Company Contact Information

The headquarters and corporate office contact information for Teck Coal Limited is as follows:

Headquarters Office:
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Calgary, Alberta T2G 0R3
T: 403.767.8500 / F: 403.265.8794

For the purposes of the assessment of the Project under the IAA and BC EAA, the primary Teck contact person is:

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Sparwood, BC V0B 2G0
Tel: 250.433.7126 / Fax: 250.425.9873
Email: Natasha.Essar@teck.com

2.3 Corporate Policies

Teck Resources Limited, and all its operations, is committed to responsible business practices in all aspects of its activities. The Safety and Sustainability Committee of the Board of Directors provides policy direction and monitoring of the company's environmental, social, and safety performance (Teck 2020c).

Teck's company-wide commitments are outlined in the following key sustainability policy documents.

- The *Code of Sustainable Conduct and Our Strategy for Sustainability* outline the company's commitment to sustainable development, focusing on aspects such as community and environmental performance.
- The *Code of Ethics* sets out the company's dedication to upholding high moral and ethical standards, specifying basic business conduct and behavior.
- The *Health and Safety Policy* sets out the company's commitment to providing leadership and resources for entrenching the core value of safety.
- The *Human Rights Policy* sets out the company's commitment to respecting the rights of employees, the communities in which the company operates, and others affected by the company's activities.
- Teck's *Indigenous Peoples Policy* sets out the company's aim to integrate the perspectives of Indigenous Peoples into company decision-making throughout the mining life cycle and to create lasting benefits that respect their unique interests and aspirations.
- Teck's *Water Policy* sets out the company's commitment to protect water and the life it sustains by being an industry leader in water stewardship, including the safe, efficient and sustainable use, reuse, management, treatment and discharge of water.

- Teck's *Inclusion and Diversity Policy* sets out the company's commitment to supporting an inclusive and diverse workplace that recognizes and values differences.
- Teck's *Tax Policy* sets out the company's commitment to be transparent, cooperative, compliant, and ethical in all tax matters.
- *T*eck's *Expectations for Suppliers and Contractors* sets out the company's expectations for suppliers of goods and contractors performing services for or on behalf of Teck.
- Teck's *Health, Safety, Environment and Community* (HSEC) Management System provides a structure for implementing the company's sustainability commitments. The HSEC system includes overarching corporate policies, the HSEC Management Standards, guidelines and site-level policies and procedures.

3 Project Information

This section of the DPD provides the primary description of the Project, including background and overview, deposit geology and resource characterization, components and activities, mine plan, waste and emissions, public and environmental safety, and mine reclamation and closure.

3.1 Background and Overview

3.1.1 The Role of Steelmaking Coal and Transition to Low Carbon Economy

Steel plays a critical role in today's modern society, including the building of infrastructure such as rail, bridges, hospitals and schools, that is needed to maintain and improve the quality of life for people around the world. Steel demand will be driven by increasing population, economic growth, and urbanization as a key component of infrastructure development and construction, particularly in high growth regions and in other developing economies, where 2 to 3 billion people are projected to join the global middle class by 2050. From building wind turbines and energy-efficient buildings, to deploying electric vehicles, hybrid busses and rapid transit lines, steel is also essential to build out the infrastructure required to transition to a low-carbon economy. As one of the most widely used materials, steel is also suitable for the circular economy as it is easily recyclable and difficult to substitute in most applications.

Steelmaking coal is a vital ingredient in the production of steel. A sub-type of steelmaking coal called coking coal is a higher-grade coal that is used to produce an intermediary product – coke – which is then used in the chemical, thermal and mechanical processes that transform iron ore into hot metal. This use of steelmaking coal in the hot metal and steelmaking processes results in GHG emissions. Once produced, hot metal can then be produced into steel using the blast furnace-basic oxygen furnace (BF-BOF) or the electric arc furnace (EAF) process. Today, according to the World Steel Association (2021), about 73% of steel is produced using the BF-BOF process, which requires high-quality, hard coking coal, and only 27% through the EAF process.

Globally, the steel sector has a 7% to 9% share of global GHG emissions, and therefore has a major role to play in global decarbonization. As the steel sector works to decarbonize, in addition to improvements in efficiency in existing steelmaking processes over time, four primary pathways will contribute to reduced GHG emissions in steelmaking by 2050:

- increased recycling of scrap steel via the EAF steelmaking process
- the application of carbon capture, usage and storage (CCUS) for natural-gas-based direct reduced iron
- the use of carbon-free steel production processes using hydrogen-based direct reduction processes
- the application of CCUS for blast furnaces (BF+CCUS)

All four of these pathways will be essential in delivering carbon reductions in the steel production process; the degree to which they will each contribute along this journey will differ over time and geography. Teck believes that BF+CCUS is the only abatement technology capable of decarbonizing the steelmaking

industry at the rate and scale required by 2050 to limit global temperature increases to 1.5℃ (Teck 2021a).

Teck's analysis suggests that demand for seaborne steelmaking coal will remain robust through 2050 across these scenarios, in large part due to steel demand growth in regions that rely on low-cost, high-quality seaborne steelmaking coal—and specifically hard coking coal—imports. Teck's view is based on the following points (Teck 2021a):

First, as noted above, we anticipate significant steel demand growth out to 2050.

Second, we anticipate that scrap consumption will increase out to 2050. Scrap recycling currently accounts for approximately 30% of global crude steel production; as the cornerstone for the circular economy, scrap is the lowest-cost decarbonization lever in the steel industry. Scrap availability varies by region, and while it is expected to grow up to 50% globally by 2050, its use will be limited to regions with abundant scrap availability and/or low natural gas costs. Scrap use is therefore expected to be limited in new growth regions with limited existing steel-based infrastructure, such as India and Southeast Asia, limiting the use of EAF in these regions in favour of blast furnace steelmaking. To ensure that scrap use supports decarbonization of steel production, the significant increase in electricity demand associated with use of EAF steel production must be met with low-carbon sources of power.

Third, while hydrogen-based steelmaking processes are expected to grow over time, the scale of the supporting renewable infrastructure required, and the technological hurdles associated with producing low-cost hydrogen, make near-term adoption highly unlikely. It is estimated that the cost of hydrogen would need to decline by more than 65% to US$1 to US$2 /kg in conjunction with a supportive carbon pricing environment to economically incentivize large-scale adoption of hydrogen direct reduced iron technology; this is not expected to occur before 2040. As the cost of hydrogen decreases and the world increasingly adopts low-carbon solutions, demand for other hydrogen in other low-carbon applications will likely increase—such as for energy storage to support intermittent generation sources like solar—and may be prioritized over the use of hydrogen for steelmaking. While the cost of hydrogen presents a barrier, an equally important limitation is the inadequate availability of high-grade iron ore pellets required to produce steel via hydrogen-based steelmaking processes.

Fourth, we anticipate that CCUS technologies will be applied at many existing blast furnaces. The application of CCUS to existing blast furnaces is the most cost-competitive decarbonization technology, as it leverages the more than US$1 trillion in installed blast furnace assets that would otherwise be stranded. Unlike hydrogen technology, it does not rely on large-scale renewable infrastructure for low-cost hydrogen power. Instead, at an average carbon abatement cost of US$50 to $100/tonne of carbon dioxide (CO_2), CCUS is well positioned for large-scale adoption. CCUS is already a proven technology in other hard-to-abate industries and has the potential to reduce up to 80% of emissions at existing integrated steelmaking facilities. As with many GHG reduction and abatement efforts, CCUS success will also be tied to carbon pricing and technical and logistical considerations, such as further development of large-scale CO_2 transportation to deliver captured CO_2 to sequestration sites.

Across varying climate scenarios, we predict decreases in demand for steelmaking coal over the longer term (Teck 2021a). However, Teck's analysis suggests that demand for seaborne steelmaking coal will remain robust through at least 2050 across these scenarios, in large part due to steel demand growth in

regions that rely on high-quality steelmaking coal and specifically hard coking coal imports. Teck's understanding is that the decarbonization of steel production will require all the technologies discussed above. No single abatement technology in the short or long term will be the solution to reducing emissions in the steelmaking sector.

Teck's high-quality steelmaking coal is expected to remain resilient under different climate change scenarios. Use of the steelmaking coal we produce will result in less carbon emissions per tonne of steel produced when compared to the use of lesser quality coals. The quality of steelmaking coal is an important factor in the energy consumption and emissions performance of the steelmaking process. The high coke strength of our coal helps to ensure stable and efficient blast furnace operations, resulting in lower CO_2 emissions per tonne of steel for its steelmaking customers. As steel producers look to reduce the GHG emissions intensity of their production and potentially begin to face rising carbon prices, demand for the kind of steelmaking coal Teck produces will remain strong because of the low-carbon advantage it provides to steel producers.

Teck's steelmaking coal operations are also low-GHG-intensity producers, assisted by access to low-carbon sources of electricity in BC, and rank in the second quartile globally.

In summary, the demand for Teck's high-quality steelmaking coal is likely to remain strong. The long-term annual average production capacity of 26 to 27 million metric tonnes of clean coal (Mmtcc) at our steelmaking coal mines, combined with being low-GHG-intensity producers and assisted by low carbon sources of electricity, supports a competitive position for coal mined from the Project into the future.

3.1.2 Project Need and Purpose

The need for the Project arises from Teck's business strategy to supply the global demand for steelmaking coal (see Section 3.1.1) and the fact that currently permitted reserves at FRO and GHO[5] will be significantly reduced near the late 2020s. The Project is also needed to secure the long-term viability of Teck's assets, operations and business in the Elk Valley, including FRO's one-third portion of the $3.7 billion in economic contributions generated by Teck's activities in the Elk Valley.

Based on the above needs, the purpose of the Project is to extend the lifespan of FRO. The Project, which would add a source of steelmaking coal starting in the mid-2020s, would maintain existing production levels at FRO through to the early 2070s[6], sustain jobs for the 1,400 employees already employed at FRO along with the thousands of indirect jobs associated with the Project and secure the continuity of economic benefits shared by Teck employees and their families, Indigenous Peoples, local communities[7], the regional, provincial and national economies and different levels of government.

[5] Teck notes that GHO will also need additional permitted areas to sustain its production and mitigate impacts to employment. Any subsequent regulatory approvals and permitting required for GHO are out of the scope of the FRX Project and not considered in this application.

[6] FRO's annual average production rate averages 9 million metric tonnes of clean coal (Mmtcc); Teck's long-term annual average production capacity (all coal operations) is 26 to 27 Mmtcc.

[7] Including the Elk Valley communities of Elkford, Sparwood, Hosmer, Fernie in BC and Crowsnest Pass in the Elk Valley, along with surrounding smaller rural communities in these vicinities.

The Project has been identified as the most environmentally, socially, technically and economically feasible option to support continued mining at FRO.

The Fording River Extension would be the primary source of steelmaking coal to FRO by the early 2030s, maintaining the current average production rate of 9 Mmtcc/yr, the Project would produce an estimated 360 Mmtcc over its operational life.

3.1.3 Project Schedule

The assessment of the Project is expected to occur over the next three years, with decisions by the Minister under Section 60(1) of the IAA and by the Ministers under section 29(4) of the BC EAA made in Q4 2023. Decisions by statutory authorities for subsequent permits required to commence construction are anticipated in Q2 2024. Additional information about the proposed assessment schedule is presented in Section 4.5.

Construction would occur from Q2 2024 through to early 2027. Mining operations would follow from 2027 through to the early 2070s. The estimate of the working life of the mine is based on the current average annual coal production rate at FRO of approximately 9 Mmtcc/yr. At the end of the mine life, Project activities will include reclamation and active closure, which is likely to occur over a period of at least five years. The post-closure duration is expected to continue until other uses of the land commence, and would include ongoing operation of water management infrastructure for as long as it is needed to support water quantity/quality objectives.

Representative mining milestones are presented in Section 3.4.2.

3.1.4 Project Location

The Project would be located within the East Kootenay Region in southeastern BC (Figure 1-2), with an approximate centre point at approximately 50.15445, -114.81111 (World Geodetic System 1984). The Project would be partially located on Castle Mountain[8] and partially within the currently permitted FRO operating area (Figure 3.1-1). The Project would be located primarily on Crown land subject to coal leases held by Teck, with portions of the Project on fee simple land owned by Teck (Figure 3.1-2). The legal description of the lands to be used for the Project is presented in Appendix C.

Access to the Project is north from Highway 3 via Highway 43 (Elk Valley Highway) from Sparwood to Elkford, then approximately 30 km north on the Fording Mine Road. Other than use of the main access road for transport of employees and deliveries and tie-in to existing power lines, the Project will not require any new use of existing rights-of-way. More information on land use and tenure in the Project region is provided in Section 7.4.1.3.

The Project would be located within ʔamakʔis Ktunaxa, the territory of the Ktunaxa Nation and within the Ktunaxa district of Qukin ʔamakʔis or Raven's Land. Qukin ʔamakʔis extends from the headwaters of the Elk River downstream to near the town of Elko, an area of more than 3,500 km^2. The Ktunaxa Nation is composed of yaq̓it ʔa·knuqǂi'it (Tobacco Plains Band), ʔaq'am (St. Mary's Band), yagan nuʔkiy (Lower

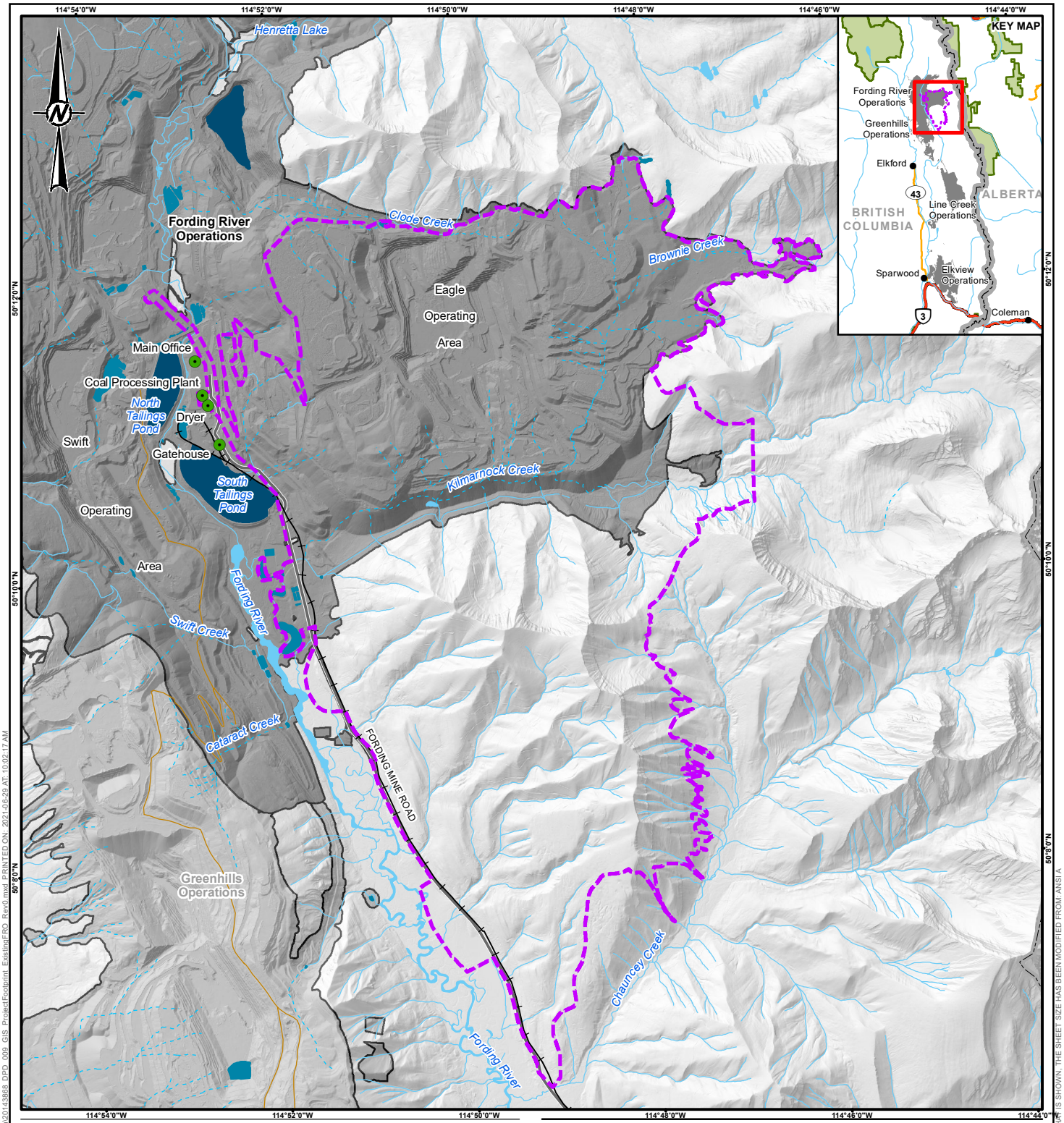
[8] The peak in the Project mine area is referred to locally as "Castle Mountain" but is not officially named on provincial government mapping services.

Kootenay Band), and ʔakisq̓nuk First Nation (Columbia Lake Band). These bands are represented collectively by the Ktunaxa Nation Council (KNC) with government offices in Cranbrook, approximately 190 km from the Project. Locations important to the Ktunaxa Nation have been identified within 1 km of the Project, including locations in the Chauncey Creek watershed. Teck also recognizes that there are two Ktunaxa communities in the US; Ḵupawiɬq̓nuk (Confederated Salish & Kootenai Tribes) in Elmo, Montana and ʔaq̓anqmi (Kootenai Tribe of Idaho) in Bonners Ferry, Idaho.

It is acknowledged that other traditional lands overlap or occur in proximity to the Project. For example, the Shuswap Indian Band asserts the Elk Valley as a shared territory with the Ktunaxa Nation and within their area of caretaker responsibility. Treaty 7 in Alberta extends to the BC-Alberta border located within 3 km of the Project footprint. Indigenous reserve lands associated with the Shuswap Indian Band in BC and the Stoney Nakoda Nation, Piikanni Nation, Siksika Nation and Kainai (Blood Tribe) and Tsuut'ina Nation in Alberta are located 35 to 130 km from the Project. Proximity of the Project to Ktunaxa and other potentially impacted Indigenous Peoples' reserve lands is shown in Figure 3.1-3.

The closest Elk Valley community is Elkford, located approximately 30 km driving distance southwest of the Project. Sparwood is the next nearest community (approximately 60 km driving distance from the Project). Fernie in the Elk Valley and Crowsnest Pass, Alberta, are both approximately 100 km away from the Project. The nearest seasonal residence is a trapper's cabin, located approximately 1.3 km away from the Project. Locations of the above-noted communities are shown in Figure 1-2.

No federal lands will be used for the Project and there will be no direct Project impacts to federal lands. The nearest federal lands, referred to as the Dominion Coal Block (Parcels 73 and 82), are located approximately 70 km and 80 km from the Project (Figure 3.1-4).



LEGEND

- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY

0 1 2

1:70,000 KILOMETRES

REFERENCE(S)

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
PROJECT FOOTPRINT AND EXISTING FORDING RIVER OPERATIONS

YYYY-MM-DD	2021-06-29
DESIGNED	DT
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
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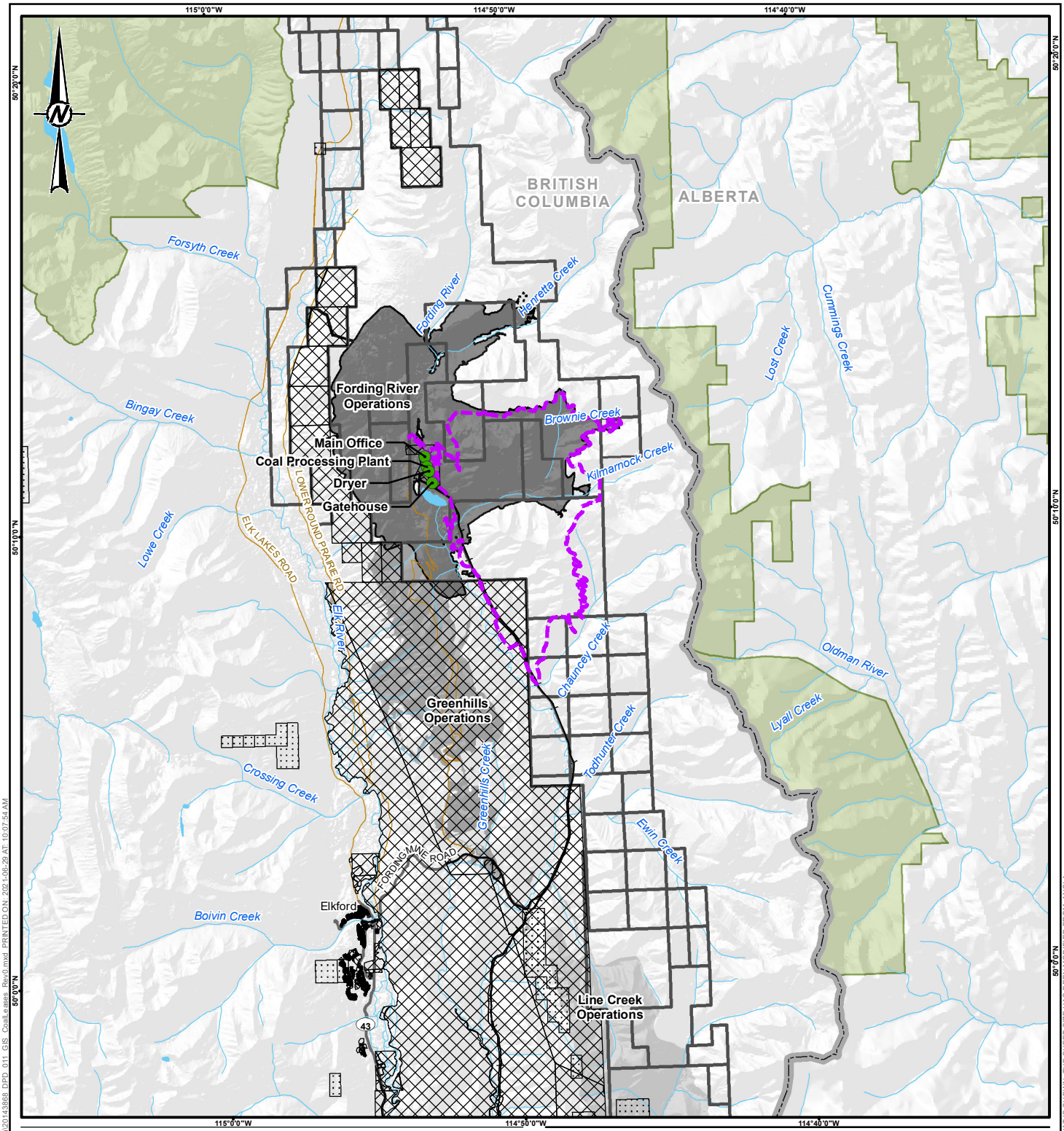

LEGEND

- CITY / TOWN / COMMUNITY
- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- WATERCOURSE
- BRITISH COLUMBIA - ALBERTA BOUNDARY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- LCO C-129 PERMIT BOUNDARY
- TECK COAL LEASES AND LICENCES
- MINERAL CLAIM TENURE
- PROJECT FOOTPRINT
- PRIVATE OWNERSHIP
- PARK/PROTECTED AREA
- WATERBODY

0 3 6

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REFERENCE(S)

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
TECK COAL LEASES IN THE PROJECT AREA

YYYY-MM-DD	2021-06-29
DESIGNED	DT
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
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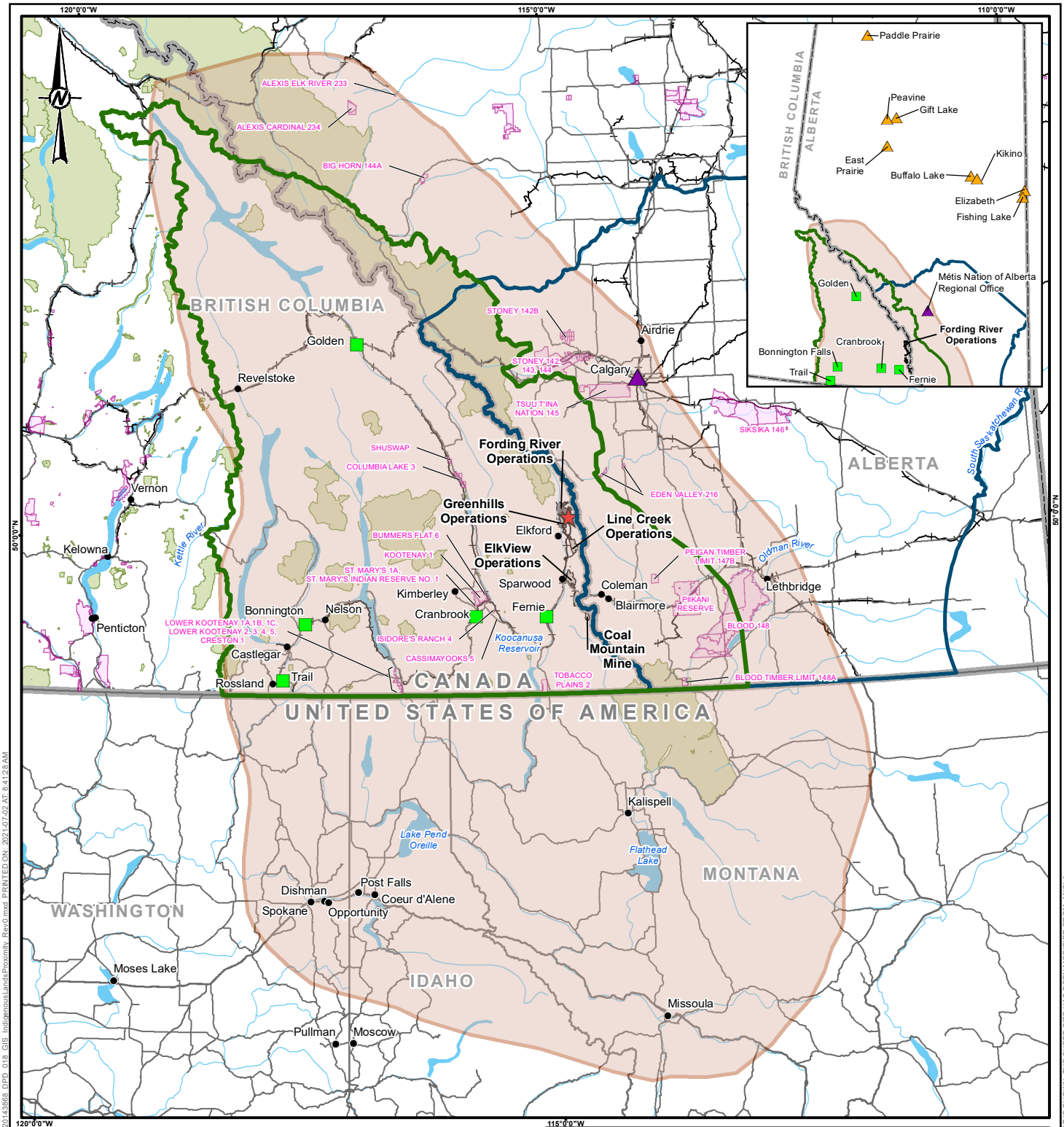

LEGEND

- CITY / TOWN / COMMUNITY
- MÉTIS NATION OF ALBERTA REGIONAL OFFICE
- MÉTIS NATION OF ALBERTA MÉTIS SETTLEMENTS
- MÉTIS NATION BC CHARTERED COMMUNITIES
- PROJECT LOCATION
- PRIMARY HIGHWAY
- RAILWAY
- WATERCOURSE
- BRITISH COLUMBIA - ALBERTA BOUNDARY
- COAL MINING OPERATION
- FRO APPROVED PERMIT
- FIRST NATIONS RESERVE
- ʔAMAKʔIS KTUNAXA
- SHUSWAP INDIAN BAND AREA OF CARETAKER RESPONSIBILITY
- TREATY 7 LANDS
- INTERNATIONAL BORDER
- PROVINCIAL PARK / PROTECTED
- STATE BORDER
- WATERBODY

0 50 100

1:4,000,000 KILOMETRES

NOTE(S)

RESERVE NAMES ARE ONLY IDENTIFIED FOR THOSE INSIDE THE ʔAMAKʔIS KTUNAXA, SHUSWAP INDIAN BAND AREA OF CARETAKER RESPONSIBILITY AND TREATY 7 LANDS

REFERENCE(S)

BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED. US DATA OBTAINED FROM ESRI AND FROM USGS NATIONAL BOUNDARY DATASET (NBD) DOWNLOADABLE DATA COLLECTION. DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT

FORDING RIVER EXTENSION PROJECT

TITLE

PROXIMITY TO INDIGENOUS RESERVES, TERRITORIES, TREATY LANDS AND CHARTERED COMMUNITIES

Teck

YYYY-MM-DD	2021-07-02
DESIGNED	SW
PREPARED	DR
REVIEWED	SL
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
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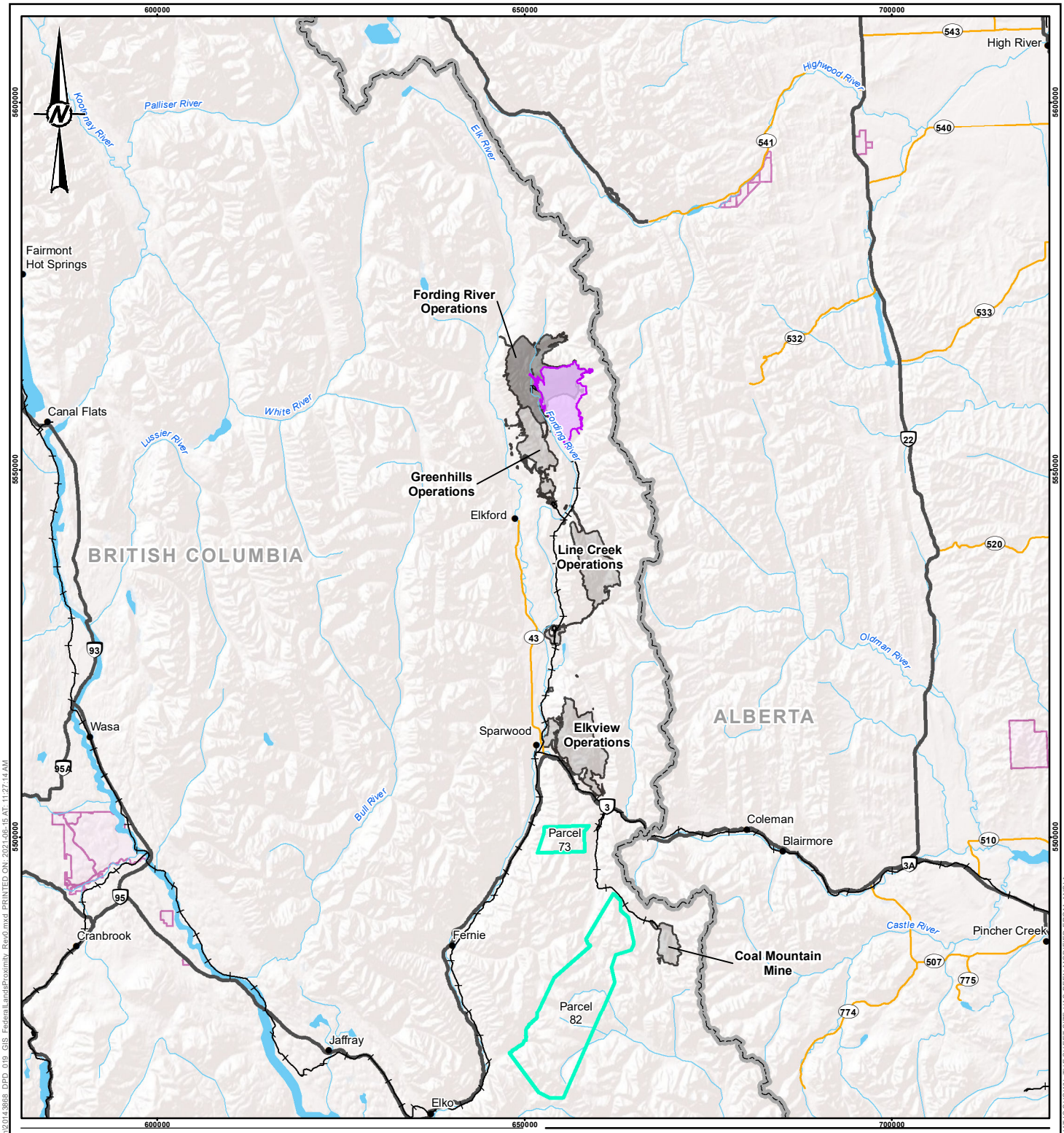

LEGEND

- CITY / TOWN / COMMUNITY
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- WATERCOURSE
- BRITISH COLUMBIA - ALBERTA BOUNDARY
- COAL MINING OPERATION
- DOMINION COAL BLOCK
- FRO C-3 PERMIT BOUNDARY
- FIRST NATIONS RESERVE
- PROJECT FOOTPRINT
- WATERBODY

0 10 20

1:750,000 KILOMETRES

REFERENCE(S)

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
PROXIMITY TO FEDERAL LANDS

YYYY-MM-DD	2021-06-15
DESIGNED	SDL
PREPARED	DR
REVIEWED	SL
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
20143868	DPD_019	0	3.1-4

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3.1.5 Project Footprint

The Project footprint comprises the proposed mine area and parts of the currently permitted FRO operating area (as defined by C-3 Permit issued under the BC *Mines Act*), including the existing Eagle and Kilmarnock waste rock storage areas, Turnbull tailings storage facility (TSF), coal processing plant, and other support facilities (Figure 3.1-1). The Project mine area (i.e., the area where resources are to be mined) is located at Castle Mountain, south of the existing FRO permitted operating area, east of the Fording River and in part of the Kilmarnock Creek and Chauncey Creek drainage areas. Kilmarnock and Chauncey creeks are in the Fording River drainage area, a tributary of the Elk River.

Early Engagement Feedback Note

Since publication of the Initial Project Description documents, the footprint has been updated to reflect progress on design and to incorporate feedback gathered through early engagement.

The Project footprint includes approximately 2,330 ha outside of the currently permitted FRO operating area (i.e., outside the C-3[9] Permit boundary). The Project footprint also includes approximately 2,320 ha within the C-3 Permit boundary. The Project footprint does not include active FRO facilities that would not require changes to support the Project (Section 3.1.5). Sections 4.1 and 4.2 compare the Project footprint to the thresholds, including area-based thresholds, for reviewable projects under relevant assessment legislation.

A preliminary footprint, based on early conceptual Project design, was presented in the provincial and federal IPD documents. Since publication of the IPD documents, the footprint has been updated to reflect progress in Project design and to incorporate feedback gathered through engagement (Figure 3.1-5), including:

- Selecting a mine pit designed to produce an estimated total of 360 Mmtcc.
- Minimizing the footprint in the Chauncey Creek drainage as much as feasible considering geotechnical safety constraints (Sections 3.3.3 and 3.4.2).
- Selecting a tailings management option involving dewatering and storage of the dewatered tailings at a combined coarse and fine refuse (CCFR) storage facility (Section 3.3.7).
- Refining waste rock storage area plans (Section 3.3.5) including:
  - reducing waste rock disturbance in the unimpacted area of the Kilmarnock Creek drainage outside of the existing C-3 Permit boundary, compared to the IPD documents
  - accommodating the selected dewatered tailings option by expanding the existing CCFR storage facility in the Eagle 4 South Pit into areas previously considered for waste rock storage in the IPD documents
  - refining the slope design of the waste rock storage area for safety and constructability, which resulted in more waste rock placed over a larger area of the existing waste rock

[9] As of July 2020, the FRO *Mines Act* C-3 boundary encompassed an area of 6,933 ha.

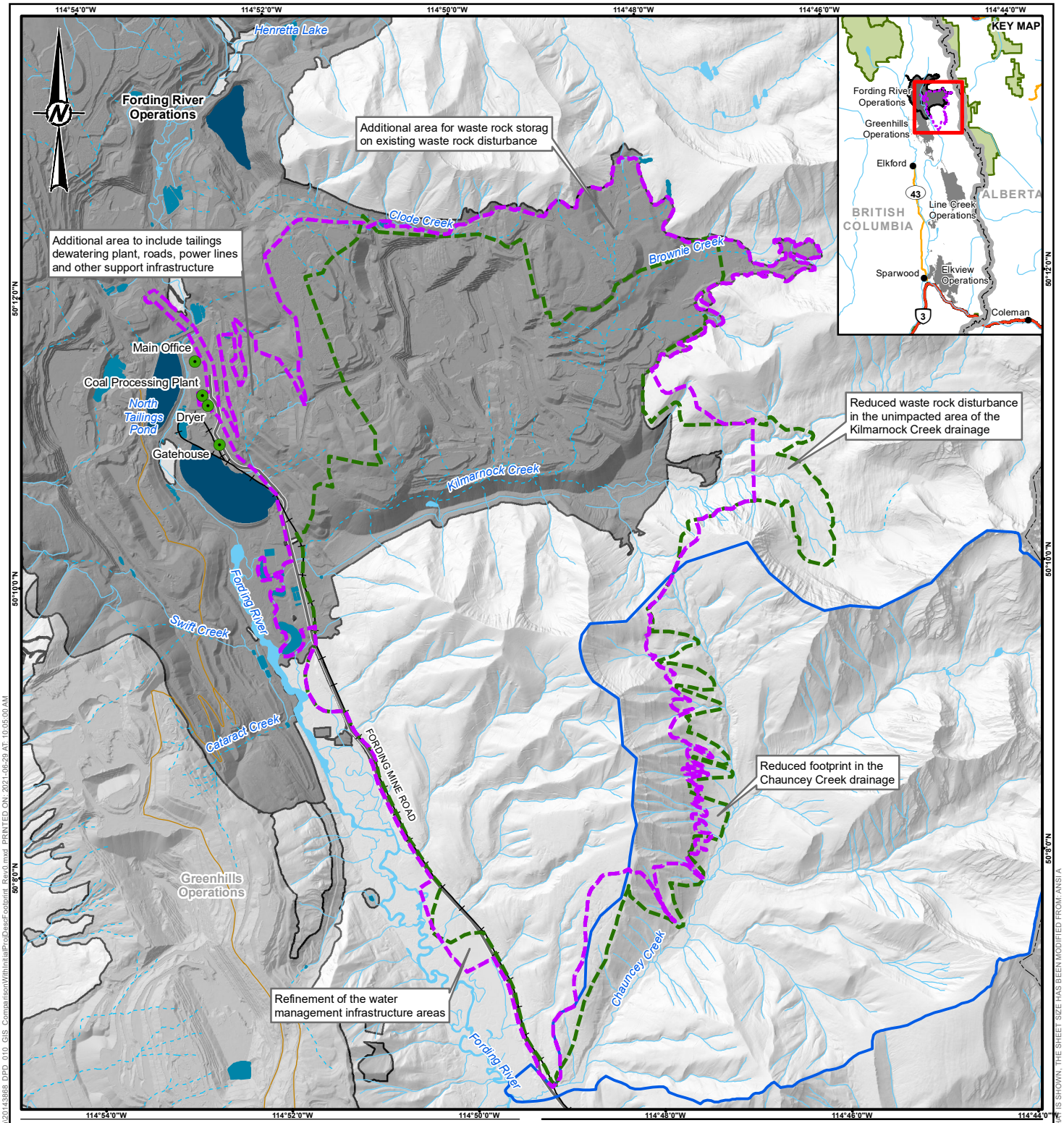
disturbance in the Kilmarnock Creek drainage within the C-3 Permit boundary, compared to the IPD documents

- further planning for backfilling of the Eagle and FRX Pits

- Refining the area for water management infrastructure, while avoiding sedimentation pond placements within the 500-year floodplain of the Fording River (Section 3.4.4).
- Refining the areas of potential disturbance associated with potential waste rock run out and cast-over or fly rocks from pit development.
- Identifying areas for haul roads, power lines, water management infrastructure, laydown areas, and maintenance facilities, including areas for access corridors and support facilities west of the Eagle Pit within the C-3 Permit boundary, which were not specifically identified in the IPD documents.

The design refinements and changes to the Project footprint since the provincial and federal IPD documents (Figure 3.1-5) have:

- increased the area within the existing C-3 Permit boundary (increased use of previously disturbed areas at FRO) by 770 ha, primarily due to the increased use of existing waste rock storage areas in the Kilmarnock drainage and additional areas west of Eagle Pit for access and support facilities; and
- reduced the area outside of the C-3 Permit boundary (i.e., new disturbance area) by approximately 220 ha, including reduced footprint in the Chauncey Creek drainage and in the unimpacted area of the Kilmarnock Creek drainage.



LEGEND

- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- CHAUNCEY WATERSHED
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- PREVIOUS CONCEPTUAL PROJECT FOOTPRINT (APRIL 2020)

0 1 2
1:70,000 KILOMETRES

REFERENCE(S)

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
COMPARISON WITH INITIAL PROJECT DESCRIPTION FOOTPRINT

YYYY-MM-DD	2021-06-29
DESIGNED	DT
PREPARED	DR
REVIEWED	SL
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
20143868	DPD_010	0	3.1-5

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3.1.6 Project History and Status

Fording River Operations is a coal mine owned and operated by Teck Coal Limited. The operation was owned and constructed by Canadian Pacific Railway and Cominco starting in 1969 and has been operating since 1972. In 2003, FRO was acquired by the Fording Canadian Coal Trust and Elk Valley Coal Corporation. In 2008, Teck became the sole owner of FRO.

To date, FRO has produced over 280 million metric tonnes of primarily steelmaking coal. FRO's current production is from the permitted Eagle and Swift operating areas (Figure 3.1-1). The operation supports a workforce of 1,400 employees.

Exploration activities in the vicinity of the Project started in 1969, in conjunction with the exploration of other areas near FRO and has continued over subsequent years. The potential for mining in the area of the Project has been identified in the long-range plan for FRO for more than 10 years and was added to the reserves and resources filing in 2010. With the increased understanding of the resource potential, Teck initiated additional exploration activities, and preliminary technical studies, engineering design, and environmental data collection starting in 2018, with the majority of efforts focused through 2020. Preliminary engagement on the Project started in 2018 and has continued since that time.

To support exploration activities in the area of the Project, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI) issued a Multi-Year Area Based (MYAB) Permit CX-5-022 under the *Mines Act* in 2018. The permit authorizes activities related to exploration and geotechnical drilling, test pitting, and pad and road building. Teck meets annually with BC EMLI and KNC to discuss the annual report for prior year activities and the plan for year ahead.

Before proposing the Project, Teck considered the development of the FRX resource area (previously referred to as Castle) and Turnbull East resource areas in parallel. This option was shared with KNC, and BC EMLI and BC Ministry of Environment and Climate Change Strategy (MECCS) in late-2018, and BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) in early 2019. Early feedback from these engagements raised concerns related to potential environmental effects associated with advancing both areas in parallel. Teck then decided to advance the FRX Project on its own. Efforts since 2019 have be focused solely on the FRX Project.

The Early Engagement Phase of the provincial assessment process commenced in April 2020, with BC EAO acceptance of the provincial IPD. The BC EAO undertook engagement on the provincial IPD, including a public virtual open house and public comment period. The BC EAO provided Teck with the Summary of Engagement on July 31, 2020. The Project was then designated under section 9(1) of the IAA by the Minister of Environment and Climate Change Canada in August 2020. The Process Planning Phase of the federal assessment process was initiated with Teck's submission of a federal IPD and IPD Summary in October 2020, followed by a public comment period, and provision of the Summary of Issues in November 2020. The DPD includes Teck's responses to issues raised in the provincial Summary of Engagement and federal Summary of Issues; these were provided to the BC EAO and assessment participants in November 2020.

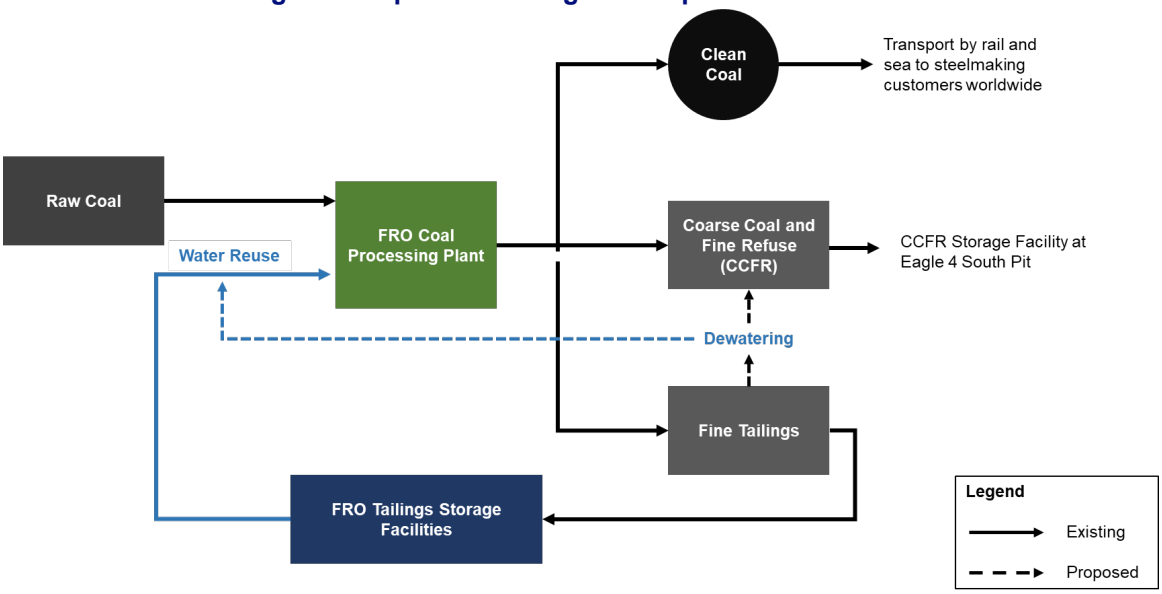
3.1.7 Project Summary

The Project as described in the DPD consists of:

- mining of steelmaking coal resource from the Project mine area
- placement of waste rock mined from the Project in the completed pit in the Eagle mining area and in the Kilmarnock area to reduce the overall Project footprint, as well as in the proposed FRX Pit when it becomes available for waste rock storage
- use of existing infrastructure at FRO such as processing plant, access roads, power lines, gas lines, and rail line to reduce the construction timelines and impact to previously undisturbed areas
- use or adaptation of existing and planned water management infrastructure and treatment facilities to reduce the Project footprint and mitigate environmental impacts
- extension of existing and planned tailings materials handling and storage infrastructure to leverage existing environmental management systems
- incorporation and alignment of Project plans with existing FRO and Teck regional environmental management and monitoring plans and programs
- development of new Project support infrastructure such as satellite office(s), maintenance facilities, and explosives storage

As noted previously, the Project would rely on existing infrastructure at FRO. For context, an overview of the primary systems used at the existing FRO for processing of raw coal is outlined in Figure 3.1-6. Proposed changes to the process associated with a transition to tailings dewatering are also shown in Figure 3.1-6.

Figure 3.1-6: Existing and Proposed Fording River Operations Process



Note: Fording River Operations will transition to tailings dewatering and storage of the dewatered fine tailings at the combined coarse and fine refuse (CCFR) storage facility at the Eagle 4 South Pit.

Existing FRO components and activities that would support the Project include:

- coal processing plant facilities with associated coal stockpiles, tailings handling and storage, water treatment and sewage facilities
- office, warehouses, and maintenance facilities
- explosives storage, manufacturing, and delivery systems
- access roads (Fording Mine Road), rail spur, power and utilities
- mining equipment including drills, shovels, and haul trucks

These existing facilities have the necessary permits and approvals required for their operation[10], and have sufficient capacity for the coal to be produced from the Project. As the Project represents a supply of new coal reserves to sustain the existing operation at current production levels, the Project will not require additional plant capacity beyond its current design and approved operating conditions and will not result in an increase to the current operational production capacity.

New Project-specific components and activities include:

- laydown areas and access roads in the Project mine area
- satellite office(s), warehouses, maintenance, fueling, and other support facilities[11]
- linkages to FRO power and utilities[12]
- explosives magazine(s) and storage
- mine pit
- waste rock storage areas
- coal stockpile and sorting areas
- coal and waste rock materials handling facilities
- transition of tailings management to a tailings dewatering system and storage to support the Project
- water management systems and infrastructure

All Project components, both new and existing, would be described as part of the IS/A.

[10] Section 4.4 discusses the existing permits and approvals for FRO that would need to be amended for the Project.
[11] Non-potable water for new buildings within the Project footprint could be supplied from a new water well with a new license.
[12] A short extension, transformers and distribution lines would be required to connect Project components to the existing FRO power supply.

3.1.8 Project Benefits

Teck's steelmaking coal operations in southeast BC, including FRO, contribute to the local economies in the Elk Valley and East Kootenay Region in BC and Crowsnest Pass in Alberta. Teck's Elk Valley operations employ over 4,000 people, including 1,400 at FRO. Many of those employed are from the local communities, contributing to the local and provincial economies and tax bases. Elk Valley residents filled approximately 55% of the total employment at FRO, including 96% of senior management roles. Teck's activities in the Elk Valley generated $3.7 billion in total economic contributions in 2020, including employee wages and benefits, spending with local suppliers, community investments, and taxes paid, including a formal mine-property tax sharing pool.

Early Engagement Feedback Note

Early engagement on the Project included feedback about possible positive Project impacts to the local and regional economy.

This section provides a discussion regarding anticipated positive Project impacts to the local area, the region, British Columbia and Canada.

FRO produces approximately 9 Mmtcc/yr of steelmaking coal for global sale and export. Teck's contribution to the national trade balance in 2019 accounted for nearly 75% of Canada's steelmaking coal export, of that FRO accounted for nearly 25%. Additionally in 2020, Teck's $3.7 billion in economic contributions in the Elk Valley represented approximately 50% of Teck's $7.4 billion total economic contributions in Canada, of which $147 million were directed to the Government of British Columbia, including $29 million in taxes (Teck 2021b).

The Project would extend the life of FRO, helping to meet market demand for steelmaking coal, as well as generating new and sustaining existing employment and economic benefits. As noted in Section 3.1.1, steel demand will be driven by increasing economic growth and urbanization as a key component of infrastructure development and construction, particularly in high growth regions and in other developing economies, where 2 to 3 billion people are projected to join the global middle class by 2050.

During construction, the Project would create several hundred direct jobs, as well as additional indirect and induced jobs. A large portion of direct construction employment would be sourced from contractors within the Elk Valley region. The Project would also extend existing direct (as well as indirect and induced) operational employment for the FRO workforce as workers shift from other mining areas at FRO to the Project. With the extended life of mining operations, future local employment opportunities will become available for others as existing operational workers retire.

Direct, indirect, and induced employment generated during construction and sustained during operations would contribute to regional and local incomes and wage earnings. On-the-job and specialized training and skill development opportunities provided to the Project workforce would continue throughout operations, contributing to the skills and capacity of the local labour force and business community.

The Project would also generate additional direct, indirect, and induced supplier revenues for local and regional businesses during construction and would continue to generate these revenues throughout operations. A modest portion of supplier revenues and indirect employment would accrue to the broader national economy from Project procurement of goods and services outside of BC.

Incremental provincial tax revenues will accrue during construction and continue throughout operations, through taxation of Project-associated employment income, taxes on products, carbon taxes, and corporate income tax in conjunction with business revenues earned from the Project. The Project will also generate payroll and income taxes payable to Canada, representing an additional contribution to federal and provincial government revenue streams. During operations, tax revenues from Teck's annual contribution to the Elk Valley Property Tax Sharing Agreement would continue at a similar level to FRO's current annual average contributions.

The injection of new economic benefits during Project construction and the continuation of existing operational economic benefits through to the early 2070s would contribute to individual and family well-being by providing a source of ongoing employment and relatively high incomes. Workers would continue to benefit from training and skill development, supporting the long-term development of human capital in the area. The Project would continue to support the local population base and economy.

In addition to the above economic benefits, the Project would support Teck's continued implementation of policies and practices that support local communities, including those supporting hiring and the procurement of goods and services from local communities and Indigenous Peoples. Policies and practices related to housing, service and infrastructure investments, and healthy living offer benefits to local communities beyond employment and contracting.

By sustaining the FRO workforce, local procurement, and Teck's economic, social and environmental initiatives, the Project is expected to continue to support sustainable development of communities in the Elk Valley and the East Kootenay Region. Teck will continue to support local workers and businesses through various programs, including working collaboratively with the KNC to identify and implement opportunities for employment and participation by Ktunaxa businesses in the provision of goods and services (refer to Section 6.1). In 2020, Teck's Elk Valley Operations contributed $1.4 million in community investment. As outlined in Section 3.1.1, Teck expects robust demand for steelmaking coal globally and continued demand for local employment and contracting supporting production.

3.1.9 Alternatives to the Project

Alternatives to the Project represent other technically and economically feasible ways that are directly related to the Project and meet its need and purpose. Potential alternatives to the Project that have been evaluated by Teck are identified in Table 3.1-1, along with a discussion on their ability to meet the need and purpose of the Project and/or consideration of their technical and/or economic feasibility, as applicable.

Table 3.1-1 Alternatives to the Project

Alternative Considered	Analysis and Discussion of the Alternative	Conclusion
Alternative: **No Project** Not adding an additional source of steelmaking coal to extend the life of FRO	Not adding an additional source of steelmaking coal at FRO would result in a decline in production in the mid-2020s, with production ceasing in the late 2020s, assuming no other reserves could be permitted to sustain operations. This alternative would see a progressive reduction in employment over this timeframe, as well as a reduction in economic benefits to local communities, employees and their families, the Ktunaxa Nation and other Indigenous Peoples, the regional, provincial and national economies, and different levels of government. Similarly, positive effects for some in the community flowing from the Project's economic effects (e.g., investment in community programming and infrastructure, positive impacts on quality of life associated with employment incomes) will also progressively decline during this timeframe. Without the Project, Teck would experience a reduction in its globally competitive position and market share, which would result in reduced economic viability and the eventual need for closure of FRO. While some employment would be required for reclamation and closure, most direct and indirect employment would cease. In 2020, Teck's activities in the Elk Valley generated $3.7 billion in economic contributions, one-third of which stemmed from FRO. Without the Project, economic contributions to suppliers, communities, and tax contributions would be significantly reduced, including railway and port related expenditures. Teck's contribution to the national trade balance in 2019 accounted for nearly 75% of Canada's steelmaking coal export, of that FRO accounted for nearly 25%. These contributions would be reduced with FRO closure. With this alternative there would be no additional potential contributions to environmental impacts in the Elk Valley. Ongoing environmental mitigation innovation would focus on the mitigations required to support reclamation and closure of the operation. In Teck's view, the disadvantages of this alternative outweigh the advantages. This alternative does not meet the Project need to supply the global demand for steelmaking coal and maintain the viability of FRO over the long term.	This alternative does not meet the Project need and purpose.

Table 3.1-1 Alternatives to the Project

Alternative Considered	Analysis and Discussion of the Alternative	Conclusion
Alternative: Swift Proceed with mining permitted Swift reserves by FRO	Teck's plan in 2019 was to advance extensions to FRO and GHO in parallel. Challenges with declining permitted reserves, increasing haul distance, balancing strip ratio and environmental considerations, required ongoing assessment. The proximity of FRO and GHO offered a unique opportunity to consider alternate ways to maintain production and minimize the need for new additional sources of steelmaking coal at both operations. To further planning at each operation, Teck developed a single, integrated and optimized mine plan. The mine plan indicates the need to advance FRX as an extension to FRO, and the potential for GHO to mine a portion of the permitted Swift reserves. FRO would continue to mine in Swift into the 2030s until FRX is available to fully sustain FRO's production capacity (approximately 9 Mmtcc per year). This approach would allow for sustained production and workforce retention at both operations. FRX Project timing has been and remains critical to the long-term sustainable phasing of FRO and GHO. Through refinement of the integrated mine plan, other potential phases were deferred (GHO Phase 8 and West Spoil Phase 3, and FRO Turnbull West). Given regulatory delay on the FRX Project, Teck continues to re-evaluate other areas that could sustain operations at both FRO and GHO. Teck continues to refine phased development at FRO and GHO based on business considerations, approval timelines and engagement with interested parties. The above re-evaluation and refinement of planning for FRO and GHO is occurring at the same time as changes to Swift, including ongoing mining of reserves, deferral of a marginal portion of reserves, and refinements to the geologic model, have reduced the total amount of coal in the permitted Swift pits. As such, FRO continuing to mine all of the available Swift reserves does not fulfill the need mine a sustainable long-term source of steelmaking coal. Continued mining of Swift by FRO would only support a short-term production need that would require an additional source of coal to come online in the 2020s to support the declining reserve base at FRO and allow the operation to remain economic. In parallel, the potential for GHO to mine a portion of the Swift reserves is important for GHO to remain economic. If Swift reserves were unavailable for GHO to mine, GHO would start to see a decline in production in the early to mid-2020s that could result in possible closure or require that an additional source of coal be permitted over the same period as FRX to sustain production at the operation. The primary advantage of FRO mining of all of the available Swift reserves is that it is a permitted project and water quality effects and mitigations are already accounted for under the EVWQP regional model and Implementation Plan Adjustment (IPA). While this may appear to be a benefit overall, mining of Swift without FRX only fills a short-term production need and would still require an extension to FRO to meet the Project need and purpose to sustain production at FRO and Teck's business in the long-term.	This alternative does not meet the Project need and purpose.

Table 3.1-1 Alternatives to the Project

Alternative Considered	Analysis and Discussion of the Alternative	Conclusion
Alternative: New Resource Area Adding an additional source of steelmaking coal to extend the life of FRO (assumes new resource area, instead of the FRX Project)	Exploration and mining in the north end of the Elk Valley has been occurring since 1969. As such the better reserves have already been identified based on current understanding. While there are other areas of interest for exploration in the Elk Valley, Teck has limited understanding of other steelmaking coal reserves that could fulfill the Project need and purpose in proximity to FRO by the mid-2020s. Further, alternative mining areas are less attractive due to higher waste to coal ratios and longer waste hauls, resulting in poorer economics. The identification and analysis of future mining areas often takes years to determine future economic viability, including identification and analysis of candidate ore bodies, technical studies and data collection, and engineering design[(a)]. This is further influenced by the time required to prepare for and advance regulatory effects assessment and/or permitting processes before constructing and operating a project. There are no primary benefits for pursuing this alternative currently. The lack of knowledge and information on a resource of similar quality and quantity, in proximity to FRO and available for the timeframe needed to maintain production, makes this alternative not feasible.	This alternative does not meet the Project need and purpose
Alternative: FRX and Turnbull East Adding an additional source of steelmaking coal from FRX and Turnbull East to extend the life of FRO	The scoping phase of the Project proposed that the FRX resource area (previously referred to as Castle) and Turnbull East resource areas be developed in parallel, with both resources located in direct proximity to FRO and each containing economically mineable steelmaking coal. The mining of FRX and Turnbull East resource areas in parallel was considered to be technically and economically feasible, and at the time was Teck's preferred alternative for the extension to FRO. This option was shared with KNC, and BC EMLI and BC MECCS in late-2018, and BC FLNRORD in early 2019. Early feedback from these engagements raised concerns around the potential for terrestrial cumulative effects (alpine grasslands, bighorn sheep), tributary management (Chauncey and Henretta creeks), and water quality. Responding to, and in consideration of the feedback provided during these early engagements, Teck determined that development of the FRX Project be advanced on its own. FRX on its own is economically feasible and meets the Project need and purpose. Turnbull East on its own is a smaller resource, with geological information, technical studies and engineering not progressed to be available in the timeframe required, nor is it expected and that it would meet the Project need and purpose on its own.	This alternative meets the Project need and purpose. The alternative was rejected by Teck and scope of project refined due to engagement feedback on environmental concerns during project scoping.

Table 3.1-1 Alternatives to the Project

Alternative Considered	Analysis and Discussion of the Alternative	Conclusion
Alternative: New Mine Construction of new mine to replace FRO (new source of steelmaking coal, processing plant, and infrastructure in proximity to the new source)	The construction of a new mine would assume that there is sufficient data and information available to understand the quality and quantity of steelmaking coal in a new resource area, as well as sufficient progress already made on required technical and engineering studies to support mine design and regulatory effects assessment and permitting processes. As noted under Alternative: New Resource Area, Teck currently does not have sufficient understanding of other sources of steelmaking coal that would support development of a new mine to replace FRO by the mid-2020s. There are limited advantages to pursuing a new mine development area currently. The disadvantages, in addition to not meeting the Project need and purpose, would include a large new disturbance footprint to accommodate the processing plant, pits, waste rock, and other supporting infrastructure required to operate a new mine (e.g., roads, railway, power lines). With FRX, this infrastructure already exists. This option likely would not be economically feasible and would have technical challenges that outweigh its benefit relative to an extension to an existing operation, such as FRO. This alternative would also likely result in an increase in potential environmental and social impacts, and the timeline to bring a new mine into production would be longer than the duration for an extension to FRO.	This alternative does not meet the Project need and purpose.

(a) As an example, exploration activities in the area of the Project started in 1969 and has continued over subsequent years. The potential for mining in the area of the Project has been identified in the long-range plan for FRO for more than 10 years and was added to Teck's resources and reserves filing in 2010. Teck initiated additional exploration activities, preliminary technical studies, engineering, and environmental data collection starting in 2018, with work to support the advancement of the Project for assessment and permitting continuing since that time.

In summary, there are no viable alternatives to the Project that could fulfill the need and purpose identified for the Project (Section 3.1.2). Other potential alternatives in proximity to FRO are insufficient to maintain the production level required to keep FRO operating at capacity in the same timeframe as the Project and/or are not at the same stage of evaluation in terms of available coal reserves, technical studies, engineering design, and economic, social and environmental sustainability. The alternatives discussed in this section are based on available information at the time this document was prepared. With Teck's mine planning process being iterative, the mine plans for its operations continue to be optimized to remain sustainable and economic over the long term.

3.2 Deposit Geology and Resource Characterization

This section of the DPD provides supporting information about the geological resource for the Project. This information supports the Project need and purpose in Section 3.1.2 and the rationale for Project components and activities in Section 3.3. For a broader discussion of regional physical environment refer to Section 7.2.

Teck understands the geology and resources in the area of the Project. Teck has more than 40 years of geological exploration data confirmed by more than 40 years of mining to the north, west, and south of

the Project mine area at Castle Mountain[13]. Within the Project mine area itself, the first exploration hole was drilled in 1969. Further exploration has occurred intermittently over the years with a recent increase in drilling intensity to provide a detailed delineation of the resource for Project planning purposes.

The Project would mine coal from the Elk and Mist Mountain formations. Layers of rock above and between the coal layers need to be removed as waste rock. This process of mining the waste rock and coal can result in exposure of the material to weather and interaction with the environment. Understanding the character of the rock layers allows Teck to design an economical and safe mine as well as to predict how the mining could influence key environmental factors. Teck understands the geochemical characteristics of the potential waste rock including selenium and potential acid generation and will seek to minimize and mitigate potential impacts.

In general, the geology in the vicinity of the Project consists of Cretaceous and upper Jurassic aged sedimentary rocks of primarily the Kootenay Group. The following sections provide further discussion of the stratigraphy and structure found in the area.

3.2.1 Stratigraphy

A general overview of the stratigraphy in the Project mine area at Castle Mountain is provided in Table 3.2-1. The Project would mine coal from the Elk and Mist Mountain formations.

Table 3.2-1: Stratigraphy in the Project Mine Area

Period	Litho-Stratigraphic Units			Principle Rock Types
Recent				Colluvium
Quaternary				Clay, silt, sand, gravel, cobbles
Lower Cretaceous	Blairmore Group			Massive bedded sandstones and conglomerates
Lower Cretaceous to Upper Jurassic	KOOTENAY GROUP	Elk Formation		Sandstone, siltstone, shale, mudstones, chert pebble conglomerate, minor coal
		Mist Mountain Formation		Sandstone, siltstone, shale, mudstones, thick coal seams
		MORRISSEY FORMATION	Moose Mountain Member	Medium to coarse-grained quartz- chert sandstone
			Weary Ridge Member	Fine to coarse-grained, slight ferruginous quartz-chert sandstone
Jurassic	Fernie Formation			Shale, siltstone, fine-grained sandstone
Triassic	Spray River Formation			Sandy shale, shale quartzite
	Rocky Mountain Formation			Quartzite
Mississippian	Rundle Group			Limestone

[13] Mining occurs at FRO to the north of the Project, GHO to the west of the Project and LCO south of the Project.

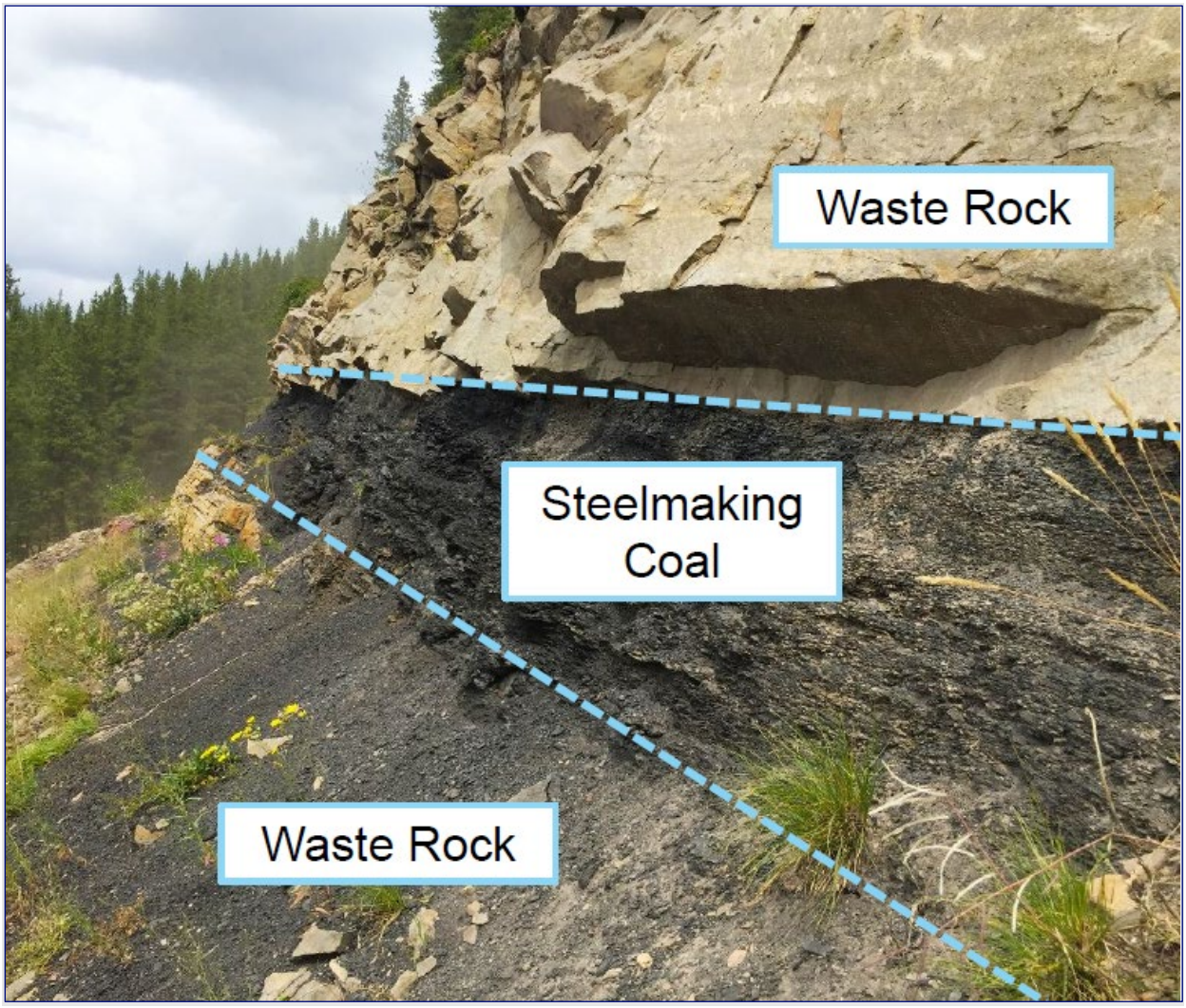
The Morrissey Formation, which is the “basal sandstone” of the Kootenay Group, is a prominent cliff-forming marker horizon in many locations. In the Project mine area, the top of the Moose Mountain member (Morrissey Formation) is in sharp contact with 1-0 seam, the lowermost bed of the Mist Mountain Formation.

The Mist Mountain Formation contains all the economic coal seams and is the most widely occurring formation on the FRO property. This economically important formation is an interbedded sequence of sandstones, siltstones, silty shales, mudstones, and medium to high volatile bituminous coal seams. The volatile content of the coal increases up section, with decreasing rank. Lenticular sandstones comprise about 1/3 of the Mist Mountain sediments at FRO, but very few laterally extensive sandstone beds exist. There are three sandstones that lie immediately above and below two of the coal seams that are the most persistent units, and are often cliff-forming marker horizons (Photo 3.2-1).

The Mist Mountain Formation is generally overlain conformably by strata of the Elk Formation. In the Project mine area, this formation is commonly a succession of sandstones, siltstones, shales, mudstones, chert pebble conglomerates, and sporadic, thin, high volatile bituminous coal seams. The Elk Formation is observed near the top of Castle Mountain, generally on the peaks west of the dominant ridge.

The top of the Elk Formation marks the upper boundary of the Kootenay Group, which is unconformably overlain by the basal member of the Blairmore Group. This thick bedded, cliff-forming sandstone and conglomerate unit has not been observed in the Project mine area.

Photo 3.2-1: Cliff Forming Sandstone Overlying a Coal Seam



3.2.2 Structure

After deposition, the sediments were involved in the mountain building movements of the late Cretaceous to early Tertiary Laramide orogeny. The major structural features at the Project mine area, are the north-south trending syncline with near horizontal to steep westerly dipping thrust faults (Figure 3.2-1). Some of the thrust faults were likely folded late in the tectonic cycle.

The formation of the major fold structure began early in the tectonic cycle. In the Project mine area one major asymmetric syncline, the Alexander Creek Syncline, is evident.

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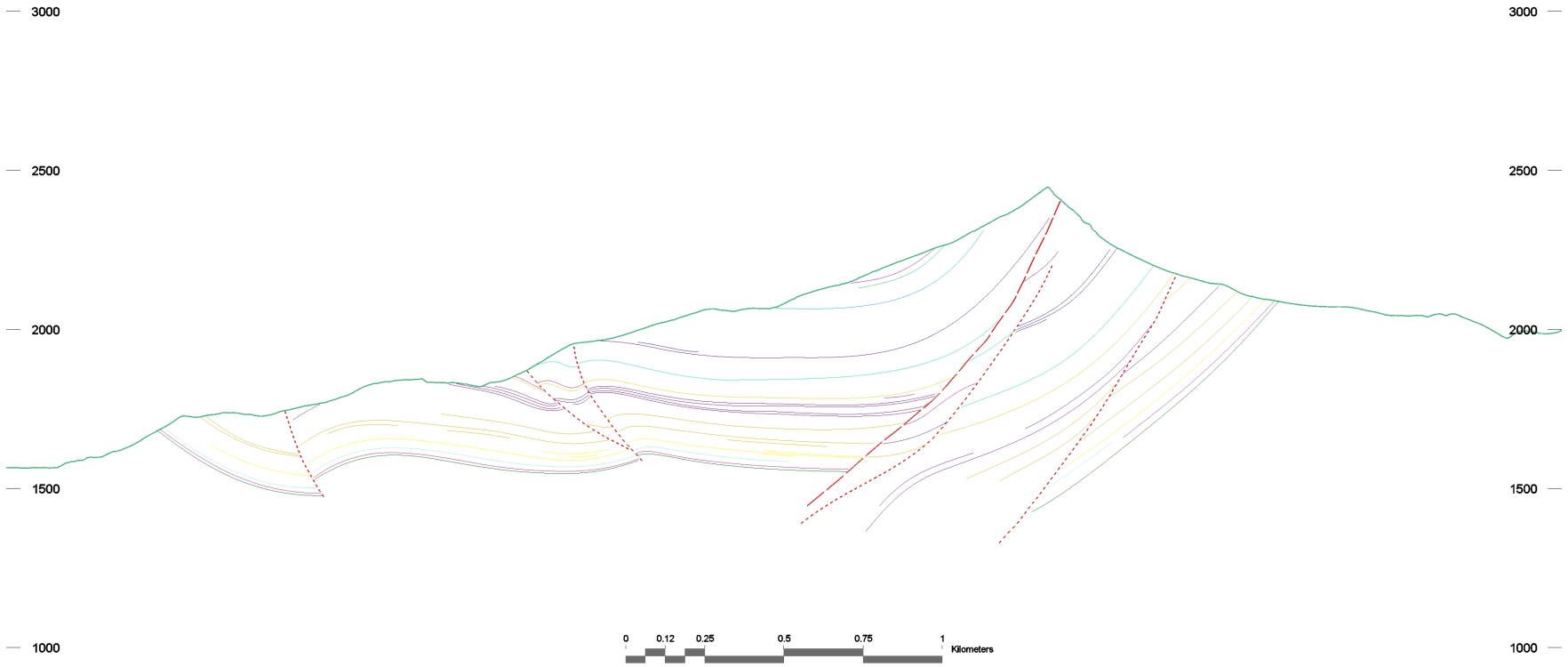


LEGEND

- Coal seam 1-0
- Coal seam 2-0
- Coal seam 3-0
- Coal seam 4-0
- Coal seam 5-0
- Coal seam 7-0
- Coal seam 9-0
- Coal seam 10-0
- Coal seam 11-0
- Coal seam 13-0
- Coal seam 16-0
- Coal seam 17-0
- Coal seam 18-0
- Coal seam 19-0
- Coal seam 20-0
- Major Faults
- Minor Faults
- Topography

REFERENCE(S)
DATA OBTAINED FROM TECK COAL LIMITED

TECK COAL LIMITED

YYYY-MM-DD	2021-06-15
DESIGNED	SH
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
CASTLE GEOLOGY CROSS-SECTION LOOKING NORTH

PROJECT NO.	CONTROL	REV.	FIGURE
20143868	DPD_020	0	3.2-1

The thrust faulting (i.e., the Ewin Pass and Brownie Ridge thrusts) was likely contemporaneous with the later stages of folding. The intervening anticline was subsequently faulted (Erickson Fault, found west of the Project mine area), then eroded.

The Alexander Creek Syncline can be traced from the southern property boundary on Castle Mountain to the northern end of the FRO property on Weary Ridge. The strata of the west limb, on the west face of Castle Mountain, dip easterly at 20º to 25º, decreasing gradually to zero as the axis is approached. The east limb; however, attains a 20º westerly dip within a much shorter (500 m) distance of the axis.

This asymmetry is possibly due, at least in part, to the influence of the Ewin Pass Thrust which subcrops 600 to 800 m east of the synclinal axis.

Further to the east, on the height of land on Castle Mountain, the strata dip westerly at a mean dip of 42º (Photo 3.2-2). Within the Project mine area, the axis of the Alexander Creek Syncline plunges to the north at an average of 4º.

Photo 3.2-2: Height of Land in the Project Mine Area showing Steeply Dipping Strata

3.2.3 Resource

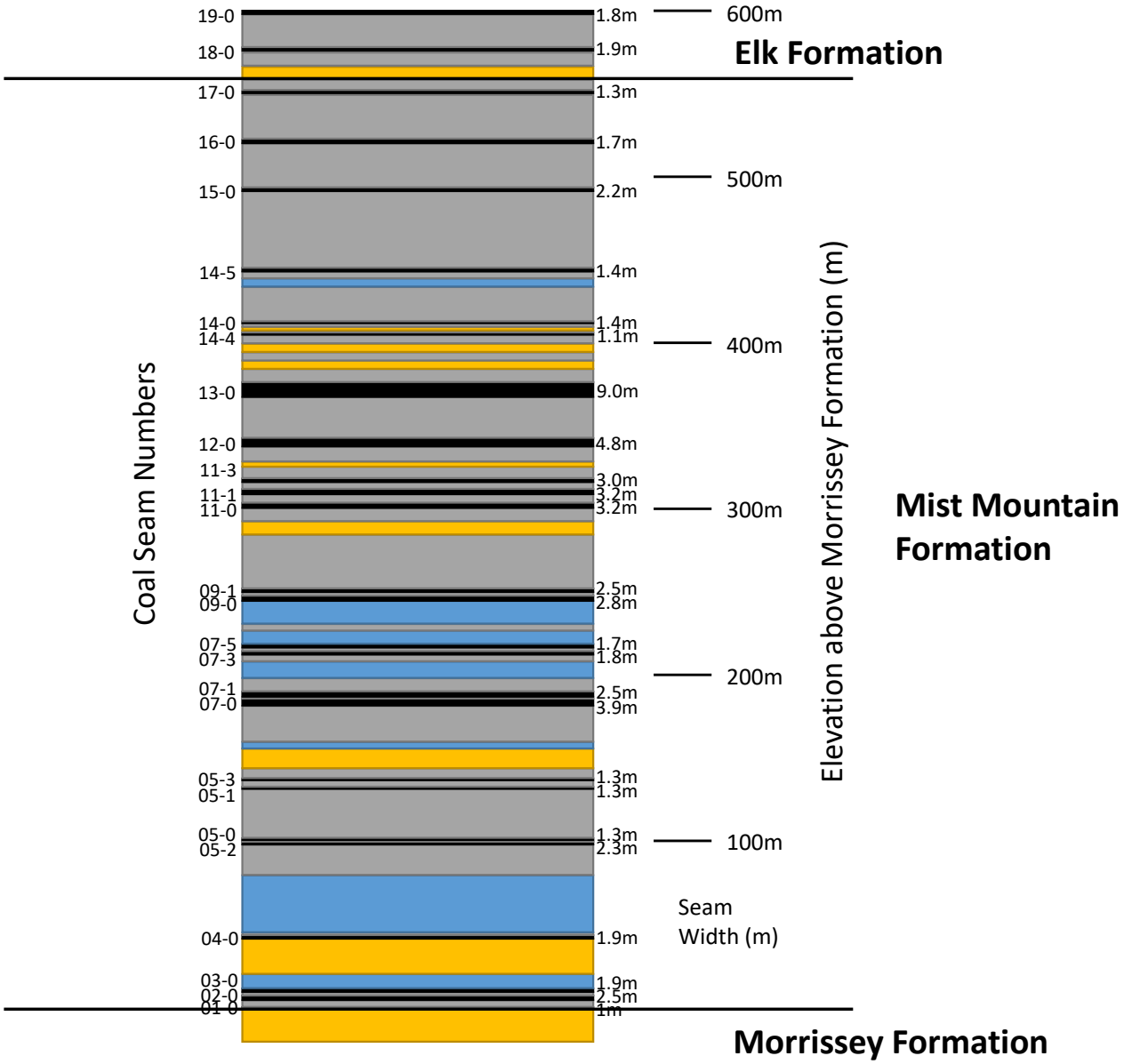
The coal in the Project mine area at Castle Mountain is named in the same manner, and shares many structural features, as the Eagle Mountain deposit directly north of the Project mine area. Fording River Operations has been mining this deposit continually over the last 30 years; it is made up of over 30 coal seams separated into major fault blocks. Two of these major fault blocks can be seen in the deposit within the Project mine area. Coal seams are identified by a bottom-up naming convention, with 1-0 Seam being the bottom of the Mist Mountain Formation and 17 seam being the top of the formation (Figure 3.2-1 and Figure 3.2-2). There is coal in the Elk Formation, but it is thin and high in volatile matter. The major coal seams in the deposit are 4-0, 5-0, 7-0, 11-0, 12-0, and 13-0. These six seams make up over 45% of the resource in the Project mine area.

There are 290 historical drill holes on Castle Mountain. Twenty-seven (27) holes were drilled in 2019, and 40 holes were drilled in 2020. Additional drilling is progressing in 2021. Drilling in the Project mine area dates back to 1969 when some of the original drilling was done on the Fording River property. Drilling has been on and off in the Project mine area since then, with significant work done in the mid-1990s and early 2000s. Testing of the coal from the Project mine area shows the coal to be of similar quality to Eagle Mountain coal.

3.2.4 Geological and Geotechnical Constraints on Mine Design

Project design is constrained by the geology and geotechnical conditions at Castle Mountain within and in the vicinity of the Project mine area. This is due to the Ewin Pass Thrust Fault's relatively central location within the mountain and the steep westerly dipping strata near the height of land (Figure 3.2-3).

The fault and the steeply dipping strata in the height of land between the Fording River drainage and the Chauncey Creek drainage influence the overall size and shape of the proposed mine pit. The eastern edge of the pit cannot be set in the region where the fault or the steeply dipping strata would make the pit unstable and unsafe. These conditions create safety and economic constraints primarily for the pit shell design, as described in Section 3.3.3.



