VISTA MINE INITIAL PROJECT DESCRIPTION SUMMARY

Phase I Vista Test Underground Mine and Vista Mine Phase II Expansion

Prepared for:

Impact Assessment Agency of Canada - Prairie and Northern Region
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Executive Summary

Development of the Vista Mine began in the second quarter of 2017 and coal production started in the first quarter of 2019. Coalspur is seeking an amendment to Mine Permit C 2011-5F and other regulatory approvals associated with the Vista Mine to proceed with the Vista Test Underground Mine (VTUM), located within the existing Phase I permit boundary, and the development of Phase II. The VTUM and Phase II are two completely independent development opportunities with different timelines and objectives and the VTUM will not impact Phase II, as it is entirely contained within the boundaries of the existing Phase I Vista Mine Permit C 2011-5F.

Total investment in the Vista Mine to date exceeds $700 million including surface infrastructure installed with the capacity to support Phase II and the VTUM. Annual spending with local industry in Alberta exceeds $200 million. Phase I of the Vista Mine provides employment to more than 300 individuals, many of whom are from local Indigenous groups in the area. Coalspur has met the requirements for First Nations consultations from the Alberta Aboriginal Consultation Office and has Impact Benefit Agreements (IBAs) with seven First Nations and Métis. Taxes and other governmental payments are expected to exceed $16 million in 2020 and $21 million in 2021.

The VTUM will be an exploratory underground mine located wholly within the boundaries of the existing Phase I Vista Mine Permit C 2011-5F and thus simply represents an alternative mining method. The VTUM will test various safety and production methods to determine the feasibility of underground mining the Vista Mine's coal reserves. Given that underground mining uses electric machines powered by electricity rather than diesel, the VTUM represents an opportunity to reduce greenhouse gas emissions at the site. The VTUM will result in an additional investment of $100 million and create 98 additional full-time jobs. The VTUM will result in only 2.85 hectares of additional surface disturbance in the Phase I permit area which was previously assessed as part of the Phase I EIA. While the exact location of the VTUM surface facilities may change within the permit boundary due to the delay in timing caused by the federal review process, all facilities for the VTUM will remain within the approved Phase I permit area and the size of disturbance will not increase. The VTUM will increase annual clean coal production by approximately 565,000 tonnes.

Phase II will be a westward expansion of the Vista Mine's currently operating open pit surface mine (Phase I). Phase II will require an additional investment of over $300 million and create 270 additional full-time jobs. The surface mine expansion would create an additional surface area disturbance of 633.6 hectares (44.2% of the existing Phase I permit) and increase annual production by approximately 4.5 million clean tonnes (75% of current planned production).

On November 8, 2018, the Canadian Environmental Assessment Agency determined that Phase II did not meet the criteria for designation under the Impact Assessment Act (IAA or Act). The Federal Minister of Environment and Climate Change Canada (Minister), on December 20, 2019, denied requests for designation received in May and June 2019 regarding Phase II. It was determined at that time that adverse effects to areas of federal jurisdiction, including effects to fish and fish habitat, migratory birds, and Indigenous peoples of Canada that may result from the Phase II project would be appropriately managed by comprehensive legislative mechanisms already in place within the provincial and federal review processes. The federal mechanisms include the review of any Application for Authorization under the *Fisheries Act* by the Department of Fisheries and Oceans Canada and the *Migratory Birds Convention Act, 1994*, which can be completed concurrent to the provincial environmental assessment and regulatory processes associated with the *Responsible Energy Development Act* (REDA). These processes provide mechanisms for consultation with Indigenous peoples, including addressing potential adverse effects and concerns raised by Indigenous peoples and members of the public.

On May 1, 2020, the Minister and Impact Assessment Agency (Agency) again received requests to designate the project. In response, an assessment report dated July 30, 2020 by the Agency concluded that the VTUM and Phase II activities did not warrant designation and that cumulative effects and the concerns expressed by the requesters would be addressed through existing legislative mechanisms. In this report, the Agency determined that even if the VTUM and Phase II are considered together as one project, they do not result in an increase in the area of mining operations by 50% or more compared with Phase I, which therefore does not result in designation. The Agency also concluded that the concerns expressed by various outside groups are known to the Agency and would be addressed by provincial processes, specifically processes required under the *Environmental Protection and Enhancement Act*, the *Coal Conservation Act*, the *Water Act* and First Nation and Métis consultations. The Agency further concluded that potential adverse effects within federal jurisdiction and related concerns can be appropriately managed through the provincial process and other existing mechanisms such as the review of any Application for Authorization under the *Fisheries Act* by Fisheries and Oceans Canada. On July 30, 2020, the Minister reversed the previous decisions and decided that the VTUM and Phase II warrant designation despite the Agency's finding that these projects do not result in an increase in the area of mining operations by 50% or more compared with Phase I, and therefore did not meet the criteria for federal designation.

Although the Minister designated both the VTUM and Phase II, when determining whether federal impact assessment is warranted for the VTUM and Phase II, the two developments should not be considered together. The VTUM has been previously applied for and is under review by the AER and may proceed independently of Phase II. Phase II may also proceed independently of the VTUM. The VTUM has been applied for to determine if an alternative approach is

economically and technically feasible for Phase I. The VTUM is occurring within the existing disturbance of Phase I and extracting resources under the existing mineral leases. The VTUM simply represents an alternative mining method within the existing and approved permit boundary. The VTUM does not represent additional disturbance beyond the boundaries of the existing Phase I permit area.

