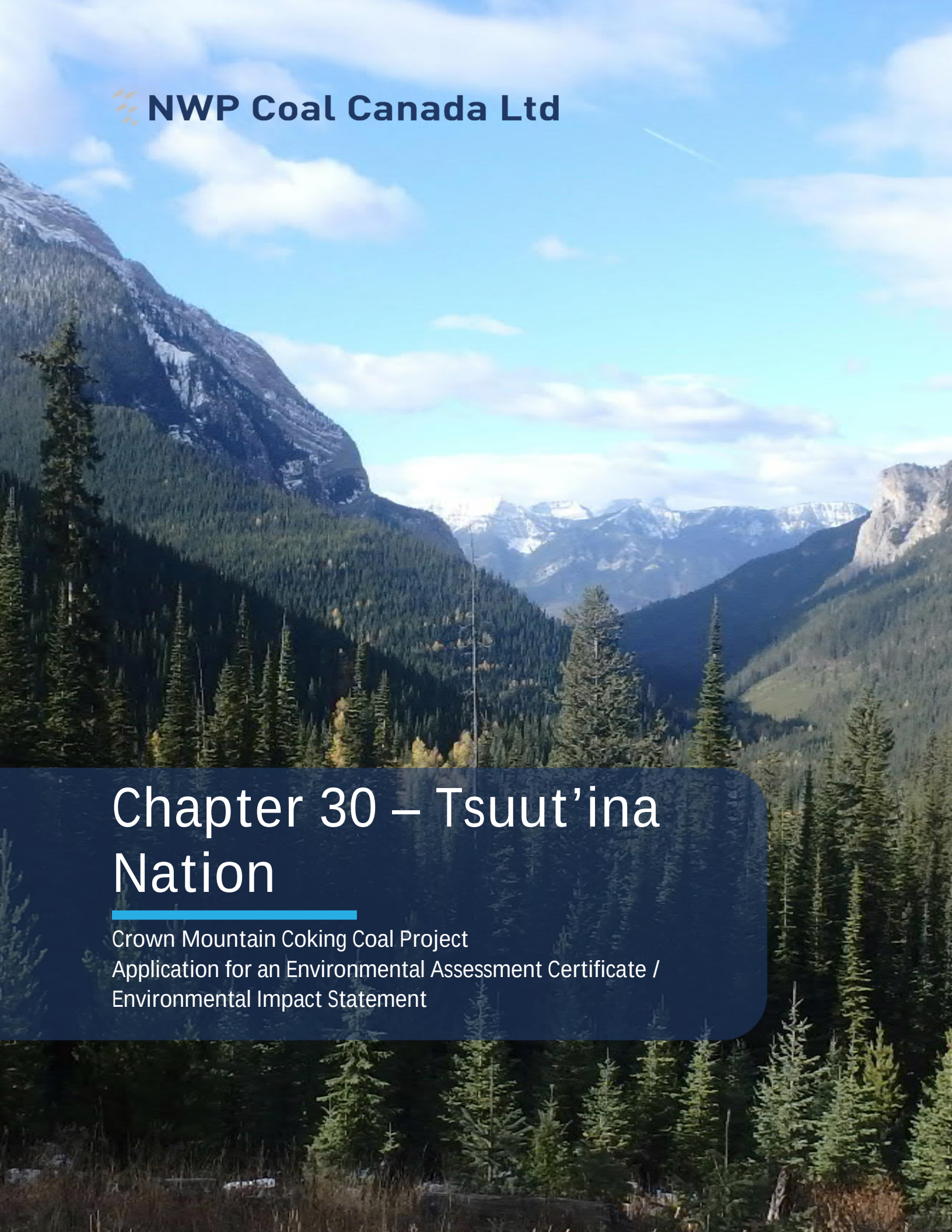
NWP Coal Canada Ltd



Chapter 30 – Tsuut'ina Nation

Crown Mountain Coking Coal Project
Application for an Environmental Assessment Certificate / Environmental Impact Statement

Table of Contents

Figures

Tables

Appendices

30. Tsuut'ina Nation

30.1 Introduction

Historically, the lands of British Columbia (B.C.) have been used by Indigenous Communities and people for traditional land and resource uses since time immemorial. Traditional land and resource use refers to the activities undertaken by Indigenous peoples that were carried out dating back to Pre-contact periods. These activities may have included the building and settling of encampments, seasonal travel, hunting, fishing, trapping, gathering of food and medicines, practicing ceremonial traditions, and burial activities. Evidence of these traditional land and resource uses can be found in archaeological evidence (e.g., archaeological sites, burial sites, and associated objects) and through Indigenous traditional knowledge.

Indigenous Communities, their traditional knowledge, as well as current and historic land and resource use is an important aspect of environmental impact assessment. This chapter provides an overview of the regulatory and policy setting as well as the environmental setting for the Crown Mountain Coking Coal Project. It includes information about the Tsuut'ina Nation community, their Aboriginal and Treaty rights, including traditional land and resource use and descriptions of the Tsuut'ina Nation's baseline conditions related to the Project. This chapter includes the assessment of effects of the Project on the environment related to the Tsuut'ina Nation, the potential mitigation measures identified, and the assessment of the impacts on the Tsuut'ina Nation's rights and interests.

The information presented in Chapter 30 is used to assess potential effects of the Project on Indigenous rights and interests (known as Aboriginal and Treaty Rights and Interests throughout Chapter 30), as outlined in the *Canadian Environmental Assessment Act*, 2012 (CEA Act, 2012) and the Guidelines for the Preparation of an Environmental Impact Statement for the Crown Mountain Coking Coal Project (EIS Guidelines; Canadian Environmental Assessment Agency [CEAA], 2015).

30.1.1 Indigenous Communities

The assessment of potential effects on treaty rights and interests, including land and resource use, was completed for the Indigenous Communities listed in Table 30.1-1. Indigenous Communities required to be consulted as part of the Project were detailed in the provincial Section 11 Order issued for the Project by the federal EIS Guidelines (CEAA, 2015). The Section 11 Order includes Schedules B and C, which

specifically name the Indigenous groups requiring consultation, with additional guidance provided in the April 26, 2018 provincial Application Information Requirements document. In October 2020, the British Columbia Environmental Assessment Office (EAO) varied the procedural order for the Project with the issuance of a Section 13 Order, which included the addition of Indigenous groups (Table 30.1-1). Additionally, CEAA provided guidance on February 20, 2015 via the EIS Guidelines, with further direction provided by the Impact Assessment Agency of Canada (IAAC) on March 16, 2020.

Table 30.1-1: Summary of Indigenous Communities Engaged for the Crown Mountain Coking Coal Project

Indigenous Community/Group	Provincial and/or Federal Guidance for Inclusion on the Project
Ktunaxa Nation • Yaq̓it ʔa·knuqƛi ‘it (ʔakink’um‡asnuq‡iʔit or Tobacco Plains Band) • ʔakisq’nuk (Akisqnuk or Columbia Lake Band) First Nation • ʔaq̓am (St. Mary’s Indian Band) • Yaqan Nuʔkiy (Lower Kootenay Band)	• EIS Guidelines (February 20, 2015) • Section 11 Order - Schedule B (May 27, 2015)
Shuswap Indian Band	• EIS Guidelines (February 20, 2015) • Section 11 Order - Schedule C (May 27, 2015)
Stoney Nakoda First Nations • Bearspaw First Nation • Chiniki First Nation • Wesley First Nation	• EIS Guidelines (February 20, 2015) • IAAC revised list of Indigenous Groups (March 16, 2020) • Section 13 Order (October 30, 2020) - additions to Schedule C of the Section 11 Order
Kainai First Nation (Blood Tribe)	• IAAC revised list of Indigenous Groups (March 16, 2020) • Section 13 Order (October 30, 2020) - additions to Schedule C of the Section 11 Order
Piikani Nation	• IAAC revised list of Indigenous Groups (March 16, 2020) • Section 13 Order (October 30, 2020) - additions to Schedule C of the Section 11 Order
Siksika Nation	• IAAC revised list of Indigenous Groups (March 16, 2020) • Section 13 Order (October 30, 2020) - additions to Schedule C of the Section 11 Order
Tsuut’ina Nation	• IAAC revised list of Indigenous Groups (March 16, 2020)
Métis Nation of British Columbia	• EIS Guidelines (February 20, 2015)
Métis Nation of Alberta, Region 3	• IAAC revised list of Indigenous Groups (March 16, 2020)

30.1.2 Regulatory and Policy Setting

30.1.2.1 Indigenous Communities

As identified by the Impact Assessment Agency of Canada (IAAC) (IAAC, 2015a, b; 2020 a-c; 2021 a, 2022) and listed in Table 30.1-1, the Project falls within the asserted Traditional Territories of the member nations of the Ktunaxa Nation (ʔakisq’nuk, Yaqan nuykiy, ʔaq’am, and Tobacco Plains Band), Shuswap

Indian Band, the Kainai, Piikani Nation, and Siksika Nation. The Stoney Nakoda (Chiniki, Bearspaw, and Wesley First Nations), has asserted a Land Claim Area which extends into B.C., outside of Treaty 7 territory where this additional land claim area overlaps with the Project footprint as identified by IAAC (IAAC, 2015c). The Project is also located adjacent to the Traditional Territories of the Tsuut'ina Nation (IAAC, 2021b). The Elk Valley Métis Nation (EVM Nation) is the closest Métis group to the Project footprint and a Chartered Community within the Métis Nation of British Columbia (MNBC). As determined by IAAC, Elk Valley Métis Nation and MNBC citizens in the region from adjacent chartered communities may be exercising their potential rights within the Project footprint (IAAC, 2015d). The Métis Nation of Alberta – Region 3 are determined by IAAC to be potentially impacted by the Project, as rights-bearing Métis communities are best considered as regional in nature, as opposed to settlement-based (IAAC, 2021c). The closest Reserve Lands to the Project are Bummer's Flat 1 Reserve (approximately 69 km southwest in B.C.), Edan Valley 216 Reserve (Stoney Nakoda; approximately 70 km north east in Alberta), and Peigan Timber Limit 147B (approximately 52 km east in Alberta).

Specific to the Ktunaxa Nation, the Project falls within the Ktunaxa Nation and the Ktunaxa Kinbasket Statement of Intent Boundary, indicating the extent of asserted Traditional Territory used by the Ktunaxa Nation in B.C. The Ktunaxa Nations maintain underlying sovereign and *sui generis* title[1] to all lands and waters within their territories, including the Elk Valley and the Project footprint. The Ktunaxa Nation currently consists of four member Bands in B.C. and two Bands in the United States, covering approximately 70,000 km^2 of Ktunaxa historical Traditional Territory (Ktunaxa Nation, 2021). Ktunaxa member groups located in B.C. include:

- Yaq̓it ʔa·knuqƚi 'it or ʔakink'umƚasnuqƚiʔit or Aqanuxunik (Tobacco Plains Band near Grasmere);
- ʔakisq'nuk (Columbia Lake Band near Windermere)
- ʔaq'am (St. Mary's Band near Cranbrook); and
- Yaqan Nuʔkiy (Lower Kootenay Band near Creston).

The Stoney Nakoda Nations, the Kainai, Piikani Nation, Siksika Nation, and the Tsuut'ina Nation are the Treaty 7 signatories identified by IAAC (IAAC, 2015c; 2020a, b; 2021a, b). In addition to the Treaty 7 rights, the Kainai, Piikani Nation, and Siksika Nation's asserted territory consists of the traditional homeland of the Blackfoot peoples (the Blackfoot Confederacy) which includes the exercise of their Aboriginal rights across the ancestral homeland of the Blackfoot peoples (IAAC 2020a, b: 2021a).

30.1.2.2 Regulatory Setting

The proposed Project is subject to environmental assessment (EA) under both the C*anadian Environmental Assessment Act* (CEA Act, 2012) and the British Columbia *Environmental Assessment Act* (2002). The Project is also undergoing a coordinated federal-provincial EA process conducted under the principles of the Canada–British Columbia Agreement for Environmental Assessment Cooperation (the Agreement). Under the Agreement, federal and provincial jurisdictions work together on impact assessments for projects that require both a federal and a provincial assessment to increase efficiency and certainty and achieve quality assessments.

[1] In Canadian law, Aboriginal title is sui generis (meaning of its own kind or unique), in that the land title originates in an Indigenous Community's occupation of its ancestral lands prior to the European assertion of sovereignty. As such, it is different from other forms of property rights because it is a communal right belonging to specific Indigenous communities. In that regard, Aboriginal title may not be sold or purchased by individuals; it may only be voluntarily surrendered to the Crown by an Indigenous community through agreements such as treaties. It includes both surface and subsurface resources, such as mineral rights and oil and gas developments (Irwin, 2018).

30.1.2.2.1 B.C. Environmental Assessment Act

A new coal mine with a production capacity of greater than 250,000 tonnes per year of clean coal or raw coal or a combination of both clean coal and raw coal is considered a Reviewable Project pursuant to the Reviewable Projects Regulation B.C. Reg. 370/2002 under the EAA, 2002 (S.B.C. 2002, c. 43). The Project is therefore considered a Review Project under the EAA, 2002.

Pursuant to Section 2(2) of the EAA, 2002, the B.C. EAO is the authority responsible for provincial review of this proposed Project. NWP submitted the Final Application Information Requirements to the EAO on April 26, 2018 (B.C. EAO, 2018). On May 27, 2015, the EAO issued an Order under Section 11 of the Act, determining the scope of the required environmental assessment and the procedures and methods for conducting the assessment. Section 12 of the Section 11 Order describes consultation with Indigenous Communities. Part G: Section 12.1 of the Section 11 Order states the EAO will consult with the Indigenous Communities listed in Schedule C of the Section 11 Order by providing notification of Project milestones during the environmental assessment (B.C. EAO, 2018). On October 30, 2020, the EAO issued an amendment in the matter of the EAA, 2002 and the environmental assessment of the Project order under Section 13 amending the Section 11 Order to add a new Section 12.5. The added Section 12.5 identifies that the EAO may implement additional measures for consultation and accommodation with any Indigenous Community, after consideration of issues raised where appropriate (B.C. EAO, 2020a).

The EAO requires that all CEA Act, 2012 requirements under subsection 19(1) for assessing environmental effects (e.g., the environmental effects of accidents and malfunctions, cumulative environmental effects, significance of effects, mitigation measures), including paragraph 5(1)(c) effects, be addressed in a dedicated chapter in the EIS. The potential effects assessment for the purposes of paragraph 5(1)(c) environmental effects, including current use of land and resources, is separate from the assessment of the potential effects on Aboriginal rights and interests. Valued Components (VCs), indicators, and any relevant analysis presented in the assessment of impacts to Indigenous Communities related to paragraph 5(1)(c) (e.g., fishing, hunting, trapping, cultural practices, socio-economic conditions, or health conditions), are considered on an individual basis for each Indigenous Community identified in any Schedule of the Section 11 Order, regardless of depth of consultation. Where the effect is the same for multiple Indigenous Communities (e.g., for the assessment of environmental effects to health and socio-economic conditions), the discussion can be aggregated, provided the rationale is well documented. Summarized results of the Indigenous consultation related to Aboriginal interests and/or other matters of concern to the identified Indigenous Communities are available in Appendix 30-A, Table 30.A-1.

The EAA, 2002 was repealed by the Environmental Assessment Act, 2018 in 2019. As per subsection 78(6) of the EAA, 2018, the environmental assessment process for the Project was continued under the 2002 Act. On May 3, 2023 the Project was transitioned to the EAA, 2018 through a Transition Order under Section 78(7) of the 2018 Act.

30.1.2.2.2 Canadian Environmental Assessment Act, 2012

The construction, operation, decommissioning, and abandonment of a coal mine with a production capacity of more than 3,000 tonnes per day (tpd) is considered a Designated Project pursuant to the *Regulation Designating Physical Activities* SOR/2012-147 under the *Canadian Environmental Assessment Act*, 2012 (S.C. 2012, c. 19, s. 52). The anticipated production capacity of the Project is up to 4.0 million

run-of-mine tonnes (M ROMt) per annum (approximately 10,150 tonnes per day [tpd]) for 15 years. The Project is therefore considered a Designated Project under the *Canadian Environmental Assessment Act*, 2012.

Pursuant to Section 15(d) of the *Canadian Environmental Assessment Act*, 2012, the Impact Assessment Agency of Canada (IAAC, formally known as Canadian Environmental Assessment Agency [CEAA]) is the authority responsible for federal review of this proposed Project. The Final Environmental Impact Statement Guidelines were issued by IAAC to NWP on February 20, 2015 for the preparation of an EIS. Section 5.1 of Part 2 of the EIS identifies which Indigenous Communities NWP is required to engage on the Project. As required by the Agency (IAAC, 2020a), NWP will make key environmental assessment summary documents (draft/final EIS, key findings, plain language summaries) accessible to these Indigenous Communities and ensure their views are heard and recorded. For the purposes of developing the EIS, NWP engaged with Indigenous Communities that may be affected by the Project, to obtain their views on:

- Effects of changes to the environment on Indigenous Communities (health and socio-economic issues; physical and cultural heritage, including any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance; and current use of lands and resources for traditional purposes); and
- Potential adverse impacts of the Project on potential or established Aboriginal or Treaty rights.

With respect to engagement activities, the EIS documents:

- The engagement activities undertaken with Indigenous Communities prior to the submission of the EIS, including the date and means of engagement (e.g., meeting, mail, telephone);
- Any future planned engagement activities; and
- How engagement activities by the proponent allowed Indigenous Communities to understand the Project and evaluate its effects on their communities, activities, potential or established Aboriginal or Treaty rights, and other interests.

Summarized results of the Indigenous consultation related to Aboriginal interests and/or other matters of concern to the identified Indigenous Communities are available in Appendix 30-A, Table 30.A-1. As noted above, the comments received from Indigenous Communities on the draft effects assessment and NWP's responses where applicable are recorded in Appendix 30-A, Table 30.A-2.

The *Canadian Environmental Assessment Act*, 2012 was repealed by the *Impact Assessment Act* (IAA), 2019 in 2019. As per subsection 181(1) of the IAA, 2019, the environmental assessment process for the Project was continued under the 2012 Act.

30.1.2.2.3 Elk Valley Water Quality Plan

The Project is located within the designated area of the Elk Valley Area Based Management Plan, also known as the Elk Valley Water Quality Plan (EVWQP). The EVWQP is a plan to manage the cumulative effects of coal mining on water quality and was developed by Teck in response to a Ministerial Order issued in April 2013 under the *Environmental Management Act* (EMA), 2003.

The Order directed Teck to develop a plan to stabilize and reduce water quality concentrations of selenium, cadmium, nitrate, and sulphate (the Order Constituents) and the rate of formation of calcite in

streams. The plan was to include short, medium, and long-term water quality targets for the order constituents for specified locations in the Elk River, Fording River, and the Canadian portion of Lake Koocanusa. The EVWQP was developed with significant consultation with Indigenous Communities, various levels of government, resource tenure holders, the public, and other stakeholders (Teck, 2014). The Minister of Environment approved the EVWQP on November 18, 2014, and the Minister's approval letter also set out Approval Conditions. The EVWQP and the Minister's Approval Conditions apply to all coal mines in the designated area of the Elk Valley, including the Project.

30.1.2.2.4 Elk Valley Cumulative Effects Framework

As part of the Provincial Cumulative Effects Framework, the Elk Valley Cumulative Effects Management Framework (EV-CEMF) aims to assess the historic, current, and potential future conditions of selected valued components and to support natural resource management decisions within the region. The purpose of EV-CEMF is to develop an approach to understand cumulative effects on the environment from various industries and natural events in the Elk Valley. Impacts are assessed using five region-specific valued components (VC) selected by the EV-CEMF Working Group: Westslope Cutthroat Trout, grizzly bear, bighorn sheep, old growth and mature forest, and riparian habitat. The EV-CEMF will be used as an additional tool in the cumulative effects assessment for the Project for the region-specific VCs.

30.1.2.3 Regional Land Use Policies and Plans

In 1992, the B.C. government directed the development of a strategic-level land use plan to identify a comprehensive and integrative vision for land and resource use in the Kootenay-Boundary region. The East Kootenay Land Use Plan was completed in 1995. This 1995 Plan, which has since been retired, included land use designations of new protected areas, special resource management zones, integrated resource management zones and preliminary enhanced resource management zones. The East Kootenay Land Use Plan (1995) also committed provincial agencies to further regional land planning to refine the enhanced management zones (B.C., 2021). Accordingly, the Kootenay Boundary Land Use Plan Implementation Strategy (KBLUPIS) was released in 1997 (Kootenay Inter-Agency Management Committee, 1997).

The main objectives of the KBULPIS (1997) include:

- Contribute to environmental, social, and economic sustainability;
- Reduce potential for disruptive land use conflicts;
- Support a secure and certain basis for public and private planning as well as investment in resource development and community planning;
- Integrate with other government strategic planning initiatives related to land and resource management; and
- Provide context and strategic direction for detailed, operational levels of land and resource management planning and decision-making.

The KBLUPIS (1997) applies to all public lands and waters in the Kootenay/Boundary regional planning area. It is important to note that the plan does not contain prescriptive direction for private land, rather, as noted above, it aims to provide strategic long-term direction to enhance security and certainty for private planning and investment in resource management.

The KBLUPIS also provides geographically specific resource management guidelines for individual resource values (e.g., connectivity, grizzly bears, ungulate winter range, etc.) (Kootenay Inter-Agency Management Committee, 1997). In 2001, specific provisions outlined in the KBLUPIS were legally established as higher level plan (i.e., the Kootenay-Boundary Higher Level Plan Order) under the *Forest Practices Code of British Columbia Act*. In 2002, the Kootenay-Boundary Higher Level Plan Order was revised and established new resource management zones and objectives. The objectives and guidelines outlined in the Kootenay-Boundary Higher Level Plan Order (2002) are not intended to impact the permitting of subsurface resource exploration and development. These objectives do not affect the operational plans for exploration, development, and production activities when authorized through the other legislation (i.e., *Mineral Tenure Act*, the *Coal Act*, and the *Mines Act*). Building off of the KPLUPIS (1997) and the Kootenay-Boundary Higher Level Order Plan (2002), in 2003, the Southern Rocky Mountain Management Plan was developed. This sustainable management plan covers the portion of the ATRI RSA that includes Flathead and Wigwam, as well as the west side of the Elk River drainage. This Plan was amended in 2010 to reflect the B.C. Government's decision to prohibit mining, oil and gas, and coal exploration and development in the Flathead River Watershed. In 2011, the *Flathead Watershed Conservation Act* was introduced.

The 2005 Cranbrook West Recreation Management Strategy overlaps with a small section of the ATRI RSA and provides the strategic-level direction on backcountry recreation. This plan does not consider industrial access. Since the implementation of this plan, access management areas and snowmobile restrictions have changed and take precedence where they differ from the Cranbrook West Recreation Management Strategy.

30.1.2.3.1 Old Growth Management Areas

Old Growth Management Areas (OGMAs) are a mechanism to protect and attain old-growth forests and enhance biodiversity. The Kootenay Boundary Higher Order Plan (2002) provides legal direction for identifying and defining old and mature seral forests. This order outlines biodiversity emphasis targets for different seral stages by landscape unit and biogeoclimatic unit (Ministry of Sustainable Development, 2002). As previously noted, since 2002, there have been multiple orders that have been approved, which have amended and varied objectives, including the biodiversity emphasis targets and old mature forest objectives. Within the Land Use and Access RSA, the 2005 amendment revised biodiversity emphasis options mapping to enhance timber and biodiversity management in the area.

In 2005, the *Forest Practices Code of British Columbia Act* was repealed and replaced largely by the *Forests and Range Practices Act.* This major change in government direction had implications in terms of how legal objectives related to OGMAs would be considered moving forward. In 2006, the Integrated Land Management Bureau decided not to legalize spatial OGMAs in the Southern Interior region. Non-Legal OGMAs are spatially defined areas of old growth forest that are defined through operational planning or landscape unit planning processes. When preparing Forest Stewardship Plans, forest licensees are not required to follow OGMA direction and can choose to manage biodiversity targets through alternative methods.

30.2 Environmental Setting

The Project is located in the Elk Valley within the front ranges of the southern Rocky Mountains in south-eastern B.C. The Elk Valley stretches more than 180 km from the mouth of the Elk River at Lake Koocanusa

in the south, north to its headwaters in Elk Lakes Provincial Park near the Continental Divide along the B.C.-Alberta border (EV-CEMF, 2018; George et al., 1987). The Elk Valley forms part of the Continental Ranges of the Rocky Mountains. Elevations in the Terrestrial LSA range from 1,170 metres above sea level (m asl) along the Elk River west of Grave Lake up to above 2,700 m asl along the Continental Divide. Key watercourses in the Project footprint, local, and regional study areas include the Elk River, Michel Creek, Alexander Creek, West Alexander Creek, Harmer Creek, and Grave Creek.

30.2.1 Atmospheric Environment

Existing air quality in the Atmospheric LSA and Atmospheric RSA is affected by natural air emissions (e.g., wind-blown dust, forest fires) and anthropogenic air emissions (e.g., existing coal mines, vehicular traffic, construction activities, residential heating, and winter road gritting). Other industrial activities that may affect local and regional air quality and greenhouse gas (GHG) emissions include pulp mills, sawmills, and several oil and gas facilities, in addition to prevalent agriculture and forestry practices.

Air emissions resulting from coal mining and processing include fugitive dust, particulate matter, carbon monoxide (CO), sulphur oxides (SOx), oxides of nitrogen (NOx), volatile organic compounds (VOCs), and GHGs (Province of B.C., 2009; Rout et al., 2014). Emissions of these compounds have the potential to affect human health and aquatic and terrestrial ecosystems. Dustfall is primarily a nuisance issue but may also affect human health, vegetation, water quality, soil quality, and visual aesthetics. Local ambient air quality monitoring data collected by two stations from January 2014 to December 2016 and operated by Teck were used in the baseline analyses. Ambient air concentrations for the selected contaminants of concern all fell below their corresponding B.C. Ambient Air Quality Objectives (AAQOs) for each of their respective averaging periods. Provincial monitoring locations in the Southern Interior Air Zone generally did not exceed the B.C. AAQOs and Canadian Ambient Air Quality Standards (CAAQS) except when influenced by wildfires between 2015 and 2017 (ENV, n.d.). Wildfire smoke is believed to be a factor leading to elevated daily and annual $PM_{2.5}$ concentrations and elevated ozone concentrations.

Meteorological conditions in the Project footprint were determined by collecting data at the Project-specific Crown Mountain meteorological station located within the coal license area at an elevation of 1,920 metres above mean sea level (m amsl) in the headwaters of the Alexander/West Alexander watershed. The mean daily average temperature ranged from 13.4°C in February 2014 to a maximum of 16.6°C in June 2015. Barometric pressure ranged from 78.3 to 82.5 kilopascals (kPa), and was generally higher in the summer, and lower with greater variability in the winter. Average daily humidity varied substantially and ranged from 50.1% (August 2015) to 93.1% (January 2016). Average monthly humidity was typically lowest in the summer months and highest in the winter. The average monthly solar radiation at the Crown Mountain climate station ranged from a minimum of 6.1 watts/square metre (W/m^2) in December 2015 to a maximum of 252.8 W/m^2 in July 2014. The wind rose indicates wind speeds between 2 and 6 kilometres per hour (km/h) were most frequently recorded between January 2014 and May 2016. The most frequent wind direction was traveling west-northwesterly (i.e., from the south-east), at approximately 22.9% of the recorded entries. The lowest precipitation values generally correspond to the summer months (a lowest mean of 35.4 mm in August) and higher precipitation in the early winter months (a highest mean of 89.6 mm in November).

To evaluate baseline GHG emissions for the Project area, total GHG emissions from B.C. and sector specific emissions, particularly emissions from the mining sector were considered. The best available estimate of

B.C.'s reported GHG emissions is provided in the 2020 ECCC National Inventory Report (NIR) (GoC, 2021) and 1990-2019 Provincial Inventory (Province of B.C., 2021). GHG emission summaries in the Atmospheric RSA in 2020 indicated a total of 1,695,266 t CO2e/year. The highest fossil fuel emitter was Teck's Fording River Operations (649,846 t CO2e/year). Based on these results, GHG emissions from Single Facility Operations in the East Kootenay region in 2020 accounted for approximately 2.6% of B.C.'s annual emissions, or approximately 0.2% of Canada's total GHG emissions.

30.2.2 Acoustic Environment

The acoustic environment in the Project area near and surrounding the Acoustic LSA comprises natural noise sources (e.g., wind, birds, insects), and anthropogenic sources (e.g., residential, recreational, mining, forestry, transportation). The Project location occurs in a medium relative hazard zone for seismic activity (Natural Resources Canada, 2015), but earthquakes do occur in the area (Natural Resources Canada, 2020). Anthropogenic sources of background vibration may include seismic exploration for mining and oil and gas developments, quarrying and resource extraction, large trucks and earth-moving equipment, and timber harvesting and hauling.

Mining in the East Kootenay region has been ongoing for over a century with coal being the dominant resource extracted in the area. There are several existing metallurgical coal mines in the Elk Valley and Crowsnest coal fields, including Teck's Elkview Operations at approximately 8 km southwest of the Project and the Line Creek, at approximately 12 km north of the Project. Additionally, the Canadian Pacific mainline, and the Sparwood/Elk Valley Airport are within the Acoustic LSA which affect the acoustic environment in the Project area. None of the above activities currently occur within the Project footprint or Acoustic LSA; these activities are present within the greater region in which the Project is located.

Ambient baseline noise monitoring was performed for the Project in 2017 to determine ambient noise levels at representative human receptors in the Acoustic LSA. Receptor locations were selected near residences, cabins, and campsites. Of the receptors, only two human receptors (locations of possible, but not occupied, Indigenous dwellings) showed some noise levels in exceedance of guidelines. Wildlife receptors were most affected within the Project site itself up to a distance of 1,500 m for noise and up to 400 m to 500 m for vibration levels. All other receptors results were in compliance with the respective criteria and applicable guidelines. Baseline vibration levels were not assessed as there are no known sources of vibration within the Project footprint.

30.2.3 Soils and Terrain

The Soil Quality and Quantity LSA and the Terrain LSA are underlain by a sequence of numerous sedimentary rock formations ranging in age from Jurassic to Lower Carboniferous. The Grave Prairie, Upper Grave Creek, West Alexander Creek, and Alexander Creek drainages are largely underlain by Jurassic-aged sandstone, shale, and limestone of the Fernie Formation (Massey et al., 2005; Price et al., 1992). The spine of Erickson Ridge consists of Carboniferous-aged dolomite, limestone, and chert of the Rundle Group (Etherington, Mount Head, and Livingstone Formations). Outcrops of dolomitic siltstone, sandy dolomite, orthoquartzite and limestone of the Rocky Mountain Group flank the Rundle Group rocks. In turn, shale, sandstone, and limestone of the Spray River Group are located between the Fernie Formation and the Rocky Mountain Group. Sandstone, siltstone, and coal of the Kootenay group outcrop along the Crown Mountain ridge top (Massey et al., 2005; Price et al., 1992).

As part of the baseline analysis, a total of 17 Soil Map Units (SMUs) were described, and were finalized once a pattern of main soil types was established through field sampling and image analysis. Dominant SMUs consisted of circum-mesic till, moderately shallow soil, and deep colluvium within the LSA and Project footprint. High soil erosion potential was identified along watercourses and on steep slopes throughout the Soil Quality and Quantity LSA.

Soil salvage potential was considered low in the LSA as 59.7% of soils were considered unsuitable for salvage for rehabilitation purposes. Soils with good potential to be salvaged for rehabilitation purposes (i.e., m, m-h, m-l classes) cover 22% of the Project footprint. Another 17% of the Project footprint has fair potential for soil salvage.

Concentrations of metals in the soil samples analyzed during the baseline surveys were found to be below the B.C. Contaminated Sites Regulation (CSR) standards, and Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (CSQG) with some exceptions that included aluminium, arsenic, barium, cobalt, manganese, nickel, selenium, thallium, and zinc. Four of the 18 polycyclic aromatic hydrocarbon (PAH) parameters analyzed were detected in soil samples. With the exception of one sample collected from near an exposed coal seam northwest of the summit of Crown Mountain, levels were below the B.C. CSR standards and CCME CSQGs. Soil pH levels by SMU varied greatly from strongly acidic to moderately alkaline.

Terrain type, assessed by mapping of surficial materials across the terrain LSA include till, colluvium, aeolian, fluvial, glaciolacustrine, and organic deposits, as well as weathered bedrock and anthropogenic deposits. Glaciolacustrine sediments are found throughout the Terrain LSA and are associated with increased susceptibility to landslides and surface erosion than other materials. Within the Terrain LSA, deposits of glaciolacustrine sediments were found along the Elk River Valley bottom, Grave Prairie and the south end of Grave Lake between the elevations of about 1,200 m above mean sea level (amsl) and 1,400 m amsl.

Terrain stability class within the Terrain LSA was high to very high covering approximately 47% of the Terrain LSA. Although karst was not observed within the Terrain LSA by the terrain stability mapping, 892.9 ha (7%) of the Terrain LSA is underlain by Primary Karst likelihood, 977.7 ha (8%) by Secondary Karst likelihood, and 3,818 ha (30%) Tertiary Karst likelihood. The remainder of the area is considered to have a negligible amount of karst potential. Most of the Project infrastructure is located on areas mapped as Tertiary or unmapped. The majority (56.5%) of the Terrain LSA was not classified as a geohazard; slow moving geohazards (5.9%), rapid moving geohazards (32%) or a combination of slow and rapid geohazards (6.1%) were identified in the baseline assessment.

30.2.4 Groundwater and Surface Water

There are two mapped aquifers identified within the catchments of Grave Creek and Erickson Creek located to the southwest of the Project, close to the Town of Sparwood. Aquifer 1078 is a sand and gravel aquifer with a size of 8.5 km^2 and overlies the 1082 bedrock aquifer at its west end. This confined aquifer is comprised of glaciofluvial sands and gravels, and it is located underneath till, in between layers, or underlying glaciolacustrine deposits. The reported yield for the wells screened in this aquifer ranges between 0.3 and 2.5 L/s while their depth to water ranges from 24 to 40 m below ground surface (m bgs). The groundwater flow pattern (i.e., flow direction) is not clear but is likely towards the Elk River. Recharge

sources are precipitation, snow melt, and infiltration of surface water. Aquifer 1082 is a confined bedrock aquifer with an area of 1.8 km^2 and a median well yield of 0.41 L/s. Groundwater within this aquifer flows to the southwest through fractured sedimentary rocks, including shale, sandstone, and limestone of the Fernie Formation.

Thirteen private wells, where 12 are owned by Teck were identified within 7 km of the LSA. No registered private wells within the Grave Creek, Erickson Creek, and Alexander Creek catchments were found.

Groundwater quality sampling at Crown Mountain has been completed over two periods between 2013 and 2016, and 2018 through 2020. Within the LSA, baseline groundwater quality exceeds B.C. CSR drinking water criteria for several parameters (cobalt, lithium, sodium, chloride, and fluoride). Most of the exceedances to these criteria occur in and around the projected footprint and above the confluence between West Alexander and Alexander creeks. Monitoring wells that exceed selenium are also located below the confluence between West Alexander and Alexander creeks and are clearly explained by a regional groundwater signature. Several monitoring wells exceed the B.C. CSR for drinking water criteria for lithium, whereas one well exceed B.C. CSR Drinking Water and B.C. Drinking Water criteria for chloride.

As part of the surface water baseline assessment, discharge hydrographs demonstrated the variability of flow conditions within the LSA. Notably, minimal to near zero flows are annually observed in the late-fall to early-spring months at each monitoring station. The onset of annual freshet conditions has been noted to occur as early as the beginning of April in some years (e.g., 2016). The freshet periods over the course of stream flow monitoring were found to generally persist into early July with low summer flows typically occurring at least by the end of August.

Surface water analytical results from the baseline program between May 2012 and June 2019 were compared to the B.C. WQG working and approved short-term guidelines for freshwater aquatic life and long-term and short-term CWQGs for freshwater aquatic life. Elevated concentrations of total aluminum and copper were identified in surface water collected from the Alexander Creek watershed during a high-magnitude precipitation event in June 2013. Nine samples exceeded the guidelines for cadmium within the Alexander Creek watershed in June 2013 and May 2014. These elevated concentrations are associated with high flow volumes and significant precipitation events. Concentrations of key parameters (i.e., nitrate, fluoride, sulphate, aluminum, cadmium, copper, iron, and selenium) were consistently higher in Michel Creek compared to Alexander Creek

30.2.5 Fish and Fish Habitat

Fish and fish habitat baseline surveys were conducted to describe and quantify existing conditions. The scope of the surveys included fish habitat, fish communities, benthic invertebrates, sediment quality, water quality, and tissue residue analyses of fish, periphyton, and benthic invertebrates.

Field studies were completed in 2014, 2017, 2019 and 2020 and included sampling in winter, spring, summer, and fall. A total of 60.1 km of stream length was assessed; of this, 49.1 km (82%) was determined to be fish bearing. Fish species observed within the Fish and Fish Habitat LSA have included Westslope Cutthroat Trout (listed under Schedule 1 of the *Species at Risk Act* [SARA]), Bull Trout, Eastern Brook Trout, Mountain Whitefish, and Rainbow Trout (Lotic Environmental, 2020). In the Aquatic RSA, additional species observed consisted of Longnose Sucker, Longnose Dace, Torrent Sculpin, Burbot, Kokanee,

Peamouth Chub, and Northern Pikeminnow. Distribution of Rainbow Trout, Burbot, Kokanee, Peamouth Chub, and Northern Pikeminnow is limited to downstream of Elko Dam on the Elk River and in Lake Koocanusa (Lotic Environmental, 2020).

As part of the baseline, fish inventories identified Westslope Cutthroat Trout, Bull Trout, Eastern Brook Trout, and Mountain Whitefish. Results of the baseline fish community study indicated the potential presence of two subpopulations of Westslope Cutthroat Trout in Alexander Creek consisting of a "fluvial resident", and "fluvial migratory" population.

Fish habitat surveys during baseline studies were conducted on Alexander Creek, West Alexander Creek, Grave Creek and other tributaries and lentic areas within the Fish and Fish Habitat LSA and Project footprint. Alexander Creek is a fish bearing fourth order tributary of Michel Creek, characterized by cascade-pool and cascade-riffle to riffle-pool morphologies. Overall habitat quality was considered to be good in one reach (ALE1) with mature riparian vegetation, diverse channel units, and sufficient overhead, cover was less available in the remainder of the watercourse. A long bedrock falls was considered to be a barrier to fish migration. Substrate was dominated by cobble and gravel throughout the surveyed reaches. Spawning potential for fish bearing reaches in the Alexander Creek watershed were classified overall to be moderate to good providing areas with adequate spawning gravel size, overhead cover, flow, and water depth for Westslope Cutthroat Trout. Spawning potential was overall limited for fall-spawning species, some sections of Alexander Creek provided appropriate spawning habitat and fall surveys of 2017 identified potential bull trout redds, and one confirmed bull trout redd in 2019.

West Alexander Creek is a second order stream and a tributary of Alexander Creek dominated by cascade-riffle/cascade-glide morphology. Within the reaches surveyed, a moderate amount of cover was provided by woody debris, and boulders. Riparian vegetation primarily consisted of mature coniferous forest, and substrate was dominated by cobble and gravel. Some sections of West Alexander Creek are considered as non-fishing-bearing due to the presence of gradients of 45% for over 200 m, and dewatering. A wetland area confirmed to be non-fish bearing is present at the headwaters (WAL4). All four unnamed tributaries of West Alexander Creek were also observed to be non-fishing-bearing due to the presence of waterfall barriers and/or gradients greater than 30%. One reach of two surveyed of West Alexander Creek (WAL1) was considered to have good spawning potential which was confirmed by the presence of Westslope Cutthroat Trout fry and Redds.

Grave Creek is a fourth order stream and a tributary of the Elk River located adjacent to the Project footprint with four fish bearing reaches. Due to the presence of a barrier to fish migration, two reaches are considered to contain an isolated population of Westslope Cutthroat Trout. Morphology was characterized by cascade-pool, and step-pool, with dominant substrate consisting of cobble and gravel. Cover ranged from poor to good between reaches and consisted of boulders, woody debris undercut banks present, and overhanging vegetation. Overall, Grave Creek and its tributaries provide moderate to good spawning potential with evidence of spawning activity including one Redd noted during surveys.

Overwintering habitat suitability was variable and was classified as poor, moderate, or good based on depth, temperature, and dissolved oxygen levels.

Twenty-seven wetland (lentic) sites were surveyed in July 2019. Lentic sites were dominated by open water/channelized wetlands with slow moving or stagnant water, including active and inactive beaver

impoundments. Most wetlands had emergent vegetation and were surrounded by mature forest. Fish presence surveys indicated that 23 of the 27 wetlands surveyed had potential for fish presence, 12 of which were connected to watercourses and considered fish-bearing after the first year of inventory sampling. Fish captures included juvenile eastern brook trout and one juvenile bull trout.

Benthic invertebrate community sampling was conducted in October 2014 and October 2017 at sites on Alexander Creek, West Alexander Creek, unnamed tributaries of West Alexander Creek, Grave Creek, and the unnamed tributaries on Grave Creek (where streams were considered fish-bearing). In 2017, some Alexander Creek stations had twice as many invertebrates in samples compared to 2014, although community composition remained similar.

30.2.6 Terrestrial Ecosystems and Vegetation

The Project footprint and the Landscapes and ecosystems LSA are characterized by old growth and mature forest, riparian habitat, avalanche chutes, and some grasslands and wetlands. The Biogeoclimatic Ecosystem Classification (BEC) zones present within the Landscapes and Ecosystems RSA and Landscapes and Ecosystems LSA include Montane Spruce (MS), Interior Cedar-Hemlock (ICH), Interior Douglas-Fir (IDF), Engelmann Spruce - Subalpine Fir (ESSF) and Interior Mountain Heather - Alpine (IMA). Fire suppression activities have resulted in a greater abundance of young forests, reducing the occurrence of non-forested structural stages where many listed plants occur (Demarchi et al., 2000; Kirby and Campbell, 1999; Mountain Goat Management Team, 2010; and Poole and Ayotte, 2019).

Baseline Terrestrial Ecosystem Mapping (TEM) was used to map and quantify avalanche chutes, grasslands, riparian habitat, old and old growth and mature forest as well as wetlands. The Project TEM predicted avalanche chutes occur across 69 ha or 5% of the Project footprint, and in 603 ha or 5% of the Landscapes and Ecosystems LSA. Grasslands are predicted to occur across 13 ha or 1% of the Project footprint, and in 200 ha or 2% of the Landscapes and Ecosystems LSA. Old growth and mature forest occur across 851 ha or 66% of the Project footprint, and 5,029 ha or 39% of the Landscapes and Ecosystems LSA. Riparian habitats are predicted across 78 ha or 6% of the Project footprint, and in 1,318 ha or 9% of the Landscapes and Ecosystems LSA. The Project TEM predicts wetlands cover less than 1 ha and less than 1% of the Project footprint, and in 122 ha or 1% of the Landscapes and Ecosystems LSA. Invasive species were found within the grassland (13 species), riparian (six species), and wetland (nine species) habitats.

The wetland baseline study identified four wetlands that occur in the Project footprint, while 32 surveyed wetlands are located adjacent to or outside of the Project footprint in the Terrestrial LSA. Most wetlands surveyed ranged in size from 0.01 to 0.25 ha (n=11) and 0.51 to 0.75 ha (n=10), and represented bog, fen, marsh, swamp, shallow open water, and a transitional/successional marsh-fen classes. The wetland baseline study also identified 11 wetland site associations and three non-wetland site associations in the Terrestrial LSA listed by the B.C. CDC as special concern (Blue-listed) and at risk of being lost (Red-listed). No Red- or Blue-listed wetland site associations were found in the Project footprint and no SARA-listed wetland plant species or communities were found within the LSA or Project footprint. One Red-listed site association was observed in the Terrestrial LSA, and 10 Blue-listed site associations were observed across 14 wetlands in the Terrestrial LSA. The Red-listed was found to occur the same wetland complex in which two Red-listed non-wetland alkaline-saline meadows were observed.

As of May 2021, the B.C. CDC has documented historical observations of 39 listed plants and 11 listed plant communities in the Landscape and Ecosystems RSA (B.C. CDC, n.d.). Within the Landscapes and Ecosystems LSA, 8 Red-listed and 15 Blue-listed plants have been documented by B.C. CDC. Limber pine and whitebark pine are both considered Endangered by COSEWIC with whitebark pine additionally being listed as Threatened under SARA (2002).

Whitebark pine was detected within the Project footprint and Landscapes and Ecosystems LSA, from an elevation of approximately 1,800 m asl to the ridge top of Crown Mountain (2,230 m asl) with the bulk of observations located at or above 1,900 m asl. Whitebark pine is also found to the north of Crown Mountain along the ridge that extends from Crown Mountain to the northern edge of the Landscapes and Ecosystems LSA in the upper Grave Creek drainage. Additionally, VRI data indicates that whitebark pine is found just outside the Landscapes and Ecosystems LSA to the east and northeast. Although limber pine was not observed within the Landscapes and Ecosystems LSA, the potential for this species to occur cannot be ruled out as seed catches or trees may occur and were not observed during the extensive baseline surveys. Limber pine has been documented south of the Landscapes and Ecosystems LSA (Klinkenberg, 2019) in habitats similar to those found within the Landscapes and Ecosystems LSA.

Baseline field surveys also recorded four listed plant species currently Red-listed by the B.C. CDC within the LSA and include ground plum, shining penstemon, Parry's townsendia, and Drummond's milk-vetch. Of the listed plant species observed during baseline surveys, none are listed as species at risk under the SARA (2002) or are designated at-risk by COSEWIC. Prior to 2019, Cusick's paintbrush was Red-listed. Since 2019, its status has been listed as Unknown (B.C. CDC, n.d.). The four Red-listed plant species within the Landscapes and Ecosystems LSA were observed in the southern portion of the Landscapes and Ecosystems LSA and not within the Project footprint. Cusick's paintbrush was also observed in the southern portion of the Landscapes and Ecosystems LSA and east of the proposed rail loadout within the Gg12 ecological community west of Valley Road. The observation of Cusick's paintbrush in the southern Landscapes and Ecosystems LSA was the first occurrence of this species documented in the Elk Valley.

Habitat conditions for listed plant communities and species in the Landscapes and Ecosystems LSA were observed in low elevations areas of the MSdw (below 1,600 m asl) with warm aspect or soil conditions preventing the establishment of trees. As part of the baseline field surveys, one Red-listed grassland was observed within the Landscapes and Ecosystems LSA. Gg12 *Rough Fescue - (Bluebunch Wheatgrass) - Yarrow - Clad Lichens* (*Festuca campestris* - (*Pseudoroegneria spicata*) - *Achillea borealis – Cladonia* spp.) was identified through the rare plant field surveys, accounting for 0.21% of the Landscapes and Ecosystems LSA and 0.04% of the Project footprint.

30.2.7 Wildlife and Wildlife Habitat

Comprehensive field surveys were conducted in 2014, 2017, 2018, and 2019 to obtain Project baseline information on wildlife occurrence, abundance, distribution and habitat availability within the Terrestrial LSA.

Baseline surveys showed that the ungulate community (including moose, elk, bighorn sheep and mountain goat) were broadly distributed in the Terrestrial LSA, occurring at various elevations within the Alexander, Grave, and Harmer Creek drainages and transboundary mountain passes (e.g., Deadman Pass) during all seasons. Most detections of each ungulate species were higher in spring/summer than in

fall/winter. Moose were most often detected in riparian habitats, wetlands, and transboundary mountain passes. Elk were detected in riparian habitats, avalanche chutes and transboundary mountain passes. Mountain goats and bighorn sheep occurred most frequently in avalanche chutes and transboundary mountain passes.

Carnivores, including grizzly bear, wolverine, American marten, and Canada lynx were found to occur along Alexander, Grave, and Harmer Creek drainages and transboundary mountain passes throughout the LSA. A grizzly bear den was incidentally observed in the avalanche chute directly west of Crown Mountain during July 2018. Baseline surveys showed evidence of breeding females throughout the Terrestrial LSA.

Wolverine tracks were detected in all three Biogeoclimatic Ecosystem Classification (BEC) zones, with no substantial difference between detection in different zones. Active or recently used American badger burrows were only documented in the northwest portion of the Terrestrial LSA, to the south, and southeast of Grave Lake. There were no active or recently used burrows, or burrows indicative of maternal denning found within the Project footprint.

Baseline acoustic monitoring identified the little brown myotis, northern myotis, and eastern red bat in the Terrestrial LSA. Both the northern myotis and the little brown myotis are federally listed on Schedule 1 of the SARA (2002) as Endangered with their survival imminently threatened by white-nose syndrome (ECCC, 2014). Northern myotis are also provincially Blue-listed. Bat species detected during winter months (November to February) were silver haired bat, big brown bat, and little brown myotis (in order of relative abundance). The highest relative number of acoustic files recorded during winter was at the West Alexander Creek headwaters site, followed by the Alexander Creek wetland, with only one recording of a silver haired bat at the Harmer Creek Reservoir. Results of live capture surveys included the identification of post-lactating females at the Alexander Creek wetland site and the Harmer Creek Reservoir site, indicating successful reproduction occurred at the maternity roost.

Within the breeding bird window of June and July 2014 and 2017 to 2019, a total of 2,088 individual birds of 80 species were observed. The most frequently encountered species across the survey years were Swainson's thrush, pine siskin, and yellow-rumped warbler. Two federal SARA-listed (2002) and provincially Blue-listed species were observed: barn swallow and olive-sided flycatcher. Species that are federally listed under SARA (2002), but provincially Yellow-listed, included common nighthawk and evening grosbeak. Great blue heron are provincially Blue-listed, but not federally listed under SARA (2002). Within the Terrestrial LSA, breeding landbird communities were found to be the most abundant, species-rich, and diverse in grasslands, mixed shrub forests, and wetlands.

During the landbird migration surveys in 2018 and 2019, 51 species were observed during the spring surveys with 878 individuals, and 33 species with 297 individuals were observed during fall surveys. The species observed most frequently were dark-eyed junco, American robin, and pine siskin. Two species of conservation concern (evening grosbeak and olive-sided flycatcher) were observed during the migration seasons. Landbird communities were found to be the most abundant, species-rich, and diverse in the MSdw subzone in mixed shrub forests in the spring and in wetlands in the fall.

During the raptor standwatch surveys in 2018 and 2019, 38 raptor observations comprising 14 species were observed. Seven raptor species were observed during the migration standwatch surveys: bald eagle, golden eagle, osprey, red-tailed hawk, Cooper's hawk, northern goshawk, and turkey vulture. In addition,

48 individual incidental observations during the spring and fall included American kestrel, barred owl, broad-winged hawk, great horned owl, merlin, northern harrier, peregrine falcon, and sharp-shinned hawk. Red-tailed hawk were the most frequently observed resident species in the spring and golden eagle were the mostly frequently observed resident species in the fall. The highest average raptor abundance and species richness was observed along southern Alexander Creek in the spring and along the upper reaches of Grave Creek in the fall.

A total of 583 individual waterbirds comprising 23 species were recorded in the Terrestrial LSA during the spring wetland surveys in April and May 2018 and 2019. Red-winged blackbird, mallard, and northern shoveler were the most abundant species in the wetlands during the spring surveys. A total of 259 individual wetland birds of 14 species were recorded in the Terrestrial LSA during the summer wetland and ephemeral area surveys in June and July 2014 and 2017 to 2019. Mallard, spotted sandpiper, and red-winged blackbird were the most abundant wetland bird species observed in the summer. A total of six birds, consisting of five mallards and one hooded merganser, were the only wetland bird species observed in the fall.

Eighty-three riverine birds and 11 nests were observed in the Terrestrial LSA across 28.3 km of creek habitat assessed over the survey years. Spotted sandpiper were the most abundant riverine bird species observed in the Terrestrial LSA, followed by American dipper and harlequin duck. No riverine birds were observed in Grave Creek upstream of the confluence with Harmer Creek or in the unnamed creek in Deadman Pass. Alexander Creek had the highest riverine bird abundance, species richness, and diversity in the Terrestrial LSA.

A total of 412 amphibian detections were recorded at 18 wetland survey sites and two ephemeral areas in the Terrestrial LSA during the amphibian baseline surveys including the western toad, Columbia spotted frog, wood frog, and long-toed salamander. The western toad is listed as Special Concern under Schedule 1 of the federal SARA (2002) and were documented at wetlands and ephemeral areas in the Terrestrial LSA from May to July across the sampling years.

30.2.8 Physical and Cultural Heritage

The archaeology baseline program was conducted under *Heritage Conservation Act* Section 12.2 Heritage Inspection Permit 2015-0098, and subsequently Multi-Assessment Permit 2018-0014, and commenced with a desktop review of applicable Archaeological Overview Assessments (AOAs) and archaeological potential polygons, and previous archaeological inspections to identify locations where archaeological sites have been previously recorded in proximity to the Project footprint. The field component of the archaeological assessment commenced with reconnaissance surveys (i.e., ground-truthing exercises) within and adjacent to delineated archaeological potential polygons (Choquette 2012; 2014) within the Archaeological LSA, and in particular within or in proximity to (i.e., ± 100 m) the Project footprint. A paleontology field assessment was not conducted because fossils resources are generally anticipated to occur deep below ground surface.

During the baseline archaeological program, numerous archaeological sites and artifacts were identified within the Archaeological LSA through the field reconnaissance (walkover) and sub-surface (shovel and evaluative) testing. Site types included, pre-contact, cultural material, surface lithics, fire-altered rock, and ancestral remains. Although the results of the baseline archaeological inventory and archaeological

impact assessment conducted have been completed, subsequent inspections (i.e., shovel testing) will be required on areas within the Project's mine plan that have yet to be subjected to any form of archaeological assessment (e.g., Phase IV, utility corridor west of the Elk River, and recently defined clearing limits of the mine plan).

30.2.9 Social and Economic Conditions

The population near the Project includes a variety of small communities in B.C. and Alberta, including Sparwood, Elkford, Fernie, and Crowsnest Pass. Individuals also live in the Regional District of East Kootenay (RDEK), including Electoral Area A. In 2016, the total population in the RDEK was 60,439, increasing at a rate of 9% between 2006 and 2016. The total Indigenous population in the RDEK was 4,710, increasing by 37.5% between 2006 and 2016. Approximately 65% of the RDEK population was working age (i.e., 15 to 64 years).

The mining industry constitutes the largest component of the regional economy. Currently, Teck has four coking coal mines operating within the Elk Valley, with the RDEK accounting for over 70% of Canada's annual coal exports (Katay, 2017). Several other mines operating in the RDEK produce industrial minerals including silica, magnesite, gypsum, graphite, and phosphate. Placer mining occurs throughout the RDEK, and several small operations produce aggregate, sand and gravel, and dimension stone (Katay, 2017). Other sectors of industry in the RDEK include forestry, agriculture, tourism and energy (i.e., oil and gas).

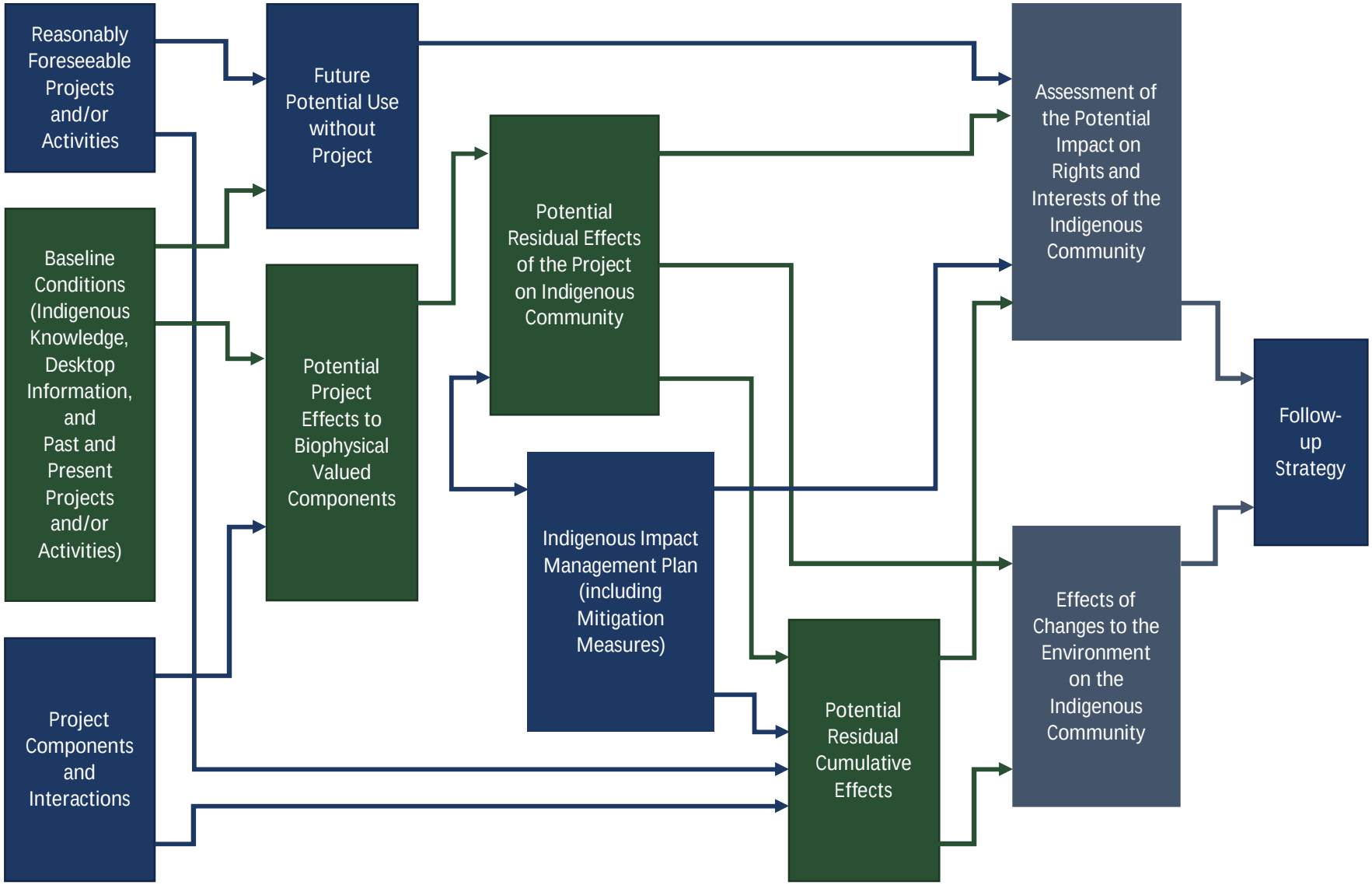
Within the RDEK, mining employs approximately 10.7% of the population in comparison to the B.C. economy which has 1.1% of workers employed in mining. The area also has more people employed in food services and accommodation; and arts, entertainment and recreation in the RDEK, which is consistent with the focus on tourism development. Employment rates within the economic LSA ranged from 54.0% to 68.7% in 2016. Analysis of the economic diversification of the LSA determined that Sparwood, Elkford, Fernie and the RDEK Electoral Area A was low. This is typical for smaller municipalities where mining is the primary industry, and as in the RDEK, many of the businesses are directly or indirectly related to the sector. In addition, the communities within the RDEK also participate in other primary industries and tourism. Annual government revenues range between approximately $8 million and $48 million. The primary revenue source for all municipalities within the Economic LSA is taxation and grants in lieu.

30.3 Overview of the Assessment Methodology

The methods for assessing potential effects on the Indigenous Community's rights and interests in relation to the Project followed the approach outlined in Chapter 5: Effects Assessment Scope and Approach. Figure 30.3-1 outlines the approach used as well as the following:

- Step 1 – Identify the rights and interests of the Indigenous Community considering secondary source information and input provided by the Indigenous Community (Section 30.5);
- Step 2 – Understand how historic and current use or changes to those conditions could affect the Indigenous Community's exercise of their rights and interests related to the Project footprint (and ATRI LSA and RSA) (Section 30.6.6). Current use as defined in Section 30.6.6 is reflective of current use of lands and resources for traditional purposes as well as potential future use by the Indigenous Community;

Figure 30.3-1: The Effects Assessment Process Flowchart



- Step 3 – Identify the potential future use and conditions that support the Indigenous Community's exercise of their rights and interests without the Project (Section 30.10.2.1);
- Step 4 – Identify potential pathways for interactions and adverse effects of the Project components and physical activities (Section 30.7.3.1) and the potential for changes to the environment that could impact on the exercise of the Indigenous Community's rights and interests (Section 30.7.3.2);
- Step 5 – Consider the anticipated residual effects to VCs (i.e., changes to the environment) that are directly related to the Indigenous Community 's rights and interests or identified specifically as being of interest to them, identifying the potential for residual effects on the rights and interests of the Indigenous Community and determining the level of significance of these effects (Section 30.7.3.2.1 to 30.7.3.2.8);
- Step 6 – Assess the potential for cumulative residual effects on the exercise Indigenous Community's rights and interests and determining the level of significance of resulting cumulative effects (Sections 30.7.4.2 and 30.7.4.4);
- Step 7 – Identify biophysical and rights and interests specific measures to avoid, mitigate, and/or otherwise accommodate for potential adverse impacts of the Project on the exercise of the Indigenous Community's rights and interests (Section 30.9: Indigenous Impact Management Plan);
- Step 8 – Consider the results of Step 5 and 6 with respect to Step 7 (Indigenous Impact Management Plan), to identify and describe the residual impacts on rights considering potential cumulative environmental effects through a comparison of potential future use of the Project footprint (and the ATRI LSA and RSA) with and without the Project and the application of mitigation measures, to assess the severity of any identified adverse impacts (Section 30.10.2.1); and
- Step 9 – Identify additional follow-up strategies and adaptive management techniques to avoid, mitigate, or otherwise accommodate for potential adverse impacts of the Project on the exercise of the Indigenous Community's rights and interests (Section 30.11).