LEGEND

- SANDSTONE
- SILTSTONE
- SHALE
- COAL

REFERENCE(S)

DATA OBTAINED FROM TECK COAL LIMITED

TECK COAL LIMITED

PROJECT

FORDING RIVER EXTENSION PROJECT

TITLE

CASTLE STRATIGRAPHIC COLUMN

YYYY-MM-DD	2021-06-15
DESIGNED	SH
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
20143868	DPD_021	0	3.2-2

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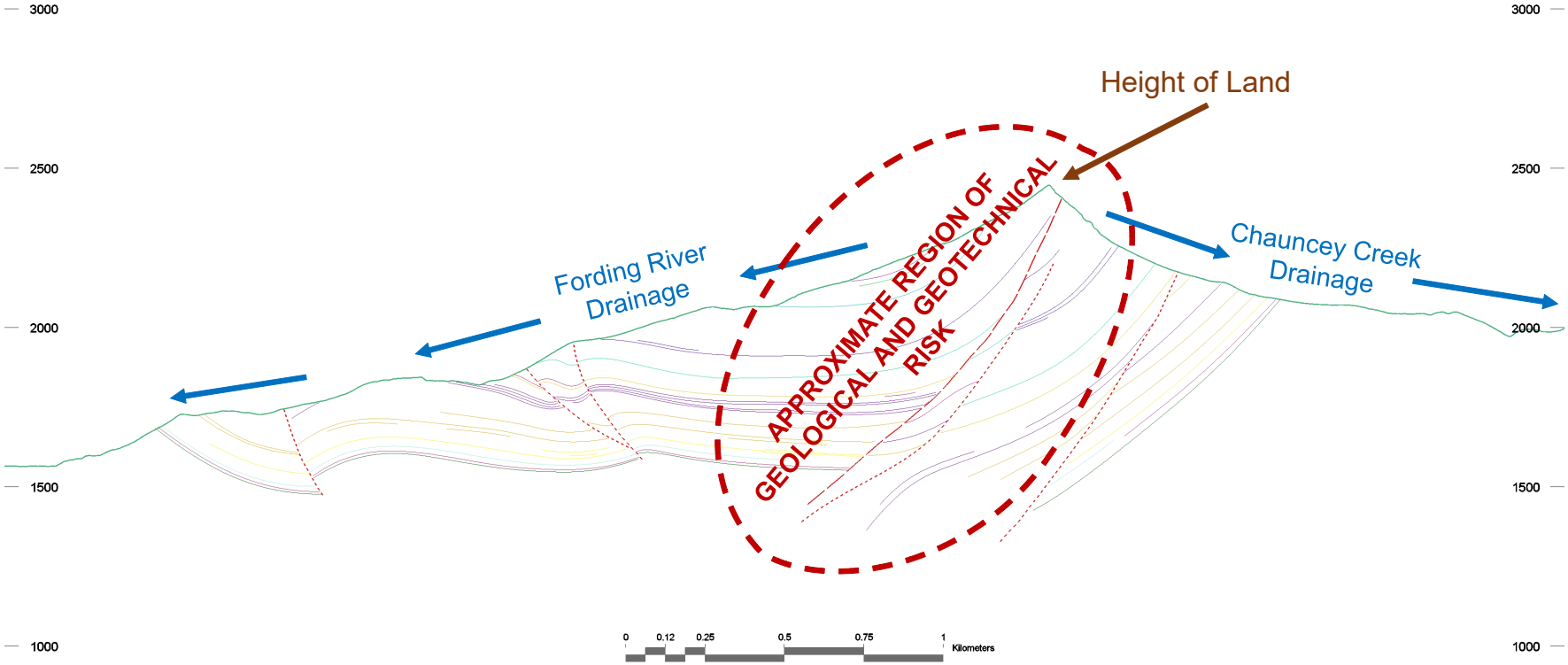


LEGEND

- Coal seam 1-0
- Coal seam 2-0
- Coal seam 3-0
- Coal seam 4-0
- Coal seam 5-0
- Coal seam 7-0
- Coal seam 9-0
- Coal seam 10-0
- Coal seam 11-0
- Coal seam 13-0
- Coal seam 16-0
- Coal seam 17-0
- Coal seam 18-0
- Coal seam 19-0
- Coal seam 20-0
- Major Faults
- Minor Faults
- Topography
- Approximate region of geological and geotechnical risk

REFERENCE(S)
DATA OBTAINED FROM TECK COAL LIMITED

TECK COAL LIMITED

YYYY-MM-DD	2021-06-15
DESIGNED	SH
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
CASTLE MOUNTAIN REGION OF GEOLOGICAL AND GEOTECHNICAL DESIGN CONSTRAINTS LOOKING NORTH

PROJECT NO.	CONTROL	REV.	FIGURE
20143868	DPD_022	0	3.2-3

3.3 Project Components and Activities

The Project components and activities selected for the Project are described in this section. The tables in each subsection identify key considerations made by Teck in selecting Project components where multiple options were considered. Rejected options that are no longer being considered for the Project are also documented. In some cases, Project components are still identified as flexible, indicating that the component or activity may still be incorporated into the Project and is subject to refinement based on results of the assessment process.

The updates made to this section since publication of the provincial and federal IPD documents reflect incorporation of feedback gathered through engagement and progress that has been made regarding Teck's evaluations and analysis to refine and select specific Project components and activities. Key changes since the provincial and federal IPD documents were published are discussed for clarity. Many of these components and activities are also described as part of the mine plan discussion in Section 3.4.

Early Engagement Feedback Note

Early engagement on the Project included feedback requesting more information about options for water quality source control and treatment, pit shell design, tailings management and storage, dust control, and new mining techniques.

Additional detail has been provided throughout Section 3.3 about the considerations and decision processes around these and other Project components.

Planning and design for Project components and activities considers:

- meeting the business need for the Project while balancing technical feasibility with economic, social and environmental sustainability
- leveraging Teck's coal mining experience in the Elk Valley, including learnings from ongoing operations, research and development, regional and local monitoring and adaptive management, and making use of existing infrastructure
- advancing the use of new and innovative technologies, as well as traditional approaches, where they are technically and economically feasible for use in the Elk Valley
- evaluating opportunities to mitigate potential impacts to important environmental factors such as terrestrial ecosystems and tributaries and address concerns of Indigenous Peoples and other interested parties
- evaluating opportunities to integrate environmental risk management and mitigations directly into Project design
- aligning with and contributing to regional program objectives and addressing challenges associated with mining in the Elk Valley (Section 7.1)
- identifying potential Project impacts and providing opportunity for refinements to support progress toward sustainability improvements

Potential use of new and innovative technologies, such as those for water quality source control and treatment (Section 3.3.6), will continue to be evaluated through Teck's Research and Development (R&D) Program. This program includes demonstration of capacity and effectiveness under similar conditions (such as through laboratory, field and pilot studies and phased development), investigation on long-term effectiveness, and an external peer review process consistent with the Technology Readiness Assessment Guidance document V01.01 (BC Southeast Coal Emerging Technologies Working Group 2021).

Teck notes that refinements to Project components and activities may be made in response to concerns from Indigenous Peoples and other interested parties, and the findings of the assessment of the Project (e.g., new information and/or to incorporate infrastructure or activities identified to mitigate potential adverse effects). Such changes would be documented in the IS/A for the Project.

3.3.1 Project Mine Area

This section provides a description and rationale for the selection of the Project mine area (Table 3.3-1), which represents the general area of resources to be mined for the Project. Teck selected the Project mine area prior to the submission of the IPD documents based on technical considerations as well as feedback received from the KNC, government agencies, and other interested parties. The Project's mineable resources are located in Castle Mountain, immediately south of the existing FRO.

Table 3.3-1: Project Mine Area

Mining Area	Considerations	Status
Castle Mountain and/or the east end of Turnbull Mountain The Project's intent is to supply additional coal to FRO. Coal is available at Castle Mountain. Coal is available at Turnbull Mountain East (TBE) on the east end of Turnbull Mountain. Development of either area would be in consideration of the existing regional environmental context (Section 7.1).	**Castle Considerations:** • Castle Mountain has large reserves of economically mineable coal and was identified as having the potential to create a mine with a high ratio of coal produced to area disturbed. • Castle Mountain reserves could support FRO's production rate on its own. **TBE Considerations:** • TBE has smaller reserves of economically mineable coal (around 10% of Castle Mountain). • TBE reserves could support around one quarter of FRO's production rate and would need to operate in parallel with other pits.	***Selected*** The Project includes mining of coal reserves in Castle Mountain only. . ***Rejected*** The Project will not include mining of TBE. Decision informed by previous and ongoing feedback on regional environmental challenges. *(Status unchanged from IPD documents)*
Status categories include: • **Selected** – the option has been chosen for the Project • **Rejected** – an option will not be included in the Project • **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project		

3.3.2 Project Timing

This section provides a description of the Project timing (Table 3.3-2) and the rationale for selection of timing options.

As described in Sections 3.1.2 and 3.1.3, the Project would extend the lifespan of FRO to the early 2070s at an average production rate of approximately 9 Mmtcc/yr. Teck anticipates that coal production from the Project would start in 2027, pending regulatory approvals, and the Project would become the primary source of coal for FRO by the early 2030s.

Project timing is closely tied to the timing of FRO's expected decrease in economically mineable coal, Project construction requirements, and final designs for the Project pit. The only known seasonal timing constraints on the Project are related to when construction can start and when certain construction activities can take place. The duration of Project operations has been updated since the provincial and federal IPD documents to reflect the progress on the pit shell design (Sections 3.3.3 and 3.4.2).

Early Engagement Feedback Note

Early engagement on the Project included feedback requesting more information about the lifespan of the Project and how it would influence the lifespan of FRO.

This section provides an update on the Project timing based on progress to the mine design. Additional information about the schedule for key Project milestones is included in Section 3.4.2. The proposed schedule for the assessment of the Project is presented in Section 4.5.

Table 3.3-2: Project Timing

Timing Component	Considerations	Status
Construction Start Prior to production start (mining), construction activities must be complete including: • construction of local access • construction of initial water management infrastructure • stripping of vegetation and soils • stripping of waste rock • construction of satellite infrastructure • connecting to FRO power and utilities	Construction can only begin after all permits and approvals have been received. Regulations and Teck's environmental management policies and practices require that construction takes place during appropriate seasonal windows (e.g., avoiding clearing during nesting season, avoiding soil stripping under frozen or wet conditions). Safety requires that construction takes place when there are low risks from weather, snow, and avalanche conditions. Construction might take two or more years.	***Selected*** production start (e.g., commence construction in 2024). Construction activities have regulatory, environmental, safety and physical timing constraints (e.g., regulatory approvals are required for construction start). *(Status updated for DPD)*
Production Start Production start is defined as when sufficient Construction has occurred to allow coal from the Project to start to supply FRO.	FRO's available coal reserves will start to reduce in the mid-2020s. The Project's intent is to replace this reduction of economically mineable coal.	***Selected*** Align as closely as possible with FRO's need for additional coal. Production would start in 2027, pending regulatory approvals and construction schedule. *(Status updated for DPD)*
Operations (Duration) The duration of the operations stage of the Project (from start of production to closure) is dependent on the rate of mining and the available mineable coal.	The current production capacity at FRO is approximately 10 Mmtcc/yr, with an annual production rate typically ranging between 8.5 and 9.5 Mmtcc/yr. Based on an average planned production rate of 9 Mmtcc/yr and a pit design with approximately 360 Mmtcc of recoverable coal reserves, the Project is anticipated to have an operational lifespan of more than forty years.	***Selected*** The Project will extend the operational life of FRO through the early 2070s at the current production rate, based on the selected pit shell (refer to Sections 3.3.3 and 3.4.2). The specific schedule for operations will be presented in the IS/A. *(Status updated for DPD)*

Table 3.3-2: Project Timing

Timing Component	Considerations	Status
Closure (Duration) The duration of the closure stage runs from the end of Project operations to post-closure. Closure includes measures related to site wide water management, measures for the closure of mine waste facilities, and closure/decommissioning of site infrastructure.	Project closure would be integrated into and aligned with the existing FRO Five Year Mine Reclamation Plan, as updated. Closure duration is dependent on the configuration of the operations entering the closure stage. Reclamation activities during the active period of closure are expected to take at least five years. Efforts taken during operations including interim and progressive reclamation might reduce the duration of active reclamation.	***Selected*** The closure duration is expected to take at least five years depending on configuration of the operations at closure. *(Status updated for DPD)*
Post-Closure (Duration) The duration of the post-closure runs from end of closure stage to an alternate future land use. Post-closure would include monitoring, reporting, and, if necessary, further closure activities such as ongoing water treatment for as long as required to meet water quality objectives.	Project post-closure would be integrated into and aligned with the existing FRO Five Year Mine Reclamation Plan, as updated. Duration for post-closure is dependent on future monitoring requirements, water treatment requirements, and aligning with future land use.	***Selected*** The post-closure duration is expected to continue until other uses of the land commence. This includes ongoing operation of water management infrastructure for as long as it is needed to support water quantity/quality objectives. *(Status updated for DPD)*
Status categories include: • **Selected** – the option has been chosen for the Project • **Rejected** – an option will not be included in the Project • **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project		

Mmtcc = million metric tonnes clean coal.

3.3.3 Pit Shell

This section describes the Project pit shell (i.e., the maximum extent of the pit) and rationale for its selection. This section has been updated from the provincial and federal IPD documents and summarizes the assessment conducted to select the pit shell for the Project, taking into consideration geotechnical, geological, environmental, social and economic constraints.

The pit shell has been designed to achieve the Project's purpose of extending FRO's lifespan while accounting for geotechnical constraints and minimizing direct impact to the Chauncey Creek drainage. As described in Section 3.2.4, geology and geotechnical conditions within the Project vicinity constrain the pit shell design. These constraints are due to the Ewin Pass Thrust Fault's relatively central location within the mountain and the steep westerly dipping strata near the height of land between Fording River drainage to the west and Chauncey Creek drainage to the east. Specifically, the eastern edge of the pit cannot be in the region of geological and geotechnical risks depicted in Figure 3.2-3, where the fault or the steeply dipping strata would make the pit unstable and unsafe or uneconomic. Design constraints due to the geological and geotechnical conditions include:

- Safety – Near the height of land, the steeply dipping layers of rock are held in place by the material below and to the west of it. A pit to the west of the height of land would mine through the material holding up the height of land. A pit in this area would not be safe.
- Economics – Near the height of land, the angle of the layers of rock is almost as steep as the design for a pit wall. A pit that started near the height of land would be very shallow, expose very little coal, and not be economic.

Early Engagement Feedback Note

The Ktunaxa Nation Council requested that Teck consider an alternative to the Project that maintained height of land and avoids footprint impacts within the Chauncey Creek drainage. Teck undertook an analysis of the identified alternatives regarding the pit shell and have identified that the pit shell presented is the most technically and economically viable alternative that will satisfy the Project's need and purpose while balancing constraints of geotechnical safety, economic viability, social effects, and environment.

Teck is committed to planning the implementation of technically and economically feasible means to minimize adverse impacts to Chauncey Creek, recognizing the current extent of the pit shell that is required to balance identified constraints. Other mitigations to support this commitment include not storing waste rock in the Chauncey Creek watershed (Section 3.3.5). The identified mitigations will be captured in a management plan to be developed for the Chauncey Creek watershed. Ktunaxa Nation will be engaged on the development of this plan.

These constraints, in addition to other social and environment considerations, were considered in developing and evaluating mining and pit shell options, as described below.

Teck evaluated the following mining options for the Project:

1) underground mining
2) a pit shell that avoids all high elevation grasslands and bighorn sheep winter range
3) a pit shell that avoids all disturbance to the Chauncey Creek drainage
4) a pit shell that minimizes disturbance to the Chauncey Creek drainage

5) a pit shell that balances the purpose of the Project with environmental and geotechnical constraints

6) a pit shell based on recovery of the most coal and highest economic value

Option 1, underground mining, would have a very low production rate (about 0.5 Mmtcc/yr) and very low total recoverable reserves (17 Mmtcc). This option was rejected as it could not meet the need and purpose of the Project.

Options 2, 3, and 4 involve an open pit that avoids high elevation grasslands and bighorn sheep winter range and/or disturbance to the Chauncey Creek drainage. Given that these options have a very similar pit design due to geotechnical constraints, they are described together as a combined option (Option 2-3-4). To meet the geotechnical constraints discussed above, the pit would need to be located quite far west from the height of land. This is due to the mass of horizontally bedded rock that must be left in place below the height of land to achieve a stable eastern pit wall. This combined option resulted in very similar long, narrow pits along the western edge of the Project area. The pit would have less than 200 Mmtcc of recoverable reserves and, due to its narrow geometry, would not support a production rate of 9 Mmtcc/yr. To meet the need for steelmaking coal and maintain operations economically, the option requires the development of other new pits to replace the proposed Project and support FRO production. Therefore, while the option would avoid direct impacts to some environmental values in the area of the Project, it potentially impacts environmental values in other areas. Furthermore, such a narrow and deep pit would require a very high pit wall that would create safety and operational hazards associated with rockfall, avalanches, and water flowing into the pit from above. Option 2-3-4 does not meet safety constraints and is not economically or technically feasible.

Option 5 meets the geotechnical constraint by placing the eastern pit wall east of the height of land. A sufficient mass of steeply bedded and faulted material near the height of land must be removed so that the pit wall is stable, thereby extending the pit into the upper portions of the Chauncey Creek drainage. This option would have approximately 360 Mmtcc of recoverable reserves and extend the life of FRO by approximately 40 years at a production rate of 9 Mmtcc/yr. This option would include some direct impacts to a portion of the high elevation grasslands, bighorn sheep winter range, and the Chauncey Creek drainage, with these impacts, and their planned mitigations, to be assessed through the assessment process.

Option 6 provides an open pit that provides the most coal recovery, with the eastern edge of the pit located near Chauncey Creek. This option resulted in a stable, large pit with approximately 650 Mmtcc of recoverable reserves, and would extend the life of FRO by over 70 years at a production rate of 9 Mmtcc/yr. However, compared to Option 5, this option would result in greater direct impacts to high elevation grasslands, bighorn sheep winter range, and the Chauncey Creek drainage. The western edge of the pit would also require relocation of the railway, access road, and utilities. While this option has the best economics and is technically feasible, it would result in the highest level of impact to environmental values and was therefore rejected.

Pit shell considerations and status for the pit shell are summarized in Table 3.3-3. Figure 3.3-1 shows the boundary of the pit shell based on Option 5 and the development of the FRX Pit described in Section 3.4.2. The pit shell and mine design may be refined through the assessment process to incorporate, for example:

- results of ongoing geological and geotechnical investigation, geotechnical stability analysis of pit and waste rock areas
- implementation of a cast-over management plan to reduce the potential for fly rock in the Chauncey Creek watershed and refining the Project footprint associated with this activity to support assessment of the Project
- details with regard to predevelopment activities including soil salvage, timber harvest, electrical power supply, access roads, earthworks to establish the mining area, and infrastructure required for operations
- details associated with implementing water management (including treatment, decant points, water movement during operations and closure)
- planning for closure and reclamation
- refinement of the coal production schedule, and details around coal blending, strip ratio, equipment productivity, mining equipment requirements, and waste rock areas which includes pit progressive backfilling (Section 3.3.4)
- details for implementing mitigations measures to address adverse effects, supplement positive effects and to address feedback received through the assessment process

Teck will continue planning the implementation of technically and economically feasible means to avoid and minimize adverse impacts to Chauncey Creek. The identified mitigations will be captured in a management plan to be developed for the Chauncey Creek watershed. Teck has proposed that this plan be developed in collaboration with the Ktunaxa Nation Council and engagement with federal and provincial regulators.

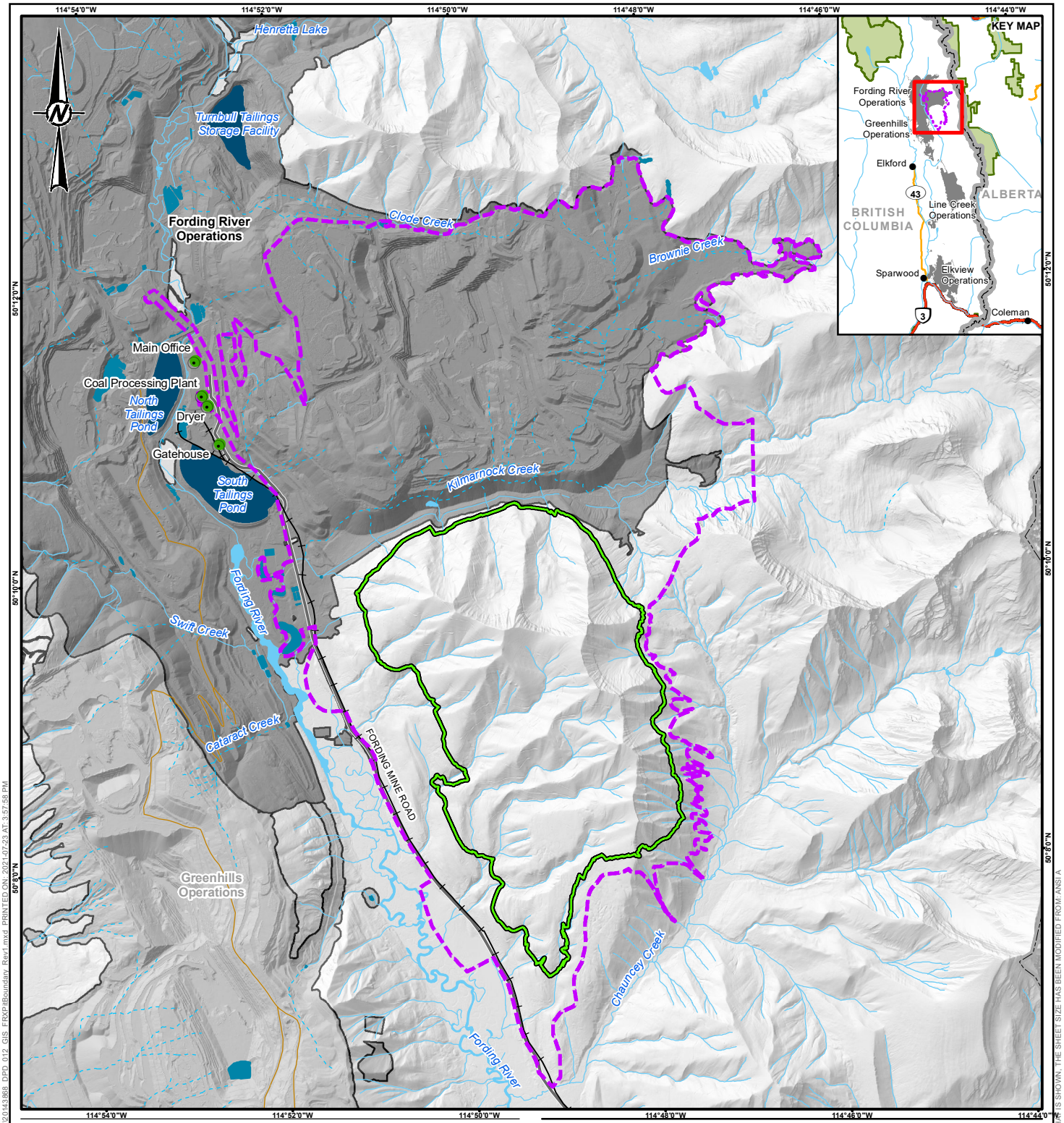
Table 3.3-3: Project Pit Shell

Pit Shell	Considerations	Status
Pit Shell "Pit shell" is a technical term that describes the size and layout of the maximum extent of all material removed from a mine.	Preliminary assessments show that almost all of the coal in the Project mine area could likely be economically mined. Representative pit shell configurations are described in Section 3.3.3 and were evaluated for the following environmental, social, and economic considerations related to the size and shape of a pit shell: • Possible removal of portions of the Chauncey Creek drainage area. • Possible cast-over and fly rock entering the Chauncey Creek drainage area. • Possible removal of high elevation grasslands and wintering range for bighorn sheep.[a] • Operational and closure options (e.g., ability to use areas for backfilling, submersion of waste rock or operation of a Saturated Rock Fill (SRF), long-term management of tailings) are affected by size, shape and mine plan associated with the pit shell. See associated Project components in following sections. • Mine life (and related economic benefits) is usually longer for a larger pit. • For a large pit, mining rate is limited by the coal processing capacity at FRO rather than by the configuration of the pit itself. • For a small pit, mining rate is limited by the space available for active benches and equipment. • Options for creative waste rock storage area management and closure landform development is higher for a larger pit. • Design is constrained by geological and geotechnical conditions. Not all pit shapes or sizes would meet the minimum geotechnical requirements for safety and stability. See Figure 3.2-3 and additional discussion in Sections 3.2.4 and 3.3.3.	***Selected*** The Project pit shell (Figure 3.3-1) has been selected. The selected pit shell would extend the mine life of FRO through the early 2070s while overcoming the geological and geotechnical constraints (Figure 3.2-3 and discussion in and discussion in Section 3.3.3 and Section 3.3.4). A number of constraints have driven selection of the pit shell. *(Status updated for DPD)*

Status categories include:

- **Selected** – the option has been chosen for the Project
- **Rejected** – an option will not be included in the Project
- **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project

a) Including contribution to potential cumulative effects associated with impacts to these habitats (refer to Section 12).



LEGEND

- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- FRX PIT BOUNDARY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY

0 1 2

1:70,000 KILOMETRES

REFERENCE(S)

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
FRX PIT BOUNDARY

Teck

YYYY-MM-DD	2021-07-23
DESIGNED	DT
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
20143868	DPD_012	1	3.3-1

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3.3.4 Mining Direction and Technique

This section of the DPD provides a description and rationale for the Project mining direction and technique (Table 3.3-4). Mining in FRX Pit (Figure 3.3-1) would start in the north and progress to the south. The mining direction is influenced by the location of the existing coal processing plant, which is closest to the north end of the pit, as well as the locations of waste rock storage. The mining technique focuses on progressive backfilling into previously disturbed areas when appropriate, reducing the need for new disturbance associated with waste rock storage.

Mining direction is linked to the layout of FRO and the Project. The FRX Pit would be developed as a conventional open pit with progressive backfilling, which is a hybrid between the two techniques presented in the provincial and federal IPD documents. A mine plan, showing both the mining direction and technique, is presented in Section 3.4.

Table 3.3-4: Project Mining Direction and Technique

Mining Component	Considerations	Status
Mining Direction The mine could be opened in one area and then progress towards other areas.	FRO Coal Processing Plant is closest to the north end of the Project mine area. The available locations for waste rock storage (refer to Section 3.3.5) also influence where mining starts and progresses.	***Selected*** The mine would start in the north and progress to the south. *(Status unchanged from IPD documents)*
Mining Technique Several approaches have been under consideration for the development of the FRX mine. All techniques are based around open-pit mining with waste rock stored in other previously mined pits, ex-pit, or within pits developed in the FRX mining area. ***Conventional open pit mining*** Typical coal mines in the Elk valley involve mining a series of interconnected open pits. Waste rock is taken out of the pit and placed in a different location either ex-pit or in another previously mined pit. Minimizing haul distance needs to be balanced with other mine operations considerations. ***Progressive backfilling*** Open pit mining can also progress with depositing waste rock within the active pit being mined once a pit of sufficient size is developed. Waste rock is moved within the pit from one side to the other. This approach can be referred to as 'along-strike' or progressive backfilling.	Placement of waste rock for the Project is constrained by the Fording River to the west and Chauncey Creek watershed to the east. To start mining the north end, waste rock needs to be hauled further north towards Kilmarnock Creek drainage area and the previously mined Eagle Pit. Haul distance, the predominant factor influencing the economics of the mine, needs to be balanced with other considerations including, but not limited to, geotechnical stability of the placed waste rock and ability to preserve access to continue mining the pit. Conventional open pit mining is applicable where a pit is being established to safely and efficiently extract coal. Progressive backfilling becomes a potential option when a pit is a sufficient size to where backfilling waste rock within the currently active pit is a safe and efficient option. It can encounter operational complexities as blasting and coal extraction occurs on one side of the pit while waste rock is being placed on the opposite side. Given the planned size and constraints of the pit, it becomes a candidate to incorporate progressive backfilling techniques part way through the mine life. This can reduce overall disturbance area by placing waste rock within the active pit as progressive backfilling on the north side while mining proceeds to the south. This may include some bottom-up waste rock placement, creating opportunity for source control as outlined in Table 3.3-6.	***Selected*** The pit would be developed as a conventional open pit with progressive backfilling. *(Status updated for DPD)*

Table 3.3-4: Project Mining Direction and Technique

Mining Component	Considerations	Status
Status categories include: • **Selected** – the option has been chosen for the Project • **Rejected** – an option will not be included in the Project • **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project		

3.3.5 Waste Rock Storage Areas

A description and rationale for Project waste rock storage locations are provided in this section (Table 3.3-5).

Waste rock is rock that has been removed to allow coal to be mined. Locations for the Project's waste rock storage areas have been identified using the following key considerations:

- prioritize, where appropriate, backfilling of pits and previously disturbed areas
- minimize hauling distance (which would reduce associated fuel consumption and GHG emissions from mobile equipment)
- avoid, minimize or reduce disturbance of watersheds that currently have no direct mining impacts

Early Engagement Feedback Note

Early engagement on the Project included feedback suggesting a "phased approach would be the least impactful to the environment… start with 'Causeway', progress to Eagle, until area opens within FRX".

The Project waste rock plan aligns with this suggestion and is described in this section and in Section 3.4.3. The 'Causeway' mentioned in the feedback is the idea of using a waste rock storage area in the Kilmarnock Creek drainage to provide a relatively level route to move waste rock from the FRX Pit to the Eagle Pit without having to travel a long way down and back up again.

Three locations were selected for waste rock storage for the Project: the Kilmarnock Creek drainage (which already contains some waste rock within the current C-3 Permit boundary), the Eagle Pit (currently being mined as part of the existing FRO), and the FRX Pit once areas become available for progressive backfilling. Avoidance of any new disturbance in the Kilmarnock Creek drainage was evaluated and determined to be not feasible due to the limited backfill storage capacity within Eagle Pit and hauling costs. However, the mine plan has been optimized since the provincial and federal IPD documents were published to reduce the footprint of the proposed waste rock storage area in the unimpacted area of the Kilmarnock Creek drainage.

Locations of the waste rock storage areas are shown in Figure 3.3-2. Details for the waste rock storage areas will continue to be developed and refined as the assessment of the Project proceeds, including:

- refining the volume and timing of waste rock placement within each waste rock storage area
- incorporating more-specific water quality management concepts (e.g., source control)
- incorporating geomorphic concepts to build to closure (i.e., end land use planning)

Specific information on the waste rock volume and timing, water quality management concepts, and geomorphic concepts will be presented in the IS/A.

Table 3.3-5: Project Waste Rock Storage Location Options

Waste Rock Storage Location Option	Considerations	Status
Locate waste rock in the Fording River Valley bottom along the west side of the Project The Project could place waste rock in the Fording River Valley bottom along the west side of the Project.	The Fording River Valley runs from north to south along the western side of Castle Mountain. Locating a waste rock storage area into the Fording River Valley bottom could lead to: • Short haul distances for waste rock. • Safety challenges placing waste rock above the Fording Mine Road and the railway. • Water management challenges collecting water from the waste rock storage area. • Water management challenges if waste rock were located on the floodplain. • Additional terrestrial and aquatic disturbance.	***Rejected*** The Project will not locate a waste rock storage area in the Fording River Valley bottom along the west side of the Project. Note however that small volumes of waste rock may be used within the Project footprint as construction materials for facilities (e.g., roads, pads and ramps). *(Status unchanged from IPD documents)*
Locate waste rock in the Chauncey Creek Drainage The Project could place waste rock in the Chauncey Creek drainage.	The Chauncey Creek drainage runs along the eastern and southern side of Castle Mountain. Chauncey Creek is identified as a high value tributary in the region and limiting impacts to this drainage is important to the Ktunaxa Nation, and other Indigenous Peoples, regulatory agencies and other interested parties. Locating a waste rock storage area in the Chauncey Creek drainage could lead to: • Short haul distances for waste rock. • Water management challenges collecting water from the waste rock storage area. • Possible water quality impacts to a high value tributary. • Additional terrestrial and aquatic disturbance.	***Rejected*** The Project will not locate a waste rock storage area in the Chauncey Creek drainage. *(Status unchanged from IPD documents)*

Table 3.3-5: Project Waste Rock Storage Location Options

Waste Rock Storage Location Option	Considerations	Status
Locate waste rock in and on the Kilmarnock Creek Drainage The Project could place waste rock in the Kilmarnock Creek drainage, both within areas previously occupied by waste rock and in previously undisturbed areas.	The Kilmarnock Creek drainage runs from east to west along the north side of Castle Mountain. The Kilmarnock Creek drainage contains historical and active FRO waste rock storage area. The upper reaches of the drainage do not have direct impacts from mining such as waste rock storage, surface disturbance, surface water interactions or alteration of groundwater. Feedback received during early engagement indicated that the upper reaches are important for hunting, recreational and traditional use, as well as for wildlife movement. Locating a waste rock storage area in the Kilmarnock Creek drainage could lead to: • Short haul distances for waste rock early in the Project. Later in the Project the distance would increase. • Creation of a causeway to allow for access from the Project to backfill the mined-out Eagle Pit at FRO. • Water management linking to existing water management systems including planned treatment at the Fording River Operations South Active Water Treatment Facility. • Some (low) additional terrestrial and aquatic disturbance. • Interference with the Kilmarnock Creek clean water diversion planned to be operational in 2021. • Restriction to access by land users and wildlife to the upper reaches. • Creates flexibility for end land use planning and geomorphic design by linking the closure landscape at Eagle and Castle.	***Selected*** The Project will locate a waste rock storage area in the Kilmarnock Creek drainage. Note that the footprint of the Kilmarnock waste rock storage area has changed from that proposed in the provincial IPD and federal IPD documents. The changes include less waste rock in the undisturbed portion of the Kilmarnock Creek drainage and more waste rock on existing waste rock disturbance, as discussed in Section 3.1.5. *(Status updated for DPD)*

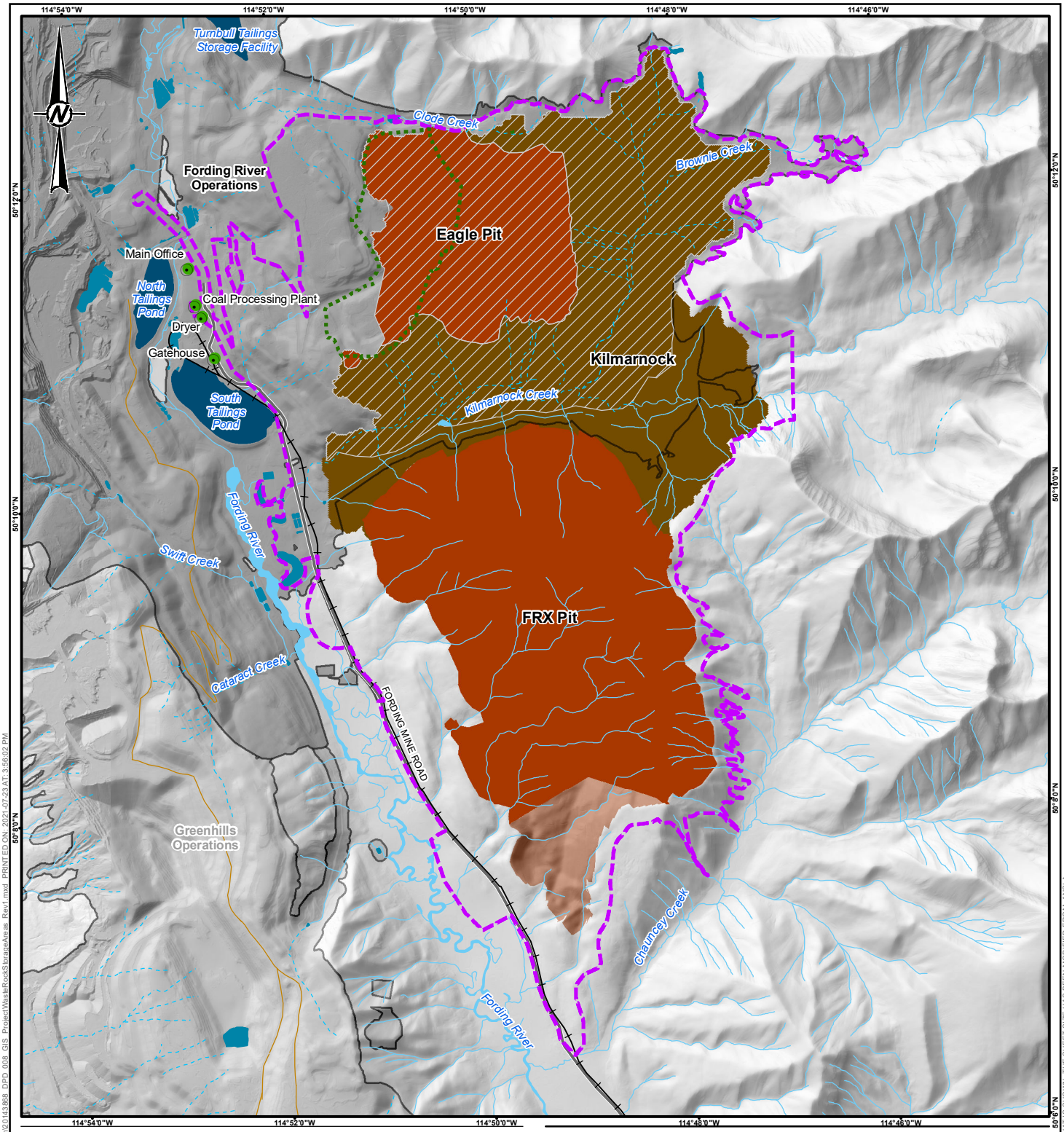
Table 3.3-5: Project Waste Rock Storage Location Options

Waste Rock Storage Location Option	Considerations	Status
Locate waste rock in and on the existing Eagle Pit The Project could place a waste rock storage area in the Eagle Pit at FRO to backfill the pit and to construct a closure landscape on top of the backfilled pit once mining in that area is complete.	The existing Eagle Pit is directly across the Kilmarnock Creek drainage from the Project and is situated partially within the Kilmarnock Creek and Clode Creek drainages. Eagle Pit could be accessed directly from the Project if a waste rock causeway crossed the Kilmarnock Creek waste rock storage area. Locating a Project waste rock storage area in the Eagle Pit could lead to: • Moderate haul distances for waste rock early in the Project. Later in the Project the distance would increase. • Backfilling Eagle Pit. • Constructing a landform on top of the backfilled pit. • Water management linking to existing water management systems including planned treatment at the Fording River Operations South Active Water Treatment Facility and Saturated Rock Fills within the Clode Creek drainage. • No additional terrestrial or aquatic disturbance. • Improved flexibility for end land use planning and geomorphic design of the waste rock storage area toward closure. In addition to the above considerations, it was noted that Teck is engaged in planning of and/or ongoing reclamation projects that may interact with some parts of the proposed footprint for locating waste rock in and on the existing Eagle Pit.	***Selected*** The Project will locate a waste rock storage area in the existing Eagle Pit for backfill. The Project will consider constructing landforms on top of the backfilled pit The Project will plan a cohesive and integrated reclamation plan for the entire Project footprint. *(Status updated for DPD)*

Table 3.3-5: Project Waste Rock Storage Location Options

Waste Rock Storage Location Option	Considerations	Status
Locate waste rock in the FRX Pit The Project could place waste rock in the FRX Pit to backfill the pit once space becomes available.	The FRX Pit could be backfilled with waste rock once there is sufficient space.[(a)] Locating a waste rock storage area in the FRX Pit could lead to: • Short haul distances for waste rock. • Backfilling of the FRX Pit. • Water management linking to Project water management systems that would be designed into the mine as it is constructed. • Water in contact with waste rock backfilled into the FRX Pit would report to the Kilmarnock Creek drainage which is already targeted for water treatment at the Fording River Operations South Active Water Treatment Facility (Section 3.4.4). Additional water treatment options are described in Section 3.3.6.2. • No additional physical disturbance associated with waste rock storage. • Improves flexibility for end land use planning and geomorphic design of the waste rock storage area towards closure.	***Selected*** The Project will locate a waste rock storage area in the FRX Pit to backfill the pit. *(Status updated for DPD)*
Status categories include: • **Selected** – the option has been chosen for the Project • **Rejected** – an option will not be included in the Project • **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project		

a) The Project's early construction activities would involve moving quantities of waste rock and placing it in temporary locations to be mined through later (e.g., fill below a haul road in steep terrain). These sites would be part of the overall water management plan for the Project, but are not identified as waste rock storage in the DPD.



LEGEND

- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- COMBINED COARSE AND FINE REFUSE STORAGE FACILITY
- PROJECT FOOTPRINT
- PIT (2070)

WASTE ROCK STORAGE AREAS

- IN-PIT WASTE ROCK
- EX-PIT WASTE ROCK
- FRX WASTE ROCK OVER EXISTING PIT AND WASTE ROCK DISTURBANCE

0 1 2

1:65,000 KILOMETRES

REFERENCE(S)

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
PROJECT WASTE ROCK STORAGE AREAS

Teck

YYYY-MM-DD	2021-07-23
DESIGNED	DT
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
20143868	DPD_008	1	3.3-2

3.3.6 Water Quality Source Control and Treatment

A description of water quality source control and treatment plans for the Project is provided in Sections 3.3.6.1 and 3.3.6.2, respectively. Overall, the Project's conceptual source control and treatment plans are based on several key concepts:

- integrate with FRO and regional water management plans and infrastructure
- plan for water management early in Project design efforts
- avoid or reduce impacts to water
- manage water so that discharge(s) from the Project contributes to meeting EVWQP objectives and meets relevant permit conditions
- adopt a best achievable technology approach (e.g., BC MOE 2012, 2015)

Early Engagement Feedback Note

Early engagement on the Project included feedback expressing concerns about potential Project-related water quality impacts, including selenium. Some feedback indicated preference for proven technologies over new or emerging technologies. Some feedback saw use of proven technologies as 'business as usual' and indicated a preference for pursuit of new and emerging technologies.

This section (including Section 3.3.6.1 and 3.3.6.2) describes the Project plan to assess a conservative case based on proven technology while committing to adopting new technologies as they become technically and economically viable.

Additional water management planning information for the Project is described in Section 3.4.4, whereas this section focuses on the water quality source control and treatment components that may be incorporated into the water management plan. The options for water quality source control and treatment in this section of the DPD are the same as those presented in the provincial and federal IPD documents. In response to feedback, additional information on the development and evaluation of the water quality source control and treatment options has been included.

3.3.6.1 Water Quality Source Control

The approach and rationale for incorporating water quality source control into the Project is described in this section. Water quality source control refers to measures designed to inhibit the release of water quality constituents of interest into the receiving environment.

In general, mining activities can result in changes to constituent concentrations in water through contact and interaction with waste rock and atmospheric oxygen (air). The constituents of interest vary among mine sites, depending on the local composition of the rock and water which are in contact. In the Elk Valley, the constituents of interest for which source control technologies are being tested include selenium, nitrate and sulphate. The Project's approach to water management includes implementing technologies that meet guidance for best achievable technology (e.g., BC MOE 2015) and operational measures to prevent or reduce release of constituents of interest to the receiving environment. For example, the Project will adopt nitrate source control as outlined in Table 3.3-6.

Teck continues to evaluate source control technologies from both operational and implementation perspectives. The Project is designed to allow for inclusion of new source control technologies as they become feasible for application in the Elk Valley. As source control technologies continue to develop, new learnings will be applied to inform the potential inclusion of source control options into the Project. It is also recognized that the efficacy of the new source control technologies that are currently under investigation might not be fully determined on a timeline that allows for thorough evaluation during the assessment of the Project. To accommodate new information and technologies that may be available for deployment in the future, the Project will continue to evaluate and, if appropriate, incorporate new source control options into the Project plan with input from the Technology Readiness Assessment Guidance document that has been established under the BC Southeast Coal Emerging Technologies Working Group. This Working Group is comprised of Provincial agencies, the KNC and Teck, which is helping to inform which technologies can be relied upon for planning and assessment, regulatory applications, as well as mine development and operations. This plan is consistent with Teck's commitment to continuous improvement and aligns with Teck's EVWQP which includes adjustments to the implementation plan as uncertainties are resolved and improved ways to manage water quality are identified.

A description of the rationale for the water quality source control options is presented in Table 3.3-6.

Table 3.3-6: Project Water Quality Source Control Options

Water Quality Source Control Component/ Activity	Considerations	Status
Source Control for nitrate The Project could incorporate efforts to reduce nitrate entering water	Nitrate can enter water when nitrate rich explosives come into contact with water. FRO has managed nitrate through ongoing implementation of appropriate explosives disposal and spill management practices (Teck 2014). Teck has developed a process to line ANFO and emulsion explosives in blast holes and is implementing the practice at all operations. The use of liners for nitrate source control is expected to have a positive effect on water quality and could contribute to a reduction in future water treatment requirements for nitrate.	***Selected*** The Project will adopt source control for nitrate. *(Status unchanged from IPD documents)*
Source Control for selenium and sulphate The Project could incorporate efforts to reduce selenium and/or sulphates entering water	Selenium and sulphate can enter water when waste rock is exposed to air (specifically oxygen) and water. Water can contact the waste rock through precipitation, runoff, surface water flow, or groundwater flow. Air can contact the waste rock by passing through spaces between the rocks. Source control options being investigated to reduce or eliminate the passage of air and/or water through waste rock include: • Capping the waste rock storage area (either by low-permeability or store-and-release cover systems). This can minimize water infiltration and air/oxygen movement through the waste rock. • Constructing the waste rock storage area from the bottom up in layers or other alternative construction methods. This can impede air and water transport through the waste rock. • Adding fine textured layers between layers in a bottom-up dump. Fine tailings, CCFR or other materials, including amendments could be used to further impede air and water moving through the waste rock to limit oxidation and potentially sequester/reduce/immobilize selenium and sulphate. • Co-mingling of the above materials with waste rock before placement to further enhance these mechanisms. • Constrain waste rock storage area design by topography and other factors. Each of these options also have the potential to act as further source control for nitrate, and potentially other constituents.	***Flexible*** The Project plan is to include source control for selenium and sulphate as they are identified as effective and feasible for application in the Elk Valley. Teck continues to evaluate the best options for source control for selenium and sulphate and how these can be incorporated into the Project. *(Status updated for DPD)*
Status categories include: • **Selected** – the option has been chosen for the Project • **Rejected** – an option will not be included in the Project • **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project		

ANFO = ammonium nitrate/fuel oil; CCFR = combined coarse and fine refuse.

3.3.6.2 Water Treatment

Water treatment refers to efforts made to reduce the concentration of mining-related constituents in mine-influenced contact water before it enters the receiving environment. Different treatment technologies exist for the reduction of selenium and nitrate in water, and existing treatment facilities operated by Teck in the Elk Valley include the West Line Creek active water treatment facility (AWTF) at LCO and the Saturated Rock Fill (SRF) at EVO, which successfully treat up to 7.5 million and 20 million litres of water per day, respectively. At FRO, the Fording River Operations South AWTF (FRO-S AWTF), is undergoing construction for planned operation in 2021. The FRO-S AWTF will treat mine-influenced contact water from the Swift, Cataract, and Kilmarnock creek drainage areas at a hydraulic capacity of approximately 20 million litres of water per day. Additionally, construction activities are underway for the Fording River Operations North SRF (FRO-N SRF [which includes Clode, Eagle pit water], previously referred to as Eagle 4 SRF), with plans for commissioning of the initial phase in late 2021. This facility is located in Eagle Pit and could potentially intercept some of the Project's contact water.

Sources of mine-influenced contact water that could be further influenced by the Project include the Kilmarnock Creek drainage and the Clode Creek drainage. New sources of mine-influenced contact water could include the FRX Pit. These sources will be evaluated to determine the potential required treatment including:

- possible available treatment capacity at the FRO-S AWTF
- possible addition of treatment capacity at the FRO-S AWTF
- possible available treatment capacity at FRO-N SRF
- possible addition of treatment capacity at FRO-N SRF
- possible construction of additional treatment facilities (e.g., a new SRF)

The Project's inclusion of source control for selenium and sulphate will take into consideration the level of certainty associated with implementing these measures in the Elk Valley. If future technologies are identified, the Project would re-evaluate treatment requirements as new information becomes available, and plans would be adjusted as appropriate and following application for relevant approvals and authorizations.

While feasible treatment effectiveness will continue to be a key factor in evaluating the treatment options, GHG emissions (along with other potential environmental effects) will continue to be considered in evaluating and developing the treatment options. In general, indirect GHG emissions associated with the treatment process (i.e., from electricity acquired from grid) is expected to be minimal as electricity at FRO is supplied through BC's green energy grid, which is powered by 97% renewable power (ECCC 2020).

A description of the water quality treatment options is presented in Table 3.3-7. The assessment will include technologies that are considered sufficiently ready for application based on available scientific evidence, following the process outlined in the Technology Readiness Assessment Guidance document from the BC Southeast Coal Emerging Technologies Working Group, as well as discussion for technologies that may be deployed in future. Uncertainty associated with mitigations will be documented in the application.

Table 3.3-7: Project Water Quality Treatment Options

Water Quality Treatment Component/ Activity	Considerations	Status
Active Water Treatment Facility (AWTF) AWTFs are a form of water treatment that pumps water through mechanical, chemical, and/or biological treatment processes. The Project could incorporate AWTFs to reduce the constituents within mine-influenced contact water.	Teck has experience designing, constructing, and operating an AWTF. AWTFs are considered a proven technology at Technology Readiness Level 9 (TRL9). AWTFs are complex, requiring a relatively long time to plan, construct, commission, and start operating (e.g., 5 years). The FRO South AWTF is in the final stages of construction, with plans to be in operation in 2021. This facility is located by the Kilmarnock settling ponds and would intercept some of the Projects contact water.	***Flexible*** The Project continues to evaluate AWTFs. *(Status unchanged from IPD documents)*
Saturated Rock Fills (SRFs) SRFs are a form of water treatment that pumps water through saturated waste rock (e.g., a mined-out pit full of waste rock and water). As the water passes through the SRF, natural processes are actively managed to capture and hold constituents within the SRF and the water outflow has improved water quality. The Project could incorporate SRFs to reduce the constituents within mine-influenced contact water.	Teck has experience operating an SRF and is in the process of planning and permitting additional SRFs. Based on research and operational experience to date, SRFs appear to be an effective means of water treatment. Compared to AWTFs, SRFs are relatively simple to construct, commission, and bring into operation. Consideration of SRFs early in Project planning could allow for early implementation and integration into Project water management. Early construction activities have started for FRO-N SRF, with plans for commissioning of the initial phase in late 2021. This facility is located in Eagle Pit and could be used to intercept and treat some of the Project's contact water. The incorporation and reliance on SRFs for the Project will continue to be evaluated through the assessment of the Project.	***Flexible*** The Project continues to evaluate SRFs and how they could be integrated into the Project plans as well as how they could be implemented early. *(Status unchanged from IPD documents)*
In-Situ Treatment The Project could incorporate in-situ treatment into waste rock storage design to reduce the constituents within mine-influenced contact water.	Waste rock storage areas could be designed to intercept water that passes through the waste rock. Examples could include suboxic zones and constructing SRFs strategically built to intercept water. The SRF could be constructed below the waste rock or at the toe of the storage area. The SRF could be constructed before the waste rock storage area is constructed or added later.	***Flexible*** The Project continues to evaluate in-situ treatment. *(Status unchanged from IPD documents)*
Status categories include: • **Selected** – the option has been chosen for the Project • **Rejected** – an option will not be included in the Project • **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project		

3.3.7 Tailings Management

This section of the DPD provides a description of the Project tailings strategy. The tailings strategy has been updated since the provincial and federal IPD documents were published. These updates reflect the results of technical investigations and analysis that have since been performed, while considering early engagement feedback.

Early Engagement Feedback Note

Early engagement on the Project included feedback requesting additional information about the Project tailings strategy.

This section describes the Project tailings strategy including the selection of tailings dewatering option with storage at the CCFR storage facility at Eagle 4 South Pit.

3.3.7.1 Current Practice

Tailings is a waste stream from coal processing, consisting of water, fine coal, other clay sized particles, and trace quantities of coal processing chemicals. In comparison to waste rock and coal products, tailings represent a small proportion of total materials moved at FRO. Tailings from the FRO Coal Processing Plant are currently managed as two separate streams:

- untreated (i.e., not thickened or dewatered) fine tailings[14]; and
- combined coarse and fine refuse, which is produced by dewatering a portion of the fine tailings and mixing it with coarse coal refuse.

FRO's current tailings strategy involves placing approximately 1.1 million tonnes per year (M t/yr) of untreated solids, including fine tailings and non-tailings materials, into the South Tailings Pond (STP) (Figure 3.1-1). After settling, the materials are dredged from the STP and placed in the Turnbull TSF, and water from the STP is recycled as process water to the FRO Coal Processing Plant. Recent mass balance investigation showed that only approximately 0.5 M t/yr of the materials placed in the STP is fine tailings and ultra-fine coal loss from the FRO Coal Processing Plant. The remaining approximately 0.6 M t/yr of materials originate from site runoff as well as dust collection, wash bays, and other non-tailings sources. Ongoing studies are in progress to confirm these quantities.

Under current practice, FRO is projected to utilize the entire storage capacity at the Turnbull TSF in the early 2030s. FRO is currently planning for operational improvements to divert the non-tailings materials currently reporting to the TSF (e.g., to settling ponds), which would allow a more efficient use of the fine tailings storage capacity at the Turnbull TSF. These improvements to the existing tailings management process will be addressed through a separate regulatory process.

In addition to the fine tailings that report to the STP and Turnbull TSF, approximately 0.4 M t/yr of fine tailings is dewatered using a disk filter and mixed with coarse coal refuse at the FRO Coal Processing Plant, creating the CCFR mixture. The CCFR is then transported using haul truck and placed at the Eagle 4 South Pit CCFR storage facility, with existing water management structures to direct surface water to sedimentation ponds prior to discharge.

[14] Untreated fine tailings contain approximately 97% water and were discussed in the IPD as tailings slurry. Thickened fine tailings contain approximately 30% to 60% water and were discussed in the IPD as thickened tailings. Dewatered fine tailings contain less than 30% water and were discussed in the IPD as dry tailings.

3.3.7.2 Development of Project Tailings Strategy

Since the provincial and federal IPD documents, Teck has selected a dewatered tailings technology for the Project. This section presents an overview of the development and evaluation of the tailings management alternatives, as well as a summary of the selected tailings management strategy.

Development of the Project tailings strategy has focused on how and where to store fine tailings. The IPD documents presented a range of alternatives for tailings handling: slurry (untreated), thickened and dewatered; as well as different alternatives for tailings storage: building a new dam, placing tailings in a mined-out pit, placing tailings in an in-pit or ex-pit waste rock storage area, and placing dewatered tailings in a stand-alone facility or with coarse coal refuse.

Since the IPD documents, Teck has developed specific alternative solutions while considering early engagement feedback, best achievable technology and innovative approaches to manage tailings. Early evaluation of the fine tailings options determined that there were no new suitable locations available to safely store untreated fine tailings. The evaluation then focused on identifying suitable storage locations for thickened and dewatered tailings. Potential locations were constrained by the limited available space that is not part of existing or future mining, waste rock storage, or other uses. Through a trade-off study, that evaluated the potential thickened and dewatered tailings options on operational, technical and environmental considerations and public concerns, Teck arrived at two potential tailings management solutions for the Project (Table 3.3-8):

a) Thickened tailings and storage at Turnbull TSF

   This option would thicken the fine tailings and store the thickened fine tailings at the Turnbull TSF. It would involve:

   - installing tailings thickening equipment within or close to the FRO Coal Processing Plant
   - constructing a pipeline to carry the thickened tailings to the Turnbull TSF
   - constructing a recycle water pipeline from the TSF to the FRO Coal Processing Plant
   - increasing the capacity of the Turnbull TSF with a dam

b) Dewatered tailings and storage at the Eagle 4 South CCFR storage facility

   This option would capture and dewater the fine tailings at the FRO Coal Processing Plant. The dewatered fine tailings would be combined with coarse refuse at the plant and transported for storage at the existing Eagle 4 South CCFR storage facility. This process would increase the CCFR quantity by up to approximately 15%, compared to current practice, and eliminate the need for a separate additional fine tailings facility. This option would involve:

   - improving the tailings dewatering efficiency and capacity for the existing equipment, which would likely include new equipment addition to the FRO Coal Processing Plant to capture all tailings solids currently discharging from the plant to the STP
   - integrating the dewatered tailings into the existing CCFR handling and storage system
   - updating the design of the Eagle 4 South CCFR storage facility to accommodate additional CCFR quantity

Upon evaluation of these two tailings management options, Teck selected the dewatered tailings option and storage at the Eagle 4 South CCFR storage facility. The Project would first utilize FRO's current practice (Section 3.3.7.1), including the use of existing slurry (untreated) fine tailings storage capacity. The Project will then transition to the dewatered tailings technology and expand the Eagle 4 South CCFR storage facility to provide sufficient capacity for the storage of coarse coal refuse and the dewatered fine tailings (combined as CCFR) for the life of the Project. The timing for the transition to the dewatered tailings technology is being evaluated and will be identified in the IS/A.

The selected option avoids the need of a dam structure near the Fording River. The dewatering process would recover the majority of water from the tailings slurry (approximately 95% or greater), which is currently discharging to the South Tailings Pond, for re-use at the FRO Processing Plant. The dewatered tailings option would have higher electricity requirement compared to the thickened tailings option; however, the differences in GHG emissions from tailings processing are expected to be minimal as electricity at FRO is supplied through BC's green energy grid, which is powered by 97% renewable power (ECCC 2020). GHG emissions could be higher with the dewatering option due to hauling to the Eagle 4 South CCFR storage facility; however, the tailings volume is small compared to coal and waste rock and the associated material handling emissions would be managed similar to coal and waste rock handling (Section 3.3.8). Either option would occupy previously disturbed mining area, thus does not require new disturbance. The selected option will be designed, constructed, and operated in accordance with the *Global Industry Standard on Tailings Management* (Global Tailings Review 2020) and applicable regulations. Potential effects on water quality due to seepage from the Eagle 4 South CCFR Storage Facility will be managed through engineering design and potential source control and treatment (Section 3.3.6). The selected tailings strategy will continue to be refined based on available information, as well as feedback through the coordinated assessment process from the BC EAO, the IAAC, Indigenous Peoples, technical advisors, and the public.

Additionally, Teck is investigating the opportunity to install an ultra-fine coal capture system at the FRO Coal Processing Plant through the use of coarser coal technology. This would enable Teck to capture and potentially market some of the ultra-fine coal loss that currently reports to the STP. The potential improvement may also reduce the increased capacity requirement at the Eagle 4 South CCFR storage facility. Teck is also investigating other innovative uses of the fine tailings material, including:

- use of dewatered fine tailings as a soil amendment during reclamation
- use of dewatered fine tailings to support source control (Section 3.3.6.1)

If determined to be technically and economically feasible, Teck will pursue the ultra-fine coal capture and/or beneficial uses of fine tailings through a separate regulatory process.

Table 3.3-8: Project Fine Tailings Options

Fine Tailings Option	Considerations	Status
Thickened Tailings at Turnbull TSF The Project could thicken the fine tailings and store them in the Turnbull TSF. For the purposes of this discussion, a thickened tailings is a mixture of water and particles with approximately 60% water by weight. A thickened tailings mixture would have a similar consistency to toothpaste.	Teck has experience with thickened tailings. There are a number of proven thickening technologies that remove water from a slurry. Turnbull TSF is a permitted existing TSF with relevant water management facilities. The Turnbull TSF will reach capacity in the mid 2030s. To hold all of the Project fine tailings, a dam would need to be constructed to expand the storage capacity at the Turnbull TSF. The equipment and infrastructure would be subject to a separate regulatory process. Thickened tailings at Turnbull TSF may provide advantages in terms of GHG emissions compared to the option of dewatered tailings at the CCFR storage facility. However, the option would not meet all the process water requirements for the FRO Coal Processing Plant (i.e., an additional water source need to be identified) and require Teck to construct and manage a new dam structure near the Fording River. There is also limited potential for seepage collection. If placement of mine rock for the dam is delayed, the higher tailings level may not be a suitable foundation for the dam.	***Rejected*** The Project fine tailings strategy will not include thickening the fine tailings and new dam structure to expand the capacity of the Turnbull TSF. *(New option for DPD)*
Dewatered Tailings at the CCFR Storage Facility The Project could dewater the fine tailings and combine it with coarse refuse and store them in an existing CCFR storage facility. For the purposes of this discussion, a dewatered tailings is a mixture of water and particles with less than 30% water by weight. The IPD documents referred to dewatered tailings as dry tailings.	Teck has experience with tailings dewatering processes and storage of the dewatered tailings at FRO, LCO, and Coal Mountain mine. FRO has an existing CCFR storage facility at the Eagle 4 South Pit with relevant water management facilities. Design of the CCFR storage facility would need to be updated to accommodate the additional CCFR quantity with dewatered tailings. The equipment and infrastructure would be subject to a separate regulatory process. The dewatered tailings option would recover the majority of water from the tailings slurry (approximately 95% or greater), that is currently discharging to the STP, for re-use at the FRO Coal Processing Plant. Increase in GHG emissions due to the increased electricity requirement for the dewatering process would be minimal with the green power grid infrastructure in BC. Increase in GHG emissions due to hauling will be addressed similar to coal and waste rock handling (Section 3.3.8). Potential water quality effects from seepage will be managed through engineering design as well as source control and treatment (Section 3.3.6). There are some innovative applications for dewatered tailings that Teck will consider. Research indicates that in some situations dewatered tailings might be useful as a soil amendment for reclamation.	***Selected*** The Project fine tailings strategy would include dewatering the fine tailings, combining it with coarse coal refuse and storing them in the CCFR facility. ***Flexible*** The timing for the transition to the dewatered tailings technology is being evaluated and will be identified in the IS/A. The Project will continue to evaluate other innovative applications of the dewatered tailings. *(New option for DPD)*

Table 3.3-8: Project Fine Tailings Options

Fine Tailings Option	Considerations	Status
Status categories include: • **Selected** – the option has been chosen for the Project • **Rejected** – an option will not be included in the Project • **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project		

CCFR = combined coarse and fine refuse; TSF = Tailings Storage Facilities.

3.3.8 Coal and Waste Rock Handling Options

This section provides a description of Project coal and waste rock handling options (Table 3.3-9).

The Project would use the FRO equipment fleet for mining and coal and waste rock handling at the Project mine area, including electric- and/or diesel-powered mining shovels; diesel haul trucks; a variety of earth-moving equipment such as dozers, excavators, and graders; drilling equipment; and a fleet of medium and light duty trucks (e.g., tractor trailers and pick-up trucks).

Coal and waste rock handling generates a large portion of mine emissions (Section 3.5.2) and influences mine and waste rock storage area design. Over time and because of operational need, equipment is retrofitted and replaced with newer, lower emission equipment, which gradually reduces GHG and other air emissions. Some of the equipment might be replaced with more advanced options (e.g., electric powered light duty trucks) that takes advantage of the green electricity infrastructure in BC.

Broader changes to the equipment and approach to coal and waste rock handling could generate larger emissions reductions (Table 3.3-9). These approaches might not be proven in time for evaluation during the assessment of the Project. Therefore, the Project will be conservatively defined assuming the use of conventional haul trucks (shown as the selected option in Table 3.3-9). However, as part of Teck's commitment to continuous improvement, the Project would allow for a shift to new approaches in the future. These new approaches will continue to be evaluated for their technical and economic feasibility, emission reduction benefits, and other effects (e.g., spills) as the Project progresses.

Table 3.3-9: Project Coal and Waste Rock Handling Options

Materials Handling Option	Considerations	Status
Haul Trucks The Project could use typical diesel-powered haul trucks.	FRO has a fleet of diesel-powered haul trucks. Diesel combustion is a large portion of mining emissions. Teck will be evaluating alternatives to diesel combustion to pursue its goal to be carbon neutral by 2050. The assessment of the Project might evaluate diesel powered equipment as a conservative case while committing to adopting alternatives in the future.	***Selected*** The Project would use the FRO equipment fleet for the Project while evaluations into other coal and waste rock handling options continue. *(Status updated from IPD documents)*
Autonomous Haul Trucks The Project could use haul trucks that have some level of self driving capability.	Teck is piloting the use of autonomous haul trucks. Industry experience with autonomous haul trucks is that they improve: • safety • efficiency and reduction in emissions Autonomous haul trucks require additional infrastructure to be incorporated into mine plans. Autonomous haul trucks would require consideration of reskilling opportunities for existing employees. Autonomous haul trucks can be diesel powered or alternatives.	***Flexible*** The Project continues to evaluate the use of autonomous haul trucks and may seek opportunities to incorporate autonomous haul trucks if benefits are proven. *(Status unchanged from IPD documents)*
Trolley Assist for Haul Trucks The Project could use infrastructure to connect haul trucks to an external source of electrical power.	Diesel-powered haul trucks use the diesel engine to generate electricity. The electricity is used to move the truck. Trolley assist is a system that connects haul trucks to an overhead electrical cable system. When the truck is connected to the cable, the diesel engine goes to idle. This reduces the amount of diesel consumed and the related emissions. Typically, trolley assist is installed on long uphill or downhill grades. Trolley assist requires wider haul roads to create room for the electrical cables and poles. Trolley assist requires capital inputs for the truck modifications and support infrastructure. This cost could be partially offset by reduced diesel costs or carbon taxes.	***Flexible*** The Project continues to evaluate the use of trolley assist for haul trucks and may seek opportunities to incorporate trolley assist if benefits are proven. *(Status unchanged from IPD documents)*

Table 3.3-9: Project Coal and Waste Rock Handling Options

Materials Handling Option	Considerations	Status
Conveyors The Project could use a conveyor system to move waste rock or coal.	Electrically powered conveyors can move material safely and efficiently. Some material would need to be crushed to reduce its size prior to conveying. Crushing and conveying would require additional stockpiles. Conveyors are used in combination with haul trucks. The trucks do short complex flexible routes to and from the conveyor and the conveyor does the long stable route. Conveyor systems, used in combination with haul trucks, have lower emissions than haul trucks alone. Mine planning must account for the use of conveyors allowing their route to be efficient and not require frequent adjustment. Teck is evaluating implications of crushing waste rock on: • Geochemical characteristics (i.e., do smaller rocks leach more constituents?). • Geotechnical characteristics (i.e., do smaller rocks pack tighter in a waste rock storage area and have less air and water flow?). Conveyor systems require large initial capital inputs for infrastructure. Conveyor systems are inflexible and upsets can impact the entire operation. Conveyor systems are expensive to relocate and are only suitable for routes with little change over time.	***Flexible*** The Project continues to evaluate the use of conveyors and may seek opportunities to incorporate conveyors if benefits are proven. Early evaluation for the Project indicates that conveyors might be more suitable for handling coal than waste rock. *(Status updated for DPD)*
Status categories include: • **Selected** – the option has been chosen for the Project • **Rejected** – an option will not be included in the Project • **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project		

3.3.9 Support Infrastructure

This section provides a description and rationale for the Project's support infrastructure (Table 3.3-10). The Project would be supported by a combination of new support infrastructure and existing FRO support infrastructure. Table 3.3-10 has been slightly updated since the provincial and federal IPD documents to reflect Project planning and to better reflect new infrastructure. The table only lists infrastructure not described elsewhere in Section 3.3.

Table 3.3-10: Project Support Infrastructure

Existing Infrastructure Component / Activity	Considerations	Status
Access to the Project mine area Regional road access to the Project would be required for movement of: • Workers • Equipment and supplies Site access would be required within the Project mine area and to connect to FRO for the movement of: • Workers • Equipment and supplies • Waste rock • Raw coal	FRO is currently accessed by Highway 3 and 43 and the Fording Mine Road. The Project is directly south of the existing FRO and adjacent to the Fording Mine Road. Construction access would be required within the Project mine area. Access roads would be required to connect the Project to existing facilities and infrastructure. Haul roads would be required within the Project mine area. Haul roads would be required to connect the Project to the existing processing plant and to existing FRO areas planned for waste rock storage.	***Selected*** Existing regional road access would meet Project needs. New construction and mine area access roads, and haul roads would be required. *(Status updated for DPD)*
Electrical supply for the Project Electrical supply for the Project would be required for: • Buildings and facilities • Electric shovels • Possible haul truck trolley assist • Possible conveyors	Electrical power for FRO is supplied by the Kan-Elk Transmission line via the Britt Creek spur from the northwest. The Project is directly south of FRO. Preliminary electrical supply assessment indicates that the Project would not require more electricity than can be supplied from the regional system. An extension, substation(s), transformers and distribution lines would be required to connect all Project components to the existing FRO power supply.	***Selected*** Existing FRO regional electrical supply would meet Project needs. New electrical infrastructure would be required to connect the Project to FRO. *(Status updated for DPD)*
Project coal processing Coal from the Project would need to be processed prior to distribution to market	The mining rate of the Project is planned to align with the available processing capacity of the FRO coal processing facilities.	***Selected*** Existing FRO coal processing facilities would meet Project needs[(a) (b)]. *(Status unchanged from IPD documents)*
Project coal distribution Coal from the Project would need to be distributed to market.	Coal distribution for FRO uses an existing rail loop and loading facilities. Project coal would be distributed to market through the existing FRO rail loop and loading facilities.	***Selected*** Existing FRO coal distribution facilities would meet Project needs. *(Status unchanged from IPD documents)*

Table 3.3-10: Project Support Infrastructure

Existing Infrastructure Component / Activity	Considerations	Status
Raw and processed coal stockpiles Coal stockpiles are required to smooth out variations in mining rate, processing rate, and loading rate. They also allow blending of coal from different parts of the mine.	Coal stockpiles at FRO allow for operational flexibility meeting both processing plant and customer needs. The Project would continue to use the existing stockpiles. The Project would require additional raw coal stockpiles at the Project mine area for operational flexibility and to support processing plant needs.	***Selected*** Existing FRO raw and processed coal stockpiles would meet Project needs at the processing plant. New raw coal stockpiles would be needed at the Project mine area. *(Status updated for DPD)*
Maintenance shops, warehousing, dry, office, etc. The Project would require buildings to house mine support activities including: • Administration • Planning/engineering • Supply • Maintenance	The buildings and infrastructure at FRO provide for the existing operations. The Project could continue to use the existing buildings. The Project would require additional buildings and infrastructure closer to the proposed mine pit.	***Selected*** Existing FRO buildings would continue to be used. New satellite offices, maintenance, and other support facilities would be needed at the Project mine area. *(Status updated for DPD)*
Explosives storage, manufacturing, and delivery The Project would require explosives to mine the waste rock and coal.	The explosives storage, manufacturing, and delivery systems at FRO provide for the existing operations. The Project could rely on the existing manufacturing and delivery systems as well as the main storage facilities. The Project would require an additional explosives magazine and product storage closer to the proposed mine area to provide for operational flexibility and safety.	***Selected*** Existing FRO explosives storage, management procedures, manufacturing, and delivery systems would continue to be used. New satellite magazine (explosives storage) and product storage (e.g., ANFO silo) would be needed at the Project mine area. *(Status updated for DPD)*

Table 3.3-10: Project Support Infrastructure

Existing Infrastructure Component / Activity	Considerations	Status
Status categories include: • **Selected** – the option has been chosen for the Project • **Rejected** – an option will not be included in the Project • **Flexible** – the option could still be incorporated into the Project and is subject to refinement based on results of the assessment process being undertaken for the Project		

a) See Section 9 for information regarding water use for processing (and other Project components).

b) FRO coal processing components and activities include the processing plant, water supply and management for processing, and processing wastes including fine tailings and CCFR.

ANFO = ammonium nitrate/fuel oil

3.3.10 Summary of Selected Project Components and Activities

This section describes the key decisions that have been made on the configuration of Project components and activities. As described in Sections 3.3.1 to 3.3.9, these decisions account for environmental, social, economic, and technical considerations, as well as feedback from early engagement, including input from Indigenous Peoples. In summary, Project components and activities are described as follows:

- Project mine area, timing, and pit shell

  The Project will mine the FRX Pit, which has sufficient reserves to support FRO's production rate. The pit shell has been selected to achieve the Project's need and purpose of extending FRO's lifespan by several decades while accounting for geotechnical constraints and minimizing direct impact to Chauncey Creek drainage. The FRX Pit is estimated to provide approximately 360 Mmtcc of reserves, extending production to the early 2070s.

- Mining direction and technique and waste rock storage locations

  The FRX Pit would be developed as a conventional open pit with progressive backfilling once the pit is of sufficient size and can be operated safely and efficiently. This technique would reduce overall disturbance area by placing waste rock within the active pit as progressive backfilling on the north side of the pit, as mining proceeds to the south.

  Mining at FRX Pit will start in the north, closest to the FRO Coal Processing Plant, and progress to the south. Waste rock will be placed as backfills in the existing Eagle Pit and in an ex-pit storage area in the Kilmarnock Creek drainage, and then in FRX Pit as it becomes available for waste rock placement. The selected waste rock storage locations limit potential disturbance in the upper reaches of Kilmarnock Creek and Fording River floodplain and avoids waste rock placement in the Chauncey Creek drainage. Waste rock will be predominantly placed in-pit or within previously disturbed areas, with approximately two-thirds of the waste rock materials placed in and on mined-out pits (pit backfills and covering landforms). Additional description of the pit and waste rock storage area development and sequencing is provided in Section 3.4.

- Water quality source control and treatment

  Source control techniques to reduce nitrate releases from blasting, including lining of ANFO (ammonium nitrate/fuel oil) holes, are being implemented across Teck's operations and will be implemented for the Project. The Project would continue to evaluate source control options for selenium and sulphate, as well as potential treatment options to manage water quality. The inclusion of source control for selenium and sulphate will take into consideration the level of certainty associated with these measures when assessing water quality and determining treatment requirements.

- Tailings management

  Teck selected the dewatered tailings option and storage at the Eagle 4 South CCFR storage facility. The Project would first utilize FRO's current practice (Section 3.3.7.1), including the

use of existing slurry (untreated) fine tailings storage capacity. The Project will then transition to the dewatered tailings technology and expand the Eagle 4 South CCFR storage facility to provide sufficient capacity for the storage of coarse coal refuse and the dewatered fine tailings (combined as CCFR) for the life of the Project. The timing for the transition to the dewatered tailings technology is being evaluated and will be identified in the IS/A.

- Coal and waste rock handling

  The Project will include use of the existing FRO fleet of equipment and/or additional equipment, if required, forming the basis of the Project to be assessed. Coal and waste rock handling options continue to be evaluated and sufficient flexibility will be maintained such that a shift to new material handling technologies could be made in the future if their benefit is clearly proven.

- Support infrastructure

  The Project will use a combination of existing FRO facilities, including FRO Coal Processing Plant, offices, maintenance shops, explosives storage, and other existing support facilities, as well as new support infrastructure. The new support infrastructure required for the Project includes access road and utility connections to the existing FRO and satellite support facilities in the Project mine area.

3.4 Mine Plan

This section presents the mine plan for the Project, including mining sequence. The mine plan considers:

- supplying the FRO Coal Processing Plant with sufficient quantity and quality of coal feed to sustain current capacity and products
- balancing raw strip ratio and haul distance to maintain mine economics and consistent haul truck and shovel requirements
- utilizing progressive pit backfilling where practicable to reduce Project footprint and optimize mine haul distances
- utilizing mine design techniques that lessen the effects of waste rock disposal and other mining activities on water quality
- progressive reclamation and end land use objectives for closure
- the decisions in Section 3.3 to balance technical feasibility (e.g., geotechnical, operational factors) with economic, social and environmental sustainability

As with Project components and activities, the mine plan may be adjusted in response to information that becomes available through the assessment of the Project. Such refinements would be documented in the IS/A.

The Project is expected to generate approximately 360 Mmtcc of steelmaking coal and 4.1 billion bank cubic metres (Bbcm) of waste rock. Overall, the clean strip ratio (i.e., the ratio of the volume of overburden or waste rock moved relative to the tonnage of clean coal produced) for the Project is

expected to be approximately 12, which is similar to average strip ratios for FRO and Teck's other mining operations in the Elk Valley. The waste rock material will be hauled to waste rock spoils and the coal will be hauled to the coal processing facilities (Section 3.3.8).

3.4.1 Construction

Construction comprises the main activities required to prepare for production of coal from the Project. Construction activities are scheduled to begin in 2024, subject to regulatory approvals and obtaining required provincial permits (Year 0). Generally, construction activities will be sequenced according to the timing of pit developments, beginning in the north and moving progressively to the south as required to implement the mine plan and maintain the production schedule. The first 2 to 2.5 years of the Project (Years 0 to 2) will be dedicated to construction activities. Construction activities will continue as needed to support ongoing production as the pit is developed to the south. Construction activities are generally completed by contractors; thus, new hiring is not expected for the Construction Stage.

General order, with most construction activities occurring in parallel, includes:

- site preparation, including timber harvest and land clearing
- access road construction (Section 3.3.9)
- construction of initial surface water management structures and erosion prevention and sediment control measures, including drainage ditches and potential upgrade to the existing Kilmarnock Settling Ponds Phase 1 and 2 for increased settling capacity if necessary
- salvaging of areas with suitable soils where safe to do so
- construction of power lines including main and distribution lines, and substation and transformers
- construction of satellite facilities to support mining operations
- pre-benching of the northern portion of the Project mine area

3.4.2 Development of FRX Pit

The Project will be developed progressively over the course of the Project life. As described in Section 3.3.4, mining in FRX Pit would start in the north and progress to the south. The mining direction is influenced by the location of the FRO Coal Processing Plant, which is closest to the north end of the Project, as well as the waste rock storage locations (refer to Section 3.4.3), focusing on progressive backfilling into previously disturbed areas when practicable. Representative activities / milestones for the Project are summarized in Table 3.4-1, and shown in Figure 3.4-1 through Figure 3.4-7.

FRO production will shift to the Project from existing operating areas as they are exhausted. Mining activities at the Project would continue until the planned end of Project operations in the early 2070s.

Table 3.4-1: Representative Years of Development

Year	Mining Description
Year 0 (expected in 2024)	Commencement of early earthworks: • Timber and brush within the footprint of the initial mining activities in the northern portion of the Project mine area are cleared, soil salvaged and stockpiled • Access to the top of north FRX Pit is established/rehabilitated • More substantial access is established • Small sub-pit excavations to establish roads • Most material is dozer pushed or hauled north • Supporting facilities, infrastructure and water management structures constructed
Year 0 – Year 4	Primary early earthworks in north FRX Pit are mainly complete, waste haul to Kilmarnock and Eagle is established. Coal is being delivered to the processing plant from initial areas of mining.
Year 4 – Year 9	Waste rock from the initial areas of mining are being sent to Kilmarnock and Eagle Pit Backfill.
Year 9 – Year 14	Mining areas are sending waste rock to Kilmarnock, Eagle Pit Backfill, and FRX Pit Backfill. As the mine phases extend south, further tree clearing and soil salvage are done, in conjunction with development of required infrastructure and access.
Year 14 – Year 24	Sequence is set up for progressive backfilling into FRX Pit. Progressive reclamation.
Year 24 – Year 34	Mining areas are sending waste rock to progressive backfilling in FRX Pit. Progressive reclamation.
Year 34 – End of Mining (early 2070s)	Mining is concluding, waste rock is being sent to progressively backfill FRX Pit. Reclamation activities continue.

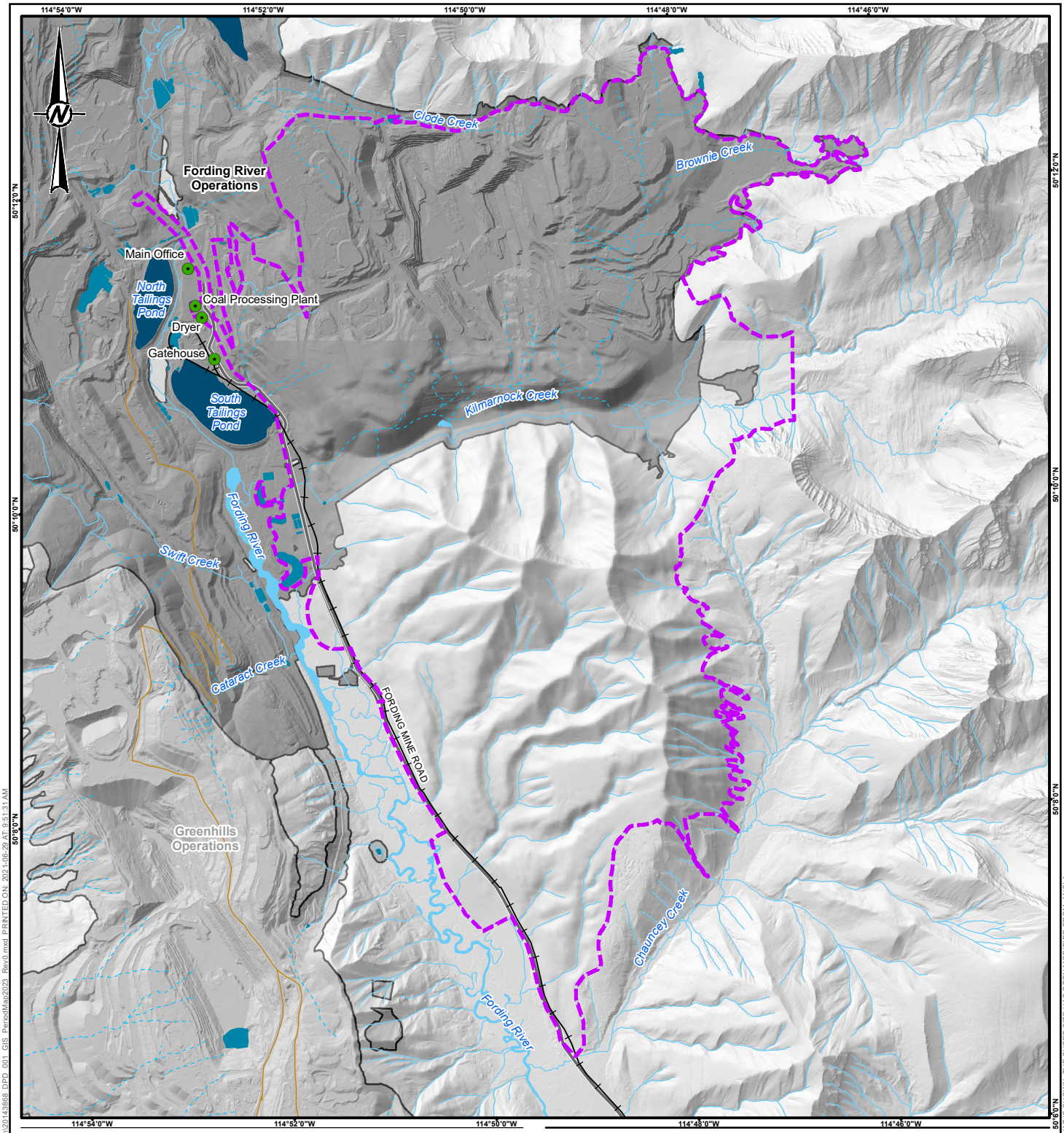
As pit development progresses from north to south, exploration activities such as geotechnical drilling and road building would continue within the Project footprint south of the active pit area in preparation for the subsequent pit development within the Project footprint. Other activities that would occur south of the active pit area within the Project footprint include timber harvesting, soil removal, power line extension, water management facilities construction, and other infrastructure development in advance of the subsequent pit development.

Pit walls and waste rock storage areas will be designed to appropriate geotechnical parameters given the stage of the Project. Teck has extensive experience in designing pit and waste rock storage for the Eagle Pit at existing the FRO, which has similar geology and design features as the FRX Pit. Geotechnical evaluations are ongoing as data is collected and interpreted.

At its deepest point, the pit excavation will be approximately 150 m lower than the elevation of the Fording River. Potential impacts of this geometry will be investigated, and associated management plans and design updates developed to reduce impacts associated with potential groundwater-surface water interactions.

Coal from FRX Pit would be transported to the existing FRO Coal Processing Plant, while waste rock material would be transported to the waste rock storage areas (Section 3.4.3). The mine plan assumes that conventional haul trucks, similar to those currently in use at FRO, would be used for material handling for both coal and waste rock. However, as described in Section 3.3.8, other material handling options such as autonomous haul trucks, trolley assist, and conveyors will continue to be evaluated.

The average annual waste rock haul distance for the Project is about 12 km, with the shortest annual haul distance of about 6 km. However, there is considerable opportunity to reduce haulage distances at various stages of the Project, especially during progressive backfilling. The mine plan is based on using a fleet of 40-tonne and 100-tonne trucks to haul material in the initial stages of production. Various support equipment such as tracked dozers, rubber-tired dozers, and excavators will be drawn from the existing fleet, or added as necessary.