The VTUM and Phase II can be operated independently. Thus, they are not the same project as determined by the Minister in his July 30, 2020 decision. The VTUM and Phase II will utilize the existing infrastructure approved under Phase I which has the capacity to accommodate the growth and expansion plans of the Vista Mine. The VTUM will not impact Phase II in any way as it is entirely contained within the boundaries of the existing Phase I Vista Mine Permit C 2011-5F. The underground entries of the VTUM will be developed within the existing Pit License C 2014-5C. The VTUM, situated within Phase I, will be executed as part of the Phase I development and will not result in any changes to the components of the infrastructure or facilities currently operating in Phase I. Similarly, Phase II will not impact the VTUM as it is being developed west of Phase I.

The Courts have held that if two projects can be considered "connected actions" they should generally be assessed together. This "connected actions" test provides that two projects are connected when (1) one project is automatically triggered by another; (2) one project cannot proceed without the other; or (3) both are part of a larger whole and have no independent utility if considered separately. This sound legal principle has not only been applied with respect to the *Canadian Environmental Assessment Act* but also to other environmental assessment regimes. The VTUM and Phase II satisfy none of these requirements and thus are independent, unconnected actions. In addition, joining the VTUM and Phase II together for the purposes of determining whether to designate these projects under the IAA creates policy implications. In the event of alternative pilot and test projects or changes to operational approaches within an approved area, future proponents would be encouraged to avoid the implementation of alternative mining techniques to avoid triggering a federal regulatory process; even though the alternative approach could provide long term benefits to the environment through the reduction of greenhouse gases and surface disturbance.

In the present case, it is evident that the timing of the VTUM and Phase II, including a decision by Coalspur on whether to sanction the projects, are proceeding on entirely different schedules. There is no policy justification to delay the VTUM, when it clearly is not subject to the *Physical Activities Regulations*, simply because Coalspur is also in the early stages of planning Phase II, engaging with Indigenous communities, and preparing an environmental impact assessment report.

Significant work on the Phase II expansion planning phase has been completed. The Phase II provincial EIA and application development was 70% complete when the federal Minister reversed the previous decisions that the project did not meet the criteria for federal designation and decided that the VTUM and Phase II warrant designation under the IAA. The provincial consultation process and EIA has continued and runs concurrent to this process to ensure commitments made with Indigenous partners and stakeholders is upheld. The provincial regulatory process, license amendments, and approvals will be required independent of any additional federal regulatory reviews completed by the Agency. Coalspur has entered into IBAs with seven First Nations and Métis groups. The Minister's decision will significantly delay the review of Phase II and the benefits from the mine that those agreements will provide to Indigenous groups in the area.

The Minister's decision adds significant delay and expense to Coalspur's plans for the VTUM and Phase II. This is a major setback for Coalspur, given the considerable investments it has already made in plans to utilize existing infrastructure and mine footprint, together with proven mitigation strategies, to minimize any potential adverse impacts of its projects. The setback will also be felt acutely by Indigenous groups and local Albertan communities who stand to benefit from the jobs and investments brought by the VTUM and Phase II. A delay in the project means a delay to the jobs and economic benefits associated with the VTUM and Phase II. This delay comes at a time when Indigenous peoples and the Alberta public are in desperate need of economic stimulus. The Alberta government itself has released a Recovery Plan with an emphasis on sustainable resource development in response to the COVID-19 pandemic, which in combination with the collapse in global oil prices, "has resulted in the most severe contraction of economic activity and jobs since the Great Depression" [Alberta's Recovery Plan: Economic Statement (2020)].

In response to the Minister's decision, the purpose of this document is to provide an overview of Coalspur's proposed Vista Mine's Phase II expansion and the VTUM. This Initial Project Description (IPD) was developed for the purposes of subsection 10(1) of the Act and contains the information set out in Schedule 1 of the *Information and Management of Time Limits Regulations* and is representative of the VTUM and Phase II projects as proposed at this time.

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DEFINITIONS AND ACRONYMS

"ACO" – Aboriginal Consultation Office of Alberta
"AEP" – Alberta Environment and Parks
"AER" – Alberta Energy Regulator
"Act" – Impact Assessment Act
"ART" – Athabasca Rainbow Trout
"CCA" – Coal Conservation Act
"CEA" – Cumulative Effects Assessment
"CHPP" – Coal Handling and Processing Plant
"CMER" – Coal Mine Effluent Regulations
"CN" – Canadian National Railway
"Coalspur" – Coalspur Mines (Operations) Ltd.
"DFO" – Department of Fisheries and Oceans
"EA" – Environmental Assessment
"ECCC" – Environment Climate Change Canada
"EIA" – Environmental Impact Assessment
"EPEA" – Environmental Protection and Enhancement Act
"EPPs" – Environmental Protection Plans
"GHG" – Greenhouse Gas
"HRIA" – Historical Resource Impact Assessment
"IAA" – Impact Assessment Agency
"IBA" – Impact Benefit Agreement
"IPD" – Initial Project Description
"LSA" – Local Study Area
"MSL" – Mineral Surface Lease
"Phase I" – Currently operating Vista Mine
"Phase II" – Second Phase of Vista Mine
"ROM" – Run of Mine Materials Handling System
"RSA" – Regional Study Area
"SARA" – *Species at Risk Act*
"SEIA" – Socio-Economic Impact Assessment
"SOPs" – Standard Operating Procedures
"TEK" – Traditional Ecological Knowledge
"TLUS" – Traditional Land Use Studies
"VECs" – Valued Environmental Components
"VTUM" – Vista Test Underground Mine
"WA" – Water Act