As outlined in Chapter 5 and Step 5 above, residual environmental effects are the effects on a VC that remain, or are predicted to remain, after mitigation measures have been implemented. The assessment of residual effects on VCs involves the consideration and evaluation of specific effects assessment criteria based on the degree (i.e., 'level') of potential Project effects. Criteria used to characterize residual effects in this chapter include:

- Duration of time that the effect occurs;
- Magnitude or intensity of the effect;
- Geographic extent, both biophysical and socio-economic scales, of the effect;
- Frequency of the effect (i.e., how often the effect occurs);
- Reversibility of the effect (i.e., if the effect can be reversed); and
- Context (i.e., the sensitivity and resilience of a VC to changes caused by the Project).

If a residual effect on a VC was determined and the VC was also considered a "pathway" for potential effects on another VC, this chapter identifies the linkages between the VCs. A determination of significance was completed for each residual effect using the significance threshold identified for each VC, as outlined in Chapter 5, Section 5.3.4.1, and was informed by the results of the residual effects characterization criteria. Residual effects on VCs were ranked as 'not significant' or 'significant'. If there

was a residual effect on a VC, whether significant or not, the effect was carried forward to the cumulative effects assessment. Likelihood, the probability of the predicted significant residual effect of occurring, is presented as applicable for both intermediate and receptor VCs if the significance determination results in a conclusion that the effects of the Project on the VC are significant. In addition, assumptions or limitations to determining the likelihood of a predicted significant residual effect were described. Effects that were determined to be not significant do not require a characterization of likelihood. Confidence refers to the prediction of the significance of a residual effect based on the quality of data used in the assessment, the level of understanding of the residual effect, and the degree to which analyses are complete. The level of uncertainty associated with the residual effects assessment, including the significance determination, was also included in evaluating confidence.

30.4 Introduction to the Tsuut'ina Nation

The following sections provide information about the Tsuut'ina Nation (or Tsuu' Tina, formerly known as Sarcee) community, Aboriginal and Treaty Rights[2], including traditional land and resource use within the following three areas: the Project footprint, the Aboriginal Treaty Rights and Interests Local Study Area (ATRI LSA), and the Aboriginal Treaty Rights and Interests Regional Study Area (ATRI RSA), defined in Section 30.7.2.1. The following sections include a description of Tsuut'ina Nation's baseline conditions related to the Project, including Tsuut'ina's Aboriginal rights and interests, the assessment of effects of the Project on their environment, the potential mitigation measures identified, and the assessment of the impacts on their rights and interests.

The information presented in Chapter 30 was used to support the assessment of potential effects of the Project on Tsuut'ina Nation's Aboriginal and Treaty rights and interests, which were considered in this chapter and are also outlined in the *Canadian Environmental Assessment Act*, 2012 (CEA Act, 2012) and the *Guidelines for the Preparation of an Environmental Impact Statement for the Crown Mountain Coking Coal Project* (EIS Guidelines; Canadian Environmental Assessment Agency [CEAA], 2015; IAAC, 2021b), the *Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples*, updated 2022 (IAAC, 2022b), the Application Information Requirements (AIR) pursuant to an Environmental Assessment Certificate (Application) under the section 16(2) EAA (2002), the *Human and Community Well-Being: Guidelines for Assessing Social, Economic, Cultural and Health Effects in Environmental Assessments in B.C., 2020* (B.C. EAO, 2020b); and meetings with the Agency. The information provide below has also been used to identify mitigation measures to remove or reduce the potential for adverse impacts.

30.4.1 Information Sources

The information described herein was obtained through publicly available information sources, listed in Sections 30.5 and 30.6 and through consultation and engagement with the Tsuut'ina Nation. The information is intended to provide an overview of traditional land and resource use within the Project footprint, the ATRI LSA, and the ATRI RSA. This information is not intended to supersede or prejudice the traditional knowledge or specific information that may be shared as part of ongoing engagement with the Tsuut'ina Nation. It provides information from generally available knowledge, Project-specific information

[2] Tsuut'ina's Aboriginal and Treaty rights and interests are defined as those outlined in the correspondence from the Impact Assessment Agency of Canada (IAAC or "the Agency") (formerly the Canadian Environmental Assessment Agency, or CEAA) addressed to Chief Onespot and Council of Tsuut'ina Nation on May 10, 2021 (IAAC, 2021b), indicating the Agency's preliminary understanding of the nature and extent of the Tsuut'ina Nation's Aboriginal and Treaty rights and interests as described in Section 30.5.4.

shared by Tsuut'ina Nation, and secondary sources of information that are intended to complement additional information that might be available from the Tsuut'ina Nation in this regard. If further information is received through continued engagement with the Tsuut'ina Nation, the information will be included where applicable to be considered as part of the overall evaluation of the potential impacts on Tsuut'ina Nation's rights and interests as part of the environmental assessment/impact assessment (EA/IA) processes.

30.4.1.1 Limitations of Information Sources

At the time of the Application/EIS submission, the Tsuut'ina Nation had provided Indigenous Knowledge in the form of a site assessment study that outlined some Traditional Land-Use (TK/TLU) information submitted to NWP. Throughout this Application/EIS, where Indigenous Knowledge was provided by the Tsuut'ina Nation it has been incorporated where applicable and noted as such. The limitations of the information sources considered include those publicly available (i.e., information provided by Tsuut'ina Nation on other relevant EIS/project applications, e.g., including Baldy Ridge Extension Project, the Castle Project, Grassy Mountain Coal Project, and the Line Creek Operations Project) and those activities and correspondence that detail Project-specific information validated by the Tsuut'ina Nation to be shared publicly. Limitations of information are also noted where no information is provided by the Tsuut'ina Nation directly related to the baseline conditions established in Section 30.6 and NWP's understanding of Tsuut'ina Nation's rights and interests are limited to those confirmed by the Tsuut'ina Nation in Section 30.5.4.

30.5 Tsuut'ina Nation Consultation and Engagement Summary

All information compiled and presented in Section 30.5 has been authored by NWP utilizing Indigenous Knowledge in the form of a Traditional Land-Use Study (TLU) report provided to NWP by Tsuut'ina Nation, and secondary sources that are publicly available. The information presented throughout is not intended to supersede traditional knowledge or specific information of the community members and Elders of the Tsuut'ina Nation.

30.5.1 Engagement Protocols

A formal document outlining the Tsuut'ina Nation consultation and engagement protocols is not publicly available. NWP intends to communicate openly, honestly, and accurately with Tsuut'ina Nation on the proposed Project and potential matters that may affect the Nation while implementing Tsuut'ina expectations for how engagement should proceed should those be shared.

30.5.2 Project Development and Pre-Application Engagement

The Pre-Application phase of consultation includes engagement undertaken up to the submission of the Application/EIS, following the issuance of the Section 11 Order by the Environmental Assessment Office (EAO). Pre-Application phase engagement activities have included distribution of a Project Notification Letter, meetings with the Tsuut'ina Nation to discuss the Project, and distribution of draft Application/EIS materials for Tsuut'ina Nation review. Additional information on consultation and engagement with Tsuut'ina Nation is provided in Chapter 4.

On October 22, 2020, a Project Notification Letter was provided to Tsuut'ina Nation, which outlined the proposed Crown Mountain Coking Coal Project and related key Project components, relevant regulatory requirements, and a brief overview of the Project's history (e.g., exploration activities and baseline surveys). The Tsuut'ina Nation contacted NWP in December 2020 to convey their interests in a further dialogue about the Application/EIS process. A video conference call was held with representatives of the Tsuut'ina Nation on February 11, 2021. NWP provided a Project update, which included an overview of the completed baseline programs, and assessment and mitigation planning activities. An additional meeting with the Tsuut'ina Nation occurred on August 4, 2021. During the August 4, 2021 meeting, NWP provided an update on the Project and EA process, continued discussions regarding engagement and collaboration, and planning a site visit with Tsuut'ina Nation representatives. A site visit with Tsuut'ina Nation representatives was planned for August 26 and 27, 2021.

On January 27, 2021, NWP provided a draft version of the initial sections of this Application/EIS section for their review and comment. On March 4, 2021, Tsuut'ina Nation provided NWP comments on the initial sections of the Application/EIS section. Feedback on the initial draft section was provided to NWP in early March 2021. On September 2, 2021, NWP also provided a draft of the effects assessment for Tsuut'ina Nation review and comment. On November 2, 2021, the Tsuut'ina Nation provided NWP with a TLU site assessment study in lieu of feedback on the draft.

Summarized results of the Indigenous consultation related to Aboriginal interests and/or other matters of concern to Tsuut'ina Nation are available in Appendix 30-A, Table 30.A-1. As noted above, the comments received from Tsuut'ina Nation on the draft effects assessment and NWP's responses where applicable are recorded in Appendix 30-A, Table 30.A-2.

Overarching themes presented in the feedback received from the Tsuut'ina Nation included information regarding the community and its history and ethnography, site specific information on Indigenous land and resource use within the Project footprint, and recommendations on mitigation measures. The Tsuut'ina Nation also highlighted further consideration of cumulative effects of the Project related to past and present projects and activities. Tsuut'ina Nation's views expressed on the effectiveness of the mitigation or accommodation measures where applicable are further outlined in Appendix 30-A, Table 30.A-1 and Table 30.A-2.

It is noted that currently no changes were made to Project design (including the identification of additional Valued Components) and implementation directly as a result of on-going consultation with Tsuut'ina Nation. The other matters of concern raised by the Tsuut'ina Nation not captured in the feedback provided in Appendix 30-A, Table 30.A-2 are addressed in Appendix 30-A, Table 30.A-1 where noted and included in Sections 30.6, 30.7, 30.8, 30.9, and 30.10.

Key issues that remain outstanding and are included in the opportunities for future engagement are the concerns regarding the overall potential cumulative effects within the Elk Valley due to on-going activities. With respect to discrepancies in views shared previously and updates since engagement began with the Tsuut'ina Nation, NWP continues to work with the Tsuut'ina Nation to address key issues that have been raised and regards consultation as an iterative process that adapts in order to identify applicable mitigative measures.

30.5.3 Future Engagement

NWP is committed to creating and sustaining constructive dialogue and relationships with the Tsuut'ina Nation over the course of the Project and the Application review phase of the EA. Should the Project be successful in receiving an Environmental Assessment Certificate (EAC), NWP will continue to share information with the Tsuut'ina Nation. Over the course of the Application review phase and post-EAC, NWP will provide the Tsuut'ina Nation with Project information, such as the Application/EIS, technical information required through Information Requests that are made public by the EAO and/or Impact Assessment Agency of Canada (IAAC), and other engagement materials such as Project newsletters and Project website updates. NWP will respond to comments received from the Tsuut'ina Nation as per the Section 11 Order, subsection 12.5.

It is noted that the Impact Assessment Agency of Canada (IAAC) has indicated that the duty to consult with the Tsuut'ina Nation in relation to the Project is at the low end of the consultation spectrum (IAAC, 2021b) when compared to Indigenous Nations that are anticipated to experience more potential Project Impacts (IAAC, 2021b).

NWP is committed to an ongoing dialogue with the Tsuut'ina Nation, including a commitment to the following:

- Entering into an agreement to formalize consultation protocols between NWP and Tsuut'ina Nation;
- Supporting site visits from representatives of the Tsuut'ina Nation;
- Integration of the results of Tsuut'ina Traditional Land Use information where applicable and possible;
- Identifying mitigation and accommodation measures to prevent/offset impacts to Valued Components; and
- Discussing possible mitigation for potential impacts to Tsuut'ina Nation rights and interests.

30.5.4 Preliminary Understanding of Rights and Interests

As their vast Traditional Territory includes the Project footprint, there is a potential for the Project to affect Tsuut'ina Nation's rights and related interests. Therefore, Tsuut'ina cultural and traditional heritage and traditional knowledge and land use must be taken into consideration and accommodated where appropriate in relation to the Project. An activity that has the potential to infringe on the Aboriginal Rights and related interests of Tsuut'ina Nation will trigger the Crown's duty to consult and accommodate with Tsuut'ina Nation.

Section 30.5.4 of the Project Application/EIS addresses Tsuut'ina Nation's rights and interests as identified by the Impact Assessment Agency of Canada (IAAC) (formerly the Canadian Environmental Assessment Agency [CEAA]). Information received from the Agency on May 10, 2021 (IAAC, 2021b), indicates the following as their preliminary understanding of the nature and extent of the Tsuut'ina Nation's Aboriginal and Treaty Rights and interests. The following summarizes the Agency's understanding of Tsuut'ina Nation's rights:

- "*Tsuut'ina are one of five nations signatory to Treaty 7 (1877);*
- *Under the terms of Treaty 7, Tsuut'ina has an established right to hunt;*
- *Tsuut'ina has rights under the Alberta Natural Resources Transfer Agreement (1930);*

- *Treaty 7 territory, in the province of Alberta, is situated approximately five kilometres from the proposed Project;*
- *Tsuut'ina assert Inherent and Treaty Rights to hunt, fish, harvest, travel and practice cultural and ceremonial activities throughout its Treaty 7 Territory;*
- *Tsuut'ina assert Incidental Treaty and Inherent Rights, such as the right to access harvesting areas;*
- *Tsuut'ina bases its governance and legislation on the teachings of Natural Laws, "Wusa", which means "the future," anything that is done today must benefit the future of those born and those yet to be born. This generational responsibility is a guiding principle applied to every aspect of Tsuut'ina's governance; and*
- *Historically, the Crowsnest Pass provided a range of important resources and Tsuut'ina people both visited and lived in the Pass and exploited the resources it offered. In addition, there were well-established trading routes (e.g., Shuswap) that Tsuut'ina used throughout the Crowsnest Pass. Geophysical and landscape elements of the Crowsnest Pass and surrounding area also play important parts in Tsuut'ina religion and spirituality. Large game animals and widely used plant resources were obtained in the Pass during all seasons"* (IAAC, 2021b).

The following summarizes the Agency's understanding of Tsuut'ina Nation's interests:

- *Hunting and Trapping*:
  - *Traditionally, Tsuut'ina hunted deer, elk, antelope, mountain sheep, mountain goat, porcupine, rabbit, and squirrel for sustenance as well as for spiritual and ceremonial purposes. They would also collect eggs and harvest ducks, geese, and swans.*
  - *Tsuut'ina Nation hunting areas were traditionally concentrated on the plains and foothills of southwestern Alberta including areas between the Red Deer and Battle River. By the mid-nineteenth century, hunting occurred mainly along the Bow and Red rivers. At Crowsnest Pass, large game animals were hunted through all seasons. In the past, buffalo were available in Crowsnest Pass during winter as they concentrated in the bottom of the valley at Crowsnest River*
  - *Tsuut'ina trapped coyotes, wolves, and foxes in late fall using dead-falls which is a type of trap. The practice of trapping eagles was sacred and spiritual among Tsuut'ina.*
  - *Wildlife and bird species such as elk, moose, deer, sheep, buffalo, and eagles continue to be important to Tsuut'ina Nation today.*
  - *Culturally, spiritually, and nutritionally important wildlife and birds include moose, elk, deer, buffalo, grizzlies, sheep, wolves, cougar, lynx, rabbit, squirrels, and other small rodents. Eagles are particularly sacred to Tsuut'ina Nation.*
- *Fishing*:
  - *Bull trout are an important source of both subsistence and ceremonial food for Tsuut'ina. These fish support Tsuut'ina's cultural activities including feasts and pow-wows.*
- *Harvesting and Gathering:*
  - *Traditionally, Tsuut'ina harvested and consumed a variety of plant species, including prairie turnips, serviceberries, blueberries, and chokecherries. They also harvested lodge pole pine for constructing tipis. Tsuut'ina Nation harvested and used alpine plants in Crowsnest Pass during all seasons.*
  - *Important medicines and traditional plants used by Tsuut'ina include buffalo grass (which is important for smudging), yarrow, sweetgrass, Saskatoon berries, choke cherries, medicinal*

flowers, mushrooms, kinnikinnick (bear berry), cedar brush, poplars, sage, red willow, diamond willow, juniper, and wild bergamot.
    - *Tsuut'ina Nation continue to harvest resources for subsistence, medicinal, and ceremonial purposes.*
    - *Multiple alpine plants are found at Grassy Mountain which are crucial to Tsuut'ina Nation ceremony, healing practices, cultural identity, and spirituality. These alpine plants are not found at lower elevations near Tsuut'ina Nation communities.*
    - *Several species of plants identified as important to Tsuut'ina include tree fungus, raspberry, knickinick (bearberry), sweetgrass, sweet pine, and lingonberries.*
    - *Tsuut'ina Nation harvest a range of plants, including berries, sweet pine, lodgepole pine, juniper, bear root, muskeg tea, trees, shrubs, lichen, and fungus, willow, and poplar. As with all berries, Saskatoon berries are also very important to the Tsuut'ina Nation and were identified on Grassy Mountain.*
    - *Several tree types are also vital for ceremony, medicine, and more. Tsuut'ina Nation harvests logs to make teepee poles for various celebrations throughout the summer and for building log houses.*
    - *Lichen, moss and several types of fungus continue to be used for traditional, ceremonial, and medicinal purposes.*
- *Cultural, Spiritual and Heritage:*
    - *Throughout Tsuut'ina territory are multiple well-known sacred areas.*
    - *Rock cairns used as navigational tools are situated along historical trails.*
    - *Geophysical and landscape elements, such as Crowsnest Mountain, and surrounding areas play important parts in Tsuut'ina religion and spirituality.*
    - *Tsuut'ina territory also contains vision quest sites.*
    - *Arrow tips, knives or spearheads were made from obsidian rock and which may come from the mountains, which requires we respect the mountains and all that is there.*
    - *As there is more development in the mountains, there are fewer "areas of solitude" for Tsuut'ina spiritual Elders. They are encountering hikers, ATVs, traffic, noise and generally more human activity. This impacts Tsuut'ina ability to conduct most sacred ceremonies. Tsuut'ina seek areas set aside for quiet spaces or areas of solitude to conduct their traditional practices undisturbed on the lands that their ancestors have used.*
- *Travel and Trade Routes:*
    - *Tsuut'ina Nation were nomadic and hunted in areas where they travelled.*
    - *Historically, Tsuut'ina traveled their territory to trade with neighboring groups and the Hudson's Bay Company as well as to undertake their seasonal round. Tsuut'ina Nation used Crowsnest Pass as a trading route to reach the Shuswap to the west"* (IAAC, 2021b).

The following summarizes the Agency's preliminary understanding of potential impacts of the Project on Tsuut'ina Nation's rights and interests (IAAC, 2021b):

- *"Potential adverse environmental effects of the Project that may impact the hunting and trapping rights of Tsuut'ina Nation include:*
    - *Loss of, or changes to, wildlife and wildlife habitat due to loss of habitat, connectivity, winter range areas, and movement caused by the Project;*
    - *Sensory disturbance may alter movement patterns of animal population near the Project;*
    - *Reduced wildlife health and/or abundance due to changes in air, water, and soil quality;*

    - *Increased hunting pressure through increased access by mine employees, contractors, and/or the general public to area near the Project;*
    - *Disturbed experience in area near the Project.*
- *Potential adverse environmental effects of the Project that may impact the harvesting and gathering rights of Tsuut'ina Nation include:*
    - *Increased harvesting or gathering pressure through increased access by mine employees, contractors, and/or the general public to area near the Project; and*
    - *Disturbed experience in area surrounding the Project.*
- *Potential adverse environmental effects of the Project that may impact the fishing rights of Tsuut'ina Nation include:*
    - *Increased fishing pressure through increased access by mine employees, contractors, and/or the general public to area near the Project; and*
    - *Disturbed experience in area near the Project.*
- *Potential adverse environmental effects of the Project that may impact the current use of culturally significant areas for Tsuut'ina Nation include:*
    - *Disturbance, and increased access by mine employees, contractors and/or the general public to places of cultural and spiritual significance.*
- *Potential adverse environmental effects of the Project that may impact the health and socio-economic conditions of Tsuut'ina Nation include:*
    - *Alteration of traditional foods due to loss of, or changes to, wildlife, plants, and fish and wildlife, plant and fish habitat, including changes to air quality; and*
    - *Changes to air quality"* (IAAC, 2021b).

The Tsuut'ina Nation's Aboriginal rights and interests and Treaty 7 rights are defined as those outlined in the correspondence above. Under the terms of Treaty 7, the Tsuut'ina Nation have an established right to hunt which is addressed further when determining potential impacts to rights related to the change in use of land and resources for traditional purposes related to hunting and trapping in Sections 30.7.3.2.2 and 30.10.2.1.2. At the time of the submission of this Application/EIS, the Tsuut'ina Nation had not provided information regarding their rights and interests to the NWP, therefore the current understanding of the Tsuut'ina Nation's rights and interests is regarded as preliminary.

As per NWP's understanding of the Tsuut'ina Nation's rights and/or interests, IAAC indicated their understanding of potential impacts of the Project on the As noted in Section 30.5.4, IAAC indicated their preliminary understanding of potential impacts of the Project on Tsuut'ina Nation (IAAC, 2021b) may include:

- Hunting and Trapping;
- Fishing;
- Harvesting and Gathering;
- Ceremonial/Sacred Areas (i.e., Culturally Significant Areas);
- Physical and Cultural Heritage (i.e., Cultural, Spiritual, and Heritage);
- Access and Travel (and Trade) Routes; and
- Social, Health, and Economic (i.e., Health and Socio-Economic) Conditions

30.6 Tsuut'ina Nation Baseline Conditions and Rights and Interests

This section describes the baseline conditions as they relate to the Project for Tsuut'ina Nation's rights and interests as identified by IAAC (IAAC, 2021b) and included in Section 30.5.4. The baseline conditions include a description of Tsuut'ina Nation's governance structures, a brief history of Tsuut'ina Nation utilizing Indigenous Knowledge in the form of a Traditional Land-Use Study (TLU) report provided to NWP by Tsuut'ina Nation, and secondary sources that are publicly available with respect to demographic data, socio-economic, and health conditions, and ethnography. This section also includes information regarding Tsuut'ina Nation's Aboriginal and Treaty rights and interests based on the preliminary understanding of the Tsuut'ina Nation's rights and interests as noted in Section 31.5.4, feedback received from Tsuut'ina Nation (Appendix 30-A, Table 30.A-2), utilizing Indigenous Knowledge in the form of a Traditional Land-Use Study (TLU) report provided to NWP by Tsuut'ina Nation, secondary sources that are publicly available, and overall consultation activities summarized in Section 30.5 relating to the historic and current use of lands and resources for traditional purposes by Tsuut'ina Nation such as fishing (and water), hunting and trapping, harvesting and gathering, ceremonial and sacred sites, access and travel routes, as well as physical and cultural heritage.

All information compiled and presented in Section 30.6 has been authored by NWP utilizing Indigenous Knowledge in the form of a Traditional Land-Use Study (TLU) report provided to NWP by Tsuut'ina Nation, and secondary sources that are publicly available. The information presented throughout is not intended to supersede traditional knowledge or specific information of the community members and Elders of the Tsuut'ina Nation (IAAC, 2021b). Tsuut'ina Nation's rights and interests described in this section are in consideration of the existing and potential future use of the Project footprint, the ATRI LSA, and the ATRI RSA by Tsuut'ina Nation to exercise their rights and interests without the Project. This section also notes where applicable that the potential future use of Tsuut'ina Nation to exercise its rights in the ATRI LSA and RSA has likely been influenced by past and ongoing development activities that have been included in the setting of the baseline conditions utilizing the assessment methodology identified in Chapter 5 and referenced in Section 30.3.

30.6.1 Governance

The Tsuut'ina Nation is a signatory to Treaty 7 which was signed on September 22, 1877 (Cook and Filice, 2020). The Nation is governed by one Chief and 12 Councillors elected on a 2-year cycle with the current term expiring November 28, 2022 (First Nations Land Management Resource Centre [FNLMRC], 2021).

Tsuut'ina joined the Framework Agreement on April 13, 2012 and on the August 13, 2012, Tsuut'ina Nation entered into an individual agreement with the federal government allowing the Tsuut'ina Nation to develop its own Land Code. Their status is currently listed as inactive, but they are amongst the 178 First Nations Canada wide that support First Nations managing and administering their own lands without federal oversight (FNLMRC, 2021).

The Tsuut'ina Nation participates in the Stoney Nakoda - Tsuut'ina Tribal Council Ltd. (Aboriginal and Treaty Rights information System, 2020). The Tribal Council signed an Agreement with the Government of Alberta on October 2, 2020 which serves to outline the formal process for Ministers and Chiefs and

Councils to meet several times throughout the year to address key priority areas that include health, economic growth, education, family services, and housing on Nations. The agreement also commits to an annual meeting between the Chiefs, Stoney Nakoda-Tsuut'ina Tribal Council, and the premier (Kemp, 2020).

Tsuut'ina Nation is a member nation of the Treaty 7 Management Corporation (T7FNCA), which acts as a Tribal Council for Treaty 7 First Nations including Stoney Nakoda (Bearspaw, Chiniki, Wesley), Blood Tribe (Kainai Nation), Siksika Nation, and Piikani Nation. The Treaty 7 First Nations Chiefs' Association serves as the political entity for the Treaty 7 First Nations Chiefs and leadership to collectively advocate for the rights and needs for each nation in the Treaty 7 territory (T7FNCA, 2020).

30.6.2 History and Ethnography

The Tsuut'ina Nation are an Athapaskan group that are part of the more northerly Dane-zaa ('Beaver Indians') Nation (Clark, 1977; Wilson and Hale, 1988). As reported by Tsuut'ina Nation, the Elders speak of a time when Tsuut'ina was part of a larger Athabascan language speaking group, the oral narrative told of a great divide which split the group, some went north such as the Slavey and Denesuline, others went south such as the Navajo and Apache (Tsuut'ina Nation Consultation [TNC], 2021).

Based on reports by the Explorer David Thompson, the Tsuut'ina Nation lived in the Beaver Hills in proximity to what is now known as Edmonton during the 1810s, where they cohabited with the Cree (MacDonald, 2009). Due to conflict with the Cree, the Tsuut'ina Nation moved further to the south. This move contributed to the Tsuut'ina Nation forming an alliance with the Blackfoot (MacDonald, 2009). While some accounts state that the move south took place in the 1700s (Cook and Filice, 2020; Calgary Foundation, n.d.), the exact timing of the move is indeterminate as it is based on Tsuut'ina Nation's oral history; some accounts placing it in the 1700's. To this day, the Tsuut'ina Nation maintain close contact with the Siksika, Blackfoot, and Stoney Nakoda Nations (Cook and Filice, 2020).

Historically, settled in *Kootisaw* ("meeting of the waters"), the location of present-day Calgary. As they became closely allied with their southern neighbours, Tsuut'ina Nation (Blood Tribe), Siksika and Piikani, this alliance provided the Tsuut'ina protection against attacks by other tribes. The Tsuut'ina evolved into an individual and distinct people who have a reputation of fearlessness. It is said that despite being outnumbered, Tsuut'ina warriors would bravely fight and usually were victorious (V. Meguinis, personal communication, February 18, 2021). They adopted much of the Blackfoot culture but maintained their own interpretation of military societies and the Sun Dance ceremony (Quilt of Belonging, 2016).

When anthropologist Diamond Jenness visited the Tsuut'ina Nation in 1921, it consisted of five bands: Big Plumes, Crowchilds, Crow Chiefs, Old Sarcees, and Many Horses. Before they were restricted to the Reserve, each band was led by a Chief. Today, the Band is governed by an elected Chief and Councillors (Cook and Filice, 2020). Please refer to Section 30.6.5 for an overview of Tsuut'ina Nation's Traditional Territory and Section 30.6.5.1 for an overview of Tsuut'ina Nation's Reserve.

30.6.3 Language

Tsuut'ina Nation, which means "a great number of people", are descendants of Athapaskan-speaking people, which include the Navajo and Apache of the south and the Dene and Chippewa of the north.

Tsuut'ina Nation has kept their traditions and their culture has evolved into to one that is unique to Athapaskan-speaking people (Benga, 2015a). Instead of being related to the geographically nearer Blackfoot language and the Cree language, the Tsuut'ina language is an Athabaskan language (Cook and Filice, 2020; Native Languages of Americas, 2020). The Tsuut'ina language is considered threatened. According to the 2016 Statistics Canada census, only 150 people identify as having knowledge of the language (Cook and Filice, 2020). Various institutions and community programs are working to preserve and protect the language. Recently the Tsuut'ina Nation took on proactive approach to preserve their language. The Gunaha Language Institute was established with the mandate of revitalizing the Tsuut'ina language and producing more speakers while utilizing Elders, knowledge keepers, and fluent speakers. The Tsuut'ina Nation are moving forward to preserving the language (V. Meguinis, personal communication, March 4, 2021). In 2011, the University of Calgary developed a program in association with the Tsuut'ina Gunaha Institute to help revive the language (Cook and Filice, 2020).

30.6.4 Population

From 1857 to 1860, explorer Captain John Palliser estimated the Tsuut'ina Nation population at 1,400 during his scientific expedition of western Canada (Cook and Filice, 2020). Epidemics of smallpox in 1837, scarlet fever in 1864 and other diseases, as well as wars, reduced the Tsuut'ina population to 450 by the time they settled on the reserve in 1881. By 1924, the Tsuut'ina Nation population had decreased to about 160 (Cook and Filice, 2020). This coincides with the time of the Spanish Flu, which Tsuut'ina Nation oral narratives indicate were devastating to the community – there are mass burial sites on Tsuut'ina land to indicate the number of members who died from it (V. Meguinis, personal communication, March 4, 2021).

According to Statistics Canada, between the years 1996 and 2006, the Indigenous population in Canada grew by approximately 45%. An increase in population growth has also been observed among the Tsuut'ina Nation, with Statistics Canada recording the Tsuut'ina Nation population as 1,645 people on-reserve in 2016. The contributing factors in Tsuut'ina Nation's population growth rate are higher fertility rates, self-identification, and in some cases the move away from a nomadic way of life as the majority of Tsuut'ina Nation members live on-reserve.

As of December 2022, Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) reports that there are 2,565 registered members of the Tsuut'ina Nation and Tsuut'ina Nation expect this number is closer to 2,600 (V. Meguinis, personal communication, March 4, 2021). Of this number, 2,164 persons live on-reserve (V. Meguinis, personal communication, March 4, 2021). Approximately 25%, or 460 persons, are in the 14 years of age and younger category (Statistics Canada, 2016). Of those living off Tsuut'ina Nation's Reserve, 140 members live on the reserves of other Nations (CIRNAC, 2022). Population density of Reserve #145 is 5.8 people per square kilometre and private dwellings occupied by usual residents were a total of 491 (Statistics Canada, 2016).

30.6.5 Community, Reserve, and Traditional Territory

Tsuut'ina is unique in its location; its Traditional Territory is vast and beyond Canada's borders. At the signing of Treaty 7 in 1877, the Tsuut'ina Nation was assigned reserve lands. Chief Bullhead refused the location, with only twenty-four hours to accept, he instructed his scouts to run and mark the boundary of lands he had envisioned. The land he favored was a camping site, where there was an abundance of water, wooded area, and animals to hunt; it bordered the Elbow River to the north and Wolf Creek to the south.

The scouts marked the area with logs and later used the logs to build the first log homes (TNC, 2021). The Tsuut'ina Nation is part of Treaty 7 long with the Stoney Nakoda (Bearspaw, Chiniki, and Wesley), Kainai, Piikani, and Siksika Nations (ATRIS, 2020). Treaty 7 or the Blackfoot Treaty of 1877 covers a large part of southern Alberta and Figure 30.6-1 shows the Treaty 7 area, as well as the Tsuut'ina Nation Traditional Territory. It is important to note that Figure 30.6-1 depicts a snapshot in time, and the concept of the extent of Tsuut'ina Nation Traditional Territories is based on an evolving understanding of the landscapes that were occupied by Tsuut'ina Nation ancestors and may not fully reflect the up to date views of the Tsuut'ina Nation due to the lack of this information as provided by the Tsuut'ina Nation for the Application/EIS.

Originally, the Siksika, Kainai, and Tsuut'ina Nations were given a common Reserve, averaging 6 km in width, located on the north side of the Bow River, 32 km northwest of Blackfoot Crossing and downstream to the junction of the Red Deer River with the South Saskatchewan (Tsuut'ina Nation Police Service [TNPS], n.d.). While the Tsuut'ina and Kainai Nations originally shared a Reserve with the Siksika Nation, Chief Bullhead, head chief of the Tsuut'ina Nation, insisted on the Tsuut'ina members having their own land base. In 1882, a new Reserve was surveyed along Fish Creek and the Elbow River, an area which the Tsuut'ina Nation had always considered their home lands (TNPS, n.d.). Chief Bullhead's decision is considered Tsuut'ina first sovereign act, to determine one's own land base through perseverant and convincing lobbying, resulted in Canada's first Supplementary Treaty in 1883 and formal designation was made in 1888 (TNC, 2021).

The new supplementary treaty was made with the Tsuut'ina Nation for these lands, which cover an area 29 km east to west and 11 km north to south. This was the origin of the present day Tsuut'ina Nation reserve lands (TNPS, n.d.). To the Tsuut'ina Nation, the selection of present day Tsuut'ina Nation lands by Chief Bullhead is an important historical event, where, as the first in Canada, their nation determined the location of their land base (V. Meguinis, personal communication, March 4, 2021). To solidify Tsuut'ina's chosen land, Chief Bullhead asked that each man, woman, and child bring a stone, as they placed the stone, they were counted, this monument symbolically ensures that each person and their families belong to the land, and that they would live in prosperity and safety for generations to come (TNC, 2021).

The Tsuut'ina Nation has engaged either on their own or with other First Nations, in several specific claims against Canada. The land claims are summarized in Table 30.6-1.

Other legal actions and assertions between the Tsuut'ina Nation and the federal government include:

- Tsuut'ina First Nation vs. Her Majesty the Queen (formerly Twinn and Starlight cases);
- Tsuut'ina Nation (Band) vs. Her Majesty the Queen in Right of Canada;
- Tsuut'ina Nation (Band) vs. Her Majesty the Queen (Canada - Minister of INAC and the Minister of National Defence (R/W case); and Tsuut'ina Nation et al. vs. Attorney General of Canada.

Crown Mountain Coking Coal Project

Figure 30.6-1
Tsuut'ina Nation Traditional Territory

LEGEND

- Tsuut'ina Nation Traditional Territory
- Blackfoot Confederacy - Treaty 7
- Tsuu T'ina Nation Reserve Lands
- Project Footprint
- City/Town
- Highway
- Watercourse
- Waterbody
- Provincial/State/Local Park
- National Park
- Province/State Boundary

0 50 100
Kilometres

N W E S

Scale 1:2,500,000

Map Drawing Information:
Data Provided By NWP Coal Canada Ltd, Dillon Consulting Limited, Province of British Columbia GeoBC Open Data, Government of Alberta Open Data, Natural Resource Canada, ESRI Basedata, Crown-Indigenous Relations and Northern Affairs Canada, Wood, 2004.

Map Created By: RB
Map Checked By: LKD
Map Coordinate System: NAD 1983 UTM Zone 11N

NWP Coal Canada Ltd

Project: 12-6231
Status: FINAL
Date: 2023-07-19

Document Path: K:\126231_Crown_Mountain\EA_Report\ExistingConditions\IndigenousInterest\126231_EC_II_TsuutinaNationTraditionalTerritory.mxd

Table 30.6-1: List of Claims and Assertions (Aboriginal and Treaty Rights information System, 2020)

Claim: Surrender for Gravel Lease
Status: Concluded Substance of Claim: The 1930 surrender for a gravel lease was invalid. Alternatively, if valid, Canada breached a pre-surrender fiduciary duty by assigning a five-year gravel lease in favour of Bennett & White construction Co Ltd. to the City of Calgary without the consent or further payment of any further compensation for the extraction of gravel to construction of the Glenmore Reservoir.
Claim: Surrender for Sale
Status: Settled Substance of Claim: Alleged that both the surrender of land in 1913 and the surrender of land in 1931 were not valid because the federal government breached its fiduciary obligation to the First Nation due to the presence of duress, undue influence and negligent misrepresentation and because the surrender bargains were unconscionable. It is further alleged that the federal government failed to follow the terms and conditions associated with the 1913 surrender and unlawfully transferred approximately 193.5 acres of land in question to the City of Calgary in 1931.
Claim: Calgary Irrigation Company
Status: Settled Substance of Claim: Concerned expropriation of 107 acres of reserve land in June 1893.
Claim: DND Lease
Status: Settled Substance of Claim: Concerned leasing of 4,780 hectares of reserve lands for Department of National Defense use.
Claim: Mineral Rights
Status: Concluded Substance of Claim: The Tsuut'ina Nation seeks confirmation from Canada that the oil and gas and other mineral rights underlying the Glenmore Reservoir lands, lands, as well as the Priddis Trail, did not legally pass to the City of Calgary and that legal title to the mines and minerals continue to be vested in the Crown as Reserve for its exclusive use and benefit. Alternatively, if the title to the mines and minerals was legally transferred to the City of Calgary, the Crown breached its fiduciary duty by failing to expressly reserve such interests from the surrender and sale of the reserve lands to the City of Calgary for the benefit of the Tsuut'ina Nation.
Claim: Priddis Trail
Status: Settled Substance of Claim: The Tsuut'ina Nation sought confirmation that the 10.23-acre portion of the Priddis Trail located within the lands surrendered in 1900, and sold to the City of Calgary in 1931, did not legally pass to the City and that the legal title to the Priddis Trail continues to be vested in the Crown as part of the Reserve. The Tsuut'ina Nation further alleged that, in light of the Osoyoos decision, the City of Calgary did not acquire any legal interest in the Priddis Trail lands because the Tsuut'ina Nation surrendered only a limited right of way interest for only so long as these lands were used for road purposes. When the Priddis Trail land ceased to be used for road purposes, it was to revert to the Crown to be held as reserve land for the use and benefit of the Tsuut'ina Nation.
Claim: Treaty 7 Ammunition
Status: Settled Substance of Claim: Failure to provide ammunition pursuant to Treaty 7.

30.6.5.1 Community and Reserve Lands

The City of Calgary borders the eastern boundary of the Tsuut'ina Nation Reserve (#145). The Municipal District of Foothills 31 are located to the south; and Rocky View County to the west and north (Figure 30.6-2). The Elbow River bisects the Reserve's northwestern and northeastern corners. In comparison to other reserves, the Tsuut'ina Reserve has a rectangular shape defined by the legal survey grid rather than topographical feature. The Reserve's boundaries have been amended since original created and reportedly encompasses an area of 29,427 ha (FNLMRC, 2021), or 29,417 ha according to Indigenous Services Canada (ATRIS, 2020).

In comparison, Statics Canada (2016) reports a reserve area of 28,292 ha. The discrepancies in the land area may be partially attributed to the Nation recently receiving 2030.8 ha of land in exchange for relinquishing 428 ha of land for major provincial road improvements and whether secondary road allowances, such as Highway 22 which bisects the Tsuut'ina Nation Reserve, are extracted from the measure (Government of Alberta, n.d.).

As noted in Section 30.6.4, with the nomadic way of life no longer practised, the majority of Tsuut'ina Nation people live on-reserve. The on-reserve portion of the population of the community is dispersed throughout the Nation's lands.

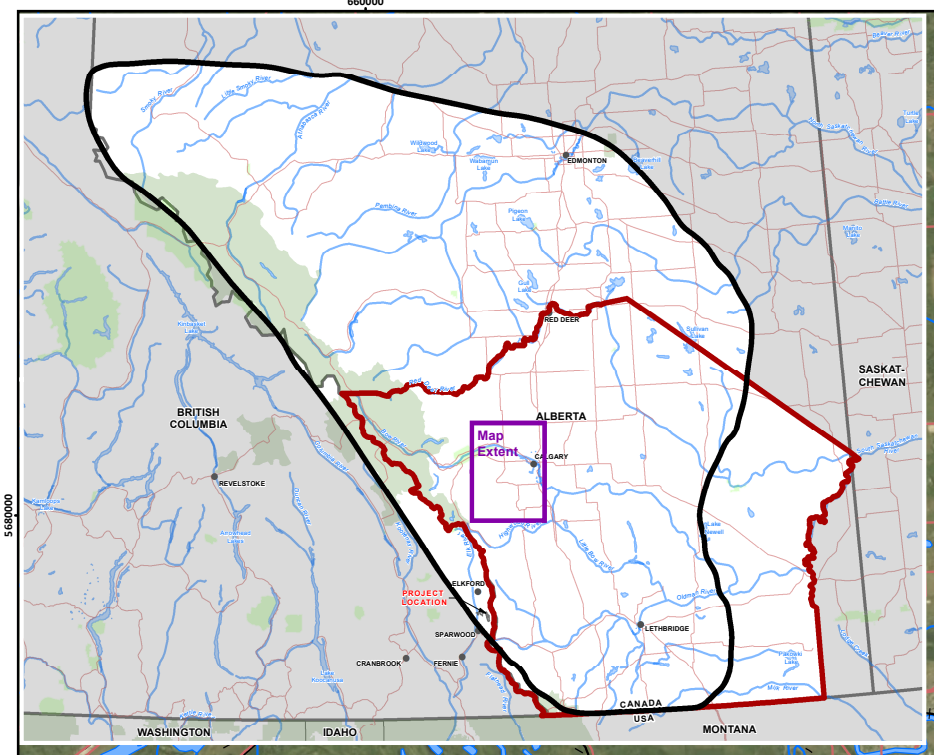
The proximity of Calgary has fostered contemporary developments along the Reserve's eastern boundary. The first Costco on First Nation land opened in August 2020 (Gilligan, 2020). Grey Eagle Resort & Casino opened in 2007 and underwent an expansion completed in 2014 (Grey Eagle Casino Resorts, n.d.).

A prominent historical legacy of the Tsuut'ina Nation was the establishment of a Canadian Armed Forces barracks and ordnance range on the Reserve between 1901 and 1996 (Salus, n.d.). The facilities original covered approximately 4,856 ha. The military base was closed in 1996 and the lands returned to the Tsuut'ina Nation (Forsyth, n.d.). There were concerns about the safety of the structures left behind as well as unexploded ordinance (Hulse, et al., 2020).

According to the National Assessment of First Nations Water and Wastewater Systems (2011),Tsuut'ina Nation Reserve is provided potable water treatment by two water treatment systems: the Business Park Municipal Type Agreement (MTA) Water System, constructed in 1992; and, the Tsuut'ina Nation No. 145 (6639) level 1 treatment system, constructed in 1993 (Neegan Burnside, 2011).

30.6.6 Tsuut'ina Nation's Rights and Interests: Historical and Current Use of Lands and Resources for Traditional Purposes

This section describes the baseline conditions for the Tsuut'ina Nation's exercise of their Aboriginal and Treaty rights and interests as identified by IAAC (IAAC, 2021b) with regard to the Project. This section includes information regarding the Tsuut'ina Nation's Aboriginal and Treaty rights and interests based on feedback from the Tsuut'ina Nation (Appendix 30-A, Table 30.A-2), publically available information, and consultation and engagement activities summarized in Section 30.5 relating to the historic and current use of lands and resources for traditional purposes by the Tsuut'ina Nation such as fishing, hunting and trapping, harvesting and gathering, ceremonial and sacred sites, access and travel routes, as well as physical and cultural heritage.



660000 680000 700000

5680000 5660000 5640000 5620000

766 772 2 567 566 782 201 564 563 1 68 8 560 758 22X 22 66 762 549 552 546 543 7

Lochend Lake
AIRDRIE
West Nose Creek
McDonald Lake
Glenbow Lake
Livingstone Creek
Sibbald Lake
Little Jumpingpound Creek
Bow River
Nose Creek
CALGARY
Glenmore Reservoir
TSUUT'INA NATION
BRAGG CREEK
Moose Creek
Bragg Creek
MOOSE MOUNTAIN
Fish Creek
Canyon Creek
Elbow River
PRIDDIS
Lloyd Lake
Whiskey Creek
Ford Creek
Quirk Creek
Threepoint Creek
OKOTOKS
Volcano Creek
Ware Creek
Cougar Creek
TURNER VALLEY
Spring Creek
Tongue Creek
Sheep River

0 5 10 Kilometres

N W E S

Scale 1:250,000

Map Drawing Information:
Data Provided By NWP Coal Canada Ltd, Dillon Consulting Limited, Province of British Columbia GeoBC Open Data, Government of Alberta Open Data, Natural Resource Canada, ESRI Basedata/Imagery, Crown-Indigenous Relations and Northern Affairs Canada, Wood, 2004.

Map Created By: RB
Map Checked By: LKD
Map Coordinate System: NAD 1983 UTM Zone 11N

Crown Mountain Coking Coal Project

Figure 30.6-2
Tsuut'ina Nation Reserve Lands

LEGEND

- Tsuut'ina Nation Reserve Lands
- Culturally Important Area
- Tsuut'ina Nation Traditional Territory
- Blackfoot Confederacy - Treaty 7
- Project Footprint
- City/Town
- Highway
- Arterial/Collector Road
- Local/Resource Road
- Railway
- Transmission Line
- Watercourse
- Waterbody
- Province/State Boundary

NWP Coal Canada Ltd

Project: 12-6231
Status: FINAL
Date: 2022-04-11

Document Path: \\42dillon\CAD\GIS\2012 and Prior\126231 Crown Mountain\EA_Report\ExistingConditions\IndigenousInterest\126231_EC_II_TsuutinaReserveLands.mxd

The Tsuut'ina Nation have a strong connection to their traditional lands (Figure 30.6-1), where their ancestors travelled in annual seasonal migrations for thousands of years following the accessibility and availability of resources. Prior to life on-reserve, the Tsuut'ina Nation camped in tepees and hunted along the edge of the forest during the winter months (Cook and Filice, 2020). During the summer, the members of the bands met in the open prairie to collect berries, hunt bison, and participate in ceremonies, dances, and festivals (Cook and Filice, 2020). Historically, the tepee was the main type of dwelling used by the Tsuut'ina Nation. Tepees usually had a four-pole foundation and were made of 12-14 buffalo (bison) skins. Additional skins would be used to line the interior of the tepee (Dempsey, 2001). There is a large Indigenous population in southern Alberta that rely on limited Crown lands; the Rockies and foothills are one of the last places for the Tsuut'ina Nation to exercise their Treaty rights and traditional use (IEG and ALCES Group, 2018).

As noted in Section 31.5, at the time of the Application/EIS submission, Tsuut'ina Nation had provided Indigenous Knowledge in the form of a site assessment study that outlined some Traditional Land-Use (TK/TLU) information submitted to NWP. Where Indigenous Knowledge was provided by the Tsuut'ina Nation (during the review of Project Planning and Design documents and during Pre-Application Engagement) it has been incorporated into the effects assessment for the use of lands and resources in relation to the Project. As such, the limitations of the information sources considered include those publicly available (e.g. other development project EA/IA applications, including Baldy Ridge Extension Project, the Castle Project, Grassy Mountain Coal Project, and the Line Creek Operations Project) and those activities and correspondence that detail Project-specific information available to be shared publicly related to traditional activities. Where the Tsuut'ina Nation did provide information related to mitigation measures, those have been included in the Indigenous Impact Management Plan (Section 31.9).

Limitations of information for assessing the Project effects to the Tsuut'ina Nation's rights and interests include the lack of specific information regarding the spatial distribution of site-specific knowledge and use values reported by Tsuut'ina Nation community members in the Project footprint and the ATRI LSA based on subsistence sites, ceremonial and cultural/spiritual uses, transportation features, habitation values, and environmental features. In addition to any tangible site-specific values mapped by Tsuut'ina knowledge holders and based on Tsuut'ina oral histories, any intangible non-site specific values that may include reported Tsuut'ina cultural properties or heritage sites in the vicinity of the Project including particular oral histories regarding Elders, ceremonies, and events that took place in the area and non-site specific values associated with oral histories of the area were those included from publicly available sources as no Project-specific information was provided. For this chapter, wherever practicable, these intangible cultural heritage resources are included within the physical and cultural heritage information.

For the use of lands and resources for traditional purposes, site-specific knowledge and use values associated with subsistence sites, transportation, and related environmental features including seasonal access and usage from Tsuut'ina knowledge holders would further support and guide the assessment of Project-related effects within the Project footprint, the ATRI LSA, and the ATRI RSA in terms of potential interactions during the Project lifecycle.

It is understood that present day availability of lands for the practice of traditional activities is reduced from the increased pressure on those lands by agriculture, residential development, mining, forestry, and park creation, among other modern developments. There is recognition within the assessment process that current use may not be reflective of desired current use, as Indigenous Communities have been

impacted in many ways that may have impeded their ability to undertake some traditional activities (e.g., loss of knowledge between generations). Current use as defined in Chapter 30 is reflective of current use of lands and resources for traditional purposes as well as preferred future use as desired by the Tsuut'ina Nation.

As the Tsuut'ina Nation did not provide a Project-specific Traditional Land-Use Study (TLU), the information available to describe the baseline information for the Tsuut'ina Nation's rights and interests in the following sections was based on publicly available information and those activities and correspondence that detail Project-specific information available from the Tsuut'ina Nation to be shared publicly. NWP's understanding of the Tsuut'ina Nation's rights and interests is limited to those confirmed by the Tsuut'ina Nation in Section 31.5.4 with limitations identified in Section 31.4.1.1, and as such, no information on the description and characterization of the location of hunting camps and cabins within the ATRI LSA and RSA to inform the determination of the appropriate spatial boundaries to describe the baseline information was provided by Tsuut'ina Nation or publicly available. No information on the description of commercial activities of the Tsuut'ina Nation within the ATRI LSA/RSA were provided by Tsuut'ina Nation or publicly available. No information on the description of Tsuut'ina Nation community members' recreational uses were provided by the Tsuut'ina Nation or publicly available. No input from the Tsuut'ina Nation was directly provided in establishing the baseline conditions related to health and socio-economics.

Further information on the use of navigable waters, forestry and logging operations, commercial fishing, hunting, trapping, and gathering activities, commercial outfitters, and recreational use, including wildlife viewing, will be updated through continued engagement with the Tsuut'ina Nation during the assessment processes where applicable. For the Tsuut'ina Nation's physical and cultural heritage, the only information provided by the Tsuut'ina Nation and publicly available is included in Sections 31.6.6.4, 31.6.6.5, and 31.6.6.6.

Country foods include traditionally used resources that are fished, hunted, trapped, harvested, gathered, or grown by Indigenous Communities for subsistence or medicinal purposes outside of the commercial food chain. In relation to the Tsuut'ina Nation's country food consumption, food insecurity has been increasing in recent years and has been further exacerbated by the global pandemic, the temporary supply chain disturbances, and the rising cost of living. In the coming years, other factors will influence food security, such as natural resources developments and climate change, which will put traditional food systems (i.e., country foods) at risk, and might lead to further serious consequences for livelihoods and health. Food security, as defined by the Food and Agriculture Organization of the United Nations (FAO)[3] , exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The four pillars of food security are: food availability, food access, utilization, and stability (FAO, 2016).

There are many considerations when discussing food insecurity, as food insecurity may be long term or temporary. It may be influenced by several factors including income, employment, race/ethnicity, and disability. A number of factors can affect food security including population growth, climate change, urbanization, industrialization, land use shifts, water scarcity, income growth, nutritional trends; and trends in global energy supply and food trade. The impact of food insecurity on health extends beyond

[3] Defined at the World Food Summit, 1996 (FAO, 2016).

diet and nutrition. In addition to income, housing tenure is an economic risk factor for food insecurity (Morrison, 2008). As relationship with the land is fundamental for the Tsuut'ina Nation, food security is an important driver of subsistence harvesting as country foods are fundamental to Indigenous cultures; disruptions to access to these resources impacts food security for the Tsuut'ina Nation.

For this Project, the potential for disproportionate effects to diverse or potentially vulnerable population groups or subgroups was explored from an economic and socio-community lens as noted in the *Human and Community Well-Being: Guidelines for Assessing Social, Economic, Cultural and Health Effects in Environmental Assessments in B.C.* (B.C. EAO, 2020b). The Gender Based Analysis Plus (GBA+) analysis to support this impact assessment was undertaken in 2022 and 2023 through two studies. As part of the first study undertaken in 2022, in addition to reviewing gender related issues in the Elk Valley for contextual information, a desktop review of gender related issues in the mining industry at a national, provincial, and local level was completed. The GBA+ study undertaken in 2023 considered socio-community barriers faced by Indigenous Communities, and Indigenous women, girls, and Two-Spirited[4] and Indigenous LGBTQIAA+[5] peoples in the context of mining both in Canada and the Elk Valley region (Chapter 18: Socio-Community Assessment, Section 18.4.4.6). Requests for interviews were sent to all potentially impacted and/or interested Indigenous Nations and Communities and positive responses were received and interviews conducted with leaders, female, youth, and Elders as members of the Tsuut'ina.

30.6.6.1 Fishing

30.6.6.1.1 Historic Use

Publicly available information on Tsuut'ina Nation fishing practices is limited. According to Dempsey (2001), historically, fish were not part of the daily diet of the Tsuut'ina. In addition, the Tsuut'ina Nation did not disclose any traditional fishing practises as part of consultation on the Benga Mining Limited Mining Ltd. for the Grassy Mountain Coal Project (2016).

30.6.6.1.2 Current Use

Today, the Government of Alberta (2015) reports that Tsuut'ina Nation fishing occurs in the Bow River, Bragg Creek, and Fish Creek during the summer months south of Calgary. Tsuut'ina knowledge holders have stated that fishing occurs in various major rivers (V. Meguinis, personal communication, March 4, 2021). Other sources note that while the Tsuut'ina Nation engages in some fishing activities, fish are generally not eaten (Dempsey, 2001). Bull trout are an important source of both subsistence and ceremonial food for Tsuut'ina. These fish support Tsuut'ina's cultural activities including feasts and pow-wows (IAAC, 2021b).

As identified in Section 31.5.4, to practice their fishing rights, the Tsuut'ina Nation require access to healthy streams and rivers within their Traditional Territory (IAAC, 2021b). Due to the lack of Project-specific information provided by the Tsuut'ina Nation on their use of watercourses within the Project footprint and based on the feedback received during consultation, it is expected that the Tsuut'ina Nation

[4] Two-Spirited is used by some Indigenous people to refer to having both a masculine and feminine spirit and can indicate sexual, gender, and/or spiritual identity.
[5] LGBTQQIA+ stands for: L- Lesbian, G-Gay, B-Bisexual, T-Trans, Trans-gendered or Trans identified, Q-Queer, Q- Questioning, I-Intersex, A-Asexual, and +-any identity not represented by the acronym. Note that there are different acronyms that can/may be used by different groups.

utilizes the ATRI LSA for fish and fishing opportunities (Appendix 30-A, Table 30.A-1 and Table 30.A-2; IAAC, 2021b).

It is noted that the exercise of the Tsuut'ina Nation's rights and interests related to fish and fishing opportunities in the ATRI LSA and RSA have likely been impacted by past and ongoing development activity (e.g., reduction in fish populations, reduced access to waterways, water quality concerns in the Elk Valley). While it is unknown as to the extent to which fishing activities are undertaken in the ATRI LSA and RSA by the Tsuut'ina Nation at this time due to the lack of information provided by the Tsuut'ina Nation, the potential future use of these areas for fishing opportunities without the Project is expected to be similar to the existing conditions (i.e., past and ongoing development activities may impact potential future fishing activities in the ATRI LSA and RSA).

For the Tsuut'ina Nation's traditional fishing rights and interests, site-specific knowledge and use values that may include fishing sites/locations of fish species of interest, cultural values and teachings related to certain fish species, Tsuut'ina knowledge on fish health, and perspectives on fish abundance from the Tsuut'ina knowledge holders would support and guide the assessment of Project-related effects within the Project footprint, the ATRI LSA, and the ATRI RSA. For traditional fishing, seasonal access and usage information from the Tsuut'ina knowledge holders on the fish species would support and guide the assessment of Project-related effects in terms of potential interactions during the Project lifecycle. At the time of the assessment, as this information was not provided by the Tsuut'ina Nation, the lack of this specific information requires continued consultation with the Tsuut'ina Nation.

30.6.6.2 Hunting and Trapping

30.6.6.2.1 Historic Use

The Tsuut'ina Nation were a nomadic people who hunted in areas where they travelled and moved alongside available resources and seasonal changes, including through the territories of neighbouring tribes (Benga, 2015b). In collaboration with other members of the Blackfoot Confederacy, the Tsuut'ina Nation concentrated on the "southern hunting grounds on the plains and in the foothills of southwestern Alberta" (Tsuut'ina Nation, 2013). Based on accounts by the Hudson's Bay Company, by 1815, the Tsuut'ina Nation hunting grounds included the "territory between the Red Deer and Battle rivers, bounded on the east by Beaverhill Lake and on the west by the Rocky Mountains" (Hudson's Bay Company, 1967, as cited in Dempsey, 2001, p. 629). By the mid-nineteenth century the Tsuut'ina Nation had moved southward, "along the Bow and Red Rivers, on the northwest fringe of the Great Plains" (Dempsey, 2001, p. 629). The area includes the Crowsnest Pass, where large game animals were hunted/trapped during all seasons (Benga, 2015b).

Traditionally, Tsuut'ina Nation members also hunted deer and elk for sustenance as well as for spiritual and ceremonial purposes. Other animals that were hunted for food included antelope, bison, moose, mountain sheep, mountain goat, porcupine, rabbit, grouse, and squirrel (Dempsey, 2001; National Energy Board, 2018). Ducks, geese and swan were harvested, and their eggs were also consumed, though in lesser quantity (National Energy Board, 2018: Dempsey, 2001). The practice of trapping eagles was sacred and spiritual among Tsuut'ina Nation (Dempsey 2001). According to Dempsey (2001), Tsuut'ina Nation also trapped coyotes, wolves, and foxes in late fall. Other sources indicate that "[t]he Tsuut'ina did not trap as

intensively as the Cree and other northern First Nations, but instead relied on the buffalo hunt" (Tsuut'ina Nation, 2013).

30.6.6.2.2 Current Use

Due to prior mining in the Grassy Mountain area in the 1940s and 1950s, Tsuut'ina Nation members have shifted their attention to areas that are less disturbed to exercise these hunting rights (Benga, 2015b). Today, while Tsuut'ina Nation still use the Crowsnest Pass area for hunting, the scale is reduced compared to past levels of hunting. As reported through the traditional land use study conducted within the Project footprint, elk, grizzly bear, black bear, sheep, mule deer, black-tailed deer, and Whisky Jack bird were hunted previously in the area (TNC, 2021).

In the Elk Valley, during the ground-truthing for the Grassy Mountain Coal Project, species of importance identified by the Tsuut'ina Nation continue to be moose, bison, and eagles (Benga, 2015b). The Tsuut'ina Nation adopted primarily a buffalo-hunting (bison) economy, while maintaining their earlier fishing, eagle and beaver-trapping traditions (Dempsey, 2001; Parks Canada, 2008). In addition, deer and elk are hunted for spiritual and ceremonial purposes. While the Tsuut'ina Nation noted their current interest in trapping as part of engagement for the Grassy Mountain Coal Project, details such as areas used for trapping were not provided.

In the traditional land use site assessment study Tsuut'ina Nation undertook within the Project footprint, the community noted the presence of potential locations for species of cultural importance but did not identify hunting and trapping areas within the Project footprint that are utilized (Appendix 30-A, Table 30.A-2) for traditional activities by Tsuut'ina Nation. As identified in Section 31.5.4, to practice their hunting rights, the Tsuut'ina Nation require access to healthy ecosystems where traditionally hunted and trapped species occur within their Traditional Territory (IAAC, 2021b). The Tsuut'ina Nation continue to hunt for wildlife and bird species such as elk, moose, deer, sheep, buffalo, and eagles (IAAC, 2021b). Due to the lack of Project-specific information provided by the Tsuut'ina Nation and based on the feedback received during consultation, it is expected that the Tsuut'ina Nation utilizes the ATRI LSA for hunting and trapping (Appendix 30-A, Table 30.A-1 and Table 30.A-2; IAAC, 2021b).

It is noted that the exercise of the Tsuut'ina Nation's rights and interests related to hunting and trapping in the ATRI LSA and RSA have likely been impacted by past and ongoing development activity (e.g., reduction in wildlife populations, reduced access to areas for traditional activities). As noted above, due to the lack of information available, it is unknown as to the extent to which hunting and trapping activities are undertaken in the ATRI LSA and RSA by the Tsuut'ina Nation at this time, the potential future use of these areas for hunting and trapping without the Project is expected to be similar to the existing conditions (i.e., past and ongoing development activities may impact potential future hunting and trapping activities in the ATRI LSA and RSA).

For the Tsuut'ina Nation's rights and interests in relation to traditional hunting and trapping, site-specific knowledge and use values that may include kill sites/traplines, noted locations of species of interest, further information on cultural values and teachings related to certain species, Tsuut'ina knowledge on species health, and perspectives on species abundance would support and guide the assessment of Project-related effects within the Project footprint, the ATRI LSA, and the ATRI RSA. For traditional hunting and trapping, seasonal access and usage information from Tsuut'ina knowledge holders on the species of

interest would support and guide the assessment of Project-related effects in terms of potential interactions during the Project lifecycle. At the time of the assessment, as this information was not provided by the Tsuut'ina Nation, the lack of this specific information requires continued consultation with the Tsuut'ina Nation.

30.6.6.3 Harvesting and Gathering

30.6.6.3.1 Historic Use

Traditionally, Tsuut'ina Nation people harvested and consumed a variety of plant species, including prairie turnips, serviceberries, blueberries, and chokeberries (Dempsey, 2001, p. 630). In the past, Tsuut'ina people widely harvested and used alpine plants in the Crowsnest Pass during all seasons (Benga, 2015b). They also harvested lodgepole pine for constructing tepees. During the springtime, the Tsuut'ina "*divided into smaller family units consisting of one to a dozen families to … renew their tepee poles, and to replace worn lodge covers*" (Dempsey, 2001, p. 630).