LEGEND

- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY

0 1 2

1:65,000 KILOMETRES

REFERENCE(S)

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TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE MINE SEQUENCE – STARTING SURFACE (YEAR 0)

Teck

YYYY-MM-DD	2021-06-29
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PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
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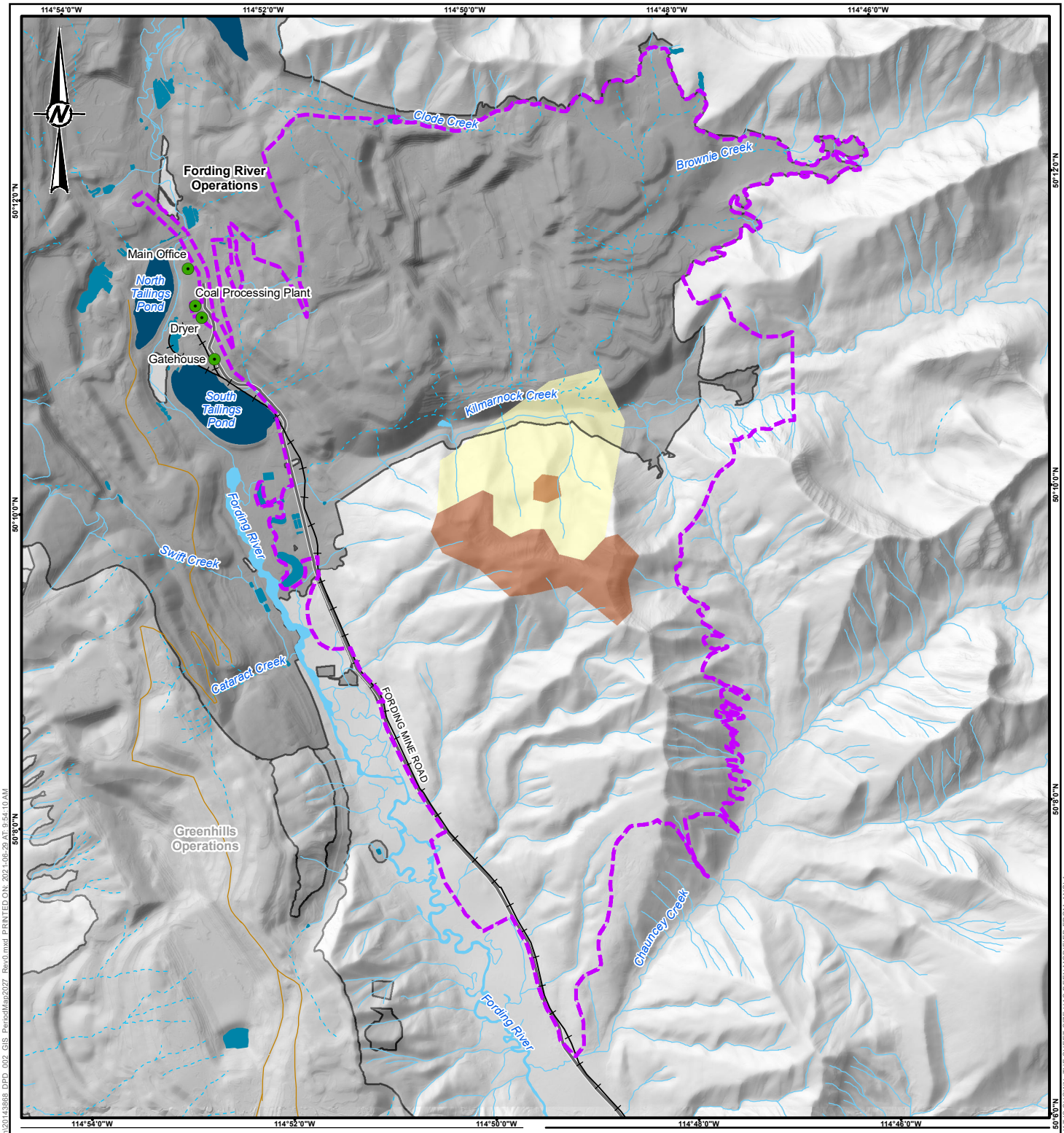

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- SUBSURFACE FLOW WATERCOURSE
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT

YEARS 0 - 4

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA

0 1 2

1:65,000 KILOMETRES

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TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE MINE SEQUENCE – YEARS 0 TO 4

Teck

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PREPARED	DR
REVIEWED	DT
APPROVED	CM

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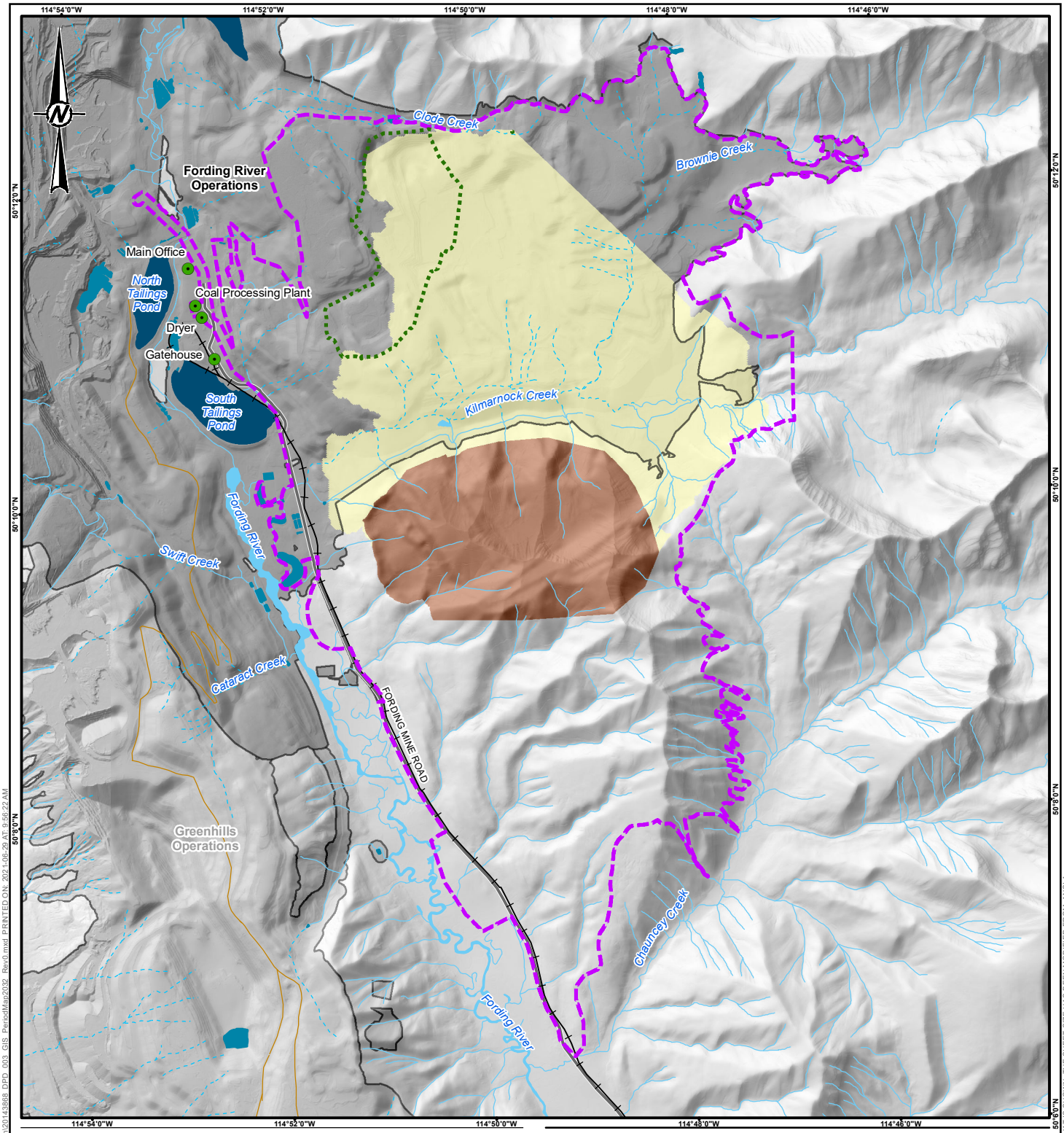

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- SUBSURFACE FLOW WATERCOURSE
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- COMBINED COARSE AND FINE REFUSE STORAGE FACILITY

YEARS 4 - 9

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA

0 1 2

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PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE MINE SEQUENCE – YEARS 4 TO 9

Teck

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APPROVED	CM

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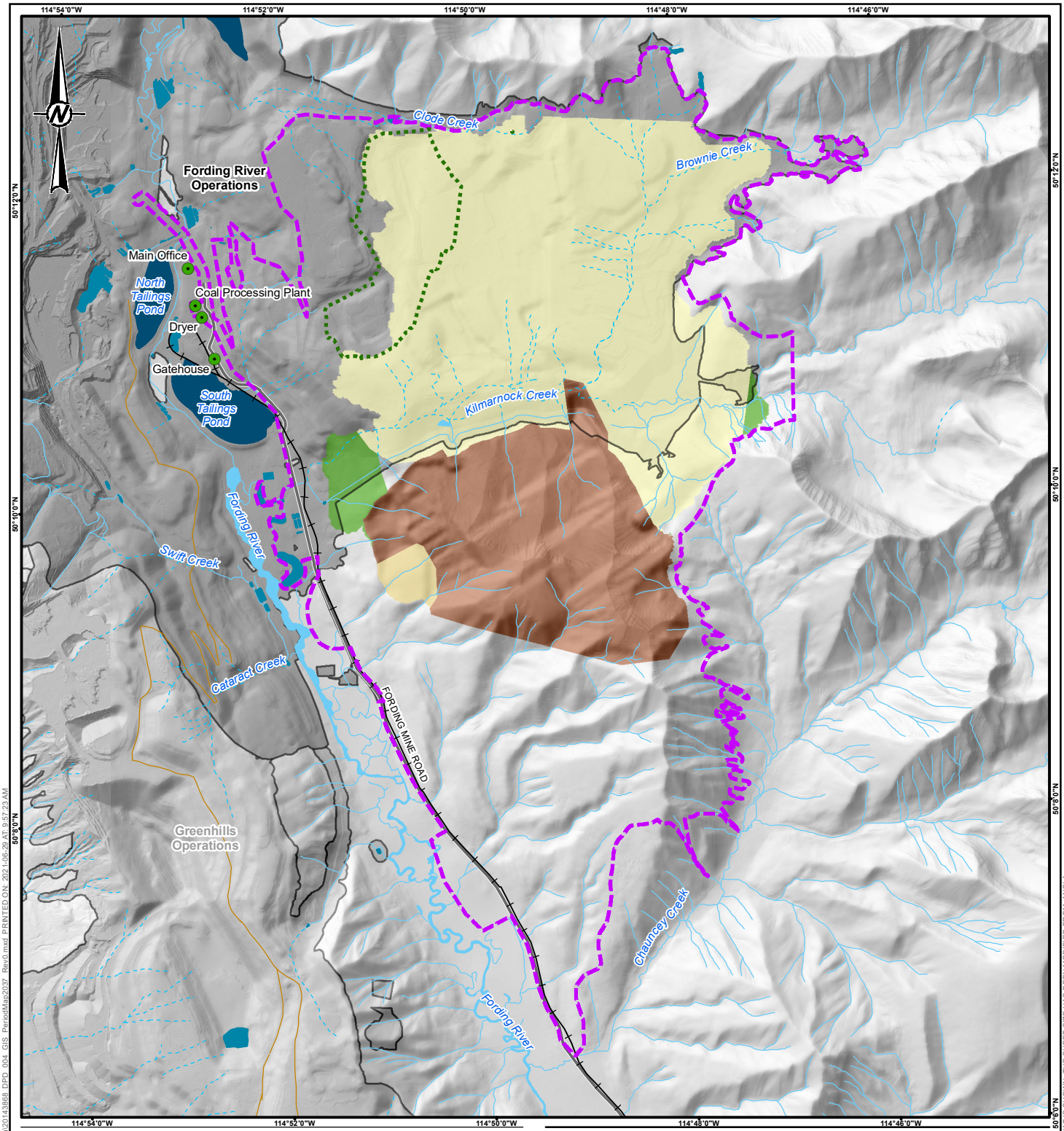

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- SUBSURFACE FLOW WATERCOURSE
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- COMBINED COARSE AND FINE REFUSE STORAGE FACILITY

YEARS 9 -14

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA
- AVAILABLE FOR PROGRESSIVE RECLAMATION

0 1 2

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TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE MINE SEQUENCE – YEARS 9 TO 14

Teck

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REVIEWED	DT
APPROVED	CM

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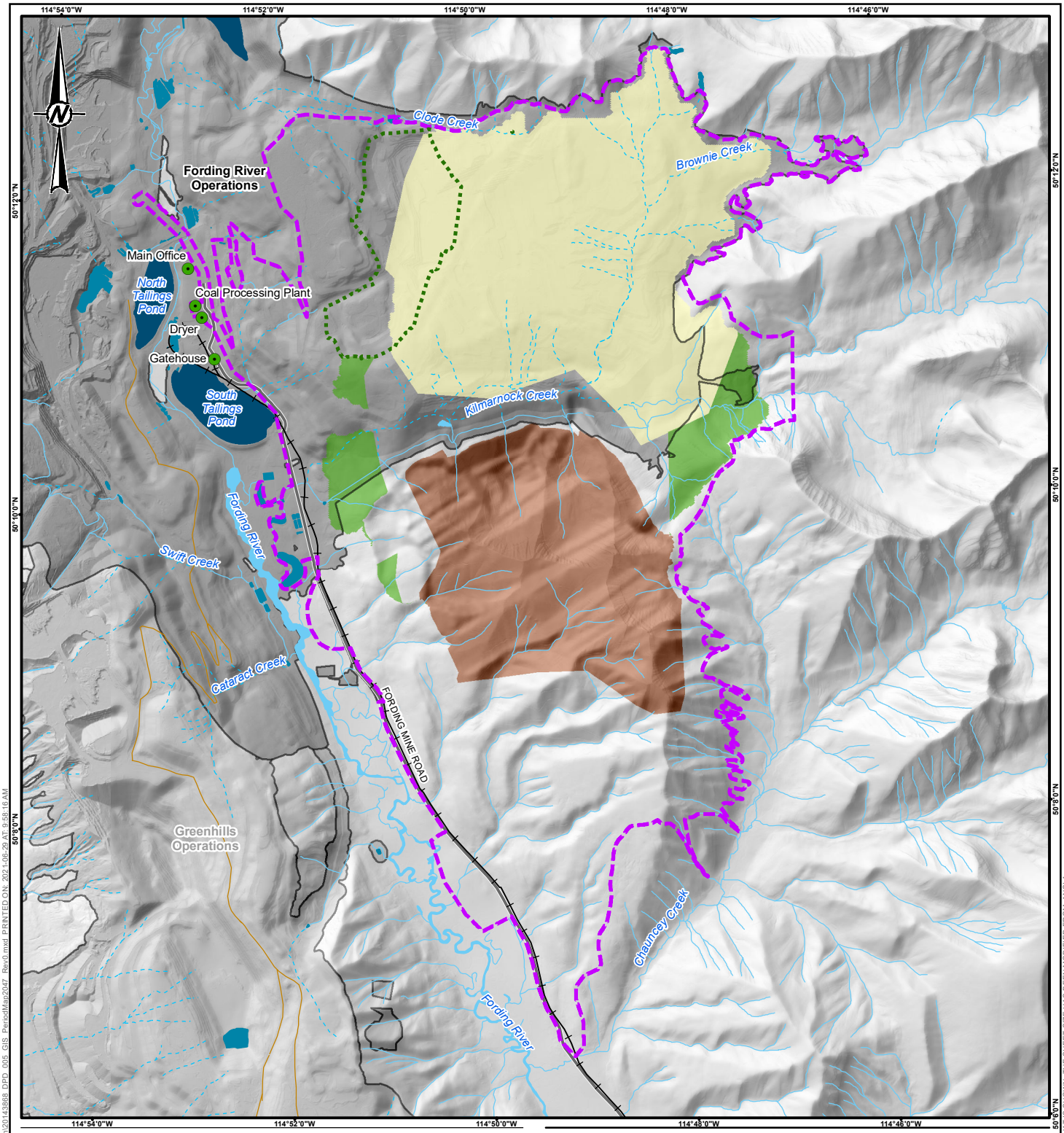

LEGEND

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- SUBSURFACE FLOW WATERCOURSE
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- COMBINED COARSE AND FINE REFUSE STORAGE FACILITY

YEARS 14 - 24

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA
- AVAILABLE FOR PROGRESSIVE RECLAMATION

0 1 2

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PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE MINE SEQUENCE – YEARS 14 TO 24

Teck

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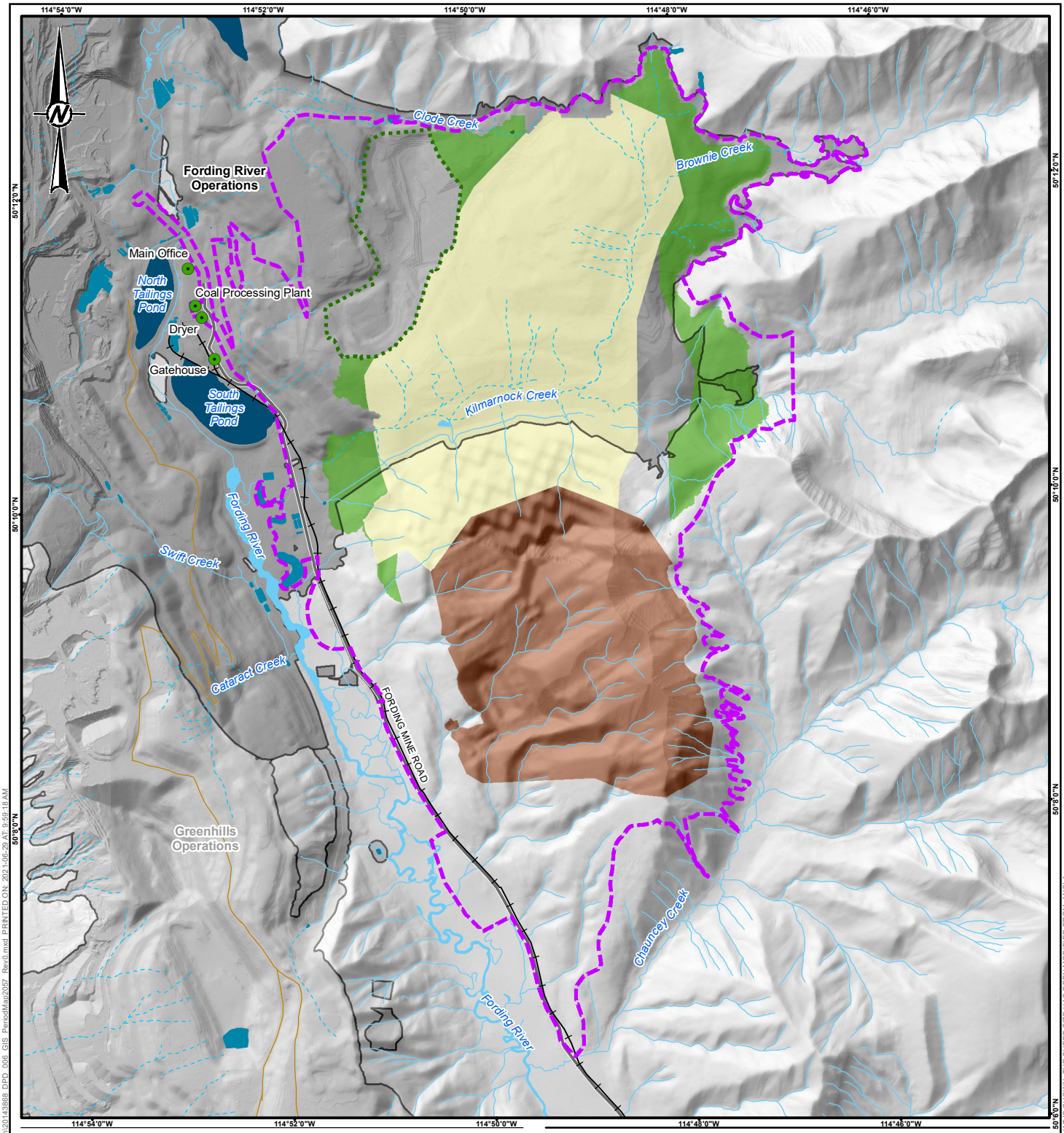

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- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- COMBINED COARSE AND FINE REFUSE STORAGE FACILITY

YEARS 24 - 34

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA
- AVAILABLE FOR PROGRESSIVE RECLAMATION

0 1 2

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TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE MINE SEQUENCE – YEARS 24 TO 34

Teck

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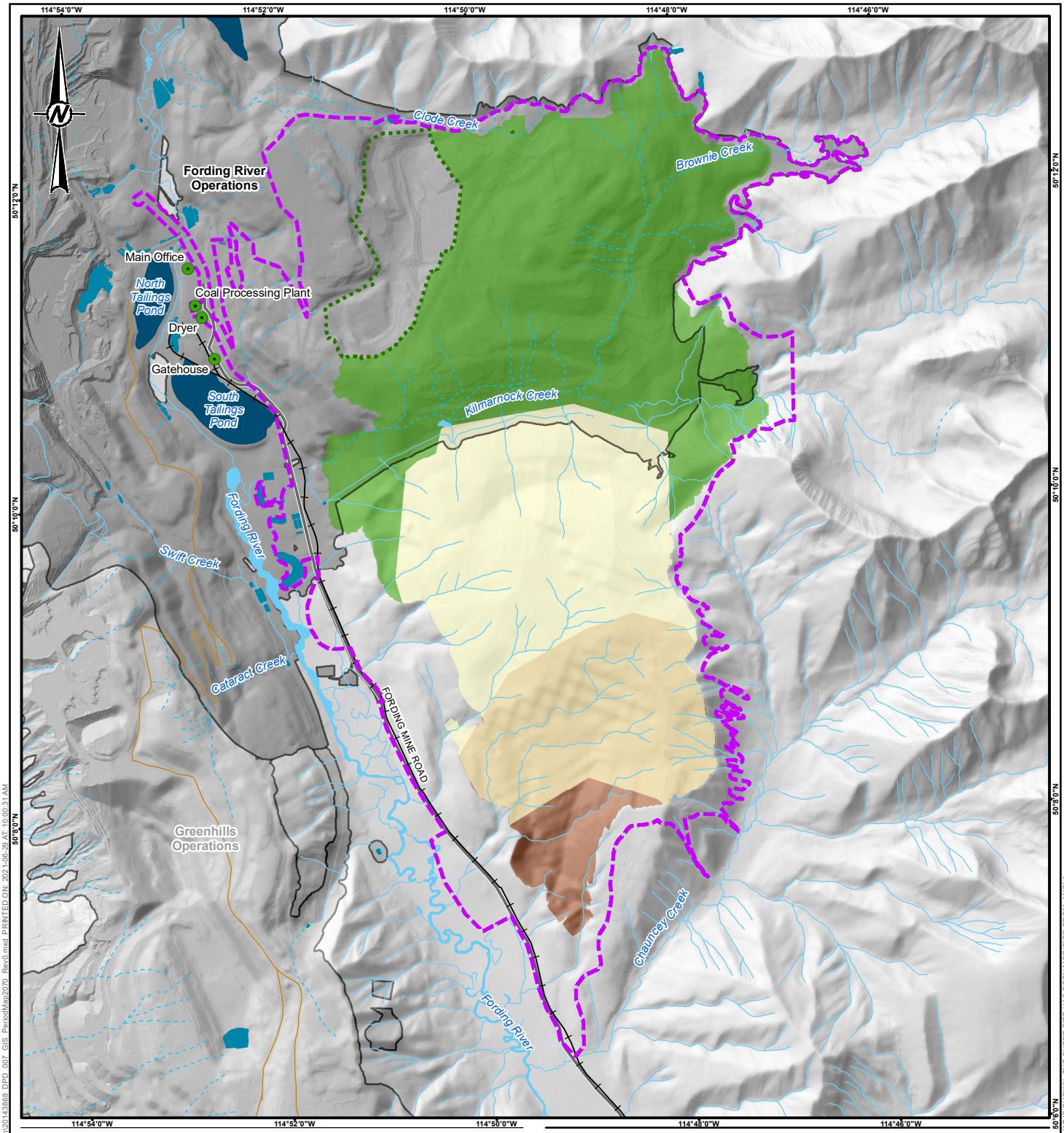

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- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- COMBINED COARSE AND FINE REFUSE STORAGE FACILITY

YEARS 34 - EOM

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA
- AVAILABLE FOR PROGRESSIVE RECLAMATION

0 1 2

1:65,000 KILOMETRES

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TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE MINE SEQUENCE – YEARS 34 TO END OF MINING

Teck

YYYY-MM-DD	2021-06-29
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APPROVED	CM

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3.4.3 Development of Waste Rock Storage Areas

The FRX Pit would be developed as a conventional open pit, with progressive backfilling as a key component in the mine plan. A map of the waste rock storage locations was provided in Figure 3.3-2.

In the initial stages of the Project, waste rock storage will be developed in the middle of Kilmarnock Creek drainage, adjacent and south of the current Eagle Pit. After which, waste rock will backfill the Eagle Pit until progressive backfilling opportunities are developed within the FRX Pit, as shown in Figure 3.4-1 through Figure 3.4-7. This approach is taken to utilize existing disturbed areas at FRO and within the Project footprint, reduce disturbance within the upper Kilmarnock and avoid backfilling in the Chauncey Creek drainage.

As described in Section 3.3.5, the waste rock storage areas design prioritizes, where appropriate, backfilling of pits and previously disturbed areas. The Project would place approximately 4,100 million bank cubic metres of waste rock in the waste rock storage area. As shown in Table 3.4-2, the majority (68%) of the waste rock materials would be backfilled into pits. The remaining 32% of waste rock, which would be placed in the ex-pit Kilmarnock waste rock storage area, includes 20% on top of existing waste rock and 12% in new disturbance area. These volumes may be refined in response to information received through the assessment of the Project. Environmental considerations may include development of mitigations associated with allowances for re-sloping, buffer zones to offset from habitats identified for ongoing protection, wildlife corridors, and drainage patterns to mitigate potential adverse effects on water quality.

Table 3.4-2: Project Waste Rock Storage Distribution

Waste Rock Storage Areas	Project Waste Rock Volume (Mbcm)	Percentage of Total Project Waste Rock
Eagle Pit (in-pit)	1,219	30%
Kilmarnock (ex-pit)		
On existing waste rock disturbance	816	20%
In new waste rock disturbance area	494	12%
FRX Pit (in-pit)	1,555	38%

Note: See Figure 3.3-2 for locations of the waste rock storage areas.
Mbcm = million bank cubic metres

Waste rock storage areas will be constructed using both bottom-up and top-down techniques. As feasible, and to support water quality management objectives, the waste rock storage areas will retain flexibility so that future water quality management techniques could be incorporated, including consideration of research and development findings on water quality source control options (Section 3.3.6.1).

The waste rock storage areas will incorporate geotechnical safety factors to manage rock roll out and other geotechnical hazards, including the construction of toe berms where necessary. Where feasible,

final waste rock storage area configurations will be designed to be favourable for reclamation and end land use objectives.

3.4.4 Project Water Management

The water management strategy for the Project includes all aspects of water management to support the stages of mine development from construction through operation, closure, and post-closure. Water management planning builds on the regional water quality management plan for Teck's Elk Valley operations laid out in the EVWQP (Teck 2014) and the EVWQP Implementation Plan Adjustment (IPA, currently 2019 IPA; Teck 2019a) (refer to Section 7.1.2). Planning also builds on alignment with the objectives of the Mine Water Management Plan at FRO, which includes managing the movement of water to:

- support the objectives of the EVWQP and IPA
- mitigate impact to the receiving environment and meet regulator and permit compliance
- support geotechnical, water quality and quantity considerations
- maximize the availability of water resources at the operations and for downstream water use
- support safe and sustainable mining

Early Engagement Feedback Note

Early engagement on the Project included feedback expressing concerns about potential Project water quality impacts including selenium.

This section describes the conceptual water management plan, including what needs to be assessed to fully develop the plan, that will be incorporated for the Project.

Water management strategies for the Project also align with Teck's hierarchy of controls, which, in the order of preference, is to prevent, reduce and treat. This framework will be adapted to the unique circumstances of the Project and will evolve over time based on new information.

Water at mining operations can be generally classified into three types:

- water that contacts areas of mining (pits, waste rock) is called mine-influenced contact water
- water that contacts disturbances (e.g., tree clearing and soil salvage) but not mining areas is called sediment-influenced contact water
- water that is kept from contacting mining activities is called non-contact water.

One water management strategy is to prevent the interaction of non-contact water with the active mining areas (pits, waste rock storage areas, TSF, and access roads) through construction of diversions, pipelines or similar facilities, and to safely reduce or minimize interaction of non-contact water with mining activities. Clean water diversions would also reduce the amount of non-contact water from upstream areas interacting with waste rock or other mining areas. The Project may necessitate changes to the clean water diversion currently planned for Kilmarnock Creek. The need for potential changes to the Kilmarnock diversion will be evaluated as part of the assessment of the Project, and addressed in the Project's water management plan.

Surface water impacted by mining operations will be conveyed to sediment ponds or other treatment facilities through a system of ditches, channels, drains, head ponds or sumps, or pumping/piping systems

prior to discharge to the receiving environment. The water management strategies are shown schematically in Figure 3.4-8 through Figure 3.4-11, and described below.

During Project construction, the FRO Coal Processing Plant and existing mine pits would continue to operate as normal with the addition of Project sediment-influenced contact water discharges. These additional discharges would be from soil salvage and timber harvest areas. Water management infrastructure would capture water discharged from cleared areas and treat it for total suspended solids.

The location of water management infrastructure proposed during Project construction is shown in Figure 3.4-8, but may be refined in response to assessment findings. Construction activities will mainly begin at the north part of the Project mine area. At this stage, sediment-influenced contact water discharges would be intercepted and re-directed to the existing and proposed infrastructure, with appropriate modifications as needed. The construction of the interception facilities (i.e., channel, ditches, head ponds, sumps, etc.) will be phased to match mine development (refer to Figure 3.4-9 through Figure 3.4-11).

Project sediment-influenced contact water will discharge primarily on the south of the Project mine area to be intercepted and re-directed to a sediment pond system for the south west side of the mine area. This additional discharge location will be required for water draining from the south portion of the mine area where it may not be feasible to direct the water to the north (uphill) to the existing discharge location. The construction of the interception channel and / or sediment pond will also be phased to match mine development. The specific location of the sediment pond system and outlet is being assessed; however, the area for possible locations of the southern sediment pond system is shown in Figure 3.4-10 and Figure 3.4-11.

Discharges of mine-influenced contact water from the FRX Pit and the waste rock storage areas are being assessed. Some pit water management will include managing water from direct precipitation in the pit, runoff from upslope catchments, and groundwater inflow. Strategies to be implemented as part of the water management plan, to be further refined through assessment and permitting for the Project, may include:

1) interception of subsurface flows above the pit floor through interceptor ditches, sumps, and/or high wall dewatering systems
2) collection and temporary storage within the pit floor (short term)
3) collection and pumping of water to sediment ponds and/or other treatment facilities

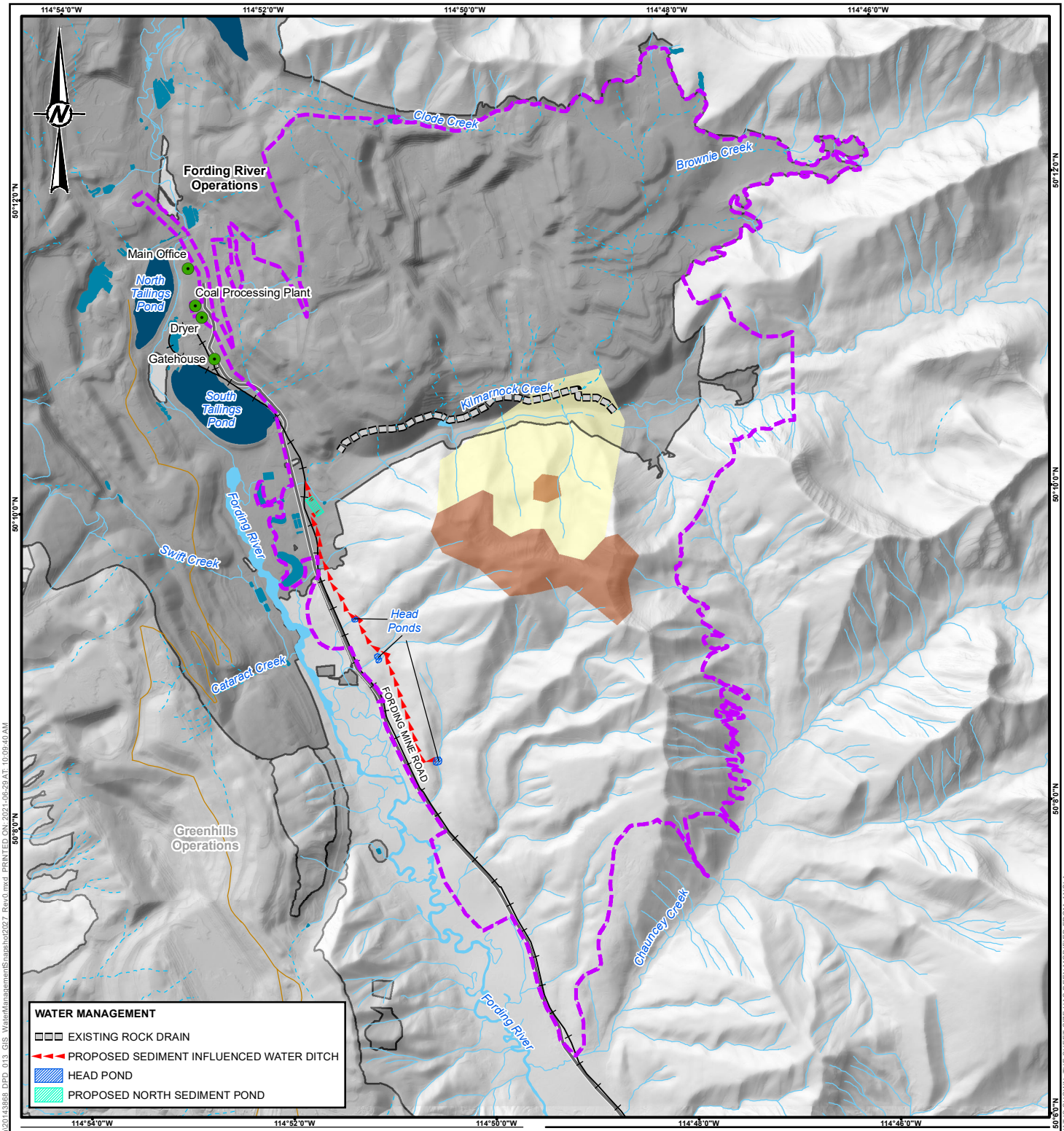
In-pit pumping may include a series of small sumps to reduce coarse sediment loading in the discharge from the pit and pumping out of the pit will be directed to adjacent waste rock storage areas for ultimate conveyance to water management infrastructure prior to discharge to the receiving environment. In-pit source control measures will also be implemented to address management of nitrate (Section 3.3.6).

Mine-influenced contact water from the waste rock storage areas would drain to the Kilmarnock drainage, the Clode drainage, or into the FRX Pit. Water quality management options for the mine-influenced contact water are described in Section 3.3.6. All water discharges are designed to meet discharge criteria.

Specifically, the water quality mitigation approach for the Project is to integrate mine planning and mine water management early to help avoid or reduce impacts to water quality. The approach focuses on selecting mitigations based on best achievable technology (MOE 2015) and incorporation of measures that are intended to reduce reliance on water treatment over time, including source control (Section 3.3.6.1). As part of this approach, the water management plan will first consider known water treatment technologies, such as SRFs (Section 3.3.6.2), to build on the learnings and experience gained in the Elk Valley to date. As planning continues, more detailed evaluation and iteration of the water management plan will occur through the assessment of the Project. The assessment will evaluate the Project's impact on regional water quality with the help of a numerical hydrology and water quality model. To represent regional water quality in the most realistic way achievable, the most updated version of the Regional Water Quality Model (Teck 2020d) will be used for the Project, and learnings from recent groundwater studies in the proximity of the Project will be considered. Existing seasonal flow variability of the Fording River watershed, potential effects of climate change, and instream flow requirements set for the upper Fording River[15] are also being considered. Based on the water quality projections, the potential water management options (Section 3.3.6) to reduce impacts to water quality will be further explored and assessed for implementation as part of water management.

Details of water management for the Project tailings strategy (Section 3.3.7.2) continue to be developed and will be provided in the IS/A.

[15] Instream flow requirements are in the process of being developed for the upper Fording River. This process is being led by the Ministry of Forests, Lands and Natural Resource Operations and Rural Development.



LEGEND

- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT

YEARS 0 - 4

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA

0 1 2

1:65,000 KILOMETRES

REFERENCE(S)

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE WATER MANAGEMENT SNAPSHOT – YEAR 4

Teck

YYYY-MM-DD	2021-06-29
DESIGNED	DT
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
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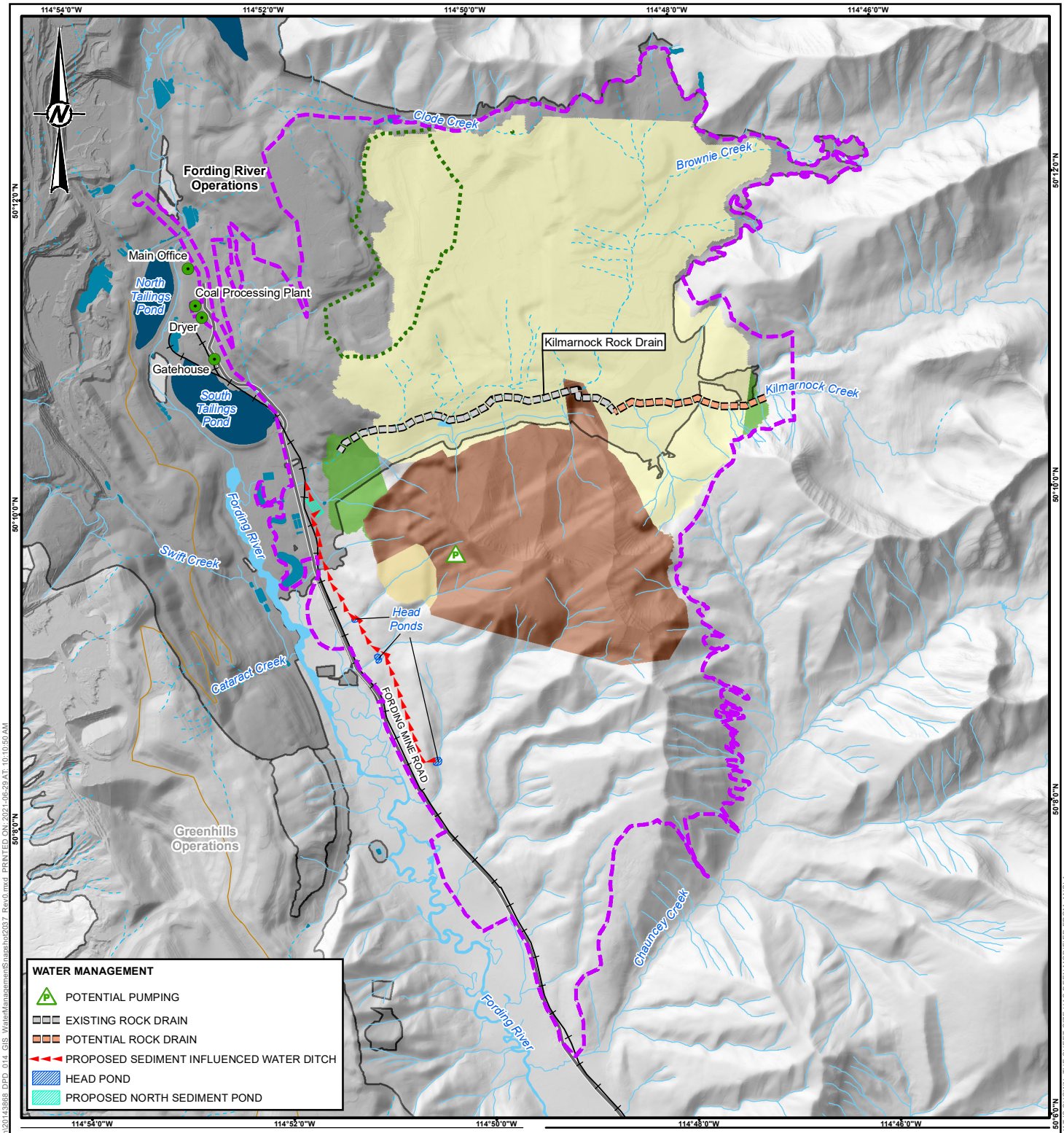

LEGEND

- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- COMBINED COARSE AND FINE REFUSE STORAGE FACILITY

YEARS 9 -14

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA
- AVAILABLE FOR PROGRESSIVE RECLAMATION

0 1 2

1:65,000 KILOMETRES

REFERENCE(S)

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE WATER MANAGEMENT SNAPSHOT – YEAR 14

Teck

YYYY-MM-DD	2021-06-29
DESIGNED	DT
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
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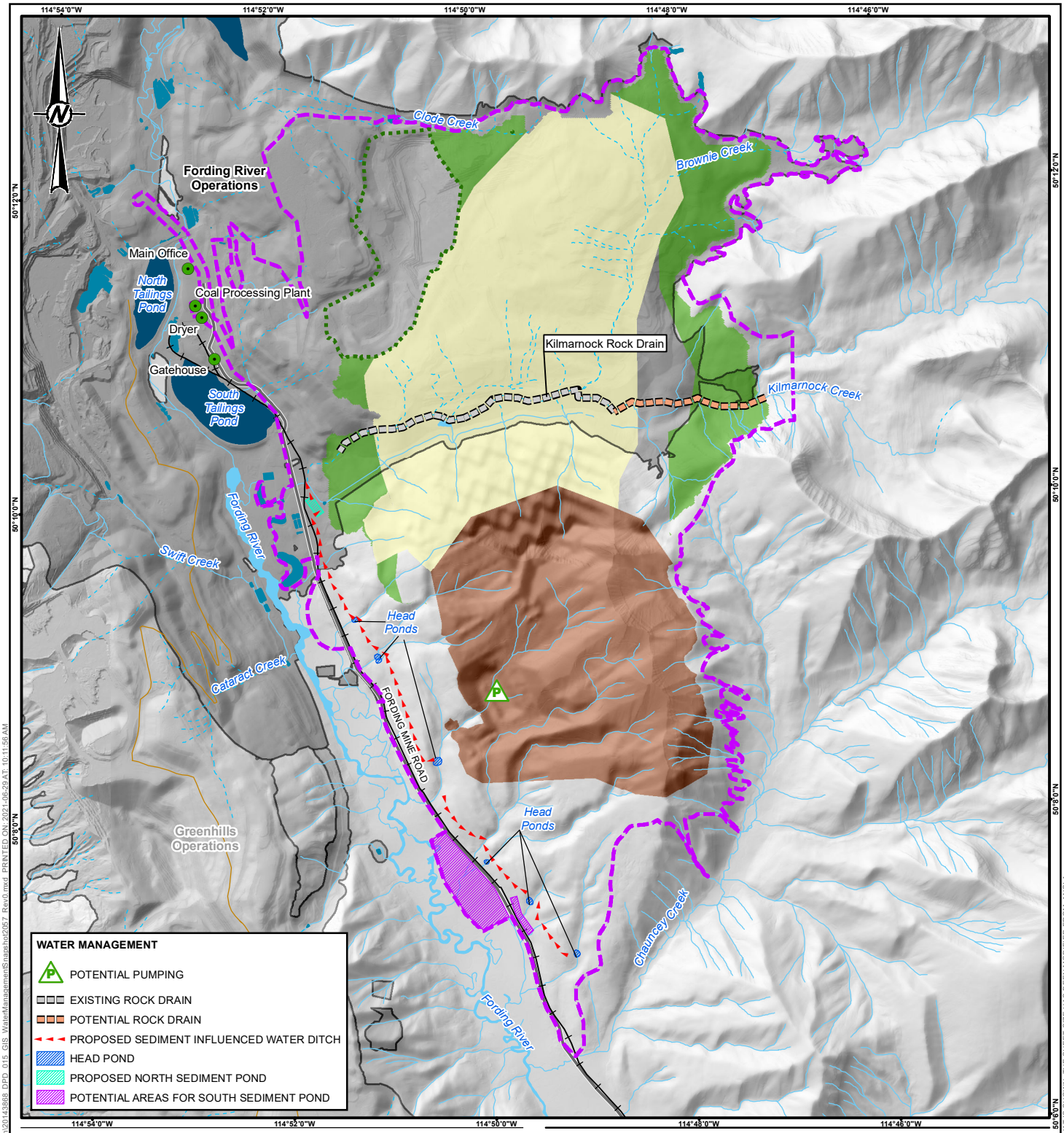

LEGEND

- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- COMBINED COARSE AND FINE REFUSE STORAGE FACILITY

YEARS 24 - 34

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA
- AVAILABLE FOR PROGRESSIVE RECLAMATION

0 1 2

1:65,000 KILOMETRES

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVE WATER MANAGEMENT SNAPSHOT – YEAR 34

YYYY-MM-DD	2021-06-29
DESIGNED	DT
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
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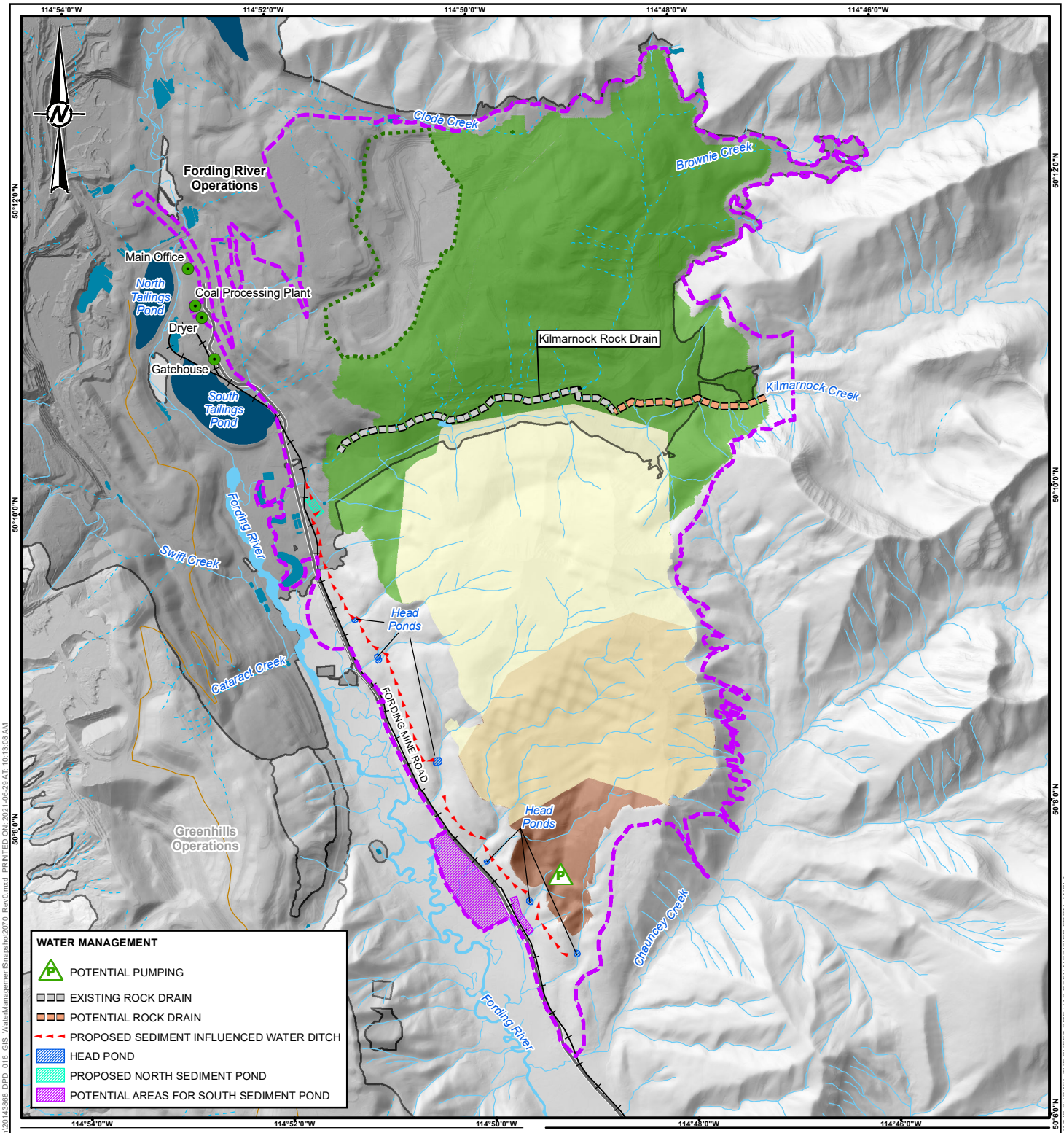

LEGEND

- EXISTING FACILITY
- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- TAILINGS POND
- WASTE WATER/SEDIMENT POND
- WATERBODY
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- COMBINED COARSE AND FINE REFUSE STORAGE FACILITY

YEARS 34 - EOM

- ACTIVE PIT
- ACTIVE WASTE ROCK STORAGE AREA
- AVAILABLE FOR PROGRESSIVE RECLAMATION

0 1 2

1:65,000 KILOMETRES

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DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
REPRESENTATIVEWATER MANAGEMENT SNAPSHOT – END OF MINING

Teck

YYYY-MM-DD	2021-06-29
DESIGNED	DT
PREPARED	DR
REVIEWED	DT
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
20143868	DPD_016	0	3.4-11

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3.5 Waste and Emissions

3.5.1 Project Waste

Project waste would be the same as FRO's wastes and no new types of waste would be produced. Waste will be managed following existing FRO waste management processes. Where needed, the existing plans and processes would be updated to incorporate the Project.

Key types of waste associated with the Project would include:

- mined waste rock (which must be removed to mine coal)
- tailings from the processing of raw coal
- hazardous and non-hazardous waste (e.g., office/ domestic waste, vehicle maintenance wastes)
- sewage
- contaminated soil (in the event of spills or leaks)

Early Engagement Feedback Notes

Early engagement on the Project included feedback proposing segregation of waste rock to manage it for constituent release. This is a standard practice at FRO and will be part of the Project. A description of the source of potentially acid generating rock and how it will be managed is provided in this section.

Waste rock generated from mining the Project would be similar to that mined at FRO. This will continue to be evaluated as part of the ongoing geochemical characterization program being undertaken for the assessment of the Project. Project waste rock would be placed in waste rock storage areas as discussed in Section 3.3.5.

The Morrissey Formation has been identified as potentially acid generating (PAG). The Morrissey Formation is usually not impacted by mining because it is below the main coal seams.

Current understanding of the likelihood of encountering PAG rock indicates that less than 1% of the Project waste rock might be PAG. There is a reasonable chance that no PAG rock would be encountered. Any rock units that are PAG will be identified in mine plans. Any mining of PAG material will be managed under FRO's approved Metal Leaching and Acid Rock Drainage Management Plan.

Raw coal from the Project would be processed at the FRO Coal Processing Plant. As described in Section 3.3.7.1, waste generated during coal processing at FRO currently includes CCFR and fine tailings. CCFR consists of 100 mm to 0.05 mm size washed rock and minor amounts of coal, and is stored at the Eagle 4 South CCFR storage facility. Fine tailings consist of water, fine coal, other clay sized particles, and trace quantities of coal processing chemicals. From FRO Coal Processing Plant, the fine tailings are discharged to the South Tailings Pond; after settling, the materials are dredged and placed in the Turnbull TSF.

As described in Section 3.3.7.2, the Project would first utilize FRO's current practice and then transition to the dewatered tailings technology and expand the Eagle 4 South CCFR storage facility to provide sufficient capacity for the storage of coarse coal refuse and the dewatered fine tailings (combined as CCFR) for the life of the Project. The dewatering process would recover the majority of water from the tailings slurry (approximately 95% or greater), which is currently discharging to the South Tailings Pond,

for re-use at the FRO Processing Plant. The timing for the transition to the dewatered tailings technology is being evaluated and will be identified in the IS/A.

Project related non-hazardous wastes would be managed through the existing FRO waste management and recycling program. Liquid wastes generated as a result of the Project would be collected and either reused within the mining process or disposed of at an appropriate on-site or off-site facility. On-site landfill cells could be incorporated into existing or future waste rock storage areas. This would require amendment of Waste Discharge Permit – Refuse AMS7726 (Section 4.4). Sewage would be collected and disposed of in the permitted FRO sewage treatment facility. Sewage produced by the Project is expected to be at the same rate as currently produced.

3.5.2 Greenhouse Gases

The Project would meet appropriate emissions and GHG regulations and requirements, and align with Teck's objective to be carbon neutral across all operations and activities by 2050. This section describes GHG emissions at the existing FRO and provides conservative estimates on potential Project GHG emissions without additional mitigations. The Project GHG emissions, including potential additional mitigations, will continue to be evaluated through the assessment process considering the Strategic Assessment of Climate Change (Government of Canada 2020).

Early Engagement Feedback Notes

Early engagement on the Project included feedback expressing concerns about potential Project greenhouse gas emissions.

This section (including Section 3.3.6.1 and 3.3.6.2) describes the Project plan to assess a conservative case based on proven technology while committing to adopting new technologies as they become proven and practicable.

Potential sources of GHG emissions for the Project would be similar to those at the existing FRO, which include:

- combustion of diesel, natural gas, and other fossil fuels to power mobile equipment and vehicles, to provide heating, and for the coal drying process and other uses
- methane, which is a GHG, is often trapped in coal and is released during mining (also referred to as fugitive methane)
- use of electricity acquired from the grid

Recent GHG emissions at FRO are shown in Table 3.5-1. The GHG emissions were calculated according to provincial and federal reporting requirements and align with the *Greenhouse Gas Protocol* (WRI 2020). Approximately 80% to 90% of the direct (Scope 1) emissions from FRO originated from diesel combustion for mobile equipment and fugitive methane. Recent increases in direct emissions in Table 3.5-1 are attributable to fluctuating factors including hauling distances and the amounts of waste rock moved and coal produced. Indirect (Scope 2) emissions from acquired electricity is a minor contributor to the total GHG emissions at FRO.

Table 3.5-1: Greenhouse Gas Emissions at the Fording River Operations

Emission	Greenhouse Gas Emissions (t CO_2e/year)		
	2019	2018	2017
Direct Emissions (Scope 1) Including:	**691,052**	**671,522**	**610,627**
Mobile equipment and vehicles	315,464	277,113	235,701
Fugitive methane [(a)]	272,437	288,825	273,003
Other fuel combustion sources, including heating, coal drying process, and other uses	103,151	105,584	101,923
Indirect Emissions (Scope 2) Including acquired electricity	**1,604**	**1,619**	**1,572**
Total Emissions (Scopes 1 + 2)	**692,656**	**673,141**	**612,200**

a) Updates to GHG quantification methodologies have resulted in restatements to the 2018 and 2017 figures from previous reporting. The emission factor used to estimate fugitive methane was updated to reflect changes in the provincial reporting requirements. Electricity emission factors were updated to more accurately reflect historical annual estimates of the electricity grid's GHG intensity.

t CO_2e/year = tonnes carbon dioxide equivalent per year

Greenhouse gas emissions would vary by Project stage. During the construction stage (expected late 2024 through to early 2027), FRO would continue to operate as normal with the addition of Project construction emissions. These additional emissions would come from the combustion of fossil fuels in the construction equipment. Preliminary estimates of fuel consumption indicate a maximum emission of 44,000 tonnes of carbon dioxide equivalent per year (t CO_2e/year) associated with Project construction activities. The estimate was obtained by multiplying estimated diesel fuel consumption with the emission factor for diesel (0.00279 t CO_2e per litre of diesel).

The Project's GHG emission estimates during operations (expected 2027 to early 2070s) will be refined in the IS/A. Conservative preliminary estimates based on current technology and equipment indicate the following:

- Direct emissions from diesel combustion to power mobile equipment (primarily haul trucks used to move coal and waste rock), would continue to vary from year to year and could increase as different areas of the Project are mined, depending on factors including haul distances, strip ratio (i.e., the ratio of the volume of waste rock moved relative to the tonnage of clean coal produced), and terrain.
- Direct emissions associated with fugitive methane would remain at approximately current levels. These emissions correlate with the amount of coal produced. As the Project would maintain current production levels, fugitive methane emissions are expected to remain at current levels.

- Other direct emissions are relatively small and are also expected to remain at current levels. These include emissions associated with the existing FRO Coal Processing Plant and support facilities which would continue to run at current production levels.
- Indirect emissions, associated with electricity acquired from the grid, would remain at approximately current levels with some increase due to the additional tailings dewatering (Section 3.3.7.2). However, the increase would be small due to the green power infrastructure that feeds the BC grid (97% sourced from renewable energy) (ECCC 2020).

Preliminary estimates of GHG emissions during the Project's operations, assuming no emission reduction mitigations, are provided in Table 3.5-2. Emissions from mobile diesel equipment associated with coal and waste rock hauling is anticipated to be the largest contributor of GHG emissions during Project operations and were estimated based on the average annual diesel requirements for the Project operations. These estimates are conservative, assuming the use of FRO's current fleet of conventional haul trucks based on the mine plan in Section 3.4. Teck will continue to evaluate potential reduction of GHG emissions associated with coal and waste rock hauling, including:

- Continued optimization of the mine plan through long-, mid- and short-range mine planning processes, including the optimization of haul distances and terrain and potential removal of areas with high strip ratios from the mine plan due to better understanding of local geology as mining progresses. This would reduce fuel requirements for mobile equipment and their associated GHG emissions.
- Equipment retrofit and replacement with more fuel or energy efficient units as current equipment is retired.
- Continued evaluation of alternative coal and waste rock handling options including options of more efficient autonomous haul trucks, electric trolley assist, and electric conveyors, as described in Section 3.3.8.

The above could reduce the total GHG emissions for the Project and overall operations to approximately current levels or lower.

Teck will also continue to evaluate other measures that may contribute to reducing sources of GHG emissions, including potential for more efficient process plant equipment and potential methane recovery as the technologies develop. These technologies might not be proven in time for evaluation during the assessment of the Project. To accommodate new information and technologies that may become technically and economically feasible in the future, the Project will continue to evaluate potential new material handling options and other GHG reduction technologies as part of the Project's mine plan.

Potential effects on GHG emissions will also be considered in the evaluation of other remaining options, including for water quality source control and treatment (Section 3.3.6).

Greenhouse gas emissions for the Project's decommissioning and closure activities (in the 2070s) would include emissions associated with the use mobile equipment and are expected to be lower than the emissions for the operations stage.

Table 3.5-2: Estimated Greenhouse Gas Emissions during Project Operations with No Mitigation

Emission	Greenhouse Gas Emissions (t CO_2e/year)	Key Inputs	Comments
Direct Emissions (Scope 1) Including:	**871,000**	Sum of three items below	–
Mobile equipment	476,000	Estimates of annual diesel fuel consumption based on current fleet of conventional haul trucks and the mine plan in Section 3.4, emissions estimated using standard emission factors for fuel combustion.	Mobile equipment emissions would vary from year to year depending on waste rock volumes, haul distances, terrain, and other factors. The emissions would likely decrease as the Project progresses (e.g., as mine plan is optimized and existing truck fleet is replaced with more fuel-efficient engines). New coal and waste rock handling options (Section 3.3.8) could further reduce these emissions.
Fugitive methane	289,000	As coal production will remain unchanged with the Project, fugitive methane emissions would remain at approximately current levels, estimated using the emission factor for bituminous coal in British Columbia from the latest National Inventory Report.	Teck will evaluate potential methane recovery as the technologies develop, which could reduce fugitive methane emissions.
Other fuel combustion sources, including heating, coal drying process, and other uses	106,000	As coal production will remain unchanged with the Project, emissions from heating, coal drying, and other uses would remain at approximately current levels; estimated using standard emission factors for fuel combustion.	Teck continues to evaluate opportunities for more efficient process equipment and other fuel saving opportunities.
Indirect Emissions (Scope 2) Including acquired electricity	**2,000**	Electricity consumption would remain at approximately current levels, with some increase with the additional tailings dewatering; estimated using the electricity emission factor for British Columbia from the latest National Inventory Report.	Electrification (e.g., with new coal and waste rock handling options) could increase indirect emissions; however, such increase would be less than the associated reduction in direct emissions.
Total Emissions (Scopes 1 + 2)	**873,000**	Sum of Direct and Indirect emissions	–

t CO_2e/year = tonnes carbon dioxide equivalent per year

The potential Project GHG emissions will continue to be evaluated through the assessment process considering the Strategic Assessment of Climate Change (Government of Canada 2020). This includes evaluation of land use changes, reclamation plans, and their potential effects on carbon sinks[16].

The Project assessment will include evaluation of the bounding cases in GHG emissions as well as emission intensity compared to international benchmarks. The Project would meet appropriate emissions and GHG regulations and requirements and align with Teck's objective to be carbon neutral across all operations and activities by 2050. Teck has set out an initial company level roadmap to achieve carbon neutrality by first avoiding GHG emissions and then eliminating or minimizing emissions. This will include looking at alternative ways of moving materials at Teck's mines, using cleaner power sources, and implementing efficiency improvements, among other measures. As such, the Project is not anticipated to affect the province's ability to meet its targets under *the Climate Change Accountability Act* or Canada's ability to meet its GHG reduction target. This will be confirmed as part of the assessment of the Project once more detailed mitigation planning has been undertaken. Discussions on the carbon-competitiveness of Teck's steelmaking operations and the Project are provided in Section 3.1.1 and Section 8.

3.5.3 Other Air Emissions

Other air emissions from FRO are primarily made up of particulate matter (PM), sulphur dioxide (SO_2), and nitrogen dioxide (NO_2) (RWDI 2019). The PM emissions arise from mining activities such as drilling, blasting, and material handling. The SO_2 and NO_2 emissions are produced by the detonation of explosives for blasting and the combustion of fossil fuels in vehicles, equipment, and coal dryers. Like GHG emissions, the Project could also lead to increases in PM, SO_2 and NO_2 emissions due to the increase in hauling and blasting. Emissions inventory will be developed as part of the Project assessment. Mitigations to reduce GHG emissions, such as equipment retrofit and replacement and the potential use of alternative coal and waste rock handling options, would also reduce other air emissions.

[16] As described in Section 3.1.5, the Project would include approximately 2,330 ha of new disturbance outside of the current FRO permitted operating area. This area consists primarily of forested habitat interspersed with non-forested ecosystems such as grasslands and avalanche paths. Description of the existing ecosystem and vegetation in the vicinity of the Project is provided in Section 7.3.1

3.6 Public and Environmental Safety

This section describes the potential malfunctions or accidents that could occur during the Project's construction, operations, closure and post-closure stages. Potential effects of the environment on the Project, including potential effects of climate change and natural hazards, are also considered in Project design and planning as described in Section 8.

Over the proposed construction period, the Project could result in a small increase in traffic due to the movement of workers, equipment and supplies associated with the construction activities. Public and environmental safety risks associated with traffic would be managed through implementation of existing FRO procedures, such as driver qualifications, transportation contract requirements, wildlife mitigation, and spill response procedures. Geotechnical stability and the risk of potential slope failure during site preparation and road construction would continue to be addressed through geotechnical investigation and engineering design.

During operation of the Project, there would be no substantive change to the risks to public and environmental safety at FRO due to malfunctions or accidents. Geotechnical and slope failure hazards at the Project facilities, including the proposed FRX Pit and waste rock storage areas and extension of the CCFR storage facility, have been and would continue to be addressed through the detailed design of the Project, as well as through FRO operational procedures including slope monitoring and emergency response plans. Other potential malfunctions or accidents that could occur during operation of the Project include potential failure of water management infrastructure. The associated risks to the environment and, if any, public safety will be reduced through engineering design, including consideration of climate change, monitoring, emergency response planning and other operational procedures. Potential spills of hazardous materials (e.g., fuel or engine oils) would continue to be managed through FRO design and operational standards, such as fuel and lube station design and containment standards, equipment maintenance, spill response procedures, and training.

Potential malfunctions or accidents during closure and post-closure, such as potential slope failures, will be addressed during detailed design and planning for closure.

Specific malfunction and accident scenarios involving the Project facilities that could affect the environment or public safety would be evaluated through the assessment process.

3.7 Mine Reclamation and Closure

Teck's approach to closure design and implementation is directed by closure objectives that consider:

1) long-term safety and stability of drainages, landforms, and features, including water quality that meets acceptable quality guidelines for safe release to the surrounding environment and use by local flora and fauna

2) contribution toward our long-term vision of achieving net positive impact (NPI) on biodiversity by maintaining or re-establishing self-sustaining landscapes and ecosystems that lead to viable long-term and diverse land uses

Early Engagement Feedback Note

Early engagement on the Project included feedback requesting more information about mine reclamation and closure. More detailed reclamation and closure plans will be developed later in the assessment process as effects of the Project on biodiversity and end land use targets are better understood. Some of the feedback will be addressed once assessment of the Project is complete and when plans are finalized.

This section of the DPD provides high level information about reclamation and closure and the considerations that will be incorporated into Project plans as they are developed in more detail.

The reclamation plan at FRO is intended to progressively reclaim areas over the life of the operation as they become available (i.e., when it is safe and once there is no future mining or other planned re-disturbance in the area). This is achieved through a process of decommissioning of infrastructure that is no longer needed, recontouring the landscape so that it is compatible with reclamation plans, revegetating to set the landscape on the intended trajectory toward end land use objectives, and monitoring to verify the success of the reclamation prescriptions and adapt them where needed.

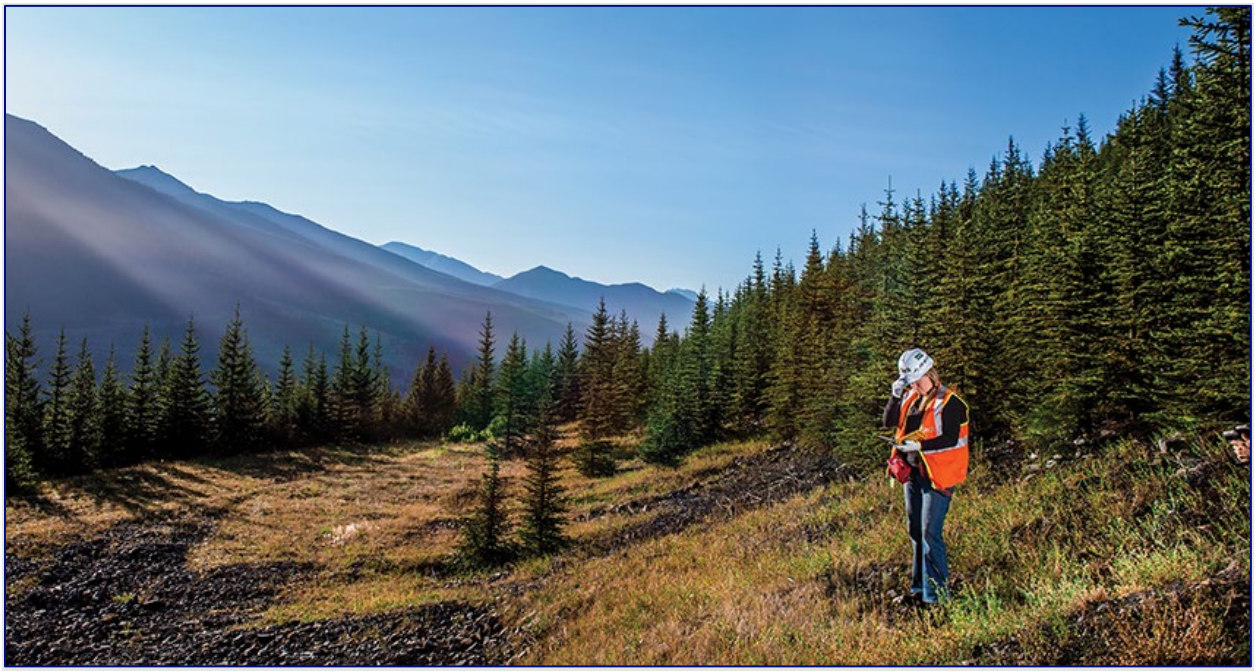
The goal of reclamation is to establish sustainable, diverse and functional landscapes that put reclaimed areas on an ecological trajectory toward pre-existing ecosystem conditions. End land use objectives thus focus on ecosystem rehabilitation, recognizing shifts in vegetation communities as the ecosystems mature. This approach means that end land use planning is considered over the long term and that a variety of end land uses can occur on the landscape over different ranges of time. As part of ongoing planning, Teck is actively seeking opportunities to incorporate landforms that will contribute to the success of reclamation plans.

Adapting an ecosystem approach, including the ecosystem classifications from pre-existing conditions, acts as a surrogate for habitats for a variety of wildlife. The intent is to focus on the rehabilitation of functioning ecosystems and through this, many different wildlife habitats will be created. This approach for the Project's reclamation and closure plan aligns with FRO's Biodiversity Management Plan process that identifies numerous ecosystem and biodiversity elements and assigns them to specific ecosystem types. The vision is to rehabilitate the ecosystem in a manner that benefits many ecosystem and biodiversity elements, as opposed to targeting a single habitat type. FRO's Biodiversity Management Plan provides an overview of the various actions, planning processes, and plans that together, represent

FRO's work toward our long-term vision of achieving NPI. The Biodiversity Management Plan for FRO will evolve over time reflecting improved understanding of impacts and the effectiveness of mitigation actions.

Reclamation research is necessary to develop successful operational reclamation plans as well as to advance the science of reclamation. The results of this research are used to develop effective reclamation programs to satisfy both short- and long-term reclamation objectives. Fording River Operations has a history of commissioning reclamation research dating back to 1969 when initial environmental and reclamation evaluations were conducted.

Photo 3.7-1: Reclamation Research Site at Fording River Operations



The final reclamation plan for the Project will be guided by site and regional research, experience as well as consultation with Indigenous Peoples, the public and government agencies. Future landscape modification and revegetation practices will include proven practices in use at Teck mines in the Elk Valley as well as emerging technologies and practices as identified through ongoing research and development. These practices are consistent with the requirements of the current legislation and requirements of FRO's existing C-3 Permit and its various amendments. Innovation in reclamation will be encouraged throughout the Project and used in conjunction with proven techniques.

The Project's reclamation and closure plan will consider:

- integration with, and where necessary adjustment to, reclamation and closure plans for existing and permitted FRO activities
- progressive reclamation of Project components as they become available
- long-term safety and stability and environmental performance

- alignment with Teck's biodiversity programs so that reclamation of non-Project components, interim reclamation, and progressive reclamation all tie into temporal and long-term habitat needs
- engagement with Indigenous Peoples, the public and government agencies about end land use, closure objectives, and geomorphic design of the closure landscape to support target ecosystems and habitat[17]
- engagement with Indigenous Peoples, the public and government agencies regarding impacts, mitigations and objectives related to social and economic impacts of closure

Through application of the above considerations, reclamation activities will occur throughout the life of the Project. Following the conclusion of operations, the Project would move into the closure stage that will focus on final decommissioning, recontouring and revegetation to support overall closure. Followed by a post-closure period of monitoring and maintenance until the area is self-sustaining and on a trajectory toward functional targeted ecosystems. Water management infrastructure would remain throughout the period of post-closure, for as long as these systems are required to manage water quality to the receiving environment. Post-closure activities and programs will be described as part of the closure plan.

[17] The Project envisions employing sessions like the EVO 'Making Wild Places' workshop conducted between Teck and KNC for planning at EVO.

4 Regulatory Framework

This section of the DPD includes a discussion of:

- thresholds for assessment under the BC EAA and how the Project relates to those thresholds
- thresholds for assessment under the federal IAA and how the Project relates to those thresholds, along with information about the designation of the Project under this Act
- other potential federal approvals that might be required for the Project
- other potential provincial permits and approvals that might be required for the Project
- proposed assessment schedule
- relevant studies, plans and/or regional assessments that may be relevant to assessment of the Project
- potentially relevant agreements
- interactions with other existing approvals

4.1 *Environmental Assessment Act* of British Columbia

The Project is reviewable under the BC EAA. According to Section 3(2), Section 10(1) and Table 6 of the *Reviewable Projects Regulation*, proposed modification of an existing coal mine is reviewable under the BC EAA if:

a) the existing project that is subject to the modification, or the modification, has a production capacity in excess of 250,000 t/yr of clean coal or raw coal or both; and

b) the modification will result in the disturbance of an area of land that was not previously permitted for disturbance and that is at least 50% of the area of land that was previously permitted for disturbance at the existing project

According to Section 4(1) and Table 6, even if the thresholds under Section 3 are not met, a project is reviewable if:

a) it emits 380,000 tonnes or more per year of one or more greenhouse gases directly from project facilities, measured in carbon dioxide equivalents, determined in accordance with Part 3 of the Greenhouse Gas Emission Reporting Regulation, B.C. Reg. 249/2015, or

b) it includes the clearance of 600 ha or more of land, unless the clearance has been authorized by the minister, or delegate, under the *Resort Timber Administration Act*

The Project does not include a change to FRO's current production capacity[18]. Given FRO's current production rate is higher than the threshold in the *Reviewable Projects Regulation,* the Project would be reviewable if either the percent change in area or total area exceeds the thresholds (per Section 3(2) and Section 4(1) respectively) noted above. Similarly, the Project would be reviewable if it emits

[18] FRO's design capacity is 10 Mmtcc per year and typical annual production is between 8.5 and 9.5 Mmtcc.

380,000 tonnes or more per year of one or more greenhouse gases directly from Project facilities (refer to Section 3.5.2).

The Project footprint (Section 3.1.5, Figure 3.1-1) includes 2,330 ha of land not previously permitted for disturbance (Table 4.1-1) and an increase of the area of mine operations of 33.3%[19]. While the Project does not meet the percentage change threshold under Section 3(2) of the regulation, it does meet the total area threshold under Section 4(1) of the regulation. Based on the information in Section 3.5.2, Project facility emissions will also likely exceed the GHG emissions threshold in Section 4(1). This means that the Project will require review under the BC EAA.

Table 4.1-1: Project Footprint Disturbance Areas

Disturbance Type	Disturbance Location	Disturbance Area (ha)
Disturbance of land related to the Project not previously permitted for disturbance (new disturbance)	Outside the FRO C-3 Permit Area	2,330
Disturbance of land related to the Project previously permitted for disturbance[(a)]	Inside the FRO C-3 Permit Area	2,320
	Total:	**4,650**
Existing FRO area of mine operations	FRO C-3 Permit Area	6,993
Percent new disturbance compared to current area of mine operations: New disturbance/existing area of mine operations = 2,330 ha / 6,993 ha		**33.3%**

a) Area previously permitted for FRO disturbance based on *Mines Act* C-3 Permit. This area includes all areas currently under active disturbance, all areas permitted for disturbance to construction and operation of specific mine infrastructure and future mine infrastructure included in prior Environmental Assessment Certificate approvals (e.g., mining in Swift). Teck has confirmed this approach with BC EAO.

4.2 *Impact Assessment Act* of Canada

According to Section 19(a) of the *Physical Activities Regulations* under the IAA, expansion of an existing coal mine is considered a designated project under the IAA if the expansion would result in an increase in the area of mining operations of 50% or more and the total coal production capacity would be 5,000 t/day or more after the expansion.

Prior to submitting the provincial IPD, Teck contacted the IAAC to determine whether the Project was described in the *Physical Activities Regulations* under the IAA. Information provided by Teck outlined that the Project would increase the area of existing mining operations at FRO by an additional approximately 36%, and that the extension would have a total production capacity 27,400 t/d. The IAAC responded that the Project, as described, would be below the threshold described in the regulation, and as a result it was the IAAC's view that the Project would not be designated under the regulations.

The IAA also states in Section 9(1) of the IAA, that the Minister of Environment and Climate Change Canada may designate a physical activity that is not prescribed by regulations if the carrying out of that

[19] The change in disturbance area (32.3%) is slightly lower than what was provided in the IPD (36.5%) because of design refinement decreasing the area of new disturbance (Section 3.1.5).

physical activity may cause adverse effects within federal jurisdiction or adverse direct or incidental effects, or public concerns related to those effects warrant the designation.

As noted in Section 1, following the posting of the provincial IPD to the BC Environmental Assessment Project Information Centre in April 2020, the IAAC received eight letter requests that the Project be designated for assessment under the IAA. On August 19, 2020 and following consideration of the designation requests and other factors set out in the IAA, the federal Minister of Environment and Climate Change Canada issued an Order designating the Project, pursuant to section 9(1) of the IAA. The reasons for the decision are posted in the Minister's response and included:

- While the area of mining operations of the Project would be below the 50% threshold for a mine expansion, it would be above the total coal production capacity threshold of 5,000 tonnes per day described in Item 19(a) of the *Physical Activities Regulations*.
- The Project may cause adverse direct and cumulative effects to areas of federal jurisdiction, including transboundary environments.
- Concerns expressed by Indigenous Peoples, federal authorities, other jurisdictions and members of the public that relate to adverse effects within federal jurisdiction or adverse effects that may not be fully addressed by the provincial assessment process or through provincial or federal permitting for the Project.
- The Project may cause adverse impacts to Aboriginal and Treaty rights and matters related to Indigenous Peoples within federal jurisdiction that cannot be addressed through existing legislative and regulatory mechanisms.

4.3 Other Federal Approvals

Depending on the final configuration of the Project, the following federal approvals or permits may be required for the Project:

- *Fisheries Act* authorization will be required if the Project cannot avoid the harmful alteration, disruption or destruction (HADD) of fish habitat (as per Section 35 of the *Fisheries Act*) or the death of fish (as per Section 34.4 of the Act).
- *Species at Risk Act* permits might be required if the Project impacts critical habitat of aquatic species or migratory birds as defined under the *Migratory Birds Convention Act, 1994*.
- *Explosives Act* permits for temporary storage explosives magazines required to support the Project.
- *Coal Mining Effluent Regulations* (pending) authorization might be required once the regulations come into force.

Teck will have other regulatory reporting and planning requirements (e.g., such as those under the *Environmental Emergencies Regulations, 2019* of the *Canadian Environmental Protection Act*, *1999* for handling and management of explosives and other hazardous substances).

Teck is the sole proponent of the Project. The federal government has not been requested, nor are they providing, any current or future financial support for the Project.

4.4 Other Provincial Permits and Approvals Required for the Project

A summary of the key authorizations or permits potentially required for the Project are provided in Table 4.4-1. There are several permits which authorize the existing FRO that will require amendment for the Project. There are also new permits that might be required. The assessment process will include a Regulatory Coordination and/or Permitting Plan to be developed by the BC EAO and the IAAC. This plan will help to clarify permitting requirements so that issues are addressed at the right time, under the pertinent regulatory process. Decisions on provincial and/or federal permits would only be made following decisions that the Project is authorized to proceed under the BC EAA and/or the IAA.

Early Engagement Feedback Note

Early engagement on the Project included feedback about possible Project permits and approvals.

Teck proposes this feedback be considered in the development of the draft Project permitting plan to be developed during the process planning phase of the assessment, assuming the BC EAO and the IAAC determine that the Project should proceed through the next phases of the assessment process.

Teck will engage with the EMLI Major Mines Permitting Office to align on the required provincial permits, licenses, approvals and authorizations to be required for the Project, and establish the coordinated review process through a Mine Review Committee (MRC). The MRC is anticipated to include representatives from the BC EMLI, the BC MECCS, the BC FLNRORD and KNC. The coordinated review process has four main stages: pre-application engagement, application screening, application review and final decisions. While applications are reviewed and recommendations provided through the MRC, the Statutory Decision Maker retains responsibility for final decisions. Teck anticipates this process to require a six-month timeline. Anticipated provincial authorizations and permits potentially required for the Project are listed in Table 4.4-1.

Table 4.4-1: Summary of Key Provincial Authorizations or Permits Potentially Required for the Project

Statute	Agency	Authorization or Permit	Project Component or Activity	Project Requirements
Mines Act	BC EMLI	*Mines Act* C-3 Permit[a]	Facilities and infrastructure within the *Mines Act* Permit area	Amend FRO permit for Project pit, waste rock storage areas, water management structures, infrastructure and footprint
Coal Act	BC EMLI	Coal Lease Multiple	Long-term production of coal	Conversion of coal licences to coal leases within the Project footprint.
Environmental Management Act	BC MECCS	Waste Discharge Permit – Effluent AMS424[a]	Land disturbance for construction activities; tailings storage might be addressed through separate permitting process	Amend FRO permit for Project discharges during construction (sediment control) and operations
Environmental Management Act	BC MECCS	Waste Discharge Permit – Effluent AMS107517[b]	Effluent discharge to the land and water from five coal mine sites located in the Elk Valley	Amend Teck area-based permit for Project discharges of contact water

Table 4.4-1: Summary of Key Provincial Authorizations or Permits Potentially Required for the Project

Statute	Agency	Authorization or Permit	Project Component or Activity	Project Requirements
Environmental Management Act	BC MECCS	Waste Discharge Permit – Refuse AMS7726[(a)]	Disposal of office and shop waste (e.g., domestic garbage)	Amend FRO permit for Project-related waste disposal sites and waste volumes
Environmental Management Act	BC MECCS	Waste Discharge Permit –Air Emissions AMS1501[(a)]	Emissions discharge to the air	Amend FRO permit if Project requires updates related to dust control or monitoring or discharges from new facilities (if required)
Water Sustainability Act	BC FLNRORD	Water Licence C133241[(a)] C133242[(a)] C133243[(a)]	Beneficial use of water from multiple sources	Amend FRO permits if Project requires updates related to water requirements for dust control; potential need for new water licences associated with water management or non-potable water supply wells
Heritage Conservation Act	BC FLNRORD	Site Alteration Permits Multiple	Alteration, recovery or destruction of archeological sites	Obtain new permits as required for Project disturbance
Public Health Act	BC Ministry of Health	BC Sewerage System Regulation Permit	Permits sewage disposal systems, if included as part of the satellite office	Obtain new permit as required
Forest and Range Practices Act	BC FLNRORD	Cutting and Road Permits on Crown land in BC	Tree removal or road building	Obtain permit as required
Wildlife Act	BC FLNRORD	Authorization or Exemption Permits	Vehicle operation in areas closed under the *Wildlife Act* and various activities related to wildlife management that may arise.	Obtain permit as required

a) Current FRO authorization or permit.

b) Current Teck area-based permit that includes FRO.