Part A: General Information

A.1 Project Overview

The Vista Test Underground Mine (VTUM) and the Vista Mine Phase II Expansion Project are coal mine projects located in Treaty 6 Territory, south of the Athabasca River in portions of Sections 9-16, Township 51, Range 24 W5M and portions of Section 7 and 18, Township 51, Range 23, W5M in Yellowhead County near Hinton, Alberta. A central latitude and longitude are 53° 23' 28.77"N Latitude and 117° 20' 20.53"W Longitude. Initial baseline data was collected in 2012 as part of the Regional Assessment to understand the ability of the region to support additional mining and the utilization of existing resources. The regional assessment aspects of the 2012 EA have been reevaluated with updated information including the current market conditions, the recent change in operating status of three nearby mines to non-operating status, and the proposed implementation of alternative mining techniques. **Figure A-1: Regional Area Map** below shows the project location within the region. **Figure A-2: Overview Map** shows the locations of the current operation, the VTUM, wholly within the Phase I permit boundary, and Phase II.

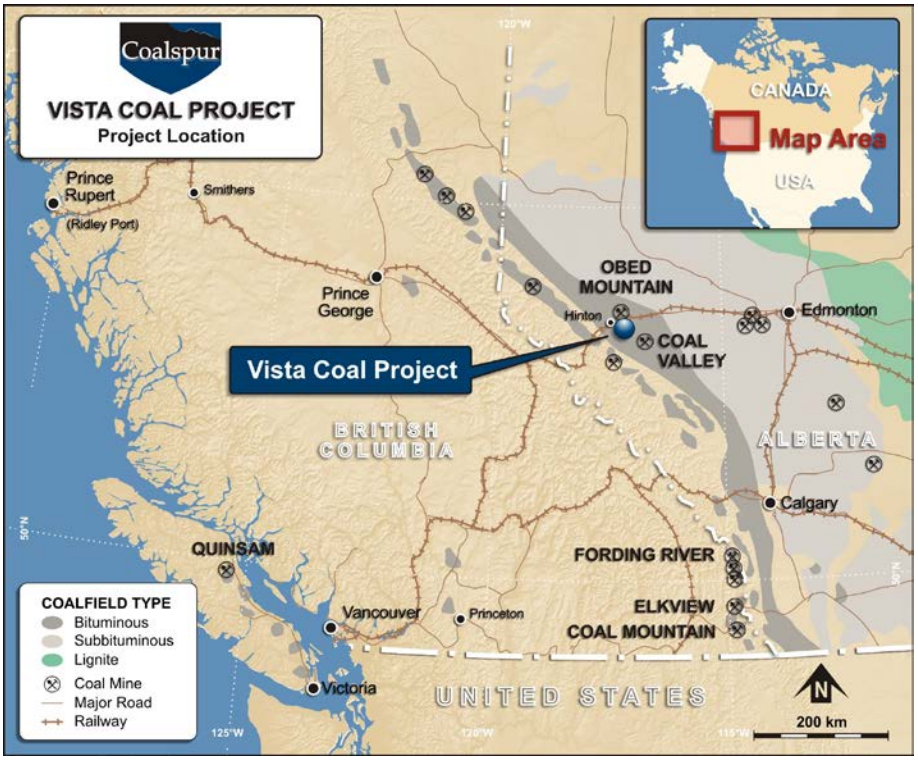

Figure A-1: Regional Area Map

ATHABASCA RIVER

TRAIL

CREEK

CREEK

Loadout

Gun Range

Clean Coal Storage Dome

Clean Coal Belt

Access Road

Communications Tower

Plant Area

Fresh Water Pond

Main Office

MRT 1

North Refuse Dump

CALYPSO POND

Phase 2 North Pit

Phase 2 Center Dump

Phase 2 South Pit

Phase 2 Subcrop Dump

ROM Sizer

ROM Dump

North Pit

Centre Dump

South Pit

McPHERSON

South Dump

Subcrop Dump

Subcrop Dump

CREEK

McPHERSON

CREEK

Vista Mine Substation

Alta-Link 138 kV

QUIGLEY

Legend

- Permit Boundary (Phase 1)
- MSL Boundary (Phase 1)
- Permit Boundary (Phase 2)
- MSL Boundary (Phase 2)
- Phase 1 Operations
- Highwall Mining Area (Phase 1)
- Local Roads
- Streams
- Power Lines

Phase II Components

- Spoil Dump
- Mine Pit
- Mine Roads
- Highwall Mining Area

VTUM Components

- Test Underground Mine Portal
- Test Underground Mine Projections

SCALE (m)

0 200 400 600 800 1000

Coalspur

Vista Mine

Figure: A-2 Overview Map

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The VTUM demonstrates Coalspur's interest as an operator to investigate an alternative mining technique (underground mine versus surface mine) within the Phase I approved operating footprint. Underground mining results in less surface disturbance and allows the mining of coal that would be uneconomical using surface mining techniques. The VTUM will test the feasibility of alternative approaches to determine if future exploration of underground mining reserves is warranted.

Phase II will be a westward continuation of the existing Phase I surface mine and will utilize the existing infrastructure, facilities, and roads previously constructed. It is effectively an expansion of the open pit surface mine extracting coal in the Val d'Or, McLeod, and McPherson seams including additional highwall mining of the final highwall. Phase II can operate concurrently with existing operations and potentially increase average production from approximately 6.5 to 11 million clean tonnes per year.