30.6.6.3.2 Current Use

Plant species that the Tsuut'ina Nation gather include blueberry, cranberry (highbush and lowbush), huckleberry (highbush and lowbush), raspberry, gooseberry, strawberry, lingonberry, kinnikinnick (bearberry), sweet pine, lodgepole pine, cedar, juniper, bear root, muskeg tea, shrubs, red willow, thistle, wild nettle, poplar, sweetgrass, tree fungus, root, and bark (Benga, 2015b; National Energy Board, 2018). These alpine plants are usually found at higher elevations and not elevations near Tsuut'ina Nation Reserve. June was noted as a favourable month for harvesting alpine plants (Benga, 2016). As reported through the traditional land use study conducted within the Project footprint, additional plant species harvested include fireweed, pearly everlasting, wild carrot, wild sarsaparilla, spruce, whitebark pine, baneberry, elderberry, thimbleberry, and dog berry (TNC, 2021).

In the Elk Valley, during the ground-truthing for the Grassy Mountain Coal Project, the Tsuut'ina Nation field crew identified the following important plant species near the project: bear root and willow (Benga, 2015b). Tsuut'ina Nation also identified culturally important species such as clasping-leaved twisted-stalk, prince's pine, horsetail, (Millennium EMS Solutions Ltd., 2015) tamarack, teaberry, buffalo horn lichen, mushrooms, old man's beard, hawthorn berry, scouring rush, Saskatoon berry, mountain sage, and white fungus (Benga, 2019). A migratory trail area from Tsuut'ina Nation through to Small Boy Camp into the Crowsnest Pass has also been identified as being used to gather plants (National Energy Board, 2018).

In the traditional land use site assessment study Tsuut'ina Nation undertook within the Project footprint, the community identified plant and wood species of medicinal significance, food, or cultural importance that are available within the Project footprint for harvesting and gathering (Appendix 30-A, Table 30.A-2) for traditional purposes. As identified in Section 31.5.4, to practice their rights to gather food and medicinal plants, the Tsuut'ina Nation require access to healthy ecosystems and culturally significant plant species within their Traditional Territory (IAAC, 2021b). Due to the lack of Project-specific information provided by the Tsuut'ina Nation, and based on the feedback received during consultation, it is expected that the Tsuut'ina Nation utilizes the ATRI LSA for harvesting and gathering (Appendix 30-A, Table 30.A-1 and Table 30.A-2; IAAC, 2021b).

It is noted that the exercise of the Tsuut'ina Nation's rights and interests related to harvesting and gathering in the ATRI LSA and RSA have likely been impacted by past and ongoing development activity (e.g., reduced access to areas for traditional activities). While it is unknown as to the extent to which harvesting and gathering are undertaken in the ATRI LSA and RSA by the Tsuut'ina Nation at this time, the potential future use of these areas for harvesting and gathering without the Project is expected to be similar to the existing conditions (i.e., past and ongoing development activities may impact potential future harvesting and gathering activities in the ATRI LSA and RSA).

For the Tsuut'ina Nation's rights and interests in relation to traditional harvesting and gathering, site-specific knowledge and use values that may include further information on culturally significant plant species, their sites/locations, cultural values and teachings related to certain plant species, Tsuut'ina knowledge on plant species health, and perspectives on the seasonality of access and usage from the Tsuut'ina knowledge holders would support and guide the assessment of Project-related effects within the Project footprint, the ATRI LSA, and the ATRI RSA in terms of potential interactions during the Project lifecycle. At the time of the assessment, as this information was not provided by the Tsuut'ina Nation, the lack of this specific information requires continued consultation with the Tsuut'ina Nation.

30.6.6.4 Ceremonial/Sacred Areas

30.6.6.4.1 Historic Use

Moose Mountain, approximately 60 km southwest of Calgary, is a culturally important area to the Tsuut'ina Nation (Figure 30.6-2; Tsuut'ina Nation, 2013). The Crowsnest Pass, Crowsnest Mountain, and surrounding areas play important parts in Tsuut'ina religion and spirituality (Benga, 2015b). The Tsuut'ina Nation adapted to the Blackfoot culture and lifestyle in order to survive on the plains. The buffalo (bison) was a highly respected animal by the Tsuut'ina Nation. It was considered a gift of life that was sent to the people by the Creator, to provide shelter, clothing, food, and tools. The buffalo (bison) represents North; the direction of Wisdom, Knowledge, and Renewal. The buffalo (bison) was also symbolized in the Medicine Wheel. Buffalo (bison) skulls possess great medicine and symbolize the animal's power. Painting a buffalo (bison) skull required much respect, and to this day is a privilege granted only through a special ceremony. Today, such painted skulls serve as a reminder of the Tsuut'ina Nation traditional way of life and their connection to the land (Quilt of Belonging, 2016).

The Tsuut'ina Nation also believed in supernatural powers that could be obtained through a vision or dream. These supernatural powers were often enshrined in a tepee painting or medicine object, such as a beaver bundle or pipe bundle (Cook and Filice, 2020). The quest for supernatural power and the attainment of certain character traits, such as bravery for men and chastity for women, were highly valued. In traditional Tsuut'ina culture, the family usually arranged marriages, and the gifts exchanged reflected family status (Cook and Filice, 2020). Historically, the Crowsnest Pass provided a range of important resources and Tsuut'ina people both visited and lived in the Pass and exploited the resources it offered. In addition, there were well-established trading routes (e.g., Shuswap) that Tsuut'ina used throughout the Crowsnest Pass. Geophysical and landscape elements of the Crowsnest Pass and surrounding area also play important parts in Tsuut'ina religion and spirituality. Large game animals and widely used plant resources were obtained in the Pass during all seasons (IAAC, 2021b).

30.6.6.4.2 Current Use

The Tsuut'ina Nation are deeply respectful of all religions. Many Tsuut'ina people are Anglican or Catholic and practice their traditional cultural beliefs. Geophysical and landscape elements, such as Crowsnest Mountain, and surrounding areas play important parts in Tsuut'ina religion and spirituality (IAAC, 2021b). The Tsuut'ina have bundles that are considered vital and sacred and they are cared for through ceremony and protocols. Most Tsuut'ina still practice ceremonies and conduct them in mountainous and secluded areas of solitude (V. Meguinis, personal communication, March 4, 2021). Most Indigenous peoples keep the location of their ceremonial and sacred areas private.

In the traditional land use site assessment study Tsuut'ina Nation undertook within the Project footprint, the community did not identify ceremonial sites and sacred areas within the Project footprint that are utilized (Appendix 30-A, Table 30.A-2). As identified in Section 31.5.4, to practice their rights, the Tsuut'ina Nation require access to areas of cultural and spiritual importance within their Traditional Territory (IAAC, 2021b). Due to the lack of Project-specific information provided by the Tsuut'ina Nation and based on the feedback received during consultation, it is expected that the Tsuut'ina Nation utilizes the ATRI LSA for undertaking traditional and ceremonial activities (Appendix 30-A, Table 30.A-1 and Table 30.A-2; IAAC, 2021b) as the Crowsnest Pass is at the outer edge of the ATRI LSA.

It is noted that the exercise of the Tsuut'ina Nation's rights and interests related to ceremonial practices and sacred areas in the ATRI LSA and RSA have likely been impacted by past and ongoing development activity (e.g., reduced access to cultural sites) and the potential future use of these areas without the Project is expected to be similar to existing conditions (i.e., past and ongoing development activities may impact potential future activities in the ATRI LSA and RSA).

For the Tsuut'ina Nation's rights and interests in relation to traditional ceremonial/sacred areas, site-specific knowledge and use values that may include further information on culturally significant areas, their sites/locations (e.g., locations for sources used for ceremonial bundles), cultural values and teachings related to certain ceremonial/sacred areas, Tsuut'ina oral histories related to areas used for ceremonial/sacred purposes, and perspectives on the seasonality of access and usage from Tsuut'ina knowledge holders would support and guide the assessment of Project-related effects within the Project footprint, the ATRI LSA, and the ATRI RSA in terms of potential interactions during the Project lifecycle. At the time of the assessment, as this information was not provided by the Tsuut'ina Nation, the lack of this specific information requires continued consultation with the Tsuut'ina Nation.

30.6.6.5 Access and Travel Routes

30.6.6.5.1 Historic Use

Historically, Tsuut'ina people traveled their territory to trade with neighboring groups and the Hudson's Bay Company (IAAC, 2021b). They also traveled to undertake their seasonal round which is the pattern of movement from one resource gathering area to another in an annual cycle. Tsuut'ina Nation used Crowsnest Pass as a trading route to reach the Shuswap to the west for trading of salmon and obsidian for the making of tools, arrowheads, knives, and spearheads (V. Meguinis, personal communication, March 4, 2021). Tsuut'ina Nation would travel to Rocky Mountain House or Fort Edmonton to trade buffalo robes, dried meat, and horses to the Hudson's Bay Company in the fall and in the spring (Dempsey, 2001). The main method of travel was by horse supported by travois, "a frame made of poles with a rick

for carrying a family's possessions" (Dempsey, 2001, p. 631). As part of the ground-truthing for the Grassy Mountain Coal Project, the Tsuut'ina Nation field crew recorded several rock cairns used as navigational tools situated along historic trails (Benga, 2016, p. H-178).

30.6.6.5.2 Current Use

Travel and access routes changed with contact of Euro-Canadian settlers with the construction of railways and highways. Restrictions imposed by the *Indian Act* and increased development have resulted in change to where the Tsuut'ina Nation used to exercise their interests in hunting and plant gathering activities (Benga, 2016). A migratory trail area from Tsuut'ina Nation through to Small Boy Camp into the Crowsnest Pass has also been identified as being used to gather plants (National Energy Board, 2018).

As identified in Section 30.5.4, to practice their rights, the Tsuut'ina Nation require access to areas within their Traditional Territory (IAAC, 2021b). Due to the lack of Project-specific information provided by the Tsuut'ina Nation, for this assessment it is assumed that while the Tsuut'ina Nation has not currently identified access and travel routes within the Project footprint, as noted earlier it is expected that the Tsuut'ina Nation utilizes the ATRI LSA for undertaking traveling throughout the region (IAAC, 2021b).

It is noted that the exercise of the Tsuut'ina Nation's rights and interests related to access and travel in the ATRI LSA and RSA have likely been impacted by past and ongoing development activity (e.g., the few relatively undisturbed east-west corridors that provide "gaps" in the Elk Valley mining region for the movement of land users), and the potential future use of these areas without the Project is expected to be similar to existing conditions (i.e., past and ongoing development activities may impact access and travel through the ATRI LSA and RSA).

For the Tsuut'ina Nation's rights and interests in relation to traditional access and travel routes, site-specific knowledge and use values that may include further information on culturally significant access routes, their specific sites/locations, cultural values and teachings related to certain access and travel routes, Tsuut'ina oral histories related to areas used for access and travel routes, and perspectives on the seasonality of access and usage from Tsuut'ina knowledge holders would support and guide the assessment of Project-related effects within the Project footprint, the ATRI LSA, and the ATRI RSA in terms of potential interactions during the Project lifecycle. At the time of the assessment, as this information was not provided by the Tsuut'ina Nation, the lack of this specific information requires continued consultation with the Tsuut'ina Nation.

30.6.6.6 Physical and Cultural Heritage

30.6.6.6.1 Historic Use

Further details on pre-contact use of the LSA can be referenced in Section 16 (Heritage Resources Assessment). As discussed under Section 30.6.6.4, history and cultural heritage developed largely around the buffalo (bison). As discussed above, Crowsnest Pass and Crowsnest Mountain were important areas for hunting, trapping and for providing travel routes. Tsuut'ina Nation historically practiced Beaver Bundle Ceremony, Medicine Pipe Ceremony, and the Rock Pile Feast. A more detailed discussion on the physical and cultural heritage of the Tsuut'ina Nation is provided in Chapter 16: Physical and Cultural Heritage Assessment.

30.6.6.6.2 Current Use

Existing community facilities on-reserve includes the Tsuut'ina Culture/Museum, which is a center for preserving and promoting cultural history that has been open since June 2017 (Tsuut'ina Nation Culture/Museum, n.d.). In addition, each July, the Tsuut'ina Nation host their annual celebration which includes a Rodeo, Powwow, Golf Tournament, Baseball Tournament, and Handgame Tournament.

As identified in Section 30.5.4, to practice their rights, the Tsuut'ina Nation require access to areas of cultural and spiritual importance within their Traditional Territory (IAAC, 2021b). Due to the lack of Project-specific information provided by the Tsuut'ina Nation, for this assessment it is assumed that while the Tsuut'ina Nation has not currently identified physical and cultural heritage sites within the Project footprint, it is expected that a structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance to Tsuut'ina Nation could be within the ATRI LSA (IAAC, 2021b).

It is noted that the exercise of the Tsuut'ina Nation's rights and interests related to physical and cultural heritage (including visiting sites of historic, cultural and spiritual importance) in the ATRI LSA and RSA have likely been impacted by past and ongoing development activity (e.g., the few relatively undisturbed east-west corridors that provide "gaps" in the Elk Valley mining region for the movement of land users), and the potential future use of these areas without the Project is expected to be similar to existing conditions (i.e., past and ongoing development activities may impact access and travel through the ATRI LSA and RSA).

For the Tsuut'ina Nation's physical and cultural heritage resources, site-specific knowledge and use values that may include further information on culturally significant areas, their specific sites/locations, cultural values and teachings related to certain Tsuut'ina physical and cultural heritage resources, Tsuut'ina oral histories related to physical and cultural heritage resources, and perspectives on the seasonality of access and usage from Tsuut'ina knowledge holders would support and guide the assessment of Project-related effects within the Project footprint, the ATRI LSA, and the ATRI RSA in terms of potential interactions during the Project lifecycle. At the time of the assessment, as this information was not provided by the Tsuut'ina Nation, the lack of this specific information requires continued consultation with the Tsuut'ina Nation.

30.6.6.7 Social and Health Conditions

The Tsuut'ina Nation view their rights and related interests as including the protection of the use and enjoyment of the Tsuut'ina Nation's Traditional Territory for present and future generations, including the cultural, environmental, social, and economic benefits of that Territory, and the protection, continuation, and preservation of the cultural, social, economic, and environmental connection of the Tsuut'ina Nation to their lands and resources. As such, for the Application/EIS, the social and health conditions are regarded as the Tsuut'ina Nation's interests within their Traditional Territory based on publicly available information (IAAC, 2021b).

30.6.6.7.1 Housing, Transportation, and Social Services

In the mid-1990s, a housing shortage occurred on the Tsuut'ina Nation Reserve, with only 230 houses available for more than 1,100 members. This resulted in several families having to share one house, whereas other members were living in tepees, tents, trailers and motorhomes (Tallow, 1988). Initially, there was a lack of housing in community due to limited funding, and a number of community members began to occupy abandoned military housing. This area grew into a neighbourhood known as Black Bear

Crossing and housed 800 Tsuut'ina residents. In 2006, Health Canada declared the buildings unfit to live in, citing asbestos contamination, and the Tribal Council ordered the buildings evacuated. The housing units were demolished in 2009 (Forsyth, n.d.). The Tsuut'ina Nation went on to develop new homes, new townsite housing and created the off-reserve housing program, and now have over 500 homes (V. Meguinis, personal communication, March 4, 2021).

Today, there are approximately 742 private dwellings on the Tsuut'ina Nation Reserve, consisting of 490 single-detached dwellings (Statistics Canada, 2016). The average household size is 3.3 persons per household (Statistics Canada, 2016).

To promote connectivity between the Reserve and the surrounding areas, the Tsuut'ina Nation completed a land exchange in 2013 to allow for the extension of the ring road system on Calgary's southwest side (Section 30.6.5.1). The extension involved the Tsuut'ina Nation exchanging 173 ha of reserve land in exchange of 874 ha of Crown land. The new road improved access along the eastern boundary of the Reserve and facilitates economic opportunities.

The Tsuut'ina Nation has their own policing services, which are considered to be an innovative and highly accredited service (V. Meguinis, personal communication, March 4, 2021). The Tsuut'ina Nation Police Service (TNPS) is an independent, self-administered policing agency in the Province of Alberta, proudly serving the Tsuut'ina Nation community since January 2004 (TNPS, n.d.). The policing service supplements the Tsuut'ina Peacemaker Court which began as a pilot project in 1999. The Tsuut'ina Nation's Peacemaker Court is a provincial level court restricted to reserve offences and the use of traditional peacemaking methods (Parker, 2004).

30.6.6.7.2 Health Services

The majority of Tsuut'ina Nation members live on the Reserve, just a few minutes' drive to Calgary thereby broadening access to health facilities. In addition, the Tsuut'ina Nation Health Centre provides services and programs to Tsuut'ina Nation members. The Tsuut'ina Health Centre provides community health services, including dentist, immunization, pharmacist, and physicians. Specific services offered include:

- Immunizations and vaccines;
- Support to individuals and families affected by fetal alcohol spectrum disorder;
- Home care program including personal and nursing care home support;
- Support and education on healthy living and diabetes;
- Prenatal care; and
- Sexual health information (Inform Alberta, n.d.).

Environmental public health services are provided by Tsuut'ina Nation and Treaty 7 Management Corporation including safe drinking water testing, which is a mandatory program (City of Calgary, 2020; Alberta Public Health, 2021).

At the time of the submission of this Application/EIS, based on desktop review of publicly available information, NWP was unable to determine health indicators specific to Tsuut'ina Nation due to the lack of Project-specific information provided by the Tsuut'ina Nation. The Human Health and Ecological Risk Assessment (HHERA; Chapter 22: Human and Ecological Health Assessment) utilizes localized receptors for both Indigenous and non-Indigenous persons to address identified health indicators used to simulate

the potential exposure of human and wildlife to contaminants of potential concern over the life of the mine and beyond, and in the case of cancer risks, over the lifetime of an individual.

As noted in Section 31.5.4, the Tsuut'ina Nation have the right to access their traditional lands used to carry out activities (e.g., fishing, hunting and trapping, harvesting and gathering for country foods) and the potential impact on the long-term or permanent displacement of access to lands may impact the ability to carry out traditional use activities. The Tsuut'ina Nation's interests in relation to social and health conditions may potentially be impacted as a result of Project-related effects that may result in the reduction of access to healthy country foods and the potential risk for contamination to areas where country food resources are utilized by the Tsuut'ina Nation within the Project footprint and the ATRI LSA.

It is noted that the exercise of the Tsuut'ina Nation's interests related to access to country foods in the ATRI LSA and the ATRI RSA has likely been impacted by past and ongoing development activity (e.g., reduced access to cultural sites and the few relatively undisturbed east-west corridors that provide "gaps" in the Elk Valley mining region for the movement of land users), and the potential future use of these areas without the Project is expected to be similar to existing conditions (i.e. past and ongoing development activities that may impact access and travel through the ATRI LSA and RSA).

For Tsuut'ina Nation's social and health conditions, site-specific knowledge and use values associated with subsistence sites, water and land transportation, and related environmental features in relation to country foods, including seasonal access and usage from Tsuut'ina knowledge holders would support and guide the assessment of Project-related effects within the Project footprint, the ATRI LSA, and the ATRI RSA in terms of potential interactions during the Project lifecycle. At the time of the assessment, as this information was not provided by the Tsuut'ina Nation, the lack of this specific information requires continued consultation with the Tsuut'ina Nation.

30.6.6.7.3 Education and Training

The Tsuut'ina Nation operates schools on the Reserve which most children attend, while some still attend schools in Calgary (Cook and Filice, 2020). Overall, over 87% of those over 25 years of age have a certificate, diploma, or degree (Statistics Canada, 2016).

The Community Futures Treaty Seven (CFT7) has a dual mandate of Entrepreneurship and Training and Employment for all treaty Seven First Nations, including Tsuut'ina Nation. The two programs operate independently under separate funding arrangements with staff dedicated to each, they also work collaboratively on projects and planning (CFT7, n.d.).

30.6.6.7.4 Employment

As of 2016, the Tsuut'ina Nation had a labour force participation rate of 69.1%, an employment rate of 63.1%, and an unemployment rate of 8.7% (Statistics Canada, 2016). The annual median income for members who are employed full-time was $68,477 in 2016 (Statistics Canada, 2016). Approximately 20.5% of members are employed in the sales and service sector, followed by the education, law and social, community and government services sector (Statistics Canada, 2016).

30.6.6.7.5 Gender Related Baseline Information

The GBA+ study carried out in 2023 was focused on socio-community barriers affecting Indigenous employment in mining (overlapping with Chapter 17: Economic Conditions Assessment), as well as the safety and security of Indigenous women, girls and Two-Spirited and Indigenous LGBTQQIA+ people in relation to mining. These sub-groups were identified based on:

1. The potential for Indigenous Peoples to benefit from employment in mining but with an awareness of socio-community barriers that can prevent them from reaching that potential; and
2. Safety and security issues associated with mining which Indigenous women, girls, and Two-Spirited and Indigenous LGBTQQIA+ people in the Elk Valley region as well as other mining areas across Canada may experience.

Both a desktop review of existing literature and primary data collection was undertaken as part of the 2023 GBA+ study. Indigenous Peoples comprise a critical potential current and future workforce for the mining industry based on living in relative proximity to many mine sites in Canada, as well as having a relatively young demographic compared to the rest of the Canadian population. In addition, economic opportunities in mining may help to provide a pathway out of colonial-induced poverty and deprivation for Indigenous groups. There remain important barriers and opportunities to understand in relation to the aforementioned issues. These issues were explored first through a desktop review of the broader literature concerning opportunities and barriers to economic participation of Indigenous Peoples in mining in Canada and also focused on safety and security issues for Indigenous women, girls, and 2SLGBTQQIA+ [6] people as well as socio-demographic and incident-based crime statistics. Existing literature on these topics was found to be fairly limited. This phase also included interviews at the local scale with Indigenous Nations and Communities, as well as mining councils to better understand barriers and opportunities to economic participation in mining that may be specific to the Elk Valley Region and also comprised of interviews with representatives of potentially impacted Indigenous Nations and community members concerning socio-community barriers to economic development and employment and safety issues in mining.

The GBA+ analysis also included a review of statistical information to identify potential safety and security issues for Indigenous women, girls and 2SLGBTQQIA+ people who may be living in Sparwood, Elkford, or Fernie. Based on the socio-demographic and crime statistics for the Elk Valley (Chapter 18, Section 18.4.4.6.3), both Elkford and Sparwood had higher than provincial rates of those identifying as Indigenous and Women+ in 202 while Fernie's population identifying as Indigenous and Women+ was lower than the provincial rate. In general, the Elk Valley region has a lower level of crime than the provincial average with the exception of Fernie which has a higher rate of harassing communications. While these statistics indicate that the Elk Valley is a relatively safe region, they do not indicate whether crimes were committed against Indigenous women, girls, and Two-Spirited and Indigenous LGBTQQIA+ people. It is to be noted that data may also be unavailable as some crimes are never reported to the police especially relevant to where Indigenous Peoples and Indigenous women are extremely distrustful of police in Canada based on the forced removal of Indigenous children into the residential school system and apprehensions during the Sixties Scoop, experiences of violence and mistreatment by the police, and racism pervading law enforcement (McKay, 2021).

[6] 2SLGBTQQIA+ stands for: 2S-Two-Spirited, L- Lesbian, G-Gay, B-Bisexual, T-Trans, Trans-gendered or Trans identified, Q-Queer, Q-Questioning, I-Intersex, A-Asexual, and +-any identity not represented by the acronym. Note that there are different acronyms that can/may be used by different groups.

As previously noted, the GBA+ study undertaken in 2023 considered socio-community barriers faced by Indigenous Communities, and Indigenous women, girls, and Two-Spirited and Indigenous LGBTQIAA+ peoples in the context of mining both in Canada and the Elk Valley region (Chapter 18, Section 18.4.4.7). The GBA+ interviews revealed a variety of socio-community related barriers and concerns related to the mining industry in Canada and the Elk Valley region. While there will not be temporary work camps for the Project, and the workforce will be primarily drawn locally, hyper-masculine and sexist cultures can still pervade mining regions (NWAC, 2020), including urban areas where off-reserve Indigenous women, girls, and 2SLGBTQQIA+ people may reside for this Project. The themes have been classified as housing barriers, childcare, cost of living, the safety of Indigenous women, girls, and Two-Spirited and Indigenous LGBTQIAA+ people, health barriers, and other social and cultural barriers. The focus of the interviews was to understand Indigenous perspectives and knowledges with respect to socio-community barriers in the mining industry. In addition, while the above themes have been separated and parsed out in order to generate understanding and meaning, there is also some overlap across these themes and those presented in Chapter 17. It is to be noted that positive responses received, and interviews conducted with leaders, female, youth, and Elders as members of the Tsuut'ina may have included perspectives of the interviewees that may not be representative of the Tsuut'ina. Interviewees highlighted barriers [7] associated with socio-community conditions specific to mining in the Elk Valley region, or to mining in general and the highlights of themes and findings are further outlined in Chapter 18.

30.6.6.8 Economic Conditions

The Tsuut'ina Nation view their rights and related interests as including the protection of the use and enjoyment of the Tsuut'ina Nation's Traditional Territory for present and future generations, including the cultural, environmental, social, and economic benefits of that Territory, and the protection, continuation, and preservation of the cultural, social, economic, and environmental connection of the Tsuut'ina Nation to their lands and resources. As such, for the Application/EIS, the economic conditions are regarded as the Tsuut'ina Nation's interests within their Traditional Territory based on publicly available information.

The Tsuut'ina Nation are active in various economic sectors, such as cattle raising and real estate. There are several Tsuut'ina Nation businesses identified by the Treaty 7 Business Directory (2013) including small businesses and recreational services such as the Redwood Meadows Golf and Country Club. Other Tsuut'ina owned companies include the TTN Gas Stop, TTN Contracting GP Inc., Tsuut'ina Energy Corporation, and Sarcee Gravel Products. The Tsuut'ina also operate Taza Development Corporation (Taza), in partnership with Canderel. Taza is an unprecedented development project located on 1,200 acres of Tsuut'ina lands. The proposed development includes three unique Villages: Taza Park, Taza Crossing and Taza Exchange. High-value real estate opportunities afforded at Taza include: retail, office, rental residential, restaurant and hospitality establishments, entertainment venues, vibrant outdoor spaces, and centres for innovation and wellness (Taza Development Corporation, 2021).

In 2007, the Tsuut'ina opened the Grey Eagle Resort and Casino just outside Calgary city limits (Grey Eagle Casino Resorts, n.d.). The Grey Eagle complex began a major expansion, including the construction of a 178-room hotel, in 2012. The hotel, which opened in 2014, sits beside the Grey Eagle Casino and offers an entertainment center, restaurant, lounge, and spa, as well as gainful employment for Tsuut'ina Nation's community (Grey Eagle Casino Resorts, n.d.). In August 2020, Costco opened a new store on

[7] Note that not all of these barriers are not necessarily specific to Indigenous People but may apply to non-Indigenous peoples as well.

Tsuut'ina territory as part of the Nation's Taza development. This is the first Costco in North America that is located on First Nation land (Gilligan, 2020).

The Tsuut'ina are a proud, resilient and innovative Nation who pride themselves on their warrior spirit. It was said that the Blackfoot aligned themselves with Tsuut'ina, as their warriors were fearless, despite being outnumbered, they would fight and come out victorious. This warrior spirit is prevalent in the Nation today. Despite uncertainty, they moved forward in economic development, governance and legislation, they are now on their way to economic sustainability (V. Meguinis, personal communication, March 4, 2021).

As noted in Section 31.5.4, the Tsuut'ina Nation have the right to access their traditional lands used to carry out activities (e.g., fishing, hunting and trapping, harvesting and gathering for country foods) and the potential impact on the long-term or permanent displacement of access to lands may impact the ability to carry out traditional use activities. The Tsuut'ina Nation's interests in relation to economic conditions may potentially be impacted as a result of Project-related effects to the reduction of access to country foods and increased food security concerns, and the reduction or elimination of potential commercial activities (e.g., tourism, activities related to cultural knowledge transfer and transmission, commercial harvesting) within the ATRI LSA.

It is noted that the exercise of the Tsuut'ina Nation's interests related to access to areas of traditional activities (e.g., country foods to support the rights-based economy) in the ATRI LSA and the ATRI RSA has likely been impacted by past and ongoing development activity (e.g., reduced access to cultural sites and the few relatively undisturbed east-west corridors that provide "gaps" in the Elk Valley mining region for the movement of land users), and the potential future use of these areas without the Project is expected to be similar to existing conditions (i.e. past and ongoing development activities that may impact access and travel through the ATRI LSA and RSA).

For the Tsuut'ina Nation's economic conditions, site-specific knowledge and use values associated with subsistence sites, water and land transportation, and related environmental features in relation to country foods, including seasonal access and usage from Tsuut'ina knowledge holders would support and guide the assessment of Project-related effects within the Project footprint, the ATRI LSA, and the ATRI RSA in terms of potential interactions during the Project lifecycle. At the time of the assessment, as this information was not provided by the Tsuut'ina Nation, the lack of this specific information requires continued consultation with the Tsuut'ina Nation.

30.6.7 Summary of Tsuut'ina Nation's Rights and Interests

The following Table 30.6-2 presents a summary of the rights and interests as identified within the background and contextual information provided in Section 30.6 and preliminary consultation with Tsuut'ina Nation in relation to the Project as well as the feedback received on this section (Appendix 30-A, Table 30.A-2). All information compiled and presented in this summary has been authored by NWP utilizing secondary sources that are publicly available due to the lack of Project-specific information provided by the Tsuut'ina Nation. The information presented is not intended to supersede traditional knowledge or specific information of the community members and Elders of Tsuut'ina Nation.

Table 30.6-2: Summary of Tsuut'ina Nation's Rights and Interests in Relation to the Project

Indigenous Rights & Interests	Indigenous Resource, Use, or Species of Interest
Fishing	Based on available information, fishing is understood to be a traditional activity undertaken by the Tsuut'ina Nation within their Traditional Territory. The Tsuut'ina Nation have the right to fishing and fish species are a potential valuable food source to the Tsuut'ina Nation. Bull trout are an important source of both subsistence and ceremonial food for Tsuut'ina Nation. The Tsuut'ina Nation did not identify watercourses within the Project footprint and the ATRI LSA that are utilized for fish and fish opportunities. Due to the lack of Project-specific information provided by the Tsuut'ina Nation and based on feedback received during consultation, it is expected that the Tsuut'ina Nation utilizes the ATRI LSA for fish and fishing opportunities. It is the perspective of the Tsuut'ina Nation that fish, fish habitat, and fishing opportunities have been impacted by past and ongoing development activity in the ATRI LSA and the ATRI RSA. While it is unknown as to the extent to which fishing activities are undertaken in the ATRI LSA and RSA by the Tsuut'ina Nation at this time, the potential future use of these areas for fishing opportunities without the Project is expected to be similar to the existing conditions likely influenced by past and ongoing development activities.
Hunting and Trapping	The Tsuut'ina Nation have the right to hunt and/or trap the following species: • Ungulates – mule deer, black-tailed deer, moose, elk, mountain sheep, mountain goat, antelope, bison • Carnivores – wolf, coyote, fox, grizzly bear, black bear, cougar, lynx • Small mammals – porcupine, rabbit, squirrel, beaver • Birds – whisky jack bird, grouse, waterfowl (ducks, geese, and swans), eagles Hunting and trapping rights continue to be a traditionally and culturally important activity for subsistence, spiritual, and ceremonial purposes for the Tsuut'ina Nation. In the traditional land use site assessment study Tsuut'ina Nation undertook within the Project footprint, the community noted the presence of potential locations for species of cultural importance but did not identify hunting and trapping areas within the Project footprint that are utilized for traditional activities by Tsuut'ina Nation. Due to the lack of Project-specific information provided by the Tsuut'ina Nation and based on feedback received during consultation, it is expected that the Tsuut'ina Nation utilizes the ATRI LSA for hunting and trapping. It is the perspective of the Tsuut'ina Nation that the exercise of the Tsuut'ina Nation's rights and interests related to hunting and trapping in the ATRI LSA and RSA has been impacted by past and ongoing development activity. While it is unknown as to the extent to which fishing activities are undertaken in the ATRI LSA and RSA by the Tsuut'ina Nation at this time, the potential future use of these areas for fishing opportunities without the Project is expected to be similar to the existing conditions likely influenced by past and ongoing development activities.

Indigenous Rights & Interests	Indigenous Resource, Use, or Species of Interest
Harvesting and Gathering	The Tsuut'ina Nation have the right to harvest plants in their Traditional Territory and based on publicly available information, they harvest various plant species for nutritional, spiritual, and medical significance. Based on feedback provided by the Tsuut'ina Nation through engagement and based on publicly available information, Tsuut'ina Nation members potentially harvest and gather plants such as fireweed, pearly everlasting, wild carrot, wild sarsaparilla, spruce, whitebark pine, baneberry, elderberry, thimbleberry, dog berry, blueberry, cranberry (highbush and lowbush), huckleberry (highbush and lowbush), raspberry, gooseberry, strawberry, lingonberry, kinnikinnick (bearberry), sweet pine, lodgepole pine, cedar, juniper, bear root, muskeg tea, shrubs, lichen, fungus, red willow, thistle, wild nettle, poplar, sweetgrass, tree fungus, root, and bark. Other culturally important species include clasping-leaved twisted-stalk, prince's pine, horsetail, tamarack, teaberry, buffalo horn lichen, mushrooms, old man's beard, hawthorn berry, scouring rush, Saskatoon berry, mountain sage, and white fungus. In the traditional land use site assessment study Tsuut'ina Nation undertook within the Project footprint, the community identified plant and wood species of medicinal significance, food, or cultural importance that are available within the Project footprint for harvesting and gathering for traditional purposes. Due to the lack of Project-specific information provided by the Tsuut'ina Nation and based on feedback received during consultation, it is expected that the Tsuut'ina Nation utilizes the ATRI LSA for harvesting and gathering. It is the perspective of the Tsuut'ina Nation, that the exercise of the Tsuut'ina Nation's rights and interests related to harvesting and gathering in the ATRI LSA and RSA has been impacted by past and ongoing development activity. While it is unknown as to the extent to which harvesting and gathering are undertaken in the ATRI LSA and RSA by the Tsuut'ina Nation at this time, the potential future use of these areas for harvesting and gathering without the Project is expected to be similar to the existing conditions likely influenced by past and ongoing development activities.
Ceremonial/Sacred Areas	Based on the preliminary understanding of the Tsuut'ina Nation's rights and interests and publicly available information, the right to conduct traditional activities in their ceremonial/sacred areas is undertaken within the Tsuut'ina Nation's Traditional Territory. Based on publicly available information, Tsuut'ina Nation members potentially have ceremonial/sacred activities tied to environmental and ecological attributes available within the Project footprint. Geophysical and landscape elements, such as Crowsnest Mountain, and surrounding areas play important parts in Tsuut'ina religion and spirituality. In the traditional land use site assessment study Tsuut'ina Nation undertook within the Project footprint, the community did not identify ceremonial sites and sacred areas within the Project footprint that are utilized. Due to the lack of Project-specific information provided by the Tsuut'ina Nation and based on feedback received during consultation, it is expected that the Tsuut'ina Nation utilizes the ATRI LSA for undertaking traditional and ceremonial activities as the Crowsnest Pass is at the outer edge of the ATRI LSA.

Indigenous Rights & Interests	Indigenous Resource, Use, or Species of Interest
	Based on publicly available information, it is noted that the exercise of the Tsuut'ina Nation's rights and interests related to ceremonial practices and sacred areas in the ATRI LSA and RSA has been impacted by past and ongoing development activity and the potential future use of these areas without the Project is expected to be similar to existing conditions likely influenced by past and ongoing development activities.
Access and Travel Routes	Based on the preliminary understanding of the Tsuut'ina Nation's rights and interests and publicly available information, the right to access traditional travel routes is related to the Tsuut'ina cultural heritage within their Traditional Territory. Based on publicly available information, as the mountainous area of the Elk Valley is a valued site for seasonal occupancy, the Tsuut'ina Nation members potentially have travel routes tied to hunting trails or wildlife trails or key habitat types such as waterbodies. Travel and access to the Crowsnest Pass is a priority for Tsuut'ina Nation. Due to the lack of Project-specific information provided by the Tsuut'ina Nation, for this assessment it is assumed that while the Tsuut'ina Nation has not currently identified access and travel routes within the Project footprint, as noted earlier, it is expected that the Tsuut'ina Nation utilizes the ATRI LSA for undertaking traveling throughout the region. It is the perspective of the Tsuut'ina Nation that the exercise of the Tsuut'ina Nation's rights and interests related to access and travel in the ATRI LSA and RSA has been impacted by past and ongoing development activity, and the potential future use of these areas without the Project is expected to be similar to existing conditions likely influenced by past and ongoing development activities.
Physical and Cultural Heritage	Tsuut'ina Nation potentially has physical and cultural heritage sites related to the archeological potential within the Project footprint relate to the Tsuut'ina cultural and spiritual rights within their Traditional Territory. Crowsnest Pass and Crowsnest Mountain were important areas for hunting, trapping and for providing travel routes. Moose Mountain, approximately 60 km southwest of Calgary, is a culturally important area to the Tsuut'ina Nation. For this assessment it is assumed that while the Tsuut'ina Nation has not currently identified physical and cultural heritage sites within the Project footprint, it is expected that a structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance to Tsuut'ina Nation could be within the ATRI LSA. It is the perspective of the Tsuut'ina Nation that the exercise of the Tsuut'ina Nation's rights and interests related to the access and use of sites of physical and cultural heritage in the ATRI LSA and RSA has been impacted by past and ongoing development activity, and the potential future use of these areas without the Project is expected to be similar to existing conditions likely influenced by past and ongoing development activities.

Indigenous Rights & Interests	Indigenous Resource, Use, or Species of Interest
Social and Health Conditions	Based on publicly available information, social and health conditions for the Tsuut'ina Nation are regarded as an interest within their Traditional Territory. In the mid-1990s, a housing shortage occurred on the Tsuut'ina Nation Reserve, resulted in several families having to share one house, whereas others members were living in tepees, tents, trailers and motorhomes. Initially, there was a lack of housing in community due to limited funding, and a number of community members began to occupy abandoned military housing. This area grew into a neighbourhood known as Black Bear Crossing, in 2006, Health Canada declared the buildings unfit to live in, citing asbestos contamination, and the Tribal Council ordered the buildings evacuated. The Tsuut'ina Nation went on to develop new homes, new townsite housing, and created the off-reserve housing program. To promote connectivity between the Reserve and the surrounding areas, the Tsuut'ina Nation completed a land exchange in 2013 to allow for the extension of the ring road system on Calgary's southwest side. The new road improved access along the eastern boundary of the Reserve and facilitates economic opportunities. The Tsuut'ina Nation has their own policing services, which are considered to be an innovative and highly accredited service, the Tsuut'ina Nation Police Service supplements the Tsuut'ina Peacemaker Court which is a provincial level court restricted to reserve offences and the use of traditional peacemaking methods. The majority of Tsuut'ina Nation members live on the Reserve, just a few minutes' drive to Calgary thereby broadening access to health facilities. In addition, the Tsuut'ina Nation Health Centre provides services and programs to Tsuut'ina Nation members. Environmental public health services are provided by Tsuut'ina Nation and Treaty 7 Management Corporation including safe drinking water testing, which is a mandatory program. The Tsuut'ina Nation operates schools on the Reserve which most children attend, while some still attend schools in Calgary. The Community Futures Treaty Seven has a dual mandate of Entrepreneurship and Training and Employment for all treaty Seven First Nations, including Tsuut'ina Nation. Approximately 20.5% of members are employed in the sales and service sector, followed by the education, law and social, community and government services sector. The GBA+ study carried out in 2023 was focused on socio-community barriers affecting Indigenous employment in mining as well as the safety and security of Indigenous women, girls and Two-Spirited and Indigenous LGBTQQIA+ people in relation to mining. These sub-groups were identified based on the potential for Indigenous Peoples to benefit from employment in mining but with an awareness of socio-community barriers that can prevent them from reaching that potential and safety and security issues associated with mining which Indigenous women, girls, and Two-Spirited and Indigenous LGBTQQIA+ people in the Elk Valley region as well as other mining areas across Canada may experience. The GBA+ interviews revealed a variety of socio-community related barriers and concerns related to the mining industry in Canada and the Elk Valley region. The themes

Indigenous Rights & Interests	Indigenous Resource, Use, or Species of Interest
	have been classified as housing barriers, childcare, cost of living, the safety of Indigenous women, girls, and Two-Spirited and Indigenous LGBTQIAA+ people, health barriers, and other social and cultural barriers. It is to be noted that positive responses received and interviews conducted with leaders, female, youth, and Elders as members of Tsuut'ina Nation may have included perspectives of the interviewees that may not be representative of Tsuut'ina Nation. The GBA+ analysis also included a review of statistical information to identify potential safety and security issues for Indigenous women, girls and 2SLGBTQQIA+ people who may be living in Sparwood, Elkford, or Fernie. In general, the Elk Valley region has a lower level of crime than the provincial average with the exception of Fernie which has a higher rate of harassing communications. While these statistics indicate that the Elk Valley is a relatively safe region, they do not indicate whether crimes were committed against Indigenous women, girls, and Two-Spirited and Indigenous LGBTQQIA+ people. It is the perspective of the Tsuut'ina Nation that the exercise of the Tsuut'ina Nation's interests related to access to country foods in the ATRI LSA and the ATRI RSA have likely been impacted by past and ongoing development activity.
Economic Conditions	Based on publicly available information, economic conditions for the Tsuut'ina Nation are regarded as an interest within their Traditional Territory. The Tsuut'ina Nation are active in various economic sectors, such as cattle raising and real estate including small businesses and recreational services such as the Redwood Meadows Golf and Country Club. Other Tsuut'ina owned companies include the TTN Gas Stop, TTN Contracting GP Inc., Tsuut'ina Energy Corporation, and Sarcee Gravel Products. The Tsuut'ina also operate Taza Development Corporation and in partnership with Canderel, which is an unprecedented development project located on 1,200 acres of Tsuut'ina lands. In 2007, the Tsuut'ina opened the Grey Eagle Resort and Casino just outside Calgary city limits, the complex began a major expansion in 2012. The hotel, which opened in 2014, sits beside the Grey Eagle Casino and offers an entertainment center, restaurant, lounge, and spa, as well as gainful employment for Tsuut'ina Nation's community. In August 2020, Costco opened a new store on Tsuut'ina territory as part of the Nation's Taza development. This is the first Costco in North America that is located on First Nation land. It is the perspective of the Tsuut'ina Nation that the exercise of the Tsuut'ina Nation's interests related to access to areas of traditional activities in the ATRI LSA and the ATRI RSA have likely been impacted by past and ongoing development activity.

30.7 Assessment of the Effects of Changes to the Environment on Tsuut'ina Nation

This section outlines the assessment of the effects of the changes to the environment as a result of the Project and its components and activities that are understood to be important to Tsuut'ina Nation (IAAC, 2021b). The effects assessment in this section is focused on the environmental factors identified by Tsuut'ina Nation which categorize their use of lands and resources for traditional purposes in terms of fishing, hunting and trapping, harvesting and gathering, ceremonial and sacred sites, access and travel routes, as well as physical and cultural heritage, and social, health, and economic conditions.

The assessment of the effects of the changes to the environment and resulting changes on the Tsuut'ina Nation's use of land and resources, compares projected future conditions with the Project against projected future conditions without the Project and considers that both existing and future conditions are influenced by past and ongoing development activities in the ATRI LSA and RSA. These have been considered in the description of the baseline conditions in Section 30.6. This assessment of the effects of changes to the environment is considered in the assessment of impacts on the rights and interests of the Tsuut'ina Nation that is subsequently presented in Section 30.10. The methods for assessing potential effects on the Tsuut'ina Nation in relation to the Project followed the approach outlined in Chapter 5 and previously described in Section 30.3.

In the absence of specific input being received from the Tsuut'ina Nation at the time of this assessment (e.g., no Project-specific Traditional Knowledge/Traditional Land and Resource Use study for the Project footprint and the ATRI LSA), components of the environment of potential importance to the Tsuut'ina Nation were determined through the review of publicly available information as previously described in Section 30.5, the preliminary understanding of the Tsuut'ina Nation's rights and interests (Section 30.5.4), and consultation and engagement activities described in Section 30.5.3. This assessment of the changes to the environment is largely based on the assessment work of other study disciplines/VCs as described in detail elsewhere in this Application/EIS in combination with the information sources described previously. All information considered in the assessment of potential Project effects is not intended to supersede traditional knowledge or specific information of the citizens and Elders of the Tsuut'ina Nation. This effects assessment may be revised and updated as a result of continued consultation with the Tsuut'ina Nation during the assessment processes.

30.7.1 Thresholds for Determining the Significance of Residual Effects

Threshold criteria used to determine the significance of residual effects on each relevant VC (i.e., receptor, specified intermediate VCs, and federal VCs) are as outlined in Chapter 5. Significance thresholds were established in consideration of the technical guidance for Determining Whether a Designated Project is Likely to Cause Significant Adverse Environmental Effects under the CEAA 2012 as well as the Ktunaxa Nation Council's *Recommended Minimum Standards for Proponents in Determining Significance of Effects in Environmental Assessments (EAs) in the Elk Valley* (Candler, 2020). Thresholds used to determine the significance of residual effects to Tsuut'ina Nation related to the Project include:

- Potential change to use of lands and resources for traditional purposes - A significant residual effect to current use of lands and resources for traditional purposes is defined as the permanent loss of access or ability to conduct traditional land and resource use, which cannot be mitigated.
- Potential change to physical and cultural heritage, and potential change to a structure, site, or item that is of historical, archaeological, paleontological, or architectural significance - A significant residual effect to physical and cultural heritage is defined as the permanent loss of physical and cultural heritage through the permanent loss of a structure, site, or item that is of historical, archaeological, paleontological, or architectural significance to Tsuut'ina Nation, which cannot be mitigated.
- Potential change to social, health, and economic conditions – Specific to changes in health conditions, a significant residual effect to social and health conditions is defined as persistent, frequent, and long-lasting exceedance in ecological and human health risk assessment hazard quotients (HQs) and risk magnitudes for non-carcinogenic and carcinogenic contaminants of potential concern. Additionally, a significant residual effect to socio-economic conditions is defined as the permanent loss of access to social and economic resources used by Tsuut'ina Nation as a result of the Project and that cannot be mitigated for.

30.7.2 Assessment Methods

The methods for assessing potential effects that may result in potential changes to the environment that may affect the Tsuut'ina Nation and their rights and interests in relation to the Project followed the approach outlined in Chapter 5 and is decribed in Section 30.3. Where appropriate, effects on the Indigenous resources, use, or species of interest previously outlined in Table 30.6-2 were evaluated using the results of receptor and intermediate VC effects assessments (e.g., grizzly bear is a receptor VC and alteration of surface water quantity is an intermediate VC). In some cases, no receptor or intermediate VC corresponds to the Indigenous resource, use, or species of interest (e.g., bison is not a VC and not in the Project's area of influence) and as such, representative VCs were selected to serve as surrogates for the effects assessment on Tsuut'ina Nation. Where no appropriate representative VC was identified to serve as a surrogate for effects, additional biophysical information from Project-specific baseline studies and publicly available information was used, where applicable, to allow for an understanding of potential effects to Indigenous resources, use, or species of interest (e.g., bison is not a VC being assessed for the Project and yet information on its cultural impact on the Tsuut'ina Nation's rights and interests can be utilized to assume that the ungulate VCs being assessed for the Project may have cultural significance).

The assessment of effects on intermediate and receptor VCs of potential interest to the Tsuut'ina Nation, such as wildlife, plants, fish, and socio-economic conditions, may not fully capture the conditions that influence Indigenous historic and current use of lands and resources for traditional purposes. It is important to note that the assessment of effects to Indigenous resources, use, and species of interest was not undertaken from the standpoint of the Tsuut'ina Nation's experience of being on the land. As noted in Section 30.3, the term "current use" as defined in Section 30.6.6 is intended to reflect any current use of lands and resources for traditional purposes (which for the ATRI LSA is unknown at this time) as well as potential future use as desired by Tsuut'ina Nation. Additional information may be provided by Tsuut'ina Nation in the future that would be incorporated into the effects assessment process and mitigation planning in addition to what is presented in this document.

For quantitative human health and ecological risk assessment (HHERA) in Chapter 22, the focus was on various Indigenous land use and tradition lifestyles to conservatively assess maximal potential impacts to the VC of human health. By inference, potential impacts to human health of other peoples (e.g., non-Indigenous, recreational) would have less potential for a health risk. Human health risk assessment (HHRA) and ecological risk assessment (ERA) define and quantify potential health risks, which in the present instance serve as surrogate measures of potential health impacts from the Project and are detailed in Chapter 22. The baseline assessment method is fundamentally as described in Chapter 22, and relies primarily on measured biophysical data, especially baseline studies of concentrations of contaminants of potential concern in environmental media and is conducted to establish current "benchmark risk estimates" in the form of either hazard quotients (HQs) or as incremental lifetime cancer risks (ICLRs). The baseline benchmarks are subsequently used in the Project Case and Cumulative Case in Chapter 22 to examine the "incremental" risk resulting from releases associated with the Project and reasonably foreseeable future projects or activities. Documents from which Base Case information and data were obtained relevant to the development of the quantitative HHERA are as follows:

- Baseline Air Quality: Air Quality Baseline Report – Crown Mountain Coking Coal Project (Dillon, 2020a);
- Baseline Soil Data: Baseline Soil and Vegetation Chemistry Report – Crown Mountain Coking Coal Project (Keefer Ecological Services Ltd., 2021);
- Baseline Water Quality: Surface Water Quality Baseline Report: 2012 to 2019 Surface Water Quality Sampling Results – Crown Mountain Coking Coal Project (Dillon, 2020b);
- Baseline Sediment Quality: Crown Mountain Coking Coal Project – Aquatic Health Baseline Sampling Report (Lotic Environmental, 2020); and
- Baseline Fish Tissue Quality: Crown Mountain Coking Coal Project – Aquatic Health Baseline Sampling Report (Lotic Environmental, 2020).

In addition to use of baseline studies on environmental quality noted above, baseline food chain modelling was conducted to ascertain the baseline dietary exposure and risk to wildlife health and human health. Food chain modelling is described further under Chapter 22, and in detail in the technical support document on human health and ecological risk assessment (Chapter 22, Appendix 22-A). As indicated in Chapter 22, there are no significant residual effects to ecological or human health anticipated as a result of the Project.

Chapter 30 identifies the potential Project-related impacts to Aboriginal and Treaty Rights to inform the EA regulatory decision-making process and planning of the Project in Section 30.10. Through this effects assessment and continued consultation with the Tsuut'ina Nation, Project-related effects to Tsuut'ina Nation's Aboriginal and Treaty rights and interests may continue to be identified, and where applicable, mitigated or accommodated.

30.7.2.1 Assessment Boundaries for the Effects of Changes to the Environment on Tsuut'ina Nation

Study areas represent the spatial boundaries that encompass the areas, at appropriate scales and spatial extents, in which the Project is anticipated to interact with a VC or VC group (Chapter 5). For the purposes of the assessment of impacts to Indigenous and interests, three spatial boundaries were considered in the assessment: the Project footprint, the ATRI LSA, and the ATRI RSA.

The Project footprint is the area of physical disturbance associated with the Project and encompasses all anticipated Project components, both temporary and permanent, covering approximately 13 square kilometres (km^2) or 1,283 hectares (ha). The Project footprint is the area of physical disturbance associated with the Project (Figure 30.7-1). The Project footprint consists of the proposed surface extraction areas (three pits - north pit, east pit, and south pit); mine rock management areas; mine infrastructure and support facilities, including the plant area (raw coal stockpile area and processing plant); clean coal transportation route; rail loadout facility and rail siding; and ancillary facilities (i.e., water supply, power supply, natural gas supply, water, sewage treatment, fuel storage and explosives storage).

The ATRI LSA and RSA were developed in consideration of VCs (e.g., air quality) or VC groups (e.g., wildlife) and technical and scientific information (e.g., location and distribution of VCs) that may be potentially relevant to the assessment of Aboriginal and Treaty rights and interests (Figure 30.7-2 and Figure 30.7-3). The ATRI LSA encompasses the LSAs of receptor and intermediate VCs and VC groups in which Indigenous peoples may have constitutionally protected rights to practice traditional activities, such as for fishing and hunting and gathering. The ATRI RSA encompasses the RSAs of the receptor and intermediate VCs and VC groups in which the Tsuut'ina Nation may have constitutionally protected rights to practice traditional activities. The VC-specific study areas are outlined in each VC assessment chapter. The ATRI LSA is approximately 88,500 ha while the ATRI RSA is approximately 3,193,000 ha.

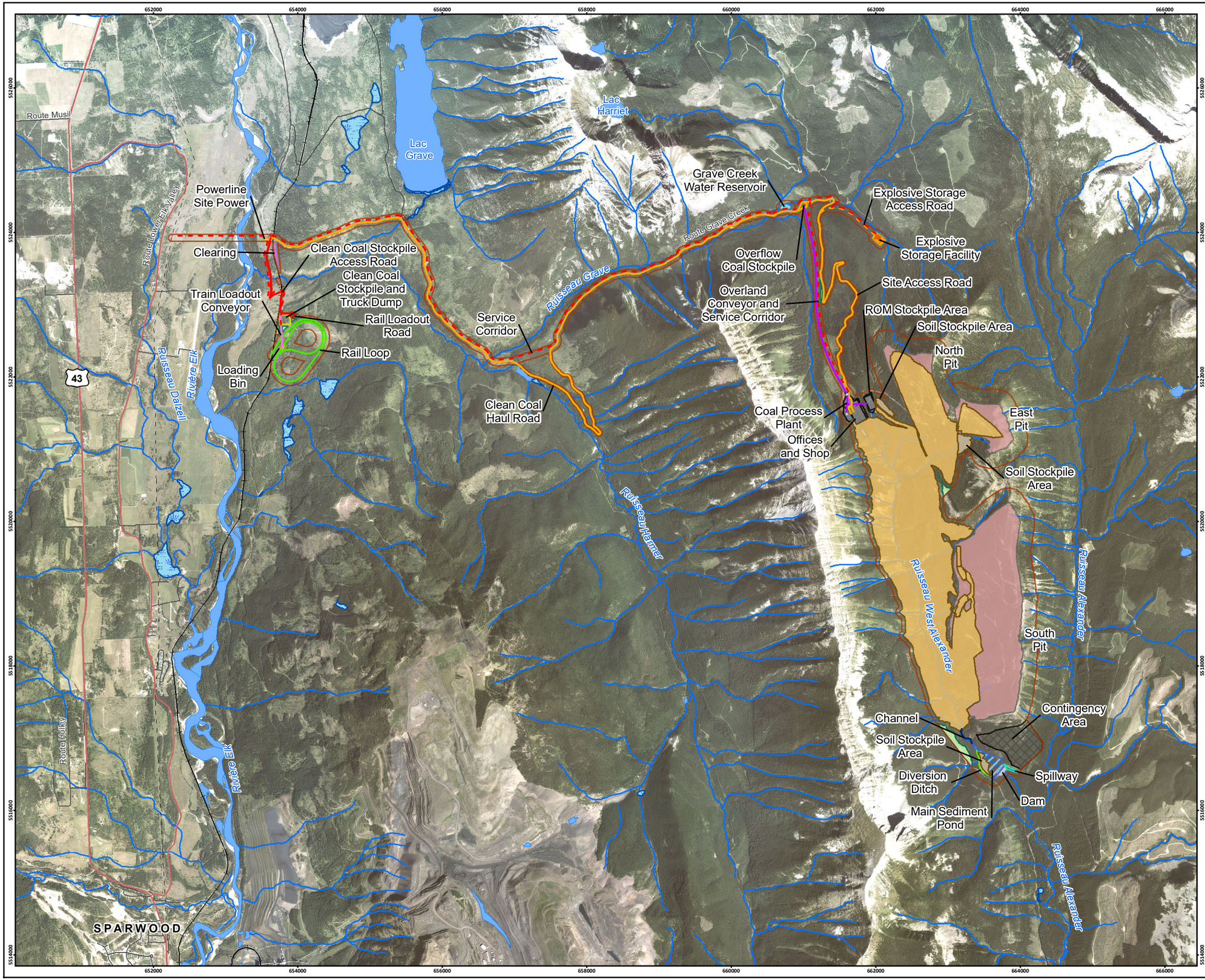
The VC study areas relevant to the assessment of effects to Indigenous historic and current use of lands resources for traditional purposes include:

- Project footprint;
- Fish and Fish Habitat LSA;
- Aquatic LSA and RSA;
- Terrestrial LSA and RSA;
- Landscapes and Ecosystems LSA and RSA;
- Grizzly Bear RSA;
- Birds, Bat, and Amphibians RSA;
- Socio-Community LSA and RSA;
- Economic Conditions LSA and RSA;
- Land Use and Access LSA and RSA; and
- Archaeological LSA and RSA.

In some instances, in the assessment of effects to Aboriginal and Treaty rights and interests, the specific VC study areas are referred to as the VC baseline program, and data collection was confined to the boundaries for that specific VC (LSA and/or RSA) for the purposes of the VC baseline assessment.

30.7.3 Potential Effects of the Changes to the Environment on Tsuut'ina Nation

This section outlines the Project activities and components that may result in potential changes to the environment that may affect Tsuut'ina Nation in relation to the Project. The assessment of potential Project effects focuses on planned Project activities. Potential effects related to unplanned events (e.g., spills, equipment malfunctions, accidents) are presented in Chapter 21. This section describes the potential changes to the environment related to the applicable VCs in consideration of Tsuut'ina Nation's rights and interests.



Crown Mountain Coking Coal Project

Figure 30.7-1
Project Footprint and Infrastructure

LEGEND

- Project Footprint
- Channel to Ultimate Pond
- Clean Coal Haul Road\Site Access
- Explosive Storage Access\Facility Road
- Rail Loadout Road
- Rail Loop
- Service Corridor
- Coal Process Plant Conveyor
- Coal Process Plant Duct
- Train Loadout Conveyor
- Waste Dump
- Mined Area
- Clean Coal Stockpile and Truck Dump
- Overflow Coal Stockpile
- Soil Stockpile Area
- Explosive Storage Facility\Pad
- Loading Bin
- Plant Site\ROM Stockpile Area
- Powerline-Site Power
- Water Reservoir
- Main Sediment Pond
- Dam
- Spillway
- Diversion Ditch
- Clearing
- Additional Area
- Contingency Area
- Highway
- Arterial/Collector Road
- Local/Resource Road
- Railway
- Transmission Line
- Watercourse
- Waterbody
- Wetland
- British Columbia/Alberta Border

0 1 2
Kilometres

N W E S

Scale 1:50,000

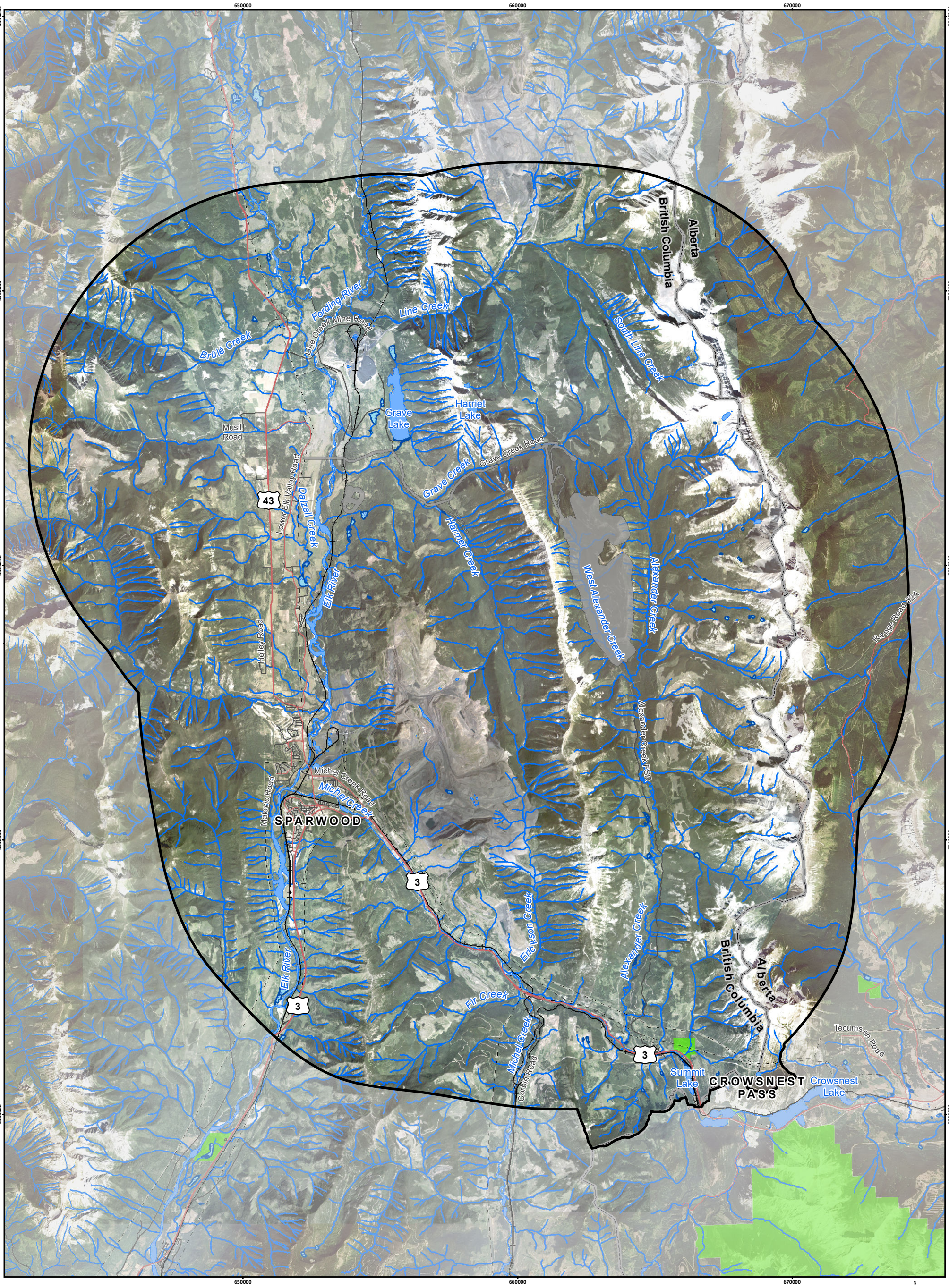
Map Drawing Information:
Data Provided By NWP Coal Canada Ltd, Dillon Consulting Limited, Province of British Columbia GeoBC Open Data, Government of Alberta Open Data, Natural Resource Canada.
Imagery Provided By GeoBC OrthoImagery (Aug 2016).