BC EMLI = British Columbia Ministry of Energy, Mines and Low Carbon Innovation; BC MECCS = British Columbia Ministry of Environment and Climate Change Strategy; BC FLNRORD = British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development.

Section 9 provides more information about Project water use and permitting considerations. Section 10 provides more information about land use plans relevant to the Project.

4.5 Proposed Assessment Schedule

A preliminary schedule for major assessment and permitting process milestones is presented in Table 4.5-1. This schedule is subject to change as the details of the coordinated provincial and federal assessment process become available.

Table 4.5-1: Preliminary Coordinated Assessment, Permitting and Project Milestone Schedule

Milestone/Activity	Timing (single dates represent end dates)
Early engagement with Ktunaxa Nation, local provincial and federal governments and local community (non-governmental) organizations	2018 through 2019
BC EAO accepts provincial IPD and Engagement Plan, initiating the assessment process under the BC EAA	April 2020
Early engagement with Ktunaxa Nation, local provincial and federal governments and local community (non-governmental) organizations and interested members of the public	April through June 2020
BC EAO releases a Summary of Engagement and direction for a Detailed Project Description	July 2020
Federal Minister of Environment and Climate Change Canada designates the Project under the IAA	August 2020
Impact Agency of Canada (IAAC) accepts and posts the federal IPD and IPD Summary	October 2020
IAAC Comment Period on the federal IPD (20 days)	November 2020
IAAC issues Summary of Issues	November 2020
Teck submits DPD (this document) to jointly fulfill requirements of BC EAA and IAA	Q3 2021
BC EAO and IAAC decisions on whether the Project should move to next stage of the assessment process (BC EAO Readiness Decision and IAAC Notice of Determination)	Q3 2021
Joint Planning Phase In this phase the IAAC and the BC EAO will issue the TISG/AIR and other notices, orders and/or plans that will support the assessment process: • under the IAA - Public Participation Plan, Indigenous Engagement and Partnership Plan, Impact Assessment Cooperation Plan, Permitting Plan and Notice of Commencement • under the BC EAA - Process Order, Regulatory Coordination Plan and Assessment Plan and Terms of Reference for the Technical Advisory Committee and the Community Advisory Committee Teck anticipates that some of these documents may be coordinated or issued jointly by the BC EAO and the IAAC, should the Project proceed to this stage of the assessment process	Q1 2022
Teck submits joint Draft Impact Statement/ Application to meet the assessment requirements under the IAA and the BC EAA	Q2 2022
Agency and public review of joint Draft Impact Statement/ Application	Q4 2022
Teck submits joint Final Impact Statement/ Application for the assessment under the IAA and BC EAA	Q2 2023
Agencies Issue Draft Assessment Reports	Q4 2023
BC EAO releases Certificate Decision	Q4 2023
IAAC releases Impact Assessment Decision	Q4 2023
Submit provincial permit applications	Q4 2023
Provincial agencies release permit application decisions	Q2 2024
Start of construction activities	Q2 2024

Table 4.5-1: Preliminary Coordinated Assessment, Permitting and Project Milestone Schedule

Milestone/Activity	Timing (single dates represent end dates)
Start of mining operations	Q1 2027
Cessation mining operations, start of closure	~2070

4.6 Relevant Studies, Plans and/or Regional Assessments

Teck understands that assessment of GHG emissions will be required in accordance the Strategic Assessment of Climate Change (Government of Canada 2020). Additional information on GHG emissions for the Project is included in this document in Section 3.5.2. No other federal regional assessments, studies or plans are relevant to the Project.

Several provincial plans are relevant and can be used to guide the assessment of the Project. These include, for example, land use plans, the Elk Valley Cumulative Effects Management Framework and the Elk Valley Water Quality Plan. Relevant local and regional environmental studies, initiatives, plans and programs are discussed in Section 7.1.2. Land use plans are discussed in Section 10.

4.7 Potentially Relevant Agreements

Potentially relevant agreements made by the Governments of Canada and British Columbia that may help guide engagement and/or the scope assessment process for the Project are identified in Appendix D.

4.8 Interactions with Other Existing Approvals

As noted in prior sections, the Project may influence other existing projects and/or approvals at FRO, as follows:

- If the Project is approved, GHO may focus on mining a portion of the Swift Project, potentially requiring an amendment to the Environmental Assessment Certificate for the Swift Project, as well as changes to the FRO and GHO *Mines Act* Approvals to accommodate the change in operator. Regardless of which operation mines portions of Swift, both the FRO and GHO require additional permitted areas to maintain production capacities past the late-2020s and early 2030s.
- The Project may necessitate changes to the clean water diversion project planned for Kilmarnock Creek. The potential need for change and the potential need for subsequent changes to permits for that Project will be evaluated as the assessment of the Project proceeds.

Any permitting changes that may be necessitated as a result of approval of the FRX Project will be addressed under permitting processes separate from that being undertaken for the FRX Project.

5 Public, Government Agencies, Non-Government Organizations and Technical Advisor Engagement and Issues

Early, inclusive and meaningful engagement with all interested persons who may be affected by or have an interest in the Project is important to Teck and is an integral component of the process under the BC EAA and the IAA. Teck started engagement on the Project in 2018. To date, Teck has engaged with multiple organizations and groups. This section summarizes engagement with the public, government agencies, non-government organizations, and technical advisors. A summary of engagement directly with Indigenous Peoples regarding the Project is presented in Section 6.

The Project has completed engagement through a variety of methods, including in-person meetings (pre-COVID-19), teleconferences, letters, emails and via the Project website (https://fordingriverextension.teck.com/). The Project website includes Project-specific information on engagement opportunities, regional benefits, cumulative effects, the assessment process, and more. The website is designed to support a meaningful engagement in a virtual space, provide an additional opportunity for feedback, and be a mechanism to stay connected to the Project.

The following list outlines the interested parties that have been engaged for the Project to date:

- Governments agencies and Indigenous Peoples identified as technical advisors and invited to comment on the Project by the BC EAO and the IAAC
- landowners, residents and businesses in the vicinity of the Project
- environmental groups
- community-based organizations
- local governments
- employees
- interested members of the public

Engagements undertaken with the above parties since preparation of the provincial IPD are summarized in Table 5-1. For engagements with the potentially affected public prior to development of the provincial IPD, refer to Tables 14 through 16 of the provincial Engagement Plan.

Table 5-1: Engagement with Potentially Affected Public, Government, Non-Governmental Organizations and Technical Advisors about the Project since Preparation of the Provincial Initial Project Description

Date	Group(s) Engaged	Purpose of Engagement
April 17, 2020	Elk Valley Bighorn Outfitters	Elk Valley Bighorn Outfitter letter providing feedback on Castle Project received by Teck.
May 13, 2020	Elk Valley Bighorn Outfitters	Teck letter response to Elk Valley Bighorn Outfitters.
May 14, 2020	Open House #1	Introductory Presentation on the Castle Project, hosted by BC EAO. Teck presented an overview of the Project and responded to questions.
May 19, 2020	Open House #2	Introductory Presentation on the Castle Project, hosted by BC EAO. Teck presented an overview of the Project and responded to questions.
May 19, 2020	Sparwood & District Fish & Wildlife Association	Sparwood & District Fish & Wildlife Association letter providing feedback on Castle Project received by Teck.
May 25, 2020	Sparwood & District Fish & Wildlife Association	Teck letter response to Sparwood & District Fish & Wildlife Association.
May 27, 2020	Elk Valley Bighorn Outfitters	Elk Valley Bighorn Outfitters letter providing feedback on Castle Project received by Teck.
June 4, 2020	Ktunaxa Nation, the Confederated Salish & Kootenai Tribes, Kootenai Tribe of Idaho, City of Fernie, District of Elkford, District of Sparwood, Regional District of East Kootenay, Interior Health Authority, Environment and Climate Change Canada, Health Canada, Natural Resources Canada, Ministry of Energy, Mines and Petroleum Resources, Ministry of Environment and Climate Change Strategy, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, US Environmental Protection Agency and State of Montana.	Introductory Technical Advisory meeting, hosted by the BC EAO.
June 12, 2020	General Public	Teck launches Project Website https://fordingriverextension.teck.com/
June 17, 2020	Elk Valley Bighorn Outfitters	Teck letter response to Elk Valley Bighorn Outfitters.
June 21, 2020	East Kootenay Wildlife Association	East Kootenay Wildlife Association letter providing feedback on the Project received by Teck.
June 23, 2020	Elkford Rod & Gun Club	Elkford Rod & Gun Club letter providing feedback on Project received by Teck.
June 26, 2020	United States Environmental Protection Agency	Feedback provided on provincial IPD via comment tracking database.
July 30, 2020	District of Elkford	Meeting requested by District of Elkford for a Project update. Teck presented an overview of the Project and responded to questions.

Table 5-1: Engagement with Potentially Affected Public, Government, Non-Governmental Organizations and Technical Advisors about the Project since Preparation of the Provincial Initial Project Description

Date	Group(s) Engaged	Purpose of Engagement
July 15, 2020	Confederated Salish & Kootenai Tribes	Feedback provided on provincial IPD via a letter to the BC EAO.
July 31, 2020	Ktunaxa Nation, Shuswap Indian Band, Stoney Nakoda Nation, Piikani Nation, Siksika Nation, Kainai (Blood Tribe), the Confederated Salish & Kootenai Tribes, Kootenai Tribe of Idaho, City of Fernie, District of Elkford, Interior Health Authority, Environment and Climate Change Canada, Health Canada, Ministry of Energy, Mines and Petroleum Resources, Ministry of Environment and Climate Change Strategy, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, US Environmental Protection Agency[(a)]	Feedback provided on the provincial IPD via the Summary of Engagement and comment tracking database.
August 13, 2020	Backcountry Hunters and Anglers (BC & Montana Chapters)	Backcountry Hunters and Anglers (BC & Montana Chapters) letter providing feedback on Project received by Teck.
August 21, 2020	Confederated Salish & Kootenai Tribes	Teck reached out to the Confederated Salish & Kootenai Tribes following the federal decision to open engagement.
August 21, 2020	Confederated Salish & Kootenai Tribes	The Confederated Salish & Kootenai Tribes responded to Teck's email indicating interest in further engagement on the Project.
August 26, 2020	District of Elkford	Meeting with District of Elkford to discuss IPD feedback. Teck provided some clarity on District of Elkford comments, and District of Elkford highlighted some Project interests.
September 8, 2020	East Kootenay Wildlife Association	Teck letter response to East Kootenay Wildlife Association.
September 8, 2020	Elkford Rod & Gun Club	Teck letter response to Elkford Rod & Gun Club.
September 9, 2020	Backcountry Hunters and Anglers (BC & Montana Chapters)	Teck letter response to Backcountry Hunters and Anglers (BC & Montana Chapters).
October 30, 2020	Confederated Salish & Kootenai Tribe	Provided feedback on the federal IPD via a letter to IAAC.
November 3, 2020	United Stated Environmental Protection Agency	Provided feedback on the federal IPD via a letter to IAAC.
November 17, 2020	District of Sparwood	Teck provided an update on the Project and DPD.
November 18, 2020	Backcountry Hunters & Anglers (BC & Montana Chapters)	Teck provided an update on the Project and DPD; discussion of interests on the Project.
November 23, 2020	District of Elkford	Teck provided an update on the Project and DPD.

Table 5-1: Engagement with Potentially Affected Public, Government, Non-Governmental Organizations and Technical Advisors about the Project since Preparation of the Provincial Initial Project Description

Date	Group(s) Engaged	Purpose of Engagement
December 1, 2020	Municipality of the Crowsnest Pass	Teck provided an update on the Project and DPD.
December 4, 2020	Regional District of East Kootenay	Teck provided an update on the Project and DPD.
December 8, 2020	Elk Valley Bighorn Outfitters	Teck provided an update on the Project and DPD; identified interests in the Project.
December 9, 2020	East Kootenay Wildlife Association, Elkford Rodd and Gun Club, Sparwood District Fish and Wildlife Association	Teck provided an update on the Project and DPD.
December 16, 2020	Outdoor Recreationalists	Teck presented at the annual Outdoor Recreationalists Meeting; provided an update on the Project and DPD.
December 18, 2020	Confederated Salish & Kootenai Tribes	Provided feedback on the DPD via a letter to BC EAO and IAAC.
December 30, 2020	Backcountry Hunters & Anglers (BC & Montana Chapters)	Provided a letter to Teck further outlining interests, and suggestions for mitigations.
February 1, 2020	Backcountry Hunters & Anglers (BC & Montana Chapters)	Teck letter response to Backcountry Hunters and Anglers (BC & Montana Chapters).
February 17, 2020	Backcountry Hunters & Anglers (BC & Montana Chapters)	Meeting to discuss terrestrial components of the letter provided by Backcountry Hunters & Anglers on Dec 30, 2020.
March 15, 2021	Local Trapper	Phone call with local trapper to discuss the Project and potential impacts and interests.
March 16, 2021	District of Elkford	Meeting to continue discussion of interests on the Project.
April 8, 2021	Contractor Townhall	Teck provided a Project presentation to current and potential new contractors in the region.
April 12, 2021	District of Elkford	Meeting to continue discussion of Project interests, specifically the District of Elkford housing study.
April 21, 2021	District of Sparwood, Social Community and Economic Effects Advisory Committee	Teck provided a Project update presentation to this committee, formed as a condition of the Baldy Ridge Extension Environmental Assessment Certificate.
April 29, 2021	Backcountry Hunters and Anglers	Meeting to discuss aquatic topics in the letter provided by Backcountry Hunters & Anglers on Dec 30, 2020.
May 26, 2021	District of Sparwood	The District of Sparwood participated in data collection interview focused on socio-economic topics.
May 26, 2021	Elk Valley Safe Homes	Elk Valley Safe Homes participated in a data collection interview focused on socio-economic topics.
May 27, 2021	Causeway Bay Hotel	Causeway Bay Hotel participated in a data collection interview focused on socio-economic topics.

Table 5-1: Engagement with Potentially Affected Public, Government, Non-Governmental Organizations and Technical Advisors about the Project since Preparation of the Provincial Initial Project Description

Date	Group(s) Engaged	Purpose of Engagement
May 27, 2021	District of Elkford Chief Administrative Officer	The Chief Administrative Officer from the District of Elkford participated in a data collection interview focused on socio-economic topics.
June 1, 2021	Remax	Remax participated in a data collection interview focused on socio-economic topics.
June 1, 2021	District of Elkford	The District of Elkford participated in a data collection interview focused on socio-economic topics.
June 1, 2021	Fire/Emergency Services Fernie	Fire/Emergency Services Fernie participated in a data collection interview focused on socio-economic topics.
June 2, 2021	Fernie Chamber of Commerce	The Fernie Chamber of Commerce participated in a data collection interview focused on socio-economic topics.
June 2, 2021	District of Sparwood Chief Administrative Officer	The Chief Administrative Officer from the District of Sparwood participated in a data collection interview focused on socio-economic topics.
June 2, 2021	Fernie Senior Citizens Society	The Fernie Senior Citizens Society participated in a data collection interview focused on socio-economic topics.
June 3, 2021	Teck Employees	A group of Teck employees participated in a data collection interview focused on socio-economic topics.
June 3, 2021	Local Trapper	A trapper located within proximity to the Project participated in a data collection interview focused on land-use topics.
June 4, 2021	Elk Valley Bighorn Outfitters	Elk Valley Bighorn Oufitters participated in a data collection interview focused on land-use topics.
June 8, 2021	Elkford Chamber of Commerce	The Elkford Chamber of Commerce participated in a data collection interview focused on socio-economic topics.
June 9, 2021	Fernie Women's Resource Center	The Fernie Womens Resource Center participated in a data collection interview focused on socio-economic topics.
June 10, 2021	Royal LePage	Royal LePage participated in a data collection interview focused on socio-economic topics.
June 10, 2021	Elkford Rod and Gun Club	The Elkford Rod and Gun Club participated in a data collection interview focused on land-use topics.
June 15, 2021	Backcountry Hunters and Anglers	The Backcountry Hunters and Anglers Club participated in a data collection interview focused on land-use topics.
June 16, 2021	East Kootenay Addiction Services	East Kootenay Addiction Services participated in a data collection interview focused on socio-economic topics.

Table 5-1: Engagement with Potentially Affected Public, Government, Non-Governmental Organizations and Technical Advisors about the Project since Preparation of the Provincial Initial Project Description

Date	Group(s) Engaged	Purpose of Engagement
June 17, 2021	Regional District of the East Kootenay	The Regional District of the East Kootenay participated in a data collection interview focused on socio-economic topics.
June 18, 2021	Crowsnest Pass Chief Administrative Officer	The Chief Administrative Officer from the Crowsnest Pass Municipality participated in a data collection interview focused on socio-economic topics.
June 22, 2021	Elkford ATV Club	The Elkford ATV Club participated in a data collection interview focused on land-use topics.
June 22, 2021	Sparwood Chamber of Commerce	The Sparwood Chamber of Commerce participated in a data collection interview focused on socio-economic topics.
June 22, 2021	Elk Valley Family Society	The Elk Valley Family Society participated in a data collection interview focused on socio-economic topics.
June 23, 2021	Fernie Pride Society	The Fernie Pride Society participated in a data collection interview focused on socio-economic topics.
June 23, 2021	City of Fernie Chief Administrative Officer	The Chief Administrative Officer for the City of Fernie participated in a data collection interview focused on socio-economic topics.
June 24, 2021	Sparwood Senior Citizens Housing Society	The Sparwood Senior Citizens Housing Society participated in a data collection interview focused on socio-economic topics.
June 25, 2021	Teck Human Resources	Teck Human Resources representatives participated in a data collection interview focused on socio-economic topics.
June 29, 2021	School District 5	Representatives from School District #5 participated in a data collection interview focused on socio-economic topics.
July 7, 2021	Sparwood and District Fish and Wildlife Association	The Sparwood and District Fish and Wildlife Association re-submitted a letter provided to Teck in May 2020 to indicate their interest topics remain the same.
July 15, 2021	Interior Health	Interior Health participated in a data collection interview focused on socio-economic topics.

a) Additional information about engagement with Indigenous Peoples of Canada is presented in Section 6.

In addition to the above, formal public comments were received by the BC EAO and the IAAC over the course of public comment periods on the IPD documents and as part of the designation requests under the IAA. Public comments were summarized in the following documents:

- Summary of Engagement prepared by the BC EAO (July 31, 2020)
- Summary of Issues prepared by IAAC (November 13, 2020)

Technical advisors were also invited by the BC EAO and the IAAC to provide comments on an early draft of this DPD document.

Throughout the engagement process, Teck has received valuable feedback on the Project. Key topics of interest received through the engagements listed above, as well as those brought forward during engagements completed prior to preparation of the provincial IPD, are summarized into themes in Table 5-2 and supplements the information summarized in Sections 1.2.1 and 1.2.2. As noted in Section 1.2, the full set of Teck's responses to the Summary of Engagement and Summary of Issues is presented in Appendices A and B, respectively. Additional detailed comments and responses from Technical Advisors are documented in the comment tracking database for the Project (hosted by BC EAO).

Table 5-2: Key Topics of Interest Related to the Project Identified by the Public, Government, Non-Governmental Organizations

Topic of Interest	Comment Summary	Actions
Water quality	Potential effects, including cumulative effects, on the Fording River, Elk River, Chauncey Creek, Koocanusa Reservoir (a transboundary waterbody) and the Kootenai River downstream of Koocanusa Reservoir. Concerns focused around the existing selenium (and nitrate) concentrations in these bodies of water and how the potential further increase of concentrations would affect fish and fish habitat and Teck's ability to meet the objectives of the Elk Valley Water Quality Plan, permit requirements related to water quality and other commitments.	**Teck Regional Actions:** • Teck participates in environmental initiatives and regulatory processes that focus on current and legacy conditions, including water quantity and quality initiatives (Section 7.1.2 and 7.1.3). This includes working to develop and implement the EVWQP and various related regional initiatives (refer to Section 7.1.2). Mitigations outlined in the 2019 EVWQP Implementation Plan Adjustment (IPA) report are intended to stabilize and reduce concentrations of selenium and nitrate for Teck's permitted developments over the next 20 years. The Project, if approved, will be integrated into a subsequent version of the EVWQP IPA. • Teck continues to advance efforts to improve environmental performance and build public confidence. Teck anticipates progress on water quality research, mitigation, and long-term planning to occur in parallel with the Project. **Project Actions:** • The Project's water management plan builds on existing water treatment plans and mitigations, including successes in mine design, source control, treatment, and research and technology that are available and applicable to conditions in the Elk Valley and for the Project. The water quality management plan makes allowance for adaptation of improvements in technology to be incorporated as the Project evolves. Additional details about Teck's water quality management plan for the Project are included in Sections 3.3.6 and 3.4.4. • The assessment will evaluate the Project's potential water quality effects within the context of the regional water quality initiatives, and the Project, if approved, will be integrated into a subsequent version of the EVWQP IPA. • The proposed scope for the water quality assessment and assessment of other VCs that may be affected by water quality will be included in draft TISG/AIR being submitted by Teck to the BC EAO and the IAAC. Results of the assessment will be presented in the Impact Statement/Application. • Teck anticipates discussing water quality management options and mitigations through the Technical Advisory Committee to be established for the assessment, while taking into account other processes working on the issue on a regional basis. • Refer also to fish and fish habitat.

Table 5-2: Key Topics of Interest Related to the Project Identified by the Public, Government, Non-Governmental Organizations

Topic of Interest	Comment Summary	Actions
Fish and fish habitat, particularly westslope cutthroat trout (WCT)	A number of concerns were raised about potential Project impacts on fish and fish habitat. This included concerns regarding impacts to the populations of westslope cutthroat trout (WCT) in the upper Fording River where significant decline has been observed, and in Koocanusa Reservoir*. Concerns were raised regarding how potential water quality contaminants from the Project could contribute to population trends and contaminant concentrations in fish tissue in the Elk River watershed and Koocanusa Reservoir. Concerns were raised regarding habitat loss and disturbance to tributaries in the upper Fording River watershed that have already been subject to substantial loss. *Note that while fish in Koocanusa Reservoir are subject to a number of cumulative effects that have changed their community composition in the reservoir over the last several decades, monitoring does not document a specific recent decline in WCT in Koocanusa Reservoir (Presser and Naftz 2020) and Teck is not aware of high adult fish mortality in this system. More information about the status of WCT in the upper Fording River is presented in Section 7.3.3.	**Teck Regional Actions:** • Operational changes at FRO and GHO to reduce potential stress to the population (refer to Table 7.1-1) and collaboration with Ktunaxa Nation Council, regulators, government agencies and experts to understand the decline in the WCT population in the upper Fording River. • Development of a strategy that will support operationalization of the goals and objectives in the Province/KNC led recovery plan, once available. • Ongoing initiatives associated with the Fish and Fish Habitat Management Plan and the Tributary Management Plan. • Teck participates in the Koocanusa Reservoir Transboundary Monitoring Task Group to monitor water quality trends and their potential effects in Koocanusa Reservoir and makes its data publicly available. **Project Actions:** • The Project will incorporate findings related to WCT population decline in the upper Fording River to mitigate potential Project adverse impacts and support, as much as is practicable, healthy habitat for WCT. • Assessment of Project effects on fish and fish habitat will consider the current conditions and impacts to fish and fish habitat in the upper Fording River and at a regional scale.

Table 5-2: Key Topics of Interest Related to the Project Identified by the Public, Government, Non-Governmental Organizations

Topic of Interest	Comment Summary	Actions
Bighorn sheep and high elevation grasslands	Concerns regarding potential effects on Rocky Mountain bighorn sheep in the Elk Valley due to impacts on high elevation grasslands, which were noted as critical winter habitat for Rocky Mountain bighorn sheep.	**Teck Regional Actions:** • Teck participates in environmental initiatives and regulatory processes that focus on current and legacy conditions, including management of terrestrial effects and habitat initiatives for bighorn sheep and high elevation grasslands (Section 7.1.2 and 7.1.3). • Since the 1980s, Teck-sponsored annual flight surveys have contributed data that have shown an increasing trend in the Elk Valley East bighorn sheep population. • Teck continues to progress work on habitat research, mitigation and reclamation for bighorn sheep and high elevation grasslands. **Project Actions:** • Bighorn sheep and grasslands have been identified as candidate VCs for assessment of the Project. Teck will propose the scope of the assessment for bighorn sheep and their habitat and sensitive ecosystems such as high elevation grasslands in the draft TISG/AIR to be submitted to the BC EAO and the IAAC. • Teck anticipates discussing the assessment of terrestrial effects with the Technical Advisory Committee established for the assessment of the Project, while acknowledging other processes working on the issue on a regional basis. This includes ongoing engagement to discuss Teck's options analysis for selected Project components (Section 3.3) that have an influence on terrestrial effects.

Table 5-2: Key Topics of Interest Related to the Project Identified by the Public, Government, Non-Governmental Organizations

Topic of Interest	Comment Summary	Actions
Climate change	Carbon dioxide and methane emissions from the Project and how this could affect climate change and the provincial and federal greenhouse gas emission reduction targets.	**Teck Regional Actions:** • Teck is a member of the Canadian Carbonization Research Association and ResponsibleSteel™, two organizations that are taking leadership roles in reducing emissions from steel production. • Teck is monitoring advances in carbon capture, utilization and storage technologies that will reduce the emissions of coal-based steel production. • In 2020, 97% of electricity that we use across all operations in BC is sourced from renewable, zero-carbon power sources. We are reducing carbon emissions further by sourcing and using more renewable energy to power our operations. In early 2020, we purchased the SunMine solar energy facility, located on fully reclaimed land at Teck's former Sullivan Mine site in Kimberley. • Transportation is a significant source of emissions for our operations, whether that is vehicles needed to operate our mines or the vehicles our employees use to get to work. We are working to identify and implement zero-carbon options for transportation across our operations. In 2019, we introduced two electric buses for crew transport at FRO and GHO. **Project Actions:** • Project plans and designs will consider GHG implications. • Teck will commit to continuous improvement and, where appropriate, adopting new technologies as they become available and technically and economically feasible for use. • The assessment of the Project will discuss predicted Project GHG emissions as well as potential future changes to support Teck's 2050 carbon neutrality goals.

Table 5-2: Key Topics of Interest Related to the Project Identified by the Public, Government, Non-Governmental Organizations

Topic of Interest	Comment Summary	Actions
Indigenous traditional lands	Impacts to areas of spiritual, cultural and archaeological significance, as well as current use of resources in the Project area and those that may utilize the Project area (e.g., wildlife) and how this would affect Indigenous communities.	**Teck Regional Actions:** • As described in Teck's *Indigenous Peoples Policy*, Teck respects the rights, cultures, interests and aspirations of Indigenous Peoples and is committed to building strong and lasting relationships that help us understand each other's perspectives and priorities. Teck is committed to meaningful consultation and engagement with Indigenous Peoples and their involvement in informing the development of regulatory applications. • Teck engages with local Indigenous Peoples on our regional initiatives as outlined in Section 7.1.2. **Project Actions:** • Teck will engage with potentially affected Indigenous Peoples to evaluate the Project's effects on their rights and interests, including spiritual, cultural and archaeological, and resource use interests. Refer to Section 6 for additional information on this topic.
Human health	Potential effects on human health due to impacts on the environment, specifically on water and air quality in Canada and the US.	**Teck Regional Actions:** • Teck undertakes ongoing monitoring of water and air quality conditions in the Elk Valley. • Teck is working to update a regional human health risk assessment (HHRA) required under the regional EMA Permit 107517. This regional HHRA is expected to be completed in mid-2021. The study contributes to identification of risk management controls and mitigations to address human health risks and includes review and input from a task group formed in 2018 with representatives from KNC, Interior Health Authority, BC MECCS, the First Nations Health Authority and Teck. **Project Actions:** • The assessment of the Project will include an assessment of the risk of the Project to human health. The scope for this assessment will be proposed in the draft TISG/AIR to be submitted to the BC EAO and the IAAC. • Refer also to water quality.

Table 5-2: Key Topics of Interest Related to the Project Identified by the Public, Government, Non-Governmental Organizations

Topic of Interest	Comment Summary	Actions
Recreational access	Potential effects on recreational lands and recreational fishing.	**Teck Regional Actions:** • Teck regularly engages with the public and with outdoor enthusiast groups (including hunting and fishing clubs) to understand access concerns and access options for all Teck operations. For example, access is a key area of engagement for the closure and reclamation of Teck's Coal Mountain mine. **Project Actions:** • Teck proposes to work with interested parties to identify opportunities to manage and mitigate recreational access impacts. This will be achieved via providing future engagement opportunities on the Project website, holding topic-specific meetings as requested and as Teck has information to share. • Access will also be considered during closure planning.
Economic stability	Potential positive effects of the Project to sustain long-term employment and support the economies of the surrounding communities.	**Teck Regional Actions:** • Teck's Elk Valley operations contribute to the local economies in and around the Elk Valley, especially Elkford, Sparwood, Fernie and Crowsnest Pass. Teck and FRO's economic support to these communities comes through employment, community investment, local purchases, rentals and a formal mine-property tax sharing pool. Teck's Elk Valley operations employ over 4,000 people, including 1,400 at FRO. Many of those employed are from the local communities, contributing to the local and provincial economies and tax bases. **Project Actions:** • Additional information regarding potential Project benefits is included in Section 3.1.8. • Economic benefits of the Project will be evaluated during the assessment of the Project. Teck will propose the scope of this assessment in the draft TISG/AIR to be submitted to the BC EAO and the IAAC. • Effects of mine closure on long-term economic stability and development will be evaluated in the assessment of the Project and addressed through mine closure planning. Teck will propose the scope of this assessment in the draft TISG/AIR to be submitted to the BC EAO and the IAAC.

Table 5-2: Key Topics of Interest Related to the Project Identified by the Public, Government, Non-Governmental Organizations

Topic of Interest	Comment Summary	Actions
Sustainability	Potential positive effects of the Project's proposed reclamation efforts that would be consistent with ongoing efforts for existing mines in the Elk Valley to reclaim and rehabilitate lands impacted by mining. Comments received were regarding Teck's leadership in forward-thinking technologies to mitigate water quality impacts and their commitment to reclamation activities and minimizing overall environmental impacts.	**Teck Regional Actions:** • Teck is committed to responsible resource development. We are focused on operating sustainably, focused on the health and safety of our people and building strong relationships with communities. • Teck's work on regional environmental initiatives and regulatory processes focused on current and legacy conditions, including water quality management, reclamation and restoration initiatives as outlined Sections 7.1.2 and 7.1.3. • Teck continues to advance these efforts to improve environmental performance and build public confidence. **Project Actions:** • The Project planning will consider Teck's sustainability goals. • The integration of sustainability principles into Project planning and assessment and the Project contribution to sustainability will be described in the IS/A.

Technical advisors also identified key topics of interest regarding:

- consideration of best achievable technology for water quality and source control and effectiveness of mitigations
- receipt of additional information regarding how the operational sequencing of the Project would influence closure and end land use planning
- Project interactions with the biophysical and human environment and permitting considerations.

Teck plans to continue to work with the potentially affected public, as well as government agencies and non-government organizations to identify social, economic and environmental priorities and to define mutually beneficial outcomes and measures of success for the Project. Teck looks forward to continuing to receive feedback to support the development of a socially, environmentally and economically sound Project.

Teck is committed to a gender-based analysis + (GBA+) approach to engagement on the Project. Teck will continue to engage diverse groups so that information is available and accessible. These efforts include but are not limited to engagement with groups of varying genders, age, level of education and ethnicity. Teck has started this work with the establishment of a Project website, located at https://fordingriverextension.teck.com/, where Project information and engagement tools such as surveys and polls can be found. Additional efforts to support Teck's engagement with women and diverse groups will occur through several methods, including site tours (when possible), phone calls, and virtual engagement methods (including teleconference, videoconference).

In addition, the land and resource use, employment and economy, services and infrastructure, and community health and well-being existing conditions studies and effects assessments will collect and analyze disaggregated secondary data pertaining to women and sub-groups, and conduct interviews with women and sub-groups to understand potential disproportionate or differential impacts of the Project. Mitigation and benefit enhancement measures to address disproportionate or differential impacts will be identified through engagement with diverse groups.

Some of the diverse groups Teck intends to engage throughout this process include but are not limited to the following:

- District of Sparwood
- District of Elkford
- City of Fernie
- Municipality of the Crowsnest Pass
- Regional District of East Kootenay
- Residents of Sparwood, Elkford and Fernie
- Elk Valley Women Task Force
- College of the Rockies
- School District 5
- Sparwood Seniors Citizens Housing Society

- Fernie Child Care Society
- Fernie Women's Resource Center
- Fernie Senior Citizens Society
- East Kootenay Addiction Services Society
- Youth Advisory Commission
- Elkford Motor Inn
- Women in Mining Representative

Teck is committed to its Inclusion and Diversity Policy which states:

> "Teck respects and appreciated differences in age, ethnicity, Indigenous origin or heritage, gender, physical attributes, beliefs, language, sexual orientation, education, nationality, social background and culture or other personal characteristics".

This policy will apply and be followed in the work undertaken to support data collection and the assessment of this Project. Other policies currently in practice within Teck and of which will be followed when proceeding with engagement of women and diverse groups include but are not limited to the following:

- *Code of Ethics*
- *Code of Sustainable Conduct*
- *Human Rights Policy*
- *Indigenous Peoples Policy*

6 Indigenous Peoples Engagement, Interests and Location

The Project would be located within the East Kootenay Region in southeastern BC, in proximity to potentially interested Indigenous Peoples (Figure 3.1-3). This section of the DPD includes a discussion of Teck's understanding of Indigenous interests to date and how the Project might interact with those interests. This understanding is based on Teck's direct engagement activities with affected and potentially affected Indigenous Peoples and the input provided to the BC EAO and the IAAC during review of the provincial and federal IPD documents[20]. Teck's approach to engaging Indigenous Peoples for the Project is described in the provincial Engagement Plan. Additional information about social and economic conditions related to Indigenous Peoples is presented in Section 7.4.1.1.

The Ktunaxa Nation is a key participant in the assessment process to be undertaken for the Project under the BC EAA and the IAA. Teck will continue to engage the Ktunaxa Nation consistent with the Impact Management and Benefits Agreement between Teck and the Ktunaxa Nation (IMBA; refer to Section 6.5.2 of the provincial Engagement Plan), which acknowledges Ktunaxa laws, customs, policies and governance structures, and creates a framework for consultation and engagement. Additional information on the IMBA is presented in Section 6.1.

The Shuswap Indian Band, Stoney Nakoda Nation, Piikani Nation, Siksika Nation, Kainai (Blood Tribe), Tsuut'ina Nation, Métis Nation British Columbia and Métis Nation of Alberta have also indicated their interest in engaging in the assessment process to be undertaken for the Project.

The information in this section is based on preliminary guidance from the BC EAO and the IAAC on engagement with Indigenous Peoples. The scope and nature of that engagement may change as further guidance is provided. The scope for ongoing engagement with each group of Indigenous Peoples will be established in collaboration with each group, the BC EAO and the IAAC. Throughout this work, Teck is committed to adhering to the *Indigenous Peoples Policy*, which states, in part:

> "Teck respects the rights, cultures, interests, and aspirations of Indigenous Peoples and is committed to building strong and lasting relationships that help us understand each other's perspectives and priorities."

This policy will apply and be followed in the work undertaken to support data collection and the assessment of the Project. Teck will also continue to engage Indigenous women and diverse groups in a manner that makes information available and accessible to all interested groups. While a part of this work starts with the Project website Teck has developed, Teck will continue to work to provide access to engagement opportunities by setting up site visits, participating in community engagements (where appropriate), supporting the collection of disaggregated data and information within communities (where appropriate) and by utilizing virtual or other forms of engagement (i.e., teleconference, video conference, letters and email). Through these engagement efforts, Teck will seek to understand effects of the Project from diverse Indigenous perspectives, such as hunters, trappers and other harvesters (as appropriate).

[20] Including the designation request process under the IAA.

6.1 Ktunaxa Nation

6.1.1 Introduction Provided by Ktunaxa Nation

The Project lies within ʔamakʔis Ktunaxa, the unceded and unsurrendered territory of the Ktunaxa Nation, and is located within the Ktunaxa district of qukin ʔamakʔis or Raven's Land. Qukin ʔamakʔis extends from the headwaters of the Elk River downstream to near the town of Elko, an area of more than 3,500 km^2. We, the Ktunaxa Nation maintain underlying Indigenous title and stewardship responsibilities for all lands and waters within ʔamakʔis Ktunaxa (Figure 3.1-1), including the Elk Valley and the Project area.

The Ktunaxa Nation is composed of four communities and their members in Canada, including: yaq̓it ʔa·knuqƛi'it (Tobacco Plains Band), ʔaq'am (St. Mary's Band), yaqan nuʔkiy (Lower Kootenay Band) and ʔakisq̓nuk First Nation (Columbia Lake Band). These communities, and the interests of all Ktunaxa citizens in Canada, are represented by the Ktunaxa Nation Council (KNC). There are also two Ktunaxa communities in the United States of America; ḵupawiɬq̓nuk (Confederated Salish & Kootenai Tribes) in Elmo, Montana and ʔaq̓anqmi (Kootenai Tribe of Idaho) in Bonners Ferry, Idaho.

Within the borders claimed by Canada and British Columbia, ʔamakʔis Ktunaxa covers approximately 70,000 km^2 (27,000 square miles) of mountains, valleys, rivers and lakes in the Kootenay region. The region's landscape is alive with Ktunaxa culture and history. The Ktunaxa creation story relates the origins of our people and describes the events and relationships that helped shape – and continue to shape – ʔamakʔis Ktunaxa. As told by elder Wilfred Jacobs, the creation story tells of a chase involving powerful animal beings that travelled the Columbia and Kootenay valleys in a loop, before the rivers were separated, creating and naming the landscape. The creation story culminates in the creation of humans, including our own people, the Ktunaxa, and our covenant with the creator to take care of the land and water. The geography and geology of the Elk Valley is formed in the final events of the story, when the animal chief and creation hero, Naƛmuqɬin, collapses, forming the Rocky Mountains with his body. His feet stretch to ya·ƛiki near the Yellowhead Pass, and his head lies in the area of Yellowstone Park in Montana.

The Elk Valley was traditionally used and occupied by the Ktunaxa people prior to and after 1846, the date of the Oregon Boundary Treaty between the USA and the British Crown. Important settlements were maintained by our people in the Elk Valley well into the 20th century, and our citizens continue to reside throughout the valley, including in Sparwood, Fernie, and elsewhere. As well, we have maintained use and occupancy throughout the Elk Valley, including in the area of the Fording River and the Fording River Extension Project, despite widespread impacts from coal mining, forestry, and other activities in the area. While there are no reserve lands in the Elk Valley, our oral history indicates that reserve areas were promised in the area of Michel Flats and present day Sparwood but were never formally allotted.

Today, our Knowledge Holders recognize the Elk Valley for the richness of its fish and game, its connection to our oral history, and also for the presence of coal, the legacy of impacts from extensive coal mining, and associated restrictions on access to lands, many of which were privatized in the early 20th century. The diverse land forms, waters, animals, and plants that help sustain our rights, and to which we owe a responsibility of stewardship, are under pressure from industrial development and change. Valley bottoms, traditionally maintained through fire cycles as open forests and grasslands, are now threatened in many places by

mining, fire suppression, uptake of private land, energy transmission, hydro-electric reservoirs, agriculture, and transportation systems. Higher altitude valleys and slopes, including high elevation grasslands on south and east facing slopes, provide critical habitat for culturally important species such as elk, deer, sheep, and grizzly bear and are impacted in many areas by forestry, mining, recreational development, and associated road networks. Ktunaxa citizens and leadership, as communicated through KNC, have serious concerns regarding water quality and cumulative effects in the Project area, specifically related to increases in selenium and other contaminants (e.g., cadmium, nitrate, sulphate) in critical fish-bearing waterways including the upper Fording. Coal mines in the Elk Valley, including FRO operations, have seriously affected and continue to affect water quality and at risk fish populations in the area, with Chauncey Creek being one of the last major tributaries of the Fording River that remains relatively unimpacted by industrial coal mining.

Despite past impacts, our citizens continue to maintain deep cultural connections with the lands and waters of qukin ʔamakʔis, including the area of Castle Mountain. Our practice of rights, including learning, reinforcing, and passing on place-based knowledge and language, depends on the ability of our citizens to continue to access and teach our children and youth through experience in culturally preferred places, with confidence in preferred animals and resources, and the ability to freely practice rights within culturally and ecologically functional landscapes. While areas north and west of the Project have been intensively mined and industrial impacts make many areas no longer useable by our citizens, the area of Castle Mountain and the Chauncey drainage remain important and vital with a network of documented trails and camps used by Ktunaxa to hunt elk, sheep and other animals, fish, harvest plants and medicines, and access nearby passes and other cultural areas.

If the Project proceeds the existing area excluding Ktunaxa use around the FRO mine would be expanded to include the Project area. Representatives of the KNC are engaged on implementation of Teck's EVWQP, Aquatic Monitoring Program, Research and Development updates and Teck's Biodiversity Program. The KNC also holds a seat on the Environmental Monitoring Committee (EMC), which is an independent body established under the Elk Valley Environmental Management Act Permit 107517 (Section 7.1.2).

While KNC's relationship with Teck has improved in recent decades, and there has been some success in improving benefits for most Ktunaxa citizens, the history of coal mining within qukin ʔamakʔis has been an almost entirely negative influence. Efforts by Teck and KNC to work collaboratively in preparing this Project Description give cause for hope that this Project may improve the situation in the Elk Valley and ʔamakʔis Ktunaxa, rather than further erode it. Whether this potential is realized will depend on continued efforts by Teck to work with KNC and other regulators towards a full assessment of, and accommodation for, impacts of the Project to Ktunaxa title, rights and interests.

6.1.2 Teck Summary of Engagement, Interests and Location for Ktunaxa Nation

As noted above, the Project would be located within ʔamakʔis Ktunaxa. Reserve lands of the Ktunaxa Nation are illustrated in Figure 3.1-3, with the largest reserve areas comprised of the Tobacco Plains (yaq̓it ʔa·knuqƛi'it), Kootenay 1/ St. Mary's (ʔaq'am), Lower Kootenay (yaqan nuʔkiy) and Columbia Lake (ʔakisq̓nuk) reserve areas[21].

Ktunaxa Nation is in Stage 5 negotiations with the BC Treaty Commission which is guided by the Ktunaxa Nation Rights Recognition & Core Treaty Memorandum of Understanding (2018) between the federal and provincial governments and the Ktunaxa Nation. The yaq̓it ʔa·knuqƛi'it, ʔaq'am, yaqan nuʔkiy and ʔakisq̓nuk are developing their land code under the First Nations Land Management Framework Agreement.

The Project is subject to the Impact Management Benefits Agreement (IMBA) established between Teck and the Ktunaxa Nation, which formalizes the long-standing relationship between the two parties, and creates a framework for greater cooperation and clarity on topics including consultation and engagement, environment and land stewardship, cultural resource management, and employment and business opportunities for Ktunaxa citizens and Ktunaxa businesses. The IMBA does not limit or derogate from the Ktunaxa Nation's rights, including the inherent right of self-government, it provides a process on how mining projects become a part of the IMBA on a case-by-case basis.

Consistent with the established working relationship and in view of the rights and interests of the Ktunaxa Nation in the Elk Valley, Teck began engaging with KNC about the Project in 2018, initially through Teck's exploration program. This was followed by an introduction to the Project in fall 2018 and a workshop in April 2019, which included an overview of the Project and engagement on baseline work plans. KNC also provided comments on draft materials prepared by Teck, such as the draft provincial IPD. Teck continues to engage the KNC through ongoing meetings and communications to identify and address concerns and build strong and mutually beneficial working relationships. Teck is committed to continuing to work with the Ktunaxa Nation towards achieving their free, prior and informed consent for the Project.

Table 6.1-1 summarizes engagement activities with the KNC since preparation of the provincial IPD and Engagement Plan. For earlier engagements with the KNC, refer to Table 2 of the Engagement Plan. Teck and KNC acknowledge that the table may not reflect the KNC's perspective in its entirety and is not a complete account of the issues and concerns raised.

[21] The reserve areas listed sometimes comprise several reserves (e.g., Lower Kootenay 1a, 1B, 1C, 2,3,4, & 5 on Figure 3.1-1). A number of other reserve areas also occur in ʔamakʔis Ktunaxa (e.g., Bummers Flat 6, Isidore's Ranch 4, Cassimayooks 5, Creston 1).

Table 6.1-1: Engagement with Ktunaxa Nation about the Project since Preparation of the Provincial Initial Project Description (April 9, 2020)

Date	Activity	Comments	Approach to Addressing
February 27, 2020	Teck, KNC and the BC EAO Workshop/Open House Planning Session	Meeting with KNC and BC EAO to review BC EAO schedule for Early Engagement Activities.	Teck worked with BC EAO and KNC to set two public open houses and worked with KNC to set two KNC-specific open houses in August 2020.
April 9, 2020	Teck/KNC Baseline Meeting	Teck and KNC discussed 2019 KNC comments on baseline work plans and reviewed 2020 baseline work plans.	KNC provided written comments to Teck on the 2020 baseline work plans on May 29, 2020.
April 22, 2020	Teck/KNC Valued Components (VCs) Meeting	Teck and KNC met on candidate VCs. KNC provided feedback on additional species to consider incorporating into the assessment of the Project.	Teck worked to incorporate suggestions from KNC into baseline programs. Teck and KNC later met in October and November to further discuss candidate VCs, and will continue to work on advancing the candidate VCs and selecting those to be included in the assessment.
May 11, 2020	Project Option – Pit Shell Meeting	Teck shared the pit shell options that were considered for the Project, including Option 5.	KNC highlighted the importance of including KNC in the decision making process where possible and engaging early. Teck adjusted the approach for subsequent Project options meetings.
May 19, 2020	KNC feedback on Baseline Information	KNC reviewed 2020 baseline work plans, provided written comments and recommended health and sensory locations for consideration in the assessment of the Project to Teck.	Teck provided written responses to KNC on August 4, 2020, and has incorporated the sensory receptors into baseline data collection and assessment planning.
May 27, 2020	IMBA Working Group Meeting	Teck met with the IMBA working groups to provide an update on the Project, including the economic/employment opportunities associated with the Project.	Teck has continued to work with KNC to established Project-specific engagement for the Project that support addressing issues and meet the commitments under the Teck-Ktunaxa Nation IMBA.
June 4, 2020	Technical Advisor Meeting	KNC participated in the Introductory Technical Advisor Meeting hosted by BC EAO.	No Project specific concerns brought forward. Meeting was to introduce Technical Advisory Committee process under the BC EAA.
June 5, 2020	KNC letter to BC EAO	KNC provided Ktunaxa Nation's notice of intent to participate in the assessment process BC EAA	Teck has continued to work with KNC to established Project-specific engagement for the Project that support addressing issues and meet the commitments under the Teck-Ktunaxa Nation IMBA.

Table 6.1-1: Engagement with Ktunaxa Nation about the Project since Preparation of the Provincial Initial Project Description (April 9, 2020)

Date	Activity	Comments	Approach to Addressing
June 19, 2020	Project Option - Tailings Meeting	Teck met with KNC on June 19 to go over preliminary tailings options to consider for the Project. KNC indicated they would like to know more about the Swift Mine Plan and would like to see Teck's internal criteria rankings.	Teck and KNC met on October 29 (listed below) to discuss the Swift Mine Plan. Teck will continue to work with KNC to set up additional engagements, as needed.
June 23, 2020	Letter from Ktunaxa Nation to IAAC	Letter requesting the Project be federally designated under IAAC.	Teck acknowledges the federal designation decision on August 19, 2020 and Ktunaxa Nation's interests in the Project.
July 6, 2020	Project Option - Waste Rock Placement Meeting	Teck met with KNC on July 6 to discuss proposed plans for waste rock placement. KNC indicated they would be interested in seeing the second case (accounting for environmental factors) when it is ready.	Teck will continue to work with KNC to set up additional engagements, as needed.
July 22, 2020	Comments on the provincial IPD provided to BC EAO	KNC provided written comments following their review of the provincial IPD outlining concerns over the Project and providing recommendations for conducting the assessment pertaining to Ktunaxa Nation's interests.	Teck has considered the comments on the provincial IPD and provided written responses to the comments, indicating how the information either informed the development of the DPD or how the comment is proposed to be addressed in later stages of the assessment being undertaken for the Project.
August 12, 2020	Ktunaxa Nation Open House #1	Teck and the BC EAO presented to the KNC staff and Ktunaxa citizens in an open house on August 12. Questions and comments arose relating to food security, closure timelines and the Readiness Decision under the BC EAA process. Ktunaxa citizens expressed concern regarding the participation of other Indigenous Nations in the Project assessment process.	Teck has included food security in the Ktunaxa Nation interests table (Table 6.1-2). BC EAO provided some feedback around the Readiness Decision.

Table 6.1-1: Engagement with Ktunaxa Nation about the Project since Preparation of the Provincial Initial Project Description (April 9, 2020)

Date	Activity	Comments	Approach to Addressing
August 13, 2020	Ktunaxa Nation Open House #2	Teck and the BC EAO presented to KNC staff and Ktunaxa citizens in an open house on August 13. Questions arose regarding reclamation timelines, closure timelines and the Readiness Decision under the BC EAA process. Ktunaxa citizens expressed concern regarding the participation of other Indigenous nations in the Project assessment process.	Teck has included reclamation progress in the Ktunaxa Nation interests table (Table 6.1-2). BC EAO provided some feedback around the Readiness Decision.
August 14, 2020	Letter from Ktunaxa Nation to IAAC	Letter re-affirming request that the Project be federally designated under IAAC.	Teck acknowledges the federal designation decision on August 19 and Ktunaxa Nation's interests in the Project.
August 24-25, 2020	KNC Site Visit	Ktunaxa Nation knowledge holders and KNC representatives participated in a two-day site visit to the Project location to support the interests assessment for the Project.	Teck will continue to work with KNC to share information to support the Ktunaxa Nation interests assessment for the Project.
September 18, 2020	KNC Workshop	KNC hosted a workshop on Ktunaxa Nation's Environmental Assessment Process.	Teck will continue to work with KNC to share information to support the Ktunaxa Nation interests assessment for the Project.
October 14, 2020	VC Workshop – Aquatic and Physical	Teck met with KNC to discuss candidate aquatic and physical VCs.	Teck will continue to work with KNC on topics of interest identified through the aquatic and physical candidate VCs discussion.
October 19, 2020	VC Workshop – Terrestrial and Physical	Teck met with KNC to discuss terrestrial and physical VCs.	Teck will continue to work with KNC on topics of interest identified through the terrestrial and physical candidate VCs discussion.
October 28, 2020	KNC and Teck Collaborative Engagement Planning Session	KNC and Teck met to discuss engagement needs associated with the Project.	Additional work between Teck and KNC is occurring to develop more detail regarding schedule and information needs for both parties within the BC and federal regulatory processes.
October 29, 2020	Swift Mine Plan Discussion	KNC and Teck met to discuss the Swift Mine Plan and its interaction with the Project.	KNC indicated appreciation for the meeting. Teck will continue to engage with KNC on the business need for the Project as part of FRO's mine life.

Table 6.1-1: Engagement with Ktunaxa Nation about the Project since Preparation of the Provincial Initial Project Description (April 9, 2020)

Date	Activity	Comments	Approach to Addressing
November 4, 2020	Letter from Ktunaxa Nation to IAAC	Letter providing feedback on the federal IPD.	Teck acknowledges the feedback provided and will continue to work to engage with the Ktunaxa Nation on their interests and concerns regarding the Project.
November 9, 2020	VC Workshop – Cultural and Social	Teck met with KNC to discuss cultural, social and human health candidate VCs.	Teck will continue to work with KNC on topics of interest identified through the cultural, social and human health candidate VCs discussion.
November 17, 2020	KNC input into the Detailed Project Description	KNC provided Teck with material reflecting elements of Ktunaxa Nation's perspectives and voice for inclusion in the DPD.	Teck appreciates the effort Ktunaxa Nation has put into developing their contribution to the DPD and will continue to work with the KNC so that Ktunaxa Nation's perspectives are reflected in the assessment being undertaken for the Project.
December 16, 2020	Letter from Ktunaxa Nation to Teck regarding the provincial EA Readiness Decision	KNC provided Teck with a letter outlining KNC's topics of interest and concern regarding the provincial EA Readiness Decision.	Teck acknowledges the feedback provided and is actively working on a number of the topics raised with Ktunaxa Nation. Teck provided a response to this letter to Ktunaxa Nation, and will continue to work with Ktunaxa Nation on their interests and concerns regarding the Project.
December 17, 2020	Meeting with Ktunaxa Nation to discuss Project Alternatives	Teck met with KNC to discuss Alternatives to the Project.	Teck acknowledges the feedback Ktunaxa Nation have provided on this topic and have worked to provide the level of detail requested in the DPD.
January 6, 2021	Name Change Notification	Teck notified KNC of the Project name change via email and phone calls (where possible).	No further engagement on the Project name change required.
January 14, 2021[1]	Meeting with KNC to discuss EA Readiness Decision information	Teck met with KNC to clarify the interests and concerns in the December 16 letter.	Teck acknowledges the feedback provided and is actively working on a number of the topics raised with Ktunaxa Nation.
January 20, 2021[1]	Email regarding other Indigenous Nations	Teck provided KNC a package of publicly available information submitted by other Indigenous Peoples related to the Project	Teck is committed to ongoing engagement on this topic.
January 28, 2021	Chauncey Discussion	KNC and Teck met to discuss Project interactions with Chauncey.	Teck has made a commitment to work on a Chauncey Management Plan with Ktunaxa Nation in the DPD and will continue to work with Ktunaxa Nation on this topic.

Table 6.1-1: Engagement with Ktunaxa Nation about the Project since Preparation of the Provincial Initial Project Description (April 9, 2020)

Date	Activity	Comments	Approach to Addressing
February 16, 2020	Letter response to Ktunaxa Nation from Teck regarding the EA Readiness Decision	Teck provided KNC with a letter response to KNC's earlier letter outlining topics of interest and concern regarding the EA Readiness Decision.	Teck is actively working on a number of the topics raised with Ktunaxa Nation, and will seek to work with Ktunaxa Nation to develop a path forward for new topics and concerns raised in the letter.
March 2, 2021	Draft DPD Comments	KNC provided draft comments on the draft DPD to Teck.	Teck appreciates the effort Ktunaxa Nation has put into developing the DPD comments. Teck has worked to address the comments in the final version of the DPD and/or to indicate where comments may be addressed later in the regulatory process, or outside of the regulatory process, as documented in comment tracking database.
March 3, 2021[1]	Letter from KNC	KNC provided a letter expressing concerns with environmental impacts and request the DPD submission be suspended pending further understanding of existing impacts and progress on key mitigations. KNC also request engagement with Teck leadership.	Teck is committed to engagement with KNC on concerns about significant environmental impacts and land stewardship issues.
March 15, 2021[1]	Teck response to KNC's March 3 letter	Teck provided a letter committing to ongoing engagement on the Project including DPD comments.	Teck is committed to ongoing engagement with the Ktunaxa Nation including at the leadership level.
March 18, 2021	Cultural Awareness Session	Ktunaxa provided FRX team members a Cultural Awareness Session	Teck and the FRX team appreciate Ktunaxa taking the time to provide a Cultural Awareness Session. The session was impactful for team members.
April 26, 2021[1]	KNC engagement pause notification	KNC informed Teck that external engagement will be paused.	Teck is committed to ongoing engagement on the project and acknowledge the pause in external engagement.
May 7, 2021[1]	Leadership meeting - cancelled	n/a	Teck is committed to this meeting and looks forward to participating when rescheduled.
June 3, 2021[1]	Letter dated May 28, 2021 emailed to KNC	Teck provided a letter updating on the Project and to confirm next steps for engagement.	Teck is committed to ongoing engagement with the Ktunaxa Nation on the Project.

Table 6.1-1: Engagement with Ktunaxa Nation about the Project since Preparation of the Provincial Initial Project Description (April 9, 2020)

Date	Activity	Comments	Approach to Addressing
June 28, 2021[1]	Letter to KNC regarding submission of the DPD.	Teck provided a letter identifying Teck's intent to submit the DPD on July 31 and expressed Teck's commitment to continued engagement on the Project.	Teck proposes ongoing engagement on the Project continue at KNC's earliest opportunity.

EA = Environmental Assessment; n/a = not applicable.
[1] – Indicates that the activities referenced in the text have not been reviewed by KNC, and the table provides Teck's perspective on these activities.

Ktunaxa Nation Council (KNC) also participates in weekly to biweekly meetings with the BC EAO (since March 2020) and Teck on the process for the assessment under the BC EAA. As of September 1, 2020, these meetings were expanded to include the IAAC and to discuss coordination of the provincial and federal assessment processes. For the period of June 2020 to April 2021, Teck and KNC have also been meeting biweekly to coordinate engagement activities and exchange of information. Continued regular meetings are proposed to facilitate Project engagement as well as broader engagement between the Ktunaxa Nation and Teck.

Throughout the above-noted engagement, Teck has been working with the Ktunaxa Nation to identify potential Project impacts on the rights and interests of the Ktunaxa Nation. Ktunaxa Nation's interests and concerns that have been identified through early engagement are summarized in Table 6.1-2. The issues identified in the table are summaries and are not meant to be a comprehensive list of issues. Teck will continue to engage with the Ktunaxa Nation to gain a more comprehensive understanding of issues beyond what is presented in this section.

Table 6.1-2: Ktunaxa Nation Interests and Concerns Related to the Project

Interests and Concerns	Comment Summary	Actions
Indigenous title, rights and interests, current use of lands and resources for traditional purposes, health, and other impacts	The Project is located within lands and waters actively used, occupied and cared for by the Ktunaxa Nation and is in an area of central importance where the Nation has Indigenous rights and interests. The Ktunaxa Nation has noted that undisturbed watersheds between FRO, GHO and LCO represent some of the few areas that remain accessible to Ktunaxa Nation citizens in the Fording River watershed. The Ktunaxa Nation has identified concerns regarding potential for adverse cultural and environmental impacts of the Project to cause extraordinarily adverse effects on the Ktunaxa Nation and Ktunaxa Nation rights. Specific concern has been raised regarding: • food security and certainty (e.g., potential changes to food quality/quantity from changes to air quality, dust, water quality, vegetation and game) • timing of mine closure and the spatial, sensory and temporal disruption of Ktunaxa practices in qukin ʔamakʔis • influence of cumulative effects including existing displacement of Ktunaxa practices from disturbance caused by existing coal mines, mine exploration and other industrial and non-industrial activities • interests in preferred areas for practice of Ktunaxa Nation rights in the Project footprint, including hunting, habitation and transportation (foot and horse trails) and the importance of these activities in connecting to a broader Ktunaxa cultural landscape that supports deep past, current and future connections with the land and resources	**Regional Actions:** • The Impact Management and Benefits Agreement (IMBA) between the Ktunaxa Nation and Teck is a comprehensive agreement that formalizes the long-standing relationship between the Ktunaxa Nation and Teck and creates a framework for greater cooperation and clarity on topics including consultation and engagement, environment and land stewardship, cultural resource management, employment and business opportunities for Ktunaxa Nation citizens. • Teck is working to update a regional human health risk assessment (HHRA) required under the regional EMA Permit 107517. This regional HHRA is expected to be completed mid-2021. A special task group was formed in 2018 with the sole purpose of resolving specific concerns identified by KNC regarding potential health risks to Ktunaxa Nation citizens. This task group includes representatives from KNC, Interior Health Authority, BC Ministry of Environment and Climate Change Strategy, the First Nations Health Authority and Teck. In 2019, KNC launched its expanded diet study to understand the preferred consumption rates of Ktunaxa Nation citizens; the results of that work will be shared with Teck and will feed directly into the regional HHRA. In addition, Teck and the KNC continue to collect and analyze wild food samples; the data generated by that effort also will feed directly into the regional HHRA. **Project Actions:** • Teck is working collaboratively with the Ktunaxa Nation to understand the effects of the Project on Ktunaxa Nation rights and interests and to develop mitigations and accommodations for identified effects. The approach to assessment of the Project to Indigenous Peoples will be proposed in the draft TISG/AIR to be submitted to the IAAC and the BC EAO. The results of the assessment will be presented in the IS/A. As part of preparing for the assessment, several receptor locations have been identified by KNC based on existing Ktunaxa Nation use and occupancy information, such as habitation values (camp or cabin), an important trail, and rights practice (Morris 2020). • For additional discussion on the topic of mine closure, refer to the long-term closure management row later in this table.

Table 6.1-2: Ktunaxa Nation Interests and Concerns Related to the Project

Interests and Concerns	Comment Summary	Actions
Reclamation Progress and restoration efforts / environmental performance	Teck has heard concern that there is a lack of tangible action and evidence that demonstrates progress in addressing environmental concerns prior to additional impacts occurring (i.e., more land is being disturbed than is being demonstrated as reclaimed), with a focus on water quality, aquatic biodiversity, and overall reclamation progress and restoration efforts.	**Teck Regional Actions:** • Teck and KNC both participate in environmental initiatives and regulatory processes that focus on current and legacy conditions, including reclamation and restoration initiatives (Sections 7.1.2 and 7.1.3). • Teck continues to advance efforts to improve environmental performance and build Ktunaxa Nation confidence. Teck anticipates progress on regional reclamation and restoration efforts to occur in parallel with the assessment of the Project. **Project Actions:** • The draft TISG/AIR to be submitted to the BC EAO and the IAAC, will propose that IS/A include a conceptual closure plan that makes provision for reclamation aspects related to mine closure for the Project, including proposed end land use objectives. • Teck anticipates engaging with the Ktunaxa Nation about how existing and legacy reclamation progress will be considered in the Project's reclamation and closure plans. • The Project's reclamation and closure plans will include progressive and interim reclamation. They will also account for availability of habitat through the life of the Project rather than just looking at the end of the Project. • Both the IS/A and, if the Project is authorized under the BC EAA and the IAA, subsequent permit applications, will lay out Teck's proposed monitoring and reporting to document environmental performance, including success of mitigations and confirmation of assessment predictions. Monitoring and reporting requirements, along with the environmental performance metrics, are also anticipated as a condition of permits, should they be granted.

Table 6.1-2: Ktunaxa Nation Interests and Concerns Related to the Project

Interests and Concerns	Comment Summary	Actions
Ecosystems and plant and terrestrial animal species of cultural importance and/or conservation concern, including cumulative effects and ecological health	Teck has heard concern about current and future levels of disturbance in the Elk Valley and how the Project has the potential for cumulative effects to ecosystems and species that are of cultural importance to the KNC. There is particular concern about unique and regionally important environmental features within the Project footprint, including critical ungulate and sheep habitat, high elevation grasslands/brushlands, whitebark pine and the species these habitats support. Interests also include: • soils and terrain, including productivity, decomposition processes, nutrient cycling and restoration potential. • other ecosystems of conservation concern, including wetlands, riparian and floodplain ecosystems, avalanche paths, karst ecosystems, old and mature forests • birds, including the woodpecker guild which is culturally important based on Ktunaxa creation story and an important keystone (8 species), and the migratory raptor guild which has specific cultural importance tied to qukin ʔamakʔis, and the American dipper which has a strong link between aquatic-riparian health and wildlife-habitat impact pathways • wildlife, including moose, bighorn sheep and elk, their habitat and their migratory/movement corridors	**Teck Regional Actions:** • Teck and KNC both participate in environmental initiatives and regulatory processes that focus on current and legacy conditions, including terrestrial cumulative effects (TCE) and habitat initiatives (Sections 7.1.2 and 7.1.3). • Teck continues to advance efforts to improve environmental performance and build Ktunaxa Nation confidence. Teck anticipates progress on TCE and other habitat research, mitigation and reclamation to occur in parallel with the assessment of the Project. **Project Actions:** • Teck will include the valued components (VCs) identified in this comment in the list of candidates to be considered for the assessment of the Project and will propose this list and the method for selecting final VCs for assessment in the draft TISG/AIR to be submitted to the BC EAO and the IAAC. Teck will work with the KNC, BC EAO, IAAC and other technical advisors to select the final list of VCs to be assessed for the Project. The intent of VC selection process is to select VCs that are relevant to issues raised, responsive to potential effects, and representative of the various parts of the environment. The intent is that the VCs to be assessed are sufficiently comprehensive to understand the effects of the Project, and concise so that Project-VC interactions can be clearly articulated, and redundant analysis is avoided. • The assessment of the Project will include an evaluation of cumulative effects that will consider the context of existing conditions including existing cumulative effects. The scope of the assessment will be proposed in the draft TISG/AIR to be submitted to the BC EAO and the IAAC. • Teck anticipates discussing TCE with the KNC, BC EAO, IAAC and other technical advisors while acknowledging other processes working on the issue on a regional basis. This includes ongoing engagement to discuss Teck's options analysis for selected Project components (Section 3.3) that have an influence on TCE.

Table 6.1-2: Ktunaxa Nation Interests and Concerns Related to the Project

Interests and Concerns	Comment Summary	Actions
Alignment with Ktunaxa Nation goals, values and objectives for the Elk Valley	Teck has heard that the Ktunaxa Nation is interested in clarifying how environmental performance of the Project and existing operations could be made consistent with the nation's formal and informal planning goals, values and objectives.	**Teck Regional Actions:** • Teck's operations are authorized via various permits and approvals issued under provincial legislation, namely the *Mines Act*, *Environmental Management Act* and *Water Sustainability Act*. These permits contain mechanisms for Teck's monitoring and reporting on environmental compliance with the environmental performance metrics included in the authorizations. KNC is engaged in review of the reported materials via the Environmental Monitoring Committee, direct engagement and/or via engagement with provincial regulators. **Project Actions:** • Teck is interested in further discussion with KNC about the formal and informal goals, values and objectives developed by the Ktunaxa Nation for the Elk Valley. Understanding this work will enhance Teck's understanding of interests in the area and determine if there are opportunities to better align with the Ktunaxa Nation goals, values and objectives. Through this work, Teck hopes to clarify topics of interest that will be relevant to regional initiatives and those that are relevant to the Project (refer to Section 7.1.2). As additional information on this topic is available, it is proposed that Teck and KNC discuss opportunities for integration and alignment on mutually beneficial goals, values and objectives.
Water (including water quantity and quality)	Teck has heard that water is an overarching concern for the Ktunaxa Nation as water influences all aspects of Ktunaxa Nation way of life, including social, education and employment, traditional knowledge and language, economic and land and resources. Ktunaxa Nation rights and traditions rely on water and its flow, which are central to life and sacred. Specific interests and concerns have been identified regarding the resultant effects of changes to water quantity and quality on the health of fish (e.g., westslope cutthroat trout) and the health of other wildlife and natural systems. A number of constituents, including selenium, are seen as real challenges.	**Teck Regional Actions:** • Teck and KNC both participate in environmental initiatives and regulatory processes that focus on current and legacy conditions, including water quantity and quality initiatives (Section 7.1.2 and 7.1.3). Teck has been working to develop and implement the EVWQP and various related regional initiatives (refer to Section 7.1.2). Mitigations outlined in the 2019 IPA are intended to stabilize and reduce concentrations of selenium and nitrate for Teck's permitted development over the next 20 years. The Project, if approved, would be integrated into a subsequent version of the EVWQP IPA. • Teck continues to advance efforts to improve environmental performance and build Ktunaxa Nation confidence. Teck anticipates progress on water quantity and quality research, mitigation, and reclamation to occur in parallel with the assessment of the Project (refer to Table 7.1-1).

Table 6.1-2: Ktunaxa Nation Interests and Concerns Related to the Project

Interests and Concerns	Comment Summary	Actions
Water (including water quantity and quality) (cont'd)		**Project Actions:** • The Project's water quality management plan builds on existing water treatment plans and successes in mine design, source control, treatment, and research and technology relevant to the Elk Valley. The water quality management plan makes allowance for adaptation of improvements in technology to be incorporated as the Project evolves. Additional details about Teck's water quality management plan for the Project are included in Sections 3.3.6 and 3.4.4. • The assessment will evaluate the Project's potential water quantity effects within the context compliance with Environmental Flow Needs Policy and site-specific Environmental Flow Needs Limits. • The assessment will evaluate the Project's potential water quality effects within the context of the regional water quality initiatives, and the Project, if approved, will be integrated into a subsequent version of the EVWQP IPA. • The proposed scope of the water quality assessment and assessment of other VCs that may be affected by water quality will be identified in the draft TISG/AIR to be submitted to the BC EAO and the IAAC. Results of the assessment will be presented in the IS/A. • Teck anticipates discussing water quality management options and mitigations with the KNC, BC EAO, IAAC and other members of the Technical Advisory Committee while taking into account other processes working on the issue on a regional basis.

Table 6.1-2: Ktunaxa Nation Interests and Concerns Related to the Project

Interests and Concerns	Comment Summary	Actions
Protection and rehabilitation of tributaries	Teck has heard concern that tributaries to the Fording River should be protected from mining impacts or rehabilitated if they are already impacted. The Project could impact previously impacted tributaries (i.e., Kilmarnock Creek) and unimpacted tributaries (i.e., Chauncey Creek).	**Teck Regional Actions:** • Teck and KNC both participate in environmental initiatives and regulatory processes that focus on current and legacy conditions, including tributary management (Sections 7.1.2 and 7.1.3). • Teck continues to advance efforts to improve environmental performance and build Ktunaxa Nation confidence. **Project Actions:** • The Project has committed to not placing waste rock storage into Chauncey Creek. The Project will develop a Chauncey Creek Management Plan that describes mitigation and monitoring proposed to limit impacts in the watershed, with consideration of other relevant fisheries projects in this watershed. • The Project plans to reduce impacts to Kilmarnock Creek by limiting the amount of waste rock storage in Kilmarnock Creek. These plans will be refined with engagement related to access and environmental effects. • In proceeding with the assessment of the Project, Teck will continue to plan the implementation of technically and economically feasible means to minimize adverse impacts to Chauncey Creek. The identified mitigations will be captured in a Chauncey Creek Management Plan that is proposed to be prepared in collaboration with the Ktunaxa Nation Council. • The assessment of the Project will include potential impacts to tributaries, including Chauncey and Kilmarnock creeks. The scope of the assessment of aquatic resources, to be captured through various aquatic VCs, will be proposed in the draft TISG/AIR to be submitted to the BC EAO and the IAAC.

Table 6.1-2: Ktunaxa Nation Interests and Concerns Related to the Project

Interests and Concerns	Comment Summary	Actions
Fish and fish habitat	The Fording River is adjacent to the Project and recognized as a river with respect to which there are high concerns for the genetically pure westslope cutthroat trout (WCT) population. Recent monitoring of the fish population found that there was significant decline in adults and juveniles (approximately 90% and 74% respectively) in the upper Fording River, which led to the "A Call to Action" letter from KNC to the department of Fisheries and Oceans on February 25, 2020.	**Teck Regional Actions:** • Teck and KNC both participate in an initiative to understand the WCT population decline in the upper Fording River (Sections 7.1.2 and 7.1.3). A report on potential causes and response actions is expected in mid-2021. • Operational changes at FRO and GHO to reduce potential stress to the population, including precautionary measures in the upper Fording River, such as: o Sourcing of operational water needs from non-environmental flow needs (or least risk environmental flow needs (e.g., stored pit water) withdrawal points during the 2019/20 winter season to avoid exacerbating low flow conditions during periods of natural low flow. o Continuous monitoring of instream flows and environmental conditions to inform relative environmental flow needs requirements for the operation (ongoing). o Review of Erosion and Sediment Control Management Plan in preparation for spring freshet to focus areas of concern, minimize potential for sediment deposition and release to Fording River. • Development of a strategy that will support operationalization of the goals and objectives in the Province/KNC led recovery plan, once available. • Ongoing initiatives associated with the Fish and Fish Habitat Management Plan and the TMP. **Project Actions:** • The Project will incorporate findings related to the WCT population decline to mitigate potential Project adverse impacts and to support, as much as is practicable, healthy habitat for WCT. • Assessment of Project effects on fish and fish habitat will consider the current conditions and effects on fish and fish habitat.

Table 6.1-2: Ktunaxa Nation Interests and Concerns Related to the Project

Interests and Concerns	Comment Summary	Actions
Indigenous Peoples engagement	Teck has heard that engaging with Ktunaxa Nation early in the decision making process for Project components is important. The Ktunaxa Nation have expressed concern regarding recognition of claims by other nations.	**Project Actions[1]:** • Teck is proactively planning engagement and working with KNC as outlined in Table 6.1-1. • Teck is committed to engaging KNC on project components and met in October 2020 to plan engagement and identify opportunities for engagement on specific Project components. Teck is working closely with the provincial and federal governments to define the scope of engagement of potentially affected Indigenous Peoples for the purpose of the assessment. Teck provided information to KNC on the claims of other Indigenous Nations on January 20, 2021 and is committed to ongoing engagement on this topic.
Project justification	Teck has heard that Ktunaxa Nation would like to better understand the justification for the Project in relation to the need and purpose of the Project in a low carbon economy, alternatives to the Project and existing and recently permitted projects, such as the Swift Project, and how it informs the timing and rationale for the Project. The Ktunaxa Nation has asked whether phasing the Project could be considered.	**Project Actions[1]:** • Teck has provided information related to this issue in Section 3.1.9. • Teck has also engaged directly with KNC to provide more information on Project justification in a meeting held October 29, 2020, as well as at a meeting on Project alternatives on December 17, 2020 (refer to Table 6.1-1) and is committed to ongoing engagement on this topic.
Long-term post-closure management	Teck has heard interest in understanding the long-term post-closure plan for Fording River Operations and the Project, including financial assurance.	**Project Actions:** • Teck plans to engage with KNC about the post-closure landscape including opportunities to integrate values and interests into closure planning. • Financial assurance would be set under as part of application for permits under the *Mines Act*, provided the Project is approved under the BC EAA and the IAA.

[1] – Indicates that revisions to the text have not been reviewed by KNC, and are intended to provide Teck's perspective of these items.

Given the early stage of the assessment process, details of Project-specific mitigations are still in development. More information on Teck-led initiatives and regional programs related to these interests or concerns, developed with contributions from KNC, government agencies and other interested parties, are outlined in Section 7.1.2. Additionally, Teck will work with technical advisors identified for the processes under the BC EAA and/or the IAA and Ktunaxa Nation to further identify and assess potential approaches to address issues.

Engagements planned to advance understanding of Ktunaxa Nation interests and develop Project-specific mitigations are identified in Table 6.1-3. Additional engagements will be completed as requested and as required to support information needs for the Ktunaxa Nation.

Table 6.1-3: Planned Engagement with Ktunaxa Nation

Item #	Activity
1	Schedule additional meetings and/or other forms of engagement with KNC to further discuss engagement and information requirements for Ktunaxa Nation for the assessment process
2	Participate in weekly calls with KNC to review agreed actions and receive input on key regulatory submissions associated with the assessment process and the Project
3	Participate in bi-weekly KNC, BC EAO, IAAC, and Teck calls to support clarity and information sharing through the assessment process
4	Meetings scheduled to discuss assessment methods, thresholds for effects, mitigations and other assessment topics; schedule additional meetings as needed
5	Maintain open information flow and communication with the KNC and, as necessary, its member communities, to identify and/or address information needs or requests
6	Maintain a log of all communications with Indigenous Peoples for review by BC EAO and/or IAAC upon request

As the IMBA between the Ktunaxa Nation and Teck is a comprehensive agreement, Teck did not enter into any additional agreements with KNC regarding the Project during the Early Engagement Phase. In January 2021, Teck and the Ktunaxa Nation entered into a Joint Management Agreement (JMA) for private lands in the Elk Valley and Flathead River Valley purchased for conservation purposes.

6.2 Shuswap Indian Band

The Shuswap Indian Band (also known by their traditional name of Kenpesq't) are the furthest southeastern community of the Secwepémc Nation. The Shuswap Indian Band are situated on the north end of Lake Windermere, and near the town of Invermere, between the Rocky and Purcell mountain ranges within the Columbia Valley. The Shuswap Indian Band asserts the Elk Valley as a shared territory with the Ktunaxa Nation, referred to as Shuswap Indian Band's area of caretaker responsibility – or Yecwmenul'ecem- (refer to Figure 3.1-3). Shuswap Indian Band's historical records, including oral and historical treaty records, document Shuswap Indian Band's rights and interests in the area of caretaker responsibility.

Teck is not aware of negotiations between the Shuswap Indian Band and the BC Treaty Commission. The Shuswap Indian Band is participant to the Secwépemc – BC Government to Government (Qwelmínte) letter of Commitment of 2019. The Shuswap Indian Band have an operational land code under the First Nations Land Management Framework Agreement.

Teck began engaging with the Shuswap Indian Band about the Project in early 2019 by providing notification of the upcoming Project and then hosting a Project introduction meeting in fall 2019. Table 6.2-1 lists the engagement activities with the Shuswap Indian Band since preparation of the provincial IPD and Engagement Plan. For earlier engagements with the Shuswap Indian Band, refer to Table 5 of the provincial Engagement Plan.

Table 6.2-1: Engagement with Shuswap Indian Band about the Project since Preparation of the Initial Project Description

Date	Activity	Comments	Approach to Addressing
March 3, 2020	Teck received Ethnographic Overview Study Regarding the Southeast Portion of Shuswap Indian Band's Caretaker Area report from Shuswap Indian Band	The report presents an overview of the occupation and land use, past and present, by Shuswap Indian Band members and ancestors in the Elk Valley region.	Teck will continue to engage Shuswap Indian Band on the Project and potential impacts.
March 4, 2020	Meeting on the provincial IPD and the Engagement Plan	Teck reviewed the provincial IPD and Engagement Plan. Shuswap Indian Band shared interest in participating in cumulative effects initiatives, monitoring, emergency communication protocols, and water quality (in particular selenium).	Teck met with Shuswap Indian Band on April 14, 2020 (listed below) to further identify Shuswap Indian Band interests in the Project.

Table 6.2-1: Engagement with Shuswap Indian Band about the Project since Preparation of the Initial Project Description

Date	Activity	Comments	Approach to Addressing
April 14, 2020	Meeting with Teck providing an update on the Project	Shuswap Indian Band shared their interest in valued component selection, conducting a cultural site assessment and review of the terms of reference for the assessment of the Project.	Teck will continue to engage Shuswap Indian Band through the assessment of the Project. Shuswap Indian Band will prepare a work plan for Project engagement.
May 15, 2020	Follow-up email	Teck followed up with Shuswap Indian Band on a Project engagement work plan.	
June 17, 2020	Follow-up email	Teck followed up with Shuswap Indian Band on a Project engagement work plan.	
June 23, 2020	Email from Shuswap Indian Band to BC EAO	Shuswap Indian Band provided their notice of intent to participate in the assessment process under the BC EAA to the BC EAO.	Teck will work with Shuswap Indian Band, the BC EAO (and now the IAAC) to identify and evaluate impacts of the Project on Shuswap Indian Band's interests.
July 3, 2020	Letter from Shuswap Indian Band to BC EAO	Shuswap Indian Band affirmed their intent to participate in the assessment process under the BC EAA to the BC EAO. The letter included feedback on the Band's interests on the Project.	
September 30, 2020	Meeting – Project Update Presentation	Teck and Shuswap Indian Band discussed further engagement needs around the Project, and the process for working together.	Teck will continue to work with Shuswap Indian Band on appropriate methods of engagement.
November 5, 2020	Letter from Shuswap Indian Band to the IAAC	Letter providing feedback on the federal IPD.	Teck acknowledges the feedback provided and will continue to work to engage with the Shuswap Indian Band regarding the Project.
December 17, 2020	Meeting – Project and DPD Update Presentation	Teck and Shuswap Indian Band discussed further engagement needs around the Project, and the process for working together (via a work plan).	Teck will continue to work with Shuswap Indian Band on appropriate methods of engagement.

Table 6.2-1: Engagement with Shuswap Indian Band about the Project since Preparation of the Initial Project Description

Date	Activity	Comments	Approach to Addressing
January 8, 2021	Letter from Shuswap Indian Band and table including comments on draft DPD	Shuswap Indian Band provided comments on the draft DPD.	Teck acknowledges the feedback and will continue to work to engage with and address Shuswap Indian Bands feedback on the Project. Teck has worked to address the draft DPD comments in the final version of the DPD and/or identify where comments may be addressed later in the regulatory process, as documented in the comment tracking database.
July 15, 2021	Shuswap Indian Band/Teck Meeting – Kick-off Cultural Heritage Assessment work and provide project update	Teck and Shuswap Indian Band discussed next steps for advancing work related to the Cultural Heritage Assessment.	Teck will work with Shuswap Indian Band in support of their Cultural Heritage Assessment.

Based on engagement to date, preliminary interests and concerns are related to:

- resource development impacts on transmission of Indigenous knowledge and practices across generations
- archaeological sites and artifact gathering by band members
- cultural and traditional use of lands and resources for traditional purposes, subsistence harvesting and health (e.g., from changes to surface and groundwater quality, traffic and habitat effects)
- water quality to support consumption and use by other resources, and fish and fish habitat, especially westslope cutthroat trout, in the Elk Valley in general and in the Elk and White[22] river watersheds
- cumulative effects
- socio-economics effects, including employment and economics opportunities
- air quality and noise impacts
- soils and terrain, including soil quality

[22] Teck notes that the White River converges with the Kootenay River northeast of Canal Flats (approximately 178 km upstream of the confluence of the Elk River with the Kootenay River).

- access to areas of key cultural and spiritual significance (e.g., trails, travel corridors, waterways, mountains and burial sites)
- plants and wildlife species of cultural importance (e.g., Labrador tea, soapberry, glacier lilies, Devil's club, willow, Canby lovage, deer, elk, moose, bighorn sheep, grizzly and black bear, and fur-bearers)
- Shuswap Indian Band role of Yecwmenul'ecem and keeping ecological balance intact
- data collection and study participation (e.g., archaeological work, water quality and fish monitoring)

For more detail on preliminary interests identified by the Shuswap Indian Band during early engagement, and Teck's responses, refer to Appendix A.

Table 6.2-2 provides a list of engagement activities Teck plans to undertake with the Shuswap Indian Band to support the assessment process.

Table 6.2-2: Planned Engagement with Shuswap Indian Band

Item #	Activity
1	Teck to meet with Shuswap Indian Band to discuss in more detail the interests in the Project and a path forward for continued engagement and mitigating potential effects of the Project
2	Maintain a log of all communications with Indigenous Peoples for review by BC EAO and/or IAAC upon request

The Memorandum of Understanding between the Shuswap Indian Band and Teck established a basis for cooperative work between Teck and the Shuswap Indian Band.

Teck entered into an agreement with Shuswap Indian Band in June 2021 to facilitate engagement and the collection of data to support the identification of Shuswap Indian Band interests related to the Project.

6.3 Stoney Nakoda Nation

The Stoney Nakoda Nation is made up of three Stoney Nakoda Nations, the Bearspaw, Chiniki, and Wesley, and is a signatory of Treaty 7. They reside on four reserves; Big Horn 144 A, Eden Valley 216, Stoney 142-143-144, and Stoney 142 B. The Stoney Tribal Administration represents the three nations, each of which have their own chief and council. The proximity of Stoney Nakoda reserves to the Project was presented in Figure 3.1-3.