After mining and processing, the coal from the VTUM and Phase II will be transported by the existing Phase I infrastructure including the covered conveyor to the rail siding south of the CN mainline. CN will transport the coal by train to west coast ports where it will be shipped via ocean vessels to international markets.

The primary contact for the purposes of this Project Description is:

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A.2 Summary of Engagement

During preparation of the Phase II application, general project information was provided beginning in 2018 to the Town of Hinton, the Town of Edson, Yellowhead County, Alberta Aboriginal Consultation Office, Fisheries and Oceans Canada, Alberta Energy Regulator, and Impact Assessment Agency of Canada, formerly the Canadian Environmental Assessment Agency.

Engagement activities included phone discussions, in person meetings and attendance at public open houses. In addition to general project information, fisheries offsetting requirements were discussed with Fisheries and Oceans Canada.

Coalspur has established an effective public and stakeholder engagement process which is incorporated into the planning and operation of the proposed Phase II. The engagement process

was initiated by identifying local and regional businesses, municipal governments, community groups, and special interest groups in the local and regional areas. Publication of open house events were announced online, in newspapers, and through direct distribution. Initial points of communication focused on newsletters, open houses, informal and formal drop-in opportunities at the Hinton project office, letter invitations, phone calls, meetings, and e-mail. Coalspur staff were encouraged to participate in open houses and members of the public to visit the project office in Hinton.

With regards to the VTUM, due to the nature of the project within the confines of Phase 1, early engagement was undertaken with the Alberta Energy Regulator and the Aboriginal Consultation Office. There were no concerns raised during this process.

As the regulatory process and timeline have changed significantly, Coalspur is planning to distribute updates to the regional municipal governments and hold targeted sessions to ensure interested parties fully understand these impacts. Following the July announcement of federal designation, Coalspur provided First Nation and stakeholders with an update regarding impacts to the increased timelines

A.3 Indigenous Consultation and Engagement

Coalspur has been actively engaging with First Nation and Métis communities regarding the Phase II application since February of 2019. The Phase II consultation is in addition to the ongoing consultation and engagement regarding the currently active mining operations of Phase I. The First Nation Consultation Plan for Phase II was submitted to the ACO for review and approval in late 2018 – early 2019. Upon approval of this plan, Coalspur has actively engaged with the following communities:

- Erminskin Cree Nation, including their remote community of Mountain Cree
- Whitefish Lake First Nation
- O'Chiese First Nation
- Kehewin Cree Nation
- Aseniwuche Winewak Nation
- Louis Bull Tribe
- Lac Ste. Anne Métis

The process has included the sharing of project plans, maps, and proposed development and access to the site for the completion of Traditional Land Use Studies (TLUS) to understand impacts and incorporate Traditional Ecological Knowledge (TEK) into reclamation and planning. Coalspur provides regular updates to all communities and submits bi-monthly reports to the ACO for review to ensure Consultation practices meet the defined requirements. Ongoing consultation will continue throughout the life of the project and will include meetings and discussions with leadership or delegated representatives, responding to site-specific issues and concerns, and field tours relating to both active operations and the future development of Phase II and the VTUM.

Coalspur has engaged Aseniwuche Winewak Nation, Whitefish Lake First Nation, Erminskin Tribe, Alexis Nakota Sioux, and Louis Bull Tribe to complete TLUS of the project area. The TLUS and TEK data, collected as part of the Phase II Consultation and engagement are incorporated into the Phase II application in areas of environmental, cultural, and economic impact of the project. Through the establishment of Joint Implementation Committees, Coalspur provides updates regarding existing operations, amendments to operations, and future development to communities. These meetings help foster the identification of business and employment opportunities at the Vista Mine.

Topics raised by Indigenous groups related to the project include:

Summary of Issues raided by Indigenous	
Concern	**Concerns with reclamation timelines, schedule, and plan.**
Response	Coalspur implements a progressive reclamation plan in which reclamation activities are conducted at the same time as mining operations allowing for direct placement of overburden and soil. This allows for not only quicker reclamation but for higher quality and success of reclamation.
Concern	**Reclamation plan will not return Crown Lands to pre-existing conditions appropriate for traditional land use.**
Response	Coalspur is committed to continue working with Indigenous communities on its reclamation activities to ensure that the reclaimed landscape is returned to a condition and standard that best suits long term needs of people and wildlife.
Concern	**Impacts to future food security and medicines.**
Response	The reclamation plan includes species monitoring and targeting for both plants and animals. Coalspur remains committed to working with Indigenous communities on its reclamation activities to ensure reclamation activities provide the necessary future food security and needed medicines.
Concern	**Impacts to McPherson Creek and the Athabasca Rainbow Trout.**
Response	The mine plan was developed so direct impacts to the fish habitat would be avoided. Coalspur has implemented a fish toxicity program which includes ART. Coalspur monitors quality and quantity parameters throughout multiple locations south of the mine disturbance as well as before and after.
Concern	**Employment opportunities for members and contract work for Indigenous.**
Response	There are currently 16 Indigenous working at the mine. Several projects onsite have been completed by Indigenous owned businesses and contractors. Coalspur is continuously looking forward to working with the Indigenous peoples in the area.
Concern	**Return of Wetlands for medicine, habitat and timeliness of reclamation**.
Response	Coalspur is committed to continue working with Indigenous communities on its reclamation activities. Coalspur has a progressive reclamation plan that ensures the timeliness of reclamation completion.

A.4 Studies or Plans Relevant to the Project

There have been no studies or plans relevant to the project that have been conducted in the region under section 92 or 93 of the Act or by any jurisdiction, including by or on behalf of an Indigenous governing body, that is available to the public.