Map Created By: RB
Map Checked By: HEB
Map Coordinate System: NAD 1983 UTM Zone 11N

NWP Coal Canada Ltd

Project: 12-6231
Status: FINAL
Date: 2023-07-19

Document Path: K:\126231_Crown_Mountain\EA_Report\EffectsAssessment\IndigenousInterest\126231_EA_II_ProjectFootprintInfrastructure.mxd



Crown Mountain Coking Coal Project

Figure 30.7-2
Aboriginal Treaty Rights and Interests Local Study Area

- Aboriginal Treaty Rights and Interests Local Study Area
- Project Footprint
- Highway
- Arterial/Collector Road
- Local/Resource Road
- Railway
- Transmission Line
- Watercourse
- Waterbody
- Wetland
- Provincial Park/Protected Area
- British Columbia/Alberta Border

0 2 4
Kilometres

Scale 1:130,000

Map Drawing Information:
Data Provided By NWP Coal Canada Ltd, Dillon Consulting Limited, Province of British Columbia GeoBC Open Data, Government of Alberta Open Data, Natural Resource Canada. Imagery Provided By Landsat 8 (Aug 2018), and GeoBC Ortho Imagery (Aug 2016).

Map Created By: RB
Map Checked By: HS
Map Coordinate System: NAD 1983 UTM Zone 11N

NWP Coal Canada Ltd

Project: 12-6231
Status: FINAL
Date: 2023-07-19

Document Path: K:\126231_Crown_Mountain\EA_Report\EffectsAssessment\IndigenousInterest\126231_EA_II_LocalStudyArea.mxd

Crown Mountain Coking Coal Project

Figure 30.7-3
Aboriginal Treaty Rights and Interests Regional Study Area

- Aboriginal Treaty Rights and Interests Regional Study Area
- Project Footprint
- Highway
- Railway
- Transmission Line
- Watercourse
- Waterbody
- Wetland
- Provincial Park/Protected Area
- National Park
- British Columbia/Alberta Border

Kilometres

Scale 1:900,000

Map Drawing Information:
Data Provided By NWP Coal Canada Ltd, Dillon Consulting Limited, Province of British Columbia GeoBC Open Data, Government of Alberta Open Data, Natural Resource Canada.
Imagery Provided By ESRI.

Map Created By: RB
Map Checked By: HS
Map Coordinate System: NAD 1983 UTM Zone 11N

NWP Coal Canada Ltd

Project: 12-6231
Status: FINAL
Date: 2023-07-19

Document Path: K:\126231_Crown_Mountain\EA_Report\EffectsAssessment\IndigenousInterest\126231_EA_II_RegionalStudyArea.mxd

As noted in Section 30.5.4, IAAC indicated their preliminary understanding of potential impacts of the Project on Tsuut'ina Nation (IAAC, 2021b) may include:

- Hunting and Trapping;
- Fishing;
- Harvesting and Gathering;
- Ceremonial/Sacred Areas (i.e., Culturally Significant Areas);
- Physical and Cultural Heritage (i.e., Cultural, Spiritual, and Heritage);
- Access and Travel (and Trade) Routes; and
- Social, Health, and Economic (i.e., Health and Socio-Economic) Conditions.

The Tsuut'ina Nation's Aboriginal rights and interests and Treaty 7 rights are defined as those outlined in Section 30.5.4. Under the terms of Treaty 7, the Tsuut'ina Nation have an established right to hunt which is addressed further in Section 30.7.3.2.2. The discussion of effects has been organized into potential effects on the historic and current use of lands and resources for traditional purposes, social and health conditions, and economic conditions.

30.7.3.1 Project Components and Interactions

Project activities during the Construction and Pre-Production, Operations, Reclamation and Closure, and Post-Closure phases have the potential change the environment and in turn impact the Tsuut'ina Nation's rights and interests based on these interactions. Table 30.7-1 to Table 30.7-4 below provide a summary of the anticipated interactions between the Project and VCs (e.g., wildlife and wildlife habitat) related to the Aboriginal and Treaty rights and interests described throughout Chapter 30, by identifying the Project components/activities, the Indigenous right and/or interest, the associated VC, and the anticipated pathway for potential interactions with the Indigenous right and interest. Refer to Chapter 3 for a description of the Project components/activities that are summarized below.

The interactions outlined in the table below are intended to identify the pathway between the VC and Tsuut'ina Nation rights and interests. All components and Project activities were assessed for potential pathways for interactions between the Project and Tsuut'ina Nation that have the potential to impact their rights and interests as currently understood. This assessment of effects to the Tsuut'ina Nation is primarily based on the traditional land use site assessment study Tsuut'ina Nation undertook in the Project footprint, the review of publicly available information, and consultation and engagement activities as the Kanai have not yet provided a Project-specific TLU fgor the Project footprint, the ATRI LSA, and the ATRI RSA. For ease of reading, the components and activities with similar potential pathways of interactions with Tsuut'ina Nation rights and interests were grouped together within the following Table 30.7-1 to Table 30.7-4. Each separate table below reflects the potential interactions between Tsuut'ina Nation and their rights and interests as currently understood for each separate Project Phase (i.e., Construction and Pre-Production, Operations, Reclamation and Closure, and Post Closure).

With respect to the Tsuut'ina Nation's seasonal round, the Project components and activities were assessed based on Tsuut'ina Nation's traditional land use site assessment study, publicly available information, and feedback received from the Tsuut'ina Nation (Section 30.5) within the Project footprint and the ATRI LSA that included species of interest and/or locations of cultural significance and traditional use that are utilized seasonally that have the potential to interact. Based on the information sources identified, as noted in Section 30.6.6, none have been currently identified by the Tsuut'ina Nation.

The potential residual environmental effects that may exist after the proposed mitigations measures have been implemented are discussed in Section 30.7.3.2. Upon reception of other information from Tsuut'ina Nation during the assessment processes, information may be further refined. The Tsuut'ina Nation's Traditional Knowledge may provide a better understanding of the Project's potential interactions with the Tsuut'ina Nation's rights and interests as it relates to the timing of traditional activities and practices that coincide with the specific Project phases (Appendix 30-A, Table 30.A-2).

30.7.3.2 Characterization of Potential Residual Effects of the Changes to the Environment on Tsuut'ina Nation

Based on the interactions identified in Table 30.7-1 to Table 30.7-4, potential effects to Tsuut'ina Nation are outlined in this section using effects assessment information from the other VCs. The purpose of this assessment is to identify the potential Project-related residual effects to the Tsuut'ina Nation and to inform the impacts to rights assessment (Section 30.10). The residual effects to the Tsuut'ina Nation consider the residual effects for the associated VCs (e.g., Wildlife and Wildlife Habitat VCs) and anticipated effects to non-VC groups (i.e., broad ecosystem types). The potential effects and mitigation for Physical and Cultural Heritage as well as any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance are combined in Section 30.7.3.2.6, for the purposes of the residual effects assessment.

Criteria used to characterize residual effects are defined in Chapter 5, Section 5.3.4.5 and outlined in Section 30.3, and include duration, magnitude, spatial extent, frequency, reversibility, and context (i.e., the sensitivity and resilience of a VC to changes caused by the Project). As previously noted above in Section 30.7.2, where no appropriate representative VC was identified to serve as a surrogate for effects, additional biophysical information from Project-specific baseline studies and publicly available information was used, where available, to allow for an understanding of potential residual effects to Indigenous resource, use, and/or species of interest. At the time of the submission of this chapter, the Tsuut'ina Nation have yet to submit a Project-specific TK/TLU study within the ATRI LSA for the Project. Through this effects assessment and continued consultation with the Tsuut'ina Nation, Project-related residual effects to the Tsuut'ina Nation may continue to be identified, and where applicable, mitigated or accommodated. The information utilized reflects NWP's current determination of significance, the understanding of which may be further refined through continued consultation with the Tsuut'ina Nation.

Additionally, the confidence of the residual effects to the current use of lands and resources by the Tsuut'ina Nation is considered to be moderate where applicable, reflecting the current information that is available through ongoing consultation with the Tsuut'ina Nation.

Table 30.7-1: Summary of Potential Interactions between the Project and the Tsuut'ina Nation's Rights and/or Interests for Construction and Pre-Production Phase

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component/Valued Component Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
Transportation Highway transport trucks, light duty vehicles and crew busses will use Highway 43, Line Creek Mine Road, Valley Road, and Grave Creek Road for all phases of the Project which include transportation of personnel, materials, and consumable items.	• Hunting and Trapping	• Wildlife and Wildlife Habitat (Chapter 15) - Potential interaction between vehicles with wildlife through disruption of their movements and potential direct mortality from vehicle strikes. This interaction has the potential to impact hunting and trapping rights.
Logging of Merchantable Timber Merchantable timber will be logged from the infrastructure and pre-production development footprint.	• Fishing • Hunting and Trapping • Harvesting and Gathering • Ceremonial/Sacred Areas • Travel Routes • Physical and Cultural Heritage	• Fish and Fish Habitat (Chapter 12) and Surface Water Quality (Chapter 11) - Potential interaction with fish and fish habitat through non-contact surface runoff/erosion where bare soils are exposed during logging. • Terrestrial Ecosystems (Chapter 13) and Vegetation (Chapter 14) - Potential loss of vegetation communities and change in terrestrial ecosystems through introduction of invasive vegetation species. • Wildlife and Wildlife Habitat (Chapter 15) - Potential change of wildlife food sources and movements as a result of changes in vegetation communities and terrestrial ecosystems (i.e., degradation of wildlife habitat). Potential sensory disturbance to wildlife (i.e., noise and vibration). • Pre-contact archaeological resources (Chapter 16) - Potential loss of pre-contact archaeological artifacts (if present) and tree throws. • Potential loss/disconnection of historic and present-day travel routes and trails. • Potential loss of ceremonial or sacred areas within the Project footprint.

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component/Valued Component Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
		These interactions have the potential to impact fishing rights, hunting and trapping rights, harvesting and gathering rights, and use of culturally significant areas.
Clearing and Grubbing After the merchantable timber has been removed, the remaining vegetation will be cleared and grubbed from the infrastructure and pre-production development footprint. Wood waste will be stockpiled within the confines of the Project footprint, and stockpiles will not be located adjacent to waterbodies.	• Fishing • Hunting and Trapping • Harvesting and Gathering • Ceremonial/Sacred Areas • Travel Routes • Physical and Cultural Heritage	• Fish and Fish Habitat (Chapter 12) and Surface Water Quality (Chapter 11) - Potential interaction with fish and fish habitat through surface runoff/erosion where bare soils are exposed during grubbing. • Terrestrial Ecosystems (Chapter 13) and Vegetation (Chapter 14) - Potential changes to vegetation that may impact the ability to harvest and gather for traditional purposes. • Terrestrial Ecosystems (Chapter 13) - Potential change in landscape and terrestrial ecosystem types resulting in the change of wildlife food sources and movements. • Wildlife and Wildlife Habitat (Chapter 15) - Potential change of wildlife food sources and movements as a result of changes in vegetation communities and terrestrial ecosystems (i.e., degradation of wildlife habitat). Potential sensory disturbance to wildlife (i.e., noise and vibration). • Pre-contact archaeological resources (Chapter 16) - Potential loss of pre-contact archaeological artifacts (if present) and tree throws. • Potential loss of ceremonial or sacred areas within the Project footprint. • Potential loss/disconnection of historic and present-day travel routes and trails. These interactions have the potential to impact fishing rights, hunting and trapping rights, harvesting and gathering rights, use of culturally significant areas, and social and health conditions.

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component/Valued Component Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
Quarry for Construction Materials Excavation of road bed materials from the North Pit footprint for use on Grave Creek Road.	• Physical and Cultural Heritage	• Pre-contact archaeological resources (Chapter 16) - Potential loss of pre-contact archaeological artifacts (if present) during quarrying activities. This interaction has the potential to impact use of culturally significant areas.
Infrastructure and Road Construction • Water Management or Water Management Structures; • Road Upgrades and Construction; • Overland Conveyor; • Coal Handling Process Plant Construction; • Workshop/Mine Dry Construction; • Rail Loadout Construction; • Explosives Factory; and • Soil Salvage.	• Fishing • Hunting and Trapping • Harvesting and Gathering • Ceremonial/Sacred Areas • Travel Routes • Physical and Cultural Heritage • Social and Health Conditions	• Surface Water Quantity (Chapter 10), Surface Water Quality (Chapter 11), and Fish and Fish Habitat (Chapter 12) - Potential interaction with non-contact surface water and fish and fish habitat through erosion and sedimentation of bare soils. • Surface Water Quantity (Chapter 10) and Surface Water Quality (Chapter 11) - Potential interaction with ceremonial/sacred areas around water with changes in water levels and water quality. • Terrestrial Ecosystems (Chapter 13) and Vegetation (Chapter 14) - Potential interaction with riparian vegetation species of interest due to the loss of riparian habitat. • Fish and Fish Habitat (Chapter 12) and Wildlife and Wildlife Habitat (Chapter 15) - Potential localized changes in accessibility to wildlife associated with riparian areas due to changes to surface water quality, fish and fish habitat, and riparian vegetation/habitat. • Fish and Fish Habitat (Chapter 12) - Potential interaction with fish and fish habitat through the installation of water supply pipelines from Grave Creek and West Alexander Creek through changes in water level and erosion and sedimentation. • Wildlife and Wildlife Habitat (Chapter 15) - Potential loss of wildlife habitat within road and infrastructure footprint and potential change in localized wildlife species of interest movement/accessibility. Potential sensory disturbance to wildlife species of interest (i.e., noise and vibration). Potential interaction with wildlife species of interest through

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component/Valued Component Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
		transportation of materials and personnel to site (e.g., vehicle collisions and increased traffic). Potential loss of wildlife habitat within road and infrastructure footprint and potential change in localized wildlife species of interest movement/accessibility. Potential stressor on wildlife population with increased access roads potentially attracting hunters and increased road densities. • Terrestrial Ecosystems (Chapter 13) and Vegetation (Chapter 14) – Potential loss of vegetation species of interest within road and infrastructure footprint. Potential for introduction of invasive species around development areas reducing the quality of vegetation communities/terrestrial ecosystems/ habitats for vegetation species of interest. Potential loss of grassland habitat, and therefore, potential loss of species of interest within footprint of Rail Loadout. Loss/fragmentation of grassland wildlife habitat, and therefore, potential loss of species of interest as a result of the workshop/mine dry footprint. • Pre-contact archaeological resources (Chapter 16) - Potential loss of archaeological artifacts (if present) within road and infrastructure construction footprint. Potential loss of pre-contact archaeological artifacts (if present) during construction of building foundations. Potential change due to a significant historic area located near the project's roads: Grave Lake, Grave Creek, and Grave Prairie. • Socio-Community (Chapter 18) - Potential Project nuisance effects residents due to noise and vibration. Potential change in availability/reliance on country food. Potential public safety due to physical hazards. • Potential loss/disconnection of portions of historic and present-day travel routes and trails if present within or crossing new roads and infrastructure footprint.

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component/Valued Component Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
		• Potential loss of ceremonial/sacred areas within road and infrastructure construction footprint. These interactions have the potential to impact fishing rights, hunting and trapping rights, harvesting and gathering rights, use of culturally significant areas, and social and health conditions.
Construction Waste Materials Collection and transfer to a recycling facility or other approved facility. Waste will be fenced and stored in sea containers or waste oil containers as appropriate.	None identified	None identified - there are no anticipated interactions between Indigenous interests and storage of construction waste, as the waste will be stockpiled in contained areas or appropriate containers that are not open to the environment. Accidents, malfunctions, and unplanned events are discussed in Chapter 21.

Table 30.7-2: Summary of Potential Interactions between the Project and the Tsuut'ina Nation's Rights and/or Interests for Operations Phase

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component / Valued Components Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
Labour Hiring of personnel for the mine, CHPP operations administration, and coal haul; Training of personnel.	• Economic conditions • Social and Health Conditions	• Economic Effects (Chapter 17) - Potential modest economic benefit for Nation members that could be hired for the mine, CHPP operations administration, and coal haul. • Socio-Community (Chapter 18) - Potential change in population and demographic. Potential change in community health and well-being. Potential modest positive change in availability of community services. Potential change due to the influx of new employees to the region that could potentially contribute to social impacts, including safety risks. This interaction has the potential to impact economic and social and health conditions.
Explosives Factory Ammonium nitrate/emulsion storage facilities which have the ability to load explosive agents into delivery trucks; Wash facility to decontaminate the bulk explosive delivery trucks; Storage of explosives (detonators and boosters).	• Fishing • Hunting and trapping	• Surface Water Quality (Chapter 11), Fish and Fish Habitat (Chapter 12), Vegetation (Chapter 14), and Wildlife and Wildlife Habitat (Chapter 15) - Potential interaction with fish and fish habitat, terrestrial ecosystems and vegetation, and wildlife species of interest through the release of nitrogen compounds and other contaminants from storage areas and wash facilities. These interactions have the potential to impact fishing rights and hunting and trapping rights.
Fuel Storage Receiving bulk fuel deliveries; Onsite storage of fuel; Dispensing fuel; Transferring fuel to on-site delivery trucks.	• Fishing • Hunting and trapping	• Surface Water Quality (Chapter 11), Fish and Fish Habitat (Chapter 12), Vegetation (Chapter 14), and Wildlife and Wildlife Habitat (Chapter 15) – None identified - there are no anticipated interactions between Indigenous interests and fuel storage. Accidents, malfunctions and unplanned events are discussed in Chapter 21. These interactions have the potential to impact fishing rights and hunting and trapping rights.

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component / Valued Components Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
Mining Progressive clearing; Removal of unconsolidated material; Loading, hauling and stockpiling of soil; Drilling and loading of blastholes; Detonating the explosives; Loading, hauling and dumping of mine rock; Loading hauling and stockpiling or coal.	• Fishing • Hunting and Trapping • Harvesting and Gathering • Physical and Cultural Heritage • Social and Health Conditions	• Surface Water Quality (Chapter 11) and Fish and Fish Habitat (Chapter 12) - Loss of West Alexander Creek as a result of mine development and the storage of mine rock. • Fish and Fish Habitat (Chapter 12) - Potential interaction with fish and fish habitat as well as surface water quality and quantity through mining activities (sedimentation, erosion, spills, contact runoff, nitrate, selenium, sulphate contamination from broken rock and dust). Potential changes to the actual or perceived accessibility, health, and quality of potential fish species of cultural interest/use for country foods due to mining activities. • Terrestrial Ecosystems (Chapter 13) - Potential changes in vegetation communities/terrestrial ecosystems and introduction and colonization of invasive vegetation species that outcompete species of interest. • Vegetation (Chapter 14) - Potential interaction with vegetation health through particulate matter and dust deposition. • Wildlife and Wildlife Habitat (Chapter 15) - Potential change of wildlife species of interest food sources and movements as a result of changes in vegetation communities and terrestrial ecosystems (i.e., degradation of wildlife habitat) or sensory disturbances. Changes in wildlife species of interest movements/accessibility to these wildlife species due to presence of the mine. • Fish and Fish Habitat (Chapter 12) and Wildlife and Wildlife Habitat (Chapter 15) - Sensory disturbances to potential fish and wildlife species of interest due to detonation of explosives and other mine activities. • Pre-contact archaeological resources (Chapter 16) – Potential discovery of pre-contact archaeological resources (if present) in unconsolidated material or during progressive clearing activities. • Socio-Community (Chapter 18) - Potential Project nuisance effects residents due to noise and vibration. Potential change in availability/reliance on country food. Loss of potential access to fish in West Alexander Creek.

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component / Valued Components Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
		• Potential loss of ceremonial/sacred areas. These interactions have the potential to impact fishing rights, hunting and trapping rights, harvesting and gathering rights, current use of culturally significant areas, and social and health conditions.
Site Water Requirements Using contact water as the primary process make-up water from Interim Sediment Pond (Year 1 to 5); Using contact water as the primary process make-up water from the North Pit (Year 5 to 15); Backup reservoir in Grave Creek as a secondary source of process make-up water.	• Fishing • Hunting and Trapping • Ceremonial/Sacred Areas • Social and Health Conditions	• Surface Water Quality (Chapter 11) and Fish and Fish Habitat (Chapter 12) - Potential reduction of flows in Grave Creek through use as a secondary source of process make-up water, with potential to impact fish species of interest and their habitat, as well as surface water quality and quantity. Potential for loss of downstream aquatic habitat resulting in the change or loss of access to traditionally/culturally important fish species or access to fish as country foods. • Wildlife and Wildlife Habitat (Chapter 15) - Potential for changes to accessibility to aquatic wildlife species of interest (e.g., waterfowl) with the change or loss of aquatic habitats. • Socio-community (Chapter 18) – Potential change in availability/reliance on country food. • Potential for changes to ceremonial or sacred areas associated with Grave Creek or downstream habitats. These interactions have the potential to impact fishing rights, hunting and trapping rights, use of culturally significant areas, and social and health conditions.
Coal Processing Run of mine coal sizing; Washing coal; Mechanical and thermal drying of coal; Coal reject disposal (part of loading, hauling and dumping of mine rock activities); Conveying clean coal; and mine roads development	• Fishing • Hunting and Trapping • Ceremonial/Sacred Areas	• Surface Water Quality (Chapter 11) and Fish and Fish Habitat (Chapter 12) - Potential reduction in flow of West Alexander Creek during coal reject disposal, hauling and dumping or mine rock, with potential to impact fish species of interest and their habitat, as well as surface water quality and quantity. Potential for loss of downstream aquatic habitat resulting in the change or loss of access to traditionally/culturally important fish species or access to fish as country foods.

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component / Valued Components Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
		• Wildlife and Wildlife Habitat (Chapter 15) - Potential for changes to accessibility to aquatic wildlife species of interest (e.g., waterfowl) with the change or loss of aquatic habitat. Potential sensory disturbance and change in food sources for wildlife species of interest as a result of dust deposition/changes in vegetation communities. • Pre-contact archaeological resources (Chapter 16) - Potential for changes to ceremonial or sacred areas associated with West Alexander Creek or downstream habitats. These interactions have the potential to impact fishing rights, hunting and trapping rights, and use of culturally significant area.
Sewage Treatment Sewage will be treated by a septic system constructed at the plant site which will support the administration, mine dry, and CHPP facilities.	• None identified	• There are no anticipated interactions between Indigenous interests and treated sewage, as the septic system will comply with the appropriate standards and regulations. Accidents, malfunctions, and unplanned events are discussed in Chapter 21.
Main Sediment Pond Construction of Main Sediment Pond in Year 4; Management of the Main Sediment Pond discharge for remainder of operational mine life.	• Fishing • Hunting and Trapping	• Surface Water Quality (Chapter 11), Surface Water Quantity (Chapter 10), and Fish and Fish Habitat (Chapter 12) - Potential interaction with surface water and fish species of interest and their habitat through sedimentation or changes in water levels through the management (discharge) of the Main Sediment Pond. • Wildlife and Wildlife Habitat (Chapter 15) - Potential for changes to accessibility to aquatic wildlife species of interest (e.g., waterfowl) with the change or loss of aquatic habitat. • Potential for change in access to places that may be important for ceremonial or sacred areas. These interactions have the potential to impact fishing rights and hunting and trapping rights.

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component / Valued Components Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
Progressive Reclamation Reclaiming available areas as soon as possible to achieve reclamation objectives.	• Fishing • Hunting and Trapping • Harvesting and Gathering • Ceremonial/Sacred Areas	• Surface Water Quality (Chapter 11) and Fish and Fish Habitat (Chapter 12) - Potential interaction with surface water quality and fish and fish habitat through erosion and sedimentation and of bare soils. • Terrestrial Ecosystems (Chapter 13) and Vegetation (Chapter 14) - Potential for changes in vegetation communities through the introduction and colonization of invasive species that outcompete species of interest resulting in a loss of traditionally/culturally important vegetation communities. • Wildlife and Wildlife Habitat (Chapter 15) - Potential for changes in wildlife food sources through changes to ecosystems/vegetation communities resulting in changes to wildlife species of interest movements/migrations. • Potential changes to or loss of places that may be important for ceremonial or sacred areas through changes in landscape/ecosystems should reclamation activities not be effective. These interactions have the potential to impact fishing rights, hunting and trapping rights, harvesting and gathering rights, and use of culturally significant areas.

Table 30.7-3: Summary of Potential Interactions between the Project and the Tsuut'ina Nation's Rights and/or Interests for Reclamation and Closure Phase

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component / Valued Components Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
Dismantling Infrastructure and Buildings Dismantling of the CHPP, maintenance facilities, administration, and other facilities; Dismantling, salvaging, collecting, and transferring materials to a recycling facility or other approved facility. Removal of the powerline; Removal of the natural gas line.	• Fishing • Hunting and Trapping • Harvesting and Gathering	• Surface Water Quality (Chapter 11) and Fish and Fish Habitat (Chapter 12) - Potential interaction with surface water quality and fish species of interest and their habitat through erosion and sedimentation of bare soils. Potential change to the interconnection throughout the ecosystem due to interaction of ecological features. • Terrestrial Ecosystems (Chapter 13) and Vegetation (Chapter 14) - Potential for introduction of invasive species around development areas reducing the quality of vegetation communities/terrestrial ecosystems/habitats for species of interest. Potential for reestablishment of plant harvesting activities. • Wildlife and Wildlife Habitat (Chapter 15) - Potential sensory disturbance to wildlife species of interest (i.e., noise and vibration). Potential for reestablishment of wildlife habitat in the development footprint. Potential for reestablishment of wildlife food sources through reestablishment of habitat/vegetation communities. Potential for the reestablishment of hunting activities. These interactions have the potential to impact fishing rights, hunting and trapping rights, and harvesting and gathering rights.
Progressive Reclamation Reclaiming available areas as soon as possible to achieve reclamation objectives.	• Fishing • Hunting and Trapping • Harvesting and Gathering • Ceremonial/Sacred Areas • Social and Health Conditions	• Surface Water Quality (Chapter 11) and Fish and Fish Habitat (Chapter 12) - Potential interaction with surface water quality and fish species of interest and their habitat through erosion and sedimentation of bare soils. • Terrestrial Ecosystems (Chapter 13) and Vegetation (Chapter 14) - Potential for reclamation of ecosystems and related species of interest and areas used for harvesting and gathering. • Wildlife and Wildlife Habitat (Chapter 15) - Potential for reestablishment of wildlife food sources through reestablishment of

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component / Valued Components Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
		ecosystems/vegetation communities. Potential for reestablishment of wildlife accessibility in the development footprint for species of interest. • Socio-community (Chapter 18) – Potential for Indigenous Communities to take part in progressive reclamation opportunities. Potential change in community well-being. Potential change in availability/reliance on country food. These interactions have the potential to impact fishing rights, hunting and trapping rights, harvesting and gathering rights, current use of culturally significant areas, and social and health conditions.
Monitoring Reclamation monitoring; Geotechnical monitoring; Aquatic effects monitoring.	• Fishing • Hunting and Trapping • Harvesting and Gathering • Ceremonial/Sacred Areas • Social and Health Conditions	• Surface Water Quality (Chapter 11), Fish and Fish Habitat (Chapter 12), Terrestrial Ecosystems (Chapter 13), Vegetation (Chapter 14), and Wildlife and Wildlife Habitat (Chapter 15) - Potential for reduction of the quality and accessibility of fish, vegetation species of interest and wildlife species of interest for traditional/cultural purposes or country foods, should insufficient effects monitoring take place that affects the mitigation measures utilized. • Socio-Community (Chapter 18) - Potential for Indigenous Communities to take part in monitoring activities, in particular: aquatic effects monitoring. These interactions have the potential to impact fishing rights, hunting and trapping rights, harvesting and gathering rights, use of culturally significant areas, and social and health conditions.

Table 30.7-4: Summary of Potential Interactions between the Project and the Tsuut'ina Nation's Rights and/or Interests for Post-Closure Phase

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component / Valued Components Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
Water Management Management of the Main Sediment Pond discharge. Decommissioning the Main Sediment Pond once water quality objectives have been met.	• Fishing • Hunting and Trapping • Harvesting and Gathering	• Surface Water Quality (Chapter 11), Surface Water Quantity (Chapter 10), and Fish and Fish Habitat (Chapter 12) - Potential interaction with surface water and fish species of interest and their habitat through erosion and sedimentation or changes in water levels through the decommissioning of the Main Sediment Pond. • Terrestrial Ecosystems (Chapter 13) and Vegetation (Chapter 14) - Potential for changes in water levels resulting in potential impacts to riparian vegetation communities and wildlife habitats of interest. • Wildlife and Wildlife Habitat (Chapter 15) - Potential for changes to accessibility to aquatic wildlife VC species of interest (e.g., waterfowl) with the change or loss of aquatic habitat. These interactions have the potential to impact fishing rights, hunting and trapping rights, and harvesting and gathering rights.
Rail Line and Road Use Branch C Road will remain as a permanent access road for future commercial and recreational use. The rail line will remain as a permanent feature.	• Fishing • Hunting and Trapping • Harvesting and Gathering	• Surface Water Quality (Chapter 11), Fish and Fish Habitat (Chapter 12), Terrestrial Ecosystems (Chapter 13), Vegetation (Chapter 14), Wildlife and Wildlife Habitat (Chapter 15) - Potential for access within the Project footprint through the use of Branch C Road, which will remain as a permanent access road for future traditional activities such as fishing, harvesting and gathering, as well as hunting and trapping. • Surface Water Quality (Chapter 11) and Fish and Fish Habitat (Chapter 12) - Potential interaction with surface water and fish species of interest and their habitat through erosion and sedimentation due to permanent rail line. • Terrestrial Ecosystems (Chapter 13) and Vegetation (Chapter 14) - Potential for the introduction of weeds and invasive vegetation species in disturbed areas around the rail line resulting in a change of localized vegetation communities/loss of species of interest.

Project Components and Activities	Tsuut'ina Nation Right and/or Interest	Valued Component / Valued Components Group and Effects Pathway for Potential Interaction with the Tsuut'ina Nation
		• Wildlife and Wildlife Habitat (Chapter 15) - Potential for collisions with wildlife and disruption to wildlife movements resulting in changes to accessibility to wildlife species of interest. Potential stressor on wildlife population with increased access roads potentially attracting hunters and increased road densities. These interactions have the potential to impact fishing rights, hunting and trapping rights, and harvesting and gathering rights.
Monitoring Reclamation monitoring; Geotechnical monitoring; Aquatic effects monitoring.	• Fishing • Hunting and Trapping • Harvesting and Gathering • Social and Health Conditions	• Surface Water Quality (Chapter 11), Fish and Fish Habitat (Chapter 12), Terrestrial Ecosystems (Chapter 13), Vegetation (Chapter 14), and Wildlife and Wildlife Habitat (Chapter 15) - Potential for reduction of the quality and accessibility of fish species of interest, vegetation species of interest, and wildlife species of interest for traditional/cultural purposes or country foods, should insufficient effects monitoring take place that affects the mitigation measures utilized. • Socio-Community (Chapter 18) - Potential for Indigenous Communities to take part in monitoring activities, in particular: aquatic effects monitoring. These interactions have the potential to impact fishing rights, hunting, and trapping rights, harvesting and gathering rights, and use of culturally significant areas.

30.7.3.2.1 Change to Use of Lands and Resources for Traditional Fishing Purposes

Based on available information, fishing or the harvesting of the fish is understood to be a traditional activity undertaken by the Tsuut'ina Nation within their Traditional Territory. While information has not been provided by the Tsuut'ina Nation to NWP that confirms that community members fish in or near the Project area or in the LSA, there is the potential for this activity to occur. The harvesting of fish is a potential valuable source of country food to the Tsuut'ina Nation. It is our understanding that Tsuut'ina Nation have identified Bull Trout as a fish species of interest and access to healthy aquatic systems for fishing rights and related interests. The fish and fish habitat VC and related residual effects assessment (Chapter 12) was used to support an understanding of Project-related residual effects that have the potential to change the opportunity to fish Bull Trout by Tsuut'ina Nation. Residual effects to fish and fish habitat VCs, including the Bull Trout VC include:

- Instream habitat loss as a result of mine design;
- Habitat loss due to changes in water quantity;
- Riparian disturbance; and
- Changes in water quality.

Changes to abundance, disturbance, spawning areas, seasonal movements, movement courses, and habitat requirements for Bull Trout considered in the EIS are included in Chapter 12, Section 12.4.2.2. Chapter 12 also notes that Alexander Creek, West Alexander Creek, Grave Creek, and 12 of 27 wetlands (surveyed for fish presence) which were connected to watercourses were considered fish bearing. 13 of the 27 wetlands surveyed had low probability for fish presence based on the lack of suitable habitat observed and/or disconnectedness with fish bearing watercourses.

As a result of changes to the fish and fish habitat VCs, potential effects on Tsuut'ina Nation's opportunity to fish for Bull Trout include:

- Potential change in the ability to know and teach the cultural and social aspects of fish VC species and waterbodies within the Project footprint and the ATRI LSA during all Project phases.
- Potential change in the value of place as a result of the change in accessibility of fishing opportunities within the Project footprint and the ATRI LSA, and the loss of waterbodies within the Project footprint during all Project phases.
- Potential change in accessibility to fishing opportunities in Grave Creek and West Alexander Creek as a result of Project activities in all Project phases.
- Potential change in fishing opportunities due to increased fishing pressure associated with an increase in access to watercourses as a result of Project development (i.e., upgrading of access roads).

Mitigation measures have been recommended to avoid, minimize, or otherwise address potential adverse effects to Bull Trout that are related to Tsuut'ina Nation's rights and interests. Specific mitigation for Bull Trout can be referenced in Chapter 12, Section 12.5.3.

Further, mitigation measures related to the effects of the Project on the Tsuut'ina Nation are outlined in this chapter in Section 30.9 (Table 30.9-1) which presents the Indigenous Impact Management Plan that was developed in response to the concerns raised by the Tsuut'ina Nation and the identified Indigenous Communities. The mitigation measures presented in Section 30.9.1 may be revised or updated as a result

of specific input provided by the Tsuut'ina Nation where applicable. No other technically and economically feasible mitigation measures were identified to address potential impacts to the Tsuut'ina Nation's rights and interests related to the fish and fish habitat VCs. At this time, NWP is not aware of potential future technology innovations that may help to further mitigate effects.

Development of the mine site will result in the removal of approximately 5.5 km of West Alexander Creek, which may be used for traditional activities by the Tsuut'ina. While there is potential for traditional use of West Alexander Creek, it is anticipated to be relatively minimal and to a lesser extent compared to the mainstems of Alexander Creek, Michel Creek, and the Elk River. During Operations, use of Alexander Creek for fishing will be permitted, unless blasting activities are occurring. It is important to note that blasting restrictions will not affect access to the entire length of Alexander Creek, only those sections in close proximity to the pit undergoing blasting.

The Project has the potential to result in residual adverse effects to fish and fish habitat as a result of Project Construction and Pre-Production, Operations, Reclamation and Closure, and Post-Closure activities. In particular, the Project may result in permanent changes to instream fish habitat, the loss of habitat due to changes in water quality, riparian disturbance, and changes in water quality that could affect fish health. Project residual effects to the fish and fish habitat VCs, including Bull Trout, indicate the potential for a residual effect on Tsuut'ina Nation's opportunity to fish for Bull Trout.

The residual effects to the opportunity to fish Bull Trout and the use of Bull Trout for traditional purposes (based on past and current uses) due to the Project footprint are characterized as follows:

- Duration: *Short-term to Long-term*, as the potential for adverse effects to opportunities for fishing will be short-term as they will generally be limited to the Construction and Pre-Production and Operations phases of the Project.
- Magnitude: *Low to Moderate,* as the opportunities to fish and access to healthy aquatic systems in watercourses currently used or potential used in the future may be altered as a result of Project residual effects on fish and fish habitat VCs, including Bull Trout (e.g., instream loss associated with West Alexander Creek).
- Geographic Extent: *Local*, as changes in the opportunity to fish and access aquatic systems is restricted to the West Alexander Creek within the Fish and Fish Habitat LSA and the ATRI LSA.
- Frequency: *Continuous*, as the opportunity to fish and access aquatic systems potentially used currently or in the future by Tsuut'ina Nation is anticipated to occur during Construction and Pre-Production, Operations, and Reclamation and Closure until Project activities are completed.
- Reversibility: *Reversible Long-term to Irreversible*, changes in opportunities to fish are anticipated to be reversible as the Project footprint is reclaimed and off-site aquatic compensation is achieved. There are no permanent barriers in the West Alexander or Alexander Creeks, and fish have the option to move freely throughout the watershed, including downstream to the Elk River.
- Context: *Neutral*, as opportunities to fish are present within several watercourses within the Fish and Fish Habitat LSA and these watercourses have been previously disturbed by human activities (e.g., Harmer Creek and mining activities). The context is also deemed neutral due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional fishing within the Project footprint at this time, as it is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Determination of Significance

The Tsuut'ina Nation did not identify watercourses within the Project footprint that are utilized for fishing (Appendix 30-A, Table 30.A-2). It is acknowledged that Tsuut'ina Nation has the potential to use Project-impacted watercourses that support Bull Trout given their current use and interest in this species within the ATRI LSA. The Project is anticipated to result in short-term to long-term changes in opportunities for fishing as access to upstream Grave Creek and West Alexander Creek is restricted over the course of the Project. Impacts to fish habitat, such as the loss of instream habitat, will be compensated for through the Fish and Fish Habitat Management Plan, and other than those identified within the Project footprint, no permanent losses to the ability to fish Bull Trout is anticipated within the ATRI LSA. The Fish and Fish Habitat Management Plan will compensate the loss of available habitat to fish and benthic invertebrate communities in the Fish and Fish Habitat LSA and Aquatic RSA or for different uses as required for their life histories, thus resulting in no net loss of instream habitat as a result of the Project.

In consideration of the above and the Project's design to reduce impacts to fish and fish habitat VCs including the Fish and Fish Habitat Management Plan, the residual effect of the Project on the use of lands and resources for fishing is rated as not significant.

Likelihood and Confidence

Effects that are determined to be not significant do not require a characterization of likelihood. Confidence considers the reliability of data and analytical methods used in the assessment of effects. Baseline conditions of relevant VCs within the Project footprint and Fish and Fish Habitat LSA are well established, providing sufficient data to assess effects to changes in the opportunity for Tsuut'ina Nation to fish and access to healthy aquatic systems. Though baseline data was sufficient to evaluate effects for the fish and fish habitat VCs, areas currently or potentially used by Tsuut'ina to fish were not available at the time of the assessment. As such, the confidence of the residual effects to the use of lands and resources by Tsuut'ina for fishing and fish opportunities is considered to be moderate.

The residual effects to opportunities for fishing will be further discussed through continued consultation with Tsuut'ina Nation, as well as through the development of potential follow-up and monitoring and adaptive management measures to implement corrective actions as necessary based on that follow-up. Thus, the continued consultation and follow-up program to be implemented is expected to improve the moderate level of confidence.

As noted earlier, while mitigation measures related to the effect of the Project on the Tsuut'ina Nation are presented in the Indigenous Impact Management Plan (Section 30.9), at this time, the Tsuut'ina Nation did not provide specific information included in Section 30.9.1 that addressed their concerns regarding fish and fish habitat VC species (including Bull Trout) related to the Tsuut'ina Nation's traditional fishing activities.

30.7.3.2.2 Change to Use of Lands and Resources for Traditional Hunting and Trapping Purposes

Based on available information, hunting and trapping is understood to be a traditional activity undertaken by the Tsuut'ina Nation within their Traditional Territory. While information has not been provided by the Tsuut'ina Nation to NWP that confirms that community members hunt or trap within or near the Project area or in the LSA, there is the potential for this activity to occur. The harvest of wildlife is a potential valuable source of country food and sustenance to the Tsuut'ina Nation and may contribute to their

cultural activities. Of the wildlife VC species identified as part of the EA regulatory process, moose, elk, mountain (bighorn sheep), mountain goat, waterfowl (ducks and geese), as well as Canada lynx and grizzly bear have been identified as being of interest to Tsuut'ina Nation. The wildlife and wildlife habitat residual effects assessment (Chapter 15) was used to support an understanding of Project-related effects that have the potential to change hunting and trapping by Tsuut'ina Nation. Residual effects to wildlife VCs include:

- Habitat loss and degradation;
- Sensory disturbance;
- Disruption to movement; and
- Increased mortality risk.

The assessment of residual effects to land use and access (Chapter 19) was used to understand potential effects on the availability of lands used for hunting and trapping. In addition, changes to air quality (Chapter 6) and noise (Chapter 7) may result in indirect sensory disturbance to Indigenous land users and alter or deter their use of the lands for hunting and trapping. Changes to abundance, disturbance, occupancy, seasonal movements, movement corridors, and habitat requirements for wildlife species identified by Tsuut'ina Nation and considered in the EIS are included in Chapter 15.

Potential effects on the opportunity to hunt and trap that may result from changes associated with the Project include:

- Potential change in accessibility to hunt and trap within the ATRI LSA during the Construction and Pre-Production, Operations, and Reclamation and Closure phases due to changes in land use as a result of Project development.
- Potential change in the value of place as a result of the change in accessibility to hunt and trap, or the actual or perceived change in quality of species hunted or trapped, within the ATRI LSA during the Construction and Pre-Production, Operations, and Reclamation and Closure phases.
- Potential change in the ability to know and teach Tsuut'ina cultural and social aspects of hunting and trapping within the Project footprint and the ATRI LSA during the Construction and Pre-Production and Operations phases due to changes in access and wildlife quality.
- Potential change in the availability of wildlife species to hunt and trap due to changes in habitat loss and degradation, sensory disturbance, disruption to movement, and increased mortality risk during all phases of the Project.
- Potential increased hunting pressure because of increased access surrounding the Project area through all phases of the Project.

Mitigation measures have been recommended to avoid, minimize, or otherwise address potential adverse effects to the wildlife VCs that are related to the Tsuut'ina Nation's rights and interests. Specific mitigation for wildlife VCs related to the Tsuut'ina Nation can be referenced in Chapter 15.

Further, mitigation measures related to the effects of the Project on the Tsuut'ina Nation are outlined in this chapter in Section 30.9 (Table 30.9-1) which presents the Indigenous Impact Management Plan that was developed in response to the concerns raised by the Tsuut'ina Nation and the identified Indigenous Communities. The mitigation presented in Section 30.9.2 may be revised or updated as a result of specific input provided by the Tsuut'ina Nation where applicable. No other technically and economically feasible mitigation measures were identified to address potential impacts to the Tsuut'ina Nation's rights and

interests related to the wildlife VCs. At this time, NWP is not aware of potential future technology innovations that may help to further mitigate effects.

The Project has the potential to result in residual adverse effects to wildlife species potentially used by Tsuut'ina Nation for hunting and trapping following mitigation. In particular, wildlife habitat will be removed, and wildlife species movement disrupted as a result of Project Construction and Pre-Production and Operations. These impacts have the potential to result in residual effects to Tsuut'ina Nation due to the anticipated temporary decline in the wildlife species available for use by Tsuut'ina Nation in hunting and trapping practices as well as the temporary impact to the accessibility of areas used to hunt and trap in the Project footprint and the ATRI LSA. In the Reclamation and Closure phase approximately 785 ha of self-sustaining ecosystems will be reclaimed within the disturbance footprint to reclaim wildlife habitat impacted as a result of the Project and is expected to renew the use of the Project footprint for hunting and trapping related activities.

Potential residual effects to the current use of lands and resources by Tsuut'ina for hunting and trapping is characterized as follows:

- Duration: *Long-term*, the potential for adverse effects to opportunities for hunting and trapping species of interest will be long-term as the effects related to habitat loss and degradation, sensory disturbance, and disruption to movement are expected to continue to the end of the Reclamation and Closure phase of the Project.
- Magnitude: *Low* to *Moderate*, the potential for negative effects to opportunities for hunting is low to moderate based the limited amount of expected loss of high-quality habitat, or the semi-permanent nature of infrastructure such as that of linear infrastructure that might impact species movements, and limited percentage of high-quality habitat that will be impacted by potential sensory disturbance.
- Geographic Extent: *Local*, potential effects to opportunities for hunting and trapping are restricted to the Project footprint and the Terrestrial LSA.
- Frequency: *Continuous*, the potential for adverse effects to species of interest are expected to occur continuously as the Project activities are completed, from Construction and Pre-Production to Reclamation and Closure.
- Reversibility: *Reversible Long-term*, changes in current use of lands and resources for traditional purposes resulting from the Project activities related to hunting and trapping are anticipated to be reversible as the site is reclaimed and ecosystems are re-established (Chapter 33).
- Context: *Neutral*, the opportunity to conduct traditional hunting and trapping within the Project footprint and local study areas is important to Tsuut'ina Nation members. The Project footprint is within Tsuut'ina Nation Traditional Territory, once utilized and depended upon by Tsuut'ina Nation ancestors and part of the rights and interests of Tsuut'ina Nation members of today. Changes to Tsuut'ina Nation's accessibility to opportunities for hunting and trapping is deemed neutral due to the importance of these traditional activities to Tsuut'ina cultural and traditional identity and the importance of available lands for traditional practices (as a result of the loss of available lands for resource use in general within British Columbia and Alberta due to multiple industry and development expansions), balanced with the anticipated renewed access and availability of these resources following the completion of the Project. The context is also deemed neutral due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional hunting and trapping within the Project footprint at this time,

as it is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Determination of Significance

Tsuut'ina Nation noted the presence of potential locations for species of cultural importance but did not identify hunting and trapping areas within the Project footprint that are utilized for traditional activities (Appendix 30-A, Table 30.A-2) and it is anticipated that currently Tsuut'ina Nation has a low level of use in the Terrestrial LSA used to evaluate effects to VCs due to previously noted disturbances (e.g., existing mining activity). The anticipated low level of use by Tsuut'ina coupled with the lack of significant adverse effects to wildlife VCs that potentially used for hunting and trapping purposes indicates the no residual effect on the change in lands and resources for traditional hunting and trapping. The Project is not anticipated to result in the permanent loss of access or the ability to conduct traditional land and resource use related to hunting and trapping within the Project footprint or VC study areas. As part of Project Reclamation and Closure wildlife habitat will be reclaimed within the disturbance footprint, and result in a variety of wildlife habitat types for use by ungulate, carnivore, and bird species.

Therefore, in consideration of the above and the Project's design to reduce impacts to wildlife VCs, ecosystems, land use, air and noise, the residual effect of the Project on the use of lands and resources for traditional hunting and trapping is rated as not significant.

Likelihood and Confidence

Effects that are determined to be not significant do not require a characterization of likelihood. Confidence considers the reliability of data and analytical methods used in the assessment of effects. Baseline conditions of relevant VCs within the Project footprint and VC study areas are well established, providing sufficient data to assess effects to changes in the opportunity for Tsuut'ina Nation to hunt and trap. Though baseline data was sufficient to evaluate effects for Project VCs, not all species of interest to Tsuut'ina Nation identified through publicly available information were evaluated to the depth of the VC baseline studies and effects assessment. As such, the confidence of the residual effects to the use of lands and resources by Tsuut'ina for hunting and trapping is considered to be moderate.

The residual effects to opportunities for hunting and trapping will be further discussed through continued consultation with Tsuut'ina Nation, as well as through the development of potential follow-up and monitoring and adaptive management measures to implement corrective actions as necessary based on that follow-up. Thus, the continued consultation and follow-up program to be implemented is expected to improve the moderate level of confidence.

As noted earlier, while mitigation measures related to the effect of the Project on the Tsuut'ina Nation are presented in the Indigenous Impact Management Plan (Section 30.9), at this time, the Tsuut'ina Nation did not provide specific information included in Section 30.9.2 that addressed their concerns regarding wildlife VC species related to the Tsuut'ina Nation's traditional hunting and trapping activities.

30.7.3.2.3 Change to Use of Lands and Resources for Traditional Harvesting and Gathering Purposes

Based on available information, plant harvesting is understood to be a traditional activity undertaken by the Tsuut'ina Nation within their Traditional Territory. Plants may be harvested as a food source, for their medicinal value and/or for cultural activities. Plant species that may be of interest to Tsuut'ina Nation for use in harvesting and gathering, based on the traditional land use study of the Project footprint as provided by Tsuut'ina Nation and the desktop review of publicly available information, include fireweed, pearly everlasting, wild carrot, wild sarsaparilla, spruce, whitebark pine, baneberry, elderberry, thimbleberry, dog berry, blueberry, cranberry (highbush and lowbush), huckleberry (highbush and lowbush), raspberry, gooseberry, strawberry, lingonberry, kinnikinnick (bearberry), sweet pine, lodgepole pine, cedar, juniper, bear root, muskeg tea, shrubs, lichen, fungus, red willow, thistle, wild nettle, poplar (trembling aspen), sweetgrass, tree fungus, root, and bark. Other culturally important species include clasping-leaved twisted-stalk, prince's pine, horsetail, tamarack (larch), teaberry, buffalo horn lichen, mushrooms, old man's beard, hawthorn berry, scouring rush, Saskatoon berry, dog berry, mountain sage, and white fungus. The potential species of interest for harvesting and gathering occur across a range of ecosystem types.

Plant communities assessed within Chapter 13 and Chapter 14 may contain plant species that Tsuut'ina Nation members use for harvesting of plants and medicines. Given that plant species of interest do not necessarily occur within the receptor ecosystem Project VCs or are vegetation receptor VCs, broad ecosystem types identified through the Terrestrial Ecosystem Mapping (TEM) and their potential impacts were used to evaluate potential changes in harvesting and gathering for traditional purposes (Chapter 13). Table 30.7-5 identifies potential plant species of interest in relation to the broad ecosystem types in which they may predominantly occur in the Project footprint, the ATRI LSA, and the Landscapes and Ecosystems LSA as well as the potential impact to those ecosystem types with the respective study area as a result of the Project.

Several species of interest to Tsuut'ina Nation have not been documented within the Project footprint or the Landscapes and Ecosystems LSA based on the Project-specific TEM baseline surveys, and include:

- Lingonberry;
- Muskeg tea;
- Bear root;
- Cedar;
- Old man's beard;
- Hawthorn berry;
- Teaberry;
- Red willow; and
- Sweetgrass.

The above-listed species are not included in the assessment of effects to harvesting and gathering. Based on the assessment of effects to landscapes and ecosystem VCs (Chapter 13), anticipated effects to ecosystems include changes in ecosystem abundance and distribution, changes in the composition and structure of ecosystems, and change in forest patch sizes and ecosystem extents.

Table 30.7-5: TEM Broad Ecosystem Types of the Plant Species of Interest

Plant Species of Interest	Broad Ecosystem Types [1]	Total Change in Broad Ecosystem Type in Landscapes and Ecosystems LSA As a Result of the Project
Bearberry Lodgepole pine Sweet pine Gooseberry Raspberry Blueberry Huckleberry Baneberry Tamarack Saskatoon berry Trembling aspen Buffalo horn lichen Clasping-leaved twisted stalk Prince's pine Thimbleberry	Forested Site Series	Forested Sites (-10.72%)
Juniper Fireweed	Forested Site Series Grassland/Brushland Ecosystems	Forested Sites (-10.72%) Grassland/Brushland Ecosystems (-9.56%)
Wild nettle Whitebark pine	Avalanche Ecosystems Forested Site Series	Avalanche Ecosystems (-12.34%) Forested Sites (-10.72%)
Engelmann spruce Wild sarsaparilla	Forested Site Series Flood Ecosystems	Forested Sites (-10.72%) Flood Ecosystems (-0.04%)
Cranberry Blueberry Scouring rush Horsetail Dog berry Black elderberry	Wetland Ecosystems Flood Ecosystems	Wetlands (-3.40%) Flood Ecosystems (-0.04%)
Strawberry	Grassland/Brushland Ecosystems	Grassland/Brushland Ecosystems (-9.56%)
Thistle Fireweed Pearly everlasting Wild carrot	Anthropogenic Sites	Anthropogenic Sites (-1.43%)
Mountain sage	Subalpine Shrub Group	Subalpine Shrub Group (-0.00%)

Potential effects on harvesting and gathering for traditional use that may result from changes in broad ecosystem types, including:

- Potential change in access to harvest plant species or harvesting/gathering sites of interest through ecosystem and vegetation loss within the Project footprint during Construction and Pre-Production and Operations;

- Potential change in distribution of plant species and plant harvesting sites and activities as a result of changes to the abundance and distribution of ecosystems within the Project footprint as a result of Construction and Pre-Production;
- Potential change in the value of place as a result of the change in accessibility of plant species of interest within the Project footprint and the ATRI LSA throughout the Construction and Pre-Production, Operations, and Reclamation and Closure phases; and
- Potential change in the ability to know and teach the cultural and social aspects of plant and medicine gathering within the Project footprint and the ATRI LSA throughout the Construction and Pre-Production and Operations phases due to changes in vegetation quality and access to harvesting and gathering areas.

Mitigation measures have been recommended to avoid, minimize, or otherwise address potential adverse effects to the vegetation VCs that are related to the Tsuut'ina Nation's rights and interests. Specific mitigation for vegetation VCs related to the Tsuut'ina Nation can be referenced in Chapter 14.

Further, mitigation measures related to the effects of the Project on the Tsuut'ina Nation are outlined in Section 30.9 (Table 30.9-1) which presents the Indigenous Impact Management Plan that was developed in response to the concerns raised by the Tsuut'ina Nation and the identified Indigenous Communities. The mitigation presented in Section 30.9.3 may be revised or updated as a result of specific input provided by the Tsuut'ina Nation where applicable. No other technically and economically feasible mitigation measures were identified to address potential impacts to the Tsuut'ina Nation's rights and interests related to the vegetation VCs. At this time, NWP is not aware of potential future technology innovations that may help to further mitigate effects.

Project Construction and Pre-Production and Operations is anticipated to result in impacts to broad ecosystem types within the Landscape and Ecosystems LSA and Project footprint as a result of site development. Project activities, such as site clearing and grubbing, logging, and soil disturbance will remove vegetation and increase the potential for invasive plant species establishment. Based on the assessment of effects to landscapes and ecosystem VCs (i.e., avalanche chutes, grasslands, riparian habitat, old growth and mature forests, and wetland ecosystems; Chapter 13), anticipated residual effects to ecosystems within the Landscapes and Ecosystems LSA and Project footprint include changes in ecosystem abundance and distribution, changes in the composition and structure of ecosystems, and change in forest patch sizes and ecosystem extents. Similar residual effects are anticipated for some of the broad ecosystem types not considered receptor VCs, such as forested sites, floodplains, and anthropogenic sites.

Changes in broad ecosystems types and receptor ecosystem VCs that may contain plant species of interest that are harvested and gathered or areas that are accessed by Tsuut'ina Nation for harvesting and gathering may experience residual effects due to the changes in broad ecosystem types and receptor ecosystem VCs. In particular, those residual effects on landscapes and ecosystems may remove areas currently or potentially used by Tsuut'ina to harvest and gather plants. As part of Project Reclamation and Closure activities, the Project footprint will be reclaimed to similar ecosystem types to the local area and which previously existed before disturbance (Chapter 33). Approximately 785 ha will be reclaimed through site reclamation activities.

Potential residual effects to the use of lands and resources by Tsuut'ina for the harvesting and gathering is characterized as follows:

- Duration: *Long-term to Permanent*, as the loss of vegetation communities and plant species of interest within those communities, as well as access to vegetation communities, will be impacted over the long-term and potentially permanently as ecosystem recovery and reclamation may take longer than 34 years to recreate areas used for harvesting and gathering.
- Magnitude: *Low to Moderate,* as while the proportional area of habitat for potential culturally significant plants and ecosystems is exceptionally low relative to extent of lands within which harvesting and gathering may be conducted by Tsuut'ina Nation members. There is an anticipated loss of broad ecosystem types within the Landscape and Ecosystems LSA and the ATRI LSA that have the potential to include plant species of interest, including a loss of avalanche ecosystems (12.34%), forested sites (10.72%), grassland/brushland ecosystems (9.56%), wetland ecosystems (3.40%), floodplains (0.04%), and anthropogenic sites (1.43%).
- Geographic Extent: *Discrete*, as impacts to vegetation communities potentially used by Tsuut'ina for harvesting and gathering is restricted to the Project footprint.
- Frequency: *Intermittent*, as the effects to vegetated areas potentially used by Tsuut'ina are likely to be impacted mainly during Construction and Operations.
- Reversibility: *Reversible Long*-Term, as ecological restoration activities will reclaim impacted vegetation communities. Reclaimed areas, such as forested sites, will take many years to support mature forests that may support plant species of interest used for harvesting and gathering.
- Context: *Neutral*, while the opportunity to conduct traditional land and resource use within the Project footprint and the ATRI LSA is deemed important to Tsuut'ina Nation members, the Tsuut'ina Nation has not identified nor provided any information on specific sites within the Project footprint for harvesting and gathering. The Project footprint is within Tsuut'ina Nation Traditional Territory, once utilized and depended upon by Tsuut'ina Nation ancestors, and part of the rights and interests of Tsuut'ina Nation members of today. The opportunity to harvest and gather within the ATRI LSA is dependent on the location of ecosystems and plant species of interest as well as the access to these areas and changes to the Tsuut'ina Nation's accessibility for harvesting and gathering is deemed neutral due to the importance of these traditional activities to Tsuut'ina cultural and traditional identity and the importance of available lands for traditional practices (as a result of the loss of available lands for resource use in general within British Columbia and Alberta due to multiple industry and development expansions), balanced with the anticipated impact of these resources as a result of the Project and lack of site-specific information on the Project footprint related to Tsuut'ina Nation's rights and interests. The context is also deemed neutral due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional harvesting and gathering within the Project footprint at this time, as it is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Determination of Significance

Tsuut'ina Nation noted the presence of plant and wood species of cultural importance but did not identify specific areas within the Project footprint that are utilized for harvesting and gathering for traditional purposes (Appendix 30-A, Table 30.A-2). The Project is anticipated to result in long-term impacts to vegetation communities and ecosystems that may include plant species of interest or areas that are accessed to harvest and gather. Effects to vegetation communities and ecosystems are spatially limited in

nature, occurring within the Project footprint, and will be reclaimed during Reclamation and Closure as per the Ecological Restoration Plan for the Project (Chapter 33). The level of use by Tsuut'ina Nation, in particular the Project footprint and the Landscape and Ecosystems LSA, for traditional harvesting and gathering is anticipated to be low as the Tsuut'ina Nation have not provided information regarding their use of the Project footprint and there are no public documents that describe their use of the Project's area of influence. As such, the Project is not anticipated to result in the permanent loss of access or the ability to conduct traditional land and resource use related to the harvesting and gathering within the Project footprint or Landscape and Ecosystems LSA.

In consideration of the above regarding available information with respect to use by the Tsuut'ina Nation, the residual effect of the Project on the use of lands and resources for harvesting and gathering is rated as not significant.

Likelihood and Confidence

Effects that are determined to be not significant do not require a characterization of likelihood. Confidence considers the reliability of data and analytical methods used in the assessment of effects. Existing information on baseline conditions of landscape and ecosystems (receptor VCs) and broad ecosystem types within the Project footprint and Landscape and Ecosystems LSA provide sufficient data to evaluate the change in the harvesting and gathering for traditional use by Tsuut'ina Nation. Not all plant species of interest were evaluated through baseline studies conducted for VCs (i.e., landscape and ecosystem or vegetation VCs) and direct and indirect effects to individual plant species of interest are not well understood at this time. As such, the confidence of residual effects to the use of lands and resources by Tsuut'ina Nation for harvesting and gathering is considered to be moderate.

The residual effects to opportunities for harvesting and gathering will be further discussed through continued consultation with Tsuut'ina Nation, as well as through the development of potential follow-up and monitoring and adaptive management measures to implement corrective actions as necessary based on that follow-up. Thus, the continued consultation and follow-up program to be implemented is expected to improve the moderate level of confidence.

As noted earlier, while mitigation measures related to the effect of the Project on the Tsuut'ina Nation are presented in the Indigenous Impact Management Plan (Section 30.9), at this time, the Tsuut'ina Nation did not provide specific information included in Section 30.9.3 that addressed their concerns regarding plant and vegetation VC species of cultural significance related to the Tsuut'ina Nation's traditional harvesting and gathering activities.

30.7.3.2.4 Change to Change to Use of Lands and Resources for Traditional Ceremonial/Sacred Areas

The entirety of Tsuut'ina Nation's Traditional Territory is of immense cultural and traditional importance with special regard to Moose Mountain, the Crowsnest Pass, and Crowsnest Mountain. The potential general Project effects to ceremonial and sacred places that might exist within the Project footprint include:

- Potential loss of ceremonial and sacred places that might exist within the Project footprint;

- Potential change in accessibility to ceremonial and sacred places that might exist through changes in access to the Project footprint throughout the Construction and Pre-Production and Operations phases;
- Potential change in the value of place as a result of the loss or changes to ceremonial or sacred areas that might exist within the Project footprint throughout all Project phases; and
- Potential change in the ability to know and teach the cultural and social aspects of culture and history as a result of the loss or changes to ceremonial or sacred areas that might exist within the Project footprint throughout all Project phases.

As no ceremonial/sacred sites were identified by the Tsuut'ina Nation within the Project footprint (Appendix 30-A, Table 30.A-2), no potential Project-related unmitigated effects were identified, and no specific Project-related residual effects were carried forward in this assessment. Throughout background information research, Moose Mountain, the Crowsnest Pass, and Crowsnest Mountain were identified as being important areas of Physical and Cultural Heritage for the Tsuut'ina Nation (IAAC, 2021b) and are discussed further in Section 30.7.3.2.6.