The Stoney Nakoda Nation's traditional territory is found in southern Alberta; however, Stoney Nakoda Nation has asserted rights and title in southeastern BC through a Supreme Court of British Columbia Writ of Summons filed in 2004. Stoney Nakoda Nation has indicated that the Project has the potential to intersect locations used for the exercise of rights and is within an area associated with hunting, harvesting, ceremonial and sacred sites and other cultural practices. The Stoney Nakoda Nation have provided Indigenous knowledge and traditional use information for other nearby projects located in Alberta that may overlap with the study area for the Project. This information has not been made publicly

available for use or is protected by confidentiality agreements. Teck will discuss the applicability of the existing studies for the Project with the Stoney Nakoda Nation.

Neither the Stoney Nakoda as a Nation, nor its member nations, are signatories to the First Nations Land Management Framework Agreement.

Table 6.3-1 presents the engagement activities with the Stoney Nakoda Nation since preparation of the provincial IPD and Engagement Plan. For earlier engagements with the Stoney Nakoda Nation refer to Table 8 of the Engagement Plan.

Table 6.3-1: Engagement with Stoney Nakoda Nation about the Project since Preparation of the Initial Project Description

Date	Activity	Comments	Approach to Addressing
March 2, 2020	1895 Memorandum of Agreement	Stoney Nakoda Nation provided Teck with an 1895 Memorandum of Agreement with Shuswap Indian Band via email.	Teck acknowledges the Memorandum of Agreement provided.
March 2, 2020	Stoney Nakoda Nation and Teck Introductory Meeting	Teck introduced the Project (IPD) to Stoney Nakoda Nation.	Teck will work with Stoney Nakoda Nation to identify and evaluate potential impacts of the Project on Stoney Nakoda Nation's interests.
April 8, 2020	Teck provided an update on the Project.	Stoney Nakoda Nation confirmed their interest in completing a cultural assessment, socio-economic participation, conducting a site tour and providing cultural awareness training.	Follow up meeting scheduled for future engagement discussion and potential site visit.
June 8, 2020	Stoney Nakoda Nation Letter to BC EAO	Stoney Nakoda Nation provided their notice of intent to participate in the assessment process under the BC EAA to BC EAO.	Teck will work with Stoney Nakoda Nation and the BC EAO (and now the IAAC) to identify and evaluate impacts of the Project on Stoney Nakoda Nation's interests.
December 16, 2020	Stoney Nakoda Nation Letter to BC EAO	Feedback provided by Stoney Nakoda Nation on the provincial IPD via a letter and comment response table.	Teck acknowledges feedback provided and will continue to work with Stoney Nakoda Nation to evaluate potential impacts of the Project on Stoney Nakoda Nation's interests.
January 28, 2021	Stoney Nakoda Nation Letter to IAAC.	Feedback provided on the federal IPD.	Teck acknowledges the Statement of Claim provided by Stoney Nakoda Nation and will continue to work to engage the Stoney Nakoda Nation in an appropriate manner.
March 25, 2021	Teck/Stoney Nakoda Nation email exchange	Teck and Stoney Nakoda Nation corresponded via email to discussed further engagement needs around the Project, and the process for working together (via a work plan).	Teck will continue to work with Stoney Nakoda Nation on the appropriate methods of engagement.

Table 6.3-1: Engagement with Stoney Nakoda Nation about the Project since Preparation of the Initial Project Description

Date	Activity	Comments	Approach to Addressing
April 19, 2021	Teck/Stoney Nakoda Nation email exchange	Teck and Stoney Nakoda Nation corresponded via email on the timing of the proposed workplan.	Teck will continue to work with Stoney Nakoda Nation on the appropriate methods of engagement.
May 14, 2021	Teck/Stoney Nakoda Nation email exchange	Teck and Stoney Nakoda Nation corresponded via email on the timing of the proposed workplan and a site tour.	Teck will work with Stoney Nakoda Nation to set up a site tour.
July 7, 2021	Teck/Stoney Nakoda Nation email exchange	Teck reached out to Stoney Nakoda Nation via email to set up a meeting to discuss next steps to advance the workplan and site visit.	Teck will continue to work with Stoney Nakoda Nation on the appropriate methods of engagement.

Based on engagement to date, Stoney Nakoda Nation identified interests and concerns related to:

- environmental stewardship and natural resource management and monitoring of traditional lands
- consideration of traditional knowledge and cultural perspectives and experiential components of the land and resources in the assessment to be conducted for the Project
- documentation and preservation of traditional place names and oral narrative within southeastern BC
- access to sacred sites and locations for hunting, fishing, harvesting, ceremonial and cultural practices
- data collection and study participation (e.g., participating in the Environmental Monitoring Committee (EMC[23])

For more detail on the interests identified by the Stoney Nakoda Nation, and Teck's responses, refer to Appendices A and B.

Table 6.3-2 provides a list of engagement activities Teck plans to undertake with the Stoney Nakoda Nation to support the assessment process.

[23] Refer to section 7.1.2 for information on EMC mandate and membership.

Table 6.3-2: Planned Engagement with Stoney Nakoda Nation

Item #	Activity
1	Site tour and meetings to discuss Project and next steps.
2	Teck to meet with Stoney Nakoda Nation to discuss in more detail the interests in the Project and a path forward for continued engagement and mitigating potential effects of the Project.
3	Maintain a log of all communications with Indigenous Peoples for review by BC EAO and/or IAAC upon request

Teck did not enter into any agreements with the Stoney Nakoda Nation during early engagement on the Project.

6.4 Piikani Nation

The Piikani Nation is a member of the Blackfoot Confederacy and a signatory to Treaty 7, which covers an area from the BC border in the west, the United States border in the south, the Cypress Hills to the east and the Red Deer River to the north. The Project is within asserted ancestral lands of the Piikani Nation. The Piikani Nation has two reserves; Peigan Timber Limit "B" and Piikani. The proximity of the reserves to the Project was presented in Figure 3.1-3.

The Piikani Nation are not signatories to the First Nations Land Management Framework Agreement.

Table 6.4-1 presents the engagement activities with the Piikani Nation to date.

Table 6.4-1: Engagement with Piikani Nation about the Project

Date	Activity	Comments	Approach to addressing
April 24, 2020	Letter from Piikani Nation to BC EAO	Piikani Nation identified their interest in participating in the Project assessment process under the BC EAA.	Teck will work with Piikani Nation and the BC EAO (and now the IAAC) to identify and evaluate impacts of the Project on Piikani Nation's interests.
June 23, 2020	Letter from Piikani Nation to BC EAO	Piikani Nation affirmed their intent to participate in the assessment process under the BC EAA to BC EAO. Letter included feedback on the Nation's interests on the Project.	
July 29, 2020	Teck provided Project update presentation to Piikani Nation	Teck completed a presentation with Piikani Nation on the Project and discussed further steps for engagement.	Piikani Nation will prepare a work plan for engagement on the Project. Teck plans on incorporating the feedback regarding further steps for engagement into the engagement plan for the Project.
September 24, 2020	Piikani engagement workplan	Piikani provided a workplan and budget for engagement on the Project for Teck's consideration.	Teck acknowledges receipt of the work plan.

Table 6.4-1: Engagement with Piikani Nation about the Project

Date	Activity	Comments	Approach to addressing
November 3, 2020	Teck provided written approval of workplan	Teck provided an email to Piikani indicating the proposed workplan is acceptable and work can advance on an engagement agreement.	Teck to begin writing an engagement agreement.
November 10, 2020	Email from Shared Value Solutions to Teck	Expression of interest to arrange meeting on Project and encouragement for Teck to draft an engagement agreement	Follow up meeting scheduled.
November 17, 2020	Teck provided response to Piikani Nation	Teck proposed meeting dates and offered to provide an advance on some of the workplan items.	Follow up meeting scheduled.
December 2, 2020	Teck notification on meeting schedule delay	Teck notified Piikani Nation that scheduled meeting would be delayed until January 2021.	Meeting rescheduled.
December 18, 2020	Piikani draft DPD Comments	Teck received the comments provided by the Piikani to BC EAO and IAAC on the draft DPD	Teck has worked to address the comments in the final version of the DPD and/or identify where comments may be addressed later in the regulatory process, as documented in the comment tracking database.
February 25, 2021	Teck provided Project update presentation to Piikani Nation.	Teck completed a presentation with Piikani Nation on the FRX Project, and discussed the scope of work and budget to support Piikani participation in the interests assessment.	Teck will continue to work with Piikani Nation on appropriate methods of engagement.
March 15, 2021	Piikani Revised Budget	Piikani provided Teck with a revised budget on March 15, 2021 via email.	Teck set up follow-up meeting to discuss work plan and budget.
June 16, 2021	Piikani/Teck Kick Off Meeting for Traditional Ecological Knowledge and Land Use Study work	Piikani and Teck met to discuss next steps for the Traditional Ecological Knowledge and Land Use Study for the Project.	Teck will work with Piikani to coordinate a site tour, as well as next steps for the Traditional Ecological Knowledge and Land Use Study work.
July 13, 2021	Piikani/Teck Site Tour	Teck met with Piikani in-person for a site tour of the Fording River Operations and Project location.	Teck will support further field work by Piikani to help meet data collection needs for the Traditional Ecological Knowledge and Land Use Study.

Based on the engagement to date, the Piikani Nation identified interests and concerns related to:

- high elevation grasslands
- plant species of cultural significance (e.g., saskatoon, soopolallie, common juniper, birch, yarrow, lodgepole pine)
- fish populations
- wildlife species of cultural significance (e.g., grizzly bear)
- potential for archaeology resources in Project area
- access to Piikani Nation ancestral territories for spiritual, cultural and subsistence uses
- data collection

For more detail on interests identified by the Piikani Nation during early engagement, and Teck's responses, refer to Appendix A.

Table 6.4-2 provides a list of engagement activities Teck plans to undertake with the Piikani Nation to support the assessment process.

Table 6.4-2: Planned Engagement with Piikani Nation

Item #	Activity
1	Teck to meet with Piikani Nation to discuss the proposed work plan including interests in the Project and a path forward for continued engagement and mitigating potential effects of the Project.
2	Maintain a log of all communications with Indigenous Peoples for review by BC EAO and/or IAAC upon request

Teck entered into an agreement with Piikani in June 2021 to facilitate engagement and the collection of data to support the identification of Piikani interests related to the Project.

6.5 Siksika Nation

The Siksika Nation are members of the Blackfoot Confederacy and are signatories to Treaty 7. Treaty 7 covers an area from BC border in the west, the United States border in the south, the Cypress Hills to the east and the Red Deer River to the north. The Siksika Nation has one reserve, Siksika 146. The proximity of this reserve in proximity to the Project was presented in Figure 3.1-3.

The Project is within asserted traditional territory of the Siksika Nation. The Siksika Nation have indicated that the area around Castle Mountain was used for travel, trade, harvesting and ceremonial purposes and continues to be an area of importance.

The Siksika Nation is a signatory to the First Nations Management Framework Agreement but have voted to become inactive and have not proceeded to governance and management control over their lands independent of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC).

Table 6.5-1 presents engagement with the Siksika Nation to date.

Table 6.5-1: Engagement with Siksika Nation about the Project

Date	Activity	Comments	Approach to Addressing
May 5, 2020	Letter from Siksika Nation to BC EAO	Siksika Nation identified their interest in participating in the Project assessment process under the BC EAA.	Teck will work with Siksika Nation and the BC EAO (and now IAAC) to identify and evaluate impacts of the Project on Siksika Nation's interests.
May 8, 2020	Letter from Kainai (Blood Tribe) and Siksika Nation to Teck	Letter with attached reports providing supplementary information on Blackfoot Traditional Use and Occupancy in the East Kootenays.	Teck reviewed documents to advance understanding of Kainai (Blood Tribe) and Siksika Nation interest in the Project, and historical use of the region.
May 13, 2020	Call with Siksika Nation	Teck met with Siksika Nation to introduce Teck's operations in the Elk Valley and the Project, and invited engagement moving forward.	Teck will work with Siksika Nation to develop an appropriate path forward for engagement on the Project.
June 24, 2020	Letter from Siksika Nation to BC EAO	Letter affirming Siksika Nation's intent to participate in the Project assessment process under the BC EAA. Letter included feedback on Siksika Nation's interests in the Project.	Teck will work with Siksika Nation and the BC EAO (and now IAAC) to identify and evaluate impacts of the Project on Siksika Nation's interests.
June 19, 2020	Letter from Kainai (Blood Tribe) and Siksika Nation to IAAC	Letter requesting the Project be federally designated under IAAC.	Teck acknowledges the federal designation decision on August 19 and the Indigenous Peoples that may have an interest in the Project.
July 31, 2020	Letter from Kainai (Blood Tribe) and Siksika Nation to IAAC	Letter re-affirming Siksika Nation's request to have the Project federally designated under the IAA.	
September 3, 2020	Proposal on engagement participation provided to Teck by Siksika	Siksika Nation provided Teck with a Scope of Work to support engagement participation in the Project regulatory process.	Teck will work with Siksika Nation to evaluate the potential Project impacts on their interests.
November 3, 2020	Letter from Siksika Nation to IAAC	Letter providing feedback on the federal IPD.	Teck acknowledges feedback provided by Siksika Nation and will continue to work with Siksika Nation to evaluate impacts of the Project on Siksika Nation's interests.
December 18, 2020	Siksika draft DPD Comments	Teck received the comments provided by Siksika to BC EAO and IAAC on the draft DPD.	Teck has worked to address the comments in the final version of the DPD and/or to identify where comments may be addressed later in the regulatory process, as documented in the comment tracking database.

Table 6.5-1: Engagement with Siksika Nation about the Project

Date	Activity	Comments	Approach to Addressing
May 27, 2021	Letter from Siksika to KNC, IAAC and BC EAO	Siksika Nation provided a letter outlining their position on Aboriginal rights and traditional use in southeastern British Columbia.	Teck appreciates and acknowledges the information provided in the letter and will continue to work with Siksika Nation to understand their interests in the Project.
July 15, 2021	Siksikai/Teck Kick Off Meeting for Traditional Land Use Study work	Siksika and Teck met to discuss next steps for the Traditional Land Use Study for the Project.	Teck will work with Siksika to coordinate a site tour, as well as next steps for the Traditional Land Use Study work.

Based on the engagement to date, interests and concerns identified by the Siksika Nation include:

- impacts to ability to practice Indigenous and treaty rights and cultural and traditional use of lands and resources in and around the Project area and within Alberta, including harvest of plants for food, medicinal and ceremonial (e.g., ochre and 7th paint) purposes
- Project interference with legal, spiritual and cultural practices, including sense of place, way of life, transmission of culture from generation to generation, and governance
- impacts to camping and gathering sites of cultural, spiritual and historical importance that are important for transmission of traditional culture, knowledge and law
- impacts to hunting rights, including hunting practices of elk, mule deer, bighorn sheep (a species of cultural importance), moose and occasionally bear
- disturbance of land in Siksika Nation traditional territory
- impacts to the Oldman River[24] system with cultural and environmental importance
- provincial and international transboundary impacts to wildlife, habitat, and water quality, to terrestrial and aquatic wildlife habitat
- impact to terrestrial and aquatic wildlife habitat
- protection of wildlife and wildlife habitat, including migratory birds, fish (e.g., westslope cutthroat trout) and bighorn sheep
- air and water quality (e.g., selenium)
- cumulative effects associated with potential development of other future mining projects
- data collection

[24] The Oldman River has its headwaters in the eastern slopes of the Rocky Mountains and flows generally eastward to the Bow River and then onto the South Saskatchewan River, eventually draining into the Hudson Bay.

For more detail on interests identified by the Siksika Nation during early engagement, and Teck's responses, refer to Appendix A.

Table 6.5-2 provides a list of engagement activities Teck plans to undertake with the Siksika Nation to support the assessment process.

Table 6.5-2: Planned Engagement with Siksika Nation

Item #	Activity
1	Teck to meet with Siksika to discuss in more detail the interests in the Project and a path forward for continued engagement and mitigating potential effects of the Project
2	Maintain a log of all communications with Indigenous Peoples for review by BC EAO and/or IAAC upon request

Teck entered into an agreement with Siksika Nation in June 2021 to facilitate engagement and the collection of data to support the identification of Siksika Nation interests related to the Project.

6.6 Kainai (Blood Tribe)

The Kainai (Blood Tribe) are members of the Blackfoot Confederacy and are signatories of Treaty 7. Treaty 7 covers an area from BC border in the west, the United States border in the south, the Cypress Hills to the east and the Red Deer River to the north. The Project is within asserted traditional territory of the Kainai (Blood Tribe). The proximity of Reserves 148 and 148A to the Project is presented in Figure 3.1-3.

Blood Tribe Land Management, a department of the Blood Tribe Administration, operates under the authority of Blood Tribe Chief and Council and the Government of Canada to administer and manage land use and occupancy of the Blood Reserves,148 and 148A, in conjunction with CIRNAC to support compliance with applicable legislation governing the use and disposition of Blood Reserve land. Kainai (Blood Tribe) is not a signatory of the First Nations Land Management Agreement.

Table 6.6-1 presents engagement with the Kainai (Blood Tribe) to date.

Table 6.6-1: Engagement with Kainai (Blood Tribe) about the Project

Date	Activity	Comments	Approach to Addressing
May 5, 2020	Letter from Kainai (Blood Tribe) to BC EAO	Kainai (Blood Tribe) identified their interest in participating in the Project assessment process under the BC EAA.	Teck will work with Kainai and the BC EAO (and now IAAC) to identify and evaluate impacts of the Project on Kainai (Blood Tribe) interests.
May 8, 2020	Letter from Kainai (Blood Tribe) and Siksika Nation to Teck	Letter with attached reports providing supplementary information on Blackfoot Traditional Use and Occupancy in the East Kootenays.	Teck reviewed documents to advance understanding of Kainai (Blood Tribe) and Siksika Nation interests in the Project, and historical use of the region.

Table 6.6-1: Engagement with Kainai (Blood Tribe) about the Project

Date	Activity	Comments	Approach to Addressing
May 13, 2020	Call with Kainai (Blood Tribe)	Teck met with Kainai (Blood Tribe) to introduce Teck's operations in the Elk Valley and the Project, and invited engagement moving forward.	Teck will work with Kainai (Blood Tribe) to develop an appropriate path forward for engagement on the Project.
June 24, 2020	Letter from Kainai (Blood Tribe) to BC EAO	Letter affirming Kainai (Blood Tribe) intent to participate in the Project assessment process under the BC EAA. Letter included feedback on interests on the Project.	Teck will work with Kainai (Blood Tribe) and the BC EAO (and now IAAC) to identify and evaluate impacts of the Project on Kainai (Blood Tribe) interests.
June 19, 2020	Letter from Kainai (Blood Tribe) and Siksika Nation to IAAC	Letter requesting the Project be federally designated under the IAA.	Teck acknowledges the federal designation decision on August 19, 2020, and the Indigenous Peoples that may have an interest in the Project.
July 31, 2020	Letter from Kainai (Blood Tribe) and Siksika Nation to IAAC	Letter re-affirming their request to have the Project federally designated under the IAA.	
September 3, 2020	Proposal on engagement participation provided to Teck by Kainai	Kainai (Blood Tribe) provided Teck with a scope of work to support engagement participation in the Project regulatory process.	Teck will work with Kainai (Blood Tribe) to evaluate the potential Project impacts on their interests.
November 3, 2020	Letter from Kainai (Blood Tribe) to IAAC	Letter providing feedback on the federal IPD.	Teck acknowledges feedback provided by Kainai (Blood Tribe) and will continue to work with Kainai (Blood Tribe) to evaluate impacts of the Project on Kainai's interests.
December 18, 2020	Kainai DPD Comments	Teck received the comments provided by Kainai (Blood Tribe) to BC EAO and IAAC on the draft DPD.	Teck has worked to address the comments in the final version of the DPD and/or identify where comments may be addressed later in the regulatory process, as documented in the comment tracking database.
May 27, 2021	Letter from Kainai to KNC, IAAC and BC EAO	Kainai (Blood Tribe) provided a letter outlining their position on Aboriginal rights and title in southeastern British Columbia.	Teck appreciates and acknowledges the information provided in the letter and will continue to work with Kainai (Blood Tribe) to understand their interests in the Project.

Kainai (Blood Tribe) have indicated that the area around Castle Mountain was used for travel, trade, harvesting and ceremonial purposes and continues to be an area of importance.

Based on the engagement to date, interests and concerns identified by the Kainai (Blood Tribe) include:

- impacts to ability to practice Indigenous and treaty rights and cultural and traditional use of lands and resources in and around the Project area and within Alberta, including harvest of plants (e.g., stems, roots, berries) for food, medicinal and ceremonial purposes
- Project interference with legal, spiritual and cultural practices, including sense of place, way of life, transmission of culture from generation to generation, and governance
- impacts to camping and gathering sites of cultural, spiritual and historical importance that are important for transmission of traditional culture, knowledge and law
- impacts to a parcel of land near Coleman, Alberta, about 60 km from the Project and used as a base to support Kainai (Blood Tribe) members' exercise of treaty rights and traditional land uses in the Crowsnest Pass region
- impacts to the Oldman River[25] system with cultural and environmental importance
- provincial and international transboundary impacts to wildlife, habitat, and water quality
- impacts to hunting rights, including hunting practices of elk, mule deer, bighorn sheep (a species of cultural importance), moose and occasionally bear
- disturbance of land in Kainai (Blood Tribe) traditional territory
- impact to terrestrial and aquatic wildlife habitat
- protection of wildlife and wildlife habitat, including migratory birds, fish (e.g., westslope cutthroat trout) and bighorn sheep
- air and water quality (e.g., selenium)
- cumulative effects associated with potential development of other future mining projects
- data collection

For more detail on interests identified by the Kainai (Blood Tribe) during early engagement, and Teck's responses, refer to Appendix A.

Table 6.6-2 provides a list of engagement activities Teck plans to undertake with the Kainai (Blood Tribe) to support the assessment process.

Table 6.6-2: Planned Engagement with Kainai (Blood Tribe)

Item #	Activity
1	Teck to meet with Kainai (Blood Tribe) to discuss in more detail the interests in the Project and a path forward for continued engagement and mitigating potential effects of the Project
2	Maintain a log of all communications with Indigenous Peoples for review by BC EAO and/or IAAC upon request

[25] The Oldman River has its headwaters in the eastern slopes of the Rocky Mountains and flows generally eastward to the Bow River and then onto the South Saskatchewan River, eventually draining into the Hudson Bay.

Teck entered into an agreement with Kainai (Blood Tribe) in June 2021 to facilitate engagement and the collection of data to support the identification of Kainai (Blood Tribe) interests related to the Project.

6.7 Tsuut'ina Nation

The Tsuut'ina Nation are signatories to Treaty 7. Treaty 7 covers an area from BC border in the west, the United States border in the south, the Cypress Hills to the east and the Red Deer River to the north. Proximity of the Project to Tsuut'ina Nation 145 reserve is presented in Figure 3.1-3.

The Nation is led by a Chief and twelve councillors (Government of Alberta 2020). The Tsuut'ina are a signatory to the First Nations Land Management Agreement but have elected to be inactive and have not yet ratified a land code to operationalize governance and management control of their land and natural resources.

Table 6.7-1 provides a list of engagement activities Teck plans to undertake with the Tsuut'ina Nation to support the assessment process.

Table 6.7-1: Engagement with Tsuut'ina Nation about the Project

Date	Activity	Comments	Approach to addressing
November 6, 2020	Letter from the Tsuut'ina Nation to IAAC	Letter providing feedback on the federal IPD.	Teck acknowledges feedback provided by the Tsuut'ina Nation and proposes to continue to work with Tsuu'tina Nation to evaluate impacts of the Project on Tsuu'tina Nations interests.
February 16, 2021	Letter to Tsuut'ina Nation from Teck	Letter provided to introduce Teck and the Project, and provide opportunity for future engagement.	Teck will address any follow up correspondence with further engagement as appropriate.
March 24, 2021	Teck email invitation to engage	Teck sent an email to follow-up on the previous letter sent to Tsuut'ina to ask if they would like to engage on the Project.	Teck remains open to engagement with Tsuut'ina and their interests in the Project.
May 21, 2021	Tsuut'ina/Teck Meeting	Tsuut'ina and Teck met to do introductions and discuss future engagement.	Teck will continue to work with Tsuut'ina to understand their interests in the Project.
June 9, 2021	Tsuut'ina/Teck Meeting	Tsuut'ina and Teck met for a Project Introduction, and for Tsuut'ina to share some information about their history and culture.	Teck will continue to work with Tsuut'ina to understand their interests in the Project.

Based on the letter submitted to IAAC on November 6, 2020, interests and concerns identified by Tsuut'ina Nation include:

- water quality and ability for water to support natural ecosystems
- cumulative effects related to access and reduction of "areas of solitude", thereby impacting ability to conduct undisturbed traditional activities

Table 6.7-2 provides a list of engagement activities Teck plans to undertake engagement with the Tsuut'ina Nation to support the assessment process.

Table 6.7-2: Planned Engagement with Tsuut'ina Nation

Item #	Activity
1	Teck to meet with Tsuut'ina Nation to discuss in more detail the interests in the Project and a path forward for continued engagement and mitigating potential effects of the Project
2	Maintain a log of all communications with Tsuut'ina Nation for review by BC EAO and/or IAAC upon request

Teck did not enter into any agreements with Tsuut'ina Nation during early engagement on the Project.

6.8 Métis Nation of Alberta

Métis of Alberta reside throughout the province in various Métis Settlements (refer to Figure 3.1-3 for proximity of the closest settlements to the Project) and other communities.

The Métis Nation of Alberta is governed by a provincial council consisting of a provincial president and vice-president, and six elected regional presidents, vice-presidents and local councils (MNA 2020a). To facilitate consultation activities, each of its six administrative regions and the local councils have entered into Regional Consultation Protocols, creating a one-window approach to consultation with the Métis Nation of Alberta. Six regional consultation offices are tasked with facilitating consultation between proponents, the Crown and affected Métis citizens at the local, regional and provincial levels. Métis Nation of Alberta is not a signatory of the First Nations Land Management Agreement.

Table 6.8-1 presents engagement with the Métis Nation of Alberta to date.

Table 6.8-1: Engagement with Métis Nation of Alberta about the Project

Date	Activity	Comments	Approach to addressing
November 2, 2020	Letter from the Métis Nation of Alberta to IAAC	Letter providing feedback on the federal IPD.	Teck acknowledges feedback provided by the Métis Nation of Alberta and proposes to continue to work with Métis Nation of Alberta to evaluate impacts of the Project on Métis Nation of Alberta's interests.

Table 6.8-1: Engagement with Métis Nation of Alberta about the Project

Date	Activity	Comments	Approach to addressing
January 20, 2020	Meeting to introduce Teck and the Project	The Métis Nation of Alberta indicated some high levels interests and concerns.	The Métis Nation of Alberta indicated they would provide additional detail to Teck regarding their interests and concerns in the Project. Teck will continue to work with the Métis Nation of Alberta to evaluate impacts of the Project on Métis Nation of Alberta's interests.
April 27, 2021	Meeting to check in on the Project and next steps	The Métis Nation of Alberta and Teck met to discuss next steps for engagement on the Project	Teck will work with the Métis Nation of Alberta to establish future engagements on the Project as appropriate.
May 27, 2021	Letter from Letter from the Métis Nation of Alberta	The Métis Nation of Alberta indicated there are possible outstanding concerns with respect to the project.	Teck will receive a proposal from Métis Nation of Alberta for a Traditional Study for the Project.
July 12, 2021	Email to Métis Nation of Alberta	Teck advised Métis Nation of Alberta their proposal is acceptable.	Teck and Métis Nation of Alberta will schedule a meeting to initiate the proposed study.

Based on the Summary of Issues, interests and concerns identified by the Métis Nation of Alberta include:

- emission levels and climate change
- impact to terrestrial and aquatic wildlife habitat
- air and water quality
- notification process when artifacts are found during ground disturbance
- protection of archaeological sites and notification of findings
- impact to culture, tradition and history
- access

Table 6.8-2 provides a list of engagement activities Teck plans to undertake with the Métis Nation of Alberta to support the assessment process.

Table 6.8-2: Planned Engagement with Métis Nation of Alberta

Item #	Activity
1	Teck to meet with Métis Nation of Alberta to discuss in more detail the interests in the Project and a path forward for continued engagement and mitigating potential effects of the Project
2	Maintain a log of all communications with Métis Nation of Alberta for review by BC EAO and/or IAAC upon request

Teck did not enter into any agreements with Métis Nation of Alberta during the Early Engagement Phase of the Project.

6.9 Métis Nation British Columbia

The Métis Nation British Columbia represents 38 Métis Chartered Communities in BC The Kootenays are home to six Métis Nation British Columbia communities: Columbia Valley located in Invermere, Elk Valley located in Fernie, Kootenay South Métis Society located in Trail, West Kootenay Métis Society located in Bonnington, Métis Nation Columbia River Society located in Golden, and the Rocky Mountain Métis Society located in Cranbrook. The location of the indicated communities in proximity to the Project is presented in Figure 3.1-3.

The Métis Nation British Columbia is governed by an 11-person cabinet consisting of a President, Vice-President, 7 elected Regional Directors, and provincially elected representatives for both the Métis Women and Métis Youth of British Columbia (MNBC 2020a). Métis Nation British Columbia is not a signatory of the First Nations Land Management Framework Agreement.

Teck has engaged with the Métis Nation British Columbia as outlined in Table 6.9-1. Additionally, Teck has engaged directly with the Elk Valley Métis Association regarding the Project (Table 6.9-1). The Elk Valley Métis Association is a member of the Métis Nation British Columbia and National Métis Nation Council. Teck understands the Métis of the Elk Valley are represented by the elected leadership of the Elk Valley Métis Association, a provincially registered non-profit society, established in 1994, located in the Kootenay Region in BC. Teck will continue to engage the Elk Valley Métis Association and the Métis Nation British Columbia to understand their respective governance, membership, interests and engagement preferences.

Table 6.9-1: Engagement with Métis Nation British Columbia and the Elk Valley Métis of about the Project

Date	Activity	Comments	Approach to addressing
February 16, 2021	Letter to the Métis Nation BC from Teck	Letter provided to introduce Teck and the Project, and provide opportunity for future engagement.	Teck will address any follow up correspondence with further engagement as appropriate.
February 16, 2021	Response to Teck Letter	The Métis Nation British Columbia indicated they would get back to Teck with additional detail regarding the potential impact of the Project on their interests.	Teck will work to understand the Métis Nation British Columbia to evaluate impacts of the Project on Métis Nation British Columbia's interests.
February 25, 2021	Letter to Teck	The Elk Valley Métis provided a letter to Teck outlining their interest in engaging on the Project.	Teck responded to the letter with an email response offering an introductory call. Teck will work to understand the Elk Valley Métis interests in the Project.
March 1, 2021	Métis Nation BC reach out to Teck	The Métis Nation British Columbia emailed Teck to indicate they had an interest in introducing themselves and engaging further.	Teck met with the Métis Nation British Columbia to do introductions and discuss next steps.

Table 6.9-1: Engagement with Métis Nation British Columbia and the Elk Valley Métis of about the Project

Date	Activity	Comments	Approach to addressing
March 2, 2021	Elk Valley Métis/ Teck Introductory Meeting	The Elk Valley Métis and Teck met to do introductions and discuss future engagement.	Teck will work to understand the Elk Valley Métis to evaluate impacts of the Project on Elk Valley Métis interests.
March 15, 2021	Métis Nation BC & Teck Introductory Meeting	The Métis Nation British Columbia met with Teck to do introductions and discuss future engagement.	Teck will continue to work with the Métis Nation British Columbia to understand their interests in the Project.
March 23, 2021	Elk Valley Métis/ Teck Meeting	The Elk Valley Métis and Teck met again to provide further information on the Project, and for the Elk Valley Métis to provide a presentation on their history.	Teck will continue to work with the Elk Valley Métis to understand their interests in the Project.
May 4, 2021	Métis Nation of BC/Teck Meeting	The Métis Nation British Columbia met with Teck to hear an introduction to the Project.	Teck will continue to work with the Métis Nation British Columbia to understand their interests in the Project.
May 18, 2021	Elk Valley Métis/ Teck Meeting	The Elk Valley Métis and Teck met to provide an overview of steelmaking coal, and for the Elk Valley Métis to provide a presentation on their consultation process.	Teck will continue to work with the Elk Valley Métis to understand their interests in the Project.
June 1, 2021	Elk Valley Métis/ Teck Meeting	The Elk Valley Métis and Teck met to discuss a future site visit to better understand the Project area.	Teck will work with Elk Valley Métis to facilitate a site visit.
June 29, 2021	Elk Valley Métis Site Tour	Teck provided a tour of Fording River Operations and the Project area.	Teck will continue to work with the Elk Valley Métis to understand and evaluate impacts of the Project on Elk Valley Métis interests.

Table 6.8-2 provides a list of engagement activities Teck plans to undertake with the Métis Nation British Columbia to support the assessment process.

Table 6.9-2: Planned Engagement with Metis Nation British Columbia

Item #	Activity
1	Maintain a log of all communications with Métis Nation British Columbia for review by BC EAO and/or IAAC upon request
2	Teck to meet with Elk Valley Métis to discuss in more detail the interests in the Project and a path forward for continued engagement and mitigating potential effects of the Project
3	Maintain a log of all communications with the Elk Valley Métis for review by BC EAO and/or IAAC upon request

Teck did not enter into any agreements with Métis Nation of British Columba or the Elk Valley Métis during early engagement on the Project.

7 Existing Environment

The following information presents a general overview of the existing environment in the vicinity of the proposed Project. As the Project moves through the assessment process, additional information, compiled from existing studies and collected through ongoing investigations (refer to Appendix E) will be documented in existing conditions reports. The existing conditions reports will form an important component of the assessment for the Project, providing context and a basis for assessing potential effects. Additional detail about the information to be contained in the existing conditions reports will be proposed in the draft TISG/AIR and refined through the Process Planning Phase of the assessment process. The draft TISG/AIR to be submitted to the BC EAO and the IAAC, will also include the proposed scope of the assessment of the Project, including a list of the VCs proposed to be evaluated.

Early Engagement Feedback Note

Early engagement on the Project included feedback about the valued components (VCs) to be assessed for the Project. This information has been compiled for inclusion in the draft TISG/AIR that Teck is submitting to the BC EAO and the IAAC. The VCs to be assessed for the Project are meant to be relevant to issues raised, responsive to potential effects, representative of the various parts of the environment, sufficiently comprehensive to understand the effects of the Project, and concise so that the nature of the interactions between the Project and the VCs can be clearly articulated and redundant analysis is avoided.

There will be additional opportunity to provide feedback on the draft TISG/AIR, including the VCs to be assessed, during public engagement following the BC EAO's and the IAAC's decisions on whether the Project should proceed to the next phases of the coordinated assessment process.

7.1 Regional Environmental Context

7.1.1 Historical Regional Environmental Context

Coal has been mined in the Elk Valley since the late 1890s, with more intensive coal mining related activities occurring in the Project region for over the last 50 years. Mining activity, combined with other activity, including forestry, urban and rural development, transportation infrastructure, agriculture and more, has resulted in changes to the biophysical and human environment in the area.

7.1.2 Regional Environmental Studies, Initiatives, Plans and Programs

Teck has been involved in efforts to understand and reduce the effects of mining in the Project region for many years and collaborates in various initiatives that include government agencies, the KNC, and other interested parties. A list of existing studies and investigations underway is found in Appendix E. Other regional actions are guided by various plans and permit conditions that have evolved to address regional management objectives in the Elk Valley. Examples of initiatives that Teck has led or participates in include:

- **The Elk Valley Water Quality Plan (EVWQP):** In April 2013, the BC Minister of Environment issued Ministerial Order No. M113, which required Teck to prepare an area-based management plan for the Elk River watershed and the Canadian portion of the Koocanusa Reservoir. In this plan, Teck was to identify the actions it would take to manage water quality downstream of its five mines in the region. In response, Teck developed the Elk Valley Water

Quality Plan (Teck 2014), with the objectives of protection of aquatic ecosystem health, management of bioaccumulation of constituents in the receiving environment, protection of human health, and protection of groundwater. The EVWQP included an Initial Implementation Plan that outlined the mitigation plan to achieve water quality targets for selenium, sulphate, nitrate and cadmium in surface water at specific locations throughout the Elk River watershed and in the Koocanusa Reservoir. Teck had input from Indigenous Peoples, provincial and federal governments, technical experts, and other interested parties. *Environmental Management Act* Permit 107517 was put in place to regulate the EVWQP and establishes instream compliance limits at a series of compliance points. The C-Permits under the BC *Mines Act* for each of Teck's operations in the Elk Valley were also amended to set out requirements related to the EVWQP.

The EVWQP regional water quality model is required to be updated every three years. Following the 2017 update, Teck issued the 2019 IPA, which is an adjustment to the Initial Implementation Plan. Another regional water quality model update was submitted in early 2021.

Teck plans to use the updated model to support water quality mitigation planning for the Project. With the basis of the IPA being the permitted mine plan, mitigations specific to the Project will not be included in the next update. Rather, Teck plans to submit Project-specific water quality mitigations in the assessment application. Should the Project be approved, the Project-specific water quality mitigations would be integrated in a subsequent water quality model update and IPA.

- **The Elk Valley Permit (*Environmental Management Act* Permit 107517):** Following the approval of the EVWQP in 2014, the Ministry of Environment issued *Environmental Management Act* Permit 107517, often referred to as the Elk Valley Permit. Many of the actions and commitments described in the EVWQP were included as requirements in Permit 107517[26]. Permit 107517 requires that Teck implement a number of management plans and monitoring programs including a discharge and receiving environment monitoring program, a groundwater monitoring program, regional and local aquatic effects monitoring programs, a calcite monitoring program and management plan, as well as plans for tributary management, adaptive management, human health and ecological risk assessment, and other requirements. Should the Project be approved, discharges and monitoring plans associated with the Project would be authorized through Permit 107517.
- **Calcite Management Plan:** In addition to targets for concentrations of selenium, nitrate, sulphate and cadmium, the EVWQP includes targets for managing formation of calcite in Elk Valley waters downstream of Teck's mining operations. As part of the EVWQP, Teck developed a program to quantify, monitor and assess potential effects of calcite deposits downstream of its mining operations. Four streams, Greenhills Creek (downstream of GHO), Corbin Creek (downstream of Coal Mountain mine) and Elkview Dry Creek and Erickson Creek (downstream of EVO), were identified as priority streams because they support fish

[26] Other permits, such as Teck's C-permits under the *Mines Act*, incorporate other aspects of the EVWQP.

habitat and calcite formation was higher than other streams. Teck's first calcite management project was initiated at Greenhills Creek in 2018 and studies have continued to confirm the effectiveness of the system and to inform next steps for managing calcite. In October 2020, Teck received direction from Environment and Climate Change Canada setting out measures to be taken to improve water quality and prevent calcite deposition in waters downstream of FRO and GHO.

- **Tributary Management Plan (TMP):** The TMP was developed to meet requirements of Permit 107517. The TMP details protection and rehabilitation goals for tributaries (creeks and streams) within the Elk Valley, and provides guidance for the environmental management of tributaries to be taken into consideration during future mine planning. The TMP complements the EVWQP and supports its objectives. The 2017 TMP was approved. The 2018 update of the plan was not accepted. Teck submitted a new update to BC MECCS on July 31, 2020, that addressed:
  - revised definition of "protection" that reflects EMC input
  - identification of prioritized tributaries for permanent protection and for rehabilitation
  - an implementation plan for protection and restoration/rehabilitation for the next three years
  - inclusion of relevant groundwater monitoring work, how the TMP will be considered in mine planning, further responses to EMC advice, and relevant supporting information

  The 2020 update proposes that Chauncey Creek, which is adjacent to the Project, be addressed through the assessment of the Project rather than the TMP, stating:

  > *For this cycle of the TMP, Teck is proposing that activities in Chauncey Creek be covered by terms and conditions issued through the Project assessment by the BC EAO and IAAC. Results of the Project assessment, and the mitigation and monitoring put in place to limit impacts in the watershed, are expected to be included in a Chauncey Creek Management Plan.*

- **Environmental Monitoring Committee (EMC):** The EMC, consisting of representatives from BC MECCS, BC EMLI, Environment and Climate Change Canada, the KNC, Interior Health Authority, and Teck, was established to review monitoring and report submissions required by Permit 107517. The EMC prepares an annual public report summarizing monitoring activities reviewed by the committee. The committee's existence, mandate and membership are requirements of Permit 107517[27]. Refer to the most recent EMC public report here.
- **Southeast Coal Initiative:** The Southeast Coal Initiative is a coordination framework in which the Province of BC, KNC, and Teck have agreed to work together with the goal of addressing challenges and implementing opportunities for improvement related to mining in the Elk Valley. It includes several working groups that have been formed to focus on

[27] A change to the membership of the EMC would require a permit amendment by the BC MECCS.

cumulative effects management, westslope cutthroat (WCT) recovery, emerging technologies, and permitting process improvement.

- **Koocanusa Reservoir Transboundary Monitoring Task Group.** This task group is composed of representatives from the US Army Corps of Engineers, US Environmental Protection Agency, Montana Department of Environmental Quality, Montana Fish and Wildlife, the BC MECCS, and Teck. The task group was formed in 2018 to develop a common understanding of current and future water quality monitoring activities and data, with an emphasis on selenium, in the transboundary waters of Koocanusa Reservoir. Early efforts of the task group resulted in the development of a two-year monitoring program that will help to assess the potential for environmental effects in the reservoir. Data collected under the program are uploaded to US Environmental Protection Agency's Water Quality Data portal here.
- **The Elk Valley Fish and Fish Habitat Committee (EVFFHC):** The EVFFHC is a multi-agency group that works collaboratively to discuss technical information related to Teck's fisheries obligations in the Elk Valley. The EVFFHC includes membership from the KNC, BC FLNRORD, Fisheries and Oceans Canada and Teck. The EVFFHC is an example of a multi-agency approach that works in an inclusive manner to advance mitigation planning for fish habitat throughout the Elk Valley. Read more about the EVFFHC here.
- **Net Positive Impact (NPI):** In 2011, Teck established a voluntary long-term vision of achieving an NPI on biodiversity in areas affected by our activities. For Teck, NPI means that ecosystems and biodiversity are better off at the end of mining than when we found them. Working towards securing NPI happens throughout the mining life cycle, and includes determining key ecosystem and biodiversity elements relative to a pre-mining baseline and tracking plans for achieving NPI in operation-specific biodiversity management plans. Read more about Teck's approach to NPI here.
- **Reclamation Research:** Teck's reclamation research program at FRO was initiated in 1969, with the purpose of enabling improved environmental and reclamation evaluations; advancing the science of reclamation to enable the achievement of both short- and long-term goals; and, progressing work towards the quantification of NPI. Research has included the design of novel models that have been transitioned into operational use to support reclamation planning and implementation, including a vegetation quality assessment tool (evaluating the quality of reclaimed areas in comparison to native benchmark ecosystems); wildlife and vegetation species-specific local and regional models (enabling the assessment of reclaimed area habitat suitability, quality and class); and, ecohydrological models (enabling the strategic placement of soil resources to target specific ecosystem types). Other key learnings have included an understanding of key habitat features and forage types for integration into both mine planning and reclamation design to meet the long-term requirements for establishing ecosystems and core wildlife habitat.

- **Elk Valley Cumulative Effects Management Framework (EV-CEMF):** Recognizing the need for a broadly accepted, credible and workable approach to the assessment and management of cumulative effects in the Elk Valley and as a condition in the Environmental Assessment Certificate for the LCO Phase II Project, Teck and the KNC held a multi-stakeholder workshop to address broader cumulative landscape and land use pressures in the Elk Valley. As an outcome of this workshop, the EV-CEMF was launched. A diverse working group, now consisting of the KNC, industry, community organizations, and provincial government ministries, provides guidance and oversight on EV-CEMF activities. The EV-CEMF selected five VCs for the first phase of study: riparian habitats, old and mature forest, grizzly bear, bighorn sheep, and westslope cutthroat trout. Deliverables from the EV-CEMF include results of retrospective and prospective assessment, along with management responses including mitigations to help inform natural resource management decisions. Teck has remained an active member of the working group, sub-groups and expert teams for each VC, providing information, data, scientific expertise and recommendations. Find out more about the EV-CEMF here.
- **Biodiversity Management Technical Advisory Group (TAG):** As a condition in the Environmental Assessment Certificate for the FRO Swift Project, Teck, the KNC, BC FLNRORD, and BC EMLI established the Biodiversity Management Technical Advisory Group (TAG). The primary function of the TAG is to share scientific, technical and Ktunaxa knowledge, and to provide input on Teck's Biodiversity Program, including input to operation-specific biodiversity management plans and regional terrestrial cumulative effects management planning. The objective of the TAG is to advise on the selection and inclusion of ecosystem and biodiversity elements, the risk ranking process carried out for these ecosystem and biodiversity elements, and any ensuing biodiversity mitigation strategies (i.e., species-specific action plans) and actions for Teck's operations in the Elk Valley.
- **Air Quality Monitoring Program:** Teck has an extensive air monitoring network in the Elk Valley to track trends in ambient air quality.
- **Carbon Neutrality 2050:** As part of our commitment to climate action and responsible resource development, Teck has committed an objective to be carbon neutral across all operations and activities by 2050. Teck has set out an initial roadmap to achieve carbon neutrality by first avoiding emissions and then eliminating or minimizing emissions. This will include looking at alternative ways of moving materials at our mines, using cleaner power sources, and implementing efficiency improvements, among other measures. Read about Teck's goal to become carbon neutral and other climate change actions at the following links:
    - Teck Announces Goal of Carbon Neutrality
    - Taking Action on Climate Change

Teck also contributes to and collaborates with other organizations to benefit conservation and the environment in the Elk Valley. For example, Teck supports and contributes to the conservation efforts to benefit ungulate winter range enhancement on The Nature Trust of BC's Big Ranch property, BC FLNRORD's regional grizzly bear DNA (deoxyribonucleic acid) studies, the Sparwood Fish and

Wildlife Association's West Elk Valley bighorn sheep study, the Sparwood Fish and Wildlife Association's regional elk collar study, and others. Teck has supported directly or indirectly through other organizations to the securement of lands for conservation in excess of 17,000 ha, 7,150 ha of which are in the Elk and Flathead valleys. Teck is working with the Ministry of Transportation and Infrastructure and other organizations to implement Phase 1 of the Highway 3 Connectivity corridor and Alexander-Michel Corridor Highway 3 Overpass and looking to support EV-CEMF objectives through reducing road density by taking actions on rehabilitating roads on our private lands.

7.1.3 Regional Environmental Challenges

Some of the environmental challenges in the Project region are of note to Indigenous Peoples, government agencies and other interested parties. Teck has received feedback and information on these challenges through engagement on prior project application review processes, various regional initiatives, and engagement on the Project prior to submitting the DPD (see Sections 5 and 6). Table 7.1-1 provides a summary of key challenges, and current and proposed actions to address each.

The Project plans and designs will consider these challenges and work to avoid or reduce Project effects in the area while working with broader initiatives (Section 7.1.2) to understand and address the challenges.

Table 7.1-1: Recent Environmental Challenges in the Project Region

Environmental Factor	Issue Summary	Actions
Terrestrial cumulative effects (TCE)	Cumulative loss of habitat such that protection of remaining habitat is seen to be important for maintaining several regional values, including: • Bighorn sheep • Grizzly bear • Old growth and mature forests • Grassland and brushland ecosystems • Wetland ecosystems • Riparian and flood ecosystems • Whitebark pine	**Current / Non-Project Actions:** • TCE Management Plan, various individual ecosystem/species management plans. • Reclamation research, and progressive reclamation. • Consideration of Teck's mitigation hierarchy in mine design and reclamation strategy. • Consideration of enhancements in degraded habitat until reclamation in other areas is complete. • Consideration of offsets. **Project Actions:** • Include TCE Management Plan and individual ecosystem/species management plans in design considerations for the Project. • Consideration of Teck's mitigation hierarchy in mine design and reclamation planning. • Incorporation of landscape level information into reclamation planning to support habitat connectivity.

Table 7.1-1: Recent Environmental Challenges in the Project Region

Environmental Factor	Issue Summary	Actions
High elevation grasslands (HEG) including brushlands	Mining mountains removes high elevation grasslands and brushlands which are seen to be rare, at-risk, an unmitigable loss and/or important within BC	**Current / Non-Project Actions:** • Draft High Elevation Grassland and Brushland Management Plan. • Mapping and field validation of the relative abundance, distribution and condition of grasslands and brushlands in the Project region. • Conduct HEG reclamation research, and progressive reclamation efforts including seed collection, development of reclamation prescriptions for HEG communities. • Reclamation of exploration disturbance in HEG, as outlined in exploration permit(s). • Possible adjustments to mine design and reclamation strategy for existing and future impacts. • Consideration of possible offsets **Project Actions:** • Consider High Elevation Grassland and Brushland Management Plan in Project planning.
Whitebark pine (WBP)	Mining in the mountains of the Elk Valley removes WBP, which are federally endangered and under stress due to disease, climate change, mountain pine beetle infestation, fire and fire suppression	**Current / Non-Project Actions:** • WBP Species Management Plan. • Research WBP local disease occurrence and habitat information. • Conduct seed collection. • Contribute to blister rust resistance efforts; seed and parent trees. • Continue to include whitebark pine in reclamation planting. • Continue to participate in provincial working groups to support provincial WBP recovery. **Project Actions:** • Consider WBP Management Plan in Project planning.

Table 7.1-1: Recent Environmental Challenges in the Project Region

Environmental Factor	Issue Summary	Actions

Westslope cutthroat trout (WCT)	Recent surveys (fall 2019) show a significant decline in WCT (approximately 90% in adults and 74% in juveniles) in the upper Fording River	**Current / Non-Project Actions:**
		• Operational changes at FRO and GHO to reduce potential stress to the population, including precautionary measures in the upper Fording River, such as:
		  ○ Sourcing of operational water needs from non-environmental flow needs (or least risk environmental flow needs (e.g., stored pit water) withdrawal points during the 2019/20 winter season to avoid exacerbating low flow conditions during periods of natural low flow.
		  ○ Continuous monitoring of instream flows and environmental conditions to inform relative environmental flow needs requirements for the operation (ongoing).
		  ○ Review of Erosion and Sediment Control Management Plan in preparation for spring freshet to focus areas of concern, minimize potential for sediment deposition and release to Fording River.
		• Establishment of a WCT Working Group that includes Teck, BC and KNC.
		• Collaborate with the KNC, regulators, government agencies and experts to understand the decline.
		• Bi-weekly meetings with KNC and government agencies.
		• Report on potential causes and response actions expected in mid-2021.
		• Development of a strategy that will support operationalization of the goals and objectives in the Province/KNC led recovery plan, once available.
		• Ongoing initiatives associated with the Fish and Fish Habitat Management Plan and the TMP.
		Project Actions:
		• Consider outcomes from actions above, including outcomes from WCT Working Group, in Project planning, as relevant.

Table 7.1-1: Recent Environmental Challenges in the Project Region

Environmental Factor	Issue Summary	Actions
Water quality	Instream concentrations are not meeting permit limits at some locations	**Current / Non-Project Actions:** • Expediting the design and commissioning of water quality mitigation within the bounds of what is technically feasible – Teck anticipates that the Fording River Operations South Active Water Treatment Facility will come online in 2021. The SRF at EVO is currently undergoing construction to expand capacity, with commissioning planned by the end of 2020. Early construction activities have started on the FRO-N SRF, with plans for commissioning of the initial phase in late 2021. • Detailed investigation of potential groundwater flow paths and attenuation mechanisms in the vicinity of Fording River and Kilmarnock Creek to evaluate actions to identify and reduce potential for groundwater bypass around treatment facilities. • Implementation of source control (e.g., change in blasting procedures to reduce nitrate residuals in waste rock).[28] • Ongoing evaluation and research on constituent impacts, treatment, and source control. • Adjusting Teck's Implementation Plan to achieve compliance with the EVWQP and Permit 107517. • Include source control in design considerations for new projects. **Project Actions:** • The Project's water quality management plan builds on existing water treatment plans and successes in mine design, source control, treatment, and research and technology relevant to the Elk Valley. The water quality management plan makes allowance for adaptation of improvements in technology to be incorporated as the Project evolves. Additional details about Teck's water quality management plan for the Project are included in Sections 3.3.6 and 3.4.4. • The assessment will evaluate the Project's potential water quality effects within the context of the regional water quality initiatives.
Water quality emerging issues	Ongoing water quality improvement efforts and research have identified that nickel may also be a water quality constituent of concern	**Current / Non-Project Actions:** • Research on nickel impacts, including research to identify concentrations that are protective of aquatic life in the Elk Valley, treatment and source control. **Project Actions:** • Include research findings on nickel in relevant aspects of Project planning and assessment, as available.

[28] Reducing nitrate residuals is anticipated to positively influence water treatment effectiveness for selenium. Both Active Water Treatment Facilities and Saturated Rock Fills reduce nitrates before reducing selenium. With less nitrates in the water due to source control, more selenium can be removed.

7.2 Physical Environment

The Project footprint straddles portions of FRO and Castle Mountain in the Fording River Valley (Figure 3.1-1). The area of new disturbance within the Project footprint consists primarily of forested habitat interspersed with non-forested ecosystems such as grasslands and avalanche paths. Some of these ecosystems have been previously disturbed by exploration and forestry activities. Mining disturbance (including waste rock storage) exists in the catchments of Kilmarnock Creek and Clode Creek.

The Project footprint experiences a continental cold climate, with elevation, slope, aspect and proximity to the Fording River representing important influences on temperature, precipitation and wind speed. Snow cover in the Fording River Valley is relatively consistent from November through March, with greater snowfall and associated snowpack accumulation occurring from January through March and with increasing elevation. In comparison, rainfall is generally moderate in the summer months with no defined dry season, noting that rainfall accumulation is also known to increase with elevation. Wind through the region is mainly channelled through the Fording River Valley, meaning that the predominant winds are from the south-southeast and south, although winds from the northwest are also common.

Air emissions from FRO are primarily made up of particulate matter (PM), sulphur dioxide (SO_2), nitrogen dioxide (NO_2) and GHGs (RWDI 2019; Sections 3.5.2 and 3.5.3). The PM emissions arise from mining activities such as drilling, blasting and material handling. The SO_2 and NO_2 emissions are produced by the detonation of explosives for blasting and the combustion of fossil fuels in vehicles, equipment and coal dryers. Sources of GHG emissions include fossil fuel combustion as well as fugitive coalbed methane.

Mining activities that generate noise include coal extraction, material handling and stockpiling, as well as activities associated with blasting, shovels, haul trucks, drills and auxiliary equipment.

Castle Mountain is currently undisturbed by active mining and is bordered by Kilmarnock Creek and the actively mined Eagle Mountain to the north, the Fording River and the actively mined Greenhills Range to the west, and Chauncey Creek and the High Rock Range to the east and south (Figure 3.1-1). The topography along the upper portions of Castle Mountain is steep, with typical slopes of approximately 0.4 m/m or 40%. The topography along the lower portion of the west side of Castle Mountain (facing the Fording River) includes shallower slopes of approximately 0.1 m/m or 10%. Elevations near the Project range from approximately 1,550 metres above sea level (masl) at the valley floor (near the Fording River) to approximately 2,550 masl at the peak of Castle Mountain.

Drainage at Castle Mountain consists of a network of relatively small-sized watercourses that collect runoff from the surrounding terrain and support ephemeral or intermittent flow conditions. Flows from these watercourses ultimately report to larger tributaries to the Fording River such as Chauncey and Kilmarnock creeks or directly to the Fording River as summarized below:

- Runoff from the north side of the mountain drains to Kilmarnock Creek, which flows west toward the Fording River and passes through an approximately 3 km long channel located under an existing waste rock storage area immediately north of Castle Mountain. Approximately 30% of the catchment area of Kilmarnock Creek has been disturbed by

historical and active mining activities. These mine disturbance areas are located primarily in the lower half of the catchment of Kilmarnock Creek[29].

- Runoff from the east and south sides of Castle Mountain drains to Chauncey Creek, which flows southwest toward the Fording River. The catchment area of Chauncey Creek is unaffected by direct impacts from mining activities and includes major tributaries from the High Rock Range extending to the Continental Divide.
- Runoff from the west side of Castle Mountain drains to a series of small tributary channels[30] that report to the Fording River.

In addition to the catchment areas that drain from Castle Mountain, Project activities are also expected to influence drainage from the catchment area of Clode Creek (located to the north of the Kilmarnock Creek catchment). Clode Creek drains generally west to southwest toward the Fording River and includes both active and passive flow contributions, recognizing that several partially backfilled pits (specifically Eagle 4 Pit and Eagle 6 West Pit) are known to passively drain to Clode Creek. The southern half of the Clode Creek catchment is extensively mined with approximately 50% of the watershed disturbed by FRO.

The Fording River drains generally south and discharges to the Elk River. Stream flows in the Fording River at the mouth typically peak in June, coinciding with rainfall and late snowmelt, although peak flows can occur in May from snowmelt and rain-on-snow events (Golder 2018a). The Elk River flows generally southwest and discharges to Koocanusa Reservoir at a location approximately 100 km downstream of the mouth of the Fording River.

Surface water quality data collected by Teck has shown that mine-influenced water at FRO can be generally characterized as slightly alkaline with concentrations of nitrate, sulphate, and selenium that are higher than in watercourses without mining development. Water quality in the Fording River upstream of existing operations is low in nutrient and trace element concentrations. Nitrate, selenium, and sulphate concentrations increase in the river downstream of Cataract, Swift, Clode and Kilmarnock creeks (all of which are influenced by mining activities), but concentrations within the Fording River are lower than those observed in the mine-influenced tributaries. With the exception of the surface water flows from the catchment area of Kilmarnock Creek, surface water flows from the undisturbed portion of the Project footprint include water quality characteristics that are representative of areas un-influenced by mining.

Soils in the undisturbed portion of the Project footprint are influenced by topographic relief, parent materials, local climate, and biota. In general, Brunisols develop on gentle to moderate slopes with coarse- to medium-textured parent materials at low to mid-elevations, while Regosols occur on moderately steep to steep slopes at mid- to high elevations. Regosols occur predominantly on medium to coarse-textured colluvial or weathered bedrock deposits and commonly associated with shallow lithic soils at high elevations (Lacelle 1990). Organic soil deposits including Mesisols may be present in association with the peatland group of wetlands in the area.

[29] The active water treatment facility currently being constructed at FRO will have Kilmarnock Creek as one of its sources.
[30] Recent assessment of these tributaries indicates that a number of them are ephemeral (only have surface water flow some of the time in direct response to rainfall or snowmelt).

7.3 Biological Environment

7.3.1 Ecosystems and Vegetation

Human activities over the past century have had an influence on ecosystems and vegetation in the Elk Valley, with increased intensity at lower elevations. Information regarding ecosystems within the Project footprint was summarized from Meidinger and Pojar (1991), Braumandl and Curran (2002) and MacKillop et al. (2018), unless otherwise cited. Forestry and coal mining development have occurred in the Elk Valley for more than 100 years. Other influences in the region include, but are not limited to, power lines, well sites, pipelines, railways, highway, rural development, recreation and tourism, and the communities of Sparwood, Elkford and Fernie (see Figure 1-1 for the Project regional location).

The Project footprint is situated in the Elk Valley Ecosection and the Rocky Mountain Forest District. There are two main biogeoclimatic zones in the footprint: Engelmann Spruce – Subalpine Fir zone and Montane Spruce zone. Scientific names of the vegetation species listed in this document can be found in Appendix F.

The Engelmann Spruce – Subalpine Fir zone occurs throughout the East Kootenay Region at mid- to high elevations and is generally mountainous, steep and rugged. Undisturbed steep mountain sides (snow covered in winter months) have old growth spruce and subalpine fir forests. This zone also contains meadows, grasslands, brushlands and whitebark pine habitat. Herbaceous species such as subalpine daisy, common red paintbrush, western meadow rue, Sitka valerian and Indian hellebore are common in meadows in this zone. Grasslands in the zone contain rough fescue, Idaho fescue, pinegrass, timber oatgrass, diverse-leaved cinquefoil, yellow beard-tongue and thread-leaved sandwort (MacKillop et al. 2018). Notably, many of the grassland and brushland ecological communities in this zone have been identified as ecological communities at risk[31].

Avalanches are natural disturbances in the Engelmann Spruce – Subalpine Fir zone that result in small patches of unique communities adjacent to larger patches of different ecosystem types, increasing regional diversity (Quinn and Phillips 2000). Plant species present in avalanche areas are often similar to those found in the surrounding landscape, but the communities differ in composition and structure because succession is stalled and soil moisture is higher, favouring shade-intolerant species and shrubs and herbs over trees (Bebi et al. 2009; Quinn and Phillips 2000).

The Montane Spruce zone occurs in the East Kootenay Region at low to mid-elevations with a growing season that tends to be warm and dry. The vegetation of the Montane Spruce zone has tree stands dominated by hybrid Engelmann x white spruce[32], subalpine fir, Douglas-fir and western larch. Prominent shrub species include false azalea, Utah honeysuckle, soopolallie and falsebox. The herb layer frequently contains grouseberry, twinflower, pinegrass and heart-leaved arnica. Red-stemmed feather moss and step moss are the dominant moss species. One of the most distinctive features of the landscape is the extensive, young and maturing stands of lodgepole pine.

[31] A discussion of ecologically sensitive areas, including ecological communities at risk, is provided in Section 7.3.5.4. Species at risk, including plant species, are discussed in Section 7.3.4.
[32] The notation “Engelmann x white spruce” means a tree species that is a hybrid, essentially a cross breed, between an Engelmann spruce and a white spruce.

7.3.2 Wildlife and Wildlife Habitat

The undisturbed portion of the Project footprint provides habitat for a variety of wildlife species. For example, the conifer forests, grasslands and whitebark pine stands provide habitat for wildlife such as red squirrel, snowshoe hare, marten, pine siskin and Clark's nutcracker. Stands of lodgepole pine provide summer and fall range, as well as cover, for moose and mule deer. Birds such as the three-toed woodpecker that forage on bark-inhabiting insects are also common in the pine forests. Scientific names for wildlife species mentioned in this document are listed in Appendix F.

Avalanche tracks that occur within the Project footprint provide summer range for ungulates like deer and moose, and spring and summer habitats for grizzly and black bears. Bird species generally occurring in these habitats include fox sparrow, American robin, dusky grouse, rufous hummingbird and red-tailed hawk.

High elevation grasslands provide habitat for a variety of species in the Elk Valley, including as an important component of overwintering habitat for bighorn sheep and an important component of whitebark pine habitat. The meadows and steep-sloped grasslands in the Project footprint provide summer forage for elk, bighorn sheep, mule deer, moose, black bear and grizzly bear. Columbian ground squirrel and golden-mantled ground squirrel are the common small mammals in these habitats; American badger, which preys on these species, may also be present.

American dipper, spotted sandpiper and harlequin duck are known to use streams within the general vicinity of the Project. American dipper is a year-round resident, whereas spotted sandpiper and harlequin duck are summer migrants. Amphibians such as Columbia spotted frog, wood frog, western toad and long-toed salamander may also use riparian and wetland habitats in the general vicinity of the Project.

The local climate, characterized by relatively cool wet winters and dry warm summers, is important to wildlife habitat use patterns in the area. Snowfall influences the habitat conditions and use by many animal species, particularly ungulates, during winter. Wind is important in reducing snow levels in winter, creating foraging opportunities that would not be possible in deep snow.

As with ecosystems and vegetation, anthropogenic and natural influences (e.g., forestry, coal mining, fire, pests, disease) have affected wildlife habitat and the presence and distribution of wildlife in the Elk Valley. Other infrastructure (transmission lines, well sites, pipelines, railways, roads) and communities in the region affect wildlife habitat availability, suitability and use in the Elk Valley. Hunting and other recreation activities also affect wildlife presence and distribution on the landscape, though to a lesser extent.

7.3.3 Fish and Fish Habitat

The Fording River originates in the Rocky Mountains of BC between the Greenhills and High Rock ranges and flows generally south to where it joins the Elk River between Elkford and Sparwood, BC. The river is approximately 75 km long and drains an area of about 620 km^2. The Project is located in the upper Fording River drainage, which is defined as the section located upstream of Josephine Falls (Figure 1-2) and a series of cascades. Fish habitat that could be affected by the Project includes the mainstem of the Fording River between Clode Creek and Ewin Creek, as well as a number of tributaries, including Kilmarnock Creek, Chauncey Creek and unnamed tributaries to these creeks and the Fording River.

Most tributaries in the vicinity of the Project are high-gradient first and second order (tributary) streams. Typically, these tributary streams are very steep in their headwaters and steadily decline to where they meet another stream or river (e.g., the Fording River). Such streams are usually fish-bearing in the lower reaches where the gradient is ≤20%; however, some of the streams within the Project footprint have been altered, in accordance with applicable authorizations, to accommodate nearby mining activities (e.g., relocated, converted to rock drains, fragmented by waste rock storage areas, pit development).

Westslope cutthroat trout are the only known fish species to occur in the upper Fording River above Josephine Falls, which acts as a barrier to upstream fish movement (Teck 2013; Cope et al. 2013; Golder 2014; Cope et al. 2016).

The WCT population status in the upper Fording River has been studied intensively from 2012 onwards (Cope et al. 2013, 2016, 2017, Cope 2020). These studies have assessed the population in terms of abundance, genetic differentiation, mortality rates, condition factors, age class, growth rate, life history strategies, movement patterns, and habitat use/availability. This information is used to estimate the size of the WCT population and monitor trends in the population over time in relation to mining activities. To date, the following key findings have been identified (from Cope et al. 2016, unless otherwise noted):

- The genetic integrity study indicates a genetically isolated, pure strain of WCT.
- The WCT habitat availability was estimated at 57.5 km in the upper Fording River mainstem with an additional 59 km of tributary habitat.
- Overwintering and tributary habitat were defined as critical and limiting for WCT based on fish use and habitat availability.
- Spawning habitat was identified in both the tributaries and the mainstem and high-density juvenile rearing habitat was identified in the tributaries.
- Three core WCT habitat areas have been identified in the upper Fording River mainstem:
    - 6.5 km of stream between Henretta Lake and the multi-plate culvert (including Clode Flats)
    - 7 km of stream adjacent to Castle Mountain including the oxbow pools and groundwater reach, a side-channel to the Fording River and Chauncey Creek
    - 6.3 km of stream south of GHO, including Greenhills Creek and Dry Creek
- Telemetry results have confirmed both migratory and resident WCT life history variants use the upper Fording River watershed.
- Recent monitoring of the fish population (fall 2019) found that there was significant decline in adults and juveniles (approximately 90% and 74%, respectively) in the upper Fording River (Cope 2020), which led to the “A Call to Action” letter from KNC to Fisheries and Oceans Canada on February 25, 2020 (refer to Section 7.1.3 for further discussion).

Additional information about WCT habitat that may be affected by the Project is discussed in Section 7.3.5.7.

In addition to directly monitoring the WCT population, Teck monitors various other components of the aquatic ecosystem through FRO's Operational Environmental Monitoring Program (OEMP), FRO's Local Aquatic Effects Monitoring Program (LAEMP), and the Regional Aquatic Effects Monitoring Program (RAEMP). One component of the FRO OEMP is an environmental flow needs study that will be used to inform the development of instream flow requirements for the upper Fording River through the development of habitat-flow relationships for different life stages (rearing, spawning, overwintering, migration), evaluation of seasonal variability in flows, and assessment of the effects of water use on fish habitat availability and connectivity between habitats. Development of the Project and its associated water use will consider the instream flow requirements set for the upper Fording River.

Benthic invertebrate communities are also monitored because they act as an important food source for fish and other aquatic-dependent wildlife. Monitoring occurs in the Fording River and its tributaries through the FRO LAEMP and RAEMP. Through these programs, benthic invertebrate abundance, diversity, community composition and tissue selenium concentrations are monitored in mine-exposed and reference locations throughout the Elk Valley (Minnow 2020).

Benthic invertebrate communities sampled in reference areas are composed mainly of mayflies (Ephemeroptera), stoneflies (Plecoptera) and caddisflies (Trichoptera), which are commonly referred to as "EPT". Percent (%) EPT[33] and % Ephemeroptera are the benthic invertebrate community endpoints most sensitive to mine-related influence (Minnow 2018). Results from the latest cycle of the RAEMP indicate that % EPT values in the Fording River mainstem were below the regional normal range in one or more samples at sites adjacent to FRO (e.g., RG_MP1 and RG_FOUSH), and between Kilmarnock Creek and Chauncey Creek (e.g., RG_FOBCP and RG_FO22) (Minnow 2020) and thus adjacent to the proposed Project site. In contrast, % EPT values at the reference area upstream of mine influence (RG_HENUP) were within the regional normal range in all samples collected between 2017 and 2019. Although % EPT values were lower than the regional normal range at sites adjacent to the proposed Project, the total abundance of EPT was generally within the regional normal range, suggesting that in most cases lower % EPT was due to higher abundances of non-EPT taxa rather than lower abundances of EPT taxa (Minnow 2020).

The section of the upper Fording River mainstem downstream of Kilmarnock Creek also exhibited a clear and temporally consistent spatial pattern in % Ephemeroptera between September 2017 and 2019 (Minnow 2020). Percent Ephemeroptera was the lowest, below both the regional normal range and the site-specific normal range, from the FRO Compliance Point (RG_FRCP1SW) upstream of Porter Creek to upstream of Ewin Creek (RG_FOUEW). This spatial pattern was identified in 2016 during sampling undertaken for the FRO LAEMP, with subsequent monitoring and analysis completed for the LAEMP (Minnow and Lotic 2020) identifying the likely cause at most sites to be a combination of water quality stressors and habitat variables (Minnow 2020). These results indicate that the benthic invertebrate community in the section of the mainstem upper Fording River adjacent to FRO and the proposed Project is affected by existing mining operations.

To characterize primary productivity and mining impacts in lotic systems, periphyton productivity, community composition and tissue selenium concentrations were sampled in the Elk Valley under the

[33] The proportion of the benthic invertebrate community that consists of Ephemeroptera, Plecoptera and Trichoptera.

RAEMP until the 2015-2016 cycle. Periphyton parameters were not sampled in the 2017-2019 cycle of the RAEMP because site-specific studies showed that periphyton endpoints were not sensitive enough to statistically detect mine-related influences (Minnow 2018). However, because the proposed Project will impact a watershed as yet unimpacted by mining activity (Chauncey Creek), periphyton productivity (as chlorophyll-a) and biomass (as ash free dry mass) samples are being collected within the Chauncey Creek watershed at the request of the Ktunaxa Nation. Sampling results will be compared to the reference area normal range for the Elk Valley as presented in Minnow (2018).

7.3.4 Species at Risk

Species at risk information in BC is available from both provincial and federal sources. Provincially, the BC MECCS maintains conservation information on the BC Species and Ecosystems Explorer for several thousand species in the province (BC MECCS 2020a). Data on known species at risk occurrences (referred to as element occurrences) are available through the BC Conservation Data Centre (BC CDC 2020). The BC CDC assigns a provincial rank or listing of red, blue or yellow to a species or ecosystem based on its conservation status within BC. Red-listed species or ecosystems are considered to be at risk of being lost (i.e., Extirpated, Endangered or Threatened) in BC. Blue-listed species or ecosystems are considered to be of Special Concern (formally Vulnerable) in BC. Yellow-listed species or ecosystems includes any species or ecosystems that are at the least risk of being lost.

Federally, species ranking is conducted by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), established under Section 14 of the *Species at Risk Act* (SARA). Under the COSEWIC system, species are ranked as Extinct, Extirpated, Endangered, Threatened, Special Concern, Data Deficient or Not at Risk. Schedule 1 of SARA provides the official list of species at risk. The prohibitions of the Act apply only to those species ranked as Endangered, Threatened or Extirpated (if there is a recovery strategy in place and these species are afforded protection of critical habitat as defined in the relevant recovery strategy). SARA typically applies only on federal land. On private or provincially owned lands, only aquatic species as defined by the federal *Fisheries Act* and migratory birds also listed under the federal *Migratory Birds Convention Act, 1994* are protected under SARA, and critical habitat protection on non-federal lands is afforded only to aquatic species, unless ordered by the Governor in Council if it is deemed that provincial or voluntary measures do not adequately protect a species.

A definition of each federal and provincial conservation status is provided in Table 7.3-1.

Table 7.3-1: Conservation Status Definitions

Agency	Status	Definition
COSEWIC (federal)	Endangered	A species facing imminent extirpation (no longer exists in Canada) or extinction (no longer exists).
	Threatened	A species likely to become Endangered if limiting factors are not reversed.
	Special Concern	A species that is particularly sensitive to human activities or natural events, but is not Endangered or Threatened.

Table 7.3-1: Conservation Status Definitions

Agency	Status	Definition
BC CDC (provincial)	Red	Any indigenous species, subspecies or plant community that is at risk of being lost (i.e., Extirpated, Endangered or Threatened or are candidates for designation) in BC
	Blue	Any indigenous species, subspecies or community considered to be of special concern in BC. Blue-listed elements are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. They are not at risk of extirpation nor considered endangered.
	Yellow	Any indigenous species or subspecies that is apparently secure and at least risk of being lost.

Source: BC CDC 2020.
BC CDC = British Columbia Conservation Data Centre; COSEWIC = Committee on the Status of Endangered Wildlife in Canada.

7.3.4.1 Plants at Risk

A query of the BC CDC was completed in January 2020 for federally/provincially listed plants at risk that have potential to occur in the Rocky Mountain Forest District. The results were further refined using information on the biogeoclimatic zones/subzones that occur in the Project vicinity (Engelmann Spruce – Subalpine Fir dry cool, Montane Spruce dry cool, Montane Spruce dry warm, and conservatively Interior Mountain-heather Alpine though it does not occur in the Project footprint) to identify species at risk that have the potential to be affected by the Project. Thirty-six vascular, 19 non-vascular, and 3 lichen red- or blue-listed plant species were identified as having the potential to occur within the Project vicinity based on the above criteria (Appendix G). Plant species at risk that have been documented within the Project vicinity from previous investigations are listed in Table 7.3-2.

Table 7.3-2: Plant Species at Risk Documented within the Project Vicinity

Common Name[a]	BC List[b]	COSEWIC[c]	SARA[d]
Vascular Plants			
Abbreviated bluegrass	Blue	—	—
Buff daisy	Blue	—	—
Engelmann's knotweed	Red	—	—
Limber pine	Blue	Endangered	—
Parry's townsendia	Red	—	—
sweet-flowered fairy-candelabra	Blue	—	—
whitebark pine	Blue	Endangered	Endangered
Wolf's trisetum	Blue	—	—
Wyoming kitten-tails	Red	—	—
Non-vascular Plants			
Arizona calcareous moss	Blue	—	—
Barbula amplexifolia	Red	—	—
Cephaloziella rubella	Blue	—	—
Donn's grimmia	Blue	—	—

Table 7.3-2: Plant Species at Risk Documented within the Project Vicinity

Common Name[a]	BC List[b]	COSEWIC[c]	SARA[d]
Hygroamblystegium varium	Blue	—	—
Orthotrichum pallens	Blue	—	—
Rock rather moss	Blue	—	—
Schleicher's thread-moss	Blue	—	—
Short-tooth hump-moss	Blue	—	—
Slender smoothcap	Red	—	—
spathulate candle snuffer moss	Blue	—	—
Lichens			
Blue-footed pixie	Blue	—	—
Two-toned bone lichen	Blue	—	—

Source: Teck VPro Master Database; Teck 2016a,b; Poole and Smyth 2014: Integral 1997-2010; Golder Database.
a) Refer to Appendix G for a list of scientific names.
b) Red = Extirpated, Endangered, or Threatened; Blue = Special Concern (BC CDC 2020).
c) Committee on the Status of Endangered Wildlife in Canada; — = not listed.
d) SARA (*Species at Risk Act*) Schedule 1; — = not listed.

Of the provincially at-risk plant species identified through the BC CDC query, the only species currently federally listed under Schedule 1 of SARA is whitebark pine (Endangered).

7.3.4.2 Wildlife at Risk

A query of the BC CDC was completed in February 2020 for federally/provincially listed wildlife at risk that have potential to occur in the Rocky Mountain Forest District. The results were further refined using information on the biogeoclimatic zones that occur within the Project vicinity. Previously collected data and external sources (e.g., British Columbia Breeding Bird Atlas) were also reviewed. Sixty-three red- or blue-listed wildlife species were identified as having the potential to occur within the Project vicinity based on the above criteria, 18 of which are also federally listed under Schedule 1 of SARA (Appendix H). Five additional species that are provincially yellow-listed (not at risk) are federally listed under Schedule 1 of SARA (Appendix H). In total the list includes 13 mammal species, 23 bird species, 2 amphibian species, 11 gastropod species and 18 insect species.

Wildlife at risk that have been documented within the Project vicinity from previous investigations are listed in Table 7.3-3. Three species are also protected under the *Migratory Birds Convention Act, 1994*.

Table 7.3-3: Wildlife Species at Risk Documented within the Project Vicinity

Common Name[a]	BC List[b]	COSEWIC[c]	SARA[d]
Mammals			
American badger	Red	Endangered	Endangered
Bighorn sheep	Blue	—	—
Grizzly bear	Blue	Special Concern	Special Concern

Table 7.3-3: Wildlife Species at Risk Documented within the Project Vicinity

Common Name[a]	BC List[b]	COSEWIC[c]	SARA[d]
Little brown myotis	Yellow	Endangered	Endangered
Birds			
Bank swallow[e]	Yellow	Threatened	Threatened
Barn swallow[e]	Blue	Special Concern	Threatened
Northern goshawk	Blue	Not at Risk	—
Olive-sided flycatcher[d]	Blue	Special Concern	Threatened
Prairie falcon	Red	Not at Risk	—
Amphibians			
Western toad	Yellow	Special Concern	Special Concern
Insects			
Gillette's checkerspot	Blue	—	—

Source: Matrix 2014, 2015; Golder 2018b.
Note: Species scientific names can be found in Appendix H.
a) Refer to Appendix H for a list of scientific names.
b) Red = Extirpated, Endangered, or Threatened; Blue = Special Concern (BC CDC 2020).
c) Committee on the Status of Endangered Wildlife in Canada; — = not listed.
d) SARA (Species at Risk Act) Schedule 1; — = not listed.
e) Species is also protected under the *Migratory Birds Convention Act, 1994*.

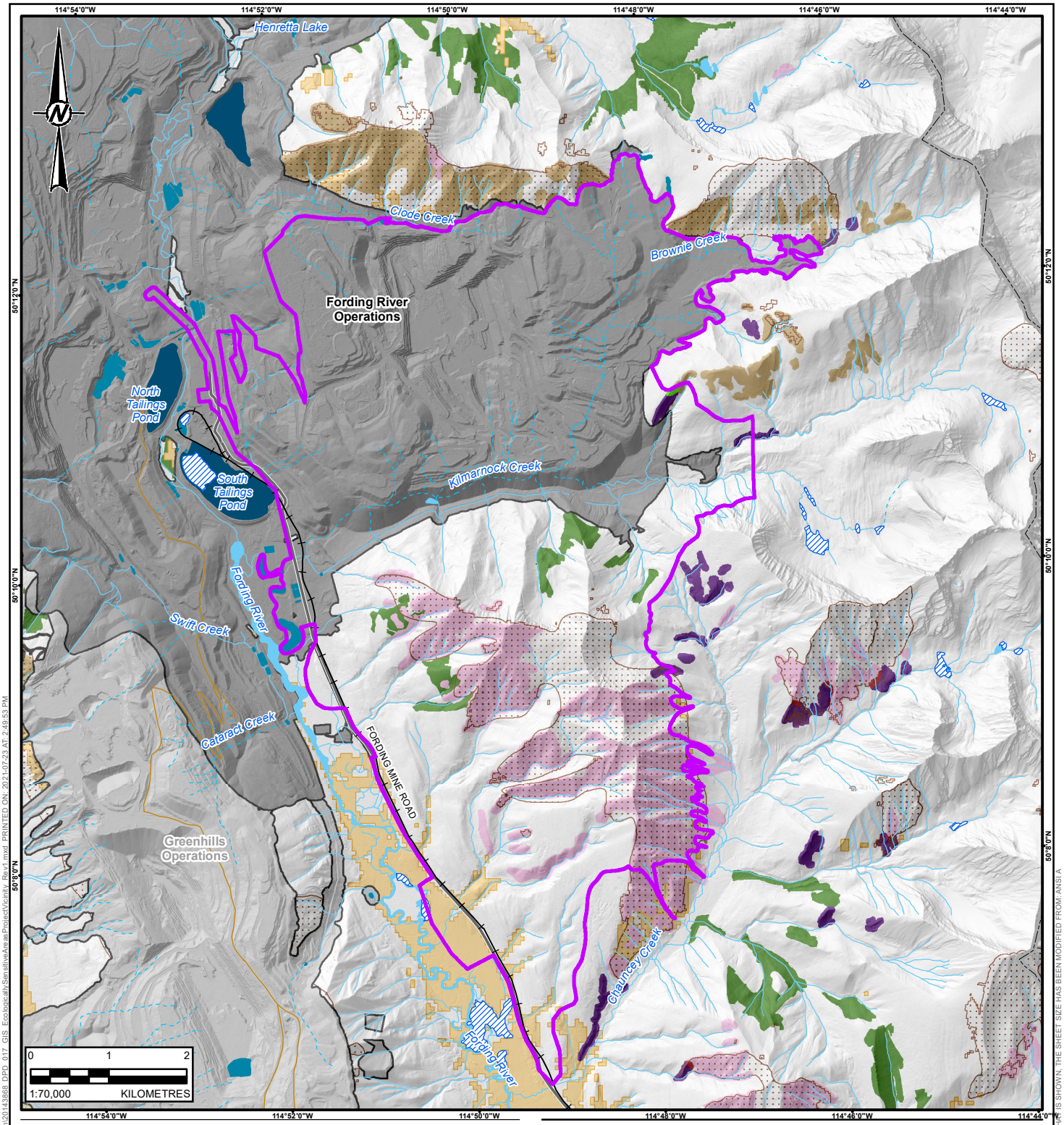
7.3.4.3 Fish at Risk

As noted in Section 7.3.3, WCT is the only fish species occurring in the Project vicinity due to a fish barrier downstream on the Fording River (Josephine Falls). The species is designated as Special Concern by COSEWIC and listed as Special Concern under Schedule 1 of SARA. Additionally, this species is blue-listed in BC.

Refer to Section 7.1.3 and Section 7.3.5.7 for more discussion related to WCT.

7.3.5 Ecologically Sensitive Areas

Several key ecologically sensitive areas that have been mapped in the Project vicinity or within the broader region are depicted in Figure 7.3-1. Those within the Project vicinity are discussed below.