A.5 Strategic Environmental Assessment

Relevant strategic assessments, being carried out under section 95 of the Act are the Strategic Assessment of Climate Change and Strategic Assessment which applies to all projects assessed under the *Impact Assessment Act*. The Strategic Assessment of Thermal Coal Mining was launched under the Act to provide guidance on how future projects will be assessed; currently the Draft Terms of Reference have been released with publication of the final assessment to be completed in fall 2021. Additional information on greenhouse gas emissions as they relate to the Strategic Assessment of Climate Change are included in **Section E.23**.

Part B: Project Information

B.6 Project Justification and Purpose

B.6.1 Project Purpose and Need

Coalspur's Vista Mine, near Hinton, Alberta, is an operating surface coal mine producing approximately 6 million tonnes of clean coal per year. In 2018, Coalspur proposed to expand the Phase I footprint westward through an expansion called Phase II, which will utilize the existing coal processing plant, materials handling, and refuse disposal infrastructure with the purpose of increasing the annual volume of coal by approximately 4.5 million clean tonnes. Phase II is planned to run concurrently to Phase I, with construction proposed to commence in January 2022 and with operations to commence in April 2022. The increased volume of coal for Phase II is necessary for the economic viability of the Vista Mine based on the decrease in coal prices since the economic feasibility studies and the start of operations.

In 2019, Coalspur proposed the VTUM. The VTUM is an exploratory underground mine located wholly within the boundaries of the existing Phase I permits and licenses. The VTUM is needed to determine whether the seams currently being mined from the surface in Phase I are suitable to be mined with underground mining methods as these seams have not been mined underground in Alberta. If successful, the VTUM will increase the coal production of Phase I by approximately 565,000 clean tonnes per year over three years of operation, however the purpose of the VTUM is to test various safety and production methods to determine the feasibility of a commercial underground mine within Coalspur's mineral reserves.

The VTUM and Phase II are two separate and distinct, but adjacent projects with different timelines and objectives. There is still a large global demand for thermal coal, which made up 27% of the world's energy supply in 2017 (NRCAN, 2020). The Vista mine produces high calorific value, low sulfur and moderate to low nitrogen coal mined in a responsible manner that helps to meet these demands.

With the VTUM and Phase II developments, Coalspur will:

- Provide a new source of jobs close to the Town of Hinton;
- Employ skilled employees in full-time, well paid positions.
- Support education and training initiatives applicable to the Vista Mine including the VTUM and Phase II;

- Continue to be an active member of the community by supporting local programs and charities.
- Provide opportunities to local, regional, and provincial contractors and retailers, including Indigenous groups, who will provide goods and services to the projects; and
- Provide revenue to municipal, provincial, and federal governments in the form of production royalties, license fees, and taxes.

Annual spending with local Vista Mine partners in Alberta exceeds $200 million annually. Based on a widely accepted economic formula developed by the Coal Association of Canada, for every direct job at the mine, three additional indirect jobs are supported. Therefore, an additional 900 people are employed as a result of the mine. Phase II will create an additional 270 direct full-time jobs and 810 indirect jobs and the VTUM will create an additional 98 direct full-time jobs and 294 indirect jobs. All told, at full development, the mine would support over 2,500 jobs in the region.

- **Table B-1: Direct and Indirect Employment**

Jobs	Current Mine	VTUM	Phase II	Total
Direct	325	98	270	693
Indirect	975	294	810	2,079
Total	1,300	392	1,080	2,772

The VTUM and Phase II also benefit other areas throughout Alberta and Canada. The IBAs tied to Phase II provide direct financial support to First Nation and Métis communities within the region. Additionally, the third-party railroad that transports clean coal from the mine to terminals see a benefit from the operation of the mine. The VTUM and Phase II will provide additional employment in the railroad sector to transport the increased volumes that the Vista Mine would produce.

The Vista Mine's coal is transported and loaded on ocean going vessels at two terminals located in British Columbia. Ridley Terminals Inc.'s terminal is in Prince Rupert, BC and is owned by

Riverstone Holdings LLC, AMCI Group, and a limited partnership owned by the Lax Kw'alaams Band and the Metlakatla First Nation. Coal from the Vista Mine is also transported to Westshore Terminals Ltd located near Vancouver, BC. Employment opportunities that these terminals provide are benefited by increased supplies of coal.

B.7 Physical Activities Regulations

The relevant provision, Section 19 (a) of Schedule 2, to the Physical Activities Regulation is:

> *19) the expansion of an existing mine, mill quarry or sand or gravel pit in one of the following circumstances:*
>
> *a) in the case of an existing coal mine, if the expansion would result in an increase in the area of mining operations of 50% or more and the total coal production capacity of 5 000t/day or more after expansion*

As confirmed by the Agency in its Analysis Report dated July 30, 2020, the project does not meet the thresholds in the *Physical Activities Regulations*. On July 30, 2020, the Minister of Environment and Climate Change decided the Project warranted designation anyway under subsection 9(1) of the Impact Assessment Act.

B.8 Activities and Infrastructure

The mining and processing of coal involves several inter-related development stages. For both surface and underground mining these stages include pre-construction, construction, operations, and reclamation. Activities within these stages differ between underground and surface mining and are further described below.