30.7.3.2.5 Change to Use of Lands and Resources for Traditional Purposes: Access and Travel Routes

Ancient travel routes and landforms of cultural significance are summarized in Chapter 16. In general, travel routes have been historically known to be linked to the movement corridors of wildlife species of interest. Known or anticipated transboundary movement corridors for ungulate species of interest along the Continental Divide include the Crowsnest, Deadman, and Racehorse Passes in the eastern portion of the ATRI LSA. Movement corridors for grizzly bear include Alexander Creek, West Alexander Creek, and Grave Creek Canyon. A migratory trail area from Tsuut'ina Nation through to Small Boy Camp into the Crowsnest Pass has also been identified as being used to gather plants. Some corridors may be impacted by the Project through footprint loss (e.g., West Alexander Creek; see Section 30.7.3.2.1). Other connectivity habitats included the Michel-Alexander linkage at the southern portion of the ATRI LSA that might be utilized by the Tsuut'ina Nation for travel and access.

The general trend of north-south oriented mining and related potential disturbance along valley bottoms and some ridges potentially limits the east-west connectivity between alpine ranges. As there are no identified Project-related effects to the use of travel routes by Tsuut'ina Nation (Appendix 30-A, Table 30.A-2), no specific Project-related effects to access or travels are carried forward in this assessment.

30.7.3.2.6 Change to Physical and Cultural Heritage and Change to a Structure, Site, or Item that is of Historical, Archaeological, Paleontological, or Architectural Significance

As discussed above in Section 30.6.6.6, pre-contact archaeological artifacts are an immensely important connection between Indigenous Peoples, their ancestors, culture, history, and traditional knowledge (i.e., Physical and Cultural Heritage). As part of the Project planning process, and following preliminary findings of the Archaeological Baseline Program, the Project footprint was re-designed and consciously placed to minimize direct impacts to as many archaeological sites as possible. NWP has conducted mitigation through the redesign of the Rail Loadout to avoid impacts to suspected ancestral burials that were identified during the Baseline Archaeological Program and is continuing consultation to address any related concerns. Through consultation with the Project Archaeologist and Ktunaxa Nation Council, an

area within continuous, rolling slope situated upslope to the east-southeast of Grave Prairie was identified as a suitable revised location for the Rail Loadout. Though several relatively small-sized archaeological sites were discovered within the revised location, none of the sites contained evidence of ancestral burials.

Following the most recent conclusions of the Archaeological Baseline Program, and the current Project footprint configuration, there are 14 pre-contact archaeological sites identified within the Project footprint anticipated to be directly impacted as a result of the Project. None of the sites contain suspected ancestral burial grounds (refer to Chapter 16). There were eight pre-contact archaeological sites identified as having the potential for indirect impacts as a result of the Project. The potential residual effects to archaeological resources that might be of interest to Tsuut'ina Nation are summarized in Chapter 16. It is noted that currently none of these archaeological resources of interest have been identified by the Tsuut'ina Nation at this time.

Throughout background information research, the Crowsnest Pass and Crowsnest Mountain were identified as being important areas of Physical and Cultural Heritage for the Tsuut'ina Nation. Moose Mountain, approximately 60 km southwest of Calgary, is a culturally important area to the Tsuut'ina Nation. These locations are not carried forward in this assessment as no Project interactions or results of environmental effects on locations, are anticipated at this time due to Crowsnest Pass (14 km) being located outside of the Project footprint and at the very edge of the ATRI LSA. Crowsnest Mountain (13 km) being located outside of the ATRI LSA and within the ATRI RSA, and Moose Mountain (124 km) being located outside of the ATRI RSA (IAAC, 2021b). These important areas are separated from the Project footprint in most cases by a major mountain ridge with relatively few passes and are reasonably located far from the Project. It is not anticipated that the Project will limit ability to access these areas, and they are therefore not carried forward in this assessment.

Based on the above, the Project may result in the following effects to physical and cultural heritage:

- Potential change in the value of place as a result of the permanent loss or changes to unknown pre-contact archaeological sites that might be relevant to the Tsuut'ina Nation within the Project footprint; and
- Potential for change of physical and cultural heritage that might be relevant to the Tsuut'ina Nation, and the ability to know and teach the cultural and social aspects as a result of the loss or changes to pre-contact archaeological sites within the Project footprint throughout all Project phases.

Mitigation measures proposed to reduce adverse effects to physical and cultural heritage are generally accepted, understood, and proven to effectively reduce adverse effects on physical and cultural heritage. Mitigation measures for direct impacts and indirect impacts to archaeological resources have been identified to avoid, minimize, or otherwise address potential adverse effects to the archaeological resources that may be related to Tsuut'ina Nation's rights and interests. Through the assessment of effects and continued consultation with Tsuut'ina Nation, mitigation for physical and cultural heritage and to a structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance to the Tsuut'ina Nation may continue to be identified and implemented. Specific mitigation for archaeological resources related to the Tsuut'ina Nation can be referenced in Chapter 16.

Further, mitigation measures related to the effects of the Projecton the Tsuut'ina Nation are outlined in this chapter in Section 30.9 (Table 30.9-1) which presents the Indigenous Impact Management Plan that was developed in response to the concerns raised by the Tsuut'ina Nation and the identified Indigenous Communities. The mitigation presented in Section 30.9.4 may be revised or updated as a result of specific input provided by the Tsuut'ina Nation where applicable. No other technically and economically feasible mitigation measures were identified to address potential impacts to the Tsuut'ina Nation's rights and interests related to physical and cultural heritage and to a structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance to the Tsuut'ina Nation. At this time, NWP is not aware of potential future technology innovations that may help to further mitigate effects.

Known heritage resources (i.e., identified archaeological sites that might be relevant to the Tsuut'ina Nation) that have the potential for environmental effects as a result of the Project are considered to be important due to rarity, undisturbed condition, and spiritual implications. Due to their potential for cultural importance to the Tsuut'ina Nation and based on their (currently undefined but) potential link to Tsuut'ina Nation ancestry, the Project footprint may potentially impact Tsuut'ina Nation's physical and cultural heritage.

There are 15 pre-contact archaeological sites anticipated to be directly impacted by the Project (refer to Chapter 16), though none of these sites include ancestral burials. These resources are located in areas where adjustments to the Project footprint cannot be made. Therefore, additional mitigation in the form of salvaging these resources through a controlled, permitted, professional archaeological excavation will be required in consultation with appropriate Indigenous community representatives.

The residual effects to physical and cultural heritage and a structure, site, or item that is of historical, archaeological, paleontological, or architectural significance due to the Project footprint are characterized as follows:

- Duration: P*ermanent*, as loss of a heritage resource or site that might be relevant to the Tsuut'ina Nation related to physical and cultural heritage during Construction and Pre-Production or Operations cannot be reversed once it occurs.
- Magnitude: *High*, the potential for adverse effects to heritage resources or sites related to physical and cultural heritage that might be relevant to the Tsuut'ina Nation is high due to the amount of change relative to baseline conditions.
- Spatial Extent: *Discrete*, as only heritage resources that exist within the Project footprint will be directly impacted. These heritage resources may be of interest to the Tsuut'ina Nation based on their potential linkage to Tsuut'ina Nation ancestry.
- Frequency: *Once*, the direct loss of heritage resources related to physical and cultural heritage that may exist within the Project footprint occurs only within the Construction and Pre-Production or Operations phases of the Project.
- Reversibility: *Irreversible*, heritage resources that might be relevant to the Tsuut'ina Nation related to physical and cultural heritage that are retrieved from the Project footprint cannot be returned/reburied within the Project footprint in the same geographical context. Change of an archaeological site is irreversible.
- Context: *Low*, heritage resources of interest related to physical and cultural heritage are considered to be very important cultural resources to the Tsuut'ina Nation that link Tsuut'ina Nation members to their ancestors and cultural identities and have a low resilience to change as alterations to areas or sites of interest and significance may not adapt to effects that alter their

presence or existence. The context is also deemed low as it is expected that the Tsuut'ina Nation's ability to know and teach their way of living can continue outside of the Project footprint during all Project phases despite the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional cultural activities within the Project footprint at this time.

Determination of Significance

A significant adverse residual environmental effect on Tsuut'ina Nation physical and cultural heritage related to heritage resources is one that results in a permanent Project-related disturbance to, or destruction of, all or part of a pre-contact heritage resource considered to be of importance, to the spiritual or cultural identity of Tsuut'ina Nation that cannot be mitigated or compensated. Currently, there are no identified linkages to pre-contact archaeological sites within the Project footprint with the Tsuut'ina Nation.

The implementation of mitigation is a key element of this significance criterion. Therefore, in consideration of the above discussion, the significance threshold, the mitigation that has been implemented to date, and the mitigation that will be implemented as the Project moves forward, both under provincial regulation and authorization and through consultation with the Tsuut'ina Nation, the environmental effects of the Project on physical and cultural heritage and structures, sites, or items that are of historical, archaeological, paleontological, or architectural significance for all phases of the Project are rated not significant. The confidence of the prediction is discussed below.

Likelihood and Confidence

Effects that are determined to be not significant do not require a characterization of likelihood. Confidence considers the reliability of data and analytical methods used in the assessment of effects. The confidence in the characterization of the residual effect to physical and cultural heritage from Project development is considered to be low. With the exception of Phase IV (Alexander Creek valley - Secondary Transportation Corridor), the Utility Corridor (west of Elk River); Phase I and II clearance limits (recently defined), which are identified as requiring assessment, baseline conditions of pre-contact heritage resources within the Project footprint are relatively well established, providing sufficient data to assess the potential for direct impacts to heritage resources. The baseline information on the connection between these pre-contact heritage resources and the Tsuut'ina Nation physical and cultural heritage has not been identified based on the information available on the Tsuut'ina Nation (Appendix 30-A, Table 30.A-2). Mitigation strategies proposed to avoid or offset impacts to pre-contact heritage resources are expected to be moderate to high in effectiveness. Continued consultation activities with Tsuut'ina Nation could result in changes to the confidence of mitigation success and effectiveness based on connections to Tsuut'ina ancestry which has currently not been provided. Adaptive management measures will be developed and implemented to address corrective actions, as necessary, based on the results of consultation, and mitigation through archaeological monitoring.

No residual effects on a change in heritage resources due to other Project activities were predicted in consideration of planned mitigation. Monitoring during Construction and Pre-Production and Operations, and adaptive management, as necessary, will confirm these effects predictions and the effectiveness of mitigation, or provide information to implement adaptive corrective actions and strategies.

30.7.3.2.7 Change to Social and Health Conditions

Based on the background information research and the consultation activities with Tsuut'ina Nation to date, there are no anticipated interactions between the Project and Tsuut'ina Nation housing, transportation, or social services and education, and therefore, no unmitigated Project effects on these aspects of social and health conditions are anticipated. Tsuut'ina Nation have not to date identified that community members live either full or part time in the general vicinity of the Project footprint. It is possible that Tsuut'ina Nation members live in local towns including Sparwood and Elkford though this has not been confirmed.

There is potential for Project-related effects to health and well-being through the potential consumption of country foods (e.g., fish). The residual effects assessments resulting from the Project on air quality (Chapter 7), fish and fish habitat (Chapter 12), wildlife (Chapter 15), landscapes and ecosystems (Chapter 13), and information from the human health and ecological risk assessment (Chapter 30) were used to support an understanding of Project-related effects that have the potential to change Tsuut'ina Nation's social and health conditions.

Potential effects on Tsuut'ina Nation's social and health conditions because of the Project and related changes applicable VCs include:

- Potential change in the actual or perceived quality of fish resources for sustenance fishing/country foods within the ATRI LSA during Operations;
- Potential change in the actual or perceived quality of wildlife resources for hunting/country foods within the Project footprint and the ATRI LSA during Operations;
- Potential change in the actual or perceived quality of terrestrial plants and medicine resources for sustenance/country foods, within the Project footprint and the ATRI LSA during Operations; and
- Potential indirect disturbance, or health effects, to Indigenous land users because of changes in air quality or surface water quality (as collectively represented by the Human and Ecological Health Assessment, Chapter 22) over the course of Construction and Pre-Production, Operations, and Reclamation and Closure.

It is important to recognize, that while the incidence of crime in the ATRI LSA is not anticipated to change substantially due to the Project, it is well documented that Indigenous women, girls, and Two-Spirited peoples already experience more violence than non-Indigenous women and girls in Canada (NWAC, 2020). As the Project will not have any temporary mining camps and there is not expected to be a large influx of outsiders to the area, sex work and safety and security issues are less likely to substantially increase. Overall, potential unmitigated effects related to a change in community health and well-being are expected to be minimal. Nevertheless, some mitigation measures are recommended to minimize adverse Project effects, including disproportionate effects that vulnerable sub-populations such as Indigenous Peoples and females could face in relation to mining are addressed in the Indigenous Impact Management Plan (Section 30.9).

Further, mitigation measures related to the effects of the Project on the Tsuut'ina Nation are outlined in Section 30.9 (Table 30.9-1) which presents the Indigenous Impact Management Plan that was developed in response to the concerns raised by the Tsuut'ina Nation and the identified Indigenous Communities. The mitigation presented in Section 30.9.5 may be revised or updated as a result of specific input provided by the Tsuut'ina Nation where applicable. No other technically and economically feasible mitigation

measures were identified to address potential impacts to the Tsuut'ina Nation's rights and interests related to the change in community health and well-being. At this time, NWP is not aware of potential future technology innovations that may help to further mitigate effects.

Based on the Human Health and Ecological Risk Assessment (HHERA; Chapter 22), which encompasses changes in air quality, the overall Project-related risk to terrestrial and aquatic wildlife health is considered to be low, except for a few localized receptors within the Project footprint. As well, the overall Project-related risk to human health is also considered to be low, for both Indigenous and non-Indigenous persons. The HHERA (Chapter 22) identifies potential residual effects for identified contaminants of potential concern for wildlife and human health (e.g., arsenic, cadmium, cobalt, selenium, chromium), noting that majority of the identified contaminants of potential concern have been determined to pose a low risk to wildlife and human health. Though the risk is identified as low, there is potential for residual effects to wildlife and human health, based on the actual or perceived quality of fish and wildlife resources consumed as country foods within the Project footprint and respective VC LSAs. The HHERA (Chapter 22) was conducted specifically using the air quality and surface water quality modelling predictions, as well as data on soils and vegetation quality, to simulate the potential exposure of human and wildlife to contaminants of potential concern over the life of the mine and beyond, and in the case of cancer risks, over the lifetime of an individual.

The residual effects to social and health conditions due to the Project are characterized as follows:

- Duration: *Long-Term*, the predicted residual effects to wildlife and human health and the potential change in country foods is only associated with the Project footprint or close to the haul road, areas which will be reclaimed during Reclamation and Closure.
- Magnitude: *Low*, as the proposed Project and associated activities are considered to present a low risk to wildlife and human health and therefore a low magnitude to quality of country foods.
- Geographic Extent: *Discrete to Local*, as the low estimated risk to wildlife and human health, and low risk to country foods, is limited to the Project footprint (e.g., on or adjacent to the haul road) and the respective VC LSAs (e.g., Terrestrial LSA, Aquatic LSA).
- Frequency: *Continuous*, as the potential risk to country foods is most plausible during the operational lifetime of the mine as represented by the Operations phase; similar but less exposure/risk is plausible during other phases of the Project.
- Reversibility: *Reversible Long-Term*, as the low risk to wildlife and human health and associated country foods and consumption of country foods is diminished (mitigated) as the Project disturbance footprint is reclaimed in Reclamation and Closure as per the Ecological Restoration Plan (Chapter 33).
- Context: *Neutral*, as aquatic and terrestrial wildlife species and humans have a neutral sensitivity and resilience to the low potential exposure/risk; the low exposure risk is unlikely to adversely affect individuals or local populations and therefore an unlikely disruption to country food quality. The context is also deemed neutral due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to consume country foods within the Project footprint at this time, as it is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Determination of Significance

The residual effects of the Project on aquatic and terrestrial wildlife health and human health during all Project phases are considered not significant (Chapter 22, Section 22.5.4.3). As such, residual effects to social and health conditions due to the Project, in particular changes to the actual or perceived quality of country foods and indirect disturbance to Indigenous land users is not considered significant. The wildlife and human health risk estimates and their magnitude inherently consider operational activities, emissions, and other contaminant releases intrinsic to the predictive modelling of water quality, air quality, and secondarily food via transport, fate and food chain modelling. Given the conservative nature of the exposure/risks and proposed mitigation in Reclamation and Closure, the Project is not anticipated to result in significance adverse effects to aquatic and terrestrial wildlife or Indigenous persons.

Likelihood and Confidence

Effects from Project activities that are determined to be not significant, as in the present case, do not warrant a characterization of likelihood.

The confidence in the characterization of the residual effects to social and health conditions is considered to be moderate to high. The confidence derives from consideration of confidence in:

- Contaminant fate and transport modelling for releases to air and water which dictate exposure point concentration for exposure assessment;
- Substantive knowledge of ecological dietary/food chain relationships for exposure modelling; and
- Conservatism of assumptions that err towards overestimating rather than underestimating exposure and risk (e.g., assumptions of statistical upper-bound exposure concentrations in water, assumption of lifetime exposure scenarios).

Collectively, the above-listed practices provide moderate to high confidence that the risk estimates are not underestimated, and in the present case, an overall moderate level of confidence that the estimated health risk to aquatic and terrestrial wildlife and human health as a result of the Project is low and not significant.

30.7.3.2.8 Change to Economic Conditions

Based on the publicly available information, and the consultation activities conducted with Tsuut'ina Nation to date (Appendix 30-A, Table 30.A-2), there are no anticipated Project effects related to Tsuut'ina Nation's economic ventures such as commercial operations, forestry, or logging, and commercial fishing. Some impacts to hunting and trapping may occur and are discussed in Section 30.10.2.1.2.

There may be a modest positive effect to economic conditions through training and as part of the Construction and Pre-Production and Operations phases. There is also the opportunity for Tsuut'ina Nation members to take part in the Reclamation and Closure and Post-Closure phases with respect to follow-up and monitoring programs.

The Project can be expected to result in positive economic outcomes for employment, income, the regional and local economies, and government finances within the RSA (Chapter 17). These positive outcomes will be enhanced through training programs to maximize the hiring of local workers and from Indigenous Communities. Positive economic effects are expected to occur during all Project phases, with

the primary economic benefits occurring during Construction and Pre-production and Operations which together are expected to occur over an 18-year period.

Using a GBA+ lens, Indigenous Peoples[8] who may want and also be targeted for Project employment by NWP could face barriers related to housing availability, the cost of living, lack of childcare, and access to adequate community services. Indigenous potential employees from communities like Tsuut'ina that are not within daily commuting distance of the Project (more than 100 km away), may require housing close to the Project location. Further, given that many potential Indigenous employees may be more eligible for entry level positions in mining with resulting lower wages, in addition to transportation limitations related to commuting time, barriers such as the high cost of living and lack of local affordable housing could be even more of an issue or challenge to their participation in the Project.

NWP has committed to defining targets for a high level of Indigenous employment and prioritizing Indigenous women where applicable, reducing barriers to housing and childcare are likely critical in being able to achieve certain Indigenous employment targets. Some mitigation measures are recommended to help enhance Project benefits with Indigenous communities as well as minimize adverse Project effects, including disproportionate effects to or barriers that vulnerable sub-populations such as Indigenous peoples and females could face in relation to Project development. These include recommendations related to hiring and training to increase the proportion of Indigenous workers, and addressing affordable housing, childcare needs, shiftwork, and safety issues as outlined in this chapter and described in Chapter 18. Specific mitigation for change in economic conditions can be referenced in Chapter 17, Section 17.5.5.

Further, mitigation measures related to the effects of the Project on the Tsuut'ina Nation are outlined in Section 30.9 (Table 30.9-1) which presents the Indigenous Impact Management Plan that was developed in response to the concerns raised by the Tsuut'ina Nation and the identified Indigenous Communities. mitigation presented in Section 30.9.5 may be revised or updated as a result of specific input provided by the Tsuut'ina Nation where applicable. No other technically and economically feasible mitigation measures were considered to address potential impacts to the Tsuut'ina Nation's rights and interests related to the change in economic conditions. At this time, NWP is not aware of potential future technology innovations that may help to further mitigate effects.

30.7.3.2.9 Limitations of the Assessment of Socio-Economic Conditions

No information was provided by Tsuut'ina Nation or publicly available on the description of the following related socio-economic conditions in the ATRI LSA or the ATRI RSA:

- The use of navigable waters;
- Tsuut'ina Nation forestry and logging operations;
- Tsuut'ina Nation commercial fishing, hunting, trapping, and gathering activities;
- Tsuut'ina Nation commercial outfitters; and
- Tsuut'ina Nation recreational use including wildlife viewing.

[8] It is recognized that the housing barrier also applies to non-Indigenous peoples but given that Indigenous peoples are a vulnerable sub-population who experience severe socio-economic inequities as a collective due to historical and ongoing colonialism, as well as NWP's objective to target Indigenous peoples for employment in mining, their situation with respect to housing access and affordability warrants special consideration from a GBA+ lens.

Therefore, the changes to the environment caused by the Project that may potentially affect the above listed socio-economic conditions and their potential effects were not carried forward into the effects assessment process and no potential impacts to Tsuut'ina Nation's rights and interests are addressed. Where related information may be available regarding the socio-economic conditions identified in this section, the assessment of potential impacts on the Tsuut'ina Nation's rights and interests related to these socio-economic conditions will be address where applicable in Section 30.10.

30.7.3.3 Summary of Potential Residual Effects of the Changes to the Environment on Tsuut'ina Nation

The residual effects to Tsuut'ina Nation are summarized below in Table 30.7-6 and are reflective of the current use of lands and resources for traditional purposes by Tsuut'ina Nation as well as potential future use.

30.7.4 Cumulative Effects Assessment of the Changes to the Environment on the Tsuut'ina Nation

Cumulative environmental effects are the result of the residual environmental effects of the Project interacting with the effects of other past, present, and reasonably foreseeable future projects or activities to produce a combined/overlapping effect. Cumulative effects as a result of this Project in combination with the existence of other past, present, and reasonably foreseeable physical activities include changes to the environment. The objective of the cumulative effects assessment is to consider overlapping effects for all residual adverse effects, not only those predicted to be significant (EAO, 2013). Additional guidance used for cumulative effects assessment in general is provided in Chapter 5, Section 5.3.5. As previously noted, all information compiled and presented in Section 30.7.4 has been authored by NWP and the information presented in relation to potential Project effects is not intended to supersede traditional knowledge or specific information of the community members and Elders of Tsuut'ina Nation.

The approach for determining cumulative effects requires the following for a potential cumulative effect to occur:

- The Project results in a residual adverse environmental effect on a component of the environment that is understood to be of interest to the Indigenous Community;
- The residual Project effect interacts cumulatively with effects from other projects or activities (i.e., the effects of the Project overlap spatially and temporally with those of other projects or activities) that have been or will be carried out;
- The other projects or activities that have been or will be carried out (i.e., this does not include hypothetical information, but known future projects); and
- The cumulative effect is likely to occur.

The Impact Assessment Agency of Canada (IAAC, 2021b) has on a preliminary basis determined the depth of the duty to consult in relation to the Project to include cumulative effects assessment at the regional scale for the Tsuut'ina Nation.

Table 30.7-6: Summary of Potential Residual Effects Assessment on Tsuut'ina Nation

Residual Effect	Project Phases	Mitigation Measures	Summary of Residual Effects Characterization	Significance (Significant, Not Significant)	Confidence (High, Moderate, Low)
Change to Use of Lands and Resources for Traditional Fishing Purposes	• Construction and Pre-Production • Operations • Reclamation and Closure	See Section 30.9 and specific mitigation tables for receptor or intermediate VCs.	Duration: Short-term to Long-term Magnitude: Low to Moderate Geographic Extent: Local Frequency: Continuous Reversibility: Reversible Long-term to Irreversible Context: Neutral	Not Significant	Moderate
Change to Use of Lands and Resources for Traditional Hunting and Trapping Purposes	• Construction and Pre-Production • Operations • Reclamation and Closure	See Section 30.9 and specific mitigation tables for receptor or intermediate VCs.	Duration: Long-Term Magnitude: Low to Moderate Geographic Extent: Local Frequency: Continuous Reversibility: Reversible Long-Term Context: Neutral	Not Significant	Moderate
Change to Use of Lands and Resources for Traditional Harvesting and Gathering Purposes	• Construction and Pre-Production • Operations • Reclamation and Closure	See Section 30.9 and specific mitigation tables for receptor or intermediate VCs.and specific mitigation tables for receptor or intermediate VCs.	Duration: Long-term to Permanent Magnitude: Low to Moderate Geographic Extent: Discrete Frequency: Intermittent Reversibility: Reversible Long-Term Context: Neutral	Not Significant	Moderate
Change to Physical and Cultural Heritage and Change to a Structure, Site, or Item that is of Historical, Archaeological, Paleontological, or Architectural Significance	• Construction and Pre-Production • Operations	See Section 30.9 and specific mitigation tables for receptor or intermediate VCs.	Duration: Permanent Magnitude: High Geographic Extent: Discrete Frequency: Once Reversibility: Irreversible Context: Low	Not Significant	Low

Residual Effect	Project Phases	Mitigation Measures	Summary of Residual Effects Characterization	Significance (Significant, Not Significant)	Confidence (High, Moderate, Low)
Change to Social and Health Conditions	• Operations	See Section 30.9 and specific mitigation tables for receptor or intermediate VCs.	Duration: Long-Term Magnitude: Low Geographic Extent: Discrete to Local Frequency: Continuous Reversibility: Reversible Long-Term Context: Neutral	Not Significant	Moderate to High

Due to the extent of the Aboriginal and Treaty Rights and Interests Regional Study Area (ATRI RSA) and the potential for overlap of land and resources for traditional purposes undertaken by Shuswap Indian Band, Stoney Nakoda First Nation, Métis Nation British Columbia, Kainai First Nation, Piikani Nation, Siksika Nation, Tsuut'ina Nation, and Métis Nation of Alberta, Region 3; the cumulative effects assessments for the above-listed Indigenous Communities was undertaken using the cumulative effects assessments completed for receptor and intermediate VCs that relate to rights and interests for the Project and, where available, for other projects or activities in the ATRI RSA.

30.7.4.1 Cumulative Effects Assessment Methods

The methods for assessing potential cumulative effects on the Tsuut'ina Nation in relation to the Project followed the approach outlined in Chapter 5 and is included in Section 30.3. As noted in the assessment methods outlined in Section 30.7.2, to understand potential cumulative effects on a community's opportunity to fish in the regional area, the findings of the fish and fish habitat Valued Component cumulative effects assessment were used. Where applicable, publicly-available information specific to the Tsuut'ina Nation has been presented and incorporated into the assessment of potential cumulative effects including the *Elk Valley Cumulative Effects Assessment and Management Report* (EV-CEMF, 2018) that integrates the assessment results for five Valued Components (VCs) to serve as indicators of environmental condition and trends, and the *Cumulative Effects Assessment for Kainai First Nation* (IEG and ALCES Group, 2018) report which undertakes an assessment that includes culturally important species of interest to the Tsuut'ina Nation (i.e., ungulates).

It is important to note that the assessment of effects presented in this section is preliminary. No traditional ecological knowledge or traditional land and resource use studies had been completed specifically for the Project by Tsuut'ina Nation other than the information provided by the community members included in the site assessment study (Appendix 30-A, Table 30.A-2). To NWP's knowledge no traditional ecological knowledge or traditional land and resource use studies had been provided for the region by Tsuut'ina Nation, though consultation with Tsuut'ina Nation has informed the assessment. As such, the information provided below is based on the generally available knowledge of Indigenous use of land and resources and culture, and professional judgment. This information has been supplemented by literature sources and secondary information from past reports and EAs in the region as noted in Section 30.4.1. In this light, this chapter does not presume or replace information that may become available through further engagement of Tsuut'ina Nation or in any traditional knowledge/traditional land use study that might be conducted and/or provided that includes regional information. Future information that is received will be used to continue to refine the Project design and proposed mitigation, as appropriate.

As detailed in the Project residual effects assessments (Section 30.7.3), the Project is not anticipated to result in significant localized residual effects on the current use of lands and resources for traditional purposes (i.e., fishing, hunting and trapping, and harvesting and gathering), physical and cultural heritage, structures or sites of historical, archaeological, paleontological, or architectural significance, or social, health, and economic conditions. While not considered to be significant, given that there is potential for residual effects of the Project on Tsuut'ina Nation, an assessment of the cumulative effects is required because the residual effects of the Project may act cumulatively with the residual effects of other past, present, and reasonably foreseeable (i.e., announced) future projects and/or activities. Generally, the effects of past and present projects or activities are encompassed in the existing (baseline) conditions

relating to Aboriginal and Treaty rights and interests. Information regarding the overall cumulative effects assessment methodology for the Application/EIS is provided in Chapter 5, Section 5.3.5.4.

For the purposes of the cumulative effects assessment, residual Project effects considered in the assessment include the following, which are based largely on those enumerated in Section 5(1)(c) of CEA Act, 2012:

- Change to use of lands and resources for traditional purposes: Fishing;
- Change to use of lands and resources for traditional purposes: Hunting and trapping;
- Change to use of lands and resources for traditional purposes: Harvesting and gathering;
- Change to physical and cultural heritage and change to a structure, site, or item that is of historical, archaeological, paleontological, or architectural significance; and
- Change to social, health, and economic conditions.

The assessment of potential cumulative effects is a qualitative assessment of potential cumulative interactions between the Project's residual effects and the residual effects that may arise from other projects or activities within the ATRI RSA. A conservative approach has been used in the assessment of cumulative effects that assumes that the current and potential use of the lands and resources occurs throughout the ATRI RSA. The conservative approach was used due to NWP's continued consultation with the Tsuut'ina Nation, and additional information related to the past and current use of lands for various traditional activities continues to be discussed and confirmed.

Though no spatial or temporal overlap is anticipated to occur in conjunction with the Project's effects to archaeological resources and other reasonably foreseeable future projects and activities (because effects on archaeological resources are limited to the area of physical disturbance of a particular project, and there is no such spatial overlap between project footprints in the present case), a potential cumulative effect on physical and cultural heritage and potential changes to a structure, site, or item that is of historical, archaeological, paleontological, or architectural significance is nonetheless carried forward in the cumulative effects assessment. While Archaeological Impact Assessments were conducted for the Heritage Resources LSA, additional sites of significance within the ATRI RSA could be identified in the future that are currently unknown or undocumented and could have the potential to be impacted as a result of projects and activities, and therefore may impact the Tsuut'ina Nation.

The assessment of potential residual Project effects to the socio-community VC, based on publicly available information, indicated that no residual effects are anticipated, and as such, no cumulative effects to the socio-community as it relates to potential residual cumulative effects is presented. Similarly, the assessment of potential residual Project effects to the economic conditions VC indicated that no residual effects are anticipated, and as such, no cumulative effects to the socio-economic conditions as it relates to potential residual cumulative effects is presented. It is noted that there is potential for some positive economic conditions effects through: increase in employment opportunities and income, contribution to regional and local economies, and increased payment to government through taxes and royalty payments.

Valued Components (VCs) that have linkages to the Tsuut'ina Nation and were used in the assessment of potential cumulative effects include:

- Fish and fish habitat;

- Ungulates;
- Carnivores;
- Bird community;
- Terrestrial ecosystems;
- Vegetation;
- Land use and access;
- Heritage resources; and
- Human and wildlife health.

30.7.4.1.1 Cumulative Effects Assessment Boundaries

The assessment of cumulative effects of changes to the environment on the Tsuut'ina Nation was conducted at a regional scale using receptor and intermediate VC information, as available, within ATRI RSA. The ATRI RSA is approximately 3,193,000 ha and encompasses the VCs and VC groups in which Tsuut'ina Nation may have constitutionally protected rights to practice traditional activities, such as for fishing and hunting and gathering.

The VC study areas relevant to the assessment of cumulative effects include the following, which are encompassed within the ATRI RSA:

- Aquatic RSA;
- Terrestrial RSA;
- Landscapes and Ecosystems RSA;
- Grizzly Bear RSA;
- Terrestrial RSA;
- Birds, Bats, and Amphibians RSA;
- Socio-Community RSA;
- Economic Conditions RSA;
- Land Use and Access RSA;
- Archaeological RSA; and
- Human Health and Ecological Risk Assessment (HHERA) RSA.

Temporal, administrative, and technical boundaries used in the assessment of receptor and intermediate VCs were considered in the assessment of cumulative effects and are summarized in the relevant VC assessment chapters. These were further supported by available historical baseline conditions for cumulative effects assessment based on pre-industrial or range of natural variation conditions (IEG and ALCES Group, 2018) and reasonably foreseeable projects and/or activities in combination with the Project.

30.7.4.2 Identifying Past, Present, and Reasonably Foreseeable Projects and/or Activities

Prior to European settlement, the natural region that makes up a majority of the study area would have supported grassland-associated species such as elk and mule deer, and forest-dwelling species such as moose in the forested landscapes including the mountain valleys in the ATRI RSA (IEG and ALCES Group, 2018). Natural wildlife and fish populations would have supported traditional land use throughout the region. Since European settlement, a substantial transformation has occurred, with the regional landscape slowly converting to anthropogenic cover types and the built environment. Current changes, including effects from environmental change and industrial projects, are experienced on top of ongoing legacies

from past impacts on the ATRI RSA (IEG and ALCES Group, 2018). From the perspective of the Tsuut'ina Nation, consideration of cumulative effects in relation to the Project requires consideration of a pre-industrial baseline, and of the significance of already existing effects on Aboriginal and Treaty rights in the regional study area, as well as the additional potential effects of the Project in combination with reasonably foreseeable future projects and activities, and effects from changes in the environment (IEG and ALCES Group, 2018; Appendix 30-A, Table 30.A-2).

Past, present, and reasonably foreseeable future projects and activities have the potential to act cumulatively with the Project residual effects within the ATRI RSA and result in a potential cumulative effect. Descriptions of the past, present, and reasonably foreseeable projects and/or activities for consideration in the cumulative effects assessment are provided in Chapter 5, Section 5.3.5.3. A map showing the location of reasonably foreseeable future projects and activities relative to the ATRI RSA is presented in Figure 30.7-4. The following projects were considered as past, present projects and/or activities in the cumulative effects assessment and were included in the determination of baseline conditions:

- Natural Resource Extraction (Mining) – Past mining operations that are no longer operational include Hosmer Wheeler, Natal Ridge, Michel Creek, Sparwood Ridge, Balmer, and J-Area (Sparwood Operations), McGillivray, and Tent Mountain.
- Coal Mountain Operations – Present.
- Elkview Operations – Present.
- Line Creek Operations – Present.
- Fording River Operations – Present.
- Greenhills Operations – Present.
- Kootenay West Mine – Present.
- Elkhorn Quarry West (Windermere Mining Operations) – Present.
- Energy (Elko Dam) – Present.
- Koocanusa Reservoir – Present.
- Marten Phosphate Project – Present.
- Forestry – Forestry occurs on both private and Crown land in the Elk Valley. Timber has been harvested on private lands by several proponents, including but not limited to Tembec, Jemi Fibre Corp, and Canwel Building Materials Group (Canwel). Currently, Canwel harvests timber on privately held lands across the Elk Valley. B.C. Crown Land timber harvests occur throughout the Elk Valley and have been active since the late 1800s. The total allowable cut in the Cranbrook Timber Supply Area is approximately 900,000 cubic meters per year, before taking into account harvesting on private lands (EVCEMWG, 2018).
- Natural processes or events include geophysical events (i.e., avalanches, seismic events, and landslides) and forest fires that have occurred in the past and are occurring in the present.
- Energy (Pipelines) – FortisBC and TransCanada Energy (TC Energy) operate natural gas pipelines in the region.
- Energy (Electrical Transmission) – Several overhead transmission lines occur in the Elk Valley generally running along highways, the transmission lines intersect towns and other linear features in the area (e.g., rail, local roads, and gas pipelines).
- Transportation – Linear transportation features across the Elk Valley includes rail, roads (e.g., forestry, exploration, private, and local roads), and highways. Rail runs along major highways in the Elk Valley, servicing existing coal mines.

- Recreation and Tourism – Recreation and tourism take place in front-country and backcountry areas across the Elk Valley.
- Commercial, Residential, and Industrial Use – Lands of nearby communities used for commercial, residential, and industrial use. Includes commercial and industrial development that facilitates commerce and employment as well as areas of residential use.
- Parks and Protected Areas – Parks and protected areas occur throughout the Elk Valley and include Provincial Parks, recreation areas, and community and local parks.
- Agriculture – Agricultural lands in the Elk Valley are mainly used for farming and grazing purposes, with equine and beef livestock the most common livestock activities.

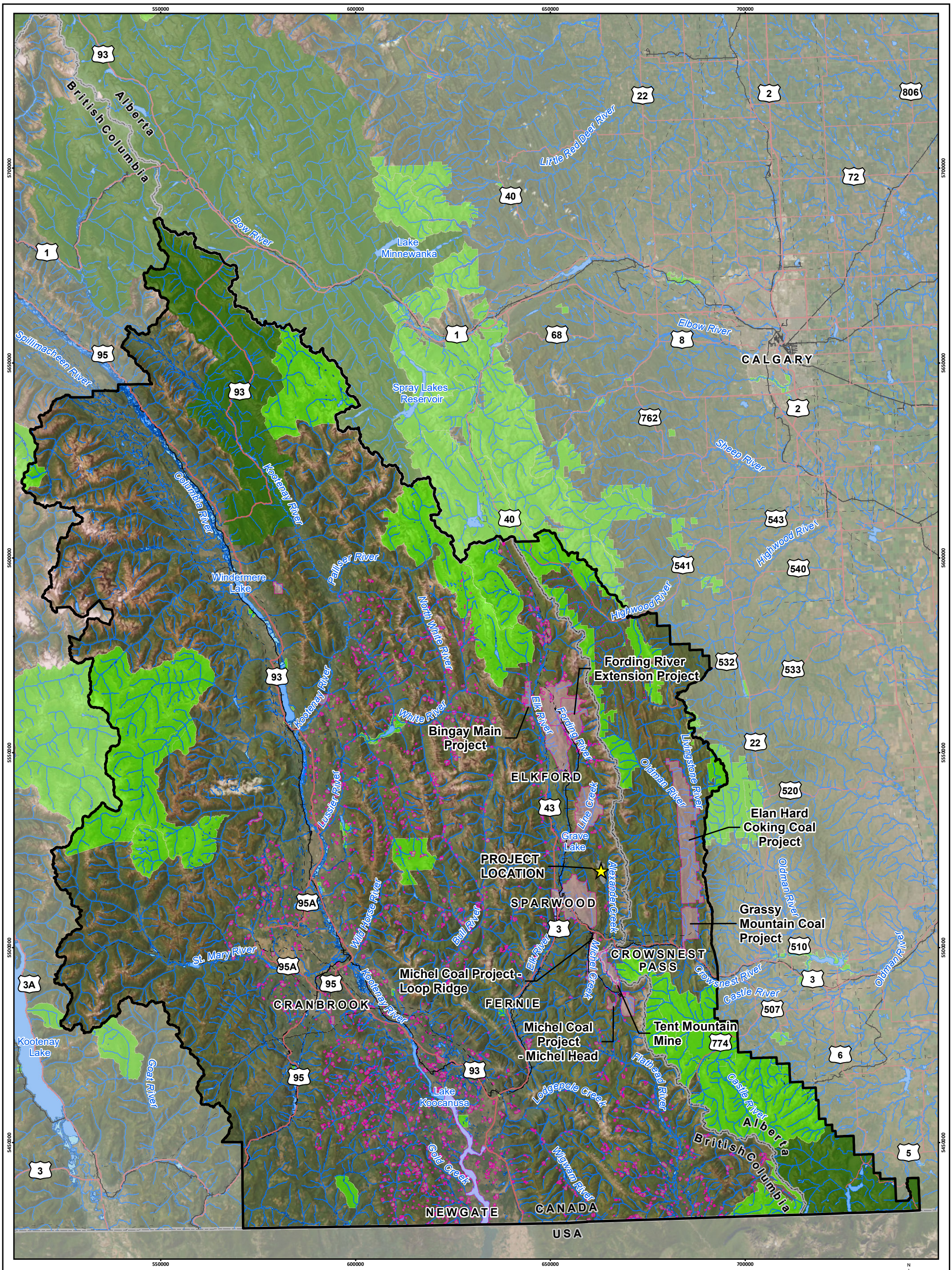
The future projects and activities identified as having a potential to interact cumulatively with the anticipated residual Project effects on Tsuut'ina Nation primarily include the currently ongoing future projects and activities that have the potential to occur in the ATRI RSA. For the purposes of the cumulative effects assessment, only reasonably foreseeable future projects and activities are considered. It is assumed that past and present projects and activities are included in the baseline information that includes historic and current use of lands and resources for traditional purposes.

Figure 30.7-5 presents a map depicting certain past, present, and reasonably foreseeable future projects and/or activities within the ATRI RSA all together as to showcase the extent of the cumulative effects on one extent with the here the extent of the cumulative effects information applicable. Reasonably foreseeable projects and activities that have the potential to act cumulatively with the Project residual effects within the ATRI RSA, and with potential Aboriginal and Treaty rights and interests include:

- Tent Mountain Mine;
- Fording River Extension Project;
- Bingay Main Project;
- Grassy Mountain Project;
- Michel Coal Project;
- Elan Hard Coking Coal Project;
- Future forestry, including use of future cutblocks;
- Climate change, including changes in extreme weather events related to precipitation, temperature, wind events, and hydrological events; and
- Natural processes or events, including geophysical events (i.e., avalanches, seismic events, and landslides) and forest fires that have occurred in the past, are occurring, or that have the potential to occur in the future.

The following projects were considered as past, present, or reasonably foreseeable future projects and/or activities but were not included in the cumulative effects assessment:

- Coal Mountain Phase 2 as the environmental assessment was placed on hold by Teck in 2016;
- Mount Brussilof (Baymag Mine) by Baymag due to no temporal overlap (TBD);
- Barns Lake Phosphate Exploration Project by Fertoz International Inc. given that the project is in exploration phase and no project has been proposed; and
- Cabin Ridge Coal by Warburton Group is in exploration and no project has been proposed.



Crown Mountain Coking Coal Project

Figure 30.7-4
Reasonably Foreseeable Future Projects and Activities in the ATRI RSA

- Reasonably Foreseeable Projects and Activities
- Aboriginal Treaty Rights and Interests Regional Study Area
- Crown Mountain Coking Coal Project
- Highway
- Railway
- Transmission Line
- Watercourse
- Waterbody
- Wetland
- Provincial Park/Protected Area
- National Park
- British Columbia/Alberta Border

0 15 30
Kilometres

Scale 1:900,000

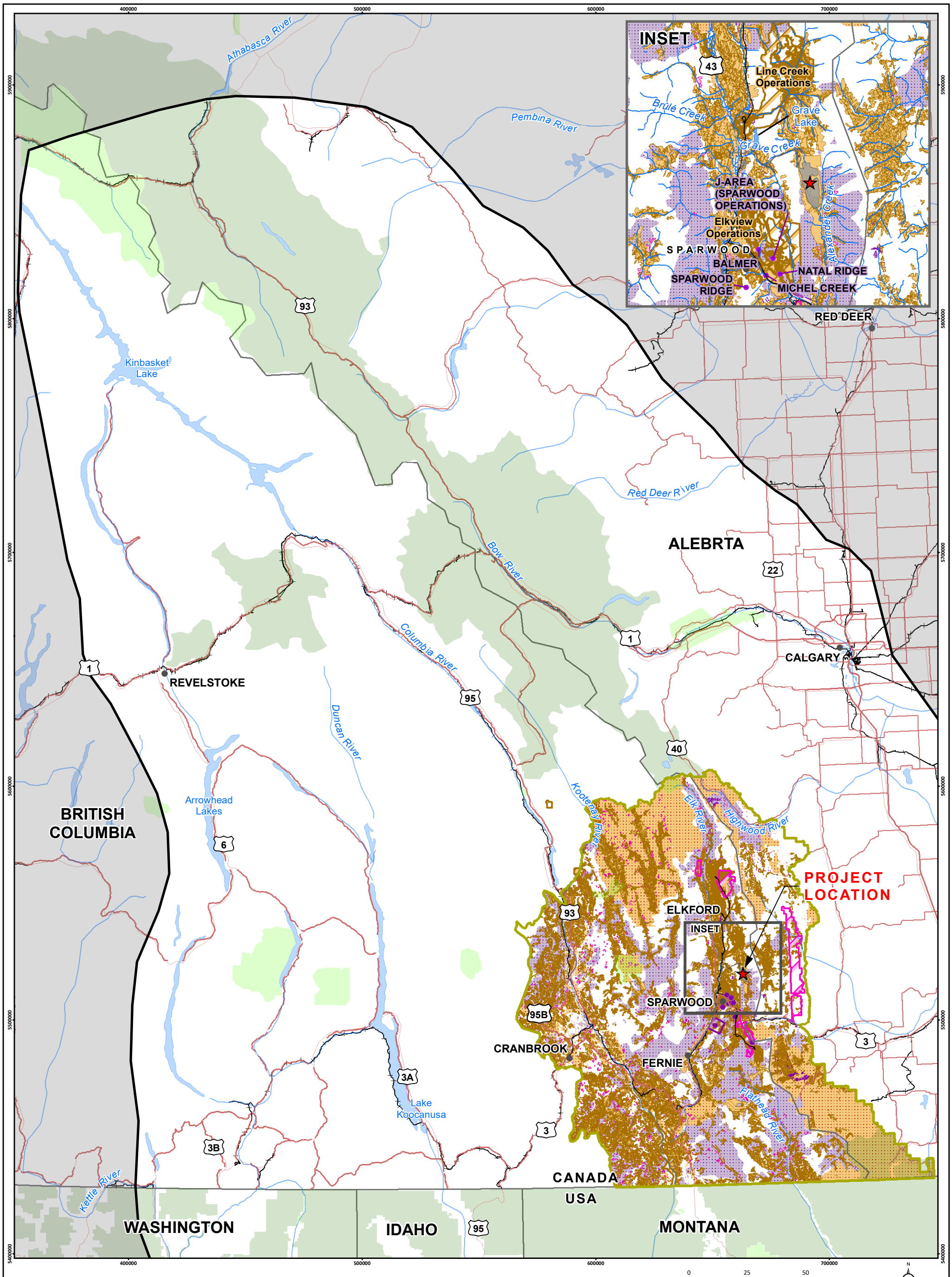
Map Drawing Information:
Data Provided By NWP Coal Canada Ltd, Dillon Consulting Limited, Province of British Columbia GeoBC Open Data, Government of Alberta Open Data, Natural Resource Canada. Imagery Provided By ESRI.

Map Created By: RB
Map Checked By: HS
Map Coordinate System: NAD 1983 UTM Zone 11N

NWP Coal Canada Ltd

Project: 12-6231
Status: FINAL
Date: 2023-07-19

Document Path: K:\126231_Crown_Mountain\EA_Report\CumulativeEffects\IndigenousInterest\126231_CE_II_PPRFFProjectActivitiesRSA.mxd



Crown Mountain Coking Coal Project

Figure 30.7-5
Certain Past, Present, and Reasonably Foreseeable Future Projects and Activities in the ATRI RSA

- Past Project
- Past Projects and Activities
- Present Projects and Activities
- Reasonably Foreseeable Future Projects and Activities
- Retired Cutblocks
- Present Forest Activities
- Reasonably Foreseeable Future Forestry Activities
- Present Activities
- Past Wildfire Extents (1919-2021)
- Extent of Cumulative Effects Data
- Ktunaxa Nation Traditional Territory
- Project Footprint
- City/Town
- Highway
- Railway
- Watercourse
- Waterbody
- Provincial/State/Local Park
- National Park
- Province/State Boundary

0 25 50
Kilometres

Scale 1:1,500,000

Map Drawing Information:
Data Provided By NWP Coal Canada Ltd, Dillon Consulting Limited, Province of British Columbia GeoBC Open Data, Government of Alberta Open Data, Natural Resource Canada, ESRI Basedata, Ktunaxa Nation.

Map Created By: RB/LMM
Map Checked By: MN
Map Coordinate System: NAD 1983 UTM Zone 11N

NWP Coal Canada Ltd

Project: 12-6231
Status: FINAL
Date: 2023-07-19

A cumulative effects assessment was completed for each VC that corresponds to Tsuut'ina Nation as outlined in Section 30.3.3.4, including fish and fish habitat (Chapter 12), wildlife and wildlife habitat (Chapter 15; i.e., ungulates, carnivores, and birds), terrestrial ecosystems (Chapter 13), vegetation (Chapter 14), land use and access (Chapter 19), heritage resources (Chapter 16), and human and wildlife health (Chapter 22). Section 30.4.3 identifies the effects of past and present projects or activities that have been carried out and generally reflects those in the existing baseline environment; in other words, the contributions of past and present projects and activities are normally encompassed in the baseline conditions established for the Project. Therefore, in most cases, it was more appropriate and logical to consider the overlap of the effects of the Project and those of past and present projects and/or activities in the Project-related effects assessment for each VC (with the Project effects contributing to a change in those baseline conditions), and to focus the cumulative effects assessment on the effects of reasonably foreseeable projects or activities.

The assessment and evaluation of the cumulative effects of the Project in combination with past, present, and reasonably foreseeable future projects and/or activities considered the nature and degree of change from baseline conditions due to both the Project and the other projects and/or activities.

30.7.4.3 Identification of Potential Cumulative Effects of Changes to the Environment on Tsuut'ina Nation

The potential effects of the Project have the potential to act cumulatively with reasonably foreseeable future projects and/or activities as such, may result in cumulative effects on VCs that relate to changes to the environment on the Tsuut'ina Nation, as outlined above. Based on the significance determination undertaken for each VC related to Tsuut'ina Nation and identified in their relevant chapters in the Application/EIS, no significant adverse cumulative effects were anticipated for VCs or VC groups.

It is noted that the Impact Assessment Agency of Canada (IAAC) has indicated that the duty to consult with Tsuut'ina Nation based on IAAC's understanding of Tsuut'ina Nation as outlined in Section 30.5.4 (IAAC, 2021b). In addition, while Tsuut'ina Nation has not provided specific information on their use of land and waterways in the Project footprint and the ATRI LSA, given the information that is available at this time (Appendix 30-A, Table 30.A-2), it is anticipated that the ATRI RSA does have potential for use by Tsuut'ina Nation for various traditional activities. Further, their possible use of the area may be impacted by past and present activities and other projects. In the absence of specific information on use of land being provided by Tsuut'ina Nation, much of the description of possible cumulative residual effects on the change to use of lands and resources for traditional purposes in Section 30.7.4.4 is speculative. As noted earlier, a conservative approach has been taken to account for the lack of information provided by Tsuut'ina Nation with respect to the cumulative impact on their rights and interests.

The assessment of potential residual cumulative effects for VCs or VC groups related to Tsuut'ina Nation are summarized as follows:

- Fish and Fish Habitat: The Project has the potential to result in impact to fish and fish habitat from instream habitat loss as a result of mine development, habitat loss due to changes in water quantity, changes in water quality, changes in streambed structure, and riparian disturbance. The Project will not contribute to significant residual effects due to incremental loss of fish habitat through mine development, changes in water quantity, changes in streambed structure, or riparian disturbance in the ATRI RSA, since all habitat losses anticipated to occur as a result of the

Project will be compensated for through measures to enhance, restore, and create fish habitat in the Elk Valley, resulting in no residual effect. Changes in water quality as a result of the Project will be mitigated through Project design and Project- effects and are not anticipated to extend beyond the Fish and Fish Habitat LSA. Changes in water quality as a result of the Project were found to be a localized effect; therefore, no potential ATRI RSA-scale interaction with fish and fish habitat is anticipated to occur. The Project in combination with other reasonably foreseeable future projects and activities is not anticipated to cause the "death of fish by means other than fishing" or the "harmful alteration, disruption, or destruction" (HADD) of fish habitat, as direct habitat losses will be compensated for through offsetting in the Aquatic RSA. The residual cumulative effects to fish and fish habitat were considered to be not significant. The potential residual cumulative effects to the change to use of lands and resources for traditional fishing purposes resulting from the Project in combination with other reasonably foreseeable future projects and activities are described in Section 30.7.4.4.1.

- Wildlife and Wildlife Habitat: The Project as the potential to result in impacts to wildlife and wildlife habitats. The wildlife cumulative effects assessment for ungulates, carnivores, aquatic mammals, waterfowl, and birds identified the potential cumulative effects from habitat loss and alteration, sensory disturbance, disruption to movements (for ungulates and carnivores) and increased mortality risk (for ungulates and carnivores). The Project will contribute to incremental loss of habitat for some species in the ATRI RSA, though the amount contributed by the Project is small and the total amount in combination with other reasonably foreseeable future projects and activities is considered to be low (Chapter 15). Similarly, the Project may contribute to further loss of habitat due to avoidance for species that are sensitive to noise, though the amount contributed by the Project is not significant and the total amount in combination with other reasonably foreseeable future projects and activities is anticipated to be low. The Project and other reasonably foreseeable future projects and activities may block ungulate and carnivore movements to varying degrees. Ungulate and carnivore movements are geographically separated from the Project such that additive barriers with the Project are unlikely. Increased density of roads can result in increased risk of mortality due to hunter access and collisions with vehicles. Road density is predicted to decline in the regional area and increased mortality risk is not expected. The Project, in combination with other reasonably foreseeable future projects and activities, would not limit the ability of ungulates, carnivores, and birds to persist and maintain self-sustaining populations in the VC-specific regional study areas (i.e., Terrestrial RSA, Grizzly Bear RSA) (Chapter 15). The residual cumulative effects to these species were therefore considered to be not significant. The potential residual cumulative effects to the change to use of lands and resources for traditional hunting and trapping purposes resulting from the Project in combination with other reasonably foreseeable future projects and activities are described in Section 30.7.4.4.2.
- Landscapes and Ecosystems/Vegetation: The Project as the potential to result in impacts to landscapes, ecosystems, and vegetation. The landscapes and ecosystems cumulative effects assessment considered potential residual effects of the Project interacting with reasonably foreseeable future projects and activities to affect the abundance and distribution as well as composition and structure for avalanche chutes, riparian habitat, grasslands, old and mature forest, and wetland ecosystems as well as vegetation. Generally, the potential effects of dust, spills/releases, weeds, and other related sources of impact affecting the composition and structure of ecosystems were all found to be mitigated through the implementation of standard

industry practices such that associated residual effects were not anticipated to occur. The potential Project residual effects, combined with reasonably foreseeable future projects and activities, anticipated change in abundance and distribution of each landscapes and ecosystems VCs. The potential residual cumulative changes in abundance and distribution of the landscapes and ecosystem VCs were characterized to be of moderate magnitude for some VCs in the Landscapes and Ecosystems RSA; none were assessed to be significant. The Project was not found to have a disproportionately high contribution to the anticipated cumulative effects on VCs of landscapes and ecosystems. Similar to that identified for landscapes and ecosystems, potential residual cumulative effects to whitebark pine were anticipated to occur through mortality and loss of habitat, and were assessed to be significant overall, particularly in consideration of the contribution of white pine blister rust to regional rates of mortality. The Project and other reasonably foreseeable future projects or activities directly overlap with approximately 14% of potential whitebark pine critical habitat in the Landscapes and Ecosystems RSA, but the Project contribution to that loss is approximately 2%, proportional to its contribution to the overall footprint of other reasonably foreseeable future projects or activities (i.e., less than 3%), and therefore was considered to be not significant. The potential residual cumulative effects to the change to use of lands and resources for traditional harvesting and gathering purposes resulting from the Project in combination with other reasonably foreseeable future projects and activities are described in Section 30.7.4.4.3.

- Heritage Resources: At this time, no spatial or temporal overlap of the Project's effects in combination with the effects of other past, present, or reasonably foreseeable future projects or activities is known to occur within the ATRI RSA. There is potential for physical and cultural heritage resources and structures, sites, or things of historical, archaeological, paleontological, or architectural significance to be located with the ATRI RSA and overlap with the other future projects and activities. The locations of these resources and sites are unknown at this time at a regional scale. It is anticipated that planned mitigation for current and future projects and activities includes identification of heritage resources prior to the development of projects and activities, as well as the commitment to implement mitigation in consultation with potentially impacted Indigenous Communities. Archaeological resources and sites are protected by the *Heritage Conservation Act* through designation as "provincial heritage sites", or through automatic protection by virtue of being of particular historic or archaeological value (FLNRORD, 2021). Protected archaeological sites may not be altered (i.e., changed in any manner) without a permit issued by the Minister or designate. The residual cumulative effects on heritage resources were therefore considered to be not significant. The potential residual cumulative effects to the change to physical and cultural heritage resources and structures, sites, or things of historical, archaeological, paleontological, or architectural significance resulting from the Project in combination with other reasonably foreseeable future projects and activities are described in Section 30.7.4.4.4.
- Human and Ecological Health: The assessment of potential cumulative effects to terrestrial and aquatic wildlife health concluded that there are no significant residual cumulative effects and that the cumulative exposure is largely reflective of the exposures documented for the Project scenarios. The wildlife and human health risk estimates and their magnitude inherently consider operational activities, emissions, and other contaminant releases intrinsic to the predictive modelling of water quality, air quality, and secondarily food via transport, fate and food chain modelling. Terrestrial wildlife health risk is negligible, low (and likely to be negligible due to

conservatism of the assessment), or in isolated instances (e.g., masked shrew), moderate to high but not ecologically significant due to geographic locations of the exposure scenario within the mine footprint or adjacent to the mine haul road. With regard to aquatic health, the health risk was considered in most cases either negligible, low (and likely to be negligible due to conservatism of the assessment), or in isolated instances, moderate and geographically isolated to short reaches of immediate receiving waters at the mine footprint. The overall cumulative effects related to human health risk, including conservative risk estimates conducted specifically for a hypothetical First Nations receptor[9], were considered to be low to negligible. The results of the cumulative effects assessment indicated that there were no significant residual cumulative effects to ecological or human health anticipated because of the Project in combination with other past, present, and reasonably foreseeable future projects or activities. The potential residual cumulative effects to the change to social, health, and economic conditions resulting from the Project in combination with other reasonably foreseeable future projects and activities are described in Section 30.7.4.4.5.

30.7.4.4 Potential Residual Cumulative Effects of the Changes to the Environment on Tsuut'ina Nation

Within the ATRI RSA, lands have experienced and are experiencing past disturbances as a result of mining, forestry, agricultural/commercial/residential development, and natural disturbances (e.g., avalanches, forest fires). Based on the results of the relevant VC potential residual cumulative effects assessments and in consideration of potential regional mitigation measures as well as the requirements of Section 5(1)(c) of CEA Act, 2012, potential residual cumulative effects are anticipated to occur as they relate to:

- The use of lands and resources for traditional purposes (i.e., fishing, hunting and trapping, harvesting and gathering);
- Physical and cultural heritage, and structures, sites, or things of historical, archaeological, paleontological, or architectural significance; and
- Social, health, and economic conditions.

Though potential residual cumulative effects to VC or VC groups that may be of interest to Tsuut'ina Nation and their Aboriginal and Treaty rights and interests are not assessed as significant, a conservative approach to the assessment of residual cumulative effects on Aboriginal and Treaty rights and interests indicates residual cumulative effects may occur. Residual cumulative effects assessments for potential cumulative effects on Aboriginal and Treaty rights and interests are presented in Sections 30.7.4.4.1 to 30.7.4.4.5.

30.7.4.4.1 Change to Use of Lands and Resources for Traditional Fishing Purposes

Within the ATRI RSA, potential residual cumulative effects to fish and fish habitat, in particular species such as Bull Trout that may be of interest to Tsuut'ina Nation for fishing, may occur as a result of the construction and operations of present and reasonably foreseeable future projects and activities. Potential residual cumulative effects on fish and their habitat within the ATRI RSA could include instream habitat loss as a result of future developments and changes in water quantity, changes in water quality, changes in streambed structure, and riparian disturbance. Specific to the Project, direct habitat losses will

[9] The First Nations receptor was modelled as being present at each of the receptor locations for 100% of their lifetime and exposed to Project effects throughout all Project phases using conservative high percentage of country foods and water sourced directly from the LSA throughout that lifetime.

be compensated for through offsetting in the Aquatic RSA and no significant residual cumulative effects to fish VCs are anticipated. Climatic changes in the regional area could change the habitat available to species fished within the ATRI RSA, for example through increased water temperatures limiting geographic distribution. As well, climatic changes may result in hydrologic changes, changes in channel morphology, and increased spread of invasive species. Given the potential for cumulative effects on fish habitat and disturbance to fish species potentially used by Tsuut'ina Nation for fishing as a result of past, present, and reasonably foreseeable future projects and activities, the potential residual cumulative effects to fishing within the ATRI RSA were evaluated.

The potential residual cumulative effects to the use of lands and resources for fishing arising from the effects of the Project in combination with the effects of other past, present, and reasonably foreseeable future projects or activities are characterized as follows:

- Duration: *Long-Term*, as the opportunity to fish within the ATRI RSA may be affected by fish habitat loss, which will be reclaimed within the ATRI RSA through offsetting and reclamation and post-closure activities of reasonably foreseeable future projects and activities.
- Magnitude: *Moderate*, as the changes in fish and fish habitat are not expected to result in changes in the opportunity by Tsuut'ina Nation to fish within the ATRI RSA.
- Geographic Extent: *Regional*, as potential effects to the opportunity to fish will be limited to the respective footprints of the Project and those of other reasonably foreseeable future projects and activities within the ATRI RSA.
- Frequency: *Continuous,* as the effects to fish and fish habitat have the potential to occur until habitat is reclaimed or offset, resulting in changes to the opportunity to fish over the course of reasonably foreseeable future projects and activities until reclamation occurs.
- Reversibility: *Reversible Long-Term*, changes in the opportunity to fish are anticipated to be reversible as the respective footprints of the Project and those of other reasonably foreseeable future projects and activities are reclaimed and off-site aquatic compensation is achieved.
- Context: *Neutral*, as opportunities to fish are present within several watercourses in the ATRI RSA, and many of these watercourses have been previously disturbed by human activities (e.g., Elk River and mining activities). The ATRI RSA overlaps with several Indigenous Communities' Traditional Territories and as such, changes in the accessibility to fish may impact the ability to undertake cultural and traditional practices for community members and the importance of available lands for traditional practices. The context is also deemed neutral due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional fishing within the Project footprint at this time, as it is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Determination of Significance of Residual Cumulative Effects

As previously noted in Chapter 12, Section 12.6.1, instream habitat loss due to mine design and development and changes in streambed structure have the potential to interact with other reasonably foreseeable future projects and activities in the Aquatic RSA. Habitat losses in tributaries of the Elk River are expected to occur as other coal mining projects are developed. These losses could include both direct habitat loss due to mine design and development, and indirect losses due to changes in flows. Habitat losses from other reasonably foreseeable future projects are anticipated to be compensated following DFO's strategy for offsetting instream habitat losses that result from HADD. As such, while there may be

a measurable change in fish habitat availability locally in some tributaries that will be in addition to the habitat losses expected from the Project in West Alexander Creek, a net loss of fish habitat in the Aquatic RSA is not expected, provided that compensation habitat is developed as required by regulatory habitat loss restrictions under the *Fisheries Act*. Due to the lack of information available on the Tsuut'ina Nation's use of the Project footprint and the ATRI LSA for fishing, the Project's contribution to residual cumulative effects on changes to fish and fish habitat is not anticipated to reduce the ability and opportunity of the Tsuut'ina Nation to practice their Aboriginal and Treaty rights and interests related to fishing within the ATRI RSA.