LEGEND

- RAILWAY
- ROAD - PAVED
- ROAD - UNPAVED
- SURFACE FLOW WATERCOURSE
- SUBSURFACE FLOW WATERCOURSE
- FRO C-3 PERMIT BOUNDARY
- GHO C-137 PERMIT BOUNDARY
- PROJECT FOOTPRINT
- WASTE WATER/SEDIMENT POND
- TAILINGS POND
- WATERBODY

ECOLOGICALLY SENSITIVE

- BIGHORN SHEEP WINTER RANGE
- OLD GROWTH MANAGEMENT - NON LEGAL
- UNGULATE WINTER RANGE
- WETLAND

BC CDC ECOLOGICAL COMMUNITIES AT

- Gb20 - BLUE LISTED
- Gb20 - BLUE LISTED, Gg16 - RED LISTED
- Gg16 - RED LISTED
- Gg14 - RED LISTED, Gg16 - RED LISTED
- Gg14 - RED LISTED, Gg16 - RED LISTED, Gb20 - BLUE LISTED

NOTE(S)

ECOLOGICAL COMMUNITIES AT RISK OCCUR IN THE AREAS INDICATED BUT DO NOT REPRESENT 100% OF THE AREA SHOWN

REFERENCE(S)

BASE DATA OBTAINED FROM TECK COAL LIMITED AND GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED. DATUM: NAD 83 PROJECTION: UTM ZONE 11

TECK COAL LIMITED

PROJECT
FORDING RIVER EXTENSION PROJECT

TITLE
ECOLOGICALLY SENSITIVE AREAS IN THE PROJECT VICINITY

Teck

YYYY-MM-DD	2021-07-23
DESIGNED	MS
PREPARED	DR
REVIEWED	SL
APPROVED	CM

PROJECT NO.	PHASE	REV.	FIGURE
20143868	DPD_017	1	7.3-1

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7.3.5.1 High Elevation Grassland and Brushland Ecosystems

High elevation grassland and brushland ecosystems develop where conditions are too dry for forest establishment because of semi-arid climate or because sites within otherwise forested areas are too dry and warm (MacKillop et.al. 2018). Brushlands differ from grasslands in that woody shrubs such as juniper and Saskatoon are prominent. Several of the grassland ecosystems are unique to the East Kootenay Region. High elevation grasslands provide habitat diversity and important forage for grazing ungulates including provincially listed bighorn sheep. Other wildlife species at risk use or may use these ecosystems, including American badger and prairie falcon, as do several plant species at risk, including some of those described in Table 7.3-2 (e.g., Wolf's trisetum, Parry's townsendia).

In the Elk Valley high elevation grasslands and brushlands are under threat from mining, exploration roads, off-road vehicle use and loss of natural fire patterns. Fire suppression has allowed tree and shrub encroachment to occur resulting in broad-scale shifts from grasslands to forested ecosystems (MacKillop et al. 2018).

As a result of these threats and combined with the limited distribution, several grassland and brushland ecosystems have been designated provincially at risk as described in Section 7.3.5.4.

Teck is in the process of preparing a high elevation grassland and brushland management plan which is intended to mitigate potential affects to these ecosystems at operations in the Elk Valley.

7.3.5.2 Wetland and Floodplain Ecosystems

Several wetland and floodplain ecosystems occur in the vicinity of the Project along the Fording River, Kilmarnock Creek and Chauncey Creek. Wetlands are biologically diverse habitats, and the ecological functions provided by wetlands to maintain terrestrial and freshwater biodiversity is disproportionate to their size and the area that they occupy on the landscape. In the Elk Valley, wetlands provide habitat used by many species at some point in their life cycle, and many of BC's species of conservation concern depend on wetlands. In the Elk Valley, wetlands are relatively uncommon and may have undergone substantial conversion due to agriculture, rural development, mining and other development activities.

Floodplain ecosystems are part of the larger riparian areas of streams, rivers and some wetland complexes (MacKillop et.al 2018). Floodplain ecosystems provide important habitat for fish and wildlife species and act as sediment traps and prevent erosions of stream banks. Throughout much of BC floodplain ecosystems have been affected by hydroelectric development and human developments.

Select wetland and floodplain ecosystems are also considered ecological communities at risk, as described in Section 7.3.5.4.

7.3.5.3 Old and Mature Forests

Old and mature forests occur within and in the vicinity of the Project. Old forests are stands greater than or equal to 250 years old, except in subzones that experience stand-initiating disturbance; in these subzones, old forests are stands greater than or equal to 140 years old (BC MOF and MELP 1995). Mature forests provide important values associated with old forest ecosystems, and are recruitment sites

for old forests. Mature forest is present in forested areas > 100 years old or > 120 years old depending on the frequency of disturbance in the ecosystem (BC MOF and MELP 1995).

Old and mature forests are recognized for their contribution to biodiversity values, and ecological function not found in younger stands, including providing important habitat for animals and genetic diversity to nearby tree stands. Old and mature forests also provide several additional functions, including carbon sequestration and microhabitat creation. Species diversity and structural characteristics of old forests (e.g., large living and dead trees, large gaps) develop slowly and are difficult to replace once lost. Old and mature forests have been affected by the forestry industry, agriculture, and mining in the Elk Valley.

The EV-CEMF reported that the amount of old forest is below historical levels throughout most of the Elk Valley (Holmes et al. 2018). Specifically, select subzones and variants in the Montane Spruce and Engelman Spruce – Subalpine Fir zones are in a high old-growth deficit and would not meet legal targets for old growth as described in the Kootenay Boundary Higher Level Plan Order, nor are they in the expected range of natural variation (i.e., the amount of old forest that existed historically in the Elk Valley under natural disturbance regimes). The amount of mature forest was also below historical levels, although not to the same degree as old forest. However, mature stands are important as they serve as recruitment stands in areas where there is not enough old forest to meet objectives.

Old Growth Management Areas (OGMAs) in BC are defined areas that are specially managed for old forest values and can be legally or non-legally established. Notably, the recent provincial Old Growth Strategy Review (Gorley and Merkel 2020) listed several concerns regarding OGMAs including that there has been no substantial monitoring or updates of these areas since implementation in 1995, and that many OGMAs do not actually contain old forest. The assessment of the Project will rely on field verified terrestrial ecosystem mapping to define areas of old and mature forests rather than the OGMAs. OGMAs are depicted in Figure 7.3-1 for information purposes.

7.3.5.4 Ecological Communities at Risk

Several ecological communities at risk have the potential to occur within the Project vicinity (BC CDC 2020):

- Rough fescue – (bluebunch wheatgrass) – yarrow – clad lichens (Gg10/Gg12), a red-listed grassland in BC
- Idaho fescue – sulphur buckwheat – thread leaved sandwort (Gg14), a red-listed grassland in BC
- Rough fescue – sulphur buckwheat – thread leaved sandwort (Gg16), a red-listed grassland in BC
- Idaho fescue – bluebunch wheatgrass – sulphur buckwheat – thread-leaved sandwort (Gg17), a blue-listed grassland in BC
- Saskatoon – soopolallie – common juniper (Gb20), a blue-listed brushland in BC
- Timber oatgrass – grouseberry – thread-leaved sandwort – compact selaginella (Ag01), a red-listed alpine grassland in BC
- Scrub birch / water sedge (Wf02), a blue-listed wetland in BC

- Slender sedge / common hook-moss (Wf05), a blue-listed wetland in BC
- Hard-stemmed bulrush deep marsh (Wm06), a blue listed wetland in BC
- Drummond's willow / bluejoint reedgrass (Fl05), a blue-listed riparian flood community in BC
- Black cottonwood / common snowberry – roses (Fm01), a red-listed riparian flood community in BC

Of these ecological communities at risk three have been previously documented in the Project vicinity by BC MECCS (2021) including Gg14, Gg16 and Gb20 as depicted in Figure 7.3-1. Several of these ecological communities at risk, specifically some of the grassland and brushland communities have currently been documented only in the East Kootenay region (i.e., Gg14, Gg16, Gg17 and Gb20), and are of conservation concern due to their current known distribution and potential sensitivity to development. Further, ecological communities at risk provide important habitat diversity, significant habitat for wildlife and frequently provide habitat for at-risk species and species of concern (MacKillop et al. 2018).

Refer to Table 7.1-1 for a summary of recent efforts and initiatives related to high elevation grasslands and brushlands.

7.3.5.5 Whitebark Pine Habitat

Whitebark pine is a shade-intolerant coniferous tree species that prefers open habitats (such as grasslands, forb-dominated ecosystems and open forests) in subalpine and alpine climates (Keane and Parsons 2010; Klinkenberg 2014), though this species also occurs in a variety of forested habitats (ECCC 2017). In the Elk Valley, whitebark pine habitat consists primarily of high-elevation areas that are sparsely vegetated and rocky (Teck 2016b).

Whitebark pine is federally endangered and under stress due to four main threats: disease (blister rust), climate change, mountain pine beetle infestation, and fire suppression (ECCC 2017). These factors also interact and can compound impacts. White pine blister rust is currently considered the greatest threat but with a rapidly changing climate, including increased frequency of severe weather events including catastrophic wildfires, there is increasing concern that suitable climate envelopes for this species will shift (ECCC 2017). Whitebark pine is slow to establish and reach reproductive maturity and these characteristics may make it impossible for it to adapt to these new conditions.

Improving mapping and inventory of whitebark pine, identifying the extent of white pine blister rust infection across the range, and identifying rust resistant whitebark pine trees and trees that are cone producing is considered essential for supporting the recovery of whitebark pine (ECCC 2017). Teck has a Whitebark Pine Species Management Plan that is implemented to mitigate potential adverse effects to whitebark pine at operations in the Elk Valley.

Limber pine is another species of pine that has been assessed by COSEWIC- as endangered and has the potential to occur within the Elk Valley. It shares many of the same traits as whitebark pine and occupies similar habitat. This species is also affected by white pine blister rust and the other threats identified above for whitebark pine. Limber pine overlaps distribution with whitebark pine predominantly in the eastern part of the range at lower elevations. According to the BC CDC there are currently no documented occurrences of this species within the Project footprint.

7.3.5.6 Bighorn Sheep Winter Range

Bighorn sheep winter range was mapped using information provided by the Elk Valley Cumulative Effects Management Framework (Bighorn Sheep Expert Team 2017). Winter range typically consists of relatively high-quality forage on warmer aspects where snow is removed by wind and solar radiation and where escape terrain occurs nearby. Bighorn sheep use a variety of high-elevation habitats as winter range, including grasslands, alpine meadow, alpine tundra, rock outcrops, and reclaimed mines. Winter range in the Elk Valley is considered the most critical factor limiting bighorn sheep populations since they are not adapted to forage and travel in deep snow. Annual range for bighorn sheep is extensive and is not considered to be limiting in the Elk Valley (Bighorn Sheep Expert Team 2017).

Unlike bighorn sheep, deer, elk and moose winter lower in the valleys, though elk may occur less frequently at higher elevations in winter. Formal legal establishment of ungulate winter range and associated objectives is undertaken by the BC MECCS under the *Forest and Range Practices Act* (BC MECCS 2020b).

7.3.5.7 Westslope Cutthroat Trout Habitat

Critical habitat for WCT in the upper Fording River has been identified as overwintering and tributary habitat based on fish use and information in the literature; these habitats were found to be limited in the upper Fording River based on habitat availability and the scale of historical habitat loss and lost connectivity (Cope et al. 2016). Three core areas within the upper, middle and lower watershed upstream of Josephine Falls have been identified. Two of these core areas, which include important spawning, overwintering and rearing areas, are subject to footprint, water quality and flow-related impacts from existing mining operations at FRO and may be further affected by the Project. These areas consist of the following:

- 6.5 km of stream channel between Henretta Lake and the multi-plate culvert (including Clode Flats), lower Henretta Creek, Henretta Lake, Fish Pond (note that of this core area, only the portion downstream of Clode Creek may be affected by the Project)
- 7.0 km of stream channel adjacent to Castle Mountain including the oxbow pools and groundwater reach, a side-channel to the Fording River and Chauncey Creek

In addition to the core areas on the mainstem, Chauncey Creek was identified as the only tributary habitat available for a portion of the upper Fording River WCT population residing within a 10 km reach upstream and downstream of Chauncey Creek (Cope et al. 2016). Further upstream, tributaries that historically provided important WCT habitat (e.g., Kilmarnock Creek, Clode Creek) have been affected by mining. High juvenile WCT densities in lower Chauncey Creek relative to other tributaries (e.g., Ewin, Dry, Greenhills creeks; Table 3.2.28 in Cope et al. 2016), the availability of preferred habitat attributes within the watershed, and reference level water quality highlight the regional importance of Chauncey Creek as WCT habitat in the context of the upper Fording River watershed (Cope et al. 2016).

Recently, the upper reaches of Chauncey Creek, which contain many preferred or high-quality habitat attributes, were not accessible to fish resident in the Fording River as the Fording Road culvert installed by the BC Ministry of Transportation and Infrastructure acted as a barrier to upstream fish migration

(Cope et al. 2016). Through a separate regulatory process, Teck has worked to restore connectivity by replacing the Fording Road culvert with a clear span bridge, with work started in 2020.

Refer to Sections 7.1.3 for discussion of recent survey results and Table 7.1-1 for a summary of efforts related to WCT.

7.4 Human Environment

The following section provides a discussion of economic, social, health and heritage context in the general area of the Project based on public information and information obtained through engagement activities to date.

7.4.1 Social and Economic Conditions

7.4.1.1 Indigenous Peoples of Canada

The Ktunaxa Nation

As identified in Section 3.1, the KNC is the governing body of the Ktunaxa Nation, which includes the Ktunaxa communities of *yaq̓it ʔa·knuqǂi'it* (Tobacco Plains Band), ʔaq'am (St. Mary's Band), yagan nuʔkiy (Lower Kootenay Band), and ʔakisq'nuk First Nation (Columbia Lake Band). Ktunaxa Nation Council governance is described by KNC as follows:

> *The KNC is governed by the Ktunaxa Nation Executive Council which carries out day-to-day decision-making on behalf of KNC. The Executive Council includes the elected Chief for each of our four communities, the Chair of each of our Nation-level Sector Councils, and our chief negotiator of treaty negotiations* (Ktunaxa Nation AGA 2020).

There are approximately 1,500 Ktunaxa Nation members (status and non-status) in Canada (KNC 2016). A breakdown of population and labour force characteristics by Ktunaxa Nation community is provided in Table 7.4-1.

Table 7.4-1: Population, Age and Labour Force Characteristics

Ktunaxa Nation Community	Total Registered On- and Off-Reserve Population[a]	Gender[a]		Total Registered On-Reserve Population[a]	Median Age[a]	Total Population 15 years and Over [b]	Total Population 15 Years and over Participating in Labour Force [b]	Unemployment Rate[b,c] (%)
		Male	Female					
yaq̓it ʔa·knuqǂi'it (Tobacco Plains Band)	217	113	104	94	36.4	60	30	0.0
ʔaq'am (St. Mary's Band)	396	195	201	218	38.0	135	105	14.3
yagan nuʔkiy (Lower Kootenay Band)	248	118	130	122	27.8	90	60	25.0
ʔakisq'nuk First Nation (Columbia Lake Band)	278	144	134	155	42.8	120	65	0.0

Note: Median annual individual income and family income data were not available for these four communities due to area and data suppression.

a) February 2021. Source: INAC 2021. Total registered population living on and off reserve (CIRNAC 2020a). On-reserve population includes those living on a reserve other than that of their community.

b) On-reserve population. Source: Aboriginal Community Profiles, Statistics Canada 2018a.

c) The unemployment rate represents the number of individuals who are participating in the labour force (i.e., looking for work), but who are not currently employed.

The total on-reserve population for the four Ktunaxa Nation communities was 500 in 2020. Based on 2016 data, the median age of the on-reserve population communities ranged from 27.8 years (Lower Kootenay Band) to 42.8 years (Columbia Lake Band). Within the Tobacco Plains Band, 50% (30 people) of the working-age population participates in the labour force. All those participating in the labour force were employed at the time of the 2016 census for an unemployment rate of 0.0%. Within the St. Mary's Band, 78% (105 people) of the working-age population is participating in the labour force with 15 people seeking employment for an unemployment rate of 14.3%. Within the Lower Kootenay Band, over 65% (60 people) of the working-age population is participating in the labour force with 15 people seeking employment for an unemployment rate of 25%. Within the Columbia Lake Band, over 50% (65 people) of the working-age population is participating in the labour force. All those participating in the labour force were employed at the time of the 2016 census for an unemployment rate of 0.0% (Statistics Canada 2018a).

Collectively within the four communities, approximately 25% of the population aged 15 years and over had achieved a high school diploma or equivalent as their highest level of education as of 2016 (INAC 2020). Approximately 40% had also achieved an apprenticeship or trade, and 13% had a college diploma or university degree (INAC 2020). It should be noted that the information drawn from the 2016 Statistics Canada Census Aboriginal Community Profiles is dated, and that real-time employment statistics may differ reflective of current economic activity and employment opportunities. It should also be noted that, due to Statistics Canada rounding conventions for smaller population centres, some totals do not add up to 100%.

The Ktunaxa Nation has a clear vision for its future, incorporating community health, language and culture, economic sustainability, and self-government of lands and resources:

> *As a Nation we are striving to achieve strong, healthy citizens and communities, speaking our languages and celebrating who we are and our history in our ancestral homelands, working together, managing our lands and resources, as a self-sufficient, self-governing Nation (Ktunaxa Nation AGA 2000).*

The KNC is governed by the Ktunaxa Nation Executive Council. It organizes its programs according to five pillars of nation rebuilding:

- Lands and Resources
- Traditional Knowledge and Language
- Social Investment
- Education and Employment
- Economic Investment

The KNC exercises governance, sets policy, and conducts planning in order to benefit Ktunaxa Nation citizens and uphold its stewardship responsibility to the land and resources in ʔamakʔis Ktunaxa. The KNC has indicated that these three functions are essential to the Ktunaxa Nation's autonomy and to its ability to protect the title, rights and interests of its citizens, and as such are considered fundamental to Ktunaxa title and rights. Ktunaxa Nation policies, standards and accepted practices (collectively referred to as policies) are intended to guide and assist the Ktunaxa Nation in exercising stewardship and management responsibilities for lands and resources in ʔamakʔis Ktunaxa.

The Shuswap Indian Band

The Shuswap Indian Band has a registered population of 269, of which 83 live on Shuswap Indian Band reserves (CIRNAC 2020b). A further 32 live on other reserve or Crown land, while the remaining 154 live off-reserve. The Band's largest reserve is located near the Columbia River immediately north of the community of Invermere (Figure 3.1-3). The Band is governed by a chief and council, and is supported by council administration. Currently, the council is made up of the chief and two community members. The Band has used the majority of its 500 acres designated for development for commercial, residential and resort development, and has developed a commercial complex with a hotel (Indigenous Business and Investment Council 2020).

The main reserve near Invermere had a population of 319 in 2016, including Shuswap Indian Band members and four other First Nations with membership residing on the reserve. This represents an increase of nearly 9% since 2011. The median age of the on-reserve population was 34.3 in 2016, and the male to female ratio was nearly evenly split with slightly more females than males. Of the population aged 15 and over (265), around 25% had achieved a high school diploma or equivalent. Around 15% had an apprenticeship or trade, and 40% had a college diploma or university degree. Over three quarters of the working-age population was participating in the labour force, with 15 people seeking employment for an unemployment rate of 7.3%. The median annual individual income was nearly $30,000, while the median annual family income was just over $59,000 (Statistics Canada 2018b).

Stoney Nakoda Nation

The Stoney Nakoda Nation is composed of the Bearspaw, Chiniki and Wesley First Nations represented by the Stoney Tribal Administration and located in western Alberta in the foothills entering the Rocky Mountains along the Trans-Canada Highway. The Stoney Nakoda Nation has four reserve communities (Big Horn 144A; Eden Valley 216; Stoney 142-143-144; and Stony 142A). The settlement of Morley is located with Stoney 142-143-144, and represents the largest reserve lands of the Nation. Each member Nation is led by a Chief and four councillors (Government of Alberta 2020). A notable Nation business is the Stoney Nakoda Resort and Casino located near the Trans-Canada Highway.

The Stoney Nakoda Nation has a registered population of 5,672, of which 4,979 live on Stoney reserves. A further 172 live on other reserve or Crown land, while the remaining 521 live off-reserve (CIRNAC 2020c,d,e). Statistics Canada's 2016 census reported an official resident population on Big Horn 144A, Eden Valley 216 and Stoney 142-143-144 of 235, 595, and 3,700, respectively, in 2016. No population was reported for Stoney 142A. The on-reserve population had a median age of around 21. Of the population aged 15 and over (2,920), approximately 15% had a high school diploma or equivalent as their highest level of education. A further 7% had an apprenticeship or trade, while the 13% had a college diploma or university degree. Just under half (1,335) of the working-age population (2,920) was participating in the labour force, with 1,335 people seeking employment for an unemployment rate of 37.1%. The median annual individual income for the Big Horn reserve is supressed by Statistics Canada for confidentiality reasons. On the Eden Valley and Stoney reserves, the median income was around $8,000 and $15,000, respectively, while the median economic family income was about $37,000 and $42,500, respectively (Statistics Canada 2018c,d,e).

Piikani Nation

The Piikani Nation is associated with the Blackfoot Confederacy in southwestern Alberta near the Town of Pincher Creek. The Nation has two reserve communities, Piikani 147 and Peigan Timber Limit 147B, of which Piikani 147 is the largest. The Nation is led by a Chief and eight councillors (Government of Alberta 2020). The Piikani Investment Corporation has a mandate to advise the Piikani Nation Chief and Council members regarding investments, loans, loan guarantees, and the operation of Piikani business entities. The Corporation also provides community grants, bursaries and summer internships to support community activities and training (Piikani Investment Corp 2018). Piikani Resource Development Ltd. (PRDL) is responsible for the development and management of Piikani Nation's resources as the economic development arm of the Nation. PRDL supports initiatives and individuals pursuing small business opportunities, and manages a number of Piikani businesses and economic endeavours (i.e., 1559725 Alberta Corp, 1782191 Alberta Corp, Piikani Oldman Hydro Limited Partnership, Piikani Nation Niipooksistsiko Crafts and Tourism Lodge) (PRDL n.d.).

The Piikani Nation has a registered population of 3,921, of which 2,443 live on Piikani reserves. A further 38 live on other reserve or Crown land, while the remaining 1,440 live off-reserve (CIRNAC 2020f). Statistics Canada's 2016 census reported an official resident population on Piikani 147 of 1,510 in 2016. No population was reported in Peigan Timber Limit 147B. The median age of the on-reserve population was just over 30.8. Of the population aged 15 and over (2,370), approximately 20% had a high school diploma or equivalent as their highest level of education. Around 12% had an apprenticeship or trade and approximately 32% had a college diploma or university degree. Over half (575) of the working-age population (1,125) was participating in the labour force, with 1,600 people seeking employment for an unemployment rate of 27.8%. The median annual individual income was just over $16,000, while the median annual economic family income was nearly $42,000 (Statistics Canada 2018f).

Siksika Nation

The Siksika Nation is located in south-central Alberta to the east of Calgary. The Nation has a single, large reserve, Siksika 146, which includes the community of Bartstow. The Town of Gleichen is located immediately adjacent to the reserve lands. The Nation is led by a Chief and 12 councillors (Government of Alberta 2020). The Siksika Nation administers local health and wellness facilities, schools and social programs and is home to the Nation Sportsplex, Old Sun Community College and the Blackfoot Crossing Historical Park (Indian Business Corporation 2016). Siksika Resource Development GP Ltd. (SRDL) was established in 1997 as the economic and investment arm of the Siksika Nation. SRDL has a number of subsidiary businesses providing services in the areas of agricultural products, commercial real estate, retail, construction, dining and hospitality, and economic and resource development (SRDL 2020).

The Siksika Nation has a registered population of 7,556, of which 2,443 live on Siksika reserve. A further 207 live on other reserve or Crown land, while the remaining 3,219 live off-reserve (CIRNAC 2020g). Statistics Canada's 2016 census reported an official resident population on Siksika 146 of 3,465 in 2016. The median age of the on-reserve population was 25.8. Of the population aged 15 and over (2,370), just over 23% had a high school diploma or equivalent as their highest level of education. Around 14% had an apprenticeship or trade, while 22% had a college diploma or university degree. Nearly half (47%) of the working-age population (2,370) was participating in the labour force, with 240 seeking employment for an unemployment rate of 21.4%. The median annual individual income was nearly $16,000, while the median annual economic family income was just over $44,000 (Statistics Canada 2018g).

Kainai (Blood Tribe)

The Kainai (Blood Tribe) is located in southwestern Alberta, extending southwest of the city of Lethbridge's limits towards the border with the United States to the limits of the town of Cardston. Kainai (Blood Tribe) has two reserve communities, Blood 148, which is the largest, and 148A. The community of Stand Off is located on the reserve and is associated with much of Kainai (Blood Tribe) infrastructure and administration. The Kainai (Blood Tribe) is led by a Chief and 12 councillors (Government of Alberta 2020). Blood Tribe Economic Development is the economic development arm of the Kainai (Blood Tribe), and is focused on business and corporate development. The Blood Tribe Agricultural Project is a Kainai (Blood Tribe) business entity and has been in operation since 1991. The Blood Tribe Agricultural Project is tasked with operating and maintaining the irrigation system, and monitoring and maintaining the conditions of the lands entrusted to the project. Another notable business is Kainai Forage. Established in 1997, Kainai Forage grows and processes hay and alfalfa on reserve for international distribution.

The Kainai (Blood Tribe) has a registered population of 12,697, of which 8,519 live on Kainai reserves. A further 220 live on other reserve or Crown land, while the remaining 3,958 live off-reserve (CIRNAC 2020h). Statistics Canada's 2016 census reported an official resident population on Blood 148 of 4,535 in 2016, and supresses data on Blood 148A due to quality or confidentiality concerns. The median age of the on-reserve population was 28.5. Of the population aged 15 and over (3,280), just over 20% had a high school diploma or equivalent as their highest level of education. Around 7% had an apprenticeship or trade, while 33% had a college diploma or university degree. Nearly half (44%) of the working-age population (3,280) was participating in the labour force, with 330 people seeking employment for an unemployment rate of 22.4%. The median annual individual income was nearly $15,000, while the median annual economic family income was nearly $45,000 (Statistics Canada 2018h).

Tsuut'ina Nation

The Tsuut'ina Nation's reserve community of Sarcee 145 is located in Alberta southeast of the city of Calgary.

The Tsuut'ina Nation has a registered population of 2,439, of which 2,091 live on the Sarcee reserve. A further 136 live on other reserve or Crown land, while the remaining 212 live off-reserve (CIRNAC 2020i). Statistics Canada's 2016 census reported an official resident population on Sarcee 145 of 1,640. The on-reserve population had a median age of around 34. Of the population aged 15 and over (1,160), approximately 27% had a high school diploma or equivalent as their highest level of education. A further 10% had an apprenticeship or trade, while the 45% had a college diploma or university degree. Over two thirds (800) of the working-age population (1,160) was participating in the labour force, with 65 people seeking employment for an unemployment rate of 8.1%. The median annual individual income for the Sarcee 145 reserve was around $37,000, while the median economic family income was about $128,000, indicating multiple income earners per family (Statistics Canada 2018i).

The Tsuut'ina have a number of businesses including trades, wood products, arts and crafts, cleaning and hospitality services, catering, security, and transportation. The Redwood Meadows Golf and Country Club, Sarcee Gravel Products, and Tsuut'ina Gas Stop are prominent Nation businesses. The Nation maintains an income support department, off reserve residency services, and a healthcare centre. Fire, rescue and policing services are also provided on-reserve to membership (Tsuut'ina Nation 2020).

Métis Nation of Alberta

The Métis Nation of Alberta was formed in 1928 to implement a mandate that supports “practices of transparency, accountability and inclusiveness for Métis Albertans in governments’ policy and decision-making processes, and overall, promotes and facilitates the advancement of Métis people through self-reliance, self-determination and self-management” (MNA 2020b). The Métis Nation of Alberta is governed by a provincial council consisting of a provincial president and vice-president, and six elected regional presidents, vice-presidents and local councils (MNA 2020a).

The 114,370 Métis of Alberta reside throughout the province, including in the following Métis Settlements:

- Buffalo Lake (population 710)
- East Prairie (population 300)
- Elizabeth (population 655)
- Fishing Lake (population 440)
- Gift Lake part A (population 660)
- Kikino part A (population 930)
- Paddle Prairie (population 540)
- Peavine (population 620)

Collectively, the Métis of Alberta had a median age of 29.5 in 2016. Of the population aged 15 and over (85,480), 30% had a high school diploma or equivalent as their highest level of education. Around 12% had an apprenticeship or trade, while 31% had a college diploma or university degree. Nearly three quarters (71%) of the working-age population (85,480) was participating in the labour force, with 7,995 people seeking employment for an unemployment rate of 13.1%. The median annual individual income was nearly $37,000 (Statistics Canada 2018a).

Métis Nation British Columbia

The Métis Nation British Columbia was established in 1996 as the representative organization for Métis in BC. The Métis Nation British Columbia represents 38 Métis Chartered Communities in BC and has a mandate to develop and enhance opportunities for the Métis by implementing culturally relevant social and economic programs and services. The Métis Nation British Columbia is governed by an 11-person cabinet consisting of a President, Vice-President, 7 elected Regional Directors, and provincially elected representatives for both the Métis Women and Métis Youth of British Columbia (MNBC 2020a). The Métis Nation British Columbia Ministry of Natural Resources oversees initiatives related to natural resources, land and Métis Traditional Knowledge across all Métis Nation British Columbia departments and Ministries. The Employment and Training Ministry delivers programs and services to improve the employment potential, earning capacity and self-sufficiency of Métis, while the Ministry of Economic Development and Partnerships implements programs and policies aimed at economic prosperity and self-reliance for Métis (MNBC 2020c).

The Métis Nation British Columbia and the Provincial Government signed a Métis Nation Relationship Accord in 2006 and re-signed it in 2016. The Accord sets out objectives to address health (community, family, and individual), housing, education, economic development (including Crown corporation procurement), information sharing, justice, Métis identification and data collection (e.g., population statistics), and wildlife stewardship (Government of British Columbia 2016).

The 89,405 Métis of British Columbia reside throughout the province, and do not have formal Settlements as is the case in Alberta. Collectively, the Métis in BC had median age of 32.3 in 2016. Of the population

aged 15 and over (68,805), 31% had a high school diploma or equivalent as their highest level of education. Around 12% had an apprenticeship or trade, while 34% had a college diploma or university degree. Over two thirds (69%) of the working-aged population (68,800) was participating in the labour force, with 4,595 people seeking employment for an unemployment rate of 9.7%. The median annual individual income was nearly $30,000 (Statistics Canada 2018j).

7.4.1.2 Regional District of East Kootenay and Elk Valley Communities

Coal mining has historically been a major part of the Elk Valley and Regional District of East Kootenay's economies. The growth of the communities of Fernie and Sparwood during the first half of the 1900s and Elkford during the 1970s was the direct result of the development of Elk Valley mines. As of 2019, there were seven operating coal mines in BC, four of which were in the Elk Valley and operated by Teck. In 2019, Teck's Elk Valley mines produced approximately 24 million tonnes of the coal to be exported from the province. As of January 2020, Teck's Elk Valley mines collectively employed over 4,000 workers with approximately 60% of workers living in Fernie, Sparwood, Elkford and Crowsnest Pass. Local employees fill 96% of senior management roles.

Mining is the largest industry in each of the local communities, with mining employing 71% of the male workforce and 25% of the female workforce in Elkford, and 46% of the male workforce and 18% of female workforce in Sparwood. Fernie's and Crowsnest Pass's labour forces are somewhat more diverse; however, mining still employs 28% of men and 7% of women in Fernie, and 32% of men and 4% of women in Crowsnest Pass (Statistics Canada 2017a,b,c,d,e,f).

The median incomes in the Elk Valley region and local communities have historically had one of the highest in the province, particularly among the male workforce, due to the large mining and forestry sectors. For example, median income among all working-age men in Elkford is $98,432 as of 2015, which is 2.4 times higher than the median income of the male workforce in the province. However, there is an income gap between men and women. The 2015 median income amongst all working-age men in Elkford was more than four times as high as the median income for working-age women (at $22,992). This pattern of gender-based income disparity is high when compared to the Regional District of East Kootenay, and the Province of British Columbia as a whole, where the median income for males is 1.85 and 1.5 times higher than for females, respectively (Statistics Canada 2017g).

With heavy dependency on coal mining, unemployment rates in the Fernie–Elk Valley area have been tied to the local mines' production levels, which in turn are directly influenced by international coal market conditions. As of 2016, unemployment in Regional District of East Kootenay was 7.9%, while Sparwood and Elkford's unemployment increased slightly from 2011, from 5.5% to 6.4% in Sparwood and from 4.2% and 5.4% in Elkford, but remained lower than the provincial average of 7%.

With the regional economy being one of the least diversified in the province, economic growth strategies in the local communities are focused on expanding and diversifying the local economies by supporting both resource-based (mainly mining) and tourism industries. Sparwood, Elkford, Fernie, the Tobacco Plains Indian Band and the communities' Chambers of Commerce are all members of the Elk Valley Economic Initiative, which supports regional economic development projects and initiatives for existing businesses, new businesses and the advancement of economic diversification. In addition to focusing on developing their goods, service and retail sectors to support ongoing mining operations, tourism and

recreation, Sparwood has identified economic development opportunities in accommodation properties, agricultural processing or value-add development, and local education and research institutes, all supported through provision of flexibility in land use to promote business development and diversification (District of Sparwood 2015). Elkford is focused on continuing economic development opportunities in the mining sector, expansion of commercial and tourism accommodation through development of a large hotel, and enhancement of recreational amenities within local parks.

In Fernie, tourism is evolving in tandem with its role as a residential community for mine workers. Key developments include Fernie Alpine Resort; promotion and development of commercial outdoor recreational businesses such as fish guiding, rafting, and hunting; and tourism-related accommodation, beverage, and entertainment businesses. Also, between 2011 and 2016, employment in retail trade more than tripled in Fernie in response to population growth, and the economies of both Fernie and Crowsnest Pass have being diversifying into the construction and manufacturing sectors. The Elk Valley communities rely heavily on taxes levied on the coal mining industry to support recreational services due to a lack of economic diversity. In 2017 revenue from the Elk Valley Property Tax Sharing Agreement composed 25% of all municipal revenue in Sparwood, 41% of all municipal revenue in Elkford, and 17% of all municipal revenue in Fernie (City of Fernie 2018; District of Elkford 2018; District of Sparwood 2018).

It is estimated that the Project would create several hundred additional jobs during the proposed two-year construction period. During operations, the Project is not expected to create significant new employment opportunities as the existing FRO workforce is expected to shift from other mining areas at FRO to the Project. The Project will extend the life of mining operations at FRO, thereby helping to meet market demands for steelmaking coal when existing operational production would otherwise begin to decline. It is anticipated that the existing direct and indirect employment and economic benefits associated with FRO will be sustained further into the future as a result of the Project.

The Elk Valley communities of Fernie (population 5,249), Sparwood (population 3,784), Elkford (population 2,499) and Crowsnest Pass, Alberta (population 5,589) are nearby, with Elkford being the closest community to FRO. Population projections suggest that between 2021 and 2031, the total population in the Fernie Local Health Area[34] is expected to grow by approximately 7% or less than 1% annually (BC Stats 2019). Projections indicate an increase in the percentage of the total population aged 65 years and over, from 13.5% of the total population to 21.7% of the total population. All other age categories are projected to see a decline in overall percentages during this same period, with the percentage of the population age 25 to 64 years expected to decline from 60.8% in 2021 to 54.7% in 2031.

Housing costs and availability in the Elk Valley region are linked to the strength of the mining industry: when the market price for coal is high, demand for labour drives housing costs up, which can cause substantial variability in housing prices from year to year. Cost of rental and owned accommodation varies across communities, with dwelling values in the local communities generally being below the provincial average. For example, in 2016, the average dwelling value in Elkford was $266,128 compared to $487,237 in Fernie (and $720,689 provincially). Between 2011 and 2016, average dwelling values

[34] Fernie Local Health Area includes the communities of Fernie, Sparwood and Elkford, as well as Tobacco Plains First Nation Reserve, Elko, Hosmer, Jaffray, Baynes Lake, Grasmere, and Roosville.

stayed relatively consistent in Sparwood and Elkford, while Fernie saw a 10% growth in value, and Crowsnest Pass a 9% decline.

It is anticipated that the construction workforce will be housed at Teck's Elk Valley Lodge temporary worker accommodation located in Elkford, BC[35]. As the existing FRO operational workforce is expected to shift from other mining areas at FRO to the Project, no additional housing requirements are anticipated for the operations stage of the Project.

The four communities each have preschools, and elementary and secondary schools operated privately and by the BC Ministry of Education and School District #5. The College of the Rockies services the East Kootenays, with its main campus in Cranbrook and six secondary campuses, including one in Fernie. The college provides a mix of vocational, trades (including a mining apprenticeship training program), career technical, academic programs, and adult education. Lethbridge College offers training programs, applied degrees, and apprenticeships with both classroom-based and online credit classes, and regional campuses in Crowsnest Pass. Available apprenticeship training applicable to the mining industry includes electrician, welder, heavy duty equipment technician, and parts technician programs.

Each of the communities in the Elk Valley have their own fire department. There are also volunteer search and rescue teams in Elkford and Fernie. Ambulance service in the Elk Valley is provided by the BC Ambulance Service and is based in each of the local communities in BC. The Royal Canadian Mounted Police provides municipal police services in the municipalities and unincorporated rural areas, with the Sparwood, Fernie and Elkford police stations being collectively managed under the Elk Valley Integrated Detachment. The District of Elkford draws water from six nearby wells to supply water and sewer services to the community. Solid waste disposal services are provided through the Elkford Transfer Station.

The local communities, with the exception of Elkford, are located on a major highway network. Highway 3 is the key commuting route for those working in Teck's Elk Valley mines and living in Crowsnest Pass. In 2018, average daily traffic passing the permanent traffic measurement site on Highway 3, located 2 km west of the BC–Alberta provincial boundary, indicated that vehicles passing this site ranged in volume from 3,551 vehicles in November to 7,935 vehicles in August with a yearly average of 4,798 vehicles per day (BC Ministry of Transportation and Infrastructure 2019).

7.4.1.3 Land Use and Tenure

The Project would be located on Crown land coal leases held by Teck and on fee simple land owned by Teck (Figure 3.1-2). Access to the Project site is via Highway 43 north of Sparwood and then the Fording Mine Road east of Elkford (Figure 3.1-1). The mining portion of the Project is outside of the current FRO mine permit boundary (C-3 Permit). Lands associated with the Project footprint are zoned for Rural Resource under the Elk Valley Zoning Bylaw No. 829 of the Regional District of East Kootenay. The Rural Resource designation allows agricultural, rural residential, and rural resource land uses and also recognizes the use of these lands for public utility use, resource extraction, green space and outdoor recreation. Land use plans are further discussed in Section 10.

[35] For the temporary worker accommodation to be available for the Project construction workforce, it would require an extension to the municipal permit.

Strategic land use planning within the East Kootenay Region that overlaps the Project footprint includes a variety of land use objectives, including those addressing commercial resource development. Under the Kootenay-Boundary Land Use Plan and Higher Level Plan (1997, 2002), the Project footprint is within the Coal Enhanced Resource Development Zone which represents lands with priority management emphasis on coal resources and their exploration, development and production and provides long-term commitment to coal mining exploration and development. Coal Enhanced Resource Development Zones are located exclusively in the East Kootenay Region and encompass areas of known coal reserves, existing coal mining facilities and infrastructure, as well as areas for potential expansion. Teck is aware that the Ktunaxa Nation has established formal and informal planning goals and objectives for the Elk Valley and is working with KNC to understand these, and how they may be incorporated into the Project. This includes discussion on mechanisms to demonstrate environmental performance, including the success of planned mitigation.

Coal mining and processing has been a primary economic driver and land use in the Elk Valley since the first coal mine was established at Coal Creek near Fernie in the late 1890s. Other land and resource uses within and surrounding the Project footprint include oil and gas exploration, timber harvest, trapping, guided hunting and fishing, and outdoor recreation related activities such as golfing, wildlife viewing, camping, hiking, horseback riding, hunting, fishing, snowmobiling, all-terrain vehicle (ATV) riding, bike riding and skiing. An active petroleum and natural gas lease belonging to the Elk Valley Corporation overlaps the Project footprint.

Forestry takes place on Crown land and on private managed forest land that are adjacent to FRO (i.e., Managed Forest 471 and Managed Forest 27). Forest tenures overlap the Project and FRO area and tenure holder Canadian Forest Products Ltd. has harvest agreements with Teck related to access and the right to harvest. There is a network of forest service roads that overlap the Project footprint which are owned and managed by Canadian Forest Products Ltd.

A No Unauthorized Entry boundary exists for FRO and is established around the active operating areas to maintain public safety as requirement of the Health Reclamation and Safety Code for Mines in BC (HSRCBC). All persons (including hunters and anglers) must have permission to access property where Teck operates. The Project would change the No Unauthorized Entry boundary to include the Project footprint.

The Project footprint is located within Wildlife Resource Management Unit 4-23 of the Kootenay Region. Open season hunting for licensed hunters occurs within Management Unit 4-23 (outside restricted no hunting / no shooting areas) for a number of small and big game species including deer, elk, moose, bear, and sheep. Limited Entry Hunting permits are available for moose and mountain goat within Limited Entry Hunting zone boundaries that overlap the Project footprint. The BC Special Mountain Sheep Permit auction, which raises funds for sheep management and conservation in BC, allows the recipient to hunt one of four subspecies of wild sheep anywhere in BC that is open for public hunting (including outside of FRO’s existing No Unauthorized Entry boundary) through an extended hunting season. Hunting activity occurs within the Project footprint outside the existing No Unauthorized Entry Boundary as well as lands to the west, east and south of the Project footprint. Although several commercial guides and outfitters operate in the Kootenay Region, there are no guiding tenures within the Project footprint. The nearest guide outfitting tenure is located approximately 5 km northwest of the Project, beyond the existing FRO and GHO boundaries.

While the Elk Valley provides world class fly fishing in the Elk River, fishing opportunities are limited within and adjacent to the Project due to a recreational fishing closure on the Fording River above Josephine Falls and access restrictions associated with the FRO No Authorized Entry boundary.

Two trapline tenures overlap the Project. Access to traplines through Teck properties is provided with permission from Teck while maintaining public safety. Species trapped in this area include beaver, lynx, mink, wolf, marten, weasel and coyote. The closest trapping cabin is located approximately 1.3 km southeast of the Project.

Portions of the Project footprint fall in the Chauncey Todhunter Access Management Area. Portions of this management area encompass seasonal motor vehicle closures, as designated under the BC *Wildlife Act Motor Vehicle Prohibition Regulation.* The nearest provincial parks to the Project are:

- the Don Getty Wildland Provincial Park and Beehive Natural Area, located approximately 5 km east of the Project in Alberta, on the east side of the continental divide
- Elk Lakes and Height of the Rockies Provincial Parks, located approximately 17 km northwest of the Project in BC

Outdoor recreation is highly valued by local residents and visitors to the area and is considered an important lifestyle attraction of the Elk Valley. Numerous outdoor recreational opportunities exist in areas where access is permitted surrounding FRO, including ATV and snowmobile riding, mountain biking, horseback riding, camping, hiking, fishing and hunting. The Elkford ATV Club manages several ATV and snowmobiling trails surrounding Teck's FRO and GHO areas. Registered angler guides attract an international clientele to fish along the Elk River. Recreational fishing is also popular on the Fording River downstream of Josephine Falls, although, as noted above, upstream of the falls is closed to recreational fishing. Public use of the existing FRO area is restricted within the No Shooting / No Unauthorized Entry boundary.

The Elk Valley is located in ʔamakʔis Ktunaxa, the territory of the Ktunaxa Nation. The Ktunaxa Nation is composed of yaq̓it ʔa·knuqǂi'it (Tobacco Plains Band), ʔaq'am (St. Mary's Band), yagan nuʔkiy (Lower Kootenay Band), and ʔakisq'nuk First Nation (Columbia Lake Band). The Ktunaxa Nation has a strong cultural heritage associated with the Elk Valley that includes language, knowledge, sacred values, sense of place, intergenerational transmission of knowledge and practices, and other values of importance.

Traditional land and resource use by Indigenous Peoples in the Elk Valley has included habitation, hunting, fishing, harvesting, cultivation and processing, use of the area for cultural practices, and creation and use of trails and travel corridors that connect the valley to other areas. The Elk Valley and surrounding area is subject to ongoing treaty negotiations with the Province of BC and the Government of Canada.

Traditional use including plant and animal harvesting and fishing does occur within the region. Current use of the Project footprint and surrounding areas by Indigenous Peoples is restricted by the existing No Unauthorized Entry boundary established around the active operating areas of the mine site to maintain public safety. As noted in Section 6.1, health/sensory receptor locations have been identified by the Ktunaxa Nation for consideration in the assessment to be conducted for the Project. Receptor locations were identified based on existing Ktunaxa Nation use and occupancy information and were selected

based on proximity to Ktunaxa Nation use values, such as habitation values, important trails and rights practice (Morris 2020).

7.4.1.4 Visual Aesthetics

The Project is located within the front ranges of the Rocky Mountains where the landscape context is characterized by wide valleys, steep slopes, and long ridgelines spotted with summits. The topography along the upper portions of Castle Mountain is steep with the peak reaching approximately 2,550 masl. Lower slopes are shallower, trending mainly westward towards the Fording River Valley.

Land cover in the valleys generally comprises montane spruce forests with inclusions of Douglas fir, lodgepole pine and western larch. At higher elevations land cover is characterized by Engelmann Spruce – subalpine fir forest interspersed with grasslands and brushlands on steep warm aspect slopes. At the highest elevations alpine grasslands remain on steep warm aspect slopes with stunted subalpine fir and inclusions of Engelmann spruce, whitebark pine and subalpine larch.

Industrial land and resource use patterns in the region include open-pit coal mining that has visibly modified the landscape at Teck's operations. Forestry activity is also visible in both the Fording River Valley and the Elk Valley with vegetation established at various stages of regeneration in previously logged cutblock and access road areas. The Project footprint overlaps lands that are currently visibly impacted by industrial land uses related to FRO mining activities and forestry operations and mine exploration on Castle Mountain.

Given the Elk Valley's regional attraction for outdoor recreation-based tourism, aesthetic quality of the landscape is valued as a setting for year-round recreational activities. Scenic areas are established in the Kootenay-Boundary Higher Level Plan that reflect the importance of front country landscapes to communities, recreation and tourism and indicate landscape management guidance related to the design of timber harvesting, forest management and mineral exploration. While some of the scenic areas established under Objective 9 of the Kootenay-Boundary Higher Level Plan were cancelled in the transition from the *Forest Practices Code of British Columbia Act* to the *Forest Range and Practices Act*, visual quality objectives have been established and remain for scenic areas along Highway 43 south of Elkford.

7.4.2 Health and Well-being

Elkford, Sparwood and Fernie are located in the Fernie Local Health Area, within the East Kootenay Health Service Delivery Area, which is within the Interior Health Authority. Crowsnest Pass is located within Zone 1 (South) region of Alberta Health Services Administrated Areas.

Sparwood has a Primary Health Care Centre which includes various services such as family medicine, physiotherapy, a diabetes clinic, a mental health clinic, a community dialysis clinic, a laboratory, public health services including immunization, and pre and post-natal services. Elkford Health Centre includes a medical clinic as well as lab, x-ray, physiotherapy, public health, drug and alcohol counselling, and mental health and youth outreach services. The Elk Valley Hospital located in Fernie is a level one community hospital with inpatient care, obstetrics, emergency care, a laboratory and other services. Fernie also has a health centre, which includes a community care clinic. The Crowsnest Pass Health Centre offers

24-hour emergency service, as well as a range of other health services including surgical procedures, x-ray, physiotherapy, occupational therapy, and laboratory services. There is also a day service medical clinic in Blairmore, Alberta. The East Kootenay Regional Hospital in Cranbrook, BC, is the main health facility in the region.

Findings from a 2015/2016 survey by Statistics Canada indicate that the East Kootenay Health Service Delivery Area (or HSDA, which includes other northern areas such as Kimberley, Windermere and Golden) rated poorly compared to the provincial average on certain health categories, including percentage of the population who smoke, undertake heavy drinking and are overweight or obese. Respondents in the East Kootenay HSDA reported better health behaviours than the provincial average in other health categories including level of physical activity and having regular healthcare providers. Both in East Kootenay and across the province, women report better health behaviours than men in every category. Gender differences within the East Kootenay HSDA are particularly evident in a number of key health categories, with men reporting higher incidence of heavy drinking, smoking and overweight or obesity compared to women (Statistics Canada n.d.).

The Sparwood Leisure Centre located in Sparwood houses an ice rink, pool, racquet courts, fitness centre, curling rink, restaurant and community hall. Sparwood also has a number of parks offering a bike park, bocce courts, horseshoe pitches, softball diamonds, a track, soccer field, basketball court, playground, spray park, skate park, tennis courts, volleyball court and picnic areas. The Elkford Recreation Centre located in Elkford has three curling rinks, indoor and outdoor ice rinks and a toboggan hill. Elkford and Fernie each have an Aquatic Centre. Fernie also has an ice arena, a curling club, and outdoor basketball, baseball, soccer and tennis courts. Recreational facilities in Crowsnest Pass include an indoor skatepark, indoor climbing wall, gymnasium, and the Crowsnest Sports Complex, which houses curling and ice rinks, and an outdoor pool.

The abundance and diversity of social organizations in a community play an important role in community health and well-being. A number of addiction-related services, mental health associations, support groups for specific illnesses, hospital auxiliaries, and larger organizations such as the Canadian Red Cross are located within the local communities. A variety of community support and safety organizations exist within the four communities, including housing societies, women’s centres, youth, children and infant programs, community support societies and the Food Bank. A Citizens on Patrol and Road Watch are located in Crowsnest Pass. Social organizations include clubs for children and youth (e.g., Cubs, Girl Guides, and Scouts), groups for seniors, veteran’s organizations, and church-related activity groups.

Arts, cultural, educational and environmental organizations are prevalent and include arts and historical societies, wildlife associations, music organizations, community garden societies and outdoor educational groups. Sports and recreational organizations are also abundant and include fishing, lacrosse, boxing, running, golf, weightlifting, swimming, flying, skating, soccer, martial arts, hockey, skiing and snowmobiling organizations.

7.4.3 Archaeological Resources

The area has been subject to an Archaeological Overview Assessment (Choquette and Tamasi 2018), consisting of a background synthesis of available data as well as map and aerial photograph analysis. A total of 21 landform-based geographic information system polygons were mapped within the Project footprint as having potential to contain archaeological sites, each with a 100 m buffer zone. Additionally, 24 Archaeological Overview Assessment polygons produced during a previous overview assessment have been mapped within or near the Project footprint (Choquette n.d.). The archaeological potential of the polygons is based on criteria derived from pre-contact land and resource use models developed for the middle Elk River Clode and the southern Canadian Rocky Mountains (Choquette 1980, 1982, 1987a,b).

The polygons of archaeological potential represent areas where archaeological resources, if present, may be adversely affected by mine development activities. As such, they represent areas that will be subject to more intensive archaeological field investigation in the form of an Archaeological Impact Assessment pursuant to Section 14 of the BC *Heritage Conservation Act*. Upon ground-truthing of the high potential polygons, additional areas may be identified which require assessment.

8 Effects of the Environment on the Project

The Project could be affected by a number of environmental factors from a business perspective and from a physical infrastructure perspective, as described below. This section of the DPD is similar to the provincial and federal IPD documents with minor clarifications.

From the business perspective, the steelmaking coal market will be influenced by global efforts to respond to climate change. Teck completed a climate change scenario analysis in 2019 (Teck 2019b) and in 2021 (Teck 2021a) to aid decision-making and strategic planning amidst shifts in the carbon economy. Teck steelmaking operations will remain carbon-competitive in a low carbon economy. Steelmaking coal is a vital ingredient in the production of steel and is essential to ensuring the world has a sufficient supply of steel to build out the infrastructure required to transition to a low-carbon economy. By producing steelmaking coal in BC, the Project would benefit from the province's clean energy infrastructure, with a majority (97%) of the grid electricity coming from renewable resources (ECCC 2020). Further, similar to Teck's other steelmaking coal mines, the Project would produce high quality steelmaking coal with high coke strength properties that could reduce GHG emissions during steel production when it displaces lower-grade steelmaking coal in the market.

Unlike other global producers of steelmaking coal, all of Teck's steelmaking coal mines are currently subject to a carbon tax. As other jurisdictions adopt carbon pricing policies, the cost of production for our customers will increase and may result in an improved position for the Project on the cost curve, contributing to an improved position in the market. Refer to Section 3.5.2 for further discussion on Teck's plans for carbon neutrality across all operations by 2050.

From the physical infrastructure perspective, climate change and natural hazards could directly interact with Project facilities and operations. The following environmental factors could lead to environmental effects on the Project's physical infrastructure:

- climate change
  - warmer and drier climate in summer could lead to more frequent wildfires
  - higher precipitation, especially in winter including rain-on-snow events, could lead to more frequent flooding
  - earlier peak spring flow and other potential hydrological changes, such as lower base flows in summer and winter, would need to be accounted for by the Project water management and tailings facilities, and for delivery of instream flow requirements
- natural hazards, including seismic, volcanic, avalanche, extreme weather events, and fire, would need to be addressed in the design of mine facilities and through the emergency response plan and operational procedures

Teck has commissioned a study on potential climate change in the vicinity of the Project that will inform the assessment and detailed design for the Project. Risks associated with climate change and natural hazards will be assessed and appropriate mitigations incorporated into Project plans. The Project would also follow FRO's design standards and practices that mitigate these risks. An example of this is FRO's avalanche forecasting, work requirements, and rescue procedures.

9 Water Use

FRO has three consumptive use water licenses issued by BC FLNRORD:

- C133241 for vehicle and equipment (truck washing), with yearly licensed limit of 1,892,160 m^3
- C133242 for well drilling/transportation corridor management (dust control), with yearly licensed limit of 10,950,000 m^3
- C133243 for mining purpose (washing coal), with yearly licensed limit of 18,259,490 m^3

Actual annual consumptive water uses vary year to year and are maintained within these licensed limits. A summary of recent water consumption at FRO is provided in Table 9-1.

Table 9-1: Consumptive Water Uses at the Fording River Operations

Use	Water Consumption (m^3)	
	2018	2019
Vehicle and equipment (truck washing)	46,691	277,358
Well drilling/transportation corridor management (dust control)	665,637	384,966
Mining purpose (washing coal)	2,535,701	2,038,365

Domestic water needs at FRO are met by existing licenced groundwater wells. In addition, FRO uses bottled water for potable water consumption.

Water consumption for the Project would remain similar to the existing water consumption at FRO. As the Project would be an extension to FRO, some of the Project water use would be specific to the Project mine area and some would be associated with FRO (Table 9-2). Water use in the Project mine area would support mining only. The FRO water use would include coal processing. The Project tailings handling and storage plan would result in some changes to FRO process water management, as tailings dewatering (Section 3.3.7) would recover water directly from the dewatering process instead of the South Tailings Pond and the Turnbull TSF.

This section of the DPD has been updated from the provincial and federal IPD documents with minor clarifications and addition of current consumptive water use information and tailings storage considerations.

Table 9-2: Water Use Specific to the FRX Project and the FRO Activities Related to the Project

Water Use	FRX Mine Area	FRO Water Related to the Project
Process Water Non-potable water used in the FRO Coal Processing Plant	No process water (coal washing) would be used at the Project mine area. All processing for the Project would occur at FRO.	The volume of process water requirement at the FRO Coal Processing Plant would remain at current levels as the processing rates would remain unchanged by the Project. As tailings management transitions toward dewatering (Section 3.3.7), the majority (approximately 95% or more) of water from the tailings slurry, which currently discharges to the South Tailings Pond, will be recovered directly from the dewatering process for re-use at the FRO Coal Processing Plant.
Potable Water Bottled water for human consumption	Potable water needs for the Project mine area would be met by a third-party supplier of bottled water.	There would be no change to potable water use at FRO due to the Project. Potable water needs at FRO would continue to be met by a third-party supplier of bottled water.
Domestic Water Non-potable water for domestic use in offices and mechanical shops etc	Domestic water needs at the Project mine area would be limited to the satellite offices and maintenance shops etc. Teck will evaluate trucking water from FRO, local groundwater wells, or use of and possibly storage of surface water. Domestic water for the Project might require amendment to FRO's existing water licences (Section 4.4) or obtaining new licences for groundwater wells or surface water use and possibly storage.	There would be no change to domestic water use at FRO due to the Project, except for a reduction of use due to workers using domestic water at the Project mine area rather than existing FRO facilities. Domestic water needs at FRO would continue to be met by existing licenced groundwater wells.
Dust Control Water Non-potable water for spraying on roads, stockpiles or other areas to reduce dust entering the air	Dust control water needs at the Project mine area could be met by trucking water from FRO, local groundwater wells, or use of and possibly storage of surface water. Dust control water for the Project might require amendment to FRO's existing water licences (Section 4.4) or obtaining new licences for groundwater wells or surface water use and possibly storage.	There would be no change to dust control water use at FRO's plant site due to the Project. Dust control water needs at FRO's plant site would continue to be met by existing licenced surface water sources.

Table 9-2: Water Use Specific to the FRX Project and the FRO Activities Related to the Project

Water Use	FRX Mine Area	FRO Water Related to the Project
Drilling Water For the purposes of this discussion, drilling water is non-potable water used to operate drills during construction and mining	Drilling water needs at the Project mine area could be met by trucking water from FRO, local groundwater wells, or use of and/or storage of surface water. Drilling water for the Project might require amendment to FRO's existing water licences (Section 4.4) or obtaining new licences for groundwater wells or use of and/or storage of surface water.	It is highly unlikely that there would be any drilling water use at FRO due to the Project.

10 Land Use Plans

A number of land use plans apply in the Project region (Table 10-1). Teck is aware that the Ktunaxa Nation has established formal and informal planning goals and objectives for the Elk Valley and is working with KNC to understand these, and how they may be incorporated into the Project.

This section of the DPD includes minor updates from the provincial and federal IPD documents for clarification.

Table 10-1: Land Use Plans and Area Specific Regulations

Land Use Plan	Zoning Consideration	Potential Amendments Required
Kootenay-Boundary Land Resource Management Plan Implementation Strategy Kootenay Inter-Agency Management Committee 1997	Portions of the Project would fall into the: • Coal Enhanced Resource Development Zone[a] • Enhanced Resource Development Zone	Project is consistent with the Land Use Plan. No amendments would be required for the Project.
Elk Valley Zoning Bylaw No. 829, 1990 Regional District of East Kootenay	Portions of the Project would fall into Rural Resource Zone RR-60	Project is consistent with the bylaw. No amendments would be required for the Project.
District of Elkford Zoning Bylaw No. 737, 2013 District of Elkford	Portions of the Project would fall outside of the District of Elkford. The District of Elkford includes much of FRO.	The District of Elkford zoning might need to be amended to add the Project.
Motor Vehicle Prohibition Regulation BC *Wildlife Act*	Portions of the Project would fall into the Chauncey Todhunter Access Management Area[a]	The *Motor Vehicle Prohibition Regulation* will need to be amended to remove the Project from the Chauncey-Todhunter Access Management Area as well as add FRX to the Teck Mining Closure section of the *Outdoor Access Guide: RDEK Area A, Fernie, Sparwood, Elkford* once under construction and operations.

a) The Coal Enhanced Resource Development zone overlaps the Chauncey-Todhunter Access Management Area.

11 Federal Lands

The Project is located primarily on provincial Crown land subject to coal leases held by Teck, with portions of the Project on fee simple land owned by Teck (Figure 3.1-2). No federal lands would be used for the Project and there will be no direct Project impacts to federal lands. The closest federal lands, referred to as the Dominion Coal Block (Parcels 73 and 82), are located approximately 70 km and 80 km south of the Project. Proximity of the Project to Indigenous and federal lands is illustrated in Figure 3.1-3 and Figure 3.1-4.

12 Potential Project-Related Effects

The potential effects of the Project will be assessed through the coordinated process established under the BC EAA and the IAA. The scope of the assessment and the methods for the assessment will follow environmental assessment guidance from BC and Canada and will be established in collaboration with potentially affected Indigenous Peoples, government regulators and agencies and other interested groups so that the effects of the Project are understood. The assessment will include consideration of:

- identification and assessment of the components of the physical, biological and human environment that are most important to people within the context of the Project and its potential effects
- mitigation measures and plans to avoid, minimize, rehabilitate or offset adverse impacts and enhance benefits
- integration with existing FRO and regional permits, plans and programs
- residual incremental and cumulative effects associated with the Project and other past, present and reasonably foreseeable developments

Teck has an extensive history in the Elk Valley and is involved in many studies and impact mitigation programs related to current and past coal mining in the Project region. The Project-environment interactions identified in the following subsections are based on a combination of engagement of the Project to date, the available information about current and post coal mining in the Project region and the expertise of the qualified professionals supporting the development of Teck's IS/A for review of the Project.

12.1 Potential Project-environment Interactions

Early review of the Project indicates the potential project-environment interactions outlined in Table 12-1.

Table 12-1: Preliminary Identification of Potential Project Interactions

Environment Component	Potential Issue or Interaction	Examples of Mitigations and/or Enhancements[a]
Physical Environment		
Geology, Soils and Terrain	• Changes to soil profile and quantity from vegetation removal, overburden removal, storage of waste rock and development of open-pit mine. • Changes to soil quality due to changes in soil chemical and physical characteristics during mining and reclamation activities, including potential soil contamination from accidental spills or releases of fuel or other hazardous materials. • Changes to terrain (e.g., slope, angle and elevation) and soils (e.g., productivity, decomposition processes, nutrient cycling and restoration potential). • Implications of the above potential changes to reclamation success.	• Management practices for soil erosion control and spill prevention/management plans. • Implement a reclamation and closure plan incorporating soil salvage plans, recontouring and targeted end land use objectives. • Soil salvage, soil stockpile, and soil placement management. • Use ecohydrological model to guide strategic soil placement to enhance reclamation success.

Table 12-1: Preliminary Identification of Potential Project Interactions

Environment Component	Potential Issue or Interaction	Examples of Mitigations and/or Enhancements[a]
Hydrogeology	• Changes to groundwater quality and quantity from mining interaction with the groundwater table resulting from changes to terrain/topography including disturbance to bedrock and surficial materials. • Changes to groundwater quality from water infiltration (e.g., through waste rock, pit walls, mine pits). • Changes to groundwater quality from interactions with mine-influenced surface water or from accidental spills of fuels, lubricants or other products used to support the Project.	• Implementation of erosion control and spill prevention/management plans. • Early investigations to plan intakes and outfalls and implement Project-specific surface water quality management mitigations. • Implement groundwater monitoring plans during construction and operation and adapt to findings. • Implement a reclamation and closure plan, including a closure water management plan.
Hydrology and Water Quality	• Changes in flow regime and sediment loading in streams and rivers in the Elk Valley watershed and, potentially, downstream (e.g., Koocanusa Reservoir). Lake Koocanusa is a transboundary waterbody, draining from Canada into the state of Montana in the United States of America (refer to Figure 3.1-3). • Erosion/deposition associated with changes in surface water flow regime. • Changes in water quality in streams and rivers in the Elk Valley watershed and, potentially, downstream (e.g., Koocanusa Reservoir), resulting from release of selenium, nitrate and other water quality constituents from mining and other disturbed areas. • Changes in groundwater/surface water interactions, including changes in base flows in streams and rivers in the Elk Valley watershed. • Changes in water quality in streams and rivers in the Elk Valley watershed due to interaction with mine-influenced groundwater.	• Implement surface water management plans, including mitigations to manage water quality, during construction and operations. • Integrate the commitments in the EVWQP and incorporate the Project (if approved) into subsequent EVWQP Implementation Plan Adjustment. This may include Project-specific water quality management initiatives such as using existing and/or proposed infrastructure (e.g., Fording River Operations South Active Water Treatment Facility) to treat contact water and/or implementation of other technologies (e.g., source control, saturated rock rills, or new water treatment facilities). • Include consideration of environmental flow needs in surface water management and water quality mitigation. • Integrate water management into reclamation and closure planning.
Air Quality, Noise and Vibrations	• Fugitive dust emissions from material handling and processing can result in increases in ambient particulate matter concentrations that can negatively affect human and wildlife health, soil, vegetation and waterbodies. Such changes can contribute to changes in ecosystem condition. • Combustion emissions from vehicles and equipment and removal of vegetation can result in increases in ambient concentrations of nitrogen dioxide, sulphur dioxide and other contaminants that can negatively affect human and wildlife health, water and vegetation. Similar to dust emissions, such changes can contribute to changes to ecosystem condition. • Increases and/or temporal extension in greenhouse gas emissions have the potential to affect climate change. • Noise and/or vibrations from blasting, vehicles and Project activities. • Changes to air quality, noise and vibrations can cause sensory changes that affect people and wildlife (refer to Terrestrial Resources, Land Use and Visual Aesthetics below).	• Implementation of an air quality and fugitive dust control plan. • Air monitoring program. • Efficient operation of the vehicle fleet, and equipment/coal dryer to minimize greenhouse gas emissions. • Use of noise minimization equipment where appropriate. • Investigation of other options to reduce air emissions/ consideration of alternative technologies (e.g., electric vehicles).

Table 12-1: Preliminary Identification of Potential Project Interactions

Environment Component	Potential Issue or Interaction	Examples of Mitigations and/or Enhancements[a]
Biological Environment		
Terrestrial Resources	• Direct loss, temporal loss, or change in quality, quantity and distribution of vegetation and wildlife habitat, including rare and listed ecosystems, ecological communities, species at risk and migratory birds as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*. • Sensory disturbance to wildlife, including migratory birds and species at risk (e.g., noise, light). • Disruption of wildlife, including species at risk and migratory bird movement patterns in regional landscape. • Accidental direct mortality of wildlife, including species at risk and migratory birds, due to construction, operations, traffic. • Bird fatalities resulting directly from collisions with artificial light sources or indirectly due to disorientation, energy depletion and subsequent predation. • Displacement of wildlife, including species at risk and migratory birds, and consequences to adjacent areas (e.g., competition, predation, overgrazing). • Displacement of native vegetation including culturally important and listed plants and communities by encroaching weeds. • Health effects on vegetation and wildlife, including migratory birds, due to changes in air, water and soil quality, and exposure to potential contaminants of concern. • Increased stress and reproductive impairment to wildlife associated with potential changes to habitat and health. • Increased protection for certain species due to access restrictions. • Influence of the above factors on ecosystem function. • The potential implications of the effects of the Project on transboundary populations (e.g., BC-Alberta boundary) and/or populations that rely on provincial and federal parks or conservation areas.	• Implement appropriate management practices and ecosystem/species management plans (e.g., invasive plant management plan, Teck's Bird Guidance document). • Follow best practices to limit noise and light disturbance. • Avoid and/or minimize Project interaction with sensitive and at risk ecosystems, communities or species (reduce the size, timing and duration of impacts). • Reduce mine footprint through progressive development of the mine, maximize backfill waste deposition, and progressive and interim reclamation. • Implement a reclamation and closure plan integrating Teck's strategic priority of working to achieve net positive impact on biodiversity in areas affected by our activities. • Where residual effects are unavoidable through application of avoidance, minimization and/or rehabilitation, apply an offsetting strategy. Offsetting opportunities to be identified in alignment with our environmental mitigation hierarchy and through engagement with government, Indigenous Peoples, and local communities.

Table 12-1: Preliminary Identification of Potential Project Interactions

Environment Component	Potential Issue or Interaction	Examples of Mitigations and/or Enhancements[a]
Aquatic Resources[b]	• Direct loss or change in quality, quantity and distribution of aquatic habitat resulting from pit development, placement of waste rock, and other mine infrastructure. • Change in quantity and quality of aquatic habitat resulting from alteration of surface and groundwater flows. • Change in quality of aquatic habitat resulting from deposition of calcite and sediment loading. • Health effects to aquatic resources and aquatic dependent species (e.g., fish, benthic invertebrates, amphibians, birds, including migratory birds) due to changes in water quality. • Direct loss of or changes to instream, riparian and wetland habitats and function, and related changes to quantity and quality of fish habitat. • Influence of the above factors on relative abundance, distribution and condition of aquatic dependant populations, including, potentially, transboundary populations (e.g., populations in Koocanusa Reservoir). • Influence of the above factors on ecosystem function. • Potential interactions between the Project and fish species downstream of Josephine Falls (e.g., bull trout, mountain whitefish)	• Avoid and/or minimize Project direct loss of aquatic habitat through careful selection of mine pit and waste rock storage locations. • Implement appropriate management practices and environmental management plans. • Reduce mine footprint through progressive development of the mine and maximize backfill waste deposition. • Consider environmental flow needs when assessing Project impacts and designing Project mitigation measures. • Implement appropriate management practices (e.g., Standards and Practices for Instream Works) and environmental management plans (e.g., Erosion and Sediment Control Plan). This includes monitoring water quality per current plans and adapting to findings. • Implement a habitat offset plan to compensate for unavoidable harmful alteration, disruption or destruction of fish habitat. • Implement water quality management plans to meet requirements of the EVWQP and incorporate the Project (if approved) into subsequent EVWQP Implementation Plan Adjustment (see Hydrology and Water Quality).
Human Environment		
Archaeological / Paleontological resources	• Interactions with archaeological/paleontological resources such as loss or degradation due to land clearing, mining, and development of waste rock storage areas or other facilities.	• Conduct archaeological impact assessment and implement management plans including chance find procedures. • Implementation of chance find procedures and preservation of scientific record for paleontological resources.
Economy	• Beneficial effect on local employment and labour income. • Potential effect on local labour market balance. • Beneficial effect on supplier contracting and revenues, and economic development. • Effect on local government revenues and expenditures. • Reduction in employment, contracting and local economic development at closure. • Effects that specifically or differentially impact diverse persons or groups and/or current or future generations.	• Implement local employment policies and planning. • Planning for local procurement of goods and services. • Local skills inventory, training and skills development programs. • Environment, health, safety and community plans. • Support to local initiatives to address demand for housing and local services such as health services and education. • Targeted initiatives to address effects that specifically impact a sub-group(s) within the Elk Valley.
Social - Socio-community	• Potential effect on local population and demographics. • Demand on housing and temporary accommodation, and potential effect on availability and affordability. • Demand on local services (e.g., community and health) and infrastructure and potential effect on capacity and supply. • Demand on local road transportation and potential effect on road capacity and safety. • Effects that specifically or differentially impact diverse persons or groups and/or current or future generations.	• Project supply of construction worker accommodation. • Fire Services and Mutual Aid Agreements. • Collaborative monitoring of health, education, social service usage with local government and service providers. • Support to government housing, service and infrastructure development plans and initiatives. • Traffic management planning. • Targeted mitigation and/or enhancement to address specific or differential impacts to sub-groups.

Table 12-1: Preliminary Identification of Potential Project Interactions

Environment Component	Potential Issue or Interaction	Examples of Mitigations and/or Enhancements[a]
Social - Land Use	• Potential for loss and/or disruption of area use and access for commercial (e.g., forestry, guide outfitting, trapping) and non-commercial (e.g., trails) land uses due to mining activity and extension of the FRO No Unauthorized Entry zone. • Potential indirect impacts to harvesting activities (e.g., berry-picking, trapping, hunting, fishing, guiding) from direct effects of mining activity to vegetation, wildlife and fish distribution or abundance. • Potential for change to environmental setting and quality of experience of commercial tourism (e.g., guided outfitters) and non-commercial recreational (e.g., hiking) or cultural use from effects of dust, noise, and visual disturbance.	• Access and use arrangements or agreements with land and resource users. • Management practices and environmental management plans for Ecosystems, Species, Aquatic Health, Air Quality, Noise, and Visual Quality. • Ongoing engagement and communication related to access and use. • Apply end land use objectives that are developed through consultation in reclamation and closure planning.
Social - Visual Aesthetics	• Visual disturbance resulting from vegetation removal and dust, the progressive alteration of landforms, and introduction of built features (e.g., facilities, linear corridors) that are inconsistent with the current natural landscape character. • Indirect effects to cultural, recreational, and tourism values that are related to changes to wildlife, visual quality (e.g., enjoyment of scenic values) and sensory conditions.	• Project mitigations and best practices to address potential visual effects. • Management practices and environmental management plans for vegetation, air quality and dust control. • Development and implementation of landscape design in reclamation and closure planning.
Human Health and Well-being	• Increased particulate matter (dust) concentrations (i.e., $PM_{2.5}$ and PM_{10}), which may cause health risk to local communities. • Deposition of dust on plants and soil, which can result in uptake of metals, metalloids and polycyclic aromatic hydrocarbons from coal dust to plants which are then consumed by people. • Water runoff may contribute to changes in water quality to downstream waterbodies which may impact health of humans. • Changes to other indicators of health associated with other stresses associated with the Project (e.g., sensory effects, changes in lifestyle behaviours and concerns about other Project related effects). • Effects that specifically or differentially impact diverse persons or groups and/or current or future generations. • Worker and/or public safety consequences from a potential accident or malfunction (e.g., explosives or hazardous material incident).	• Management practices and environmental management plans for vegetation, air quality and dust control. • Implementation of water management plan, including water quality management mitigations. • Implementation of various monitoring and assessment programs (e.g., metals sampling of plant tissues at FRO, Ktunaxa Wild Foods study, regional groundwater monitoring program, health risk assessment under the EVWQP) to support evaluation of health risk, verify mitigation planning is effective and manage adapatively. • Public access management through signage, community outreach, and communications on safety near active mines and other potentially hazardous areas. • Emergency response procedures and environment, health safety and community work plans. • Development and implementation of landscape design in reclamation and closure planning. • On-site provision of first aid and employee assistance programs. • Policies on worker health and safety including zero-tolerance substance abuse policy around alcohol, illegal drugs, and medications. • Strategy to address community safety and well-being collaboratively with local communities. • Targeted mitigation and/or enhancement to address specific or differential impacts to sub-groups.

Table 12-1: Preliminary Identification of Potential Project Interactions

Environment Component	Potential Issue or Interaction	Examples of Mitigations and/or Enhancements[a]
Indigenous Peoples	The above-noted Project-environment interactions have the potential to affect Indigenous Peoples within and outside of BC, either directly or indirectly. These interactions and the Project itself will be assessed for its potential to cause: • changes to physical, spiritual and cultural heritage, current use of land and resources for traditional purposes and sites or things of historical, archaeological, spiritual or cultural importance • changes to health, social or economic conditions (e.g., related to food security, transmission of knowledge, employment and other interactions) • changes that specifically or differentially impact diverse persons or groups and/or current or future generations • changes to the exercise of Aboriginal and Treaty rights	• The above-noted mitigations and enhancements are proposed to help manage potential effects to Indigenous Peoples. • The assessment of the Project will consider the rights and interests of Indigenous Peoples in consultation, and where practicable, in collaboration with participating Indigenous Peoples, the BC EAO and the IAAC. Similarly, the participating Indigenous Peoples will be engaged on the evaluation and selection of mitigation measures to minimize potential effects on Indigenous Peoples and their interests.

Notes:

[a] Mitigations may be refined and/or described in more detail in the IS/A to be submitted for the Project, once the effects assessment results are available.

[b] Reference to aquatic resources includes fish and fish habitat as defined in subsection 2(1) of the Fisheries Act, as well as aquatic habitats that may be used by migratory birds and species of conservation concern. It also includes other aquatic resources such as benthic invertebrates, amphibians and the aquatic habitat they rely on.

12.2 Potential Changes to the Environment on Lands Outside BC and Canada

Drainage from the Project footprint consists of a network of relatively small-sized, often ephemeral or intermittent, watercourses that collect runoff from the surrounding terrain. Flows from these watercourses report to the Fording River. The Fording River flows generally south and discharges to the Elk River. The Elk River flows generally southwest and discharges to Koocanusa Reservoir approximately 100 km downstream of the mouth of the Fording River. Koocanusa Reservoir straddles the Canada/US border and is part of the Kootenay (Kootenai) River system.

The Project has the potential to result in changes to water quality as a result of the release of constituents from mining areas (Table 12-1) such as waste rock, pit walls, and tailings storage areas. The Project is being designed to meet the intent of the EVWQP and the SPOs outlined in *Environmental Management Act* Permit 107517. Appropriate mitigation will be included either directly as part of the Project or within the regional mitigation planning process to manage impacts to water quality. The geographic extent of potential impacts to water quality, including the potential for affects on lands outside of BC and Canada, will be evaluated as part of the assessment of the Project. Mitigation of potential impacts is discussed in more detail in Table 12-1.

The air quality assessment for the Project will evaluate air quality impacts at a local and regional scale. Receptor locations will be identified with input from technical advisors identified for the assessment processes under the BC EAA and IAA, and at locations sufficiently afield to evaluate the geographic and temporal extent of Project-related incremental and cumulative effects. The Project will include implementation of an air quality and dust control plan and will be designed to contribute to Teck's commitments to climate action (refer to Section 3.5.2 for further information).

As noted in Section 12.1, the potential for changes to terrestrial wildlife will be evaluated as part of the assessment of the Project. Potential effects will be evaluated by geographic and temporal scales relevant to the terrestrial resources (e.g., the area used by a wildlife population) and will be included in the assessment. The geographic and temporal boundaries for the assessment will be proposed in the draft TISG/AIR to be submitted to the BC EAO and the IAAC.

13 Closing

The FRX Project represents mining of extensive deposits of mineable steelmaking coal that would allow for continued operation of Teck's FRO for several decades. The DPD builds on the provincial and federal IPD documents submitted to satisfy the requirements of the BC EAA and IAA processes. The IPD documents provided an overview of the Project which was used to engage interested Indigenous Peoples, technical advisors and the public about the Project. Since submission of the IPD documents, Project planning has advanced to reflect feedback received and the results of evaluation undertaken by Teck for various Project components and activities.

Please provide feedback to the BC EAO, the IAAC or directly to Teck.

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15 Glossary

Term	Definition
Aquatic resources	Ecosystems, plants and wildlife living in or frequenting water; occurring or situated in or on water.
Bioaccumulation	The process through which chemicals build up in organisms from sources in food and water.
Biogeoclimatic Zone	A large geographic area with a relatively uniform climate, named for the dominant vegetation species.
Biophysical resources	Aspects of the environment relating to living things such as plants and animals and to non-living things such as rocks, soils and water.
Clean Coal	Coal that has been processed at the coal processing plant.
Closure	Actions carried out when a mine ceases operations to bring the site to a safe and stable condition for the long term.
Community (plants and animals)	Plant or animal species living in close association or interacting as a unit.
Combined coarse and fine refuse	A waste stream from coal processing, generated by mixing dewatered fine tailings and coarse coal refuse from coal processing.
Crown Land	All provincial and federal government lands. Provincial parks and public land are examples of provincial crown land.
Cumulative Effects	The combined effects of past, present and reasonably foreseeable activities, over time, on people and the environment.
Disturbance	An event that causes a sudden change from the existing pattern, structure and/or composition in an ecological system or habitat.
Ecosystem	An integrated and stable association of living and non-living resources functioning within a defined physical location. A community of organisms and its environment functioning as an ecological unit. For the purposes of assessment, the ecosystem must be defined according to a particular unit and scale.
Emissions	Gases going into the atmosphere (e.g., vehicle exhaust, chemicals).
Ephemeral	A phenomenon or feature that lasts only a short time (e.g., an ephemeral stream is only present for short periods during the year).
Fee simple	Freehold ownership of land; the land is owned completely without limitation or conditions.
Fine tailings	The fine fraction of the waste stream from coal processing, including fine coal and other clay-sized particles.
Footprint	The proposed development area that directly affects the soil and vegetation components of the landscape.
Groundwater	That part of the subsurface water that occurs beneath the water table, in soils and geologic formations that are fully saturated.
Greenhouse Gas (GHG)	Any of various gases, especially carbon dioxide, that contribute to trapping the sun's warmth in the Earth's lower atmosphere.
Habitat	The place or environment where a plant or animal naturally or normally lives or occurs.

Term	Definition
Hazardous Waste	Chemicals or other wastes that are persistent and toxic, with the potential to cause undesirable consequences under certain conditions.
Infrastructure	Basic facilities, such as transportation, communications, power supplies and buildings, which enable an organization, project or community to function.
Laydown Area	An area that has been cleared for the temporary storage of equipment and supplies. Laydown areas are usually covered with rock and/or gravel to support accessibility and safe manoeuvrability of transport and off-loading of vehicles.
Material Handling	Hauling, conveying, loading and unloading of materials such as coal and waste rock.
Mature Forest	Trees established after the last disturbance have matured; a second cycle of shade tolerant trees may have become established; understories become well developed as the canopy opens up; time since disturbance is generally 80–140 years for most biogeoclimatic units in the Project area except the high-elevation Parkland units where it is 80–250 years (RIC 1998).
Mitigation	An activity intended to avoid, control or reduce the severity of adverse physical, biological or socio-economic impacts of an activity.
Old Growth Forest	Old, structurally complex stands composed mainly of shade-tolerant and regenerating tree species, although older seral and long-lived trees from a disturbance such as fire may still dominate the upper canopy; snags and coarse woody debris in all stages of decomposition typical, as are patchy understories; understories may include tree species uncommon in the canopy, due to inherent limitations of these species under the given conditions; time since disturbance generally >140 years for all biogeoclimatic units in the Project area except the high-elevation Parkland units where it is >250 years (RIC 1998).
Overburden	The soil, sand, silt or clay that overlies a mineral deposit and must be removed before mining (material below the soil profile and above the bituminous sand).
Raw Coal	Unprocessed coal: coal that is produced from mining operation before processing at the coal processing plant.
Receiving Environment	The natural aquatic environment that receives the deposit or discharge of waste from the mine.
Reclamation	The restoration of disturbed land or wasteland to a state of useful capability.
Residual Effects	Effects that persist after mitigation has been applied.
Riparian	Terrain, vegetation or a position next to or associated with a stream, floodplain or standing waterbody.
Runoff	The portion of water from rain and snow that flows over land to streams, ponds, or other surface waterbodies. It is the portion of water from precipitation that does not infiltrate into the ground or evaporate.
Soil	The naturally occurring, unconsolidated mineral or organic material at least 10 cm thick that occurs at the Earth’s surface and is capable of supporting plant growth.
Species	A group of organisms that actually or potentially interbreed and are reproductively isolated from all other such groups; a taxonomic grouping of genetically and morphologically similar individuals; the category below genus.
Species at Risk	Any species known to be “at risk” after formal detailed status assessment and designation as “endangered,” “threatened” or “of special concern” in Canada.