During the operations stage, the combined mining areas of Phase I, including the VTUM, and Phase II will share coal processing infrastructure such as production facilities, equipment parking, maintenance areas, and a rail loadout facility. This infrastructure is already installed and part of the currently operating Vista Mine. The general process of coal processing is the same for Phase I, Phase II and VTUM. After raw coal is excavated, it is dumped in the ROM Truck Dump where it runs through a primary and secondary sizer and conveyed to the raw coal stockpile. From here, coal is transported through a reclaim tunnel to the CHPP where impurities are removed. Clean coal is conveyed to the clean coal stockpile while coarse refuse material is conveyed to the North Refuse Dump and fine material conveyed through pipelines into a tailings cell, which is a former mined out pit, for dewatering. Water is recycled back to the plant form the tailings cells for re-use with supplemental water being sourced through groundwater and surface diversions. The

locations of the existing infrastructure as it relates to the current Phase I operation, the VTUM and Phase II is shown on **Figure B-1: Infrastructure Map**.

Infrastructure associated with the VTUM development includes mine includes an office, parking, and coal stockpile area within the existing Phase I area. Development of the mine includes the development of entries and the installation of ventilation, underground belts, and electrical components.

Infrastructure associated with the Phase II development includes access roads which connect to existing Phase I roads, construction of two additional plant modules, and extension of exiting powerlines and water lines. Mining activities include clearing, stockpiling of reclamation materials, development of the mine pit and waste discard piles, and operation of tailings facilities in mined out pits.

Reclamation of both projects includes progressive reclamation which allows direct placement of material which allows for better quality and more successful reclamation. The removal of all infrastructure, recontouring, replacement of soil material and revegetation is also included at the end of the reclamation process. The Phase II project will include the development of an end-pit lake.

All activities for the construction, operation, decommissioning and reclamation of Phase II and the VTUM are in the care and control of Coalspur.

Covered Clean Coal Reclaim Belt

Clean Coal Stockpile

Covered Clean Coal Belt

Warehouse

Processing Plant

CHPP

Office

Fresh Water Pond

Covered Dome Feed Belt (~ 6.2km)

Thickners

Refuse Belt

Plant Feed Belt

Main Office

Raw Coal Stockpile

Raw Coal Reclaim Belt

Maintenance Office

Fueling Station

Covered ROM Belt

Operations Office

Phase 1

Phase 2

VTUM Underground Workings

VTUM Surface Workings

Sizer Building

Truck Dump

N

Legend

- Permit Boundary (Phase 1)
- Permit Boundary (Phase 2)
- Mine Pit (Phase 1)
- Mine Pit (Phase 2)
- Spoil Dump
- Plant Area
- Freshwater Ponds
- Mine Roads
- Power Lines
- Test Underground Mine
- Test Underground Mine Projections
- North Dump Refuse Area
- CHPP Infrastructure
- Other Infrastructure

SCALE (m)

0 60 120 180 240 300

Coalspur

Vista Mine

Figure B-1 Infrastructure Map

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B.9 Production Capacity

B9.1 Phase II Production

The targeted production capacity of Phase II by itself is approximately 4.5 million clean tonnes per year with a maximum annual production of 5.8 million clean tonnes. Maximum daily production is nominally 50,000 tonnes.

B.9.2 VTUM Production

The VTUM will operate wholly within the existing Phase I footprint and produce approximately 565,000 clean tonnes per year. This is less than an 8% increase of the total Phase I production. The VTUM is expected to be in operation for 3 years.

The underground operation will begin with a single continuous miner section. If successful, a second continuous miner section will be added achieving a maximum production rate of 635,000 clean tonnes per year and a nominal daily maximum production of 6,000 clean tonnes.

B.10 Anticipated Schedule

The tables on the following pages show the anticipated schedules for both the VTUM and Phase II respectively, including expected timelines for permitting, construction, operation, decommissioning, and reclamation. Anticipated timelines are provided for the VTUM and Phase II with and without the anticipated time required to conduct a federal impact assessment should one be required.

Coalspur intends to commence construction of the VTUM in 2021. **Schedule 1: VTUM Project Schedule Provincial Process** shows the anticipated timelines for provincial permitting, construction, operation, decommissioning, and reclamation for the VTUM. Construction of Phase II is proposed to commence in April 2022 with operations to commence in July 2022. As shown on **Schedule 2: Phase II Project Schedule Provincial Process** below, these timelines are achievable under the provincial process.

Schedule 3: VTUM Project Schedule Federal and Provincial Process shows the anticipated timelines for provincial and federal permitting, construction, operation, decommissioning, and reclamation for the VTUM taking into account the anticipated time required to conduct the federal impact assessment. **Schedule 4: Phase II Project Schedule Federal and Provincial Process**

indicates the extended timeline for approval for Phase II. It is anticipated that the federal review process would delay the VTUM and Phase II by five and a half years.

Under the federal process, construction, and production of Phase II and the VTUM would not occur, potentially, until 2027.

As shown on the schedules, First Nation, Métis and stakeholder engagement are integrated into the development and operation of the mine. Coalspur provides regular updates to First Nations and Métis groups through Joint Implementation Committee meetings, e-mails, and phone calls. Ongoing consultation and engagement is a continuous process throughout the life of the mine and reclamation activities.