A net loss of habitat is not expected in the Aquatic RSA due to reasonably foreseeable future projects and activities. The Project, in combination with other reasonably foreseeable future projects and activities, is not anticipated to result in the harmful alteration, disruption, or destruction of fish habitat or the death of fish by means other than fishing, since direct habitat losses and direct mortality will be compensated by habitat offsetting measures in the Aquatic RSA such that no residual effect remains. In consideration of this and the mitigation and offsetting activities that may occur as part of the development of reasonably foreseeable future projects and activities, and information currently available on the current and potential use of lands and resources within the ATRI RSA for fishing, the potential residual cumulative effects to fishing arising from the Project in combination with other past, present, and reasonably foreseeable future projects and activities during all phases are anticipated to be not significant. The Project's contribution to residual cumulative effects on changes to fish and fish habitat is not anticipated to reduce the ability and opportunity of Tsuut'ina Nation to practice their Aboriginal and Treaty rights and interests related to fishing within the ATRI RSA. The potential cumulative impacts to the Tsuut'ina Nation's rights and interests of the residual cumulative effect on traditional fishing are discussed further in Section 30.10.2.1.1.

Likelihood and Confidence

Effects that are determined to be not significant do not require a characterization of likelihood. Fish and fish habitat conditions of relevant fish species of interests (e.g., Bull Trout), including their ecology, habitat availability and distribution, and occurrence and abundance, are well understood at the scale of the Aquatic RSA; some uncertainty does exist for fish population trends. In addition, not all aquatic systems and fish species that may be of interest to Tsuut'ina Nation were evaluated at the scale of the ATRI RSA. At this time, the full extent of aquatic systems that are used by fish species of interest and accessed by Tsuut'ina Nation for fishing historically and currently or that could be used in the future are not well understood within the ATRI RSA as Tsuut'ina Nation did not include this information in the site assessment study that Tsuut'ina Nation provided (Appendix 30-A, Table 30.A-2). Uncertainty also exists regarding the implications of regional climatic changes that may impact fish habitat availability. As such, the confidence of residual cumulative effects to the use of lands and resources for fishing is considered to be low.

NWP is committed to further discussions with Tsuut'ina Nation to understand current and potential use of lands within the ATRI RSA for fishing, in order to improve the level of confidence in this prediction.

30.7.4.4.2 Change to Use of Lands and Resources for Traditional Hunting and Trapping Purposes

Within the ATRI RSA, potential residual cumulative effects to wildlife and wildlife habitat, in particular ungulates, carnivores, and birds that may be of interest to Tsuut'ina Nation for hunting and trapping, may occur as a result of the construction and operations of present and reasonably foreseeable future projects and activities. Potential residual cumulative effects on wildlife and their habitat within the ATRI RSA could

include habitat loss and alteration, sensory disturbance, disruption to movements (for ungulates and carnivores), and increased mortality risk (for ungulates and carnivores); the Project in combination with other reasonably foreseeable future projects and activities would not limit the ability of ungulates, carnivores, and birds to persist and maintain self-sustaining populations, and no significant residual cumulative effects to these VC groups are anticipated. Climatic changes in the regional area could change the habitat available to species hunted and trapped within the ATRI RSA. Given the potential for cumulative effects on wildlife habitat and disturbance to species used by Tsuut'ina Nation for hunting and trapping as a result of past, present, and reasonably foreseeable future projects and activities, potential residual cumulative effects to hunting and trapping within the ATRI RSA were evaluated.

Potential residual cumulative effects to the use of lands and resources for hunting and trapping arising from the effects of the Project in combination with the effects of other past, present, and reasonably foreseeable future projects or activities are characterized as follows:

- Duration: *Long-term to Permanent*, as the opportunity to hunt and trap within the ATRI RSA may be affected by wildlife habitat loss which will be reclaimed within the ATRI RSA through reclamation and post-closure activities on future projects and activities. Reclaimed areas like forests may not be fully reclaimed until after post-closure periods for the reasonably foreseeable future projects and activities. Sensory disturbance to wildlife species of interest and Tsuut'ina Nation who may hunt and trap in a specific area of the ATRI RSA near future projects and activities may experience changes in sensory conditions as a result of future projects and activities over the course of operational activities. Increased mortality is anticipated to occur to the end of reclamation and closure phases for reasonably foreseeable future projects and activities.
- Magnitude: *Low*, as the changes in wildlife habitat and the movement of species is not expected to result in changes in the opportunity to hunt and trap within the ATRI RSA, and the sustainability of wildlife populations is not expected to be affected.
- Geographic Extent: *Regional*, as potential effects to the opportunity to hunt and trap will be limited to the respective footprints of the Project and those of other reasonably foreseeable future developments within the ATRI RSA.
- Frequency: *Continuous,* as the effects to wildlife and wildlife habitat have the potential to occur until habitat is reclaimed as part of reclamation activities, resulting in changes to the opportunity to hunt and trap over the course of future projects and activities until reclamation of the landscape occurs.
- Reversibility: *Reversible Long-term to Irreversible*, as ecological restoration activities anticipated to occur through reclamation strategies associated with the Project and past, present, and reasonably foreseeable future projects and activities will result in reclaimed wildlife habitat and areas potentially accessed for hunting and trapping. If areas used for hunting and trapping can no longer be accessed due to developments, there is a potential for the change in access to be irreversible.
- Context: *Neutral*, as the opportunity to hunt and trap within the ATRI RSA is dependent on access to self-sustaining wildlife populations and appropriate wildlife habitat. The ATRI RSA overlaps with several Indigenous Communities' Traditional Territories, and as such, changes in the accessibility to hunt and trap may impact the ability to undertake cultural and traditional practices for community members and the importance of available lands for traditional practices. The context is also deemed neutral due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional hunting and trapping within the Project

footprint at this time, as it is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Determination of Significance of Residual Cumulative Effects

The Project, in combination with other reasonably foreseeable future projects and activities, is not anticipated to limit the ability of ungulates, carnivores, and birds to persist and maintain self-sustaining populations in the VC-specific regional study areas (i.e., Terrestrial RSA). In consideration of this and mitigation and reclamation activities that may occur as part of the development of reasonably foreseeable future projects and activities, and the information currently available on the current and potential use of lands and resources within the ATRI RSA for hunting and trapping, the potential residual cumulative effects to the use of land and resources for the traditional purpose of hunting and trapping arising from the Project in combination with other past, present, and reasonably foreseeable future projects and activities during all phases are anticipated to be not significant. Due to the lack of information available on the Tsuut'ina Nation's use of the Project footprint and the ATRI LSA for hunting and trapping, the Project's contribution to residual cumulative effects on changes to wildlife and wildlife habitat is not anticipated to reduce the ability and opportunity of Tsuut'ina Nation to practice Aboriginal and Treaty rights and interests related to hunting and trapping within the ATRI RSA. The potential cumulative impacts to the Tsuut'ina Nation's rights and interests of the residual cumulative effect on traditional hunting and trapping activities are discussed further in Section 30.10.2.1.2.

Likelihood and Confidence

Effects that are determined to be not significant do not require a characterization of likelihood. Wildlife and wildlife habitat conditions within the regional study areas of relevant wildlife species of interests (e.g., ungulates), including their ecology, habitat availability and distribution, and occurrence and abundance, are well understood at the scale of the VC regional study areas (e.g., Terrestrial RSA); , some uncertainty does exist for wildlife species population trends. In addition, not all wildlife species that may be of interest were evaluated at the scale of the ATRI RSA. At this time, the full extent of lands that are used by wildlife species of interest and lands accessed by Tsuut'ina Nation for hunting and trapping historically and currently or that could be used in the future is not well understood within the ATRI RSA, as Tsuut'ina Nation did not include this information in the site assessment study that Tsuut'ina Nation provided (Appendix 30-A, Table 30.A-2). Uncertainty also exists regarding the implications of regional climatic changes that may impact wildlife habitat availability. As such, the confidence of residual cumulative effects to the use of lands and resources for hunting and trapping is considered to be low.

NWP is committed to further discussions with Tsuut'ina Nation to understand current and potential use of lands within the ATRI RSA for hunting and trapping, in order to improve the level of confidence in this prediction.

30.7.4.4.3 Change to Use of Lands and Resources for Traditional Harvesting and Gathering Purposes

Potential Project residual effects on terrestrial ecosystems and vegetation VCs that may be of relevant to Indigenous harvesting and gathering have the potential to interact cumulatively with past, present, and reasonably foreseeable future projects and activities within the ATRI RSA. The assessment of potential residual cumulative effects for landscapes and ecosystems VCs and vegetation VCs concluded no significant residual cumulative effects. At this time, specific areas of harvesting and gathering are

unknown within the ATRI RSA. The residual cumulative effects assessment considers the potential for current and future use within the ATRI RSA and the various landscapes and ecosystems that cover this area. Changes in climatic conditions, including higher annual precipitation and increases in average annual air temperatures (EV-CEMF, 2018), may alter the abundance and distribution of plant communities in the Elk Valley, resulting in impacts to the Tsuut'ina Nation's harvesting and gathering activities.

The residual cumulative effects to the use of lands and resources for harvesting and gathering arising from the effects of the Project in combination with the effects of other past, present, and reasonably foreseeable future projects or activities, are characterized as follows:

- Duration: *Long-term to Permanent*, as the loss of vegetation communities and plant species of interest used in harvesting and gathering, as well as the opportunity to access harvesting and gathering areas, may be impacted as a result of the construction of reasonably foreseeable future projects and activities. Reclamation activities may reclaim impacted communities over the long-term and re-establish areas potentially used for harvesting and gathering.
- Magnitude: *Moderate*, the Project acting cumulatively with past, present, and reasonably foreseeable projects and activities will result in the loss of terrestrial ecosystems and plant species that may be of interest to Tsuut'ina Nation' harvesting and gathering practices, but the sustainability of populations and ecosystems is not expected to be affected.
- Geographic Extent: *Regional*, as the loss of terrestrial ecosystems that may be accessed and used for harvesting and gathering will be limited to the respective footprints of the Project and those of other reasonably foreseeable future developments within the ATRI RSA.
- Frequency: *Once to Intermittent,* as the removal of vegetation potentially used for harvesting and gathering will occur during the construction of reasonably foreseeable future projects and activities (e.g., site clearing activities); climatic changes may result in alteration of vegetation communities sporadically over the long-term.
- Reversibility: *Reversible Long-term to Irreversible*, as ecological restoration activities anticipated to occur through reclamation strategies associated with the Project and past, present, and reasonably foreseeable future projects and activities will result in reclaimed terrestrial ecosystems and vegetation communities potentially accessed and used for harvesting and gathering. If areas used for harvesting and gathering can no longer be accessed due to developments, there is a potential for the change in access to be irreversible.
- Context: *Neutral*, as the opportunity to harvest and gather within the ATRI RSA is dependent on the location of ecosystems and plant species of interest as well as the access to these areas. The ATRI RSA overlaps with several Indigenous Communities' Traditional Territories, and as such, changes in the accessibility to harvest and gather may impact the ability to undertake cultural and traditional practices for community members and the importance of available lands for traditional practices. The context is also deemed neutral due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional harvesting and gathering within the Project footprint at this time, as it is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Determination of Significance of Residual Cumulative Effects

In consideration of mitigation measures and reclamation activities that may occur as part of development of reasonably foreseeable future projects and activities and information currently available on the current and potential use of lands and resources within the ATRI RSA for harvesting and gathering, the potential

residual cumulative effects on the use of land and resources for the traditional purpose of harvesting and gathering arising from the Project in combination with other past, present, and reasonably foreseeable future projects and activities during all phases are anticipated to be not significant. Due to the lack of information available on the Tsuut'ina Nation's use of the Project footprint and the ATRI LSA for harvesting and gathering, the Project's contribution to residual cumulative effects on changes in landscapes and ecosystems and relevant vegetation VCs is not anticipated to reduce the ability and opportunity for Tsuut'ina Nation to practice their rights and interests related to harvesting and gathering within the ATRI RSA. The potential cumulative impacts to the Tsuut'ina Nation's rights and interests of the residual cumulative effect on traditional harvesting and gathering activities are discussed further in Section 30.10.2.1.3.

Likelihood and Confidence

Effects that are determined to be not significant do not require a characterization of likelihood. The full extent of loss of lands that are used by Tsuut'ina Nation for harvesting and gathering historically and currently or that could be used in the future is not well understood within the ATRI RSA as Tsuut'ina Nation did not include this information in the site assessment study that Tsuut'ina Nation provided (Appendix 30-A, Table 30.A-2). In conjunction with this, the full extent of loss to landscapes and ecosystems and vegetation species of interests associated with past, present, and reasonably foreseeable future projects and activities cannot be accurately predicted based on the scale and availability of the information publicly available at this time and will continue to be refined as engagement with Tsuut'ina Nation on this Project is continued. As such, the confidence of the residual cumulative effects to the use of lands and resources for harvesting and gathering is considered to be low.

NWP is committed to further discussions with Tsuut'ina Nation to understand current and potential use of lands within the ATRI RSA for harvesting and gathering activities, in order to improve the level of confidence in this prediction.

30.7.4.4.4 Change to Physical and Cultural Heritage, and Change to any Structure, Site, or Thing that is of Historical, Archaeological, Paleontological, or Architectural Significance

There is potential for physical and cultural heritage resources and structures, sites, or things of historical, archaeological, paleontological, or architectural significance to be located with the ATRI RSA and as such, a potential for development of reasonably foreseeable future projects and activities to overlap with these resources and sites. At this time, the locations of these resources and sites require further consultation with the Tsuut'ina Nation within the ATRI RSA, other than those documented as part of the Project Archaeological Baseline Assessment within the Project footprint and the Heritage Resources LSA (Chapter 16).

The residual cumulative effects to physical and cultural heritage and to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance arising from the effects of the Project in combination with the effects of other past, present, and reasonably foreseeable future projects or activities are characterized as follows:

- Duration: *Permanent*, as the potential loss of physical and cultural heritage and of any structure, site, or things that is of historical, archaeological, paleontological, or architectural significance cannot be reversed once it occurs within the ATRI RSA.

- Magnitude: *High*, the potential alteration of physical and cultural heritage and of any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance may result in a measurable change from existing conditions.
- Geographic Extent: *Regional*, as the potential loss of physical and cultural heritage and of any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance is limited to the ATRI RSA.
- Frequency: *Once*, as the direct loss of physical and cultural heritage and of a structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance that may exist within the ATRI RSA will occur as reasonably foreseeable future projects and activities are constructed or carried out across the ATRI RSA.
- Reversibility: *Irreversible*, as impacts to or alteration of physical and cultural heritage and of any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance cannot be returned/reburied and are permanent.
- Context: *Low*, as physical and cultural heritage and any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance have a low resilience to change as alterations to areas or sites of interest and significance may not adapt to effects that alter their presence or existence. The context is also deemed low as it is expected that the Tsuut'ina Nation's ability to know and teach their way of living can continue outside of the Project footprint during all Project phases despite the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional cultural activities within the Project footprint at this time.

Determination of Significance of Residual Cumulative Effect

It is anticipated that mitigation measures to identify heritage resources will be implemented as part of current and reasonably foreseeable future projects and activities prior to development. Within the ATRI RSA, the location of physical and cultural heritage and of structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance are currently unknown outside of the Project footprint and Heritage Resources LSA. Should reasonable foreseeable future projects and activities be carried out within the ATRI RSA and mitigation measures be implemented to protect and avoid physical and cultural heritage and any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance (i.e., no permanent loss), the residual cumulative effects to physical and cultural heritage and to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance arising from the Project in combination with other past, present, and reasonably foreseeable future projects and activities during all phases are anticipated to be not significant. Due to the lack of information available on the Tsuut'ina Nation's physical and cultural heritage within the Project footprint and the ATRI LSA, the Project's contribution to the residual cumulative effects to physical and cultural heritage and to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance is not anticipated to reduce the ability and opportunity of the Tsuut'ina Nation to practice their Aboriginal and Treaty rights and interests within the ATRI RSA. The potential cumulative impacts to the Tsuut'ina Nation's rights and interests of the residual cumulative effect on their physical and cultural heritage are discussed further in Section 30.10.2.1.4.

Likelihood and Confidence

Effects that are determined to be not significant do not require a characterization of likelihood. Confidence considers the reliability of data and analytical methods used in the assessment of effects. The confidence in the characterization of the potential residual cumulative effect to physical and cultural heritage and to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance is considered to be low. Mitigation measures that may be used by present and future reasonably foreseeable projects and activities to avoid impacts to physical and cultural heritage and to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance (e.g., archaeological impact assessment, cultural monitoring) are generally considered moderate to high. The lack of regional information on Tsuut'ina Nation's physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance reduces the level of confidence of the significance of effects. Adaptive management measures will be implemented as part of future projects and activities, in combination with Indigenous consultation, to understand potential regional impacts to physical and cultural heritage and to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance. It is anticipated that Section 12.2 Heritage Inspection Permits will be required to determine if and where archaeological resources are present prior to developments of reasonably foreseeable future projects and activities within the ATRI RSA.

30.7.4.4.5 Change to Social, Health, and Economic Conditions

The assessment of potential residual cumulative effects to terrestrial and aquatic wildlife health as well as human health concluded the health risks are considered to be low. The Project is not anticipated to act cumulatively with other future projects or activities to contribute substantially to a change in the health of terrestrial and aquatic country foods and Indigenous health. As there may be potential for impacts to species of interest (for fishing, hunting, trapping, harvesting, and gathering) to Tsuut'ina Nation due to subsistence harvesting activities and potential of change to opportunity for access to country foods, the human and wildlife health conditions VCs are assessed cumulatively. As a result, the following assessment focuses on the human and wildlife health conditions of the residual cumulative effects. As noted in Chapter 18 (Section 18.5.5), all anticipated residual socio-community effects are considered to be negligible and no significant adverse residual effects are expected. As such, there is no spatial or temporal overlap of Project effects in combination with those of past, present, or reasonably foreseeable future projects or activities. Therefore, residual adverse cumulative effects on the socio-community are not expected. Similarly, as previously mentioned and noted in Chapter 17 (Section 17.6), residual adverse cumulative effects on economic conditions are not expected. It must be noted that due to the potential for change to opportunity for access to country foods within the ATRI LSA and the lack of information on subsistence harvesting, a potential for development of reasonably foreseeable future projects and activities to overlap with these resources and sites have the potential to impact socio-community and economic conditions (i.e., diet, financial impact); these potential cumulative effects will be updated through further consultation with Tsuut'ina Nation.

The residual cumulative effects to social, health, and economic conditions arising from the effects of the Project in combination with the effects of other past, present, and reasonably foreseeable future projects or activities are characterized as follows:

- Duration: *Long-Term*, as the predicted residual cumulative effects to the health of wildlife and potential country foods, as well as human health, are only associated with the Project footprint

or close to Project infrastructure in areas that will be reclaimed during Reclamation and Closure; there were no residual adverse effects on socio-economic conditions.

- Magnitude: *Low*, as the potential residual cumulative effects of the Project are considered to present a low risk to wildlife and human health and therefore a low magnitude to quality of country foods; there were no residual adverse effects on socio-economic conditions.
- Geographic Extent: *Local to Discrete*, as the potential effects on wildlife and human health and country foods are restricted to the HHERA RSA, receiving watersheds, and the Project footprint in which effects are inferred to be largely undetectable outside of the HHERA RSA; there were no residual adverse effects on socio-economic conditions.
- Frequency: *Continuous*, as the potential risk to country foods is most plausible during the Operations phase of the Project.
- Reversibility: *Reversible Long-Term*, as the low risk to wildlife and human health and associated country foods and consumption of country foods is diminished (mitigated) as the Project disturbance footprint is reclaimed in Reclamation and Closure; there were no residual adverse effects on socio-economic conditions.
- Context: *Neutral*, as aquatic and terrestrial wildlife species and humans have a neutral sensitivity and resilience to the low potential exposure/risk; the low exposure risk is unlikely to adversely affect individuals or local populations and therefore an unlikely disruption to country food quality or accessibility; there were no residual adverse effects on socio-economic conditions. The context is also deemed neutral due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to consume country foods within the Project footprint at this time, as it is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Determination of Significance of Residual Cumulative Effects

The assessment of residual cumulative effects of the Project in combination with those of past, present, and reasonably foreseeable future projects and activities on wildlife and human health concluded no significant adverse cumulative effects on terrestrial, aquatic, and human health. Additionally, no adverse residual effects on social, health, and economic conditions were predicted, therefore no cumulative effect to social, health, and economic conditions are expected to occur. As such, the residual cumulative effects on social, health, and economic conditions arising from the Project in combination with other past, present, and reasonably foreseeable future projects and activities during all phases are considered not significant. The wildlife and human health risk estimates inherently consider operational activities, emissions, and other contaminant releases intrinsic to the predictive modelling of water quality, air quality, and secondarily food via transport, fate and food chain modelling. Due to the lack of information available on the Tsuut'ina Nation's use of the Project footprint and the ATRI LSA to consume country foods, the Project's contribution to the residual cumulative effects on social, health, and economic conditions are not anticipated to reduce the ability and opportunity of the Tsuut'ina Nation to practice their Aboriginal and Treaty rights and interests within the ATRI RSA. The potential cumulative impacts to the Tsuut'ina Nation's interests of the residual cumulative effect on their social, health, and economic conditions are discussed further in Section 30.10.2.1.5.

Likelihood and Confidence

Cumulative effects that are determined to be not significant, as anticipated for social, health, and economic conditions, do not warrant a characterization of likelihood.

The confidence in the characterization of residual cumulative effects to social, health, and economic conditions, and in particular country foods and Indigenous health, is considered to be moderate. The confidence derives from consideration of confidence in:

- Contaminant fate and transport modelling for releases to air and water which dictate exposure point concentration for exposure assessment;
- Substantive knowledge of ecological dietary/food chain relationships for exposure modelling; and
- Conservatism of assumptions that err towards overestimating rather than underestimating exposure and risk (e.g., assumptions of statistical upper-bound exposure concentrations in water, assumption of lifetime exposure scenarios).

Collectively, the above-listed practices provide moderate to high confidence that the risk estimates are not underestimated, and in the present case, an overall moderate level of confidence that the estimated health risk to aquatic and terrestrial wildlife and human health as a result of the Project is low and not significant.

30.7.4.5 Summary of Cumulative Effects Assessment of the Changes to the Environment on Tsuut'ina Nation

Residual cumulative effects and the selected mitigation measures, characterization criteria, likelihood, significance determination, and confidence are summarized in Table 30.7-7.

Table 30.7-7: Summary of Cumulative Effects of the Changes to the Environment on Tsuut'ina Nation

Residual Cumulative Effect	Project Phase(s)	Mitigation Measures	Summary of Cumulative Residual Effects Characterization	Significance (Significant, Not Significant)	Confidence (High, Moderate, Low)
Change to Use of Lands and Resources for Traditional Fishing Purposes	• Construction and Pre-Production • Operations • Reclamation and Closure • Post-Closure	• Implementation of mitigation measures proposed for relevant VCs and VC groups will be implemented over the life of the Project. • Implementation of management programs and plans specific to VCs or VC groups (e.g., Ecological Restoration Plan, Traffic Control Plan). • Implementation of the Indigenous Impact Management Plan will be undertaken in consultation with Tsuut'ina Nation. • Regional collaboration between Indigenous Communities, proponents, and governments and implementation of initiatives to minimize collective impacts of past, present, and future projects and activities. • Continued consultation and engagement with Tsuut'ina Nation over the course of the Project to identify and understand current use of lands and resources for traditional purposes within the ATRI LSA and ATRI RSA.	Duration: Long-term Magnitude: Moderate Geographic Extent: Regional Frequency: Continuous Reversibility: Reversible Long-term Context: Neutral	Not Significant	Low
Change to Use of Lands and Resources for Traditional Hunting and Trapping Purposes	• Construction and Pre-Production, • Operations, and • Reclamation and Closure		Duration: Long-term to Permanent Magnitude: Low Geographic Extent: Regional Frequency: Continuous Reversibility: Reversible Long-term to Irreversible Context: Neutral	Not Significant	Low
Change to Use of Lands and Resources for Traditional Harvesting and Gathering Purposes	• Construction and Pre-Production • Operations • Reclamation and Closure		Duration: Long-term to Permanent Magnitude: Moderate Geographic Extent: Regional Frequency: Once to Intermittent Reversibility: Reversible Long-term to Irreversible Context: Neutral	Not Significant	Low

Residual Cumulative Effect	Project Phase(s)	Mitigation Measures	Summary of Cumulative Residual Effects Characterization	Significance (Significant, Not Significant)	Confidence (High, Moderate, Low)
Change to Physical and Cultural Heritage and Change to any Structure, Site, or Thing that is of Historical, Archaeological, Paleontological, or Architectural Significance.	• Construction and Pre-Production • Operations	• Opportunity for ceremonies on the land prior to construction of Project infrastructure as well as opportunities for harvesting and gathering within the Project footprint prior to construction for Indigenous community members.	Duration: Permanent Magnitude: High Geographic Extent: Regional Frequency: Once Reversibility: Irreversible Context: Low	Not Significant	Low
Change to Social, Health and Economic Conditions.	• Operations		Duration: Long-term Magnitude: Low Geographic Extent: Local to Discrete Frequency: Continuous Reversibility: Reversible Long-term Context: Neutral	Not Significant	Moderate to High

30.8 Overview of the Changes to the Environment on Tsuut'ina Nation and their Perspectives

The following is a summary of Section 30.7 which provides an assessment of changes to the environment and the potential resulting impact on the Tsuut'ina Nation. Effects of the changes to the environment could result in impacts to the Tsuut'ina Nation and their rights (see Section 30.10) that may occur where the Project has a residual effect and residual cumulative effect on traditional activities such as fishing, hunting and trapping, harvesting and gathering. As well, the Project could result in changes to physical activities associated with traditional use such as travel and navigation, ceremonial and sacred sites, and physical and cultural heritage areas and any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance and social, health, and economic conditions. Sections 30.7.3 and 30.7.4 taken together have provided an assessment of the Project effects on the Tsuut'ina Nation's traditional land and resource use that correspond with Tsuut'ina Nation's traditional activities as noted above.

The Project related residual effects are concluded to be rated as "not significant", with a generally low to moderate level of confidence in relation to the traditional knowledge information provided by Tsuut'ina Nation within the Project footprint and based on publicly available information and consultation activities (Appendix 30-A, Table 30.A-2). Further to the assessment on the potential direct effects of the Project, an assessment of potential cumulative effects was undertaken and as a result of the assessment it was determined that the potential cumulative effects for each Tsuut'ina Nation right and/or interest would also be minor in nature and are not considered to be significant. These potential residual and cumulative effects are not anticipated to alter long-term populations and abundance of fish, wildlife, and plant species of interest within the ATRI RSA which may be relied upon by the Tsuut'ina Nation to exercise their rights and interests. Additionally, the potential for residual cumulative effects of the Project in combination with reasonably foreseeable future projects and activities on physical and cultural heritage and to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance are restricted to those located within the footprint of the Project and of other potential projects developed within the ATRI RSA.

Mitigation measures discussed in the assessment and related VC assessment chapters and listed in Section 30.9 will reduce or eliminate effects on the Tsuut'ina Nation in order to exercise their rights and interests and reduce or eliminate effects on conditions that may prohibit or deter the exercise of the Tsuut'ina Nation's rights and interests in the Project footprint, the ATRI LSA, and the ATRI RSA. While the Tsuut'ina Nation have not confirmed their use of land and waterways in the ATRI LSA and the ATRI RSA, it is anticipated that traditional land and resource use activities and the exercise of related rights could generally occur undeterred in the ATRI LSA and the ATRI RSA. With the previously identified displacement of existing features and where restricted for safety purposes (e.g., the temporary blast restriction area in the vicinity of the mine site) within the Project footprint, traditional land and resource use activities will be restricted during certain Project phases. As identified throughout the Application/EIS, it is again noted that engagement is ongoing, and the Tsuut'ina Nation may provide additional information about the potential effects of the Project on their rights and interests during the assessment processes.

As identified in Section 30.5.2 and based on the site assessment study received from the Tsuut'ina Nation outlined in Appendix 30-A, Table 30.A-2, the Tsuut'ina Nation has indicated a primary concern about run-offs, and how they may impact human health, wildlife, fish and fish habitat, and the plants and medicines that rely on this water. As identified throughout the Application/EIS, it is again noted that engagement is ongoing, and Tsuut'ina Nation may provide additional information about the potential effects of the Project on Tsuut'ina Nation's rights and interests related to the assessment on potential Project effects. Based on the Tsuut'ina Nation's perspective, the additional cumulative effects of the Project, while determined to be minor in nature, may exacerbate current and ongoing effects in the ATRI RSA from other past and current projects, and on Tsuut'ina Nation's exercise of their rights and interests, for the foreseeable future. As details on cumulative effects to the Tsuut'ina Nation in the ATRI RSA are restricted to secondary sources of information, further information from the Tsuut'ina Nation, including Project-specific TK/TLU when provided might lead to a better understanding of these potential Project-related effects to the Tsuut'ina Nation.

30.9 Indigenous Impact Management Plan

Following the assessment of the Project effects on Tsuut'ina Nation and the cumulative effects assessment, this section describes the Indigenous Impact Management Plan that will be implemented as a result of the outcomes of the assessment processes outlined in Section 30.3.

Impact management measures identified for the potential impacts on the Tsuut'ina Nation's rights and interests are based on Tsuut'ina Nation's site assessment study, publicly available information, and preliminary consultation and engagement activities summarized in Section 30.5 (IAAC, 2021b; Appendix 30-A, Tables 30.A-1 and 30.A-2). As previously identified, the Tsuut'ina Nation's rights and interests are defined as those outlined in the correspondence from the Impact Assessment Agency of Canada, indicating the Agency's preliminary understanding of the nature and extent of the Tsuut'ina Nation's rights and interests as described in Section 30.5.4. As noted in Section 30.5.4, under the terms of Treaty 7, the Tsuut'ina Nation have an established right to hunt for which the mitigation measures and key commitments identified in relation to the use of land and resources for traditional purposes for hunting and trapping has been addressed in Section 30.9.2. Continued consultation and engagement with the Tsuut'ina Nation to further identify and adapt mitigation measures to address impacts on their rights and related interests within the Project footprint and the ATRI LSA are expected to refine this process throughout the Project life-cycle.

Specific and detailed mitigation for VCs related to Tsuut'ina Nation's rights and interests can be referenced in the respective effects assessment VC chapters. The nature and extent of the recommended VC mitigation measures are influenced by several factors including the anticipated magnitude or extent of the environmental effects, the expected effectiveness of mitigation, the level of certainty in the environmental effects predictions, and the resulting potential for impact on the Tsuut'ina Nation's rights and interests. As the potential for, and consequences of, adverse environmental effects increases; so, does the comprehensiveness of the recommended measures.

Based on the assessment of the potential environmental effects of the Project, that consider Project-related residual effects and residual cumulative effects for the applicable VCs of interest (e.g., Wildlife and Wildlife Habitat VCs) and anticipated effects to non-VC groups (i.e., broad ecosystem types), and after implementation of the mitigation measures outlined in this section, as well as additional information

(certain intermediate and receptor VCs) included in the assessment, the potential impacts of the Project on the Tsuut'ina Nation's rights and interests are addressed in Section 30.10. It is to be noted that the impact measures identified nor the effectiveness of these measures has been confirmed by the Tsuut'ina Nation to date.

NWP is committed to an ongoing dialogue with the Tsuut'ina Nation, including commitments to the following:

- Best management practices and procedures related to each VC of interest including the design of mitigation measures as outlined in the Application/EIS.
- Follow-up, monitoring and offsetting and compensation programs related to anticipated residual effects of select VCs.
- Implementation of the engagement agreement between NWP and the Tsuut'ina Nation.
- Confirmation and implementation of the Indigenous Impact Management Plan that outlines mitigation measures to avoid, minimize, reduce, and/or offset potential direct and indirect impacts of the Project and utilizes adaptive management approaches for follow-up strategies and monitoring programs.
- Consideration of collaborative strategies for addressing the cumulative effects where applicable, with the Tsuut'ina Nation, the identified Indigenous Communities, other proponents, and regulatory agencies.
- Follow the spirit and intent of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and its guiding principles.
- Support the recognition of Indigenous stewardship and governance in the Elk Valley.
- Recognize and respect the deep personal, community, and cultural attachment of the Tsuut'ina Nation to the land and resources where NWP does business.
- Incorporate NWP's understanding of Indigenous interests, values, knowledge, and ways of knowing into NWP decision making where practicable. To this end, NWP is committed to the Canadian Council for Aboriginal Business' Progressive Aboriginal Relations program[10].

In addition to the mitigations outlined in the specific VC chapters, the following mitigation measures are proposed to reduce the potential impact on the Tsuut'ina Nation's rights and interests based on the response to the concerns raised by the Tsuut'ina Nation and the identified Indigenous Communities:

- Engaging with the Tsuut'ina Nation to refine the Indigenous Impact Management Plan specific to the rights-based activities and other interests (e.g., cultural activities, hunting, trapping, fishing, gathering, and cultural heritage) exercised by the Tsuut'ina Nation within the Project footprint.
- The Indigenous Impact Management Plan will further describe cross-cultural awareness training, which will be developed in collaboration where practicable, with the Tsuut'ina Nation. This training is expected to build awareness and reduce potential adverse interactions with the identified Indigenous Communities and will include cultural awareness education and training for staff and on-the-ground personnel during the applicable phases of the Project.
- Supporting possible opportunities to augment VC-specific monitoring programs to include responses to concerns raised by the Tsuut'ina Nation utilizing adaptive management approaches for follow-up strategies.
- Participation in the Elk Valley Cumulative Effects Management Framework as co-led by the KNC.

[10] Based on the CCAB's PAR program, NWP continues to improve their Indigenous relationships and to working across cultures, and are committed to prosperity in Indigenous Communities.

- Encouraging the participation of the Tsuut'ina Nation to the applicable Project Advisory, Environmental Stewardship, and in the Environmental Monitoring Committee to review, shape, and steer monitoring activities and to guide future priorities.
- Encouraging the participation of the Tsuut'ina Nation in the Reclamation Planning Committee to review how traditional knowledge has been incorporated, including Indigenous traditional use and cultural expression as part of the Project closure goals.
- Supporting access to the Project site and provide applicable available resources for the Indigenous-Guardians Program to develop and lead monitoring programs related to the Project.
- Incorporating feedback from the Tsuut'ina Nation in the development of an Access Management and Monitoring Program which would address any concerns raised regarding access to areas that might be temporarily restricted due to safety concerns (e.g., in the Project footprint during construction and operations) by creating alternatives to guarantee access to key land use areas. NWP will establish No Unauthorized Entry (NUE) areas in order to ensure worker and public safety within and near the Project.
- Supporting the establishment of conservation lands that may be privately held by NWP, an Indigenous Community, or a recognized conservation organization.
- Supporting Indigenous work related to land and resource use planning objectives in proximity to the Project and following the EAC, NWP will support Indigenous work related to land and resource use planning objectives for consideration during the relevant Project phases.
- Providing access to requested reports and identify feedback opportunities where applicable including the various mitigation and monitoring plans as well as those related to the Indigenous Impact Management Plan.

For each potential impact as previously described and assessed in Section 30.7, the specific mitigation measures identified that relate to Tsuut'ina Nation's rights and interests are listed in the following sections and are also summarized in Table 30.9-1.

30.9.1 Use of Lands and Resources for Traditional Fishing Purposes

The mitigation measures identified for the change to use of lands and resources for traditional fishing purposes are as identified in Chapter 12, Section 12.5.3 including the Fish and Fish Habitat Management Plan and the Ecological Restoration Plan. The operational practices and procedures that are prescribed in the Site Water Management Plan in Chapter 33 (Section 33.4.1.8) including selenium, nitrate, and calcite management, and the Noise and Vibration Management Plan (Section 33.4.1.7), the Vegetation and Ecosystems Management and Monitoring Plan (Section 33.4.1.11) and the Aquatic Effects Management Program described in Section 33.4.1.5 will be the primary means by which the Project will address adverse effects to fish and fish habitat. These are identified in combination with the key mitigations for traditional fishing activities to reduce the impacts on the Tsuut'ina Nation's fishing rights including those related to their ability to know and teach the Tsuut'ina way of living during all Project phases.

Key mitigation measures for fishing also include, where practicable:

- Limiting erosion and contain sediment through the application of standard industry practices (Erosion and Sediment Control Plan, Chapter 33, Section 33.4.1.8).
- Conducting regular inspections to ensure control measures are effective and functioning properly.
- Diverting clean runoff around mine disturbed areas.
- Capturing clean surface water that cannot be diverted in sediment ponds prior to release.

- Limiting the mine disturbance footprint through Project design and progressive reclamation.
- Prohibiting or limiting non-Indigenous access to fishing areas to assure compliance with fishing restrictions.
- Respecting traditional fisheries timing windows and seasonal rounds where practicable.
- As there is potential for access within the Project footprint, NWP is committed to creating permanent access where practicable during the Post-Closure phase for future traditional activities including fishing.
- Developing NUE areas in collaboration with Indigenous Communities, regulators, and key stakeholders based on safety, logistical, and administrative considerations to restrict public access to fishing areas within the Project footprint.
- Educating the Project workforce about fish and fish habitats and implementing an angling policy for NWP non-Indigenous employees and contractors where practicable.
- NWP will coordinate with local conservation enforcement for Alexander and West Alexander Creeks should increases in non-Indigenous recreational fishing be observed by NWP employees.
- Progressive reclamation to occur such that riparian habitats are reclaimed as quickly as possible to minimize the magnitude of Project impacts at the temporal scale with collaboration where practicable with Indigenous Communities.

NWP is committed to continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on use of lands (and waters) and resources for traditional fishing purposes within the Project footprint and the ATRI LSA. The mitigation measures relevant to the fish and fish habitat VCs are connected to the Tsuut'ina Nation's rights and interests related to their ability to fish for species of interest, their perspectives on fish quality and abundance, the values associated with sustenance based on fish resources available to the Tsuut'ina Nation, and their ability to know and teach the Tsuut'ina way of living during all Project phases.

30.9.2 Use of Lands and Resources for Traditional Hunting and Trapping Purposes

The mitigation measures identified for the change to use of lands and resources for traditional hunting and trapping purposes are as identified in Chapter 15 (e.g., ungulates, Chapter 15, Section 15.4.3.3) including the Wildlife Management and Monitoring Plan and the Ecological Restoration Plan. Many of the measures to mitigate impacts to wildlife VCs are part of protocols described in Chapter 33 including the Air Quality and Greenhouse Gas Management Plan (Section 33.4.1.1), the Noise and Vibration Management Plan (Section 33.4.1.7), the Vegetation and Ecosystems Management and Monitoring Plan (Section 33.4.1.11), the Spill Prevention, Control, and Countermeasures Plan (Section 33.4.1.10), the Waste Management Plan (Section 33.4.1.12), and the Traffic Control Plan (Section 33.4.2.4) which includes access management. These are identified in combination with the key mitigations for traditional hunting and trapping activities to reduce the impacts on the Tsuut'ina Nation's hunting and trapping rights including those related to their ability to know and teach the Tsuut'ina way of living during all Project phases.

Key mitigation measures for hunting and trapping also include, where practicable:

- Minimizing disturbance and encroachment into natural vegetation, to the extent feasible, by clearing and grubbing only what is required for Construction and Pre-Production activities and progressive development of pits and Mine Rock Storage Facility.
- Clearing vegetation only in the year in which the area will be required for Construction or Operation activities to minimize the extent of cleared vegetation, to the extent possible.
- Sequencing the development of pits and Mine Rock Storage Facility areas to limit total disturbance during any one period and maximizing progressive reclamation opportunities during Operations where practicable.
- Implementation of the Erosion and Sediment Control Plan (Chapter 33, Section 33.4.1.4) to reduce the potential for sedimentation of riparian, wetland, and aquatic habitat used by wildlife VCs.
- Minimizing sensory disturbances and disruption by limiting construction activities, especially those with high noise impact, to daytime hours and appropriately timing construction activities to minimize cumulative noise levels.
- Installing and maintaining noise and light mitigation measures, where practicable, on and around Project infrastructure to minimize sensory disturbances.
- A wildlife education program will be developed to raise awareness of requirements and commitments to avoid wildlife and protect wildlife and wildlife habitat including educating employees on noise impacts and potential mitigation/control measures through appropriate training.
- Management of vehicle traffic (including limiting road traffic and access and the Traffic Control Plan) contributes to minimization of sensory disturbance and direct mortality along roads and reducing the barrier effect of roads or filters to movement.
- Wildlife will be given the right-of-way on all Project roads and gaps will be created in snowbanks to allow for unimpeded wildlife passage across roads at regular intervals.
- Preventing wildlife entrapment through implementation of wildlife protection protocols including during avalanche control activities.
- Minimizing the potential for exposure to chemical hazards and attractants through the use of holding tanks or closed facilities that exclude wildlife.
- As there is potential for access within the Project footprint, NWP is committed to creating permanent access where practicable during the Post-Closure phase for future traditional activities including hunting and trapping.
- Developing NUE areas in collaboration with Indigenous Communities, regulators, and key stakeholders based on safety, logistical, and administrative considerations to restrict public access to traditional hunting and trapping use areas within the Project footprint.
- Respecting traditional hunting and trapping timing windows and seasonal rounds where practicable.
- Progressive reclamation and revegetation throughout the mine life to reduce the Project footprint as quickly as possible to minimize the magnitude of Project impacts at the temporal scale with collaboration where practicable with Indigenous Communities.

NWP is committed to continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on use of lands and resources for traditional purposes within the Project footprint and the ATRI LSA. The mitigation measures relevant to the wildlife VCs are connected to the Tsuut'ina Nation's rights and interests related to their ability to hunt and trap species of

interest, their perspectives on the quality and abundance of these species, the values associated with sustenance based on traditional resources available to the Tsuut'ina Nation, and their ability to know and teach the Tsuut'ina way of living during all Project phases.

30.9.3 Use of Lands and Resources for Traditional Harvesting and Gathering Purposes

The mitigation measures identified for the change to use of lands and resources for traditional harvesting and gathering purposes are as identified in Chapter 13 (e.g., riparian habitat, Section 13.6.5.2) and Chapter 14 (e.g., whitebark pine, Section 14.5.5.2.1) including the Vegetation and Ecosystems Management and Monitoring Plan and the Ecological Restoration Plan. Many of the measures to mitigate impacts to plants and vegetation VCs are part of protocols described in Chapter 33 including the Wildlife Management and Monitoring Plan (Section 33.4.1.13), Air Quality and Greenhouse Gas Management Plan (Section 33.4.1.1), the Soil Management Plan (Section 33.4.1.9), Spill Prevention, Control, and Countermeasures Plan (Section 33.4.1.10), and the Waste Management Plan (Section 33.4.1.12). These are identified in combination with the key mitigations for traditional harvesting and gathering activities to reduce the impacts on the Tsuut'ina Nation's harvesting and gathering rights including those related to their ability to know and teach the Tsuut'ina way of living during all Project phases.

Key mitigation measures for harvesting and gathering also include, where practicable:

- Minimizing disturbance and encroachment into natural vegetation, to the extent feasible, by clearing and grubbing only what is required for Construction and Pre-Production activities and progressive development of pits and Mine Rock Storage Facility.
- Clearing vegetation only in the year in which the area will be required for Construction or Operation activities to minimize the extent of cleared vegetation, to the extent possible.
- Sequencing the development of pits and Mine Rock Storage Facility areas to limit total disturbance during any one period and maximizing progressive reclamation opportunities during Operations where practicable.
- Implementation of the Erosion and Sediment Control Plan (Chapter 33, Section 33.4.1.4) to reduce the potential for sedimentation of riparian, wetland, and aquatic habitats and ecosystems.
- Implement the Vegetation and Ecosystems Management and Monitoring Plan (Chapter 33, Section 33.4.1.11), to limit the effects that invasive plants may have on natural vegetation.
- Develop and implement whitebark pine salvage, propagation, and restoration as outlined briefly in Chapter 14, Section 14.5.5.2.1.
- Revegetation with Indigenous species to limit the effects that invasive plants may have on natural vegetation.
- As there is potential for access within the Project footprint, NWP is committed to creating permanent access where practicable during the Post-Closure phase for future traditional activities including harvesting and gathering.
- Developing NUE areas in collaboration with Indigenous Communities, regulators, and key stakeholders based on safety, logistical, and administrative considerations to restrict public access to traditional harvesting and gathering use areas within the Project footprint.
- Respecting traditional harvesting and gathering timing windows and seasonal rounds where practicable.

- Identifying opportunities for harvesting and gathering prior to construction for the Tsuut'ina Nation community members within the Project footprint and the reestablishment of plant harvesting activities in the reclamation phase.
- Consideration of support for possible mapping of all high priority cultural use areas in the proximity to the Project by Indigenous Communities including support for research and development of approaches for restoring Landscape and Ecosystem VCs.
- Progressive reclamation and revegetation throughout the mine life to reduce the Project footprint as quickly as possible to minimize the magnitude of Project impacts at the temporal scale with collaboration where practicable with Indigenous Communities. As part of Project Reclamation and Closure activities, the Project footprint will be reclaimed to similar ecosystem types to the local area, and which previously existed before disturbance.

NWP is committed to continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on use of lands and resources for traditional purposes within the Project footprint and the ATRI LSA. The mitigation measures relevant to the plant and vegetation VCs are connected to the Tsuut'ina Nation's rights and interests related to their ability to harvest and gather plant species of interest, their perspectives on the quality and abundance of these species, the values associated with sustenance based on traditional resources available to the Tsuut'ina Nation, and their ability to know and teach the Tsuut'ina way of living during all Project phases.

30.9.4 Physical and Cultural Heritage, and Change to any Structure, Site, or Thing that is of Historical, Archaeological, Paleontological, or Architectural Significance Impact Management

The mitigation measures identified for the change to physical and cultural heritage, and structures, sites, or things of historical, archaeological, paleontological, or architectural significance are related to reporting on the implementation of management and monitoring plans associated with the identification of appropriate mitigation for pre-contact archaeological sites based on collaboration with the Tsuut'ina Nation. An Archaeology Management Plan (Chapter 33, Section 33.4.1.2) was developed for the Project and describes protocols that will be followed where the Project footprint encroaches upon the recorded boundaries of pre-contact archaeological sites (pre-dating A.D. 1846) that are protected under the *Heritage Conservation Act*, in addition to best management practices for archaeological potential zones and Chance Finds. Mitigation measures for direct impacts to archaeological resources will include, but not be limited to, the application for a provincial Section 12.4 Alteration Permit, to be held concurrently with a Section 12.2 Heritage Inspection Permit. A Heritage Resources response procedure will be put in place as per the Section 12.4 Alteration Permit and will be followed in the event that a Heritage Resource is discovered during Project-related activities. This will include:

- Monitoring by a qualified archaeologist throughout the duration of mechanical activity within defined site boundaries;
- Salvage inspection (≤20% sample screening) of mechanically excavated sediment extracted from and immediately adjacent to recorded archaeological sites;
- Short-term or long-term halt(s) of mechanical activity should significance archaeological resources be exposed;

- Salvage inspection (100% screening) should any of topsoil/sediment that originates from within an archaeological site be required to be removed from the locality of the site area.

These are identified in combination with the key mitigations for physical and cultural heritage to reduce the impacts on the Tsuut'ina Nation's rights including those related to their ability to know and teach the Tsuut'ina way of living during all Project phases. Key mitigation measures for physical and cultural heritage also include, where practicable:

- Continued support of site visits from representatives of the Tsuut'ina Nation.
- Providing opportunities for ceremonies on the land prior to construction of Project infrastructure;
- Seeking Tsuut'ina Nation consent where applicable on any cultural heritage site or resource that may be impacted by a proposed development/land alteration.
- Protection of all cultural heritage sites and resources and managed in a way that is respectful of Indigenous stewardship, cultural values, and traditional teachings.
- NWP will support the development of a Traditional and Cultural Protection Plan to include cultural programs on site where applicable; and events and activities in communities where resource capacity may be supported by NWP.
- NWP with guidance from the identified Indigenous Communities will support the following:
    - Recording the nature and extent of any identified trail corridors and associated passes in proximity of the Project footprint including areas potentially disturbed by Project-related infrastructure, and
    - The rehabilitation of trails, marking of trail sections interrupted by disturbance within the Project footprint, and any additional archival information available regarding them.

NWP is committed to continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on physical and cultural heritage, and structures, sites, or things of historical, archaeological, paleontological, or architectural significance within the Project footprint and the ATRI LSA. The mitigation measures relevant to the Tsuut'ina Nation's physical and cultural heritage are connected to the Tsuut'ina Nation's rights and interests related to their perspectives on access to these sites, the values associated with the traditional resources available to the Tsuut'ina Nation, and their ability to know and teach the Tsuut'ina way of living during all Project phases.

30.9.5 Social, Health, and Economic Conditions Impact Management

The mitigation measures identified for the change to social, health, and economic conditions are as identified in Chapters 17 (Section 17.5.5) and 18 (Section 18.5.4), including the Health and Safety Management Plan. As noted in Chapter 22, Section 22.5.3, a wide array of design mitigation measures are having been recommended in relation to surface water and air, and considered in the assessment of impact on soil, plant/animal tissue (i.e., food) and sediment quality. As such, mitigation measures applicable to the surface water and air quality VCs are applicable, as well as the following in relation to social and health conditions as described in Chapter 33 including the Air Quality and Greenhouse Gas Management Plan (Section 33.4.1.1), the Noise and Vibration Management Plan (Section 33.4.1.7), the Vegetation and Ecosystems Management and Monitoring Plan (Section 33.4.1.11), the Spill Prevention, Control, and Countermeasures Plan (Section 33.4.1.10), the Waste Management Plan (Section 33.4.1.12), and the Traffic Control Plan (Section 33.4.2.4) which includes access management. These are identified in combination with the key mitigations for the Tsuut'ina Nation's traditional activities to reduce the impacts

on the Tsuut'ina Nation's interests including those related to their ability to know and teach the Tsuut'ina way of living during all Project phases.

Key mitigation measures for change to social, health, and economic conditions also include, where practicable:

- With respect to the use of lands and resources for traditional purposes (including fishing, hunting and trapping, harvesting and gathering, physical and cultural heritage, and social, health and economic conditions) NWP with guidance from the Tsuut'ina Nation, will include a process to monitor during the relevant phases of the Project:
  - Potential Project contaminants to water, country foods, and medicines, including identifying areas or species of particular risk where practicable.
  - The development and implementation of mitigation strategies and measures to address contaminants related to water, country foods, and medicines and their impact on Indigenous community members and Indigenous culture.
  - A culturally appropriate communication strategy to inform Indigenous community members regarding the relative safety or risks of water, country foods, and medicine consumption in proximity of the Project based on scientific and Traditional Knowledge.
  - A joint process for the incorporation of Traditional Knowledge and the participation of Indigenous community representatives in monitoring activities relate to water, country foods, and medicines within and downstream (Alexander Creek) of the Project.
- Avoidance strategies to reduce exposure by Indigenous harvesters active near the Project footprint during Operations, such as site fencing to preclude access and signage.
- Implementation of the Health and Safety Management Plan (Chapter 33, Section 33.4.2.3) to mitigate possible social issues that could emerge as a result of the changes to the environment due to the Project.
- Incorporating diversity and inclusivity and GBA+ in all areas of the company such that acceptable and expected behaviours are integrated in the company and are reflected at the community level;
- Implementation of social safety measures and preventative plans to reduce incidents and developing incident support programs.
- Collaborating with local Indigenous organizations on diversity and inclusivity initiatives and events.
- Providing preferential employment provisions including where applicable training programs that encourage the Tsuut'ina Nation members to have the training, skills, and qualifications to apply for jobs that become available.
- Developing a well-being management plan with Indigenous partners to address ways to reduce the potential effects of shift work for new Indigenous employees and to promote the safety and security of Indigenous women, girls, and 2SLGBTQIAA+ people in the workplace.
- Defining goals for a certain percentage of the workforce to be comprised of Indigenous employees while prioritizing Indigenous women where applicable and requirements that all contractors and subcontractors agree to the preferential hiring process.
- Providing flexible and individually tailored shift work hours for Indigenous employees new to shift work and possibly wage based employment, as well as those Indigenous employees needing time off for traditional hunting, fishing, trapping, and/or gathering activities.

- Designation of an Indigenous Project Liaison to assist Indigenous employees and to address workplace concerns, the availability of different types of cultural leaves for Indigenous employees where applicable.
- Distribution of relevant materials where applicable in local languages and on-site interpretation where needed for Indigenous employees, and employment assistance programs that offer culturally relevant support for Indigenous employees where applicable.
- Where practicable, contracting and sub-contracting related to the Project will be given to qualified businesses that are owned at least in part by Indigenous Community members and requirements that all businesses contract employ Indigenous employees.
- NWP will work with the Tsuut'ina Nation to create economic benefits for the community that might include initiatives related to:
  - Capacity building;
  - Direct and indirect employment;
  - Education and training; and
  - Procurement and business relationships.
- NWP will support activities related to monitoring and address potential beneficial and adverse economic and social effects related to increased participation of Indigenous community members in the NWP work force including providing support to related Indigenous Communities to conduct community-based surveys to monitor baseline trends and track positive and negative changes in socio-economic conditions.

NWP is committed to continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on social, health, and economic conditions within the Project footprint and the ATRI LSA. The mitigation measures relevant to the Tsuut'ina Nation's social, health, and economic conditions are connected to the Tsuut'ina Nation's interests related to their perspectives on country food consumption, the values associated with the traditional resources available to the Tsuut'ina Nation, and their ability to know and teach the Tsuut'ina way of living during all Project phases.

30.9.6 Summary of Indigenous Impact Management Plan Commitments

The Indigenous Impact Management Plan commitments and mitigation measures related to Tsuut'ina Nation's rights and related interests are summarized in Table 30.9-1.

Table 30.9-1: Summary of Indigenous Impact Management Plan Commitments for Tsuut'ina Nation

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
Potential Change to all Rights/Interests	• Construction and Pre-Production • Operations • Reclamation and Closure • Post-Closure	NWP is committed to an ongoing dialogue with the Tsuut'ina Nation, including commitments to the following: • Best management practices and procedures related to each VC of interest including the design of mitigation measures as outlined in the Application/EIS. • Follow-up, monitoring and offsetting and compensation programs related to anticipated residual effects of select VCs. • Implementation of the engagement agreement between NWP and the Tsuut'ina Nation. • Confirmation and implementation of the Indigenous Impact Management Plan that outlines mitigation measures to avoid, minimize, reduce, and/or offset potential direct and indirect impacts of the Project and utilizes adaptive management approaches for follow-up strategies and monitoring programs. • Consideration of collaborative strategies for addressing the cumulative effects where applicable, with the Tsuut'ina Nation, the identified Indigenous Communities, other proponents, and regulatory agencies. • Follow the spirit and intent of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and its guiding principles. • Support the recognition of Indigenous stewardship and governance in the Elk Valley and recognize and respect the deep personal, community, and cultural attachment of the Tsuut'ina Nation to the land and resources where NWP does business. • Incorporate NWP's understanding of Indigenous interests, values, knowledge, and ways of knowing into NWP decision making where practicable. In addition to the mitigations outlined in the specific VC chapters, the following mitigation measures are proposed to reduce the potential impact on the Tsuut'ina Nation's rights and interests based on the response to the concerns raised by the Tsuut'ina Nation and the identified Indigenous Communities: • Engaging with the Tsuut'ina Nation to refine the Indigenous Impact Management Plan specific to the rights-based activities and other interests (e.g., cultural activities, hunting, trapping, fishing, gathering, and cultural heritage) exercised by the Tsuut'ina Nation within the Project footprint.

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
		• The Indigenous Impact Management Plan will further describe cross-cultural awareness training, which will be developed in collaboration where practicable, with the Tsuut'ina Nation. This training is expected to build awareness and reduce potential adverse interactions with the identified Indigenous Communities and will include cultural awareness education and training for staff and on-the-ground personnel during the applicable phases of the Project. • Supporting possible opportunities to augment VC-specific monitoring programs to include responses to concerns raised by the Tsuut'ina Nation utilizing adaptive management approaches for follow-up strategies. • Participation in the Elk Valley Cumulative Effects Management Framework as co-led by the KNC. • Encouraging the participation of the Tsuut'ina Nation to the applicable Project Advisory, Environmental Stewardship, and in the Environmental Monitoring Committee to review, shape, and steer monitoring activities and to guide future priorities. • Encouraging the participation of the Tsuut'ina Nation in the Reclamation Planning Committee to review how traditional knowledge has been incorporated, including Indigenous traditional use and cultural expression as part of the Project closure goals. • Supporting access to the Project site and provide applicable available resources for the Indigenous-Guardians Program to develop and lead monitoring programs related to the Project. • Incorporating feedback from the Tsuut'ina Nation in the development of an Access Management and Monitoring Program which would address any concerns raised regarding access to areas that might be temporarily restricted due to safety concerns (e.g., in the Project footprint during construction and operations) by creating alternatives to guarantee access to key land use areas. NWP will establish No Unauthorized Entry (NUE) areas in order to ensure worker and public safety within and near the Project. • Supporting the establishment of conservation lands that may be privately held by NWP, an Indigenous Community, or a recognized conservation organization. • Supporting Indigenous work related to land and resource use planning objectives in proximity to the Project and following the EAC, NWP will support Indigenous work

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
		related to land and resource use planning objectives for consideration during the relevant Project phases. • Providing access to requested reports and identify feedback opportunities where applicable including the various mitigation and monitoring plans as well as those related to the Indigenous Impact Management Plan.
Potential Change to Use of Lands and Resources for Traditional Fishing Purposes	• Construction and Pre-Production • Operations • Reclamation and Closure • Post-Closure	The mitigation measures identified for the change to use of lands and resources for traditional fishing purposes are as identified in Chapter 12, Section 12.5.3. Key mitigation measures for fishing also include, where practicable: • Limiting erosion and contain sediment through the application of standard industry practices (Erosion and Sediment Control Plan, Chapter 33, Section 33.4.1.8). • Conducting regular inspections to ensure control measures are effective and functioning properly. • Diverting clean runoff around mine disturbed areas. • Capturing clean surface water that cannot be diverted in sediment ponds prior to release. • Limiting the mine disturbance footprint through Project design and progressive reclamation. • Prohibiting or limiting non-Indigenous access to fishing areas to assure compliance with fishing restrictions. • Respecting traditional fisheries timing windows and seasonal rounds where practicable. • As there is potential for access within the Project footprint, NWP is committed to creating permanent access where practicable during the Post-Closure phase for future traditional activities including fishing. • Developing NUE areas in collaboration with Indigenous Communities, regulators, and key stakeholders based on safety, logistical, and administrative considerations to restrict public access to fishing areas within the Project footprint. • Educating the Project workforce about fish and fish habitats and implementing a no angling policy for NWP non-Indigenous employees and contractors where practicable. • NWP will coordinate with local conservation enforcement for Alexander and West Alexander Creeks should increases in non-Indigenous recreational fishing be observed by NWP employees.

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
		• Progressive reclamation to occur such that riparian habitats are reclaimed as quickly as possible to minimize the magnitude of Project impacts at the temporal scale with collaboration where practicable with Indigenous Communities. • Continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on use of lands (and waters) and resources for traditional fishing purposes within the Project footprint and the ATRI LSA.
Potential Change to Use of Lands and Resources for Traditional Hunting and Trapping Purposes	• Construction and Pre-Production • Operations • Reclamation and Closure • Post-Closure	The mitigation measures identified for the change to use of lands and resources for traditional hunting and trapping purposes are as identified in Chapter 15 (e.g., ungulates, Chapter 15, Section 15.4.3.3). Key mitigation measures for hunting and trapping also include, where practicable: • Minimizing disturbance and encroachment into natural vegetation, to the extent feasible, by clearing and grubbing only what is required for Construction and Pre-Production activities and progressive development of pits and Mine Rock Storage Facility. • Clearing vegetation only in the year in which the area will be required for Construction or Operation activities to minimize the extent of cleared vegetation, to the extent possible. • Sequencing the development of pits and Mine Rock Storage Facility areas to limit total disturbance during any one period and maximizing progressive reclamation opportunities during Operations where practicable. • Implementation of the Erosion and Sediment Control Plan (Chapter 33, Section 33.4.1.4) to reduce the potential for sedimentation of riparian, wetland, and aquatic habitat used by wildlife VCs. • Minimizing sensory disturbances and disruption by limiting construction activities, especially those with high noise impact, to daytime hours and appropriately timing construction activities to minimize cumulative noise levels. • Installing and maintaining noise and light mitigation measures, where practicable, on and around Project infrastructure to minimize sensory disturbances. • A wildlife education program will be developed to raise awareness of requirements and commitments to avoid wildlife and protect wildlife and wildlife habitat including educating employees on noise impacts and potential mitigation/control measures through appropriate training.