Term	Definition
Steelmaking coal	A grade of coal used to produce coke, which is a raw material for steelmaking; also known as metallurgical coal or coking coal.
Tailings	A waste stream from coal processing, consisting of water, fine coal, other clay sized particles, and trace quantities of coal processing chemicals. The term 'tailings' used on its own can refer to both combined coarse and fine refuse, and fine tailings.
Terrestrial resources	Ecosystems, plants, and wildlife that rely on the land base for their life processes.
Traditional Land Use	Activities involving the harvest of traditional resources such as hunting and trapping, fishing, gathering medicinal plants and travelling to engage in these activities. Traditional resources include plants, animals and mineral resources that are traditionally used by Indigenous Peoples.
Ungulate	Belonging to the former order Ungulata, now divided into the orders Perissodactyla and Artiodactyla, and composed of the hoofed mammals such as horses, cattle, deer, swine, and elephants.
Waste Rock	Unprocessed rock materials that are produced as a result of mining operations.
Watercourse	Riverine systems such as creeks, brooks, streams, and rivers.
Wetland	Land where the water table is at, near or above the surface or that is saturated for a long enough period to promote such features as wet-altered soils and water tolerant vegetation. Wetlands include organic wetlands or peatlands, and mineral wetlands or mineral soil areas that are influenced by excess water but produce little or no peat.
Wildlife	Under the *Species at Risk Act*, wildlife is defined as a species, subspecies, variety or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus that is wild by nature and is native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.

Appendix A Concordance Table for the Summary of Engagement Received through the Provincial *Environmental Assessment Act* Process

Appendix A - Summary of Engagement

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Water quality	SOE-PUB-01	Potential effects on the Elk River, Chauncey Creek, Lake Kookanusa, Kookanusa Reservoir, and the Upper Fording River. Concerns were focused around the existing selenium concentrations in these bodies of water and how the potential further increase of selenium concentrations would affect fish and fish habitat and Teck's ability to meet the objectives of the Elk Valley Water Quality Plan and permit requirements related to water quality for existing operations impacting the Elk River.	Concerns raised in relation to water quality effects on the Elk River, Chauncey Creek, Lake Koocanusa/Koocanusa Reservoir, and the Upper Fording River are acknowledged in Sections 1.2, 5 and 12 of the Detailed Project Description (DPD). An evaluation of potential water quality effects related to the Project, including those in the context of the regional water quality initiatives, will be included in the assessment for the application. A Project specific water quality mitigation plan will also be developed and provided in the application for the Project. Should the Project be approved, it would be integrated into a subsequent Regional Water Quality Model update and Implementation Plan Adjustment. Water quality mitigations that will be relied on for the assessment will be based on proven best achievable technology. The project specific water quality mitigation plan will also consider an adaptive approach that would allow for incorporation of technology improvements for the Project. Additional information on water quality management is provided in sections 3.3.6 and 3.4.4 of the DPD. The Tailored Impact Assessment Guidelines (TISG)/ Application Information Requirement (AIR) will provide a proposed scope for the water quality assessment, and also the assessment of other valued components (VCs) that may be affected by water quality, to be included in the assessment for the Project. The TISG/AIR will be finalized during the process planning phase.	Sections 3.3.6, 3.4.4 for water quality management planning. Sections 1.2, 5 and 12 for capturing concerns about water quality.
Westslope cutthroat trout	SOE-PUB-02	The westslope cutthroat trout populations in the Upper Fording River and Lake Kookanusa are declining including recent indications of high adult fish mortality. Concerns were raised regarding how potential water contaminants from the Castle Project could further contribute to this population trend.	Teck acknowledges concerns related to westslope cutthroat trout. Information on WCT is provided in Sections 1.2, 5 and 7.3.3 of the DPD, and potential interactions of the Project with fish and fish habitat are provided in section 12. Teck participates is a multi-stakeholder Initiative to understand the WCT population decline in the upper Fording River (section 7.1.2 and 7.1.3). Relevant context on WCT in the upper Fording River will be included in the assessment for the Project. Information about Teck's regional initiatives related to fish and fish habitat and water quality is provided in Section 7.1 of the DPD. Note that while fish in Koocanusa Reservoir are subject to a number of cumulative effects that have changed their community composition in the reservoir over the last several decades, monitoring of westslope cutthroat trout does not document a specific recent decline in WCT in Koocanusa Reservoir (Presser and Naft 2020) and Teck is not aware of high adult fish mortality in this system. See comment response SOE-PUB-01 for discussion on water quality management plan. The TISG/AIR will provide a proposed scope for the water quality assessment, and also the assessment of other VCs that may be affected by water quality, including WCT and their habitat. The TISG/AIR will be finalized during the process planning phase.	Sections 1.2, 5 (Table 5-2) and 12; Section 7.1 and Section 7.3.3
Rocky Mountain bighorn sheep and high elevation grasslands	SOE-PUB-03	Potential effects on Rocky Mountain bighorn sheep in the Elk Valley due to impacts on high elevation grasslands, which are critical winter habitat for Rocky Mountain bighorn sheep.	Teck acknowledges the concern related to bighorn sheep and high elevation grasslands and has provided information in Sections 1.2 and 5 of the DPD. Potential interactions between the Project and ecosystems, communities and species of conservation concern are identified in Section 12. Teck participates in environmental initiatives and regulatory processes, such as management of terrestrial effects, and habitat initiatives for bighorn sheep and high elevation grasslands and are discussed in Section 7.1 of the DPD. Teck is undertaking studies related to bighorn sheep and high-elevation grassland habitats and reclamation opportunities. Mapping efforts started in the summer of 2020 will provide additional information related to high elevation and at risk grasslands, in support of developing plans for managing this VC. Habitat assessment efforts should also strengthen the understanding of what habitat components are critical to the local population of bighorn sheep. The draft TISG/AIR will provide a proposed scope for the assessment of the Project on grasslands and bighorn sheep.	Sections 1.2, 5 (Table 5 2) and 12; Sections 7.1.2 and 7.1.3

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Climate change	SOE-PUB-04	Carbon dioxide and methane emissions from the Castle Project and how this could affect climate change and the provincial and federal greenhouse gas emission reduction targets.	Teck acknowledges the concern about climate change and has included information in Section 5. Teck is committed to carbon neutrality across its operations by 2050, which aligns with provincial and federal greenhouse gas emission reduction targets. The assessment of the Project will evaluate the Project's potential carbon dioxide and methane emissions consistent with the Strategic Assessment of Climate Change and related guidelines. Teck will propose the scope of this assessment in the draft TISG/AIR. Refer to Section 3.5.2 of the DPD.	Sections 5 (Table 5-2) and 3.5.2
Impacts on First Nations' traditional lands	SOE-PUB-05	Impacts to areas of spiritual, cultural, and archaeological significance as well as current use of resources in the project area and those that may utilize the project area (e.g. wildlife) and how this would affect Indigenous communities.	Teck proposes to engage with the participating Indigenous Peoples to understand their perspective and evaluate potential impacts on areas of spiritual, cultural, and archaeological significance as well as current use of resources in the Project area. Teck also proposes that participating Indigenous nations be engaged on the evaluation and selection of measures to mitigate potential adverse impacts on Indigenous communities. Information is provided in Section 6 of the DPD. The approach for assessment of Indigenous interests will be proposed in the draft TISG/AIR.	Sections 5 (Table 5-2), and 6
Effects on human health	SOE-PUB-06	Potential effects to human health due to impacts on the environment, specifically on water and air quality.	Teck acknowledges the concerns related to potential effects on human health and has included this concern in Section 5 of the DPD, and identified the potential interaction between the Project and human health in Section 12. The assessment of the Project will include assessment of human health, with consideration of potential Project impacts on water and air quality. The scope of this assessment will be proposed in the draft TISG/AIR.	Sections 1.2 and 5 (Table 5-2) and 12
Loss of recreational areas	SOE-PUB-07	Potential effects on recreational lands and recreational fishing.	Teck acknowledges the concern related to potential effects on recreational lands and recreational fishing and has included this concern in Section 5 and in the potential interactions table in Section 12 of the DPD. Teck proposes to engage with the public and with potentially affected Indigenous People to understand access concerns and assess mitigation options. Teck proposes that the assessment of the Project assess land use including use of recreational lands and recreational fishing and will propose the scope of this assessment in the draft TISG/AIR.	Sections 5 and 12
Economic stability	SOE-PUB-08	Potential positive effects of the Castle Project to sustain long-term employment and support the economies of the surrounding communities.	Teck acknowledges the feedback related to positive effects of employment and economic support for local communities and has included this issue in Sections 1.2 and 5. Project benefits are also discussed in Section 3.1.8 of the DPD. The intent of the Project is to extend the lifespan, and thus the employment and economic contributions, of the Fording River Operations into the 2070s. Economic and social benefits of the Project will be evaluated during the assessment of the Project. Teck will propose the scope of the socio-economic assessment for the Project in the draft TISG/AIR.	Sections 3.1.8 and Section 5
Sustainability	SOE-PUB-09	Potential positive effects of the Castle Project's proposed reclamation efforts that would be consistent with ongoing efforts for existing mines in the Elk Valley to reclaim and rehabilitate lands impacted by mining. Comments received were regarding Teck's leadership in forward-thinking technologies to mitigate water quality impacts and their commitment to reclamation activities and minimizing overall environmental impacts.	Teck acknowledges the feedback related to positive effects of reclamation and rehabilitation of lands impacted by mining and has included the topic of sustainability in Section 5 of the DPD. Teck is part of ongoing research and development efforts. such as reclamation, water treatment, terrestrial cumulative effects, and biodiversity as outlined in Section 7.1 of the DPD. The assessment of the Project will document potential reclamation and rehabilitation efforts and our contribution to sustainability. The scope of this assessment will be proposed in the draft TISG/AIR.	Sections 5 and 7.1
Project design considerations	SOE-TA-01	Identify and describe the best achievable technology options for water quality source control and treatment (e.g. tailings ponds and clean water diversions), pit shell design, tailings management and storage (e.g. coarser coal technologies), and dust control, and consider new techniques such as long strike mining.	Information about Project options for water quality source control and treatment is outlined in Section 3.3.6 of the DPD. The pit shell is described in Section 3.3.3. Tailings handling is described in Section 3.3.7. Dust control is identified as a mitigations strategy for the Project in Section 12. Mining technique is described in Section 3.3.4.	Sections 3.3.6, 3.3.3, 3.3.7, 12, 3.3.4.
	SOE-TA-02	Request for additional information regarding how the operational sequencing of the Castle Project and use of pre-existing facilities such as waste rock dumps may influence current closure and end land use plans approved for the existing Fording River Operations.	Mine sequencing for the Project is described in Section 3.4. Reclamation planning is described in Section 3.7.	Sections 3.4 and 3.7.

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Project interactions with the biophysical environment	SOE-TA-03	Ground and surface water quality concerns due to an inability to capture and treat increased inputs of contaminants such as selenium and nitrates. Concerns around potential impacts on westslope cutthroat trout, the Fording and Elk Rivers and their tributaries (e.g. Chauncey Creek), and the Lake Koocanusa watershed.	Project plans for water quality source control and treatment is described in Section 3.3.6 of the DPD and Teck has identified the Project's potential to interact with water quality, along with potential mitigations, in Section 12. Development of Project-specific mitigations will consider learnings from regional initiatives such as those described in Section 7.1 .2 of the DPD. The assessment of the Project will consider potential impacts of water quality in the identified water bodies and to other VCs, such as westslope cutthroat trout, that might be affected by changes to water quality. Teck will propose the scope of this assessment in the draft TISG/AIR.	Sections 5,11, 7.1.2
	SOE-TA-04	Cumulative impacts on transboundary watersheds leading to effects on fish, wildlife, and human health.	The concern regarding the Project's potential to affect water quality is identified in Section 1.2 of the DPD, and the potential for the Project to interact with water quality, fish and human health is identified in Section 12. The assessment of the Project would evaluate potential cumulative impacts of water quality on fish, wildlife, and human health where the Project has the potential to contribute cumulatively, and will consider the potential for affects to areas outside of BC and/or Canada. Teck will propose the scope of the water quality assessment, including the plan for assessing potential water quality impacts on other VCs that may be affected by changes in water quality, in the draft TISG/AIR.	Sections 1.2 and 12.
	SOE-TA-05	Concerns around ineffective water quality treatment at existing Teck facilities and cumulative effects in the Elk Valley, including non-compliance with the Elk Valley Water Quality Plan.	Information about Teck's participation in regional studies, initiatives and programs to manage water quality and cumulative effects in the Elk Valley is provided in Section 7.1. The Project's potential impacts to water quality, along with potential mitigations, are identified in Sections 1.2 and 12. Teck will propose the scope of the water quality assessment, including accounting for the current state of the environment, in the draft TISG/AIR.	Section 1.2, 7.1, and 12
	SOE-TA-06	Concerns that discharges from the Project may increase selenium and nitrate concentrations in the Elk River, resulting in transboundary effects on fish and wildlife in Lake Koocanusa, a waterbody located in both Canada and the US, as well as in the Kootenai River that drains the lake and flows through Montana and Idaho.	Concern about the Project's potential to affect water quality has been included in Sections 1.2 of the DPD, and potential interactions between the Project and water quality are identified in Section 12. The assessment of the Project will evaluate potential effects of water quality on fish and wildlife, and will consider the potential for affects to areas outside of BC and/or Canada. Teck will propose the scope of the water quality assessment, including the plan for assessing potential water quality impacts on other VCs that may be affected by changes in water quality, in the draft TISG/AIR.	Sections 1.2 and 12.
	SOE-TA-07	Ground and surface water quantity concerns from water usage at the Castle Project and water seepage, combined with drying effects from climate change.	A description of Project water use is provided in Section 9 of the DPD. The Project's potential impacts to ground and surface water quantity, along with potential mitigations, are identified in Section 12. Teck will propose the scope of the assessment for water quantity, including the plan for how water usage, seepage, and climate change will be addressed, in the draft TISG/AIR.	Sections 9 and 12.
	SOE-TA-08	Concerns around potential impacts on terrestrial wildlife and plant species at risk, including Rocky Mountain bighorn sheep, high elevation grasslands and brushlands, white bark pine and limber pine.	Concerns about potential Project-related impacts to high elevation grasslands and bighorn sheep are identified in Section 1.2 of the DPD. Information on terrestrial cumulative effects and management in the Elk Valley is presented in Section 7.1. The Project's potential impacts on terrestrial resources, along with potential mitigations, is identified in Section 12. The assessment of the Project would include a terrestrial assessment that includes wildlife and vegetation species at risk such as bighorn sheep, grasslands, brushlands and whitebark pine. Limber pine has not been found in the Project area, but it will be included in the assessment if found. Teck plans to identify these species as candidate VCs for assessment of the Project and will propose the scope of the assessment for wildlife and plant species and communities of conservation concern in the draft TISG/AIR.	Sections 5, 7.1 and 12.
	SOE-TA-09	Air quality concerns including increased dust emissions and potential impacts on ecosystem health and function from dust as well as greenhouse gas emissions.	Information about Project air emissions and GHGs is provided in Section 3.5.2, and concerns about greenhouse gas emissions are acknowledged in Section 5 of the DPD. The Project's potential impacts to air quality, including greenhouse gases, along with potential mitigations, is identified in Section 12. Teck will propose the scope of the air quality assessment including the proposed plan for addressing potential air quality, dust impacts and greenhouse gas emissions, in the draft TISG/AIR. In proposing this assessment, Teck is considering the BC EAO's guidance on assessing ecosystem function.	Sections 3.5.2, 5 and 12.

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Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Project interactions with the human environment	SOE-TA-10	Human health concerns resulting from impacts to drinking water due to increased selenium and nitrates, from increased dust emissions, from increased noise, and from impacts to traditional foods due to changes in water and air quality.	Concerns related to human health due to Project-related impacts to water quality and air quality, along with Project actions, are identified in Section 5 of the DPD. The Project's potential to interact with health, along with potential mitigations, is also identified in Section 12. The assessment of the Project would include a human health assessment that considers potential Project-related changes to drinking water, dust, noise, and traditional foods. Teck will propose the scope of the human health assessment in the draft TISG/AIR.	Sections 5 and 12
	SOE-TA-11	Concerns that the project would differentially impact marginalized groups of people due to addition of direct/indirect jobs in the area.	The Project's potential impacts to economic, social and health conditions, along with potential mitigations and enhancements, is identified in Section 12 of the DPD. As indicated in Section 7.4, Teck intends to consider the potential for differential impacts to different groups of people following federal GBA+ guidance. Teck will propose the scope of the economic, social and health assessment in the draft TISG/AIR.	Sections 7.4.1 and 12
	SOE-TA-12	Concerns around maintaining local employment, training opportunities, and local suppliers to ensure sustainable economic development and community wellbeing.	The Project's potential interactions with economic and social conditions, along with potential mitigations and enhancements, is identified in Section 12 of the DPD. The assessment for the Project would include a socio-economic assessment that includes evaluating potential local employment, training opportunities, and local suppliers. Teck will propose the scope of this assessment in the draft TISG/AIR.	Section 12
	SOE-TA-13	Potential impacts on local viewscapes/visual aesthetics from mining at Castle Mountain.	The Project's potential interactions with social conditions (including visual aesthetics), along with potential mitigations and enhancements, is identified in Section 12 of the DPD. The assessment for the Project would include an assessment of social conditions, including consideration of visual aesthetics. Teck will propose the scope of this assessment in the draft TISG/AIR.	Section 12
Permitting considerations	SOE-TA-14	Need for appropriate water quantity data collection, hydrology study, environmental flow need study or update, and monitoring program development to support water licence applications or amendments.	The provincial permits anticipated for the Project are described in Section 4.4. Studies to support the Project assessment are listed in Appendix D. To the extent feasible at this early stage, the studies have been designed to also support permitting information needs. Further discussion on this topic is proposed as part of the regulatory coordination and/or permitting plans to be developed for the assessment of the Project, assuming that a decision is made that the Project proceed through the remaining phases of the assessment process under the BC EAA and IAA.	Section 4.4
	SOE-TA-15	Need to include references to the Public Health Act [SBC 2008] C. 28, the Sewerage System Regulations BC Reg. 191/2018, and the Drinking Water Protection Act [SBC 2001] C. 9.	Reference to the *Public Health Act* has been added to Table 4.4-1 of the DPD. The Project is not expected to require authorization under the *Drinking Water Protection Act* as no change to the drinking water supply for the Project is proposed (Castle workers drinking water to be supplied by bottled water consistent with current practice at FRO).	Section 4.4 (Table 4.4-1)
	SOE-TA-16	Requests for clarification around the connection between existing Fording River Operations and the proposed Castle Project, including the Castle Project's potential implications to existing permits and authorizations at Fording River Operations.	Additional information on the history and status of the Project is presented in Section 3.1.6 of the DPD. A description of mine sequencing, which will improve the understanding of connection between existing FRO operations and the proposed FRX Project, is provided in Section 3.4. Information about the potential permitting process is provided within Section 4.4. Permitting requirements will be addressed later in the assessment process.	Sections 3.1.6, 3.4, 4.4
	SOE-TA-17	Requests that Teck provide greater clarity around how the Castle Project may impact existing facilities and infrastructure and indicate whether revision of approved plans under permits such as Mines Act C-3 may require amendment in the event the Castle Project is approved.	Information about the potential permitting process is provided within Section 4.4, including a list of the existing permits that may require amendment (Table 4.4-1).	Section 4.4 (Table 4.4-1)
Ktunaxa Nation	SOE-KNC-01	Concerns regarding the adverse cultural and environmental impacts of the Castle Project to cause extraordinarily adverse effects on the Ktunaxa Nation and Ktunaxa Indigenous rights.	This concern is reflected in Section 6.1 (see Tables 6.1-1 and 6.1-2) of the DPD, along with Teck's regional and Project actions focused on addressing concerns to Ktunaxa's Indigenous rights and interests. Teck is interested in continuing to work collaboratively with the Ktunaxa Nation Council (KNC) in support the developing the Project in an environmentally and economically responsible manner. Teck notes the use of "extraordinary effects" and is interested in continuing to work with the Ktunaxa Nation to understand their concerns and the potential for effects on their rights and interests. The draft TISG/AIR will propose an approach to the assessment in the draft TISG/AIR. In preparing for the assessment, several receptor locations have been identified by KNC based on existing Ktunaxa use and occupancy information, such as habitation values (camp or cabin), an important trail, and Indigenous rights practice (Morris 2020).	Section 6.1

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Ktunaxa Nation (continued)	SOE-KNC-02	Interests in further information and understanding regarding progress on reclamation and restoration efforts, improvements to water quality, commitments on anticipated environmental performance of the Castle Project, current and future environmental performance of existing mines and a better understanding of the justification of the Castle Project, in relation to existing permits.	Teck has identified this concern in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Table 6.1-2 also relays Teck's regional and Project actions that are focused on addressing this topic. Teck proposes to continue to work with KNC to share information and understanding on these topics as they relate to the Project.	Section 6.1
	SOE-KNC-03	Concerns regarding cumulative effects and existing displacement of Ktunaxa practices, including into the Castle Project area, due to disturbance caused by existing coal mines, mine exploration and other industrial and non-industrial activities. Existing level of displacement intensifies the importance of the Castle Project area for use and stewardship.	Teck has included this information in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Table 6.1-2 also relays Teck's regional and Project actions that are focused on addressing this topic. As noted above, Teck is working collaboratively with the Ktunaxa Nation to understand impacts of the Project on Ktunaxa rights and interests. Teck intends to outline the proposed approach to this assessment in the draft TISG/AIR.	Section 6.1
	SOE-KNC-04	Interests in the unique and regionally important environmental features located within the Castle Project footprint, including critical ungulate and sheep habitat.	Teck has included this concern in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Table 6.1-2 also relays Teck's regional and Project actions that are focused on addressing impacts to ecosystems and plant and animal species of cultural importance and/or conservation concern, and their habitat. This comment has been incorporated into Teck and KNC's discussions of the VCs to be assessed for the Project. Teck will propose the scope of the assessment to terrestrial resources, including wildlife and their habitat, in the draft TISG/AIR.	Section 6.1
	SOE-KNC-05	Concerns and lack of information regarding the Castle Project's potential inconsistency with Ktunaxa's formal and informal planning goals and objectives for the Castle Project area, as the Castle Project would extend the spatial and temporal disruption of Ktunaxa practices in Qukin ʔamakʔis for generations.	Teck has included this concern in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Teck is interested in further discussion with KNC about Ktunaxa's formal and informal planning goals and objectives for the Elk Valley, and how those topics of interest are relevant to regional initiatives and those relevant to the Project. Teck proposes further discussion with KNC on opportunities for integration and alignment on mutually beneficial goals, values and objectives, as information becomes available.	Section 6.1
	SOE-KNC-06	Interests in ecosystems of conservation interest, including wetland, riparian and floodplains ecosystems, avalanche path ecosystems, karst ecosystems, old growth forests and mature forests, grassland and brushland ecosystems and all listed ecological communities.	Teck has included this concern in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Table 6.1-2 also relays Teck's regional and Project actions that are focused on addressing effects to ecosystems and plant and animal species of cultural importance and/or conservation concern, including those identified in the comment. This comment has been incorporated into Teck and KNC's discussions of the VCs to be assessed for the Project, and each has been identified in the list of candidate VCs that Teck will incorporate into the draft TISG/AIR. Teck will propose the scope of the assessment to terrestrial resources, including ecosystems and species of conservation concern, in the draft TISG/AIR.	Section 6.1
	SOE-KNC-07	Interests in the protection and rehabilitation of tributaries, a limited ecosystem with the Elk Valley due to the "valley fill" mining method. Permanent protection of tributaries would include conservation of existing ecological state of aquatic and riparian habitats without any detriment to cultural values or the exercise of rights, title and interests, or degradation of ecosystem structure, function or composition.	Teck has identified this concern in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Table 6.1-2 also relays Teck's regional and Project actions that are focused on addressing this topic. This comment has been incorporated into Teck and KNC's discussions of the VCs to be assessed for the Project. The assessment of the Project will include potential impacts to tributaries, including Chauncey and Kilmarnock creeks. The scope of the assessment of aquatic resources, to be captured through various aquatic VCs, will be proposed in the draft TISG/AIR.	Section 6.1
	SOE-KNC-08	Interests in preferred areas for practice of Ktunaxa rights in the Castle Project footprint, including hunting, habitation and transportation (foot and horse trails) and the importance of these activities in connecting to a broader Ktunaxa cultural landscape that supports deep past, current and future Ktunaxa connections with the land and resources.	Teck has identified this concern in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Table 6.1-2 also relays Teck's regional and Project actions that are focused on addressing this topic. As part of preparing for the assessment, several receptor locations have been identified by KNC based on existing Ktunaxa use and occupancy information, such as habitation values (camp or cabin), an important trail, and Indigenous rights practice (Morris 2020). Teck proposes to outline the approach for conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.1

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	Comment ID	Comment Summary	Proponent Response	Location in the DPD
Ktunaxa Nation (continued)	SOE-KNC-09	Interests in water, an overarching concern for the Ktunaxa, as water influences all aspects of Ktunaxa assessment including social, education and employment, traditional knowledge and language, economic and land and resources and Ktunaxa Nation Indigenous rights and traditions rely on water and its flow, which are central to life and sacred. Interests and concerns regarding water quality, westslope cutthroat trout and fish habitat.	Teck has identified the generally identified the concern about water, including water quality and westslope cutthroat trout and fish habitat, in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Table 6.1-2 also relays Teck's regional and Project actions that are focused on addressing this topic. As well, this comment has been incorporated into discussions between Teck and the KNC regarding the VCs to be assessed for the Project. As part of these discussions, KNC has offered to share a their proposed framework for assessing impacts to water from a Ktunaxa perspective.	Section 6.1
	SOE-KNC-10	Interests in birds, including the Woodpecker Guild, which is culturally important based on Ktunaxa creation story and an important keystone species (8 species), and the Migratory Raptor Guild, which has specific cultural importance tied to Qukin ?amak?is, and the American dipper, which has a strong link between aquatic-riparian health and wildlife-habitat impact pathways.	Teck has included the concerns about birds, including woodpeckers, migratory raptors and American dipper, in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Table 6.1-2 also relays Teck's regional and Project actions that are focused on addressing this topic. As well, this comment has been incorporated into discussions between Teck and the KNC regarding the VCs to be assessed for the Project and each of the identified species/guilds will be included in the candidate VCs list that Teck will include in the draft TISG/AIR. Teck will propose the scope of the assessment to terrestrial resources, including the assessment of the birds/bird guilds, in the draft TISG/AIR.	Section 6.1
	SOE-KNC-11	Interests in wildlife, including moose, as the Castle Project area is important to maintain connectivity with populations in Alberta and to maintain seasonal movements, and Rocky Mountain bighorn sheep and elk, as migratory movement corridors for these species are critically important as are seasonal habitats.	Teck has identified the concerns about wildlife and their habitat and movement corridors in Section 6.1 (Tables 6.1-1 and 6.1-2) of the DPD. Table 6.1-2 also relays Teck's regional and Project actions that are focused on addressing this topic. As well, this comment has been incorporated into discussions between Teck and the KNC regarding the VCs to be assessed for the Project. Teck will propose the scope of the assessment for terrestrial resources, including assessment of the Projects effects on wildlife movement and movement corridors for VCs to be assessed for the Project, in the draft TISG/AIR.	Section 6.1
Kainai (Blood Tribe)	SOE-Kainai-01	Concerns regarding direct, indirect and cumulative impacts on the ability to exercise Aboriginal rights and traditional land uses in and around the Project area, along with direct, indirect and cumulative on the ability to practice its Treaty rights within Alberta.	Teck acknowledges the interests expressed by the Kainai Nation and has included this information in Section 6.6 of the DPD. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck proposes to outline the approach for conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-02	Concerns regarding the Castle Project’s interference with legal, spiritual, and cultural practices, which form an integral part of governance.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential impacts to legal, spiritual and cultural practices, as identified in Section 6.6 of the DPD. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-03	Concerns regarding the Castle Project’s direct, indirect and cumulative impacts, on Kainai’s sense of place, way of life, and ability to pass down culture from generation to generation.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential impacts to Kainai's sense of place, way of life, and ability to pass down culture from generation to generation, as identified in Section 6.6 of the DPD. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-04	Concerns regarding the Projects impact on Kainai’s ability to harvest plants for food, medicinal and ceremonial purposes, including stems, leaves, roots and berries.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential impacts to on Kainai’s ability to harvest plants for food, medicinal and ceremonial purposes, as identified in Section 6.6 of the DPD. The assessment of the Project will consider potential effects to ecosystems and plant species. Teck proposes to engage with the Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-05	Concerns regarding the Castle Project’s impacts to camping and gathering sites of cultural, spiritual and historic importance, which are important for the transmission of traditional culture, knowledge and law.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential impacts to camping and gathering sites, as identified in Section 6.6 of the DPD. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Kainai (Blood Tribe) (continued)	SOE-Kainai-06	Concerns regarding potential impacts to uses of a parcel of land near Coleman, Alberta, about 60 km from the Project, which is used as a base to support Kainai members' exercise of Treaty rights and traditional land uses in the Crowsnest Pass region.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential impacts too uses of a parcel of land near Coleman. Teck anticipates that there will be no direct Project impacts on the identified parcel of land. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-07	Concerns regarding the Project's impacts to Kainai's hunting rights, including hunting practices of elk, mule deer, bighorn sheep (a species of cultural importance), moose and occasionally bear.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential impacts to Kainai's hunting rights, as identified in Section 6.6 of the DPD. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-08	Concerns regarding the Project's impacts to environmentally sensitive habitats, including westslope cutthroat trout habitat.	Teck acknowledges the interest expressed by the Kainai regarding potential impacts to environmentally sensitive habitats, including westslope cutthroat trout habitat, as identified in Section 6.6 of the DPD. The assessment of the Project will also consider effects to environmentally sensitive areas, including westslope cutthroat habitat, as identified in Section 12. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-09	Concerns regarding the Project's potential impacts to Bighorn sheep populations, as the project location contains the highest density of sheep within the region. The Project may impact Bighorn sheep wintering range and some of the bighorn sheep that rely on winter range in the Project area may travel into Alberta, thus impacting Alberta populations. Impacts to bighorn sheep may have corresponding impacts on treaty right to hunt bighorn sheep. Kainai has interests in in participating in studying impacts to bighorn sheep.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential impacts to bighorn sheep, as identified in Section 6.6 of the DPD. The assessment of the Project will consider effects to wildlife, including bighorn sheep and their habitat, as identified in Section 12. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-10	Concerns regarding the Project increasing disturbance of land in Kainai's traditional territory which could result in reduced harvesting areas and removal of plants and wildlife. This area is one of the few remaining areas within Kainai's territory that hasn't been taken up or disturbed – it is thus one of the few remaining areas where Kainai can continue to practice its rights.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential impacts to Kainai's traditional territory and associated reduction in harvesting areas, as identified in Section 6.6 of the DPD. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-11	Interests in protection of wildlife habitat, migratory birds and fish and fish habitat.	Teck acknowledges the interest expressed by the Kainai regarding protection of wildlife habitat, migratory birds, fish and fish habitat, as identified in Section 6.6 of the DPD. The assessment of the Project will consider effects to wildlife habitat, migratory birds and fish and fish habitat, as identified in Section 12. Teck proposes to also engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.6
	SOE-Kainai-12	Concerns regarding the Project's impacts on water and air quality. In particular, the Project may contribute to water contamination, particularly as a result of selenium. These impacts may in turn decrease Kainai's confidence in the resources in and around the area that support the practice of its rights.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential Project impacts on water and air quality, as identified in Section 6.6 of the DPD. The assessment of the Project will consider effects to water and air quality, as identified in Sections 12. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Sections 1.2, 6.6, 12

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Kainai (Blood Tribe) (continued)	SOE-Kainai-13	Concerns with respect to the Projects contribution to existing and future cumulative effects, as the Castle Project is one of six new mine projects being considered in addition to the five already existing mines.	Teck acknowledges the interest expressed by the Kainai Nation regarding potential Project cumulative impacts as identified in Section 6.6 of the DPD. The assessment of the Project will consider cumulative effects as identified in Section 12. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Sections 1.2, 6.6, 12
	SOE-Kainai-14	Interests in further understanding of the Castle Project's impacts to facilitate informed decision making, including collecting information on:· Traditional land uses use of the Castle Project area;· Conditions and resources needed to support practice of rights;· Impacts on water quality in and around the Castle Project area;· Impacts of the Castle Project on wildlife, particularly, on bighorn sheep;· Assessment of the impacts of the Castle Project on Kainai's rights; and· The ways in which Teck's existing mines have already impacted wildlife populations, water quality and other resources in the surrounding area; through existing monitoring data with respect to the impact Teck's current operations are having on these resources to help inform understanding of the impacts of the Castle Project.	Teck acknowledges the interest expressed by the Kainai regarding further understanding of potential Project impacts through collection of information. Teck proposes to engage with Kainai Nation, the BC EAO and the IAAC to better understand Kainai's interests and how they will interact with the Project and assessment process being undertaken for the Project.	Section 1.2, 6.6
Siksika Nation	SOE-Siksika-01	Concerns regarding direct, indirect and cumulative impacts on the ability to exercise Aboriginal rights and traditional land uses in and around the Project area, along with direct, indirect and cumulative on the ability to practice its Treaty rights within Alberta.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts to ability to exercise Aboriginal rights and traditional land uses in and around the Project area and Alberta, as identified in Section 6.5 of the DPD. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5
	SOE-Siksika-02	Concerns regarding interference with Siksika legal, spiritual, and cultural practices, which form an integral part of Siksika governance.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts to legal, spiritual and cultural practices, as identified in Section 6.5 of the DPD. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5
	SOE-Siksika-03	Concerns regarding the Castle Project's direct, indirect and cumulative impacts, on Siksika's sense of place, way of life, and ability to pass down culture from generation to generation.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts to Siksika's sense of place, way of life, and ability to pass down culture from generation to generation, as identified in Section 6.5 of the DPD. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5
	SOE-Siksika-04	Concerns regarding the Projects impact on Siksika's ability to harvest plants for food, medicinal and ceremonial purposes, including stems, leaves, roots and berries. This includes the materials that are utilized in the Horn Society, and Beaver Bundle and the Thunder Medicine Pipe bundle, and other Siksika Societies.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts to on Siksika's ability to harvest plants for food, medicinal and ceremonial purposes, as identified in Section 6.5 of the DPD. The assessment of the Project will consider potential effects to ecosystems and plant species. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5
	SOE-Siksika-05	Concerns regarding the Castle Project's impacts on Siksika's ability to collect ochre, and 7th paint – materials critical for Siksika ceremonial practices.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts to on Siksika's ability to collect ochre, and 7th paint, as identified in Section 6.5 of the DPD. The assessment of the Project will consider potential effects to ecosystems and plant species, with consideration of the identified plant materials. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	Comment ID	Comment Summary	Proponent Response	Location in the DPD
Siksika Nation (continued)	SOE-Siksika-06	Concerns regarding the Castle Project's impacts to camping and gathering sites of cultural, spiritual and historic importance, which are important for the transmission of traditional culture, knowledge and law.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts to camping and gathering sites, as identified in Section 6.5 of the DPD. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. The overall approach to conducting the Indigenous interests assessment is presented in the draft TISG/AIR.	Section 6.5
	SOE-Siksika-07	Concerns regarding potential impacts to uses of a parcel of land near Coleman, Alberta, about 60 km from the Castle Project, which is used as a base to support its members' exercise of Treaty and Aboriginal rights and traditional land uses in the Crowsnest Pass and Kootenay region.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts too uses of a parcel of land near Coleman. Teck anticipates that there will be no direct Project impacts on the identified parcel of land. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5
	SOE-Siksika-08	Concerns regarding the Castle Project's impacts to Siksika's hunting rights, including hunting practices of elk, mule deer, bighorn sheep (a species of cultural importance), moose and occasionally bear.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts to Siksika's hunting rights, as identified in Section 6.5 of the DPD. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5
	SOE-Siksika-09	Concerns regarding the Castle Project increasing disturbance of land in Siksika Nation's traditional territory, which could result in reduced harvesting areas and removal of plants and wildlife. This area is one of the few remaining areas within Siksika's territory that hasn't been taken up or disturbed – it is thus one of the few remaining areas where Siksika can continue to practice its rights.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts to Siksika's traditional territory and associated reduction in harvesting areas, as identified in Section 6.5 of the DPD. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5
	SOE-Siksika-10	Concerns regarding impacts to environmentally sensitive habitats, including westslope cutthroat trout habitat.	Teck acknowledges the interest expressed by the Siksika regarding potential impacts to environmentally sensitive habitats, including westslope cutthroat trout habitat, as identified in Section 6.5 of the DPD. The assessment of the Project will also consider effects to environmentally sensitive areas, including westslope cutthroat habitat, as identified in Section 12. Teck proposes to also engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5, 12
	SOE-Siksika-11	Interests in protection of wildlife habitat, migratory birds and fish and fish habitat.	Teck acknowledges the interest expressed by the Siksika regarding protection of wildlife habitat, migratory birds, fish and fish habitat, as identified in Section 6.5 of the DPD. The assessment of the Project will consider effects to wildlife habitat, migratory birds and fish and fish habitat, as identified in Section 12. Teck proposes to also engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.5, 12
	SOE-Siksika-12	Concerns regarding the Castle Project's impacts to bighorn sheep populations, as the project location contains the highest density of sheep within the region. The Castle Project may impact bighorn sheep wintering range and some of the bighorn sheep relying on winter range in the Castle Project area may travel into Alberta thus impacting Alberta populations. Impacts to bighorn sheep may have corresponding impacts on Siksika's treaty right to hunt bighorn sheep. Siksika has an interest in participating in studying impacts to bighorn sheep wintering range.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential impacts to bighorn sheep, as identified in Section 6.5 of the DPD. The assessment of the Project will consider effects to wildlife, including bighorn sheep and their habitat, as identified in Section 12 and 1.2. Teck proposes to also engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 1.2,6.5, 12

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Siksika Nation (continued)	SOE-Siksika-13	Concerns regarding the Projects impacts on water and air quality. In particular, the Castle Project may contribute to water contamination, particularly as a result of selenium. These impacts may in turn decrease Siksika's confidence in the resources in and around the area that support its practice of its rights.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential Project impacts on water and air quality, as identified in Section 6.5 of the DPD. The assessment of the Project will consider effects to water and air quality, as identified in Sections 12 and 1.2. Teck proposes to also engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Sections 1.2, 6.5, 12
	SOE-Siksika-14	Concerns with respect to the Projects contribution to existing and future cumulative effects as the Castle Project is one of six new mine projects being considered in addition to the five already existing mines.	Teck acknowledges the interest expressed by the Siksika Nation regarding potential Project cumulative impacts as identified in Section 6.5 of the DPD. The assessment of the Project will consider cumulative effects as identified in Section 12 and 1.2. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Sections 1.2, 6.5, 12
	SOE-Siksika-15	Interests in further understanding of the Castle Project's impacts to facilitate informed decision making, including collecting information on: · Traditional land uses use of the Castle Project Area; · Conditions and resources needed to support practice of rights; · Impacts of the Castle Project on water quality in and around the Castle Project area; · Impacts of the Castle Project on wildlife, particularly, on bighorn sheep; · Assessment of the impacts of the Project on Siksika's rights; and · The ways in which Teck's existing mines have already impacted wildlife populations, water quality and other resources in the surrounding area; through existing monitoring data with respect to the impact Teck's current operations are having on these resources to help inform understanding of the impacts of the Castle Project.	Teck acknowledges the interest expressed by the Siksika regarding further understanding of potential Project impacts through collection of information. Teck proposes to engage with Siksika Nation, the BC EAO and the IAAC to better understand Siksika's interests and how they will interact with the Project and assessment process being undertaken for the Project, including ways to collect relevant information.	Section 1.2, 6.5
Piikani Nation	SOE-Piikani-01	Interests in high elevation grasslands, which are home to a range of species of cultural importance, sacred sites and subsistence activities.	Teck acknowledges the interest expressed by Piikani Nation regarding high elevation grasslands, culturally important species, sacred sites and subsistence activities, as identified in Section 6.4 of the DPD. Information about high elevation grasslands, including Teck's regional and Project actions, is also presented in Sections 7.1 and 7.3, and the Project's potential interactions with the environment, along with potential mitigations is presented in Section 12. The assessment of the Project will evaluate the Project's potential effects to grasslands and other species. Teck proposes to engage with the Piikani Nation, the BC EAO and the IAAC to better understand Piikani's interests and how they interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Sections 6.4, 7.1, 7.3, 12
	SOE-Piikani-02	Interests in plants and vegetation harvested for medicinal, ceremonial, and other cultural purposes, including saskatoon, soopolallie (buffaloberry), common juniper, birch, yarrow, lodgepole pine.	Teck acknowledges the interest expressed by Piikani Nation regarding harvest of plants and vegetation for medicinal, ceremonial, and other cultural practices, as identified in Section 6.4 of the DPD. Information about plants and ecosystems in the Project area is presented in Section 7.3 and the Project's potential interactions with the environment, along with potential mitigations, is presented in Section 12. The assessment of the Project will evaluate the Project's potential effects to ecosystems and vegetation. The scope of this assessment will be proposed in the draft TISG/AIR.	Sections 6.4, 7.3, 11
	SOE-Piikani-03	Concerns regarding effects of selenium on fish populations in the Elk River watershed as a result of coal mining in the region.	Teck acknowledges the interest expressed by Piikani Nation regarding water quality and fish, as identified in Section 6.4 of the DPD. Also refer to Section 1.2. The Project's potential impacts to water quality and fish, along with potential mitigations, is presented in Section 12. The assessment of the Project will evaluate the Project's potential effects to water quality and fish. The scope of this assessment will be proposed in the draft TISG/AIR.	Sections 6.4, 12

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Piikani Nation (continued)	SOE-Piikani-04	Interests in grizzly bear, which have significance within spiritual and ceremonial teachings, songs, ceremonies, medicines, and stories, as evidenced by the Grizzly Bear Treaty (2016), initiated by Piikani Nation and led by Chief Stan Grier, which intends to protect and restore Grizzly Bear habitat across North America.	Teck acknowledges the interest expressed by Piikani Nation regarding grizzly bear, as identified in Section 6.4 of the DPD. The Project's potential impacts to terrestrial resources including wildlife, along with potential mitigations, is presented in Section 12. The assessment of the Project will evaluate the Project's potential effects to grizzly bear as a VC for the Project. The scope of this assessment will be proposed in the draft TISG/AIR.	Section 6.4, 11
	SOE-Piikani-05	Interests in the potential for archaeological resources in the project area.	Teck acknowledges the interest expressed by Piikani Nation regarding potential impacts to archaeological resources in the Project area, as identified in Section 6.4 of the DPD. The assessment to be conducted for the Project would include evaluation of potential impacts to archaeological resources. The proposed scope of this assessment will be presented in the draft TISG/AIR.	Section 6.4, 11
	SOE-Piikani-06	Interests in undertaking a traditional use study to reaffirm Piikani ties to ancestral lands and identify mitigations which may reduce the Castle Project's impacts on Piikani Nation's rights and interests.	Teck acknowledges the Piikani Nation interest in a traditional use study. Teck proposes to engage with the Piikani Nation, the BC EAO and the IAAC to better understand Piikani's interests and how they interact with the Project and assessment process being undertaken for the Project, including what studies might be appropriate.	Section 6.4
	SOE-Piikani-07	Concerns regarding the Castle Project's potential to further erode access to Piikani ancestral territories for spiritual, cultural and subsistence uses.	Teck acknowledges the feedback related to access to locations for traditional land use. Teck proposes to hold engagements specific to the Project to understand how to mitigate potential impacts to access and/or identify possible alternatives. Teck will engage with the Piikani Nation, the BC EAO and the IAAC to better understand Piikani's interests and how they interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.4
Shuswap Indian Band	SOE-Shuswap-01	Concerns regarding further resource development limiting transmission of Indigenous knowledge and practices across generations.	Teck acknowledges the interest expressed by Shuswap Indian Band regarding potential impacts to transmission of Indigenous knowledge and practices. This concern has been identified in Section 6.2 of the DPD. Teck proposes to engage with Shuswap Indian Band, the BC EAO and the IAAC to better understand Shuswap's interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.2
	SOE-Shuswap-02	Concerns regarding potential impacts to archaeological sites and artifact gathering by band members. Interests in participating in any archaeological monitoring work conducted in the project area.	Teck acknowledges the interest expressed by Shuswap Indian Band regarding potential impacts to archaeological sites and transmission of Indigenous knowledge and practices. This concern has been identified in Section 6.2 of the DPD. The assessment to be conducted for the Project would include evaluation of potential impacts to archeological resources. Teck will propose the scope of this assessment in the draft TISG/AIR. Teck proposes to continue to engage with the Shuswap Indian Band about potential participation in relevant future archaeological field work conducted in the Project area.	Section 6.2
	SOE-Shuswap-03	Interests in continued access to areas of key cultural and spiritual significance including trails, travel corridors, waterways, mountains, and burial sites.	Teck acknowledges the feedback provided by Shuswap Indian Band related to access to locations for traditional land use and access, and this concern has been identified in Section 6.2 of the DPD. Teck proposes to evaluate potential impacts to land use including traditional land use in the Indigenous interests assessment. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.2
	SOE-Shuswap-04	Concerns regarding potential impacts to subsistence harvesting in and surrounding the project area, including fishing, plant gathering, hunting and mineral gathering from changes to surface and ground water quality, increased traffic and habitat destruction.	Teck acknowledges the interest expressed by Shuswap Indian Band regarding potential impacts to subsistence harvesting in the Project area, and this concern has been identified in Section 6.2 of the DPD. Teck proposes to evaluate potential impacts to land use including traditional land use in the Indigenous interests assessment. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.2
	SOE-Shuswap-05	Concerns regarding fish and fish habitat and water quality in the Elk River and the White River and an interest in participating in water quality and fish monitoring work conducted in the project area.	Teck acknowledges the interest expressed by Shuswap Indian Band regarding fish and fish habitat and water quality in the Elk River and the White River. Teck notes that due to the location of the White River, there are no anticipated direct Project impacts to that river system. The identified concern has been identified in Section 6.2 of the DPD. Information about the Project's potential effects on fish and fish habitat and water quality, along with potential mitigations, is also provided in Section 12. The assessment of the Project would evaluate potential effects on fish and fish habitat and water quality. The proposed scope of this assessment will be presented in the draft TISG/AIR.	Section 6.2, 12

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Shuswap Indian Band (continued)	SOE-Shuswap-06	Concerns regarding indirect impacts, including cumulative effects to soil, wildlife, plants, and water.	Teck acknowledges the interest expressed by Shuswap Indian Band regarding cumulative effects. The identified concern has been identified in Section 6.2 of the DPD. Section 12 also identifies the potential Project impacts and mitigations. The assessment of the Project would evaluate potential cumulative effects, consistent with provincial and federal guidance. The proposed scope of the cumulative effects assessment will be presented in the draft TISG/AIR.	Section 6.2, 12
	SOE-Shuswap-07	Interests in plant species of importance including Labrador tea, *sxúsem* (soapberries), glacier lilies (wild sweet potato), Devil's club, willow, and Canby lovage; and animal species of importance harvested by band members in the project area, including elk, deer, and fur bearing species.	Teck acknowledges that species of interest to the Shuswap Indian Band may be in the Project area. The identified concern has been identified in Section 6.2 of the DPD. Information about the Project's potential effects on terrestrial resources, along with potential mitigations, is also provided in Section 12. The assessment of the Project would evaluate potential effects on ecosystems, plants and animals. The proposed scope of this assessment will be presented in the draft TISG/AIR.	Section 6.2, 12
	SOE-Shuswap-08	Interests in socio-economic factors such as employment and economic opportunities.	Teck acknowledges the identified concern and has identified it in Section 6.2 of the DPD. Information about potential benefits of the FRX Project to the local communities, including Indigenous communities, regional, and national economies is provided in Sections 3.1.2, 3.1.8, and 12. Teck will engage with the Shuswap Indian Band, the BC EAO and IAAC to assess Indigenous interests that may be affected by the Project, including employment and economic opportunities for Shuswap Indian Band members. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Sections 3.1.2, 3.1.8, 12
	SOE-Shuswap-09	Concerns regarding impacts to human and ecosystem health due to potential changes in air quality and noise.	Teck acknowledges the identified concern and has identified it in Section 6.2 of the DPD. Information about Project air emissions is provided in Section 3.5.2; the Projects potential impacts to air quality and noise, along with potential mitigations, is also addressed in Section 12. The assessment of the Project would evaluate potential impacts of air quality and noise on human and ecosystem health. The proposed scope of this assessment will be presented in the draft TISG/AIR.	Section 3.5.2, 6.2, 12
	SOE-Shuswap-10	Interests in undertaking a traditional land use study.	Teck acknowledges the Shuswap Indian Band interest in a collecting data and undertaking a traditional land use study (refer to Section 6.2 of the DPD). Teck proposes to engage with the Shuswap Indian Band, the BC EAO and IAAC to assess Indigenous interests that may be affected by the Project and assessment process being undertaken for the Project.	Section 6.2
Stoney Nakoda Nation	SOE-StoneyNakoda-01	Interests in environmental stewardship, natural resource management and monitoring of their traditional lands.	Teck acknowledges the interest expressed by Stoney Nakoda Nation regarding environmental stewardship, natural resource management and monitoring of their traditional lands, as identified in Section 6.3 of the DPD. Teck proposes to engage with Stoney Nakoda Nation, the BC EAO and the IAAC to better understand this interest and how it interacts with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.3
	SOE-StoneyNakoda-02	Interests in documentation and preservation of traditional place names and oral narrative within southeastern BC.	Teck acknowledges the interest expressed by Stoney Nakoda Nation to document and preserve traditional place names and oral narrative within southeastern BC, as identified in Section 6.3 of the DPD. Teck proposes to engage with Stoney Nakoda Nation, the BC EAO and the IAAC to better understand this interest and how it interacts with the Project and assessment process being undertaken for the Project.	Section 6.3
	SOE-StoneyNakoda-03	Interests in participating in any Environmental Monitoring Committee established for the Elk Valley Water Quality Plan.	Teck acknowledges the interest expressed by Stoney Nakoda Nation to participate in the Environmental Monitoring Committee, as identified in Section 6.3. of the DPD. As discussed in Section 7.1.2, membership on that committee is proscribed by the permit and would require an amendment by the Ministry of Environment to change the membership.	Section 6.3, 7.1.2
	SOE-StoneyNakoda-04	Interests in ensuring traditional knowledge, cultural perspectives, and experiential components of the land are considered in the assessment of the Project.	Teck acknowledges the interest expressed by Stoney Nakoda Nation's interests, as identified in Section 6.3 of the DPD. Teck proposes to engage with Stoney Nakoda Nation, the BC EAO and the IAAC to better understand these interests and how they interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.3

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
	SOE-StoneyNakoda-05	Interests in the continued access to locations where hunting, fishing, harvesting, ceremonial and cultural practices occur and the persistence of these activities, traditions, and customs.	Teck acknowledges the feedback related to access to locations for traditional land use, as identified in Section 6.3 of the DPD. Teck proposes to engage with Stoney Nakoda Nation, the BC EAO and the IAAC to better understand these interests and how they will interact with the Project and assessment process being undertaken for the Project. Teck will outline a proposed approach to conducting the Indigenous interests assessment in the draft TISG/AIR.	Section 6.3
	SOE-StoneyNakoda-06	Interests in conducting a traditional use/traditional knowledge study for the project area to identify Stoney Nakoda specific values, knowledge and interests related to the project area and required mitigations and measures to reduce impacts to Stoney Nakoda rights, uses and interests.	Teck acknowledges the Stoney Nakoda Nation interest in a traditional use/traditional knowledge study. Teck proposes to engage with Stoney Nakoda Nation, the BC EAO and the IAAC to better understand these interests and how they will interact with the Project and assessment process being undertaken for the Project.	Section 6.3
Water quality (e.g., selenium) impacts on the biophysical environment and on human health	SOE-Summary-01	Expand on content in the Initial Project Description around potential water quality impacts based on feedback received during Early Engagement and indicate how these potential impacts may be assessed to inform the Application Information Requirements, including reference to ongoing work to mitigate water quality impacts.	Additional information about water quality and Teck's initiatives to manage water quality, including ground and surface water quantity and quality, is provided in Sections 1.2, 5, (refer to Table 5-2), 6 and 7.1 of the DPD. Description of the Project's proposed approach for water quality source control and treatment is included in Section 3.3.6, with water management planning for the Project further described in Section 3.4.4. The Project's potential impacts to water quality, along with potential mitigations, are identified in Section 12. Development of Project-specific infrastructure will consider learnings from regional initiatives such as those outlined in Section 7.1. The assessment of the Project will evaluate potential impacts of water quality. Teck will propose the scope of the water quality assessment, including assessment of other VCs that may be affected by changes in water quality, in the draft TISG/AIR.	Sections 1.2, 5, 6, 7.1 and 12.
Impacts on species at risk, including westslope cutthroat trout, Rocky Mountain bighorn sheep, high elevation grasslands, and white bark pine	SOE-Summary-02	Include specific reference to potential impacts on westslope cutthroat trout, Rocky Mountain bighorn sheep, high elevation grasslands, and white bark pine to clearly indicate how the project design considered these impacts and mitigates them. Provide additional information regarding baseline studies to inform the Application Information Requirements to assess these impacts.	The DPD outlines Teck's participation in regional initiatives, plans and programs dedicated to evaluating and managing impacts to the identified VCs (Sections 7.1.2 and 7.1.3) and includes specific reference to potential Project effects to westslope cutthroat trout, bighorn sheep, grasslands and whitebark pine in Sections 1.2, 5, 6 and 12. Appendix D also includes a list of ongoing studies to support our understanding of these important VCs and their habitats. Relevant information from these studies will be compiled in existing information reports to be included in the assessment application. Teck will propose the scope of the assessment, including assessment of ecosystems, communities and species of conservation concern such as those listed, in the draft TISG/AIR.	Sections 1.2 5,6,7.1.2, 7.1.3 and 12
Cumulative effects on water quality, air quality, soil, terrestrial wildlife and ecosystems and the transmission of Indigenous Knowledge and cultural practices	SOE-Summary-03	Include reference to potential cumulative effects on water quality and terrestrial wildlife and ecosystems and additional information to inform the Application Information Requirements to assess these impacts.	Reference to Project potential cumulative effects on water quality and terrestrial wildlife and ecosystems is provided in Sections 1.2,5,6 and 12. The assessment of the Project will evaluate potential cumulative impacts to water quality and terrestrial wildlife and ecosystems. Teck will propose the scope of the scope of the cumulative effects assessment, including the plan for assessing potential water quality impacts and other VCs, in the draft TISG/AIR.	Sections 1.2, 5, 6 and 12.1
Importance of mining to the economy	SOE-Summary-04	Expand on content in the Initial Project Description around the potential benefits of the Castle Project to the local, regional, and national economies.	A description of potential benefits of the FRX Project to the local, regional, and national economies is provided in Sections 3.1.2, and 3.1.8. Potential interactions between the Project and the local, regional and national economies is also indicated in Section 12. Teck will propose the scope of the socio-economic effects assessment, including potential benefits, in the draft TISG/AIR.	Sections 3.1.2, 3.1.8, and 12.1

Summary of Engagement			Proponent Response	
Comment Category or Commenting Group	**Comment ID**	**Comment Summary**	**Proponent Response**	**Location in the DPD**
Impacts to traditional and current land use practices for ceremonial, cultural, medicinal, harvesting and subsistence purposes, involving plants and vegetation; wildlife and wildlife habitat; fish and fish habitat; and specific sites of archaeological and ceremonial importance.	SOE-Summary-05	Ensure understanding of the location of where these practices occur in relation of the Castle Project area, through engagement with participating Indigenous nations.	Teck is committed to engagement with participating Indigenous Peoples, in collaboration with the BC EAO and the IAAC, to develop understanding of the location of traditional practices in relation to the Project. While this engagement will continue throughout the assessment process, it will be of value if traditional and community knowledge is made available for development of the AIRs/TISGs during process planning.	Section 6, Section 12.1
	SOE-Summary-06	Provide information on how these practices, and the locations and sites they occur, would be assessed to inform the Application Information Requirements. Include how the Castle Project's potential impacts on these practices will be assessed, based on discussions with participating Indigenous nations.		
	SOE-Summary-07	Describe how traditional knowledge, cultural perspectives, and experiential components will be incorporated into the Application Information Requirements.		

AIR = Application Information Requirements; BC = British Columbia; BC EAA = British Columbia Environmental Assessment Act; BC EAO = British Columbia Environmental Assessment Office; DPD = Detailed Project Description; EVWQP = Elk Valley Water Quality Plan; FRO = Fording River Operations; FRX = Fording River Extension; GBA+ = Gender-based Analysis Plus; GHGs = Greenhouse gases; IAA = Impact Assessment Act; IAAC = Impact Assessment Agency of Canada; KNC = Ktunaxa Nation Council; PUB = Public; SOE = Summary of Engagement; TAC = Technical Advisory Committee; TISG = Tailored Impact Statement Guidelines; VCs = Valued Components; WCT = Westslope cutthroat trout

Appendix B Concordance Table for the Summary of Issues Identified through the Federal *Impact Assessment Act*

Appendix B - Summary of Issues

Element	Comment ID	Issue	Proponent Response	Location in the DPD
Air Quality	SOI-01	• Effects to air quality and impacts of those effects on human health and recreation sites	Concerns related to effects to air quality as a result of the Project, and the potential resulting changes to human health and/or recreation sites are identified in the DPD (Sections 1.2, 5, and 6). The potential interaction between the Project and these aspects of the physical and human environment are also identified in Section 12.1 (Table 12-1). The scope of the air quality and the assessment of other valued components (VCs) that may be affected by changes to air quality will be proposed in the draft Tailored Impact Statement Guidelines/ Application Information Requirements (TISG/AIR).	• Section 1.2.1 (see Comment Category 3) • Section 1.2.2 (see Comment Category 4 & 5) • Section 5 (e.g., Table 5-2, Effects on Human Health row) • Section 6 (e.g., Tables 6.1-2 – Indigenous title, rights and interests row, Section 6.2 – bullet on air quality and noise impacts) • Section 12.1 (Table 12-1 – Air Quality, Noise and Vibrations row, Social land use and visual aesthetic rows, Human health and well-being row)
	SOI-02	• Effects to the biophysical environment, and ecosystem health and function resulting in impacts to air quality from dust and greenhouse gas emissions	Concerns related to changes in dust, air quality and greenhouse gas emissions and the potential for such changes to affect the biophysical environment and ecosystem condition are identified in the DPD (e.g., Section 1.2, 5 and 6). The potential interaction between the Project and air quality and greenhouse gases are also identified in Section 12.1 (Table 12-1). The scope of the air quality and the assessment of other VCs that may be affected by changes to air quality will be proposed in the draft TISG/AIR.	• Section 1.2.1 (see Comment Category 3) • Sections 1.2.2 (see Comment Category 5) • Section 5 (Table 5-2) • Tables 6.1-2 – see Indigenous title, rights and interests bullet • Section 6.2 – see bullet on air quality and noise impacts • Section 12.1 (Table 12-1 – see Air Quality, Noise and Vibrations row)
Aquatic Resources	SOI-03	• Effects to aquatic species, specifically reductions in the abundance of certain species (for example, mayflies) and increased tissue selenium and nitrate concentrations	Concerns related to the potential for the Project to interact with aquatic resources due to changes in water quality or other stressors are identified in the DPD (Sections 1.2, 5 and 6). The potential interaction between the Project and these aspects of the physical and biological environment are also identified in Section 12.1 (Table 12-1). The scope of the water quality assessment and the assessment of other VCs that may be affected by changes to water quality, including the potential for changes in abundance of fish and benthic invertebrates, will be proposed in the draft TISG/AIR.	• Section 1.2.1 (see Comment Category 1) • Section 1.2.2 (see Comment Category 2 & 3) • Section 5 (e.g., Table 5-2, Water Quality row, Fish and Fish Habitat row) • Section 6.1 (Table 6.1-2 Water row, Fish and Fish Habitat row) • Section 6.2 – water quality bullet • Section 6.4 – fish populations bullet • Section 6.5 aquatic wildlife bullets • Section 6.6 aquatic wildlife bullet, protection of wildlife bullet • Section 6.7 water quality bullet • Section 6.8 aquatic wildlife bullet • Section 12 (Table 12-1 Aquatic Resources row)

Element	Comment ID	Issue	Proponent Response	Location in the DPD
Climate Change and GHG Emissions	SOI-04	• Impacts of upstream and downstream greenhouse gas (GHG) emissions, particularly carbon dioxide and methane emissions	Refer to SOI-02. Teck is committed to carbon neutrality across its operations by 2050, which aligns with provincial and federal greenhouse gas emission (GHG) reduction targets. The assessment of the Project will evaluate the Project's potential greenhouse gas emissions consistent with the Strategic Assessment of Climate Change. Teck will propose the scope of this assessment in the draft TISG/AIR. Refer to Section 3.5.2 of the DPD. The Strategic Assessment of Climate Change provides guidance on the scope of the assessment including the extent of effects to be considered, assessing the Project's effects on GHG emissions, carbon sinks, and contribution to Canada's emission reduction efforts and global GHG emissions.	Section 3.5.2
	SOI-05	• Implications of upstream GHG emissions to Canada's ability to meet national GHG reduction commitments and climate goals		
	SOI-06	• Climate impacts of downstream GHG emissions from use of mined coal • Effects of deforestation, including the loss of carbon sinks		
	SOI-07	• The resilience of the Project to climate change	Effects of the environment on the Project are discussed in the DPD in Section 8. Teck will propose in the draft TISG/AIR that risks associated with climate change and natural hazards and mitigations incorporated to manage these risks be assessed.	Section 8
	SOI-08	The need for the proponent to ensure that information described in the Strategic Assessment of Climate Change is provided	The Strategic Assessment of Climate Change will be used to inform the assessment of potential Project GHG emissions.	Section 3.5.2
	SOI-09	• Consideration of offsetting direct GHG emissions of the Project	Offsetting of direct GHG emissions will be considered as part of Teck's strategy to support 2050 carbon neutrality goals. In the draft TISG/AIR, Teck will propose implementation of a mitigation hierarchy to avoid, minimize, rehabilitate or offset effects, where required, be identified in the IS/A.	-
Cumulative Effects	SOI-10	• Coal mining has been occurring in the Elk Valley for over 100 years which has resulted in changes to the biophysical and human environment, including cumulative effects to land, water, resources and Indigenous peoples	Concerns related to cumulative effects are identified in the DPD (Sections 1.2, 5 and 6). Section 7.1 acknowledges that coal has been mined in the Elk Valley since the late 1890s and that mining activity, combined with other activities including forestry, urban and rural development, transportation infrastructure, agriculture and more, has resulted in changes to the biophysical and human environment in the area. As outlined in Section 7.1.2 of the DPD, Teck has been involved in efforts to understand and reduce the effects of mining in the Project region and collaborates in various initiatives that include government regulators and agencies, the Ktunaxa Nation Council, and other communities of interest. The scope of cumulative effects assessment (the residual incremental and cumulative effects associated with the Project and other past, present and reasonably foreseeable developments) will be proposed in the daft TISG/AIR. As part of the development of the draft TISG/AIR, Teck will propose that this context be identified in the Impact Statement/ Application (IS/A) and considered in the assessment of the Project in terms of its relevance to the assessment of the VCs and factors to be assessed.	• Section 1.2.1 (see Comment Category 3) • Section 1.2.2 (see Comment Category 2 & 4) • Section 5 (Table 5-2) • Section 6.1 (various rows in Table 6.1-2) • Sections 6.2, 6.5, 6.6 – see bullets on cumulative effects • Section 7.1.2
	SOI-11	• Importance of cumulative effects assessments		
	SOI-12	• Long-term and cumulative effects to wildlife and species at risk, including effects to migration corridors and species at risk such as Grizzly Bear and Whitebark Pine	Concerns related to effects to wildlife that may result from the Project, including the Project's potential to contribute to cumulative effects to wildlife, species at risk, and fish and fish habitat, are identified in the DPD (Sections 1.2, 5, and 6). The potential interaction between the Project and these aspects of the biological environment are also identified in Section 12.1 (see aquatic and terrestrial resources in Table 12-1). The scope of the wildlife and fish and fish habitat assessments, including the temporal boundaries for the assessment, will be proposed in the draft TISG/AIR. Teck will propose in the draft TISG/AIR that the assessment consider the duration of potential effects that may be contributed by the Project.	• Section 1.2.1 (see Comment Categories 1 & 3) • Section 1.2.2 (see Comment Categories 2 & 3) • Section 5 (Table 5-2) • Section 6.1 (Table 6.1-2) • Sections 6.2, 6.3, 6.4, 6.5, 6.6, 6.8 • Section 12.1 (Table 12-1)
	SOI-13	• Long-term and cumulative effects to fish and fish habitat, including Westslope Cutthroat Trout, Bull Trout, Mountain Whitefish and smaller species in B.C. and the United States		
	SOI-14	• Cumulative effects of the Project on Indigenous peoples' physical and cultural heritage, current use of lands and resources for traditional purposes, sites or things of historical archeological or cultural important, as well as health, social or economic conditions, and on the exercise of Aboriginal and Treaty rights	Teck is committed to engaging with potentially affected Indigenous Peoples to understand the Project's potential effects to their rights and interests, including the Project's potential contribution to cumulative effects. Concerns related to effects to Indigenous People's physical and cultural heritage, current uses of land and resources for traditional purpose, sites or things of historical, archaeological or cultural importance, health, social and economic conditions as well as the exercise of Aboriginal and Treaty rights are identified in the DPD (e.g., Section 1.2, 5 and 6). The potential interaction between the Project and Indigenous Peoples is also identified in Section 12.1 (Table 12-1).	• Section 1.2.1 (see Comment Categories 3 & 5) • Section 1.2.2 (see Comment Categories 1 & 4) • Section 5 (Table 5-2) • Section 6.1 (Table 6.1-2) • Sections 6.2 through 6.9 • Section 12.1 (Table 12-1 – see row on Indigenous Peoples)

Element	Comment ID	Issue	Proponent Response	Location in the DPD
Differential Impacts upon Diverse Persons and Groups	SOI-15	• Differential impacts based on sex and gender, which may include groups identified by age, place of residence, ethnicity, socio-economic status, employment status or disability for example, in a variety of ways including: • employment opportunities, • access to revenues; • access to safe and affordable housing; • compensation or benefits and expanded investment in the local community; • decision making roles for new innovation and technologies; and • access to services and programs that account for the perspective, knowledge and experiences of individuals and communities.	Concerns related to potential Project effects to diverse persons or groups are identified in the DPD (Section 1.2). The potential interaction between the Project and diverse groups of people are also identified in Section 12.1 (Table 12-1). The scope of the social, economic and health assessments will be proposed in the draft TISG/AIR, with consideration of this comment.	• Section 1.2.2 (see Comment Category 7) • Section 12 (Table 12-1 – various rows in Human Environment section)
	SOI-16	• The Project may create and exacerbate existing inequalities.		
Economic Conditions	SOI-17	• Delays caused by impact assessments to the Project's timeline, thus impacting employment income and economic stability that residents and their families rely upon	Concerns related to economy, employment, income, population, demand on local services and infrastructure, and tourism as a result of the Project are identified in the DPD (e.g., Sections 1.2, 5, and 6). The potential interaction between the Project and these aspects of the human environment are also identified in Section 12.1 (Table 12-1). The scope of the social, economic and health assessments will be proposed in the draft TISG/AIR, with consideration of this comment. As part of the draft TISG/AIR, Teck will propose that assessment of employment and economy be conducted within defined construction, operational and closure temporal boundaries for the Project. Potential for delays to Project development are not proposed to be considered as a primary dimension of the Project but may be considered in context.	• Section 1.2.1 (see Comment Category 4) • Section 1.2.2 (see Comment Category 6) • Section 5 (Table 5-2) • Section 6 (Table 6.1-1) • Section 6.2 • Section 6.3 (Table 6.3-1) • Section 12.1 (Table 12-1 – see Economy row)
	SOI-18	• Lack of long-term economic and environmental sustainability of the coal industry due to decreased of market demand for coal, and the need for development of green alternatives and green jobs	Teck has outlined the need and purpose of the Project in Section 3.1.2 of the DPD. Teck will propose in the draft TISG/AIR that characterization of existing regional economy include discussion of historical and future projected trends pertaining to the coal industry as well as local and regional economic and community development plans, priorities and activities. If issues and priorities pertaining to green alternatives and jobs related to the Project are identified through engagement and socio-economic data collection, these will be documented for further consideration.	Section 3.1.2
	SOI-19	• Loss of cultural and tourism values, including reduced access, changes to plant, fish and wildlife resources, disturbance of visual quality and increase of noise	Potential for effects to cultural, recreational, and tourism values, including those related to changes to wildlife, visual quality (e.g., enjoyment of scenic values) and sensory conditions, resulting from the Project are identified in Section 12.1 (Table 12-1) of the DPD. As part of the draft TISG/AIR, Teck will propose that the land and resource use assessment evaluate changes in area use and access, resource availability for harvesting activities (e.g., fish, wildlife) and sensory disturbances (e.g., noise and visual quality) for guided sport, tourism, and recreational activity. Teck will also propose that the economy assessment consider effects to commercial tourism as a result of Project-related changes to land based area use and access, resource availability, and environmental setting. Teck will propose an aesthetics assessment as part of the draft TISG/AIR to evaluate the potential for effects to visual quality.	Section 12.1 (Table 12-1 – see the Social – Land Use row)
	SOI-20	• Changes to local population, employment, income and training opportunities, and worker safety	Potential changes to the local population and demographics, local employment and labour income, along with reference to work safety and training, are identified in Section 12 of the DPD. As part of the draft TISG/AIR, Teck will propose that population and demographics, employment, and income be evaluated as part of the assessment of the Project. Teck will also propose that the scope of the community health and wellbeing assessment discuss potential for effects to Project workforce conditions including worker safety.	Section 12.1 (Table 12-1 – see Economy row & Human Health and Well-being row)

Element	Comment ID	Issue	Proponent Response	Location in the DPD
	SOI-21	• Influx of a work force for the Project could reduce access to housing, health care, infrastructure, and community services that address people's specific needs, restrict their options and potentially compromise their health	Potential Project-related changes to the local population and demographics, housing, local services and infrastructure and community health and well-being are identified in Section 12 of the DPD. As part of the draft TISG/AIR, Teck will propose these potential changes be assessed for the Project. The assessment would consider population-driven pressure on housing, services and infrastructure, along with changes in access to healthcare and social services and associated impacts on the health and wellbeing of community members. In the draft TISG/AIR, Teck will propose that the social, economic and health assessments include discussion of differential impacts (e.g., consideration of reliance on specific services).	Section 12.1 (Table 12-1 – see Social – Socio-community row & Human Health and Well-being row)
	SOI-22	• Possibility of proponent-funded infrastructure and community resources that improve the local quality of life and compensate for Project effects	As part of the draft TISG/AIR, Teck will propose that the assessment of services and infrastructure, employment and economy and community health and wellbeing be assessed, and that the assessment include a description of Teck's existing and planned infrastructure and other economic and social investment priorities and initiatives as applicable. Where economic, service and infrastructure and/or health impacts and/or benefit opportunities are identified through the respective assessments, mitigation and benefit enhancement measures, including those requiring proponent-funded investments will be identified. Example mitigations and benefit enhancements are indicated in Section 12 of the DPD.	Section 12.1 (Table 12-1 – see Social – Socio-community row & Human Health and Well-being row)
	SOI-23	• Financial benefits of the Project for employees and for the province of British Columbia • Concerns about the economic justification of the Project, including a comparison to the previously asserted life of mine for the Swift operation	Benefits of the Project are identified in Section 3.1.8 of the DPD. As part of the draft TISG/AIR, Teck will propose that the assessment of employment and economy include consideration of Project direct and indirect and induced economic effects along multiple economic indicators including wage income for construction and operational workers, and employment, economic output, GDP and tax revenues at the provincial-level. Refer to Section 12.1 (Table 12-1) of the DPD. Need and purpose for the Project is discussed in Section 3.1.1, with additional information on interaction of the Swift Project with the current Project included in Section 3.1.8.	Sections 3.1.2, 3.1.8, 3.1.9 and 12.1 (Table 12-1 – see Economy row)
	SOI-24	• Concerns about the adequacy of financial security of the Project including costs associated with certain mitigation measures such as water treatment	If the Project is approved, Teck will be required to provide financial security, set at a level that reflects outstanding reclamation and closure obligations associated with the site. This process is set through the *Mines Act* approval, which Teck would apply for following a decision approving the Project under the *Environmental Assessment Act* of British Columbia and the *Impact Assessment Act* of Canada.	-
Ecosystems, Vegetation, and Soils	SOI-25	• Loss of biodiversity, and effects to wilderness areas and environmentally sensitive lands, including wetland, riparian, and floodplains ecosystems; grassland and brushland ecosystems; old growth and mature forests; avalanche path ecosystems; Karst ecosystems; and listed/endangered ecological communities	Concerns related to ecologically sensitive areas and ecosystems, communities and species at risk (including all those listed in the comment) that may be affected by the Project are identified in the DPD (e.g., Sections 1.2, 5 and 6). The potential interactions between the Project and these aspects of the physical and biological environment are also identified in Section 12.1 (Table 12-1). The scope of the assessment, including that for ecosystems, vegetation, wildlife and fish, will be proposed in the draft TISG/AIR.	• Section 1.2.1 (see Comment Category 2) • Section 1.2.2 (see Comment Category 2) • Section 5 (Table 5.1-2) • Section 6 (all sections) • Section 12 .1 (Table 12-1 - see Terrestrial and Aquatic resources rows)
	SOI-26	• Loss of critical grasslands and associated effects to Bighorn Sheep that winter in the grasslands		
	SOI-27	• Loss of high-elevation mountain slopes and associated effects to Whitebark Pine		
	SOI-28	• Loss of mature and old growth forests and associated effects to Grizzly Bear and other species		
	SOI-29	• Loss of soils and inadequate restoration, including impacts to soil quantity, quality, distribution, and its contribution as a critical determinant of ecosystems	Concerns related to effects to soils as result of the Project, as well as progress regarding reclamation and restoration, were identified in the DPD (Sections 1.2, 6.1 and 6.2). The potential interaction between the Project and this aspect of the physical environment is also identified in Section 12.1 (Table 12-1). Teck will propose the scope of the soils assessment in the draft TISG/AIR, including consideration of soil quantity, quality and distribution and contribution to ecosystem function.	• Section 1.2.1 (see Comment Category 3) • Section 1.2.2 (see Summary Comment 8) • Table 6.1-2 (see row on reclamation progress and restoration efforts) • Section 6.2 (see bullet on soils and terrain) • Section 12.1 (Table 12-1)

Element	Comment ID	Issue	Proponent Response	Location in the DPD
Federal Lands	SOI-30	• Effects to connectivity corridors and long-term implications for wildlife populations within the Rocky Mountain National Parks, including to the Kootenay National Park, a national park and connectivity corridor from Waterton-Glacier International Peace Park in Alberta and Montana and the Rocky Mountain parks complex for wide-ranging wildlife, including Grizzly Bears and Wolverines	Concerns related to effects to federal lands and connectivity of wildlife habitat that may result from the Project are identified in the DPD (Sections 1.2 and 6). The potential interaction between the Project and wildlife habitat are also identified in Section 12.1 (refer to terrestrial resources in Table 12-1). The scope of the assessment, including consideration of potential effects to habitat distribution and connectivity for wildlife and the geographic scale of the potential effects, will be proposed in the draft TISG/AIR.	• Section 1.2.2 (see Comment Categories 1 & 2) • Section 6 (Table 6.1-2 - see Ecosystems and plant and animal species row) • Section 12.1 (Table 12-1 - see Terrestrial and Aquatic resources rows)
Fish and Fish Habitat	SOI-31	• Impacts to fish and fish habitat due to increased selenium, nitrate, sulphate, nickel, and cadmium concentrations and calcite deposits from effluent discharge points and seepage from tailings storage and waste rock impoundments	Concerns related to effects to fish and fish habitat, including effects that may result from changes to water quality, both in the Project vicinity and transboundary environments are identified in the DPD (Sections 1.2, 5, and 6). The potential interaction between the Project and these aspects of the biological environment are identified in Section 12.1 (refer to aquatic resources in Table 12-1). The scope of the water quality, aquatic health and fish and fish habitat assessments, will be proposed in the draft TISG/AIR.	• Section 1.2.1 (see Comment Category 1 & 2) • Section 1.2.2 (see Comment Categories 1, 2 & 3) • Section 5 (Table 5-2 – see Water quality and Fish and fish habitat rows) • Section 6 (all subsections) • Section 12.1 (Table 12-1 - see Hydrology and Water Quality, Terrestrial Resources and Aquatic Resources rows)
	SOI-32	• Contaminant levels in fish that migrate from the Project area to Montana		
	SOI-33	• Consideration of U.S. Environmental Protection Agency, State of Montana, and State of Idaho water quality and fish tissue thresholds	The scope of the assessment of aquatic resources, including the guidelines and other screening values to be used to assess effects to VCs, will be proposed in the draft TISG/AIR.	-
	SOI-34	• Threats to downstream endangered fish populations, including Westslope Cutthroat Trout, adding to recent declines in the Fording River near the Project site, and White Sturgeon	Concerns related to effects to fish and fish habitat that may result from the Project are identified in the DPD (Sections 1.2, 5, and 6). The potential interaction between the Project and these aspects of the biological environment is also identified in Section 12.1 (refer to aquatic resources in Table 12-1). As part of the draft TISG/AIR Teck will propose the scope of the water quantity and quality, aquatic health and fish and fish habitat assessments, including consideration of the implications of current population status for species that may be affected by the Project. Teck proposes that the process for selecting VCs for the assessment consider this comment.	• Section 1.2.1 (see Comment Category 1 & 2) • Section 1.2.2 (see Comment Categories 1, 2 & 3) • Section 5 (Table 5-2 – see Water quality and Fish and fish habitat rows) • Section 6 (all subsections) • Section 12.1 (Table 12-1 - see Aquatic Resources rows)
	SOI-35	• Degradation or loss of fish habitat, and resulting impacts on fish populations. Fish habitat includes Chauncey Creek and its tributary streams due to clearing of vegetation during construction, erosion and sedimentation, and Kilmarnock Creek due to waste rock dumps	Concerns related to effects to fish and fish habitat are identified in the DPD (see response to SOI-34), with specific reference to Chauncey Creek in Section 6.1. As part of the draft TISG/AIR, Teck will propose that the assessment of the Project include consideration of potential impacts to tributaries that contribute to fish habitat, including Chauncey and Kilmarnock creeks. The scope of the assessment of aquatic resources, to be captured through various aquatic VCs/VC subcomponents, will be proposed in the draft TISG/AIR.	• Section 6.1 (Tables 6.1-1 & 6.1-2 – see Protection and rehabilitation of tributaries row)
	SOI-36	• Past and ongoing investigations by Environment and Climate Change Canada (ECCC) on effects to water quality and fish, including fish kills in Line Creek.	Beyond contributing to the understanding of potential effects of mining on the environment, the past and ongoing investigations by ECCC are outside the scope of the Project. As noted above (refer to SOI-34), as part of the draft TISG/AIR Teck will propose the scope of the water quality, aquatic health and fish and fish habitat assessments, including consideration of the implications of current population status for species that may be affected by the Project.	-

Element	Comment ID	Issue	Proponent Response	Location in the DPD
Human Health and Well-Being	SOI-37	• Effects to air quality and health impacts to local residents, employees, tourists, and recreational users	Concerns related to effects to air quality, noise, drinking water, traditional foods, employment, as a result of the Project, and the potential for subsequent effects to human health and community wellbeing are identified in the DPD (Sections 1.2, 5, and 6). The potential interaction between the Project and these aspects of the physical and human environment is also identified in Section 12.1 (Table 12-1). The scope of the health assessment will be proposed in the draft TISG/AIR.	• Section 1.2.2 (see Comment Categories 3, 4 & 5) • Section 5 (Table 5-2 – see Effects on human health row) • Section 6.1 (Tables 6.1-1 and 6.1-2 – see row on Indigenous title, rights and interests) • Section 6.2 (see bullet on Cultural and traditional use of lands) • Section 12.1 (Table 12-1 - see Human Health and Well-being row)
	SOI-38	• Impacts to drinking water due to increased selenium and nitrates, dust emissions, noise, and from impacts to traditional foods due to changes in water and air quality		
	SOI-39	• Concerns around maintaining local employment, training opportunities, and local suppliers to ensure community wellbeing	Refer to SOI-20.	-
	SOI-40	• Effects to the health of Indigenous peoples through impacts to the exercise of Indigenous rights and use, now and in the future, of the lands and resources for traditional purposes, such as, hunting, fishing, plant and animal harvesting and cultural practices, in the Project area	Concerns related to effects to Indigenous use of land for traditional purposes and the exercise of Aboriginal and Treaty rights and the potential for subsequent effects to health and community wellbeing are identified in the DPD (Sections 1.2, 5, and 6). The potential interaction between the Project and Indigenous Peoples is also identified in Section 12.1 (Table 12-1). Teck is committed to engagement with participating Indigenous Peoples, in collaboration with the IAAC and the BC EAO, to develop understanding of Indigenous rights and uses that may be affected by the Project. Teck proposes to outline the approach for conducting the Indigenous interests assessment in the draft TISG/AIR.	• Section 1.2.1 (see Comment Category 5) • Section 1.2.2 (see Comment Category 4) • Section 5 (Table 5-2 – see Impacts on Indigenous traditional lands row) • Sections 6.1 through 6.9 • Section 12.1 (Table 12-1 - see Indigenous Peoples row)
Indigenous Peoples' Cultural, or Physical and Heritage	SOI-41	• Loss of cultural, historical, sacred and archeological sites and resources	Concerns related to physical, spiritual, cultural heritage and use of land for traditional site or things of historical, spiritual or cultural importance were identified in the DPD (Sections 1.2, 5 and 6). The potential interaction between the Project and Indigenous Peoples is also identified in Section 12.1 (Table 12-1). Teck is committed to engagement with participating Indigenous Peoples, in collaboration with the IAAC and the BC EAO, to develop understanding of Indigenous rights and uses that may be affected by the Project. Teck proposes to outline the approach for conducting the Indigenous interests assessment in the draft TISG/AIR.	• Section 1.2.1 (Comment Categories 3 & 5) • Section 1.2.2 (Comment Category 4) • Section 5 (Table 5-2 – see Impacts on Indigenous traditional lands row) • Section 6 (all subsections) • Section 12.1 (Table 12-1 – see Indigenous Peoples row)
	SOI-42	• Impacts to culture, spirituality and Indigenous knowledge		
	SOI-43	• Impacts to archaeological sites and participation of Indigenous nations in archaeological monitoring work		
	SOI-44	• Concerns with the notification processes when artifacts are found during ground disturbance or while on the land in general	Notification of the recording of archaeological sites is provided to First Nations representatives in-field, and to First Nations Bands and Nations following field work via the Letter of Notice and Heritage Inspection Permit interim reporting processes under the *Heritage Conservation Act* of BC.	-
Indigenous Peoples' Current Use of Lands and Resources	SOI-45	• Loss of access to, and sensory disturbance impacting preferred places, preferred species and resources, and preferred practices central to Indigenous use, language and identity	Concerns related to spiritual and cultural heritage land and resource use for traditional purposes and sites or things of historic, archaeological, spiritual or cultural importance and the exercise of Aboriginal and Treaty rights of Indigenous peoples were identified in the DPD (Sections1.2, 5, 6). The potential interaction between the Project and Indigenous Peoples is also identified in Section 12.1 (Table 12-1). The information in the DPD is based on preliminary guidance from the EAO and IAAC on engagement with Indigenous Peoples. The scope and nature of that engagement may change as further guidance is provided. Teck is committed to engagement with participating Indigenous Peoples, in collaboration with the IAAC and the BC EAO, to develop understanding of Indigenous rights and uses that may be affected by the Project. Teck will outline the proposed approach for conducting the Indigenous interests assessment in the draft TISG/AIR.	• Section 1.2.1 (Comment Category 5) • Section 1.2.2 (Comment Category 4) • Section 5 (Table 5-2 – see Impacts on Indigenous traditional lands row) • Section 6 (all subsections) • Section 12.1 (Table 12-1 – see Indigenous Peoples row)
	SOI-46	• Loss of access to ancestral territories for spiritual, cultural and subsistence uses		
	SOI-47	• Loss of opportunity to carry out cultural practices, including teaching, traditional use and harvesting activities, fishing, hunting and gathering, in both the Project area and the surrounding area where Project effects may occur		
	SOI-48	• Land and resource use for cultural purposes will be adversely affected by the Project's impacts on wildlife habitat, migratory birds, fish and fish habitat, as well as air and water quality and the ecological balance		
	SOI-49	• Impacts to Indigenous people's ability to carry out important religious, legal and cultural practices		