Schedule 1: VTUM Project Schedule Provincial Process

	2019				2020				2021				2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Completed Actions																																
Engineering and Design																																
Original VTUM Submittal																																
Pre-Application Meeting with AER																																
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Topsoil and seed for closure																																

Schedule 2: Phase II Project Schedule Provincial Process

	2019	2020				2021				2022				2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4											
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• EPEA & Mine License																								
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Phase II Construction																								
Mine Operations																								
Decommissioning and Closure																								
Reclamation																								

Schedule 3: VTUM Project Schedule Provincial and Federal Process

	2019				2020				2021				2022				2023				2024				2025				2026				2027				2028				2028				2028				2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
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Contouring of benches																																																	
Topsoil and seed for closure																																																

Schedule 4: Phase II Project Schedule Provincial Process

	2019	2020				2021				2022				2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																	
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Reclamation																														

B.11 List of Alternative Means – Technically and Economically Feasible

The primary factors of importance in determining the economic feasibility and mine ability of a reserve are proximity to infrastructure, zoning (land use and regulatory), size, quality, and geological setting of the reserve. To be economically feasible, the development of a thermal coal mine requires an adequate and a skilled workforce located close to infrastructure that will provide it with the required support facilities.

Because the thermal coal is exported to international markets, proximity to rail lines to transport the coal to ports on Canada's west coast is essential.

The main surface infrastructure and materials handling systems required for the VTUM and Phase II are already installed and operating. This infrastructure, installed during Phase I operations, utilizes state of the art technology, and provides the most technically and economically feasible means to achieve the goals of the project. Phase II will utilize the same mining method and controls that are currently employed for Phase I.

The VTUM is a test of an alternative means of resource extraction and demonstrates Coalspur's commitment to exploring technically and feasible alternatives at the Vista Mine. If successful, this alternative mining method may be utilized for the future mining of the coal within Coalspur's mineral leases that otherwise would not be able to be economically extracted. Underground mining results in less surface disturbance than surface mining to extract coal as its operations are beneath the surface. Less greenhouse gases from transportation are also emitted since electric machines powered by electricity rather than diesel are utilized. The VTUM will provide an opportunity to demonstrate alternative means for the purpose of resource extraction that will have a direct reduction in impact to surface lands and the environment.

The purpose of the Phase II project is to increase coal production using existing property and facilities, i.e Phase 1, to supply overseas customers. Potential alternate means of carrying out the project include:

- Alternate mining methods
- Alternate tailings management and treatment
- Alternate reclamation methods

Coalspur has gained knowledge in the Operation of Phase 1 which aided in determining the best methods of mining at this specific location. The Phase II project has utilized these learnings to

develop the most appropriate methods that are both technically and economically feasible, Coalspur will, however, continue to evaluate new technologies. Based on the location and proximity to Phase I and mineability of Phase II, there are currently no surface mining alternatives to the project that could meet the production of Phase II that would be considered more technically and economically feasible.

The purpose of the test underground mine is to test the feasibility of an underground mine at this location. Potential alternate means of carrying out the project include:

- Alternate mining methods
- Alternate tailings management and treatment
- Alternate reclamation methods

There are currently no technical or economically feasible alternatives to the VTUM.

Part C: Project Location

C.12 Description of Project Location

Coalspur's Vista Mine is located within the Rocky Mountain Foothills physiographic region in west-central Alberta (Pettapiece, 1986). The existing Phase I operation, proposed VTUM, and proposed Phase II are within Treaty 6 Territory and approximately, with the closest disturbance 5 km from the Hinton town boundary, the nearest community, and extend away from Hinton to the East. The closest permanent residence is approximately 6 km from closest disturbance associated with Phase II and there is one potential trapper cabin located within the Project.

Figure C-1: Coal Lease Map shows the surface lease and mineral ownership including Phase I and Phase II. **Figure C-2: Proximity to Federal Lands Map** shows the project's proximity to federal lands.

The Project is in an area where Traditional Land Use is practiced. The closest reserve land is Alexis Cardinal River Reserve No. 234, located approximately 57 km to the south east. Alexis Elk River Reserve No. 233 is also located within a 100 km radius. No other reserves, First Nation Land, or land subject to a comprehensive land claim agreement or self-government was identified within a 100 kilometer radius of the project.

N

Obed

Obed Loadout

Carldale

Pedley

Hinton

Yellowhead

Tow

Mercoal

16

Legend

- Permit Boundary (Phase 1)
- MSL Boundary (Phase 1)
- Permit Boundary (Phase 2)
- MSL Boundary (Phase 2)
- Mine Pit (Phase 1)
- Mine Pit (Phase 2)
- Mined Out (Phase 1)
- Highwall Mining Area
- Spoil Dump
- Disturbance Area
- Plant Area
- Freshwater Ponds
- Roads
- Mine Roads
- Streams
- Power Lines
- Coal Lease Area
- North Dump Refuse Area