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
		• Management of vehicle traffic (including limiting road traffic and access and the Traffic Control Plan) contributes to minimization of sensory disturbance and direct mortality along roads and reducing the barrier effect of roads or filters to movement. • Wildlife will be given the right-of-way on all Project roads and gaps will be created in snowbanks to allow for unimpeded wildlife passage across roads at regular intervals. • Preventing wildlife entrapment through implementation of wildlife protection protocols including during avalanche control activities. • Minimizing the potential for exposure to chemical hazards and attractants through the use of holding tanks or closed facilities that exclude wildlife. • As there is potential for access within the Project footprint, NWP is committed to creating permanent access where practicable during the Post-Closure phase for future traditional activities including hunting and trapping. • Developing NUE areas in collaboration with Indigenous Communities, regulators, and key stakeholders based on safety, logistical, and administrative considerations to restrict public access to traditional hunting and trapping use areas within the Project footprint. • Respecting traditional hunting and trapping timing windows and seasonal rounds where practicable. • Progressive reclamation and revegetation throughout the mine life to reduce the Project footprint as quickly as possible to minimize the magnitude of Project impacts at the temporal scale with collaboration where practicable with Indigenous Communities. • Continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on use of lands and resources for traditional purposes within the Project footprint and the ATRI LSA.
Potential Change to Use of Lands and Resources for Traditional Harvesting and Gathering Purposes	• Construction and Pre-Production • Operations • Reclamation and Closure • Post-Closure	The mitigation measures identified for the change to use of lands and resources for traditional harvesting and gathering purposes are as identified in Chapter 13 (e.g., riparian habitat, Section 13.6.5.2) and Chapter 14 (e.g., whitebark pine, Section 14.5.5.2.1). Key mitigation measures for harvesting and gathering also include, where practicable: • Minimizing disturbance and encroachment into natural vegetation, to the extent feasible, by clearing and grubbing only what is required for Construction and Pre-Production activities and progressive development of pits and Mine Rock Storage Facility.

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
		• Clearing vegetation only in the year in which the area will be required for Construction or Operation activities to minimize the extent of cleared vegetation, to the extent possible. • Sequencing the development of pits and Mine Rock Storage Facility areas to limit total disturbance during any one period and maximizing progressive reclamation opportunities during Operations where practicable. • Implementation of the Erosion and Sediment Control Plan (Chapter 33, Section 33.4.1.4) to reduce the potential for sedimentation of riparian, wetland, and aquatic habitats and ecosystems. • Implement the Vegetation and Ecosystems Management and Monitoring Plan (Chapter 33, Section 33.4.1.11), to limit the effects that invasive plants may have on natural vegetation. • Develop and implement whitebark pine salvage, propagation, and restoration as outlined briefly in Chapter 14, Section 14.5.5.2.1. • Revegetation with Indigenous species to limit the effects that invasive plants may have on natural vegetation. • As there is potential for access within the Project footprint, NWP is committed to creating permanent access where practicable during the Post-Closure phase for future traditional activities including harvesting and gathering. • Developing NUE areas in collaboration with Indigenous Communities, regulators, and key stakeholders based on safety, logistical, and administrative considerations to restrict public access to traditional harvesting and gathering use areas within the Project footprint. • Respecting traditional harvesting and gathering timing windows and seasonal rounds where practicable. • Identifying opportunities for harvesting and gathering prior to construction for the Tsuut'ina Nation community members within the Project footprint and the reestablishment of plant harvesting activities in the reclamation phase. • Consideration of support for possible mapping of all high priority cultural use areas in the proximity to the Project including potential for field sampling in these sites by Indigenous Communities including support for research and development of approaches for restoring Landscape and Ecosystem VCs.

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
		• Progressive reclamation and revegetation throughout the mine life to reduce the Project footprint as quickly as possible to minimize the magnitude of Project impacts at the temporal scale with collaboration where practicable with Indigenous Communities. As part of Project Reclamation and Closure activities, the Project footprint will be reclaimed to similar ecosystem types to the local area and which previously existed before disturbance. • Continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on use of lands and resources for traditional purposes within the Project footprint and the ATRI LSA.
Potential Change to Physical and Cultural Heritage and Change to any Structure, Site, or Thing that is of Historical, Archaeological, Paleontological, or Architectural Significance	• Construction and Pre-Production • Operations	An Archaeology Management Plan (Chapter 33, Section 33.4.1.2) was developed for the Project and describes protocols that will be followed where the Project footprint encroaches upon the recorded boundaries of pre-contact archaeological sites (pre-dating A.D. 1846) that are protected under the *Heritage Conservation Act*, in addition to best management practices for archaeological potential zones and Chance Finds. Key mitigation measures for physical and cultural heritage also include, where practicable: • Continued support of site visits from representatives of the Tsuut'ina Nation. • Providing opportunities for ceremonies on the land prior to construction of Project infrastructure. • Seeking Tsuut'ina Nation consent where applicable on any cultural heritage site or resource that may be impacted by a proposed development/land alteration. • Protection of all cultural heritage sites and resources and managed in a way that is respectful of Indigenous stewardship, cultural values, and traditional teachings. • NWP will support the development of a Traditional and Cultural Protection Plan to include cultural programs on site where applicable; and events and activities in communities where resource capacity may be supported by NWP. • NWP with guidance from the identified Indigenous Communities will support the following: o Recording the nature and extent of any identified trail corridors and associated passes in proximity of the Project footprint including areas potentially disturbed by Project-related infrastructure, and o The rehabilitation of trails, marking of trail sections interrupted by disturbance within the Project footprint, and any additional archival information available regarding them.

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
		• Continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on physical and cultural heritage, and structures, sites, or things of historical, archaeological, paleontological, or architectural significance within the Project footprint and the ATRI LSA.
Potential Change to Social, Health, and Economic Conditions	• Construction and Pre-Production • Operations • Reclamation and Closure	The mitigation measures identified for the change to social, health, and economic conditions are as identified in Chapters 17 (Section 17.5.5) and 18 (Section 18.5.4). Key mitigation measures for change to social, health, and economic conditions also include, where practicable: • With respect to the use of lands and resources for traditional purposes (including fishing, hunting and trapping, harvesting and gathering, physical and cultural heritage, and social, health and economic conditions) NWP with guidance from the Tsuut'ina Nation, will include a process to monitor during the relevant phases of the Project: o Potential Project contaminants to water, country foods, and medicines, including identifying areas or species of particular risk where practicable. o The development and implementation of mitigation and compensation strategies and measures to address contaminants related to water, country foods, and medicines and their impact on Indigenous community members and Indigenous culture. o A culturally appropriate communication strategy to inform Indigenous community members regarding the relative safety or risks of water, country foods, and medicine consumption in proximity of the Project based on scientific and Traditional Knowledge. o A joint process for the incorporation of Traditional Knowledge and the participation of Indigenous community representatives in monitoring activities relate to water, country foods, and medicines within and downstream (Alexander Creek) of the Project. • Avoidance strategies to reduce exposure by Indigenous harvesters active near the Project footprint during Operations, such as site fencing to preclude access and signage. • Implementation of the Health and Safety Management Plan (Chapter 33, Section 33.4.2.3) to mitigate possible social issues that could emerge as a result of the changes to the environment due to the Project.

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
		• Incorporating diversity and inclusivity and GBA+ in all areas of the company such that acceptable and expected behaviours are integrated in the company and are reflected at the community level. • Implementation of social safety measures and preventative plans to reduce incidents and developing incident support programs. • Collaborating with local Indigenous organizations on diversity and inclusivity initiatives and events. • Providing preferential employment provisions including where applicable training programs that encourage the Tsuut'ina Nation members to have the training, skills, and qualifications to apply for jobs that become available. • Developing a well-being management plan with Indigenous partners to address ways to reduce the potential effects of shift work for new Indigenous employees and to promote the safety and security of Indigenous women, girls, and 2SLGBTQIAA+ people in the workplace. • Defining goals for a certain percentage of the workforce to be comprised of Indigenous employees while prioritizing Indigenous women where applicable and requirements that all contractors and subcontractors agree to the preferential hiring process. • Providing flexible and individually tailored shift work hours for Indigenous employees new to shift work and possibly wage based employment, as well as those Indigenous employees needing time off for traditional hunting, fishing, trapping, and/or gathering activities. • Designation of an Indigenous Project Liaison to assist Indigenous employees and to address workplace concerns, the availability of different types of cultural leaves for Indigenous employees where applicable. • Distribution of relevant materials where applicable in local languages and on-site interpretation where needed for Indigenous employees, and employment assistance programs that offer culturally relevant support for Indigenous employees where applicable. • Where practicable, contracting and sub-contracting related to the Project will be given to qualified businesses that are owned at least in part by Indigenous Community members and requirements that all businesses contract employ Indigenous employees.

Impact on Rights and Interests	Applicable Project Phase(s)	Key Commitments/Mitigation Measures
		• NWP will work with the Tsuut'ina Nation to create economic benefits for the community that might include initiatives related to: o Capacity building; o Direct and indirect employment; o Education and training; and o Procurement and business relationships. • NWP will support activities related to monitoring and address potential beneficial and adverse economic and social effects related to increased participation of Indigenous community members in the NWP work force including providing support to related Indigenous Communities to conduct community-based surveys to monitor baseline trends and track positive and negative changes in socio-economic conditions. • Continued consultation and engagement with the Tsuut'ina Nation to identify and adapt mitigation measures to address impacts on social, health, and economic conditions within the Project footprint and the ATRI LSA.

30.10 Assessment of Potential Impacts on Tsuut'ina Nation's Rights and Interests

Considering the assessment of effects of the changes to the environment on Tsuut'ina Nation and the cumulative effects assessment, detailed in Sections 30.7.3 and 30.7.4 and the outline of the Indigenous Impact Management Plan in Section 30.9, this section describes the results of the assessment of the impacts on the Tsuut'ina Nation's rights and interests as a result of the Project. It includes a description and an assessment of the potential impact of the Project on Tsuut'ina Nation's rights and interests considering the potential future use of the Project footprint with and without the Project.

The potential for impacts on Aboriginal and Treaty rights and interests may occur when there is potential for residual (after mitigation) Project effects (direct, indirect and/or cumulative) on traditional activities such as fishing, hunting and trapping, harvesting and gathering, or on activities associated with traditional use such as travel and navigation, ceremonial and sacred sites, and on physical and cultural heritage areas.

This section provides an assessment of the possible impacts on the Tsuut'ina Nation's Aboriginal and Treaty rights and interests through the determination of potential Project effects on traditional land and resource use, including: potential change to use of lands and resources for traditional purposes; potential change to physical and cultural heritage and to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance; and potential change to social, health, and economic conditions based on both the publicly available information and feedback received on this section and related consultation activities summarized in Section 30.5.4 (IAAC, 2021b; Appendix 30-A, Table 30.A-22). It should be noted that as previously identified, Tsuut'ina Nation's Aboriginal and Treaty rights and interests are defined as those outlined in the correspondence from the Impact Assessment Agency of Canada (IAAC, 2021b), indicating the Agency's preliminary understanding of the nature and extent of the Tsuut'ina Nation's Aboriginal and Treaty rights and interests as described in Section 30.5.4. As noted in Section 30.5.4, under the terms of Treaty 7, the Tsuut'ina Nation have an established right to hunt for which the impacts identified in relation to the use of land and resources for traditional purposes related to hunting and trapping this has been addressed in Section 30.10.2.1.2.

30.10.1 Assessment Methods

The objective of assessing the level of the severity of the impact on Tsuut'ina Nation's rights and interests and interests as required by IAAC (EIS Guidelines; CEAA, 2015; IAAC, 2021b) is to assess the level of severity of the impacts that the Project may have on the exercise of these rights and related interests. An iterative approach has been taken to evaluating the severity of impacts; it may be deemed necessary to update the evaluation as new information becomes available and/or as new mitigation measures are proposed. At the time of the submission of this chapter, the Tsuut'ina Nation have submitted a site assessment study which does not include information regarding their use of lands and resources for traditional purposes within the ATRI LSA for the Project. Therefore, the information utilized reflects NWP's current determination of level of severity of adverse impacts, the understanding of which may be further refined through continued consultation with the Tsuut'ina Nation. Additionally, the overall confidence of the severity of impact on Tsuut'ina Nation's rights and interests is considered to be moderate where applicable, reflecting the current information that is available through ongoing consultation with the Tsuut'ina Nation.

Generally, the methods for assessing potential impact on Aboriginal and Treaty rights and interests in relation to the Project are as listed in Section 30.3 and further details are provided on the following:

- Consider the seven guiding principles as outlined in the *CEAA-Mikisew Cree First Nation Methodology for Assessing Potential Impacts on the Exercise of Aboriginal and Treaty Rights of the Proposed Frontier Oil Sands Mine Project* (CEAA-MCFN, 2018), to understand whether the Project will have a residual impact on the exercise of rights. A lens based on the seven guiding principles was applied for the assessment of impacts to rights and interests related to the Project; and
- Identify and describe potential adverse impacts that may result from the residual effects including cumulative environmental effects in terms of IAAC *Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples*, updated 2022 (IAAC, 2022b). The criteria include likelihood, geographic extent, frequency, duration, and reversibility, cultural well-being, health, cumulative impacts, governance, impact inequity, and the severity of these adverse impacts[11].

The identification and assessment of potential Project-related impacts to Aboriginal and Treaty Rights and Interests is to inform the EA/IA regulatory decision-making process and planning of the Project. Through this impact on rights assessment and continued consultation with the Tsuut'ina Nation, Project-related impacts to Tsuut'ina Nation's Aboriginal and Treaty rights can be used to inform Agency decision making.

Current use as defined in Section 30.6.6 is reflective of current use of lands and resources for traditional purposes as well as the potential desired future use by Tsuut'ina Nation. The potential future use of the Project footprint, the ATRI LSA, and the ATRI RSA without the Project in place for the exercise of Tsuut'ina Nation's rights and interests is in consideration of the certain past, present, and reasonably foreseeable future projects and activities within the ATRI RSA that could potentially impact the potential future use of lands and resources for traditional purposes, potential change to physical and cultural heritage activities and areas, potential change to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance, and the anticipated future social, health, and economic conditions.

The assessment of the potential impacts on Tsuut'ina Nation's rights and interests described in Section 30.10.2 are in consideration of the existing and potential future use of the Project footprint, the ATRI LSA, and the ATRI RSA by Tsuut'ina Nation to exercise their rights and interests with and without the Project. This section also notes where applicable that the potential future use of Tsuut'ina Nation to exercise its rights in the ATRI LSA and RSA has likely been influenced by past and ongoing development activities that have been included in the description of the baseline conditions in Section 30.6 utilizing the assessment methodology identified in Chapter 5 and referenced in Sections 30.3 and 30.7.4.2.

30.10.1.1 Limitations of the Impact on Rights and Interests Assessment

As noted in Section 30.6.6, not all heritage is "tangible" and can be quantified as physical sites and objects. Intangible cultural heritage for the Tsuut'ina Nation includes traditional knowledge, practices, and skills which can define culture such as language, oral history, art techniques, rituals, stories, intergenerational transfer of knowledge, representations, values, landscapes, and place names. The Tsuut'ina language and culture, which are intangible cultural resources are understood to include non-site-specific values that are

[11] Based on the criteria identified by IAAC in the Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples, updated 2022.

based in Tsuut'ina Traditional Knowledge but which may be spatially indistinct or difficult to record using maps. The connection that the Tsuut'ina Nation have with the land is an example of intangible cultural heritage. As a result of environmental change, including from urbanization and industrial development, the connection to the land can be "broken" and result in impacts to intangible cultural heritage.

There is limited information available publicly, and none provided by Tsuut'ina Nation directly regarding the importance of the land proposed for the Project and how it ties to their cultural heritage. As such, while the potential that physical changes to the land and resources may also result in impacts to intangible cultural heritage have been identified, without direct input from the Tsuut'ina Nation that provides their perspective on what these cultural impacts may mean to them, confidence in the characterization of the determination of severity of adverse cultural impact is rated as low. At this time, due to the lack of information available on intangible cultural values, Section 30.10.2.1 does not fully assess the degree of severity of adverse cultural impacts.

Through ongoing engagement and consultation with the Tsuut'ina Nation, NWP hopes to gain more insight into the potential for these impacts and to better understand their severity to allow for the development of appropriate impact management measures. It is to be noted that the assessment on impact to the Tsuut'ina Nation's rights and interests is based on publicly available information and preliminary consultation and engagement with the Tsuut'ina Nation and is not meant to supersede the Crown's formal consultation process to determine adverse impacts to rights addressed in Section 30.10.

30.10.1.2 Assessment Boundaries

Study areas represent the spatial boundaries that encompass the areas, at appropriate scales and spatial extents, in which the Project is anticipated to interact with a VC or VC group (Chapter 5). For the purposes of the assessment of impacts to Aboriginal and Treaty rights, the three spatial boundaries defined in Section 30.7.2.1 were considered in the assessment: the Project footprint, the ATRI LSA, and the ATRI RSA.

30.10.2 Potential Impact on Tsuut'ina Nation Rights and Interests

As noted in Section 30.5.4, IAAC indicated their preliminary understanding of potential impacts of the Project on Tsuut'ina Nation (IAAC, 2021b) to include:

- Hunting and Trapping;
- Fishing;
- Harvesting and Gathering;
- Ceremonial/Sacred Areas (i.e., Culturally Significant Areas);
- Physical and Cultural Heritage (i.e., Cultural, Spiritual, and Heritage);
- Access and Travel (and Trade) Routes; and
- Social, Health, and Economic (i.e., Health and Socio-Economic) Conditions

Based on the evaluation of the environmental effects of the Project, as determined through Project-related residual effects and residual cumulative effects anticipated for the associated VCs (e.g., Wildlife and Wildlife Habitat VCs) and anticipated effects to non-VC groups (i.e., broad ecosystem types), and after implementation of mitigation measures outlined in the Indigenous Impact Management Plan (Section 30.9) as well as additional information (certain intermediate and receptor VCs) included in the

assessment, there is potential for adverse impacts on Tsuut'ina Nation rights and interests that may remain include:

- Change to use of lands and resources for traditional purposes: Fishing;
- Change to use of lands and resources for traditional purposes: Hunting and trapping;
- Change to use of lands and resources for traditional purposes: Harvesting and gathering;
- Change to physical and cultural heritage and change to a structure, site, or item that is of historical, archaeological, paleontological, or architectural significance; and
- Change to social, health, and economic conditions.

As outlined in Section 30.2.3.2.6, the potential impact on Tsuut'ina Nation's rights related to Physical and Cultural Heritage as well as any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance are combined for the purposes of the impact assessment.

Based on the EIS guidelines, the assessment of the impacts of the Project components and activities, in all phases, includes a comparison of the impact on Tsuut'ina Nation's rights and interests related to the biophysical and human environments between the potential future conditions with the Project and the potential future use of the Project footprint without the Project. Potential future use of lands and resources for traditional purposes as they correspond to Tsuut'ina Nation's rights and interests without the Project are addressed in Section 30.10.2.1 under their respective potential impact on Tsuut'ina Nation's rights and interest for each identified use of lands and resources for traditional purposes.

30.10.2.1 Characterization of Severity of Adverse Impacts on Tsuut'ina Nation's Rights and Interests

The assessment of severity of adverse impacts on Aboriginal and Treaty rights and interests involves the consideration and evaluation of specific impact assessment criteria based on the degree (i.e., 'level') of severity for adverse impacts on the rights of Tsuut'ina Nation. Criteria used to characterize the degree of severity for adverse impacts on rights are defined in Table 30.10-1. The Agency's (IAAC) proposed suite of criteria (IAAC, 2022b) has been utilized to evaluate the severity of a wide range of adverse impacts on the rights of Tsuut'ina Nation. This suite of criteria has been used as an inventory from which the set of criteria considered for the assessment of impacts on the Tsuut'ina Nation's rights and interests has been determined, based on feedback from Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and the methods and VCs that have been identified.

The set of severity assessment criteria included in Table 30.10-1 is adapted from the *Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples*, updated 2022 (IAAC, 2022b) for the Project. The characterization for the severity of impacts (low, moderate, and high) have been customized for this assessment. The criteria included for this assessment are likelihood, geographic extent, frequency, duration, and reversibility, cultural well-being, health, and cumulative impacts. As a result of publicly available information and feedback received from Tsuut'ina Nation (Appendix 30-A, Table 30.A-2), the two criteria proposed in the suite that have not been carried forward are governance and impact inequity.

As previously noted, the Tsuut'ina Nation have provided a site assessment study which did not include information beyond the Project footprint, as such this severity assessment is based on the set of criteria noted in Table 30.10-1 and NWP's current understanding of the Tsuut'ina Nation's rights and interests according to preliminary consultation and publicly available information. Confidence in the assessment results considers the reliability of data and analytical methods used in the assessment of impact on rights.

Table 30.10-1: Criteria for Assessing the Level of Severity of the Impacts of the Project on the Exercise of Rights (IAAC, 2022b)[12]

Impact Criteria	Characteristics	Severity of Impact Levels
Likelihood	The full lifecycle of the Project, including its various stages and lifespan, is considered in determining the likelihood of an effect occurring. The likelihood of an impact on rights occurring considers the certainty of the potential change to environmental conditions as a result of the Project and available information on the extent to which the rights holder uses the Project area to exercise their rights.	Low – A potential impact is unlikely but could occur. The land/water resource is not known to be used by the rights holder to exercise their rights. Moderate – A potential impact is likely to occur. The land/water resource is known to be used but infrequently by the rights holder to exercise their rights. High – An impact is highly likely to occur. The land/water resource is known to be used frequently by the rights holder to exercise their rights.
Geographic extent	Geographic extent refers to the spatial area over which the impact is predicted to occur. The qualitative scales for characterizing geographic extent include the Project footprint, the ATRI LSA, and the ATRI RSA. The extent of an impact is described in terms of how much of the traditional territory would be impacted. Key information required for this criterion includes the location of each Indigenous community's traditional or treaty territory and interactions with the Project's effects.	Low – The impact could occur over a small spatial extent (e.g., Project footprint) relating to the exercise of rights. Impacts are not expected within areas of preferred or exclusive use. Moderate – The impact could occur over a moderate spatial extent (e.g., the LSA) relating to the exercise of rights. Impacts may occur within areas of preferred use. High – The impact could occur over a large spatial extent (e.g., the RSA) relating to the exercise of rights. Impacts expected within areas of preferred use or high value.
Frequency, duration, and reversibility	Frequency describes how often an impact could occur within a given time period. Duration refers to the length of time that an impact on a right is discernible. A reversible impact is one where the exercise of rights is expected to recover from the impact caused by the Project.	Low – The impact lasts less than 5 years. The impact would be confined to one discrete period during the life of the Project. The impact may be reversed in the short term. Moderate – The impact may last up to one generation. The impact would occur at sporadic, intermittent intervals, and throughout the operation and decommissioning of the Project. The impact may be reversed within one generation.

[12] Based on the criteria identified by IAAC in the Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples, updated 2022.

Impact Criteria	Characteristics	Severity of Impact Levels
		High – The impact is likely to persist over multiple generations. The impact would occur constantly during, and potentially beyond, the life of the Project. The impact cannot be reversed either in whole or in part.
Cultural well-being	Cultural well-being can be considered as the ability of an Indigenous community to continue customs, traditions, and practices integral to the community's distinct culture. Many rights are based on a unique relationship to the landscape that cannot be replicated elsewhere. The assessment considers impacts on the following types of areas that could hold cultural importance within an Indigenous community's territory. It is noted that the values associated with the different areas may overlap with one another: Physical heritage areas and structure, site, or item that is of historical, archaeological, paleontological, or architectural significance with certain tangible resources, such as notable densities of archaeological sites or burial grounds. Areas where traditional lifestyles are practiced through activities such as fishing, hunting and trapping, and harvesting and gathering. Ceremonial/sacred sites of particular spiritual importance. Cultural landscapes with interconnected access, including the travel routes and spaces between them.	Low – No or little indication that there would be any impact on areas of cultural importance. The impact is not likely to impeded peaceful access to practice cultural activities. The Indigenous community has only minor concerns about impacts from the Project or activity on health or integrity of resources and/or places used to practice rights. Moderate – There may be an impact on areas and/or practices of cultural importance. The impact may impede or alter access to practice cultural activities. There may be loss of habitat or availability of culturally important species. The disturbance may be of a physical or sensory nature. High – There would likely be an impact on areas and/or practices of cultural importance. Multiple impacts could occur to one area of high importance. There would likely be loss of habitat or availability and quality of culturally important species. Access to areas required to practice cultural activities would Kiley be disrupted or limited. The disturbance may be of a physical or sensory nature or may affect laws, knowledge, customs, and/or spiritual practices.
Health	Utilizing health as dimension for analysis of severity for all impacts on rights is to capture the inter-relatedness of impacts on rights and impacts on the health conditions of the Indigenous community. For the purposes of this assessment, "health" includes considerations of physical, mental, emotional, and spiritual health, including Indigenous views of health.	Low – The Indigenous community has minor to no concerns about impacts from the Project or activity on health, the Project is not likely to pose environmental effects to health, including effects to country foods. Moderate – There may be an impact on the physical, mental, emotional, and/or spiritual aspects of health on an individual and/or broader community basis. The Project has the potential to result in effects on food sources or cultural species of importance to traditional

Impact Criteria	Characteristics	Severity of Impact Levels
		diets, and to food security. The exercise of rights is altered due to quantifiable and/or perceived effects from the Project. High – There are significant effects from the Project on food sources or cultural species and to food security. The community has serious concerns about impacts to holistic and/or traditional models of health. Perception of effects to health interferes with, alters, and/or stops the exercise of Indigenous rights, the Project is likely to impact health on a community-wide level
Cumulative impacts	Cumulative impacts on a right may result from the Project in combination with impacts of past, existing, and future projects or activities. Cumulative impacts may have a regional or historic context and may extend to aspects of rights related to socio-economics, health, culture, heritage, and other matters tied to an Indigenous community's history and connection to the landscape. While the outcomes of the cumulative effects assessment, are included under this criterion, cumulative impacts consider a broader range of impacts and are not limited to a consideration of impacts from projects and activities.	Low – The Indigenous community has minor to no concerns about impacts from the Project or activity on health, the Project is not likely to pose environmental effects to health, including effects to country foods. Moderate – There may be an impact on the physical, mental, emotional, and/or spiritual aspects of health on an individual and/or broader community basis. The Project has the potential to result in effects on food sources or cultural species of importance to traditional diets, and to food security. The exercise of rights is altered due to quantifiable and/or perceived effects from the Project. High – There are significant effects from the Project on food sources or cultural species and to food security. The community has serious concerns about impacts to holistic and/or traditional models of health. Perception of effects to health interferes with, alters, and/or stops the exercise of Indigenous rights, the Project is likely to impact health on a community-wide level.

Source: Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples, updated 2022 (IAAC, 2022b).

The confidence in the characterization of the severity of adverse impacts to Tsuut'ina Nation's rights and interests is considered to be low due to the lack of information provided by the Tsuut'ina Nation. Due to the preliminary nature of the understanding of the Tsuut'ina Nation's rights and interests (Section 30.5.4) and based on information from the Tsuut'ina Nation (Appendix 30-A, Table 30.A-2), it is expected that the Crown consultation process will confirm the contents of the assessment on impact on Tsuut'ina Nation's rights and interests described in this section.

30.10.2.1.1 Impact on Use of Lands and Resources for Traditional Fishing Purposes

The Project has the potential to impact on Tsuut'ina Nation's rights and interests through the following:

- The potential for reduction in populations of fish species of interest (e.g., Bull Trout) due to impacts on fish habitat (though recognizing that habitat loss will be replaced with new habitat through the Fisheries Act required fish habitat compensation measures).
- The potential for temporary restrictions on access to the remaining sections of Alexander Creek due to Project activities (e.g., during blasting activities).
- The potential for change in water quality in Alexander Creek that could result in impacts to abundance and quality of fish species of interest and potential resulting in impact on traditional fishing activities.
- The potential changes to the actual or perceived health and quality of potential fish species of cultural interest/use for country foods.
- The potential for the permanent alienation of the Tsuut'ina Nation from fishing locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.

The impact on the opportunity to fish and the use of fish species for traditional purposes due to the Project are characterized as follows:

- Likelihood: *Low to Moderate*, as while there is the potential for this impact to occur, Tsuut'ina Nation has not identified to date that the community uses Alexandra Creek for fishing or whether they have an interest in using the creek in the future (Appendix 30-A, Table 30.A-2). It is acknowledged that Tsuut'ina Nation has the potential to use watercourses within the ATRI LSA that support fish and fish habitat VCs, including Bull Trout, given their interest in the species.
- Geographic Extent: *Low*, as the impact on the exercise on rights will occur over a small spatial extent (West Alexander Creek). Further, Tsuut'ina Nation have not provided any specific information to date regarding their current use of Alexandra Creek for fish or fishing opportunities or whether they have an interest in using the creek in the future. Impacts on rights and interests within areas of Tsuut'ina Nation's preferred or exclusive use are based on consultation with Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and as identified by IAAC (IAAC, 2021b).
- Frequency, Duration, and Reversibility: *Low to Moderate*, as while the impact (removal) to West Alexander Creek will be permanent, impacts to the remaining sections of Alexander Creek are expected to be infrequent, during the life of the Project only and largely reversible. Tsuut'ina Nation has not provided any specific information to date regarding their use of Alexandra Creek for fish or fishing opportunities or whether they have an interest in using the creek in the future, and while the removal of sections of West Alexander Creek, is expected to affect fish and fish opportunities, the opportunity to fish by Tsuut'ina Nation is not expected to be affected in the long term. The main branch of Alexander Creek which has the potential for fish and fishing opportunity, will not be physically altered by the Project. Impacts to fish habitat, such as the loss

of instream habitat, will be compensated for through the Fish and Fish Habitat Management Plan resulting in no net loss of instream habitat as a result of the Project.

- Cultural Well-being: *Moderate*, as while there is potential for the Alexander Creek to be culturally important to Tsuut'ina Nation, they have not provided any information to date regarding the importance of the creek to the nation. It is acknowledged that Tsuut'ina Nation has the potential to use watercourses that support Bull Trout given their interest in the species within the ATRI LSA.
- Health: *Low*, as the Project is not likely to pose environmental effects to health, including effects to country foods related to fish species harvested by Tsuut'ina Nation as surface water quality is not expected to be altered significantly due to mitigation measures identified (Site Water Management Plan) and continued monitoring will help improve adaptive management measures. The low rating also reflects that Tsuut'ina Nation has not provided information to date regarding their use of Alexandra Creek for fish and fishing opportunity or whether they have an interest in using the Creek in the future.
- Cumulative Impacts: *Moderate*, as the Project in combination with other reasonably foreseeable future projects and activities is not anticipated to result in measurable residual Project effects that reduce the ability and opportunity of Tsuut'ina Nation to practice their rights and interests related to fishing within the ATRI RSA. Due to on-going impacts of past and present projects and activities in combination with other reasonably foreseeable future projects and activities, on watercourses in the Elk Valley, the limited information currently available on the current and potential use of lands and resources within the ATRI RSA, and the uncertainty regarding the implications of regional climatic changes that may impact fish habitat availability, the cumulative impacts have been assessed as moderate. The cumulative impact is determined as moderate due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional fishing within the Project footprint at this time. It is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Degree of Severity for Adverse Impacts

The degree in severity of impact on Tsuut'ina Nation's rights for the use of lands and resources for fishing and fish opportunities is rated as low to moderate. The potential impacts to fish and fish habitat are predicted to be small in spatial extent. Mitigation and the Project's design to reduce impacts to fish and fish habitat VCs and the provision of fish habitat compensation, should allow for fishing opportunities to continue in the Elk Valley (other than the upper sections of West Alexander Creek) including those for traditional purposes. There is potential for the Project to result in the permanent alienation of Tsuut'ina Nation from fishing locations within the Project footprint, for which there is no current mitigation identified (Appendix 30-A, Table 30.A-2). It is further noted that that this physical alteration and potential change in the opportunity of the Tsuut'ina Nation to practice related traditional activities (e.g., fishing) may also have impacts on intangible cultural heritage. Due to the lack of specific information available on their use of the Project footprint for traditional purposes, understanding and characterizing these potential related impacts to their intangible cultural heritage requires further input from the Tsuut'ina Nation.

Though baseline data was sufficient to evaluate effects for the fish and fish habitat VCs, there is no current information available indicating that Tsuut'ina Nation use the watercourses within the Project footprint. Tsuut'ina Nation has also not expressed to date an interest in possibly using the Project-impacted

watercourse (Alexandra Creek) in the future (Appendix 30-A, Table 30.A-1 and Table 30.A-2). It should be noted that there is existing potential for fish and fishing opportunity available in the ATRI LSA and RSA with respect to watercourses outside of the Project footprint. Continued consultation with Tsuut'ina Nation, as well as through the development of potential follow-up and monitoring and adaptive management measures regarding fish and fish habitat are expected to improve the confidence rating and the severity assessment of impact on Tsuut'ina Nation's rights and interests.

Potential Future Use without the Project of Lands and Resources for Traditional Fishing Purposes

This section describes the potential future use of lands and resources related to fishing for traditional purposes in the Project footprint, the ATRI LSA, and the ATRI RSA without the Project in place. This is in consideration of the certain past, present, and reasonably foreseeable future projects and activities within the ATRI RSA that could impact the potential future use of lands and resources related to fishing as it relates to the potential impact on Tsuut'ina Nation's ability to exercise this right. As previously noted, Tsuut'ina Nation has not provided any information to date regarding their use of lands and resources related to fishing in the Project footprint or whether they have an interest in using the waterways in the Project footprint for fish and fish opportunity in the future. It is acknowledged that Tsuut'ina Nation has the potential to use watercourses in the ATRI LSA such as Alexander Creek that support fish and fish opportunity given the importance of healthy waterways within the ATRI LSA and RSA.

Past and ongoing projects and activities located in the ATRI LSA and RSA may likely be impacting the real or perceived quality and quantity of fish and fishing opportunities available for Tsuut'ina Nation in preferred locations to exercise Tsuut'ina Nation's rights and interests. As noted in Section 30.7.4.2 and in Chapter 12, with respect to the reasonably foreseeable future projects and activities in the ATRI RSA and based on the historical baseline of cumulative effects, past and current development activity in the ATRI LSA and RSA includes for example other mines, forestry activity (including logging in the Elk Valley), housing development, transportation facilities (roads), and recreation activities. It is anticipated that these activities will continue in the future without the Project and will continue to have influence on watercourses (water quality and quantity) and possibly fishing activity.

There is a potential for cumulative effects without the Project as the rivers and streams of the ATRI RSA including multiple reaches have experienced industrial effects and contaminant loading due to the impact on related ecosystems by forestry, mining, recreational development, and associated road networks. The Elk River system has been noted to be affected by sport fishing, transportation infrastructure, mining related impacts, and forestry activities which are anticipated to continue without the Project. The Elk River Valley has also seen substantial residential development and associated municipal water use and waste effluent deposition which are anticipated to continue without the Project. While past, present, and the reasonably foreseeable future projects and activities in the ATRI RSA have the potential for impact on Tsuut'ina Nation's rights for fishing for traditional purposes, the total footprint of the potential future use related to fishing without the Project in the Elk Valley represents a relatively small proportion of the overall Elk River watershed area. Effects on fish or fish habitat due to past and ongoing projects and activities in the ATRI RSA will interact with foreseeable future development, and with changes in the environment, and are expected to continue to have an adverse effect on Tsuut'ina Nation's rights and interests without the Project. Table 30.10-2 presents a summary of the potential impacts of the Project on the Tsuut'ina Nation's rights and interests related to fishing opportunities in comparison to a future scenario without the Project.

Table 30.10-2: Summary of Impact on Tsuut'ina Nation's Fishing Rights and related Interests based on Potential Future Use with and without the Project

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
Potential Impacts on Fishing Rights	Construction and Pre-Production	Potential loss of fishing opportunities and the potential to impact on fishing rights due to potential interactions with: • The loss of West Alexander Creek as a result of mine development and the storage of mine rock with the potential to impact traditional fishing due to the potential reduction of populations of fish species of interest. • Non-contact surface runoff/erosion where bare soils are exposed during logging, grubbing, and sedimentation of bare soils with the potential to impact traditional fishing due to potential for changes to the actual or perceived accessibility, health, and quality of potential fish species of cultural interest/use for country foods. • Potential localized changes in accessibility to fishing areas and the riparian habitat including temporary restrictions on access to Alexander Creek (e.g., during blasting activities). • The installation of water supply pipelines from Grave Creek and West Alexander Creek to result in potential changes in water level and erosion and sedimentation with the potential to impact on traditional fishing due to potential for changes to the actual or perceived accessibility, health, and quality of potential fish species of cultural interest/use for country foods. • The potential for the permanent alienation of the Tsuut'ina Nation from fishing locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	Potential impact on rights without the Project: • Tsuut'ina Nation has not to date included in their site assessment study any information regarding their fishing activity within the Project footprint. There is potential for the use of watercourses for fishing by Tsuut'ina Nation members in the ATRI LSA (e.g., Alexander Creek) and in the RSA (e.g., Elk River). • Past and current development activity in the ATRI LSA and RSA has resulted in changes to watercourses and fish populations. This includes for example other mines, forestry activity (including logging), housing development, transportation facilities (roads), and recreation activities. It is anticipated that these activities will continue in the future without the Project and continue to have influence on watercourses (water

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
	Operations	Potential loss of fishing opportunities and the potential impact on fishing rights due to potential interactions with: • The release of nitrogen compounds and other contaminants from storage areas and wash facilities with the potential to impact traditional fishing due to the potential for change in water quality in Alexander Creek that could result in impacts to abundance and quality of fish species of interest. • Mining activities (sedimentation, erosion, spills, contact runoff, nitrate, selenium, sulphate contamination from broken rock and dust) with the potential to impact traditional fishing due to potential for changes to the actual or perceived accessibility, health, and quality of potential fish species of cultural interest/use for country foods. • Potential changes to the actual or perceived accessibility, health, and quality of potential fish species of cultural interest/use for country foods due to mining activities. • Sensory disturbances to potential fish species of interest due to detonation of explosives and other mine activities. • Potential reduction of flows in Grave Creek through use as a secondary source of process make-up water, with potential to impact on surface water quality and quantity resulting in the potential for the permanent alienation of the Tsuut'ina Nation from fishing locations within the Project footprint and their ability to know and teach the Tsuut'ina way of living. • Potential reduction in flow of West Alexander Creek during coal reject disposal, hauling and dumping or mine rock, with the potential to impact fish species of interest and their habitat may potentially impact traditional fishing due to the potential reduction of populations of fish species of interest. • Potential for loss of downstream aquatic habitat resulting in the change or loss of access to traditionally/culturally important fish species or access to fish as country foods.	quality and quantity) and possibly fishing activity. • These past and ongoing projects and activities located in the ATRI LSA and RSA may likely be impacting real or perceived quality and quantity of fish and fishing opportunities available for Tsuut'ina Nation in preferred locations. These past and ongoing activities may be impacting the ability of Tsuut'ina Nation to exercise their rights related to fishing in the ATRI LSA and RSA. • Related to local area changes described above, the Elk River Valley has also seen substantial residential development and associated municipal water use and waste effluent deposition which may potentially impact fish and fishing opportunities that are anticipated to continue without the Project.

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
		• Potential interaction with fish species of interest and their habitat through sedimentation or changes in water levels through the management (discharge) of the Main Sediment Pond may potentially impact traditional fishing due to the potential reduction of populations of fish species of interest. • The potential for the permanent alienation of the Tsuut'ina Nation from fishing locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	
	Reclamation and Closure	Potential loss of fishing opportunities and the potential impact on fishing due to potential interactions with: • Fish species of interest and their habitat through erosion and sedimentation of bare soils may potentially impact traditional fishing due to the potential reduction of populations of fish species of interest. • Potential change to the interconnection throughout the ecosystem due to interaction of ecological features may potentially impact traditional fishing resulting in the potential for the permanent alienation of the Tsuut'ina Nation from fishing locations within the Project footprint and their ability to know and teach the Tsuut'ina way of living. • Potential for reduction of the quality and accessibility of fish species of interest for traditional/cultural purposes or country foods should insufficient effects monitoring take place that affects the mitigation measures utilized. • The potential for the permanent alienation of the Tsuut'ina Nation from fishing locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	
	Post-Closure	Potential loss of fishing opportunities and the potential impact on fishing due to potential interactions with:	

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
		• Fish species of interest and their habitat through erosion and sedimentation or changes in water levels through the decommissioning of the Main Sediment Pond and due to permanent rail line may potentially impact traditional fishing due to the potential reduction of populations of fish species of interest. • Potential for access within the Project footprint through the use of Branch C Road, which will remain as a permanent access road for future traditional activities such as traditional fishing in the Post-Closure phase. • Potential for reduction of the quality and accessibility of fish species of interest for traditional/cultural purposes or country foods should insufficient effects monitoring take place that affects the mitigation measures utilized. • The potential for the permanent alienation of the Tsuut'ina Nation from fishing locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	

30.10.2.1.2 Impact on Use of Lands and Resources for Traditional Hunting and Trapping Purposes

The Project has the potential to impact on Tsuut'ina Nation's hunting and trapping rights and interests through the following:

- The potential localized changes in accessibility to wildlife associated with riparian vegetation/habitat.
- The potential for changes to accessibility to aquatic wildlife species of interest (e.g., waterfowl) with the change or loss of aquatic habitats.
- The potential for changes in wildlife food sources through changes to ecosystems/vegetation communities resulting in changes to wildlife species of interest movements/migrations.
- The potential stressor on wildlife population (including ungulates) with increased access roads potentially attracting hunters, vehicle collisions, and increased road densities.
- The potential for reduction of the quality and accessibility of wildlife species of interest for traditional/cultural purposes or country foods.
- The potential for the permanent alienation of the Tsuut'ina Nation from hunting and trapping locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.

Though residual effects to wildlife VCs may occur as result of the Project, no significant adverse effects are anticipated, and the potential impacts included will result in a temporary decline in the wildlife species available for hunting and trapping use by the Tsuut'ina Nation as well as the temporary impact to the accessibility of areas used to hunt and trap in the Project footprint and the ATRI LSA.

The Project has the potential to impact on Tsuut'ina Nation's Treaty 7 rights through the following:

- The potential localized changes in accessibility to wildlife associated with riparian vegetation/habitat,
- The potential for changes to accessibility to aquatic wildlife species of interest (e.g., waterfowl) with the change or loss of aquatic habitats.
- The potential for changes in wildlife food sources through changes to ecosystems/vegetation communities resulting in changes to wildlife species of interest movements/migrations.
- The potential stressor on wildlife population (including ungulates) with increased access roads potentially attracting hunters, vehicle collisions, and increased road densities.
- The potential for reduction of the quality and accessibility of wildlife species of interest for traditional/cultural purposes or country foods.
- The potential for the permanent alienation of the Tsuut'ina Nation from hunting and trapping locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.

The impact on the opportunity to hunt and trap for traditional purposes due to the Project are characterized as follows:

- Likelihood: *Low to Moderate*, as while there is potential for this impact to occur, Tsuut'ina Nation did not detail hunting and trapping activities within the Project footprint Nation (Appendix 30-A, Table 30.A-2). While it is acknowledged that Tsuut'ina Nation has the potential to hunt and trap within the ATRI RSA which may potentially be affected by wildlife habitat loss, this will be reclaimed within the ATRI RSA through reclamation and post-closure activities. Pathways of

increased risk of mortality that are unlikely to be fully mitigated are collisions with Project-related traffic on access or mine roads, collisions with trains, and increased hunter access after closure.

- Geographic Extent: *Moderate*, as the potential impact to opportunities for hunting and trapping are restricted to the Project footprint and the ATRI LSA. The Tsuut'ina Nation has not provided information to date regarding their use of the Project footprint or whether they have an interest in using the area in the future, impacts on rights within areas of Tsuut'ina Nation's preferred or exclusive use are based on preliminary consultation with Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and as identified by IAAC (IAAC, 2021b).
- Frequency, Duration, and Reversibility: *Low to Moderate,* as the potential impact to opportunities for hunting and trapping are restricted to the Project footprint and the ATRI LSA. The Tsuut'ina Nation has not provided any specific information to date regarding their use of the Project footprint or whether they have an interest in using the area in the future, impacts on rights within areas of Tsuut'ina Nation's preferred or exclusive use are based on preliminary consultation with Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and as identified by IAAC (IAAC, 2021b).
- Cultural Well-being: *Moderate*, as while there is potential for the Project footprint to be culturally important to Tsuut'ina Nation, they have not provided any information to date regarding the importance of the area with respect to hunting and trapping for traditional purposes. The Project is not anticipated to result in the permanent loss of access or the ability to conduct traditional land and resource use related to hunting and trapping within the Project footprint or VC study areas due to the importance of these traditional activities to Tsuut'ina cultural and traditional identity, and the potential importance of the available lands for traditional practices.
- Health: *Low*, as the Project is not likely to pose environmental effects to health, based on the Human Health and Ecological Risk Assessment (HHERA; Chapter 22), which encompasses changes in air quality, the overall Project-related risk to terrestrial and aquatic wildlife health, except for a few localized receptors within the Project footprint. This assessment includes effects to country foods related to ungulate, carnivore, and bird species harvested by Tsuut'ina Nation and is assessed as low due to the sensitivity and resilience of the terrestrial wildlife health due to the low exposures/risk that are unlikely to adversely perturb local populations. The low rating also reflects that Tsuut'ina Nation has not provided information to date regarding their use of the Project footprint or whether they have an interest in using the area for hunting and trapping for traditional purposes.
- Cumulative Impacts: *Moderate*, as the Project in combination with other reasonably foreseeable future projects and activities is not anticipated to reduce the ability and opportunity of Tsuut'ina Nation to practice rights and related interests related to hunting and trapping within the ATRI RSA. The wildlife and wildlife habitat conditions within the regional study areas of relevant wildlife species of interests (e.g., ungulates), including their ecology, habitat availability, and distribution, and occurrence and abundance, are well understood at the scale of the VC regional study areas (e.g., Terrestrial RSA). The moderate rating also reflects that Tsuut'ina Nation has not provided any specific information to date regarding their use of the Project footprint for hunting and trapping for traditional purposes or whether they have an interest in using the area in the future. It is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases. Uncertainty also exists regarding the implications of regional climatic changes that may impact wildlife habitat availability.

Degree of Severity for Adverse Impacts

The degree in severity of impact on Tsuut'ina Nation's rights and interests for the current use of lands and resources for hunting and trapping is rated as low to moderate. The potential impacts are likely to be small in spatial extent, reversible in the long term, and with few effects to health and/or country foods. Mitigation and the Project's design to reduce impacts to wildlife VCs and the implementation of management, monitoring, and reclamation plans, should allow for hunting and trapping activities to continue within the ATRI LSA including those for traditional purposes.

Though baseline data was sufficient to evaluate effects for identified wildlife VCs, areas currently or potentially used by Tsuut'ina Nation for hunting and trapping have not been identified within the ATRI LSA through the site assessment study or publicly-available information. It is noted that Tsuut'ina Nation has previously identified wildlife VCs specifically as species of importance based on preliminary feedback from Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and as identified by IAAC (IAAC, 2021b). Information related to Tsuut'ina Nation's use of the ATRI LSA to hunt, and trap was not made available prior to the assessment and the currently identified low level of use by Tsuut'ina Nation coupled with the lack of significant adverse effects to wildlife VCs that are potentially used for hunting and trapping purposes, indicates the low to moderate level of impact on Tsuut'ina Nation rights and interests related to the use of lands and resources for traditional hunting and trapping.

The mitigation measures proposed for the species as well as the characterization of the residual effects and recent trends in local population levels, the Project is unlikely to contribute to limiting the ability of wildlife VCs to recover from past declines and maintain a stable population in the Terrestrial LSA. There is potential for the Project to result in the permanent alienation of Tsuut'ina Nation from hunting and trapping locations within the Project footprint, for which there is no current mitigation identified (Appendix 30-A, Table 30.A-2). It is further noted that that this physical alteration and potential change in the opportunity of the Tsuut'ina Nation to practice related traditional activities (e.g., hunting and trapping) may also have impacts on intangible cultural heritage. Due to the lack of specific information available on their use of the Project footprint for traditional purposes, understanding and characterizing these potential related impacts to their intangible cultural heritage requires further input from the Tsuut'ina Nation.

Continued consultation with Tsuut'ina Nation, as well as through the development of potential follow-up and monitoring and adaptive management measures regarding wildlife VCs are expected to improve the confidence rating and the severity of impact on Tsuut'ina Nation's rights and interests.

Potential Future Use without the Project of Lands and Resources for Traditional Hunting and Trapping Purposes

This section describes the potential future use of lands and resources for traditional hunting and trapping in the Project footprint, the ATRI LSA, and the ATRI RSA without the Project in place. This is in consideration of the certain past, present, and reasonably foreseeable future projects and activities within the ATRI RSA that could impact the potential future use of lands and resources for traditional hunting and trapping related to the potential impact on Tsuut'ina Nation's ability to exercise these rights. As previously noted, Tsuut'ina Nation has not provided any information to date regarding their use of lands and resources for traditional hunting and trapping in the Project footprint or whether they have an interest in using the Project footprint in the future. It is acknowledged that Tsuut'ina Nation has the potential to use

lands and resources for traditional hunting and trapping in the ATRI LSA given the importance of wildlife VCs such as ungulates within the local study area and the ATRI RSA.

Past and ongoing projects and activities located in the ATRI LSA and RSA may likely be impacting the real or perceived quality and quantity of country foods available in relation to hunting and trapping for Tsuut'ina Nation in preferred locations to exercise Tsuut'ina Nation's rights and interests. As noted in Section 30.7.4.2 and in Chapter 15, with respect to the reasonably foreseeable future projects and activities in the ATRI RSA and based on the historical baseline of cumulative effects, past and current development activity in the ATRI LSA and RSA includes for example other mines, forestry activity (including logging in the Elk Valley), housing development, transportation facilities (roads), and recreation activities. It is anticipated that these activities will continue in the future without the Project and will continue to have influence on lands and resources for traditional hunting and trapping in the ATRI LSA.

There is a potential for cumulative impacts due to the spatial distribution of historical disturbance as a result of mining in the Elk Valley which has followed economic coal resources to form a long north-south band of potential mining-related disturbance. In the ATRI LSA, this north-south running band is interrupted by a few relatively undisturbed east-west corridors that provide "gaps" in the mining region for the movement of animals. This general trend of north-south oriented mining and potentially related disturbance along valley bottoms and some ridges potentially limits the east-west connectivity between alpine ranges.

Without the Project footprint, other impairments to wildlife movement from highway and transportation corridors, as well as other disturbance is likely to create and maintain important barriers to animal movement, and potentially influence use of ancestral east-west trails. Past disturbance has also potentially affected the quantity and quality of certain ecosystems available for the practice of Tsuut'ina Nation's rights and interests in the Elk Valley. Within the ATRI RSA, these ecosystems are also important for maintaining biodiversity across the landscape, a critically important cultural value. This also emphasizes the cumulative effect of past developments on the practice of rights and interests. Table 30.10-3 presents a summary of the potential impacts of the Project on the Tsuut'ina Nation's rights and interests related to hunting and trapping in comparison to a future scenario without the Project.

30.10.2.1.3 Impact on Use of Lands and Resources for Traditional Harvesting and Gathering Purposes

The Project has the potential to impact Tsuut'ina Nation's harvesting and gathering rights and interests through the following:

- The potential for reduction in the quality and accessibility of vegetation species of interest for traditional/cultural purposes or country foods.
- The potential for the permanent alienation of the Tsuut'ina Nation from harvesting and gathering locations within the Project footprint.
- The residual effects on landscapes and ecosystems within the Project footprint due to the Rail Loadout, the road, and the Project infrastructure footprint may remove areas currently or potentially used by the Tsuut'ina Nation to harvest and gather plants.

Table 30.10-3: Summary of Impact on Tsuut'ina Nation's Hunting and Trapping Rights and related Interests based on Potential Future Use with and without the Project

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
Potential Impacts on Hunting and Trapping Rights	Construction and Pre-Production	Potential for decreased hunting and trapping opportunities and impact on rights due to potential interactions with: • Wildlife species of interest through transportation of materials and personnel to site (e.g., vehicle collisions and increased traffic) and potential direct mortality from vehicle strikes may potentially impact traditional hunting and trapping due to potential localized changes in accessibility to wildlife. • Potential change of wildlife food sources and movements as a result of changes in vegetation communities and terrestrial ecosystems (i.e., degradation of wildlife habitat). • Potential sensory disturbance to wildlife (i.e., noise and vibration) may potentially impact traditional hunting and trapping. • Potential change in landscape and terrestrial ecosystem types resulting in the change of wildlife food sources and movements may potentially impact traditional hunting and trapping. • Potential localized changes in accessibility to wildlife associated with riparian areas due to changes to surface water quality, fish and fish habitat, and riparian vegetation/habitat may potentially impact traditional hunting and trapping. • Potential loss of wildlife habitat within road and infrastructure footprint and potential change in localized wildlife species of interest movement/accessibility may potentially impact traditional hunting and trapping. • Potential stressor on wildlife population with increased access roads potentially attracting hunters and	Potential impact on rights Potential impact on rights without the Project: • Tsuut'ina Nation has not to date included in their site assessment study any information regarding their possible hunting and trapping activities within the Project footprint. Nevertheless, there is potential for the use of lands and resources for traditional hunting and trapping in the ATRI LSA given the importance of wildlife VCs such as ungulates within the ATRI LSA and RSA. • Past and current development activity in the ATRI LSA and RSA has resulted in forming a long north-south band of potential mining-related disturbance which is interrupted by a few relatively undisturbed east-west corridors that provide "gaps" in the mining region for the movement of animals. This includes for example other mines, forestry activity, housing development, transportation facilities (roads), and recreation activities. It is anticipated that these activities will continue in the future without the Project and continue to have influence on traditional hunting and trapping activities. • These past and ongoing projects and activities located in the ATRI LSA and RSA may likely be impacting real or perceived quality and quantity of country foods available in relation to hunting and trapping

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
		increased road densities may potentially impact traditional hunting and trapping. • The potential for the permanent alienation of the Tsuut'ina Nation from hunting and trapping locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	for Tsuut'ina Nation in preferred locations. These past and ongoing activities may be impacting the ability of Tsuut'ina Nation to exercise their rights related to hunting and trapping in the ATRI LSA and RSA. • Related to the local study area changes described above, the Elk River Valley has also seen substantial residential development that has potentially affected the quantity and quality of certain ecosystems available for the practice of Tsuut'ina Nation rights and interests in the region that are anticipated to continue without the Project.
	Operations	Potential for decreased hunting and trapping opportunities and impact on rights due to potential interactions with: • The release of nitrogen compounds and other contaminants from storage areas and wash facilities that may potentially affect wildlife species of interest may potentially impact traditional hunting and trapping. • Potential change of wildlife species of interest food sources and movements as a result of changes in vegetation communities and terrestrial ecosystems (i.e., degradation of wildlife habitat, dust deposition) or sensory disturbances may potentially impact traditional hunting and trapping. • Changes in wildlife species of interest movements/accessibility to these wildlife species due to the presence of the mine may potentially impact traditional hunting and trapping. • Potential for changes to accessibility to aquatic wildlife species of interest (e.g., waterfowl) with the change or loss of aquatic habitats may potentially impact traditional hunting and trapping. • Sensory disturbances to wildlife species of interest due to detonation of explosives and other mine activities may potentially impact traditional hunting and trapping.	

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
		• Potential for changes in wildlife food sources through changes to ecosystems/vegetation communities resulting in changes to wildlife species of interest movements/migrations may potentially impact traditional hunting and trapping. • The potential for the permanent alienation of the Tsuut'ina Nation from hunting and trapping locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	
	Reclamation and Closure	Potential for decreased hunting and trapping opportunities and impact on rights due to potential interactions with: • Potential sensory disturbance to wildlife species of interest (i.e., noise and vibration) may potentially impact traditional hunting and trapping. • Potential for reestablishment of wildlife habitat and food sources in the development footprint for species of interest through reestablishment of habitat/vegetation communities. • Potential for the reestablishment of traditional hunting activities. • Potential for reduction of the quality and accessibility of wildlife species of interest for traditional/cultural purposes or country foods should insufficient effects monitoring take place that affects the mitigation measures utilized. • The potential for the permanent alienation of the Tsuut'ina Nation from hunting and trapping locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
	Post-Closure	Potential for decreased hunting and trapping opportunities and impact on rights due to potential interactions with: • Potential for changes in water levels resulting in potential impacts to riparian vegetation communities and wildlife habitats of interest may potentially impact traditional hunting and trapping. • Potential for changes to accessibility to aquatic wildlife VC species of interest (e.g., waterfowl) with the change or loss of aquatic habitat may potentially impact traditional hunting and trapping. • Potential for access within the Project footprint through the use of Branch C Road, which will remain as a permanent access road for future traditional activities such as hunting and trapping in the Post-Closure phase. • Potential for collisions with wildlife and disruption to wildlife movements resulting in changes to accessibility to wildlife species of interest may potentially impact traditional hunting and trapping. • Potential stressor on wildlife population with increased access roads potentially attracting hunters and increased road densities may potentially impact traditional hunting and trapping. • Potential for reduction of the quality and accessibility of wildlife species of interest for traditional/cultural purposes or country foods should insufficient effects monitoring take place that affects the mitigation measures utilized. • The potential for the permanent alienation of the Tsuut'ina Nation from hunting and trapping locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	

- The potential changes in vegetation communities/terrestrial ecosystems and introduction and colonization of invasive vegetation species that outcompete species of interest resulting in a loss of potentially traditionally/culturally important vegetation communities has the potential to impact on the Tsuut'ina Nation's rights and interests.
- The potential for the permanent alienation of the Tsuut'ina Nation from harvesting and gathering locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.

The impact on the opportunity to harvest and gather for traditional purposes due to the Project are characterized as follows:

- Likelihood: *Moderate*, as there is potential for this impact to occur based on information provided by Tsuut'ina Nation regarding their use of the Project footprint and that they have an interest in using the area in the future (Appendix 30-A, Table 30.A-2). It is acknowledged that Tsuut'ina Nation has the potential to use areas within the ATRI LSA that support harvesting and gathering activities that relate to the exercise of their rights and interests. While the loss of vegetation communities and plant species of interest within those communities, as well as access to vegetation communities, will be impacted over the long-term; site reclamation activities will likely reclaim impacted vegetation communities.
- Geographic Extent: *Moderate*, as the potential impact to opportunities for harvesting and gathering are restricted to the Project footprint, and will be reclaimed during Reclamation and Closure phases of the Project. Tsuut'ina Nation has provided some information regarding their use of the Project footprint and they have an interest in using the area in the future, the impact on rights and interests related to traditional harvesting and gathering is anticipated to be moderate based on preliminary consultation with Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and as identified by IAAC (IAAC, 2021b).
- Frequency, Duration, and Reversibility: *Moderate to High,* while the impact to the Project footprint will be long-term to permanent, Tsuut'ina Nation's accessibility to opportunities for harvesting and gathering in vegetated areas of importance within the Project footprint are likely to be impacted mainly during the Construction and Operations phases, and ecological restoration activities will reclaim impacted vegetation communities. It is noted that reclaimed areas, such as forested sites, will take many years to support mature forests that may support plant species of interest used for harvesting and gathering, and as Tsuut'ina Nation has provided some information regarding their use of the Project footprint or and they have an interest in using the area in the future, the level of potential for impact is rated as moderate to high.
- Cultural Well-being: *Moderate*, as while the Project footprint has vegetation and plant species of cultural importance to Tsuut'ina Nation, information to date regarding the importance of the Project footprint as it relates to harvesting and gathering for traditional purposes is based on preliminary consultation with Tsuut'ina Nation (Appendix 30-A, Table 30.A-1 and Table 30.A-2) and no other traditional land use information specific to culturally important plants and species in the Project footprint has been provided by Tsuut'ina Nation. The level of impact on cultural well-being is rated as moderate as the Project is not anticipated to result in the permanent loss of access or the ability to conduct traditional land and resource use related to the harvesting and gathering within the Project footprint balanced with the anticipated potential impact on culturally important vegetation and plants species as a result of the Project.

- Health: *Low*, as the Project is not likely to pose environmental effects to health, including potential effects to country foods used for harvesting and gathering by Tsuut'ina Nation in the Project footprint due to the mitigation measures identified (Ecological Restoration Plan) and the continued monitoring to help improve adaptive management measures.
- Cumulative Impacts: *Moderate*, as the Project, in combination with other reasonably foreseeable future projects and activities, is not anticipated to result in measurable residual Project effects to reduce the ability and opportunity for Tsuut'ina Nation to practice their rights and interests related to harvesting and gathering within the ATRI RSA. The opportunity to harvest and gather within the ATRI RSA is dependent on the location of ecosystems and plant species of interest as well as the access to these areas. Due to on-going impacts of past and present projects and activities in combination with other reasonably foreseeable future projects and activities, on the Elk Valley, the limited information currently available on the use of lands and resources within the ATRI RSA, the uncertainty regarding the implications of regional climatic changes that may impact terrestrial ecosystems and vegetation communities, the changes in the accessibility to harvest and gather in the ATRI RSA that may potentially impact the ability to undertake cultural and traditional practices for community members, and the importance of available lands for traditional practices, the cumulative impacts have been assessed as moderate. The cumulative impact is also determined as moderate due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional harvesting and gathering activities within the Project footprint at this time. It is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Degree of Severity for Adverse Impacts

The degree in severity of impact on Tsuut'ina Nation's rights and interests for the use of lands and resources for harvesting and gathering is rated as moderate as potential impacts are likely to be small in spatial extent, reversible long-term, with few effects to health and/or country foods while there is potential for the Project to result in the permanent alienation of Tsuut'ina Nation from harvesting and gathering locations within the Project footprint for which there is no current mitigation identified (Appendix 30-A, Table 30.A-1). It is further noted that that this physical alteration and potential change in the opportunity of the Tsuut'ina Nation to practice related traditional activities (e.g., harvesting and gathering) may also have impacts on intangible cultural heritage. Due to the lack of specific information available on their use of the Project footprint for traditional purposes, understanding and characterizing these potential related impacts to their intangible cultural heritage requires further input from the Tsuut'ina Nation.