Element	Comment ID	Issue	Proponent Response	Location in the DPD
	SOI-50	• Impacts of contaminants in air and dust on the quality of, and confidence in (avoidance of), traditional foods, including plants, berries, and wild game	Concerns related to effects to air quality as a result of the Project, and the potential for subsequent effects to food items and food security and/or confidence is identified in the DPD (Section 1.2 and Section 6). The potential interaction between the Project and these aspects of the physical and human environment is also identified in Section 12.1 (Table 12-1). The scope of the air quality and human health assessments will be proposed in the draft TISG/AIR. Teck will also propose that the Indigenous interests assessments to be undertaken consider the potential interaction between the Project and food security and/or confidence.	• Section 1.2.2 (see Comment Category 4, 5 & 7) • Section 5 (e.g., Table 5-2, Effects on Human Health row), • Section 6 (e.g., Tables 6.1-2 – Indigenous title, rights and interests row, Section 6.2 – bullet on air quality and noise impacts) • Section 12.1 (Table 12-1 – Air Quality, Noise and Vibrations row, Human health and well-being row & Indigenous Peoples row)
	SOI-51	• Impacts to Indigenous stewardship of the lands and resources	Concerns related to Indigenous land and resource stewardship are identified in the DPD (Sections 1.2 and 6). The potential interaction between the Project and Indigenous Peoples is also identified in Section 12.1 (Table 12-1). Teck is committed to engagement with participating Indigenous Peoples, in collaboration with the IAAC and the BC EAO, to develop understanding of Indigenous rights and uses that may be affected by the Project. Teck also proposes to outline the approach for conducting the Indigenous interests assessment in the draft TISG/AIR.	• Sections 1.2.2 (see Comment Category 5) • Section 6.1 (Table 6.1-2 – see Indigenous title, rights and interests row & Alignment with Ktunaxa Nation goals, values and objectives row) • Section 6.3 – see environmental stewardship bullet • Section 12.1 (see Table 12-1 – see Indigenous Peoples row)
	SOI-52	• Impacts of changes to water quality on the health and quality of fish	Concerns related to effects to water quality and fish as a result of the Project are identified in the DPD (Sections 1.2, 5, and 6). The potential interaction between the Project and these aspects of the physical and biological environment is also identified in Section 12.1 (Table 12-1). The scope of the water quality, aquatic health assessments will be proposed in the draft TISG/AIR.	• Section 1.2.1 (see Comment Category 1) • Section 1.2.2 (see Comment Category 2 & 3) • Section 5 (e.g., Table 5-2, Water Quality row, Fish and Fish Habitat row) • Section 6.1 (Table 6.1-2 Water row, Fish and Fish Habitat row) • Section 6.2 – water quality bullet • Section 6.4 – fish populations bullet • Section 6.5 aquatic wildlife bullets • Section 6.6 aquatic wildlife bullet, protection of wildlife bullet • Section 6.7 water quality bullet • Section 6.8 aquatic wildlife bullet • Section 12.1 (Table 12-1 Aquatic Resources row)
	SOI-53	• Impacts to the Oldman River system with cultural and environmental importance to Siksika Nation and Kainai Nation	Teck acknowledges the interests expressed by the Kainai and Siksika Nation and has included this information in Sections 6.5 and 6.6 of the DPD. Teck will consider this comment in development of the draft TISG/AIR.	• Section 6.5 • Section 6.6
	SOI-54	• Cumulative effects in the region on country foods including water quality, air quality, and impacts to wildlife and their habitat, due to the high density of existing and proposed coal mining operations in the Elk Valley	Concerns related to effects to air quality, water quality, wildlife and their habitat as a result of the Project, and the potential for subsequent effects to food items and food security and/or confidence is identified in the DPD (Section 1.2 and Section 6). The potential interaction between the Project and these aspects of the physical, biological and human environment is also identified in Section 12.1 (Table 12-1). The scope of the air quality, water quality, and human health assessments will be proposed in the draft TISG/AIR. Teck agrees that the assessments to be undertaken consider the potential interaction between the Project and food security and/or confidence of potentially affected Indigenous Peoples.	• Section 1.2.1 (see Comment Category 3) • Section 1.2.2 (see Comment Category 4) • Section 5 (Table 5-2 – see rows on Water quality, Fish and fish habitat & Human health) • 6.1 (Table 6.1-2 – see Effects on ecosystems and plant and animal species row) • 6.2 (see bullet on cumulative effects) • Section 6.5 (see bullet on cumulative effects) • Section 6.6 (see bullet on cumulative effects) • Section 12 (first two paragraphs)

Element	Comment ID	Issue	Proponent Response	Location in the DPD
	SOI-55	• Impacts on Indigenous peoples' ability to harvest plants for food, medicinal and ceremonial purposes, including stems, leaves, roots and berries	Concerns related to effects to traditional resource use as a result of the Project, including ability to harvest plants for traditional purposes is identified in the DPD (Section 1.2 and Section 6). The potential interaction between the Project, the biological environment and Indigenous Peoples is also identified in Section 12.1 (Table 12-1). Teck is committed to engagement with participating Indigenous Peoples, in collaboration with the IAAC and the BC EAO, to develop understanding of Indigenous rights and uses that may be affected by the Project. Teck proposes to outline the approach for conducting the Indigenous interests assessment in the draft TISG/AIR.	• Section 1.2.1 (see Comment Category 5) • Section 1.2.2 (see Comment Category 4) • Section 6.1 (Table 6.1-2 – see Indigenous title, rights and interests row) • Section 6.2 (see cultural and traditional use of lands and resources bullet) • Section 6.3 (see access to sacred sites and locations bullet) • Section 6.4 (see plant species and access bullets) • Section 6.5 (see Impacts to ability to practice Indigenous and treaty rights and cultural and traditional use bullet) • Section 6.6 (see Impacts to ability to practice Indigenous and treaty rights and cultural and traditional use bullet) • Section 6.7 (see increased recreational access bullet) • 12.1 (Table 12-1 – see Indigenous Peoples row)
	SOI-56	• Cumulative impact of all projects in the area on the ability of Indigenous peoples to practice their rights now and in the future	Concerns related to the Project's potential to contribute cumulative effects is identified in the DPD (Sections 1.2,5, 6 and 12). As indicated in Section 12, the assessment will include consideration of: identification and assessment of the components of the physical, biological and human environment that are most important to people within the context of the Project and its potential effects; mitigation measures and plans to avoid, minimize, rehabilitate or offset adverse impacts and enhance benefits; integration with existing FRO and regional studies, initiatives, plans and programs; and residual incremental and cumulative effects associated with the Project and other past, present and reasonably foreseeable developments. The scope of the cumulative effects assessment will be proposed in the draft TISG/AIR and can be used to support the Indigenous interests assessment for the Project.	• Section 1.2.1 (see Comment Category 3) • Section 1.2.2 (see Comment Category 4) • 6.1 (Table 6.1-2 – see Indigenous title, rights and interests row) • Section 6.2 (see bullet on cumulative effects) • Section 6.5 (see bullet on cumulative effects) • Section 6.6 (see bullet on cumulative effects) • Section 12 (first two paragraphs)
Indigenous peoples' Aboriginal and Treaty Rights	SOI-57	• Impacts on the exercise of Aboriginal and Treaty rights and related cultural practices	With regard to cumulative effects assessment regarding the exercise of Aboriginal and Treaty rights and related cultural practices, please refer to SOI-56.	• See SOI-56
	SOI-58	• Adverse effects, such as to wildlife habitat, migratory birds, and fish and fish habitat and environmentally sensitive habitats including grassland and brushland ecosystems, avalanche path ecosystems, Karst ecosystems, Bighorn Sheep winter range and Westslope Cutthroat Trout habitat, endangered ecological communities, mature and old growth forests, and wetlands, could impact the exercise Aboriginal and Treaty rights and related cultural practices	Concerns related to effects to environmentally sensitive areas, terrestrial and aquatic wildlife and the exercise of treaty rights and cultural practices and transmission of knowledge were identified in the DPD (Sections 1.2, 5 and 6). The potential interaction between the Project, the biological environment and Indigenous Peoples is also identified in Section 12.1 (Table 12-1). Teck is committed to engagement with participating Indigenous Peoples, in collaboration with the IAAC and the BC EAO, to develop understanding of Indigenous rights and interests that may be affected by the Project. Teck will propose the scope of the aquatic and terrestrial assessments in the draft TISG/AIR, including assessment of fish and fish habitat, wildlife and wildlife habitat, ecosystems and vegetation. Teck will also outline the proposed approach for conducting the Indigenous interests assessment in the draft TISG/AIR. With regard to cumulative effects assessment regarding the exercise of Aboriginal and Treaty rights and related cultural practices, please refer to SOI-56.	• Section 1.2.1 (see Comment Category 3 & 5) • Section 1.2.2 (see Comment Category 4) • Section 5 (Table 5-1 – see Indigenous traditional lands row) • Section 6 (all subsections) • Section 12.1 – (Table 12-1 - see Indigenous Peoples row)
	SOI-59	• Significant and unsustainable cumulative impacts of coal mining and resource extraction, logging and development taking of lands and subsequently altering the landscape, diminishing the ability to exercise Aboriginal and Treaty rights and related intergenerational transfer of culture, knowledge, practices and language		

Element	Comment ID	Issue	Proponent Response	Location in the DPD
Migratory Birds and their Habitat	SOI-60	• Impacts to migratory birds, including their habitat, from Project activities leading to destruction, disturbance and fragmentation of habitat (e.g., foraging, nesting), habitat avoidance, sensory disturbance and the inadvertent disturbance and destruction of individuals, nests and eggs	Concerns related to impacts to migratory birds were identified in the DPD (Sections 1.2.2, and 6). The potential interaction between the Project and migratory birds is also identified in Section 12.1 (refer to terrestrial resources in Table 12-1). The scope of the wildlife and wildlife habitat assessments, including the assessment of aquatic and terrestrial wildlife health, will be proposed in the draft TISG/AIR and will consider potential effects to migratory birds, such as those protected under the *Migratory Birds Convention Act*. Teck notes that the species identified in SOI-63 are not necessarily reliant on grasslands, and are not listed under the *Species at Risk Act*.	• Section 1.2.2 (see Comment Category 2) • Section 6 (Table 6.1-2, Ecosystems and plant and animal species row) • Section 6.5 – see protection of wildlife bullet • Section 6.6 - see protection of wildlife bullet • Section 12 (Table 12-1 – see Terrestrial Resources row)
	SOI-61	• Impacts to migratory bird species reliant on aquatic environments currently affected by selenium and other pollutants (e.g., embryotoxicity and reproductive deformities), including the Spotted Sandpiper, American Dipper, Harlequin Duck, Northern Waterthrush, Varied Thrush, and Canada Goose		
	SOI-62	• Impacts to Rocky Mountain Flyway, an internationally important habitat area for migratory birds		
	SOI-63	• Impacts to migratory bird species reliant on grasslands, including raptors, Black-backed and Three-toed Woodpeckers, Brown Creeper, Northern Flicker and Pacific Wren are protected under the *Species at Risk Act*		
Project Design	SOI-64	• Uncertainty around the duration of project phases including operations, reclamation, closure, and post-closure and the lifespan of existing infrastructure	The FRX Project would be an extension to FRO's mining area that would extend the life of the mining operation from the mid-2020s through to the early 2070s. The schedule of the various phases of the project was provided in the DPD (Section 3.1.3 and 3.3.2). The Project will extend the life span of existing FRO infrastructure such as processing plant, access roads, power lines, gas lines, and rail line, which will be used for the Project.	• Sections 3.1.3 and 3.3.2
	SOI-65	• Inadequate level of detail to understand mitigation measures and adverse effects	The description of Project components and activities has been updated since the IPD with additional details in Section 3.3 of the DPD. Additional information regarding the management of water, waste and air emissions is presented in Sections 3.4.4, 3.5.1 and 3.5.2 and potential mitigation measures have been further identified in Section 12.1 (Table 12-1). The full list of mitigations measures to be included in the Project will be documented in the IS/A once the effects assessment results are available to support their development.	• Section 3.3 • Section 3.4 • Section 3.5.1 and 3.5.2 • Section 12.1 (Table 12-1 – see Potential mitigations column)
	SOI-66	Lack of consideration of alternative means to the Project, including a smaller, shallower mine with a shorter lifespan	A summary of alternative means of carrying out the Project that were considered by Teck is presented in Section 3.3 of the DPD. This section has been updated since the IPD was published. Teck's evaluation of alternative pit shells including a smaller, shallower mine pit with a shorter lifespan was considered is presented in Section 3.3.3.	• Section 3.3.3
	SOI-67	• Lack of consideration of alternatives to the Project, including alternative methods of making steel	Teck's consideration of potential alternatives to the Project, including the ability of those alternatives to meet the need and purpose of the Project and/or information on their technical/economic feasibility, was discussed in Section 3.1.9 of the DPD. Alternative methods of making steel is outside the scope of the Project.	• Section 3.1.9
Public Engagement	SOI-68	• Create opportunities for virtual public engagement sessions designed to allow all participants to speak, to engage with each other, and discuss conflicting evidence about the Project	Teck has and will continue to engage through a variety of methods as outlined in the DPD (Section 5) including teleconferences and a website dedicated to the Project https://fordingriverextension.teck.com.	• Section 5
Reclamation	SOI-69	• Inadequate reclamation at the existing Fording River Operations site	Teck's approach to reclamation for the Project is presented in the DPD (Section 3.7). The Project's reclamation and closure plans will include progressive and interim reclamation and will be outlined in more detail in the IS/A. FRO has a history of commissioning reclamation research and continues to incorporate learnings from our existing reclamation and management efforts (refer to Section 3.3.6 and 7.1.2/7.1.3). As part of the draft TISG/AIR, Teck will propose that monitoring to address uncertainty and/or confirm mitigations are effective be proposed in the IS/A. Teck also anticipates that monitoring and reporting requirements will be imposed in the permits required for the Project, should it be approved.	• Section 1.2.2 (see Comment Category 8) • Section 3.3.6 • Section 3.7 • Section 7.1.2 (e.g., refer to the bullet on reclamation research)
	SOI-70	• Teck's ongoing environmental stewardship and reclamation commitments and initiatives may be sufficient, including the Elk Valley Water Quality Plan and investments in water quality research and development		
	SOI-71	• Concerns about the proponent's fisheries restoration initiatives, and the legacy of accountability during reclamation		
	SOI-72	• Concerns about sufficiency of information provided on reclamation including plans for long-term water treatment and estimated costs of financial assurance		

Element	Comment ID	Issue	Proponent Response	Location in the DPD
	SOI-73	• Benefits of the Project's proposed reclamation efforts and forward-thinking technologies that would be consistent with ongoing efforts for existing mines in the Elk Valley to reclaim and rehabilitate lands impacted by mining		
Social Conditions	SOI-74	• Loss of access to areas used for recreational purposes	Concerns related to effects to fish and wildlife as a result of the Project are identified in the DPD in Sections 1.2, and concerns about what such effects could mean to recreational use, tourism is indicated in Section 5. The potential interaction between the Project and the biological and human environment is indicated in Section 12.1 (Table 12-1). Teck will propose the scope of the wildlife, land use and socio-economic assessments in the draft TISG/AIR, with consideration of these comments.	• Section 1.2.1 (see Comment Category 2) • Section 1.2.2 (see Comment Category 2) • 5 (Table 5-2 – see Recreational access row) • 12.1 (Table 12-1 – see Aquatic and Terrestrial resources rows, as well as the Social – Land use row)
	SOI-75	• Effects of declining fish populations to the local tourism industry, including fly fishing tourism		
	SOI-76	• Effects to hunting guides from changes to wildlife populations		
Species at Risk and their Habitat	SOI-77	• Impacts to federally listed Species at Risk, including their habitat, as a result of habitat loss, alteration and fragmentation, direct and indirect mortality, environmental emergencies, sensory disturbance and functional habitat loss and introduction of invasive species	Concerns related to effects to species at risk and ecologically sensitive areas as a result of the Project are identified in the DPD (Sections 1.2, 5, and 6). The potential interaction between the Project and the biological environment is also identified in Section 12.1 (Table 12-1). The scope of the vegetation, wildlife, and fish and fish habitat assessments will be proposed in the draft TISG/AIR. Teck will also propose the assessment of malfunctions and accidents and effects of the environment on the Project in the draft TISG/AIR.	• Section 1.2.1 (see Comment Category 2) • Section 1.2.2 (see Comment Categories 1 and 2) • 5 (Table 5-2 – see Fish and fish habitat row, Bighorn sheep and high elevation grasslands row) • Section 6.1 (Table 6.1-2 (see Ecosystems and plant and animal species row) • Various subsections in Section 6 • Section 12.1 (Table 12-1 – see Aquatic and Terrestrial resources rows)
	SOI-78	• Potential adverse effects to Species at Risk reliant on high-elevation grasslands, high-elevation mountain slopes, connectivity corridors, mature and old growth forest, and wetlands		
	SOI-79	• Threats to species listed in the *Species at Risk Act* and their habitat, including Grizzly Bear (special concern), American Badger (endangered), Olive-sided Flycatcher (threatened), Barn Swallow (threatened), Bank Swallow (threatened), Western Toad (special concern) and Whitebark Pine (endangered)		
	SOI-80	• Threats to downstream endangered fish populations, including Westslope Cutthroat Trout and White Sturgeon	Refer to SOI-34.	
	SOI-81	• Threats to downstream endangered fish populations, including Westslope Cutthroat Trout and White Sturgeon		
Sustainability	SOI-82	• Need for environmentally sustainable and socially responsible mining projects to meet ongoing global demand for steel and the development of sustainable infrastructure, such as renewable energy infrastructure	This comment is identified in the DPD in Sections 1.2.2, 5 and 6. Teck is committed to responsible business practices. A list of key sustainability polices are presented in the DPD (Section 2.3) and the potential benefits of the Project are presented in Section 3.1.8 of the DPD. Refer also to Section 3.5.2 for discussion of Teck's use of renewable energy and management of greenhouse gas emissions. In the draft TISG/AIR, Teck will propose that the IS/A further outline the Project's contributions to sustainability.	• Sections 1.2.2 (see Comment Category 6) • Section 2.3 • Section 3.1.8 • Section 3.5.2 • Section 5 (Table 5-2 – see row on sustainability)
Transboundary Effects	SOI-83	• Transboundary effects in the United States (U.S.) and traditional Tribal territory of U.S. Tribes including elevated selenium and nitrogen, as well as impacts to aquatic resources in the Elk River, Koocanusa Reservoir, the Kootenai River, and the Kootenai watershed in Idaho and Montana	Concerns related to transboundary environments through changes to air quality, fish and fish habitat, water quality, migratory birds, species at risk and Indigenous Peoples were identified in the DPD (Sections 1.2, 5 and 6). The potential interaction between the Project, the physical environment, the biological environment and indigenous Peoples is also identified in Section 12.1 (Table 12-1). In the draft TISG/AIR, Teck will propose that the assessment of the Project consider the potential for both direct and cumulative effects to areas of federal jurisdiction, including the potential for effects to transboundary (Alberta and US) environments through changes to air quality, fish and fish habitat, water quality, migratory birds, species at risk and Indigenous Peoples. The geographic and temporal scope of the assessment will be proposed in the TISG/AIR.	• Section 1.2.2 (see Comment Category 1) • Section 5 (Table 5-2 – see Water quality row & Fish and fish habitat row) • Sections 6.5 and 6.6 (see bullet on provincial and interactional transboundary impacts) • Section 12.1 (Table 12-1 – see Hydrology and water quality row, Terrestrial resources row & Aquatic resources row)
	SOI-84	• Transboundary impacts of the Project in the U.S. from water pollution to fish populations and fish habitat downstream in the Koocanusa Reservoir and into the U.S. Kootenai River		
	SOI-85	• Transboundary impacts to White Sturgeon in the Kootenai River		
	SOI-86	• Inclusion of transboundary environments in assessment study areas		
	SOI-87	• Transboundary effects in Alberta, including from selenium pollution and on wide-ranging species and their habitat spanning Alberta-B.C. such as Bighorn Sheep, Grizzly Bear and Wolverine		

Element	Comment ID	Issue	Proponent Response	Location in the DPD
	SOI-88	• Transboundary impacts of the Project from greenhouse gas emissions, including combustion of coal produced from the Project		
Transportation	SOI-89	• Impacts from the transportation of coal by road and rail, including impacts on wildlife	Potential effects to the biophysical and human environment due to coal and waste rock hauling within FRO and the Project area will be evaluated as part of the assessment of the Project. Clean coal from the Project would continue to be transported through the existing rail network via FRO's existing rail loop facility. Rail transport is the responsibility of the railway company and is outside the scope of the Project.	-
	SOI-90	• Impacts from coal spills transported by rail into waterways along the rail route		
Water	SOI-91	• Negative impacts of the project on groundwater and surface water quality and quantity from mining activities including accidental releases	Concerns related to effects groundwater and surface water quality as a result of the Project were identified in the DPD (Section 1.2, 5 and 6). The potential interaction between the Project and these aspects of the physical environment is also identified in Section 12.1 (Table 12-1). The scope of the surface and ground water assessments, including temporal scope, will be proposed in the draft TISG/AIR.	• Section 1.2.1 (see Comment Category 1) • Section 1.2.1 (see Comment Category 3) • Section 5 (Table 5-2 – see Water quality • Section 6 (various subsections) • Section 12.1 (Table 12-1 – see Hydrogeology row & Hydrology and water quality row)
	SOI-92	• Nitrate levels flowing from waste rock dumps could be above provincial and federal guidelines for decades after mining ends		
	SOI-93	• Ground and surface water quality concerns due to an inability to capture and treat increased inputs of contaminants such as selenium and nitrates • Ground and surface water quantity concerns from water usage at the Project and water seepage, combined with drying effects from climate change		
	SOI-94	• Effectiveness of mitigation of effects to water quality including unproven technology that lacks independent verification of effectiveness, including the unproven Saturated Rock Fill technology with little public information available on its functionality and reliability	The Project's water quality mitigation planning will leverage Teck's existing water quality management experience, including incorporating learnings from ongoing operations, research and development, regional and local monitoring and adaptive management (for example refer to programs for the Elk Valley Permit as listed in Section 7.1 of the DPD). Planning for the Project will include advancing the use of new and innovative technologies where they are technically and economically feasible for use in the Elk Valley. The proposed water quality management plan for the Project are included in the DPD (refer to Sections 3.3.6 and 3.4.4).	• Section 3.3.6 • Section 3.4.4 • Section 7.1
	SOI-96	• Need for evidence-based water treatment measures for effective water treatment		
	SOI-97	• Concerns with using unproven technology for water quality treatment that may not prove effective and that has little public information available to verify the volume of wastewater treated		
	SOI-95	• Concerns regarding coordinated efforts to improve water quality in the Elk Valley	Concerns about water have been identified in Sections 1.2, 5 and 6 of the DPD. Teck acknowledges concerns about water quality in the watersheds of the Elk Valley and in Koocanusa Reservoir and has developed and is implementing the Elk Valley Water Quality Plan and various related regional initiatives, plans and programs as noted in the DPD (Sections 3.3.6, 3.4.4 and 7.1). The Project, if approved, including the Project-specific plan for water quality management, would be incorporated into a subsequent Elk Valley Water Quality Plan implementation plan adjustment.	• Section 1.2 (various comment categories) • Section 3.3.6 • Section 3.4.4 • Section 5 (Table 5-2 – see Water quality row) • Section 6 (various subsections) • Section 7.1
	SOI-98	• Need for government transparency, oversight and enforcement of water quality standards at Elk Valley mines		
	SOI-99	• Potential non-compliance with water quality objectives in the Elk Valley Water Quality Plan		
	SOI-101	• Concerns with regulatory mechanisms that have not adequately regulated water pollution from active mining projects in the Elk Valley		
	SOI-102	• Concerns that the provincial regulatory system will not adequately protect the watershed		
	SOI-100	• Potential non-compliance with the Boundary Waters Treaty	The Boundary Waters Treaty is identified in Appendix D of the DPD. This comment will be considered in the development of the draft TISG/AIR.	• Appendix D
	SOI-103	• Concerns over the need to consider the Coal Mining Effluent Regulations that are being developed by Environment and Climate Change Canada	Teck understands that CMER is being developed and agrees that the need to comply with those requirements may need be acknowledged in the assessment. However, the terms and timing of coming into force are not yet certain. Teck acknowledges that once the requirements of CMER are understood and more certain, it may be necessary to address those requirements for the Project.	-

Element	Comment ID	Issue	Proponent Response	Location in the DPD
	SOI-104	• Concerns about impacts to Ktunaxa tradition and practice of rights from Project effects to water and water flow, which have an inherent right and value to Ktunaxa Nation, and affect Ktunaxa assessment of traditional knowledge, language, economic, social, education, employment, lands, and resources, among others	Concerns related to effects to Ktunaxa traditional uses of the land (physical, spiritual, cultural, current use of land and resources for traditional purposes, health, social or economic conditions and to the exercise of Aboriginal and Treaty rights) related to changes to water as a result of the Project were identified in the DPD (Section 6.1). The potential interaction between the Project, water and Indigenous Peoples was indicated in Section 12.1 (Table -12-1). Teck and the Ktunaxa Nation Council are engaging on the approach to assessment of water. Teck proposes to outline the approach for conducting the Indigenous interests assessment in the draft TISG/AIR.	• Section 6.1 • Section 12.1 (Table 12-1 – see Hydrogeology row & Hydrology and water quality row)
	SOI-105	• Need for adequate water quality monitoring at the site location, and upstream and downstream of the Project	Teck acknowledges concerns about water quality in the watersheds of the Elk Valley and in Koocanusa Reservoir and has developed and is implementing the Elk Valley Water Quality Plan and various related regional initiatives, plans and programs as noted in the DPD (Sections 3.3.6, 3.4.4 and 7.1.2). The Project, if approved, including the Project-specific plan for water quality management, would be incorporated into a subsequent Elk Valley Water Quality Plan Model update and Implementation Plan Adjustment. The scope of the water quality assessment including evaluating the need for follow up and monitoring strategies will be proposed in the draft TISG/AIR.	• Section 3.3.6 • Section 3.4.4 • Section 7.1.2
Wetlands	SOI-106	• Effects to wetlands along the Fording River and Kilmarnock Creek through construction and changes to water quality, including wetland loss, reduction, alteration and change in wetland function	Concerns related to effects to wetlands as a result of the Project, including potential effects to wetland habitat for migratory birds and other wildlife are identified in the DPD (Sections 1.2 and 6). The potential interaction between these aspects of the physical and biological environment and the Project are also identified in Section 12.1 (Table 12-1). The scope of the ecosystems and vegetation assessment, and the assessment of other valued components (VCs/VC subcomponents) that may be affected by changes to wetlands, will be proposed in the draft TISG/AIR.	• Sections 1.2.2 (see Comment Category 2) • Section 6.1 (Table 6.1-2 – see Ecosystems and plant and animal species row) • Section 12.1 (see Aquatic resources row)
	SOI-107	• Effects to wetland communities and ecological functions, thereby also affecting the availability and/or quality of wetland habitat for migratory birds and other wildlife		

Appendix C Legal Description of Lands to be Used for the Project

C-1. Legal Description of Lands to be Used for the Project

Those lands held as an Estate in Fee Simple by Teck Coal Limited: Block A, District Lots 3454 and 16964, Kootenay District; Lot 1, District Lot 4588, Kootenay District, Plan 11279, except Plans RW 572, 12976, NEP70655 and NEP70656.

Those lands held as an Estate in Fee Simple by Canadian Pacific Limited: That part of District Lot 3373, Kootenay District, included in Plan RW 563; District Lot 3345, Kootenay District, as shown on Plan RW 563.

Those lands held by The Crown in Right of British Columbia: District Lots 6642, 6710, 6709, 6708, 6646, 6706, 6700, 6701, 6702, 6703, 6698, 6638, 6697, 6696, 6695, 6694, 6637, 6688, 6689, 6690, 6691, 6687, 6686, 6685, 6684, 6728, 6729, 6733, 6732, 6734 and on unsurveyed ground commencing at the southwest corner of Lot 6687; thence due north to the northwest corner of Lot 6687; thence due west to the northeast corner of Lot 6635; thence due south to the southeast corner of Lot 6635; thence due east to the southwest corner of Lot 6687 being the point of commencement.

Appendix D Agreements Potentially Relevant to the Assessment Process

Agreements that will help guide engagement between the Government of British Columbia and the Ktunaxa Nation Council (KNC) include the following (Government of British Columbia 2019a):

- Ktunaxa Nation Strategic Engagement Agreement (KNC 2019)

Agreements that will guide engagement between the provincial government, the federal government and other governments include:

- Impact Assessment Cooperation Agreement between Canada and British Columbia (Government of Canada 2019)
- Memorandum of Understanding and Cooperation on Environmental Protection, Climate Action and Energy between The Province of British Columbia and The State of Montana (BC and Montana 2010)

Canada has also committed to a number of other international conventions and agreements that pertain to various environmental topics and issues. While not an exhaustive list, the following presents agreements of relevance to the Project:

- The Boundary Waters Treaty between Canada and the United States (US and GB 1909) and the Columbia River Treaty between Canada and the United States (Canada and US 1961)
- Agreement between the Government of Canada and the Government of the United States on Air Quality (Canada and US 1991)

As noted in Sections 3.1.7 and 6, the Project is also subject to the IMBA established between Teck and the Ktunaxa Nation. The Ktunaxa Nation and Teck have also signed a Joint Management Agreement for Conservation Lands (KNC and Teck 2021).

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Appendix E Existing Studies and Ongoing Investigations

E-1 Information Available Prior to the Initiation of the Project

A list of information available for the Fording River Extension Project (FRX Project, or the Project) area, before the initiation of the Project, is provided in Sections E-1.1 to E-1.3 below. This list provides an assessment of information available to the Project area for early engagement and for understanding what information is available regarding existing conditions. The list below is not intended to be considered complete; as the Project progresses, if new information becomes available it will be assessed for relevance and included as appropriate.

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E-2 Data Collection Specific to the Project

The surveys conducted or planned in support the Project to characterize the existing conditions and for the environmental assessment process (valued component selection, effects assessment, etc.) are summarized below. These surveys are specific to the Project and do not include regional or operational programs, although information from these will be assessed for relevance and included as appropriate in the characterization of existing conditions.

E-2.1 Air Quality

- Meteorological and air quality data collection from Teck monitoring network, from the regional network operated by the BC Ministry of Environment and Climate Change Strategy, as well as other from other sources (for example, Environment Canada).
- Air quality data/greenhouse gas emissions data collected from existing operations and Teck's Fording River and Greenhills operations in accordance with the Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations (BC MOE 2016) and BC Field Sampling Manual (BC MECCS 2020).

E-2.2 Noise and Vibration

- Noise and vibration baseline monitoring program to establish current conditions at locations identified as sensitive receptors based on guidance from the BC Oil and Gas Commission (BC OGC 2018).

E-2.3 Hydrogeology

- Drilling program to install groundwater monitoring wells along the base of the west flank of Castle Mountain and Chauncey Creek alluvial fan
- Bedrock well monitoring to collect understand seasonal variation of bedrock groundwater levels on Castle Mountain.
- Recurring quarterly groundwater monitoring and sampling program in accordance with the Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations (BC MOE 2016).
- Five flow (including twoload) accretion studies (Chauncey Creek and associated tributaries).
- Site visit to Chauncey Creek and Castle Mountain to identify seeps

- Leverage data from numerous complementary hydrogeology related programs conducted in the vicinity of the Project

E-2.4 Hydrology

- Data collection from routine flow monitoring at existing flow monitoring stations on watercourses potentially affected by the Project in order to acquire data requested by the Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operators (BC MOE 2016). Hydrometric data collection is carried out in accordance with Teck Flow Monitoring Protocol (KWL 2017) and provincial standards (BC ENV 2018).
- Fluvial geomorphology data collection at watercourses that could potentially be affected by the Project in accordance with the Rosgen Stream Classification (Rosgen and Silvey 1998) and the British Columbia Channel Assessment Procedure (FPCBC 1996).
- Installation of a weather station in Chauncey Creek for the purpose of collecting precipitation data in upper Chauncey Creek and on the south east side of Castle mountain.

E-2.5 Water Quality

- Data collection from routine water quality monitoring at existing water quality stations potentially affected by the Project in accordance with the Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations (BC MOE 2016).

E-2.6 Aquatic Health

- Benthic invertebrate and fish tissue collection to assess tissue chemistry data for aquatic receptors (2019 and 2021).
- Sediment collection to describe site-specific sediment chemistry (2019).
- Samples collected in accordance with Regional Aquatic Effects Monitoring Program (Minnow 2021) methods and the Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations (BC MOE 2016).

E-2.7 Fish and Fish Habitat

- Overwintering, spawning and fish presence (angling, minnow traps, electrofishing) surveys to determine fish species and life stage distribution in tributaries that drain the Project area and seasonal habitat use in the Project area in accordance with the Resources Inventory Standards Committee (RISC) 1:20,000 methods (RIC 2001a, RISC 2008a).
- Fish habitat surveys on watercourses within the Project footprint and the Local Study Area. The methods employed will be the RISC 1:20,000 methods (RIC 2001a, 2008b) and the Fish Habitat Assessment Procedure Level 1 (Johnston and Slaney 1996).

- Assess barriers to fish passage under different flow conditions. There is no single recognized, or RISC-certified, assessment methodology available to identify barriers to fish passage. Obstacles will be assessed based largely on the methodology for assessing falls and chutes (cascades) provided in Reiser et al. (2006), with supplementary information provided in Parker (2000).
- Document calcite conditions in tributaries not previously surveyed using Teck's Calcite Index (CI) measurement protocol to provide a CI score (Robinson and MacDonald 2014).
- Instream flow assessments in accordance with the provincial assessment guidelines (Lewis et al. 2004).
- Benthic invertebrate community sampling consistent with the Regional Aquatic Effects Monitoring Program (Minnow 2020) and CABIN (Environment Canada 2012) methods with 3-minute kick samples collected at three replicates at each site.
- Periphyton productivity (chlorophyll-a) and biomass (ash free dry mass) sampling in the Chauncey Creek watershed in accordance with the BC Field Sampling Manual (BC MWLAP 2003).
- Water temperature and in-situ water quality sampling in accordance with the BC Field Sampling Manual (BC MWLAP 2003).

E-2.8 Surficial Geology, Terrain, and Soils

Terrain and Soils

- Terrain field classification was undertaken in accordance with Terrain Classification System for British Columbia (Howes and Kenk 1997). This is a system for the classification of surficial materials, landforms, and geological processes of BC; the Terrain Classification System is based upon a classification system designed for mountainous terrain originally introduced by R. J. Fulton of the Geological Survey of Canada.
- Soils field data collection was undertaken in accordance with the Soil Inventory Methods for British Columbia (RIC 1995). This describes methods for soil field data collection and mapping standards for the province of BC.
- Soil classification was undertaken in accordance with the Canadian System of Soil Classification (Soil Classification Working Group 1998). This describes the soil classification system for Canada.
- Terrain and soils were described as outlined in Field Manual for Describing Terrestrial Ecosystems, 2nd Edition (BC MOFR and BC MOE 2010). This describes details to assist field surveyors in completing Provincial Ecosystem Field Forms that enable the collection of data for ecosystem inventories including site descriptions, vegetation, and site visit forms.

Terrestrial Ecosystem Mapping

- Bioterrain data collection to support terrestrial ecosystem mapping (TEM) was undertaken in accordance with the Standard for Terrestrial Ecosystem Mapping (TEM) - Digital Data Capture in British Columbia (RIC 2000). This describes the procedures for capturing, storing, and distributing

digital data for TEM and enables consistency among data collectors and for compatibility with Geographic Information System (GIS) and other provincial databases.

- Ecosystem and terrain and soil data collection to support TEM (BC Ministry of Forests and Range and BC Ministry of Environment 2010).

E-2.9 Ecosystems and Vegetation

- Ecosystem and vegetation data collection to support TEM (BC Ministry of Forests and Range and BC Ministry of Environment [BC MOFR and BC MOE] 2010; RIC 1998a).
- Ecological communities at risk surveys (BC Ministry of Forests and Range and BC Ministry of Environment 2010).
- Wetland function assessment surveys (BC Wildlife Federation and BC Ministry of Forests, Range, Natural Resource Operations and Rural Development 2021; Fletcher et al. 2021).
- Plant species at risk surveys (RISC 2018).
- Surveys to document the presence, distribution, and density of noxious weeds and invasive plants (BC MFLNRORD 2010).
- Surveys to collect data on the distribution, abundance, and quality of whitebark pine (RISC 2018; Tomback et al. 2005).
- Surveys to collect data on wildlife trees and coarse woody debris (BC MOFR and BC MOE 2010).
- Pre-disturbance surveys for plant species (RISC 2018, BC Ministry of Forests and Range and BC Ministry of Environment 2010), ecological communities at risk (BC MOFR and BC MOE 2010), and invasive plants (BC MFLNRORD 2010), in support of exploration activities for the Project.

E-2.10 Wildlife

Winter Tracking

- Winter track surveys undertaken based on provincial standards (RIC 1998b, 1998f, 1999a, 2006), with the objective being to assess the presence, relative abundance and habitat use by mammalian carnivores and ungulates in winter. Surveys conducted under suitable winter conditions (i.e., at least 24 hours after a minimum snowfall of 2 cm to allow time for animals to move and make tracks).

Remote Camera Monitoring

- Remote camera data collected according to Teck's Regional Wildlife Monitoring Program (Teck 2020), relying primarily on a stratified random design. Cameras deployed in a variety of landscape strata, habitat types and at various distances to active mining and other human activity, and reclaimed areas.
- Reconyx PC800 and PC900 HyperFire Professional Semi-Covert IR cameras set up to collect data year-round over multiple years.

- Cameras programmed to capture images 24 hours/day and to take two pictures as fast as possible with a one-second delay between triggers (i.e., motion photographs), following Teck's Remote Camera Deployment and Data Entry Manual (Teck 2019).
- Each motion-trigged photograph is reviewed to determine if wildlife or humans are captured in the image. If an image captured wildlife, the species is identified. All individuals appearing in the photographs are counted. Individuals appearing for the first time are counted as "new" individuals. If the same individual is captured in subsequent photographs, the individual in the photograph being interpreted is counted as "same". Individuals are counted as "same" for as long as they remain in a string of continuous photographs. However, if an individual leaves the field of view of the camera for greater than five minutes and then returns, the individual is again considered "new".
- A photograph rate is determined for each species for use in subsequent analysis by calculating the number of active camera days for each camera, then dividing the total number of "new" observations of the species at that camera location by the number of days the camera was active.

Badger and Ground Squirrel Surveys

- Foot-based burrow surveys based on presence/not-detected survey protocol (RIC 2007) and following the guidance in Teck's American Badger Species Management Plan (Teck 2016a). Surveys conducted in the spring when badgers are active, but vegetation does not obstruct burrows, maximizing detectability. Ground squirrel surveys completed in conjunction with badger burrow surveys. Surveys target appropriate habitat (e.g., grassland habitat on south slopes).

Grizzly Bear Denning Habitat Assessment

- Field assessment of areas of the Project footprint and vicinity identified as high suitability grizzly bear denning habitat based on the habitat suitability index (HSI) model described in the Grizzly Bear Denning Management Plan (Teck 2016b) to confirm model predictions. This information will be used to focus the spring and fall denning surveys conducted closer to the date of disturbance to identify active den locations that may require mitigation.

Bat Acoustic Surveys

- Acoustic bat detectors deployed in suitable habitat to identify areas with relatively higher activity levels (as an indication of high suitability habitats).
- Detector deployment informed by a field reconnaissance undertaken to complete a high-level assessment of habitat suitability for day roosts (i.e., structural stage five to seven) and maternity roosts (i.e., structural stage six and seven) to identify candidate locations for acoustic bat detectors. Detectors deployed during the field reconnaissance program and relocated monthly to other candidate locations identified during the field reconnaissance, with final retrieval in October.

Riverine Bird and River Otter Surveys

- Survey procedures based on those described in the provincial protocols (RIC 1998e), consisting of a river shoreline transect survey along watercourses capable of supporting breeding riverine birds. The

census technique involves walking along the watercourse and recording bird occurrences for the inventoried reaches. A riparian habitat assessment also conducted according to the procedures outlined by the BC MOE (1995).

- River otter surveys completed in conjunction with riverine bird surveys. Surveys consist of visual searches for river otter individuals or sign (dens, latrines, scat, tracks) along watercourses. Currently there are no provincial standardized protocols that target river otter. Protocol used during surveys developed from methods used in previous BC studies, which generally consist of visual searches for river otters or their sign along shoreline transects (e.g., Engelstoft and Mogensen 2005; Crowley et al. 2012).

Breeding Bird Surveys

- Surveys to document songbird presence, relative abundance, distribution, and habitat use, conducted by qualified avian field biologists using the variable radius point-count method recommended in the provincial protocols (RIC 1999b). A subset of survey locations target olive-sided flycatcher habitat (i.e., edge habitats). Each point count is ten minutes in duration consisting of eight minutes of passive listening, followed by one minute of call playback for olive-sided flycatcher and a final minute of passive listening. The olive-sided flycatcher call playback consists of three repetitions of the song of an olive-sided flycatcher followed by one contact call note over the course of one minute.
- The surveys are conducted over two rounds during the breeding season (late May to early July). Survey stations selected in the first round are revisited in the second round.

Northern Goshawk Surveys

- Call-playback surveys following standards outlined in Inventory Methods for Raptors (RIC 2001b), preceded by a high-level assessment of habitat suitability to identify locations of surveys in both foraging and nesting habitat, with sampling conducted in a variety of forested habitat types. Each transect surveyed twice during the breeding season, with survey rounds separated by at least five days.
- Call play-back stations located at 400 m intervals along each transect. Call-playbacks consist of 3 minutes of passive listening upon arrival, three rounds of call playback totalling 6 minutes, and a final 3 minutes of passive listening, totalling 12 minutes of survey. Calls are broadcast over a FoxPro call-playback device that is rotated 120 degrees after each call-series. To maximize the possibility of a northern goshawk responding to the call-playback, the first round of surveys (June) broadcasts adult northern goshawk territorial calls; the second round of surveys (July) broadcasts juvenile begging calls. Surveys broadcasting adult territorial calls are conducted during the breeding period, between sunrise and sunset. Surveys broadcasting juvenile begging calls are conducted in early morning, ‘peak hunger’ time for nesting females and chicks.
- If a northern goshawk is observed, attempts are made to locate nests in the area (within a 300 m radius of the raptor’s initial detection location). Surveyors look for evidence of occupancy, including pellets and whitewash. If a nest is observed, information is collected including nest location, nest

substrate, nest tree species, evidence of activity, and information noted for any northern goshawk detected in or around the nest.

Amphibian surveys

- Surveys conducted using two different methods:
    - i) time-constrained surveys; and
    - ii) environmental DNA analysis (referred to as eDNA).
- Surveys focused on suitable habitats within the Project footprint, but also target suitable habitats in the LSA.
- Time-constrained surveys preceded by a desktop evaluation for western toad breeding habitat followed by a field reconnaissance survey in May to verify desktop results and confirm survey locations. Surveys undertaken in June by a biologist with experience surveying for breeding amphibians (J. Hobbs) and generally aligned with provincial protocols (RIC 1998g). Survey effort varies depending on the size and suitability of the habitat but does not exceed 1 ha per surveyor hour. Although western toad is the target species, all amphibian species observed are recorded. Additional information recorded includes species, location, development stage, count, aggregate (egg mass) size, water depth of observation, distance from shore to observation, average water depth, attachment substrate, bottom substrate, and macrohabitat (e.g., stream, log jam, shoreline). Global positioning system track files are recorded so that effort can be quantified and, if necessary, replicated in future years.
- Samples collected for eDNA interpretation at all sites where time-constrained surveys fail to detect any western toads. Additionally, eDNA collected at a subset of the sites where western toad is identified to act as a validation tool for the eDNA methods. eDNA methods follow standard protocols (Hobbs et al. 2017). eDNA methods are predicated on the fact that species exogenously shed their genetic material into their environment as they complete their life processes; this exogenous DNA may become suspended in aquatic ecosystems. For aquatic and semi-aquatic species, the presence of genetic material from the target taxa (i.e., western toad) from water samples collected on site allows inference regarding species' use of local (sampled) habitats. In aquatic habitats, suspended genetic material can be detected using quantitative polymerase chain reaction (qPCR) genetic analysis techniques; a positive result from qPCR analysis may indicate species presence.
- Three (i.e., triplicate) 1 L water samples collected at a single sample station. Samples processed in the same order as collected and filtration completed within 24 hours of collection. Following collection and filtration, eDNA samples preserved and sent to a genetics lab at the University of Victoria or Maxxam Analytics for qPCR analysis.

Gillette's Checkerspot Surveys

- Surveys conducted between July 1 and July 20, the predicted flight period for Gillette's checkerspot within the BC portion of the species' range, following methods used in past inventories for this species (Hobbs 2008; Dulc and Hobbs 2013). Surveys must be conducted under specific weather

conditions (i.e., ≤ 25% cloud cover, wind < 2 on the Beaufort wind scale, and no precipitation) when the species is most active and detectable.

- Potentially suitable habitat areas (i.e., mesic sites with suitable vegetation species and structure) first identified in a GIS environment from high-resolution satellite imagery based on topography, elevation, vegetation, moisture, habitat patch size, and proximity to known extant populations. Survey locations focus on areas of potentially suitable habitat in the vicinity of the proposed Project footprint and the surrounding area. Consideration is afforded to dispersal capabilities of Gillette's checkerspot during identification and prioritization of survey areas.
- Surveys conducted by a biologist with extensive experience surveying for Gillette's checkerspot (J. Hobbs). At each survey location, visual searches conducted within areas of foraging habitat to determine the presence and abundance of Gillette's checkerspots and other butterflies. Surveys consist of visually scanning vegetation for flying, perched, and feeding butterflies. Individual butterflies may be captured using an aerial insect net, if confirmation of species identification is required. Any captured butterflies are immediately released after identification, and no specimens are collected.

Predisturbance Surveys

- Predisturbance surveys for wildlife species and important wildlife habitat features (e.g., nests, dens, mineral licks, wildlife trees) in support of exploration activities for the Project. Surveys focus on assessing and adjusting exploration activity locations (drill holes, test pits, access trails, etc.) to avoid and minimize impacts on wildlife species at risk and sensitive wildlife features.
- Surveys undertaken by meandering through the focus area searching for wildlife and wildlife sign.
- Each observation record includes, at minimum, the location of the observation, species or species group, photo, and observation notes (e.g., description of habitat feature such as measurement of den entrance).

E-2.11 Human and Terrestrial Wildlife Health

- Soil and vegetation sample collection to determine existing metals and polycyclic aromatic hydrocarbon concentrations. Vegetation tissue samples were co-located with soil samples.
- The soil and vegetation baseline sampling program was developed in general accordance with:
    - British Columbia Field Sampling Manual (BC ENV 2013),
    - First Nations Food, Nutrition & Environment Study (FNFNES; Chan et al. 2011),
    - Supplemental Guidance on Human Health Risk Assessment for Country Foods (Health Canada 2010), and
    - Existing local studies (Firelight Group 2015, Ramboll Environ 2016).
- The guidance documents were used to develop study objectives, sampling procedures, and quality assurance/ quality control (QA/QC) protocols for the sampling of soil and vegetation tissue. Sampling locations were selected to provide good coverage across the local study area with preference given

to locations near recreation sites, hiking trails, trapper cabins, parks and other likely frequented areas by people and wildlife.

- The majority of the soil and vegetation tissue was conducted by Golder in August 2019 and some additional samples were collected in August 2020 to address new receptor locations provided by the Ktunaxa.
- The baseline soil and vegetation data will be used in the human and wildlife health risk assessment for the following purposes:
    - Determine the baseline concentrations that people and wildlife that consume plants and incidentally ingest soil may be exposed to.
    - Predict future concentrations of constituents in soil and vegetation as a result of the deposition of air emissions from the Project; and
    - Calculate site-specific bioaccumulation factors (to determine uptake relationships between concentrations of constituents in soil and vegetation).

E-2.12 Socio-Economic, Land and Water Resource Use, and Visual Aesthetics

Socio-Economic Primary Data Collection

- The socio-economic baseline will profile the existing social conditions in the Elk Valley and Crowsnest Pass through secondary and primary data collection programs related to the Employment and Economy, Services and Infrastructure, and Human Health and Wellbeing components VCs. Secondary social and economic data has recently been collected for the Elk Valley Social Baseline and Impact Assessment (Golder Associates Ltd. 2017) and updated to reflect more recent publicly available data. Primary data collection will be undertaken through a targeted interview program with local elected representatives, local and regional government staff members and managers, and representatives of local community organizations to supplement secondary data collection.
- The interviews with local and regional government staff members and managers and representatives of local organizations would be targeted, one-on-one interviews. Specific questions will be developed for each interview to address gaps in baseline data and gather information about potential Project effects. In advance of interviews, interviewees will be provided with an interview guide outlining general topics to be covered, specific questions that will be asked to fill gaps, and any data requirements or reports that would be of use if prepared prior to the interview. Golder will identify community contacts through Teck's relationships and supplement with additional representatives from organizations, as appropriate.
- It will be important to recognize that baseline conditions and experiences differ between subgroups of society, and a Gender Based Analysis Plus (GBA+) approach will be applied in the selection of interviewees and topics.
- Key socio-economic issues related to development of the Project are anticipated to include:

  - Employment and contracting opportunities due to the additional construction opportunities and continuation of mining operations.
  - Population change as a result of new employment opportunities created through the Project and temporary or permanent in-migration of workers and their families.
  - Demand for housing and community services and community infrastructure due to potential in-migration of workers and their families, and effects on housing supply and availability and quality of services and infrastructure.
  - Benefits to the local and regional economy as a result of direct and indirect employment and procurement in the local economy, including the development of the mining sector, employment, income, business opportunities and government revenue generation through payment of taxes, including the benefits through the Elk Valley Property Tax Sharing Agreement.
  - Nuisance from Project related to sensory disturbance (e.g., dust, noise, visual affects).
  - Differing experiences of the Project, both through positive and adverse effects, based on unique characteristics and circumstances of subgroups of the population.
- Interviews will take place during ongoing restriction under the COVID-19 pandemic. Golder's socio-economic team will work with Teck and interviewees to determine appropriate interview processes in accordance with provincial COVID-19 pandemic restrictions, as well as Teck's and Golder's health and safety policies. At this time, it is anticipated that interviews will be conducted remotely. While the exact schedule for interviews is yet to be determined in consultation with interviewees, it is expected that they will occur in Q2 of 2021.
- The scope of the socio-economic baselines does not include baseline information on Indigenous groups. Teck will work with the KNC to develop the work plan for the assessment of Indigenous interests. This may include content pertaining to the social and economic conditions of Ktunaxa Nation communities and citizens, including, where appropriate, avenues for integrating information into the IS/A. Other Indigenous communities identified by IAAC will be included in a similar process, as required.

Land and Water Resource Use Secondary Data Collection

- A preliminary Land and Resource Use land and resource secondary data collection program detailing existing conditions pertaining to land use planning and ownership, commercial and non-commercial land and resource use within the land and resource use local and regional study areas. This included review of data collected for the Elk Valley Social Baseline and Impact Assessment (Golder Associates Ltd. 2017) and updated from available data sources such as
  - local, regional and provincial land and resource planning documents, relevant statutes, policies and frameworks
  - tenure, ownership and land use designation information
  - mapping of commercial and recreational use activity and areas data

- wildlife and fish harvesting statistics, and regulations
- information from Teck (e.g., access agreements)

Land and water Resource Use Primary Data Collection

- A land and resource use primary data collection program will be undertaken through a series of interviews and group mapping sessions with local resource operators (forestry, mining, gas),trappers and guide outfitters, wildlife conservation officer and groups, and recreational user groups. The primary data program will verify the accuracy of secondary land and resource use information and provide an understanding of the pattern of area use and access, and the relative level of use and timing of commercial and recreational activities (e.g., fishing, hunting, ATVing) occurring with in the study areas.
- These interviews and mapping sessions will be coordinated with Teck and the socio-economic primary data collect program and are expected to occur in Q2 of 2021. In accordance with provincial COVID-19 pandemic restrictions, as well as Teck's and Golder's health and safety policies, interviews will take place virtually through online meetings and mapping technologies.
- Secondary and primary data collection involves the identification of distinct land and resource use sub-groups and their characterizing their baseline conditions and experiences using a GBA+.

Visual Aesthetics photographic survey

- A photographic field survey was conducted between August 25 to 28, 2020 to capture landscape photographs and observational information from surveyed viewpoint locations with a view of the Project area. Preliminary viewing locations were determined through the results of visibility modelling, from mapping of roadways and recreations areas, and from receptor sites provided by the KNC that represent sensitive locations within a known use area. During the field survey, preliminary viewing locations were adjusted based on observations to produce representative views towards the Project that may be experienced by viewers where the Project is most visible.

Visual Aesthetics baseline landscape modelling

- Three of the viewpoints identified related to Ktunaxa indigenous cultural use areas were not accessible for photos during the photographic survey either because they are within existing No Authorized Entry areas for GHO and FRO mine sites, or are located in area that were not safe for access (i.e., alpine areas). In order to address this gap, landscape modelling and simulations of the existing viewing conditions will be developed to include in visual aesthetics baseline reporting. The modelling will be based on terrain and vegetation data, and orthographic imagery, and developed in advance landscape modelling software to produce a photo-realistic simulations of the views towards the project that may be experienced from these locations.

Visual Aesthetics lighting study

- A light baseline monitoring program will be carried out to establish current summertime and wintertime lighting conditions based on guidance from the Commission Internationale de L'Éclairage (CIE 2017) at locations consistent with the Visual Aesthetics photographic survey, where possible.

E-2.13 Geochemistry

- Laboratory analysis of samples collected from RC and core holes in the Project area.

E-2.14 Archaeology

Archaeological overview assessments, impact assessments, and data analyses are conducted in general accordance with the following:

- The British Columbia Archaeological Impact Assessment Guidelines (BC Archaeology Branch 1998).
- The British Columbia Archaeology Branch Archaeological Site Form Requirements V.7 (BC Archaeology Branch 2021).
- The British Columbia Archaeology Branch Mapping and Spatial Requirements V4. (BC Archaeology branch 2021).
- The British Columbia Archaeology Branch Guidelines for Defining Archaeological Site Boundaries and Protection Status (BC Archaeology Branch 2017).

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Appendix F List of Scientific Names

Table F-1: List of Scientific Names

Common Name	Scientific Name
abbreviated bluegrass	*Poa abbreviate* ssp. *pattersonii*
American badger	*Taxidea taxus jeffersonii*
American dipper	*Cinclus mexicanus*
American robin	*Turdus migratorius*
Arizona calcareous moss	*Mnium arizonicum*
bank swallow	*Riparia riparia*
Barbula amplexifolia	*Barbula amplexifolia*
barn swallow	*Hirundo rustica*
bent-flowered milk-vetch	*Astragalus vexilliflexus* var. *vexilliflexus*
bighorn sheep	*Ovis canadensis*
black alpine sedge	*Carex nigricans*
black bear	*Ursus arctos* and *U. americanus*
black cottonwood	*Populus trichocarpa*
black huckleberry	*Vaccinium membranaceum*
blue-footed pixie	*Cladonia cyanipes*
bluebunch wheatgrass	*Pseudoroegneria spicata*
bluejoint reedgrass	*Calamagrostis canadensis*
buff daisy	*Erigeron ochroleucus*
Cephaloziella rubella	*Cephaloziella rubella*
Clad lichens	*Cladonia* spp
Clark's nutcracker	*Nucifraga columbiana*
Columbia spotted frog	*Rana luteiventris*
Columbian ground squirrel	*Urocitellus columbianus*
common nighthawk	*Chordeiles minor*
common hook moss	*Drepanocladus aduncus*
common red paintbrush	*Castilleja miniata*
common snowberry	*Symphoricarpos albus*
compact selaginella	*Selaginella densa*
coyote	*Canis latrans*
diverse-leaved cinquefoil	*Potentilla diversifolia*
Donn's grimmia	*Grimmia donniana*
Douglas-fir	*Pseudotsuga menziesii*
Drummond's willow	*Salix drummondiana*
dusky grouse	*Dendragapus obscurus*

Table F-1: List of Scientific Names

Common Name	Scientific Name
Engelmann's knotweed	*Polygonum engelmannii*
Engelmann spruce	*Picea engelmannii*
false azalea	*Menziesia ferruginea*
falsebox	*Paxistima myrsinites*
fox sparrow	*Passerella iliaca*
Gillette's checkerspot	*Euphydryas gillettii*
golden-mantled ground squirrel	*Callospermophilus lateralis*
grizzly bear	*Ursus arctos*
grouseberry	*Vaccinium scoparium*
hard-stemmed bulrush Deep Marsh	*Schoenoplectus acutus* Deep Marsh
harlequin duck	*Histrionicus histrionicus*
heart-leaved arnica	*Arnica cordifolia*
Homosekikaic pixie-cup	*Cladonia homosekikaica*
hybrid Engelmann x white spruce	*Picea glauca x engelmannii*
Hygroamblystegium varium	*Hygroamblystegium varium*
Idaho fescue	*Festuca idahoensis*
Indian hellebore	*Veratrum viride*
junegrass	*Koeleria macrantha*
juniper	*Juniperus communis*
little brown myotis	*Myotis lucifugus*
limber pine	*Pinus flexilis*
lodgepole pine	*Pinus contorta*
long-toed salamander	*Ambystoma macrodactylum.*
low bilberry	*Vaccinium myrtillus*
lynx	*Lynx canadensis*
Magnum mantleslug	*Magnipelta mycophaga*
marten	*Martes americana*
mink	*Neovison vison*
Monarch	*Danaus plexippus*
moose	*Alces americanus*
mule deer	*Odocoileus hemionus*
Northern goshawk	*Accipiter gentilis atricapillus*
olive-sided flycatcher	*Contopus cooperi*
one-leaved foamflower	*Tiarella trifoliate var. unifoliata*

Table F-1: List of Scientific Names

Common Name	Scientific Name
Orthotrichum pallens	*Orthotrichum pallens*
Parry's townsendia	*Townsendia parryi*
peregrine falcon, anatum subspecies	*Falco peregrinus anatum*
pine grass	*Calamagrostis rubescens*
pine siskin	*Spinus pinus*
Prairie falcon	*Falco mexicanus*
red deer	*Cervus elaphus*
red squirrel	*Tamiasciurus hudsonicus*
red-stemmed feather moss	*Pleurozium schreberi*
red-tailed hawk	*Buteo jamaicensis*
rock rather moss	*Lescuraea saxicola*
Rocky Mountain tailed frog	*Ascaphus montanus*
rose	*Rosa* spp.
rough fescue	*Festuca campestris*
rufous hummingbird	*Selasphorus rufus*
Rusty blackbird	*Euphagus carolinus*
Saskatoon	*Amelanchier alnifolia*
Scheuchzer's cotton grass Herbaceous Vegetation	*Eriophorum scheuchzeria* Herbaceous Vegetation
scrub birch	*Betula nana*
short-eared owl	*Asio flammeus*
short-tooth hump-moss	*Amblyodon dealbatus*
Schleicher's thread-moss	*Ptychostomum schleicheri*
slender sedge	*Carex lasiocarpa*
slender smoothcap	*Atrichum tenellum*
snowshoe hare	*Lepus americanus*
soopalallie	*Shepherdia canadensis*
spathulate candle snuffer moss	*Encalypta spathulata*
spotted sandpiper	*Actitis macularius*
step moss	*Hylocomium splendins*
subalpine daisy	*Erigeron peregrinus*
subalpine fir	*Abies lasiocarpa*
sulphur buckwheat	*Eriogonum umbellatum*
sweet-flowered fairy-candelabra	*Androsace chamaejasme* ssp. *lehmanniana*
sandwort, thread-leaved sandwort	*Eremogone capillaris*

Table F-1: List of Scientific Names

Common Name	Scientific Name
three-toed woodpecker	*Picoides dorsalis*
timber oatgrass	*Danthonia intermedia*
twinflower	*Linnaea borealis*
two-toned bone lichen	*Hypogymnia dichroma*
Utah honeysuckle	*Lonicera utahensis*
water sedge	*Carex aquatilis*
western larch	*Larix occidentalis*
western meadow rue	*Thalictrum occidentale*
western meadow rue sitka valerian	*Valeriana sitchensis*
western pasqueflower	*Anemone occidentalis*
western toad	*Anaxyrus boreas*
westslope cutthroat trout	*Oncorhynchus clarkii lewisi*
whitebark pine	*Pinus albicaulis*
Williamson's sapsucker	*Sphyrapicus thyroideus*
wolf	*Canis lupus*
wolf's trisetum	*Graphephorum wolfii*
wolverine	*Gulo gulo*
wood frog	*Lithobates sylvaticus*
Wyoming kitten-tails	*Synthyris wyomingensis*
yarrow	*Achillea borealis*
yellow beard-tongue	*Penstemon confertus*

Appendix G Plant Species and Ecological Communities at Risk with Potential to Occur in the Project Vicinity

G-1 Introduction

The tables below were developed from a search of the British Columbia Conservation Data Centre, first accessed in January 2020 and July 2021, and confirmed against status updates released spring of 2020, and some previously collected data. The tables are intended to provide initial information regarding listed species and ecological communities with the potential to occur in the Project vicinity for early engagement. These lists are not intended to be comprehensive; searches will be re-run and species and ecological communities will be updated in concert with baseline data collected in the field, as well as through collaboration and engagement with stakeholders and regulators, as the project progresses (for example, for valued component selection and environmental assessment).

Table G-1-1: Listed Plants with Potential to Occur in the Project Vicinity

Scientific Name	Common Name	Provincial/ Global Status[a]	BC List[b]	COSEWIC[c]	SARA[d]
Vascular Plants					
Androsace chamaejasme ssp. *lehmanniana*	sweet-flowered fairy-candelabra	S2S3/G5T5	Blue	-	-
Arnica longifolia	Seep-spring arnica	S3	Blue	-	-
Astragalus crassicarpus var. paysonii	ground plum milk-vetch	S1/G5	Red	-	-
Astragalus drummondii	Drummond's milk-vetch	S1/G5	Red	-	-
Brickellia grandiflora	large-flowered brickellia	S1/G5	Red	NAR	-
Carex paysonis	Payson's sedge	SH/G4G5	Red	-	-
Cirsium scariosum var. *scariosum*	elk thistle	S3/G5T5?	Blue	-	-
Claytonia megarhiza[e]	alpine springbeauty	S3/G5	Blue	-	-
Crepis acuminata ssp. *acuminata*	long-leaved hawksbeard	S1/G5T4T5	Red	-	-
Delphinium bicolor ssp. *bicolor*	Montana larkspur	S3/G4G5T4T5	Blue	-	-
Erigeron ochroleucus	Buff daisy	S2S3/G5	Blue	-	-
Eriogonum androsaceum	androsace buckwheat	SH/G4G5	Red	-	-
Gentiana calycosa	mountain bog gentian	S2?/G4	Blue	-	-
Graphephorum wolfii	Wolf's trisetum	S3/G4	Blue	-	-
Lupinus sulphureus	sulphur lupine	S2S3/G5	Blue	-	-
Oenothera suffrutescens	scarlet gaura	S2/G5	Red	-	-
Papaver pygmaeum	dwarf poppy	S2/G3	Red	-	-
Penstemon nitidus var. *nitidus*	shining penstemon	S1/G5T5	Red	-	-
Phacelia lyallii	Lyall's phacelia	S2S3/G3	Blue	-	-
Pinus albicaulis	whitebark pine	S2S3/G3G4	Blue	E	1-E
Pinus flexilis	limber pine	S2/G4	Red	E	-
Plantago canescens	arctic plantain	S1/G4G5	Red	-	-

Table G-1-1: Listed Plants with Potential to Occur in the Project Vicinity

Scientific Name	Common Name	Provincial/ Global Status[a]	BC List[b]	COSEWIC[c]	SARA[d]
Vascular Plants (cont'd)					
Poa abbreviate ssp. *pattersonii*[e]	abbreviated bluegrass	S3/G5T5	Blue	-	-
Polemonium elegans	elegant Jacob's-ladder	S3?/G4	Blue	-	-
Polygonum austiniae	Austin's knotweed	S1/G5T4	Red	-	-
Polygonum engelmannii	Engelmann's knotweed	S1/G5T3T5	Red	-	-
Potentilla ovina var. *ovina*	sheep cinquefoil	S2?/G5?T5?	Red	-	-
Prenanthes sagittata	arrow-leaved rattlesnake-root	S1/ G4	Red	-	-
Senecio hydrophiloides	sweet-marsh butterweed	S3/G4G5	Blue	-	-
Senecio megacephalus	large-headed groundsel	S2S3/G4	Blue	-	-
Symphyotrichum frondosum[e]	short-rayed aster	S2	Red	-	-
Synthyris wyomingensis	Wyoming kitten-tails	S2S3/G5	Blue	-	-
Thalictrum dasycarpum	purple meadowrue	S2/G5	Red	-	-
Townsendia parryi	Parry's townsendia	S2/G4?	Red	-	-
Non-vascular Plants					
Amblyodon dealbatus	Short-tooth hump-moss	S3	Blue	-	-
Atrichum tenellum	Slender smoothcap	S2/G4G5	Red	-	-
Barbula amplexifolia	Barbula moss	S1	Red	-	-
Bryobrittonia longipes	Not available	S3/G3G4	Blue	-	-
Bryum uliginosum	Not available	S2S3/G3G5	Blue	-	-
Cephaloziella rubella	Not available	SH/GNR	Red	-	-
Didymodon subandreaeoides	Not available	S1S3/G4G5	Red	-	-
Encalypta spathulata	spathulate candle snuffer moss	S3/G4	Blue	-	-
Grimmia donniana	Donn's grimmia	S3	Blue	-	-
Grimmia unicolor	grimmia moss	G5	Red	-	-
Hygroamblystegium noterophilum	Not available	S2S4/G5T4	Blue	-	-
Hygroamblystegium varium[e]	Not available	S3/G5	Blue	-	-
Hygrohypnum alpinum	Not available	S3/G4G5	Blue	-	-
Lescuraea saxicola	Rock rather moss	S3/G4G5	Blue	-	-
Mnium arizonicum	Arizona calcareous moss	S2S3/G5?	Blue	-	-
Orthotrichum pallens	Orthotrichum pallens	S3/G5	Blue	-	-
Physcomitrium pyriforme	Not available	S3/G5	Blue	-	-
Pohlia longicollis	Not available	S2/G4G5	Red	-	-
Pseudoleskea incurvate var. *gigantea*	Not available	S3/G5TNR	Blue	-	-
Ptychostomum schleicheri	Schleicher's thread-moss	G5?	Blue	-	-
Racomitrium pygmaeum	Not available	S2/Gu	Blue	-	-

Table G-1-1: Listed Plants with Potential to Occur in the Project Vicinity

Scientific Name	Common Name	Provincial/ Global Status[a]	BC List[b]	COSEWIC[c]	SARA[d]
Schistidium atrichum	Not available	S2S2/GNR	Red	-	-
Schistidium robustum	Not available	S3/GNR	Blue	-	-
Tortula leucostoma[e]	desmatodon moss	S3	Blue		
Warnstorfia pseudostraminea	Not available	S3/G3G4	Blue	-	-
Lichen					
Cladonia cyanipes[e]	Blue-footed pixie	S2S4/G5	Blue	-	-
Hypogymnia dichroma	Two-toned bone lichen	S3?	Blue	-	-

a) S = Provincial; G = Global; T = Species Variety Ranking; 1 = Critically Imperilled; 2 = Imperilled; 3 = Vulnerable; 4 = Apparently Secure; 5 = Secure; ? = Not Certain; H = Historical (possibly extirpated); NR = Not Ranked; U = Unrankable.

b) Red = Extirpated, Endangered, or Threatened; Blue = Special Concern.

c) COSEWIC (Committee on the Status of Endangered Wildlife in Canada); - = not listed; E = Endangered; NAR = Not at Risk (Government of Canada 2020).

d) SARA (*Species at Risk Act*); - = not listed; 1-E = Endangered species listed on Schedule 1 (Government of Canada 2021).

Source: BC CDC (2021). Search criteria (July 9, 2021): Forest District = Rocky Mountain Forest District AND BGC Zone = IMA, ESSFdk, MSdw, and MSdk. Search restricted to Red, Blue, and legally designated species.

e) Augmented with observations of plant species at risk obtained from Teck's historical dataset and previous reports.

Table G-1-2: Listed Ecological Communities with Potential to Occur in the Project Vicinity

English Name	Scientific Name	Biogeoclimatic Unit/ Site Series	Provincial/ Global Status[a]	BC List[b]
Brushland and Grassland				
Rough fescue (bluebunch wheatgrass) - Yarrow – clad lichens	*Festuca campestris (Psudoroegneria spicata) - Achillea borealis – Cladonia spp.*	Gg10/Gg12	S1S2/GNR	Red
Idaho fescue - sulphur buckwheat - sandwort	*Festuca idahoensis - Eriogonum umbellatum - Eremogone capillaris*	Gg14	S2/GNR	Red
Rough fescue - sulphur buckwheat - sandwort	*Festuca campestris - Eriogonum umbellatum - Eremogone capillaris*	Gg16	S1/GNR	Red
Idaho fescue - bluebunch wheatgrass - sulphur buckwheat	*Festuca idahoensis - Pseudoroegneria spicata - Eriogonum umbellatum*	Gg17	S2S3/GNR	Blue
Saskatoon - soopolallie - common juniper	*Amelanchier alnifolia - Shepherdia canadensis - Juniperus communis*	Gb20	S3/GNR	Blue
Riparian Flood				
Drummond's willow / bluejoint reedgrass	*Salix drummondiana / Calamagrostis canadensis*	Fl05	S2S3/G3	Blue
Black cottonwood / common snowberry – roses	*Populus trichocarpa / Symphoricarpos albus - Rosa spp.*	Fm01	S1/GNR	Red

Table G-1-2: Listed Ecological Communities with Potential to Occur in the Project Vicinity

English Name	Scientific Name	Biogeoclimatic Unit/ Site Series	Provincial/ Global Status[a]	BC List[b]
Wetlands				
scrub birch / water sedge	*Betula nana / Carex aquatilis*	Wf02	S3/G4	Blue
slender sedge / common hook-moss	*Carex lasiocarpa / Drepanocladus aduncus*	Wf05	S3/G3	Blue
hard-stemmed bulrush Deep Marsh	*Schoenoplectus acutus* Deep Marsh	Wm06	S3/G5	Blue
Alpine				
Timber oatgrass – Grouseberry – Thread-leaved sandwort – Compact selaginella	*Danthonia intermedia – Vaccinium scoparium – Eremogone capillaris – Selaginella densa*	Ag01	S2/GNR	Red

a) S = Provincial; G = Global; T = Species Variety Ranking; 1 = Critically Imperilled; 2 = Imperilled; 3 = Vulnerable; 4 = Apparently Secure; 5 = Secure; ? = Not Certain; H = Historical (possibly extirpated); NR = Not Ranked; U = Unrankable.

b) Red = Extirpated, Endangered, or Threatened; Blue = Special Concern.

Source: BC CDC (2021). Search criteria (July 9, 2021): Forest District = Rocky Mountain Forest District AND BGC Zone = IMAun, ESSFdk1, ESSFdk2, ESSFdkp, ESSFdkw, MSdk, MSdk1, MSdk2, MSdw. Search restricted to Red and Blue listed ecological communities. Augmented with observations of ecological communities at risk obtained from Teck's previous projects.

G-2 References

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Appendix H Wildlife Species at Risk with Potential to Occur in the Project Vicinity

H-1 Introduction

The table below was developed primarily from a search of the British Columbia Conservation Data Centre, accessed in July 2021, as well as some previously collected data and external sources (e.g., British Columbia Breeding Bird Atlas). The table is intended to provide initial information regarding listed wildlife and fish species with the potential to occur in the Project vicinity for early engagement. The list is not intended to be comprehensive; searches will be re-run and species will be updated in concert with baseline data collected in the field, as well as through collaboration and engagement with stakeholders and regulators, as the project progresses (for example, for valued component selection and environmental assessment).

Table H-1-1: Wildlife and Fish Species at Risk with Potential to Occur in the Project Vicinity

Common Name	Scientific Name	Provincial/ Global Status[a]	BC List[b]	COSEWIC[c]	SARA[d]
Mammals					
American Badger, jeffersonii subspecies	*Taxidea taxus jeffersonii*	S2/G5	Red	E	1-E
Bighorn Sheep	*Ovis canadensis*	S3?/G4	Blue	-	-
Fisher, Columbian population	*Pekania pennant pop. 5*	S2/G5TNR	Red	-	-
Grizzly Bear	*Ursus arctos*	S3?/G4	Blue	SC	1-SC
Least Chipmunk, oreocetes subspecies	*Neotamias minimus oreocetes*	S3/G5T3	Blue	-	-
Least Chipmunk, selkirki subspecies	*Neotamias minimus selkirki*	S1/G5T1	Red	-	-
Little Brown Myotis	*Myotis lucifugus*	S4/G3	Yellow	E	1-E
Mountain Goat	*Oreamnos americanus*	S3/G5	Blue	-	-
Northern Myotis	*Myotis septentrionalis*	S3S4/G1G2	Blue	E	1-E
Red-tailed Chipmunk, ruficaudus subspecies	*Neotamias ruficaudus ruficaudus*	S2/G4G5T4	Red	-	-
Southern Red-backed Vole, galei subspecies	*Myodes gapperi galei*	S3S4/G5T5	Blue	-	-
Townsend's Big-eared Bat	*Corynorhinus townsendii*	S3S4/G4	Blue	-	-
Wolverine, luscus subspecies	*Gulo gulo luscus*	S3/G4T4	Blue	SC	1-SC
Birds					
American Avocet	*Recurvirostra americana*	S2S3B/G5	Blue	-	-
American Bittern	*Botaurus lentiginosus*	S3B, SNRN/G5	Blue	-	-
Bank Swallow	*Riparia riparia*	S4B/G5	Yellow	T	1-T
Barn Swallow	*Hirundo rustica*	S3S4B/G5	Blue	SC	1-T
Black Swift	*Cypseloides niger*	S2S3B/G4	Blue	E	1-E
Broad-winged Hawk	*Buteo platypterus*	S3?B/G5	Blue	-	-
Common Nighthawk	*Chordeiles minor*	S4B/G5	Yellow	SC	1-T
Eared Grebe	*Podiceps nigricollis*	S3B/G5	Blue	-	-

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Common Name	Scientific Name	Provincial/ Global Status[a]	BC List[b]	COSEWIC[c]	SARA[d]
Birds (cont'd)					
Evening Grosbeak	*Coccothraustes vespertinus*	S5/G5	Yellow	SC	1-SC
Great Blue Heron, herodias subspecies	*Ardea herodias herodias*	S3?/G5T5	Blue	-	-
Gyrfalcon	*Falco rusticolus*	S3S4B,SNRN/G5	Blue	NAR	-
Long-billed Curlew	*Numenius americanus*	S3B/G5	Blue	SC	1-SC
Northern Goshawk, atricapillus subspecies	*Accipiter gentilis atricapillus*	S3S4/G5T5	Blue	NAR	-
Olive-sided Flycatcher	*Contopus cooperi*	S3S4B/G4	Blue	SC	1-T
Peregrine Falcon, anatum subspecies	*Falco peregrinus anatum*	S2?/G4T4	Red	NAR	1-SC
Prairie Falcon	*Falco mexicanus*	S1/G5	Red	NAR	-
Red-necked Phalarope	*Phalaropus lobatus*	S3S4B/G4G5	Blue	SC	1-SC
Rough-legged Hawk	*Buteo lagopus*	S3N/G5	Blue	NAR	-
Rusty Blackbird	*Euphagus carolinus*	S3S4B/G4	Blue	SC	1-SC
Short-eared Owl	*Asio flammeus*	S3B,S2N/G5	Blue	T	1-SC
Swainson's Hawk	*Buteo swainsoni*	S2B/G5	Red	-	-
Western Screech-owl, macfarlanei subspecies	*Megascops kennicottii macfarlanei*	S3/G4G5T4	Blue	T	1-T
Williamson's Sapsucker	*Sphyrapicus thyroideus*	S3B/G5	Blue	E	1-E
Amphibians					
Rocky Mountain Tailed Frog	*Ascaphus montanus*	S2S3/G4	Blue	T	1-T
Western Toad	*Anaxyrus boreas*	S4/G4	Yellow	SC	1-SC
Fish					
Westslope Cutthroat Trout	*Oncorhynchus clarkii lewisi*	S2S3/G5T4	Blue	SC	1-SC
Gastropods					
Coeur d'Alene Oregonian	*Cryptomastix mullani*	S3/G4	Blue	-	-
Dusky Fossaria	*Galba dalli*	S3S4/G5	Blue	-	-
Glossy Valvata	*Valvata humeralis*	S1S3/G5	Red	-	-
Magnum Mantleslug	*Magnipelta mycophaga*	S2S3/G3	Blue	SC	1-SC
Pale Jumping-slug	*Hemphillia camelus*	S3/G4	Blue	-	-
Prairie Fossaria	*Galba bulimoides*	S3?/G5	Blue	-	-
Sheathed Slug	*Zacoleus idahoensis*	S3?/G3G4	Blue	SC	1-SC
Star Gyro	*Gyraulus crista*	S3S4/G5	Blue	-	-
Subalpine Mountainsnail	*Oreohelix subrudis*	S3/G5	Blue	-	-
Threeridge Valvata	*Valvata tricarinata*	S1S2/G5	Red	-	-
Widelip Pondsnail	*Stagnicola traski*	S3S4/G3G4	Blue	-	-

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Common Name	Scientific Name	Provincial/ Global Status[a]	BC List[b]	COSEWIC[c]	SARA[d]
Insects					
Albert's Fritillary	*Boloria alberta*	S3/G3	Blue	-	-
Aphrodite Fritillary, manitoba subspecies	*Speyeria aphrodite manitoba*	S3?/G5T5	Blue	-	-
Aphrodite Fritillary, whitehousei subspecies	*Speyeria aphrodite whitehousei*	S3/G5T4	Blue	-	-
Bronze Copper	*Lycaena hyllus*	S3/G5	Blue	-	-
Checkered Skipper	*Pyrgus communis*	S3/G5	Blue	-	-
Dione Copper	*Lycaena dione*	S2/G5	Red	-	-
Eastern Tailed Blue	*Cupido comyntas*	S3/G5	Blue	-	-
Gillette's Checkerspot	*Euphydryas gillettii*	S2S3/G3	Blue	-	-
Hairy-necked Tiger Beetle	*Cicindela hirticollis*	S2S4/G5	Blue	-	-
Jutta Arctic, chermocki subspecies	*Oeneis jutta chermocki*	S3/G5T4Q	Blue	-	-
Mead's Sulphur	*Colias meadii*	S3/G5	Blue	-	-
Monarch	*Danaus plexippus*	S1?B/G4	Red	E	1-SC
Nevada Skipper	*Hesperia nevada*	S3S4/G5	Blue	-	-
Old World Swallowtail, dodi subspecies	*Papilio machaon dodi*	S1/G5T4T5	Red	-	-
Silver-spotted Skipper	*Epargyreus clarus*	S3/G5	Blue	-	-
Silver-spotted Skipper, clarus subspecies	*Epargyreus clarus clarus*	S3/G5T5	Blue	-	-
Tawny-edged Skipper, themistocles subspecies	*Polites themistocles themistocles*	S3/G5TNR	Blue	-	-
Variegated Fritillary	*Euptoieta claudia*	S3N/G5	Blue	-	-

a) S = Provincial; G = Global; T = Species Variety Ranking; 1 = Critically Imperiled; 2 = Imperiled; 3 = Vulnerable; 4 = Apparently Secure; 5 = Secure; ? = Not Certain; H = Historical (possibly extirpated); NR = Not Ranked; U = Unrankable; Q = Questionable Taxonomy; B = Breeding; N = Non-breeding (BC CDC 2021).

b) Red = Extirpated, Endangered, or Threatened; Blue = Special Concern; Yellow = Not at Risk (BC CDC 2021).

c) COSEWIC (Committee on the Status of Endangered Wildlife in Canada); - = not listed; E = Endangered; T = Threatened; SC = Special Concern; NAR = Not at Risk (Government of Canada 2021).

d) SARA (*Species at Risk Act*); - = not listed; Schedule 1 status: E = Endangered T = Threatened; SC = Special Concern (Government of Canada 2021).

H-2 References

BC CDC (British Columbia Conservation Data Centre). 2021. BC Species and Ecosystems Explorer. http://a100.gov.bc.ca/pub/eswp/ [accessed July 2021].

Government of Canada. 2021. Species at Risk Public Registry. https://wildlife-species.canada.ca/species-risk-registry/sar/index/default_e.cfm. [accessed July 2021].