Though baseline data was sufficient to evaluate effects for the Project VCs, there is no current information available indicating that the Tsuut'ina Nation for use the ATRI LSA for harvesting and gathering through information provided by Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and publicly-available information. It should be noted that through this assessment it has been determined that the impact on Tsuut'ina Nation's opportunities for harvesting and gathering is rated as moderate as there is potential for the Project to result in the permanent alienation of Tsuut'ina Nation from locations within the Project footprint. Continued consultation with Tsuut'ina Nation, as well as through the development of potential follow-up and monitoring and adaptive management measures as necessary is expected to improve the confidence rating and the severity of impact on Tsuut'ina Nation's rights and interests.

Potential Future Use without the Project of Lands and Resources for Traditional Harvesting and Gathering Purposes

This section describes the potential future use of lands and resources for harvesting and gathering for traditional purposes in the Project footprint, the ATRI LSA, and the ATRI RSA without the Project in place. This is in consideration of the certain past, present, and reasonably foreseeable future projects and activities within the ATRI RSA that could impact the potential future use of sites for harvesting and gathering for traditional purposes as it relates to the potential impact on Tsuut'ina Nation's ability to exercise these rights. As previously noted, Tsuut'ina Nation has not provided any information to date regarding their use of lands and resources for harvesting and gathering for traditional purposes in the Project footprint or whether they have an interest in using sites within the Project footprint in the future. It is acknowledged that Tsuut'ina Nation has the potential to use the ATRI LSA given the importance of culturally important plants and species that the community rely on for foods, medicines, and spiritual uses within the ATRI LSA and RSA.

Past and ongoing projects and activities located in the ATRI LSA and RSA may likely be impacting the real or perceived quality and quantity of country foods available for harvesting and gathering in preferred locations to exercise Tsuut'ina Nation's rights and interests. As noted in Section 30.3.6.3 and in Chapters 13 and 14, with respect to the reasonably foreseeable future projects and activities in the ATRI RSA and based on the historical baseline of cumulative effects, past and current development activity in the ATRI LSA and RSA includes for example other mines, forestry activity (including logging in the Elk Valley), housing development, transportation facilities (roads), and recreation activities. It is anticipated that these activities will continue in the future without the Project and will continue to have influence on lands and resources for traditional harvesting and gathering in the ATRI LSA.

There is a potential for cumulative impacts due to the spatial distribution of historical disturbance as a result of mining in the Elk Valley which has followed economic coal resources to form a long north-south band of potential mining-related disturbance. In places, including the ATRI LSA, this north-south running band is interrupted by a few relatively undisturbed east-west corridors that provide "gaps" in the mining region for the movement of land users. This general trend of north-south oriented mining and potentially related disturbance along valley bottoms and some ridges potentially limits the east-west connectivity between alpine ranges.

Without the Project footprint, past disturbance has affected the quantity and quality of certain ecosystems available for the practice of Tsuut'ina Nation rights and interests in the Elk Valley. Within the ATRI RSA, these ecosystems are also important for maintaining biodiversity across the landscape, a critically important cultural value. Mature and old growth forests potentially being impacted within the Elk Valley have the potential to affect rights and interests. This also emphasizes the cumulative effect of past developments on the practice of rights and interests. Table 30.10-4 presents a summary of the potential impacts of the Project on the Tsuut'ina Nation's rights and interests related to harvesting and gathering in comparison to a future scenario without the Project.

Table 30.10-4: Summary of Impact on Tsuut'ina Nation's Harvesting and Gathering Rights and related Interests based on Potential Future Use with and without the Project

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
Potential Impacts on Harvesting and Gathering Rights	Construction and Pre-Production	Potential impact on the opportunity for harvesting and gathering activities and impact on rights due to potential interactions with: • Potential for introduction of invasive species around development areas reducing the quality of vegetation communities/terrestrial ecosystems/ habitats for vegetation species of interest and resulting in change in terrestrial ecosystems. • Potential changes to vegetation that may potentially impact the ability to harvest and gather for traditional purposes. • Potential change in landscape and terrestrial ecosystem types resulting in the change of wildlife food sources and movements. • Potential loss of riparian habitat may potentially impact the ability to harvest and gather for traditional purposes. • Potential loss of vegetation species of interest within road and infrastructure footprint may potentially impact the ability to harvest and gather for traditional purposes. • Potential loss of grassland habitat, and therefore, potential loss of species of interest within footprint of Rail Loadout and as a result of the workshop/mine dry footprint may potentially impact the ability to harvest and gather for traditional purposes. • The potential for the permanent alienation of the Tsuut'ina Nation from harvesting and gathering locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	Potential impact on rights without the Project: • Tsuut'ina Nation has included information in their site assessment study regarding possible sites related to their potential harvesting and gathering activities within the Project footprint. There is also potential for Tsuut'ina Nation to use the ATRI LSA given the importance of culturally important plants and species that the community rely on for foods, medicines, and spiritual uses within the ATRI LSA and RSA. • Past and current development activity in the ATRI LSA and RSA has resulted in forming a long north-south band of potential mining-related disturbance which is interrupted by a few relatively undisturbed east-west corridors that provide "gaps" in the mining region for the movement of land users. This includes for example other mines, forestry activity, housing development, transportation facilities (roads), and recreation activities. Mature and old growth forests potentially being impacted within the Elk Valley have the potential to affect rights and interests. It is anticipated that these activities will continue in

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
	Operations	Potential impact on the opportunity for harvesting and gathering activities and impact on rights due to potential interactions with: • Terrestrial ecosystems and vegetation through the release of nitrogen compounds and other contaminants from storage areas and wash facilities may potentially impact the ability to harvest and gather for traditional purposes. • Potential changes in vegetation communities/terrestrial ecosystems and introduction and colonization of invasive vegetation species that outcompete species of interest resulting in a loss of traditionally/culturally important vegetation communities may potentially impact the ability to harvest and gather for traditional purposes. • Potential interaction with vegetation health through particulate matter and dust deposition may potentially impact the ability to harvest and gather for traditional purposes. • The potential for the permanent alienation of the Tsuut'ina Nation from harvesting and gathering locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	the future without the Project and continue to have influence on site for traditional harvesting and gathering. • These past and ongoing projects and activities located in the ATRI LSA and RSA may likely be impacting real or perceived quality and quantity of country foods available for harvesting and gathering in preferred locations. These past and ongoing activities may be impacting the ability of Tsuut'ina Nation to exercise their rights related to harvesting and gathering in the LSA and RSA. • Related to the local study area changes described above, the Elk River Valley has also seen substantial residential development that has potentially affected the quantity and quality of certain ecosystems available for the practice of Tsuut'ina Nation rights and interests in the region that are anticipated to continue without the Project.
	Reclamation and Closure	Potential impact on the opportunity for harvesting and gathering activities and impact on rights due to potential interactions with: • Potential for introduction of invasive species around development areas reducing the quality of vegetation communities/terrestrial ecosystems/habitats for species of interest may potentially impact the ability to harvest and gather for traditional purposes.	

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
		• Potential for reclamation of ecosystems and related species of interest and areas used for harvesting and gathering may potentially impact the ability to harvest and gather for traditional purposes. • Potential for reestablishment of plant harvesting activities. • Potential for reduction of the quality and accessibility of vegetation species of interest for traditional/cultural purposes or country foods should insufficient effects monitoring take place that affects the mitigation measures utilized. • The potential for the permanent alienation of the Tsuut'ina Nation from harvesting and gathering locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	
	Post-Closure	Potential impact on the opportunity for harvesting and gathering activities and impact on rights due to potential interactions with: • Potential for changes in water levels resulting in potential impacts to riparian vegetation communities and wildlife habitats of interest may potentially impact the ability to harvest and gather for traditional purposes. • Potential for access within the Project footprint through the use of Branch C Road, which will remain as a permanent access road for future traditional activities such as harvesting and gathering in the Post-Closure phase. • Potential for the introduction of weeds and invasive vegetation species in disturbed areas around the rail line resulting in a change of localized vegetation communities/loss of species of interest may potentially	

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
		impact the ability to harvest and gather for traditional purposes. • Potential for reduction of the quality and accessibility of vegetation species of interest for traditional/cultural purposes or country foods should insufficient effects monitoring take place that affects the mitigation measures utilized. • The potential for the permanent alienation of the Tsuut'ina Nation from harvesting and gathering locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	

30.10.2.1.4 Impact on Physical and Cultural Heritage and Change to a Structure, Site, or Item that is of Historical, Archaeological, Paleontological, or Architectural Significance

The Project has the potential to impact on Tsuut'ina Nation's physical and cultural heritage through the following:

- The potential loss of pre-contact archaeological artifacts (if present) and tree throws related to physical and cultural heritage.
- The potential loss/disconnection of historic and present-day travel routes and trail if present within or crossing new roads and infrastructure footprint.
- The potential changes to or loss of places that may be important for ceremonial or sacred areas through changes in landscape/ecosystems within the Project footprint.
- The potential for change in access to places that may be important for ceremonial or sacred areas, and the potential loss of pre-contact archaeological artifacts (if present) during Project phases.
- The Project has the potential to impact on Tsuut'ina Nation's rights and interests as a result of the potential change due to a significant historic area located near the Project's roads: Grave Lake, Grave Creek, and Grave Prairie.
- The potential for changes to ceremonial or sacred areas associated with Grave Creek and West Alexander Creek.
- There is also the potential discovery of pre-contact archaeological resources (if present) in unconsolidated material or during progressive clearing activities.
- The potential for the permanent alienation of the Tsuut'ina Nation from their cultural heritage due to the intangible value associated with a sense of place within the Project footprint.

The potential impact on physical and cultural heritage and a structure, site, or item that is of historical, archaeological, paleontological, or architectural significance due to the Project footprint are characterized as follows:

- Likelihood: *Moderate*, as there are 15 pre-contact archaeological sites anticipated to be directly impacted by the Project and none are known to contain ancestral or historical burial site. These heritage resources may be of interest to the Tsuut'ina Nation based on their potential linkage to Tsuut'ina Nation ancestry though none have been identified based on preliminary consultation with Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and as identified by IAAC (IAAC, 2021b).
- Geographic Extent: *Low*, as only heritage resources that exist within the Project footprint will be directly impacted.
- Frequency, Duration, and Reversibility: *High,* as the direct loss of heritage resources related to physical and cultural heritage that may exist within the Project footprint that might be relevant to the Tsuut'ina Nation and are retrieved from the Project footprint cannot be returned/reburied within the Project footprint in the same geographical context. Change of an archaeological site is irreversible. Their potential linkage to Tsuut'ina Nation ancestry have not been currently identified based on preliminary consultation with Tsuut'ina Nation (Appendix 30-A, Table 30.A-1 and Table 30.A-2; IAAC, 2021b).
- Cultural Well-being: *High*, heritage resources of interest related to physical and cultural heritage are considered to be very important cultural resources to the Tsuut'ina Nation that link Tsuut'ina Nation citizens to their ancestors and cultural identities and have a low resilience to change as alterations to areas or sites of interest and significance may not adapt to effects that alter their presence or existence. Their potential linkage to Tsuut'ina Nation ancestry have not been

currently identified based on preliminary consultation with Tsuut'ina Nation (Appendix 30-A, Table 30.A-1 and Table 30.A-2; IAAC, 2021b).

- Health: *Low*, as the Project is not likely to pose environmental effects to health as a result of the physical and cultural heritage and a structure, site, or item that is of historical, archaeological, paleontological, or architectural significance. The low rating also reflects that Tsuut'ina Nation have not provided any specific information to date regarding their use of the Project footprint or whether they have an interest in using the area in the future.
- Cumulative Impacts: *Moderate*, as there is potential for physical and cultural heritage resources and structures, sites, or things of historical, archaeological, paleontological, or architectural significance to be located with the ATRI RSA and as such, a potential for development of reasonably foreseeable future projects and activities to overlap with these resources and sites. At this time, the locations of these resources and sites require further consultation with the Indigenous Communities within the ATRI RSA, other than those documented as part of the Project Archaeological Baseline Assessment within the Project footprint and the Heritage Resources LSA (Chapter 16). It is anticipated that mitigation measures to identify heritage resources will be implemented as part of current and reasonably foreseeable future projects and activities prior to development. Within the ATRI RSA, the location of physical and cultural heritage and of structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance are currently unknown outside of the Project footprint and Heritage Resources LSA. Should reasonable foreseeable future projects and activities be carried out within the ATRI RSA and mitigation measures be implemented to protect and avoid physical and cultural heritage and any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance (i.e., no permanent loss), the residual cumulative effects to physical and cultural heritage and to any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance arising from the Project in combination with other past, present, and reasonably foreseeable future projects and activities during all phases are not anticipated to be significant. The cumulative impact is determined as moderate due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional activities within the Project footprint at this time. It is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Degree of Severity for Adverse Impacts

The degree in severity of impact on Tsuut'ina Nation's rights and interests related to physical and cultural heritage resources and structures, sites, or things of historical, archaeological, paleontological, or architectural significance is rated as moderate to high as potential impacts are likely to be small in spatial extent, and with no effects to health. These heritage resources may be of interest to the Tsuut'ina Nation based on their potential linkage to Tsuut'ina Nation ancestry though none have been identified based on preliminary consultation with Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and as identified by IAAC (IAAC, 2021b). Though baseline data was sufficient to evaluate effects for known heritage resources, the lack of regional information on the Tsuut'ina Nation's physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance increases the degree of severity of adverse impacts. There is potential for the permanent alienation of the Tsuut'ina Nation from their cultural heritage for which there is no current mitigation identified. It is further noted that that this physical alteration and potential change in the opportunity of the Tsuut'ina Nation to practice related traditional activities (e.g., ceremonies in areas of physical and

cultural heritage) may also have impacts on intangible cultural heritage. The understanding and characterizing of these potential related impacts to the Tsuut'ina Nation's intangible cultural heritage requires further input from the Tsuut'ina Nation. Continued consultation with Tsuut'ina Nation, as well as through the development of potential follow-up and monitoring and adaptive management measures as necessary is expected to improve the moderate confidence rating and the severity of impact on Tsuut'ina Nation's rights and interests.

Potential Future Use without the Project of Physical and Cultural Heritage and Impact to a Structure, Site, or Item that is of Historical, Archaeological, Paleontological, or Architectural Significance

This section describes the potential future use of physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance in the Project footprint, the ATRI LSA, and the ATRI RSA without the Project in place. This is in consideration of the certain past, present, and reasonably foreseeable future projects and activities within the ATRI RSA that could impact the potential future use of physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance as it relates to the potential impact on Tsuut'ina Nation's ability to exercise their rights and interests.

As previously noted, Tsuut'ina Nation has not provided any information to date regarding physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance in the ATRI LSA or whether they have an interest in using ATRI LSA for physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance in the future (IAAC, 2021b; Appendix 30-A, Table 30.A-1). It is noted that there is potential for impact on physical and cultural heritage due to past disturbance which has potentially removed areas of particular cultural value, including trails, habitation areas, and harvesting areas within the ATRI RSA, and culturally and spiritually important sites elsewhere in the Elk Valley.

As noted in Section 30.7.4.2 and in Chapter 16, with respect to the reasonably foreseeable future projects and activities in the ATRI RSA and based on the historical baseline of cumulative effects, past and current development activity in the ATRI LSA and RSA includes for example other mines, forestry activity (including logging in the Elk Valley), housing development, transportation facilities (roads), and recreation activities. It is anticipated that these activities will continue in the future without the Project and will continue to potentially impact physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance in the ATRI LSA.

There is a potential for cumulative impacts due to the spatial distribution of historical disturbance as a result of mining in the Elk Valley which has followed economic coal resources to form a long north-south band of potential mining-related disturbance. In the ATRI LSA, this north-south running band is interrupted by a few relatively undisturbed east-west corridors that provide "gaps" in the mining region for the movement of land users. This general trend of north-south oriented mining and potentially related disturbance along valley bottoms and some ridges potentially limits the east-west connectivity between alpine ranges.

Without the Project footprint, the cumulative effect of past developments on the practice of rights and interests has influenced Tsuut'ina Nation's use of ancestral east-west trails. The Elk River Valley has seen

substantial residential development which may potentially impact physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance that are anticipated to continue without the Project. Past disturbance has also potentially affected the real or perceived change in accessibility to physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance for Tsuut'ina Nation and will likely continue to impact Tsuut'ina Nation's rights and interests without the Project in place. Table 30.10-5 presents a summary of the potential impacts of the Project on the Tsuut'ina Nation's rights and interests related to physical and cultural heritage in comparison to a future scenario without the Project.

30.10.2.1.5 Impact on Social, Health, and Economic Conditions

The Project has the potential to impact on Tsuut'ina Nation's social, health, and economic conditions through the following:

- The potential Project nuisance effects to residents due to noise and vibration.
- The potential change in availability/reliance on country food.
- The loss of potential access to species for traditional purposes due to loss of sections of West Alexander Creek.
- The potential for the permanent alienation of the Tsuut'ina Nation from traditional use locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.
- The potential for public safety risks due to physical hazards.
- The Project has the potential to impact on Tsuut'ina Nation's rights and interests due to the potential change in population and demographics.
- The potential change in community health and well-being.
- The potential change due to the influx of new employees to the region that could potentially contribute to social impacts, including safety risks.

Based on the Human Health and Ecological Risk Assessment (HHERA; Chapter 22), which encompasses changes in surface water and air quality, and was estimated in consideration of use and rights-based Indigenous traditional use lifestyle scenarios[13], the overall Project-related risk to human health is considered to be low. Though the risk is identified as low, there is potential for residual effects to wildlife and human health, and as such, to the actual or perceived quality of fish and wildlife resources consumed as country foods. As such there is potential for less reliance on country foods because of this perceived impact to their quality.

Based on the background information research and the consultation activities with Tsuut'ina Nation to date, there are no anticipated interactions between the Project and Tsuut'ina Nation housing, transportation, or social services and education, and therefore, no unmitigated Project effects on these aspects of social, health, and economic conditions are anticipated.

[13] Indigenous communities represent the maximally exposed receptor, largely because of their increased presence on and use of traditional land, as well as increased consumption of country foods, as compared to non-Indigenous persons; as such, risk estimates calculated for Indigenous receptors are sufficiently conservative to infer maximal potential risk to non-Indigenous peoples also frequenting the HHERA LSA. Moreover, the rights-based use receptor lifestyle is inherently more engaged with land use and therefore offers the more conservative Indigenous risk scenario.

Table 30.10-5: Summary of Impact on Tsuut'ina Nation's Physical and Cultural Heritage Rights and related interests based on Potential Future Use with and without the Project

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
Potential Impacts on Rights related to Physical and Cultural Heritage and Change to any Structure, Site, or Thing that is of Historical, Archaeological, Paleontological, or Architectural Significance.	Construction and Pre-Production	Potential impact on physical and cultural rights due to potential interactions with: • Potential loss of pre-contact archaeological artifacts (if present) and tree throws during Project activities including quarrying. • Potential loss/disconnection of historic and present-day travel routes and trails including those potentially present within or crossing new roads and infrastructure footprint. • Potential loss of ceremonial or sacred areas within the Project footprint (including road and infrastructure construction footprint. • Potential loss of archaeological artifacts (if present) within road and infrastructure construction footprint, during construction of building foundations. • Potential change due to a significant historic area located near the project's roads: Grave Prairie Cultural Landscape, Grave Lake, and Grave Creek. • The potential for the permanent alienation of the Tsuut'ina Nation from their cultural heritage due to the intangible value associated with a sense of place within the Project footprint.	Potential impact on rights without the Project: • Tsuut'ina Nation has not to date provided information regarding physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance other than the Grave Prairie Cultural Landscape in the Project footprint. Nevertheless, there is potential for physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance in the ATRI LSA and RSA. • Past and current development activity has resulted in the removal areas of particular cultural value, including trails, habitation areas, and harvesting areas within the ATRI RSA, and culturally and spiritually important sites elsewhere in the Elk Valley. This includes for example other mines, forestry activity, housing development, transportation facilities (roads), and recreation activities. It is anticipated that these activities will continue in the future without the Project and will continue to potentially impact physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance in the ATRI LSA. • These past and ongoing projects and activities located in the ATRI LSA and RSA may likely be impacting the real or perceived change in

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
	Operations	Potential impact on physical and cultural rights due to potential interactions with: • Potential discovery of pre-contact archaeological resources (if present) in unconsolidated material or during progressive clearing activities. • Potential loss or change of ceremonial/sacred areas associated with West Alexander Creek, Grave Creek or downstream habitats. • Potential for change in access to places that may be important for ceremonial or sacred areas. • Potential changes to or loss of places that may be important for ceremonial or sacred areas through changes in landscape/ecosystems should reclamation activities not be effective. • The potential for the permanent alienation of the Tsuut'ina Nation from their cultural heritage due to the intangible value associated with a sense of place within the Project footprint.	accessibility to physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance for Tsuut'ina Nation and will likely continue to impact Tsuut'ina Nation's rights and interests without the Project in place. These past and ongoing activities may be impacting the ability of Tsuut'ina Nation to exercise their rights related to physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance in the ATRI LSA and RSA. • Related to the local study area changes described above, the Elk River Valley has also seen substantial residential development which may potentially impact physical and cultural heritage and structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance that are anticipated to continue without the Project.

There is also potential for potential modest positive change in the availability of community services, the potential for Tsuut'ina Nation to take part in monitoring activities as outlined in the Indigenous Impact Management Plan (Section 30.9), and the potential economic benefit for Indigenous Community members related to employment and economic investment during the Project phases. The Project is anticipated to result in positive economic outcomes for employment, income, and local and regional economies.

The impact on the social, health, and economic conditions due to the Project are characterized as follows:

- Likelihood: *Low*, as the predicted residual effects to wildlife and human health and the potential change in country foods is only associated with the Project footprint or close to the haul road, areas which will be reclaimed during Reclamation and Closure and as Tsuut'ina Nation has indicated that while their use of the Project footprint for country food or activities will be affected by Project nuisance effects, they will harvest before clear cutting begins in the Construction phase of the Project (Appendix 30-A, Table 30.A-2).
- Geographic Extent: *Low*, as the potential impact on social, health, and economic conditions are limited to the Project footprint (e.g., on or adjacent to the haul road) and the ATRI LSA. The level of use by Tsuut'ina Nation, in particular of the Project footprint for traditional purposes is anticipated to be low based on preliminary feedback from Tsuut'ina Nation (Appendix 30-A, Table 30.A-2) and as identified by IAAC (IAAC, 2021b).
- Frequency, Duration, and Reversibility: *Low,* as the potential for impacts to social and health for Tsuut'ina Nation includes the potential risk to country foods which is plausible during the all the phases of Project. The proposed Project and associated activities are considered to present a low risk to wildlife and human health.
- Cultural Well-being: *Low*, as the potential for impacts to social and health for Tsuut'ina Nation includes the potential risk to country foods which while possible during all the phases of Project; the proposed Project and associated activities are considered to present a low risk to wildlife and human health. The low rating also reflects that Tsuut'ina Nation has indicated that while their use of the Project footprint for country food or activities will be affected by Project nuisance effects, they will harvest before clear cutting begins in the Construction phase of the Project (Appendix 30-A, Table 30.A-2).
- Health: *Low*, as the Project is not likely to pose environmental effects to health, including effects to country foods related to aquatic and terrestrial ecosystems and vegetation communities potentially accessed and used for traditional purposes by Tsuut'ina Nation. The HHERA undertaken (Chapter 22) for the Project determined that no significant residual effect is associated with the Project using various exposure and food-chain models that utilized Indigenous receptors. The low rating also reflects that Tsuut'ina Nation has indicated that while their use of the Project footprint for country food or activities will be affected by Project nuisance effects, they will harvest before clear cutting begins in the Construction phase of the Project (Appendix 30-A, Table 30.A-2).
- Cumulative Impacts: *Low*, as the assessment of residual cumulative effects of the Project in combination with those of past, present, and reasonably foreseeable future projects and activities on wildlife and human health concluded no significant adverse cumulative effects on terrestrial, aquatic, and human health. Additionally, no adverse residual effects on social and economic conditions were predicted, therefore no cumulative effect to social, health, and economic conditions are expected to occur. The residual cumulative effects on social, health, and economic

conditions arising from the Project in combination with other past, present, and reasonably foreseeable future projects and activities during all phases are also considered not significant. The cumulative impact is determined as low due to the lack of information available from the Tsuut'ina Nation regarding their opportunity to conduct traditional activities related to country food consumption within the Project footprint at this time. It is expected that their ability to know and teach the Tsuut'ina way of living can continue outside of the Project footprint during all Project phases.

Degree of Severity for Adverse Impacts

The degree in severity of impact on Tsuut'ina Nation's social, health, and economic is rated as low as potential impacts are likely to be small in spatial extent, reversible long-term, and with few effects to health and/or country foods. The currently identified low level of use by Tsuut'ina Nation within the Project footprint and ATRI RSA indicates the low level of impact on the change in lands and resources for traditional purposes and related social, health, and economic conditions. It should be noted that through this assessment it has been determined that there is potential for the Project to result in the permanent alienation of Tsuut'ina Nation from locations within the Project footprint (Appendix 30-A, Table 30.A-2). It is further noted that that this physical alteration and potential change in the opportunity of the Tsuut'ina Nation to practice related traditional activities (e.g., consumption of country food) may also have impacts on intangible cultural heritage. The understanding and characterizing of these potential related impacts to Tsuut'ina Nation's intangible cultural heritage requires further input from the Tsuut'ina Nation.

Though baseline data was sufficient to evaluate effects for socio-community, economic, and human health VCs, areas currently or potentially used by Tsuut'ina Nation for socio-community, economic, and health conditions have not been identified within the ATRI LSA by the Tsuut'ina Nation and the impact on rights assessment is based on publicly-available information. As such, there is no information indicating that the Tsuut'ina Nation currently uses the ATRI LSA for socio-community, economic, and health. Continued consultation with Tsuut'ina Nation, as well as through the development of potential follow-up and monitoring and adaptive management measures as necessary is expected to improve the confidence rating and the severity of impact on Tsuut'ina Nation's rights and interests.

Potential Future Use without the Project of Social, Health, and Economic Conditions

This section describes the anticipated future social, health, and economic conditions in the Project footprint, the ATRI LSA, and the ATRI RSA without the Project in place. This is in consideration of the certain past, present, and reasonably foreseeable future projects and activities within the ATRI RSA that could impact the anticipated future social, health, and economic conditions as they relate to the potential impact on Tsuut'ina Nation's ability to exercise their rights. As previously noted, Tsuut'ina Nation has not provided any information to date regarding their social, health, and economic conditions in the Project footprint. It is acknowledged that Tsuut'ina Nation has the potential to use the ATRI LSA with respect to social, health, and economic conditions that support their rights and interests. It is noted that there are considered to be ongoing impacts to the real or perceived quality and quantity of country foods available for harvesting in preferred locations and the potential human health risks associated with consumption.

As outlined in Section 30.6.6, food insecurity has been increasing in recent years and in the coming years, the reasonably foreseeable future projects and activities in the Elk Valley and climate change, as well as other factors will likely influence food security in terms of potentially affecting traditional food systems,

risking further serious consequences for livelihoods and health. The impact of food insecurity on health extends beyond diet and nutrition. In addition to income growth, housing tenure is an economic risk factor for food insecurity and is linked with other factors such as population growth, urbanization, industrialization, land use shifts, water scarcity, and trends in global energy supply and food trade. As noted in Section 30.7.4.2 and in Chapter 22, with respect to the reasonably foreseeable future projects and activities in the ATRI RSA and based on the historical baseline of cumulative effects, past and current development activity in the ATRI LSA and RSA includes for example other mines, forestry activity (including logging in the Elk Valley), housing development, transportation facilities (roads), and recreation activities. It is anticipated that these activities will continue in the future without the Project and will continue to potentially impact social, health, and economic conditions in the ATRI LSA.

There is a potential for cumulative impacts due to the spatial distribution of historical disturbance as a result of mining in the Elk Valley which has followed economic coal resources to form a long north-south band of mining-related disturbance. In the ATRI LSA, this north-south running band is interrupted by a few relatively undisturbed east-west corridors that provide "gaps" in the mining region for the movement of land users. This general trend of north-south oriented mining and potential related disturbance along valley bottoms and some ridges potentially limits the east-west connectivity between alpine ranges.

The Project can be generally expected to result in positive economic outcomes as included in Section 30.7.3.2.8 for employment, income, the regional and local economies, and government finances within the ATRI RSA (Chapter 17). The economic conditions without the Project are expected to be impacted as anticipated positive economic outcomes will diminish due to the lack of availability of economic opportunities related to the Project.

Without the Project, future anticipated use may potentially be negatively impacted due to the lack of the residual positive economic effects of the Project. Without the Project, impacts on Tsuut'ina Nation's rights and interests related to social and health conditions will continue as a result of activities within the Elk Valley and those outside of the Elk Valley that have the potential to impact food systems. These past and ongoing activities may be impacting the ability of Tsuut'ina Nation to exercise their rights related to the social, health, and economic conditions of their Traditional Territory and will likely continue to impact Tsuut'ina Nation's rights and interests without the Project. This also emphasizes the potential cumulative effect of past developments on the practice of rights and interests related to social, health, and economic conditions. Table 30.10-6 presents a summary of the potential impacts of the Project on the Tsuut'ina Nation's rights and interests related to social, health, and economic conditions in comparison to a future scenario without the Project.

Table 30.10-6: Summary of Impact on Tsuut'ina Nation Rights and related interests based on Potential Future Use with and without the Project on Social, Health, and Economic Conditions

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
Potential Impact on Interests related to Social, Health, and Economic Conditions	Construction and Pre-Production	Potential impact on social, health, and economic conditions and related interests due to potential interactions with: • Potential Project nuisance effects residents due to noise and vibration. • Potential change in availability/reliance on country food. • Potential public safety due to physical hazards. • The potential for the permanent alienation of the Tsuut'ina Nation from traditional use locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	Potential impact on rights due to potential interactions with: • Tsuut'ina Nation has not to date provided information regarding social, health, and economic conditions within the Project footprint. Nevertheless, there is potential for the use of the ATRI LSA and RSA Tsuut'ina Nation members with respect to social, health, and economic conditions that support their rights and interests. • Past and current development activity in the ATRI LSA and RSA has resulted in potential impacts to food security and the social determinants of health related to country food consumption. This includes for example other mines, forestry activity, housing development, transportation facilities (roads), and recreation activities. It is anticipated that these activities will continue in the future without the Project and continue to have influence on food security concerns as well as human health risk factors related to income growth, housing tenure, population growth, urbanization, industrialization, land use shifts, water scarcity, and trends in global energy supply and food trade. • These past and ongoing projects and activities located in the ATRI LSA and RSA may likely be impacting real or perceived
	Operations	Potential impact on social, health, and economic conditions and related interests due to potential interactions with: • Potential modest economic benefit for the Tsuut'ina Nation members that could be hired for the mine, CHPP operations administration, and coal haul. • Potential change in population and demographic. • Potential change in community health and well-being. • Potential modest positive change in availability of community services. • Potential change due to the influx of new employees to the region that could potentially contribute to social impacts, including safety risks.	

Impact on Rights and Interests	Project Phase(s)	Potential Future Use with Project	Potential Future Use without Project
		• Potential Project nuisance effects residents due to noise and vibration. • Potential change in availability/reliance on country food. • Loss of potential access to fish and resources in West Alexander Creek. • The potential for the permanent alienation of the Tsuut'ina Nation from traditional use locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	quality and quantity of country foods available for harvesting in preferred locations and the potential human health risks associated with consumption. • The economic conditions without the Project are expected to be impacted as anticipated positive economic outcomes for employment, income, and local and regional economies will diminish due to the lack of availability of economic opportunities related to the Project. • Without the Project, future anticipated use may potentially be negatively impacted due to the lack of the residual positive economic effects of the Project. • Without the Project, impacts on Tsuut'ina Nation's rights and interests related to social and health conditions will continue as a result of activities within the Elk Valley and those outside of the Elk Valley that have the potential to impact food systems. • These past and ongoing activities may potentially be impacting the ability of Tsuut'ina Nation to exercise their rights related to the social, health, and economic conditions of their Traditional Territory and will likely continue to impact Tsuut'ina Nation's rights and interests without the Project.
	Reclamation and Closure	Potential impact on social, health, and economic conditions and related interests due to potential interactions with: • Potential for the Tsuut'ina Nation to take part in progressive reclamation opportunities and in monitoring activities, in particular: aquatic effects monitoring. • Potential change in community well-being. • Potential change in availability/reliance on country food. • The potential for the permanent alienation of the Tsuut'ina Nation from traditional use locations within the Project footprint resulting in impacts to their ability to know and teach the Tsuut'ina way of living.	

30.10.2.2 Summary of the Assessment on the Impacts to the Tsuut'ina Nation's Rights and Interests Assessment

Impact on Tsuut'ina Nation's rights and related interests may occur where potential changes to the environment as a result of the potential residual effects and residual cumulative effects have the potential to impact the exercise of rights and interests related to traditional activities such as fishing, hunting and trapping, harvesting and gathering, or on physical activities associated with traditional use such as travel and navigation, ceremonial and sacred sites, and physical and cultural heritage areas and any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance, and social, health, and economic conditions. It is expected that the Tsuut'ina Nation's ability to know and teach their way of living can continue outside of the Project footprint during all Project phases.

As summarized in Section 30.7, an assessment of the Project effects that correspond with Tsuut'ina Nation's traditional land and resource use was undertaken. Considering the results of this assessment, as described in Section 30.10 an assessment was undertaken of the potential for Project related impacts on Tsuut'ina Nation's rights and interests including their ability to exercise their rights. This assessment of potential impacts on rights and interests also took into account that Tsuut'ina Nation have undertaken a site assessment study that identifies the exercise of their rights and/or of specific cultural interest within the Project footprint only with no information included on the ATRI LSA. As such, the severity of impacts to Tsuut'ina Nation's rights and interest has been identified to be generally in the range of low to moderate. The impact on Tsuut'ina Nation Aboriginal and Treaty rights and interests are summarized in Table 30.10-7. It should be noted that through this assessment it has been determined that there is potential for the Project to result in the permanent alienation of Tsuut'ina Nation from locations within the Project footprint (Appendix 30-A, Table 30.A-2). It is further noted that that this physical alteration and potential change in the opportunity of the Tsuut'ina Nation to practice related traditional activities may also have impacts on intangible cultural heritage. These impacts to intangible cultural heritage may include those related to traditional activities such as fishing for Bull Trout, the hunting and the trapping of species of interest to the Tsuut'ina Nation, the harvesting and gathering of culturally significant plant and vegetation species, access to areas of traditional activities, and the ceremonies and rituals tied to a sense of place within the Project footprint. The understanding and characterizing of these potential related impacts to Tsuut'ina Nation's intangible cultural heritage requires further input from the Tsuut'ina Nation.

Mitigation measures outlined further in the Indigenous Impact Management Plan (Section 30.9) have been proposed to reduce or eliminate impacts on Tsuut'ina Nation's rights and interests which were developed in response to the concerns raised by the Tsuut'ina Nation and the identified Indigenous Communities. The effectiveness of these measures has not been confirmed by the Tsuut'ina Nation to date. While it is not known whether lands outside of the Project footprint are actively used for traditional purposes by Tsuut'ina Nation, it is anticipated that traditional land and resource use activities will be able to continue undeterred, except where restricted for safety purposes (e.g., in the Project footprint during Construction and Operation phases). It is also anticipated that activities related to the exercise of Tsuut'ina Nation's rights and interests will be able to continue by members of Tsuut'ina Nation in the ATRI LSA and RSA. As identified throughout the Application/EIS, engagement is ongoing, and Tsuut'ina Nation may provide additional information about the potential effects of the Project on Tsuut'ina Nation and their impact on Tsuut'ina Nation's rights and interests which could influence the results of the assessment presented here.

Table 30.10-7: Summary of Impact on Tsuut'ina Nation's Rights and Interests

Impact on Right and Interests	Project Phase(s)	Summary of Impact on Rights and Interests Characterization	Degree of Severity for Adverse Impacts (High, Moderate, Low)
Potential Impact on Fishing Rights	• Construction and Pre-Production • Operations • Reclamation and Closure • Post-Closure	Likelihood: Low to Moderate Geographic Extent: Low Frequency, Duration, and Reversibility: Low to Moderate Cultural Well-being: Moderate Health: Low Cumulative Impacts: Moderate	Low to Moderate
Potential Impact on Hunting and Trapping Rights	• Construction and Pre-Production • Operations • Reclamation and Closure • Post-Closure	Likelihood: Low to Moderate Geographic Extent: Moderate Frequency, Duration, and Reversibility: Low to Moderate Cultural Well-being: Moderate Health: Low Cumulative Impacts: Moderate	Low to Moderate
Potential Impact on Harvesting and Gathering Rights	• Construction and Pre-Production • Operations • Reclamation and Closure • Post-Closure	Likelihood: Moderate Geographic Extent: Low Frequency, Duration, and Reversibility: Moderate to HIgh Cultural Well-being: Moderate Health: Low Cumulative Impacts: Moderate	Moderate
Potential Impact on Rights related to Physical and Cultural Heritage and Change to any Structure, Site, or Thing that is of Historical, Archaeological, Paleontological, or Architectural Significance	• Construction and Pre-Production • Operations	Likelihood: Moderate Geographic Extent: Low Frequency, Duration, and Reversibility: High Cultural Well-being: High Health: Low Cumulative Impacts: Moderate	Moderate to HIgh

Impact on Right and Interests	Project Phase(s)	Summary of Impact on Rights and Interests Characterization	Degree of Severity for Adverse Impacts (High, Moderate, Low)
Potential Impact on Interests related to Social, Health, and Economic Conditions	• Construction and Pre-Production • Operations • Reclamation and Closure	Likelihood: Low Geographic Extent: Low Frequency, Duration, and Reversibility: Low Cultural Well-being: Low Health: Low Cumulative Impacts: Low	Low

As Tsuut'ina Nation has not provided any information to date regarding their use of the ATRI LSA and the ATRI RSA for traditional purposes, additional residual Project effects, and effects from other reasonably foreseeable developments and changes in the environment, are not identified. Based on existing information, and uncertainties related to mitigation, while no significant adverse cumulative effects were determined, impacts on Tsuut'ina Nation's rights and interests have the potential to occur for the foreseeable future due to ongoing activities in the Elk Valley. It is noted that there is potential for impacts to Tsuut'ina Nation's rights and interests to be further articulated through continued engagement with Tsuut'ina Nation. On-going programs of environmental and socio-economic monitoring undertaken in collaboration with Tsuut'ina Nation and the co-development of offsets and/or mitigation measures to address where applicable the concerns noted above, will be identified further through the Indigenous Impact Management Plan (Section 30.9) and Chapter 33.

30.11 Follow-up Strategy

The purpose of the follow-up strategy is to verify the accuracy of the effects assessment and to determine the effectiveness of mitigation measures including those identified in the Indigenous Impact Management Plan. Follow-up strategies related to Tsuut'ina Nation's rights and interests are proposed where the effects assessment determines that uncertainty exists in the predictions of effects or in the effectiveness of mitigation proposed. Follow-up programs are relevant due to the uncertainty in the prediction of effects on changes to use of lands and resources for traditional purposes by Tsuut'ina Nation. In terms of the interaction of Tsuut'ina Nation rights and interests to the selected receptor and intermediate VCs, follow-up programs will also serve to improve the level of confidence in the predictions of Project-related effects on various VCs (i.e., monitoring plans for wildlife VCs such as ungulates and carnivores) in this assessment process.

As noted in Section 30.9 and based on the assessment of potential impacts on the rights and interests of the Tsuut'ina Nation, the change in use of lands and resources for traditional activities such as fishing, hunting and trapping, harvesting and gathering, or on activities associated with traditional use such as travel and navigation, ceremonial and sacred sites, and on physical and cultural heritage areas will require follow-up monitoring. Follow-up monitoring will also enable response to new and developing issues of concern during the Project implementation hence ensuring that Project-related activities comply with and adhere to EAC conditions and include provisions for community-based monitoring where applicable. The proposed approach for managing the corrective actions that may potentially be required will involve monitoring compliance with regulations, managing worksites, executing specific environmental and social works and seeking solutions to emerging environmental problems.

Communication of the results of the follow-up strategies and/or monitoring programs to Tsuut'ina Nation is an essential component will be undertaken through the Indigenous Enagement and Reporting Plan (Chapter 33, Section 33.4.3). Not only does this maintain communication with all parties and keep them informed of the Project activities and their associated environmental effects, but it also offers the opportunity to incorporate input from Tsuut'ina Nation into the design of the Indigenous Impact Management Plan and related monitoring programs and any consequential adaptive management, where applicable. NWP is available to explore the possibilities of having monitoring programs incorporate traditional knowledge or similar study methodologies as they can contribute to achieving defined monitoring program objectives.

Using an adaptive management plan, the follow-up strategies and the monitoring programs will be periodically evaluated for effectiveness and the appropriateness of their elements, and the parameters being measured and reported. This evaluation will be done in consultation with the appropriate regulatory agencies and the results of these strategies and programs will be analyzed. If any elements of the follow-up strategies and the monitoring programs warrant adjustment to meet the aim and intent, then in consultation with regulatory agencies, the strategies and the programs may be adjusted.

It is anticipated that as a condition of the approval of the Project, the results of the follow-up strategies, and the monitoring programs or measures being conducted must be reported to the appropriate regulatory agencies, both federal and provincial. All data and information gathered as part of each management plan, follow-up strategy and/or monitoring program will be documented using the protocols established for each parameter. These protocols were established during the collection of the baseline information and the manner in which they were recorded at that time will be used during the adaptive management plans, follow-up strategies and/or monitoring programs to allow for a proper comparison of the results. Reporting will continue so long as there are follow-up and monitoring activities in place. Once these activities have verified the environmental effects predictions and/or the effectiveness of the mitigation measures, and compliance with required mitigation, the follow-up strategies and the monitoring programs will cease, and reporting will no longer be required. Monitoring for compliance with regulatory permits will continue for as long as is required by the responsible permitting authority.

30.12 References

Aboriginal and Treaty Rights information System. (2020). *Tsuut'ina Nation (Community)*. Government of Canada. Retrieved January 13, 2021 from https://sidait-atris.aadnc-aandc.gc.ca/atris_online/Content/Search.aspx

Aboriginal and Treaty Rights Information System. (2020). ATRIS Search. https://sidait-atris.aadnc-aandc.gc.ca/atris_online/Content/Search.aspx

Alberta Public Health Services. (2021). *Environmental Public Health.* Alberta Health Services Retrieved January 26, 2021 from https://www.albertahealthservices.ca/eph/eph.aspx

Alamy. (2018 June. 6). *Vintage photo of Tsuut'ina women on horseback, Southern Alberta Canada 1887*. Retrieved January 19, 2021 from https://www.alamy.com/vintage-photo-of-tsuutina-women-on-horseback-southern-alberta-canada-1887-image246378868.html

Benga Mining Limited. (2015). Grassy Mountain Coal Project Information Package for Tsuu T'ina Nation. Retrieved January 12, 2021 from https://aeic-iaac.gc.ca/050/documents/p80101/126851E.pdf

Benga Mining Limited. (2015b) Grassy Mountain Coal Project Environmental Impact Assessment, Section H, Aboriginal Consultation and Assessment. Retrieved June 2, 2021 from https://www.ceaa-acee.gc.ca/050/documents/p80101/103920E.pdf

Benga Mining Limited. (2016). Grassy Mountain Coal Project Environmental Impact Assessment, Section G, Stakeholder Engagement. Retrieved January 12, 2021 from https://open.alberta.ca/dataset/731ed235-94a9-4092-9e21-8266c19a7c1b/resource/e292721a-67ce-4d6d-b260-3405fbd5b621/download/volume2.pdf

Benga Mining Limited. (2019). Joint Review Panel Request for Additional Information Response Package Addendum 10. Package 4: Treaty rights, Land Use and Culture and Human Health. Retrieved January 12, 2021 from https://open.alberta.ca/dataset/731ed235-94a9-4092-9e21-8266c19a7c1b/resource/1e83ad3e-03f3-47a1-9b71-d230b64414ff/download/addendum10-pkg4-indigenousrightslandusecultureehumanhealth.pdf

British Columbia Government (B.C.). (2021). *Kootenay-Boundary Land Use Plans*. Ministry of Forests, Lands and Natural Resource Operations. Website. https://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions/kootenay-boundary/kootenay-boundary-rlup

British Columbia Environmental Assessment Office. (2018*). Application Information Requirements.* Crown Mountain Coking Coal Project proposed by NWP Coal Canada Ltd. Updated April 26, 2018.

British Columbia Environmental Assessment Office. (2020a). *Order Under Section 13 Amending Section 11 Order.* Environmental Assessment Act S.B.C. 2002, c.43 and an Environmental Assessment of the Crown Mountain Coking Coal Project. Project Assessment Director Office. Issued October 30, 2020.

British Columbia Environmental Assessment Office. (2020b). *Human and Community Well-Being: Guidelines for Assessing Social, Economic, Cultural and Health Effects in Environmental Assessments in B.C.* Version 1.0. April 2020.

British Columbia Ministry of Environment and Climate Change Strategy. (n.d.). *Southern Interior air zone report (2014-2016).* https://www2.gov.B.C..ca/assets/gov/environment/air-land-water/air/reports-pub/air-zone-reports/2014-2016/southern_interior_air_zone_report_2014-2016_final.pdf

British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD). (2021). *Archaeology & heritage conservation: Potential approval, permit or code of practice requirements.* https://www2.gov.bc.ca/gov/content/transportation/transportation-infrastructure/engineering-standards-guidelines/environmental-management/reference-documents/environmental-regulatory-compliance/archeology-heritage-conservation

British Columbia Ministry of Sustainable Resource Management. (2005). *Cranbrook West Recreation Management Strategy.* Government of British Columbia. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/kootenayboundary-region/cranbrookwest-rms/cranbrookwest_rms_plan.pdf

Calgary Foundation. (n.d.). *Treaty 7 Indigenous Ally Toolkit*. Calgary Foundation. Retrieved January 12, 2021 from https://calgaryfoundation.org/wp-content/uploads/Ally-Toolkit-web.pdf

CBC News. (2012 September, 18). *Tsuu T'ina announces $65M Grey Eagle Casino expansions*. CBC. Retrieved January 19, 2021 from https://www.cbc.ca/news/canada/calgary/tsuu-t-ina-announces-65m-grey-eagle-casino-expansion-1.1240715

CEAA-MCFN (Canadian Environmental Assessment Agency – Mikisew Cree First Nation). (2018). Methodology for Assessing Potential Impacts on the Exercise of Aboriginal and Treaty Rights of the Proposed Frontier Oil Sands Mine Project.

Candler, C. (2020). *Ktunaxa Nation Council Recommended Minimum Standards for Proponents in Determining Significance of Effects in Environmental Assessments (EAs) in the Elk Valley.* Draft Technical Memorandum. Version 1.1. Reciprocity Research Inc. Ktunaxa Nation Council: Cranbrook, British Columbia.

City of Calgary. (2020). Source Water Protection Plan: Protecting our Source Watershed through proactive collaboration. https://pub-calgary.escribemeetings.com/filestream.ashx?DocumentId=139838

Clark, E. (1977). *Indian Legends of Canada.* McClelland and Stewart; Reprint Edition.

Community Futures Treaty Seven. (n.d.). *About Community Futures Treaty Seven*. Retrieved January 18, 2021 from https://t7edc.com/

Cook, E., and Filice, M. (2020). *Tsuut'ina (Sarcess).* The Canadian Encyclopedia. Retrieved January 13, 2021 from https://www.thecanadianencyclopedia.ca/en/article/sarcee-tsuu-tina

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). 2022. *Tsuut'ina 432*. First Nations Profile. Registered Population. Indigenous Peoples and Communities. December 2022. https://fnp-ppn.aadnc-aandc.gc.ca/fnp/Main/Search/FNMain.aspx?BAND_NUMBER=432&lang=eng

Dempsey, H. (2001). Sarcee. In W. C. Sturtevant & R. J. DeMallie (Eds.), *Handbook of North American Indians: Plains* (Volume 13, pp. 629-637). Washington: Smithsonian Institution.

Elk Valley Cumulative Effects Management Framework Working Group (EV-CEMF). (2018). *Comprehensive Report: Elk Valley Cumulative Effects Assessment and Management Report.* British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development - Kootenay Boundary Region. Released December 2018. https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/final_elk_valley_ceam_12122018.pdf

First Nations Land Management Resource Centre. (2021). *Tsuut'ina Nation*. First Nations Land Management Resource Centre. Retrieved January 13, 2021 from https://labrc.com/first-nation/tsuu-tina/

Food and Agriculture Organization of the United Nations (FAO). 2016. Policy Brief: Food Security. June 20016, Issue 2. Available at: https://www.fao.org/fileadmin/templates/faoitaly/documents/pdf/pdf_Food_Security_Cocept_Note.pdf

Forsyth, B. (n.d). *Alberta: Canadian Forces Base Calgary (Harvey Barracks).* Canadian Military History. Retrieved January 19, 2021 from https://militarybruce.com/abandoned-canadian-military-bases/abandoned-bases/alberta/

Gilligan, M. (2020, August 28). *Alberta's newest Costco marks the first in Canada to open on First Nation land*. Global News. Retrieved, January 19, 2021 from https://globalnews.ca/news/7303320/albertas-newest-costco-marks-the-first-in-north-america-to-open-on-first-nation-land/#:~:text=A%20new%20Costco%20location%20that,in%20the%20Tsuut'ina%20Nation

Government of Alberta. (2015). *Tsuut'ina First Nation Promotes "Guja" Health Initiative.* Retrieved August, 2015 from http://www.healthyalberta.com/1955.htm

Government of Alberta. (2022). *Tsuut'ina Nation 145 (Sarcee 145).* Regional Dashboard. Alberta Data Portal. https://regionaldashboard.alberta.ca/region/tsuu-tina-nation-145-sarcee-145/#/

Government of Alberta. (n.d.). *Calgary Ring Road – Overview.* Government of Alberta. https://www.alberta.ca/calgary-ring-road-overview.aspx

Government of Canada. (2013). Tsuu T'Ina Nation - Connectivity Profile. Retrieved January 19, 2021 from https://www.aadnc-aandc.gc.ca/eng/1357840941664/1360158830539

Government of Canada. (2021a). *National Inventory Report: Greenhouse Gas Sources and Sinks in Canada*. Government of Canada Publications. https://publications.gc.ca/site/eng/9.506002/publication.html

Government of Canada. (2021b). *Short-term drinking water advisories*. Water in First Nations communities. https://www.sac-isc.gc.ca/eng/1562856509704/1562856530304

Grey Eagle Casino Resorts. (n.d.). *About Us.* Grey Eagle Casino Resorts. Retrieved January 19, 2021 from https://www.greyeagleresortandcasino.ca/about-us/

Hulse, B., Rai, B., Yu, A. (2020). Historic Military Ordnance Detection. Tsuut'ina Nation, Alberta. Story Maps ArcGIS. Retrieved June 4, 2021 from https://storymaps.arcgis.com/stories/05c5113ad0b7404088c0a866536045a8

Impact Assessment Agency of Canada formerly Canadian Environmental Assessment Agency (IAAC). (2015a). *Letter to Chief Kathryn Teneese and Council: Re: Consultation Work Plan for the Federal Environmental Assessment of Proposed Crown Mountain Coking Coal Project.* February 20, 2015.

Impact Assessment Agency of Canada. (2015b). *Letter to Chief Barbara Cote Re: Consultation Work Plan and Funding for the Federal Environmental Assessment of Proposed Crown Mountain Coking Coal Project.* February 20, 2015.

Impact Assessment Agency of Canada. (2015c). *Letter to Mr. William Snow Re: Consultation Work Plan and Funding for the Federal Environmental Assessment of Proposed Crown Mountain Coking Coal Project*. February 20, 2015.

Impact Assessment Agency of Canada. (2015d). *Letter Christopher Gall: Re: Consultation Work Plan and Funding for the Federal Environmental Assessment of Proposed Crown Mountain Coking Coal Project*. February 20, 2015.

Impact Assessment Agency of Canada. (2020a). *Letter to Mae Price JFK Law Practice: Re: The Federal Environmental Assessment of the Crown Mountain Coking Coal Project (Kainai).* June 29, 2020, by email only.

Impact Assessment Agency of Canada. (2020b). *Letter to Mae Price JFK Law Practice: Re: The Federal Environmental Assessment of the Crown Mountain Coking Coal Project (Siksika).* June 29, 2020, by email only.

Impact Assessment Agency of Canada. (2020c). *Letter to Mike Allen NWP Coal Canada Ltd.: Re: Addition of Indigenous Groups to Engage on the Crown Mountain Coking Coal Project.* March 16, 2020, by email only.

Impact Assessment Agency of Canada. (2020d). *Castle Project Summary of Issues.* June 29, 2020.

Impact Assessment Agency of Canada. (2020e). *Castle Project Summary of Issues.* November 13, 2020.

Impact Assessment Agency of Canada. (2021a). *Letter to Chief Stanley Grier and Council: Re: The Federal Environmental Assessment of the Crown Mountain Coking Coal Project*. May 10, 2021, by email only.

Impact Assessment Agency of Canada. (2021b). *Letter to Chief Roy Whitney Onespot and Council Re: The Federal Environmental Assessment of the Crown Mountain Coking Coal Project.* May 10, 2021.

Impact Assessment Agency of Canada. (2021c). *Letter to Lawrence Gervais: Re: The Federal Environmental Assessment of the Crown Mountain Coking Coal Project.* May 10, 2021.

Impact Assessment Agency of Canada. (2021d). *Report of the Joint Review Panel.* Benga Mining Limited. Grassy Mountain Coal Project. Crowsnest Pass. June17, 2021 https://www.acee.gc.ca/050/documents/p80101/139408E.pdf

Impact Assessment Agency of Canada (IAAC). (2022a). *Letter to Chief Barbara Cote and Council: Re: The Federal Environmental Assessment of the Crown Mountain Coking Coal Project*. January 26, 2022, by email only.

Impact Assessment Agency of Canada (IAAC). (2022b). Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples. https://www.canada.ca/content/dam/iaac-acei/documents/policy-guidance/practitioners-guide/guidance-assessment-potential-impacts-rights-indigenous-peoples.pdf

Indigenous and Northern Affairs Canada. (2020). *First Nation Profiles: Registered Population*. Retrieved January 19, 2021 from https://fnp-ppn.aadnc-aandc.gc.ca/fnp/Main/Search/FNRegPopulation.aspx?BAND_NUMBER=432&lang=eng

Inform Alberta. (n.d.). Tsuut'ina Health Centre. Inform Alberta. https://informalberta.ca/public/service/serviceProfileStyled.do?serviceQueryId=1073005

Integrated Ecology Group (IEG) and ALCES Group, LTD. (2018). *Cumulative Effects Assessment for Kainai First Nation.* Prepared for Kainai First Nation and JFK Law. Project No. JFLBBS-18. November 9, 2018. https://registrydocumentsprd.blob.core.windows.net/commentsblob/project-81540/comment-55767/IEG%20-%20Cumulative%20effects%20assessment%20for%20Kainai%20First%20Nation%20-%20November%2015%202018.pdf

Kemp, C. (2020). Rocky Mountain Outlook *Province of Alberta signs historic agreement with the Stoney Nakoda and Tsuut'ina First Nations.* https://www.rmotoday.com/stoney-nakoda/province-of-alberta-signs-historic-agreement-with-stoney-nakoda-and-tsuutina-first-nations-2771034

Katzner, T. E., Kochert, M. N., Steenhof, K., McIntyre, C. L., Craig, E. H., and Miller, T. A. (2020). Golden Eagle (Aquila chrysaetos), version 2.0. In Birds of the World (P. G. Rodewald and B. K. Keeney, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.goleag.02

Kootenay Inter-Agency Management Committee. (1997). *Kootenay/Boundary Land Use Plan Implementation Strategy.* Published June 1997. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/kootenayboundary-region/kootenayboundary-rlup/kootenayboundary_rlup_implementation_strategy.pdf

Ktunaxa Nation Council. (2021). *Who We Are.* Ktunaxa Nation Council. https://www.ktunaxa.org/who-we-are/

MacDonald, G. A. (2009). The Beaver Hills Country: A History of Land and Life. Athabasca University Press.

McKay, Hon. J. (2021). *Systemic Racism in Policing in Canada: Report of the Standing Committee on Public Safety and National Security*. House of Commons, Canada, 43rd Parliament, 2nd Session.

Millennium EMS Solutions Ltd. (2015). Vegetation and wetlands assessment – Grassy Mountain Coal Project. Prepared for: Benga Mining Limited. File #14-00201 aeic.gc.ca/050/documents/p80101/103938E.pdf

Ministry of Sustainable Development. (2002). *Kootenay-Boundary Higher Order Plan*. Government of British Columbia. https://kootenayspatial.ca/pg_hlpo/pdf/KBHLPOrder0925.pdf

Morrison D. 2008. BC Food Systems Network – Working Group on Indigenous Food Sovereignty: Final Activity Report. March 2008. Available at: http://www.indigenousfoodsystems.org/sites/default/files/resources/WGIFS_Final_Report_March_08.pdf

National Energy Board. (2018). Tsuut'ina Nation: Affidavit of Anthony (Tony) Starlight. Retrieved June 2, 2021 from: https://docs2.cer-rec.gc.ca/ll-eng/llisapi.dll/fetch/2000/90464/90552/548311/956726/2392873/3614457/3615225/3635040/3718539/A96469-4_35917778v1_-_Affidavit_%231_of_Anthony_%28Tony%29_Starlight_-_A6L6Z3.pdf?nodeid=3718639&vernum=-2

Native Languages of Americas. (2020). *Vocabulary in Native American Languages: Sarcee (Tsuu T'ina) Words*. Native Language. Retrieved January 13, 2021 from http://www.native-languages.org/sarcee_words.htm

Native Women's Association of Canada. (2020). *Indigenous Women and Impact Assessment Final Report.* https://nwac.ca/assets-knowledge-centre/NWAC-Impact-Assessment-Final-Report-ENG-2020.pdf

Parks Canada. (2008). *Rocky Mountain House National Historic Site of Canada: Cultural Treasures*. Parks Canada. Retrieved August 2015: from http://www.pc.gc.ca/eng/lhnnhs/ab/rockymountain/natcul/natcul2/05.aspx

Parker, L. (2004). *Prison Fellowship International Centre for Justice and Reconciliation, Tsuu T'ina Peacemaking Justice in Canada*. Retrieved January 12, 2021 from http://www.justiciarestaurativa.org/www.restorativejustice.org/editions/2004/August/peacemaking

Quilt of Belonging. (2016). *Sarcee (Tsuu T'in): First Peoples in Canada*. Quilt of Belonging. Retrieved January 13, 2021 from https://www.quiltofbelonging.ca/blocks/sarcee-tsuu-tina/

Salus, A. (n.d). *The History of a Road*. Calgary Ring Road. Retrieved January 18, 2021 from https://calgaryringroad.wordpress.com/

Salus, J. (2012). *The History of a Road: The 940.* Calgary Ring Road. Retrieved January 19, 2021 from https://calgaryringroad.wordpress.com/2012/05/07/the-940/

Statistics Canada. (2016). *Canada Census Profile 2016: Tsuu T'ina Nation 145 (Sarcee 145).* https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=4806804&Geo2=CD&Code2=4806&SearchText=T2W6H6&SearchType=Begins&SearchPR=01&B1=All&TABID=2&type=0

Tallow, P. (1988). *Homeless Tsuu T'ina Residents take over abandoned Barracks*. Aboriginal Multi-Media Society. Retrieved January 18, 2021 from https://www.ammsa.com/publications/alberta-sweetgrass/homeless-tsuu-tina-residents-take-over-abandoned-barracks-0

Taza Development Corporation. (2021). Taza: Our Story. https://togetherattaza.com/our-story/

Treaty 7 Business Directory. (2013). *Tsuu T'ina Nation.* http://treaty7business.ca/tsuu-t-ina-nation.

Treaty 7 First Nations Chiefs' Association. (n.d.). *About*. Treaty 7 First Nations Chiefs' Association. Retrieved January 18, 2021 from: https://www.treaty7.org/about

Tsuut'ina Nation Police Service. (n.d.). *About the Tsuut'ina Nation Police Service.* Tsuut'ina Police. Retrieved January 13, 2021 from https://tsuutinapolice.com/about

Tsuut'ina Nation. (2013). *Preliminary Report of Traditional Knowledge*, Land Use and Occupancy (TKLUO) of Tsuu T'ina Nation Members in the Enbridge Edmonton to Hardisty Pipeline Area. Retrieved August 2015, from https://docs.neb-one.gc.ca/lleng/llisapi.dll/fetch/2000/90464/90552/92263/790736/895427/949309/949311/976767/C5%2D3 %2 D1_%2D_Evidence_of_the_Tsuu_T_ina_Nation_%2D_A3J3I5.pdf?nodeid=976959&vernum =-2

Tsuut'ina Nation. (2017). Land Code Development Project. Retrieved January 19, 2021 from https://tsuutinanation.com/wp-content/uploads/2017/01/Land-Code-Citizens-Package-January-2017.pdf

Tsuut'ina Nation Culture/Museum. (n.d.) *Welcome to the Tsuut'ina Nation Culture /Museum*. Retrieved January 19, 2021 from https://tsuutinamuseum.com/

Tsuut'ina Nation Consultation (TNC). (2021). Tsuut'ina Nation Traditional Land Use Study for Crown Mountain Coking Coal Project. Received November 2, 2021.

Willson, E. F., & Hale, H. (1988). Report on the Sarcee Indians by the Rev. E. F. Wilson. Report of the Fifty-Eighth Meeting of the British Association for the Advancement of Science, p. 243.

Wood, P. K. (2004). *Tsuu T'ina*. York University. http://www.yorku.ca/anderson/geog3010%20fw14-15/tsuu%20t%27ina.pdf