Coalspur

Vista Mine

Figure C-2 Coal Lease Map

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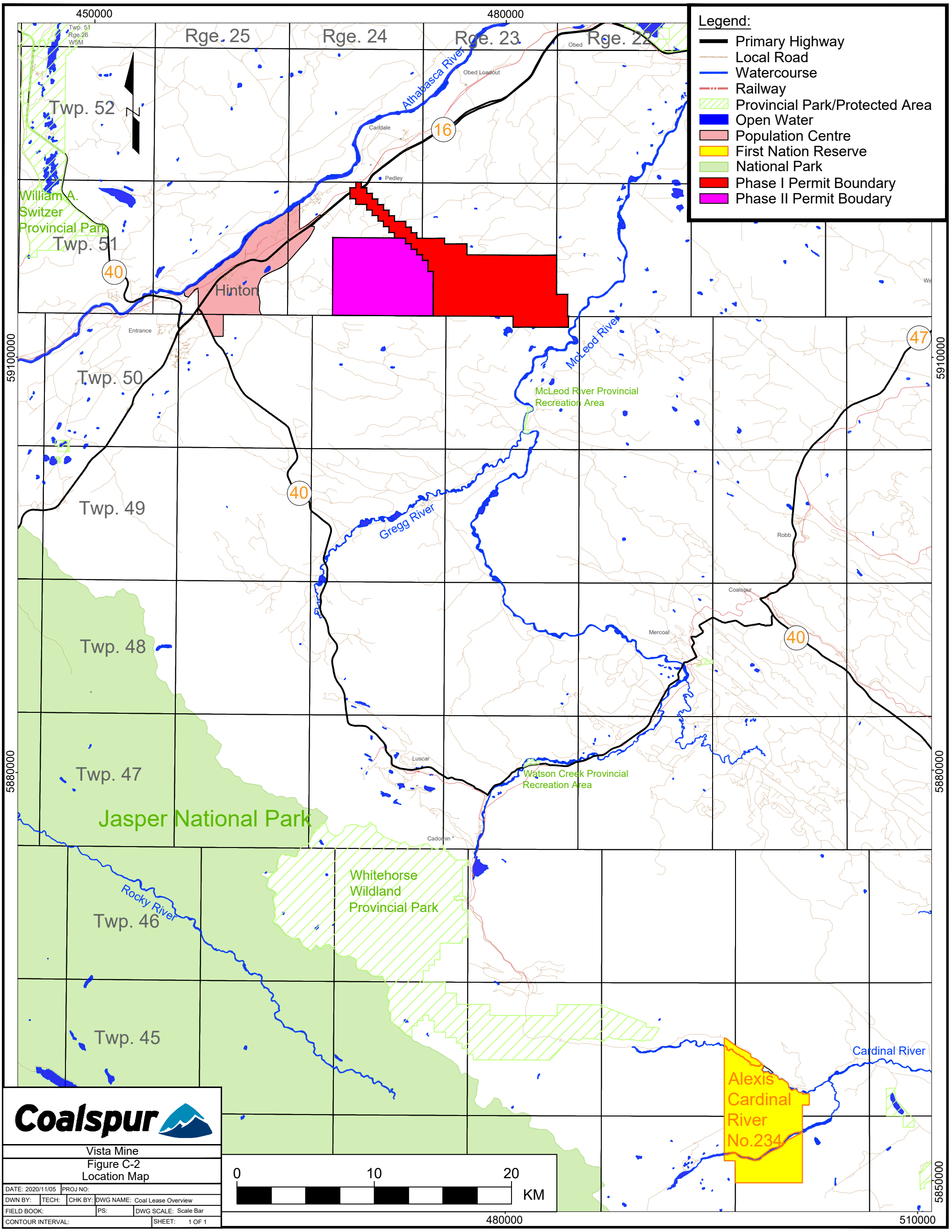

Coalspur

Vista Mine

Figure C-2
Location Map

DATE: 2020/11/05	PROJ NO:		
DWN BY:	TECH:	CHK BY:	DWG NAME: Coal Lease Overview
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C.13 Biological Environment

The Vista Mine expansion is situated within the Upper Foothills Natural Subregion of Alberta. The Upper Foothills (UF) occur at higher elevations than the Lower Foothills (LF); consequently, the climate of the UF is characterized by a stronger cordilleran influence compared to the more continental climate of the LF (Strong and Leggat 1992; Natural Regions Committee 2006). As elevation increases from LF to UF, more winter precipitation is received, and the length of the growing season becomes shorter.

Topography in the area ranges from undulating or strongly rolling dissected plateaus to steep slopes. Surface materials are predominantly medium textured and somewhat calcareous glacial till deposits that become thin on steep slopes, and may occur in association with exposed bedrock, tertiary gravels, and colluviums. At lower elevations, glaciofluvial sands and glaciolacustrine clays can be found. Upland soils include well to imperfectly drained Orthic Gray Luvisols and Brunisolic Gray Luvisols.

Vegetation within the UF is limited in diversity due to the short and cool growing season which influences the growth of extensive closed canopy coniferous forests (Natural Regions Committee 2006). Additionally, due to the lack of large landscape level fire events over the past 110 to 120 years, most lodgepole pine forests remain uniform and even-aged (Landhausser et al. 2010). Mixed or pure lodgepole pine, aspen, white spruce, and subalpine fir forests occupy sites with moderate moisture and nutrient availability (Beckingham et al. 1996).

Wetlands are relatively uncommon within the Foothills due to the steeply sloping terrain and are usually limited to seepages on northerly aspects and valley bottoms. The majority of wetlands are treed (tamarack and black spruce) and shrubby fens, with bogs and graminoid fens occurring less frequently. Organic accumulations are quite thin within the UF. Large rivers flowing east and north throughout the Foothills include the North Saskatchewan, McLeod, Athabasca, Smoky and Wapiti Rivers (Natural Regions Committee 2006).

McPherson Creek, which drains to the McLeod River, is the primary watercourse that drains the Project area. Several tributaries, mainly intermittent channels, drain to McPherson Creek from the proposed pit. Surface water quality is characterized by high levels of dissolved oxygen, low levels of dissolved organic carbon and low concentrations of total suspended solids. Water is classified as hard to very hard (Coalspur, 2012b).

Three wildlife ecodistricts dominate the Phase II area and its surroundings including the Wolf Lake Upland, the Obed Upland, and the Ram River Foothills. Phase II will mainly be within the Wolf lake Upland ecodistrict of the UF subregion.

C.14 Health, Social and Economic Context in the Region

Hinton is the closest and largest population center to the Vista Mine, situated in Yellowhead County with a 2016 population of 9,882 (GOA, 2019), showing a growth of 5.1% since 2001, much lower than the provincial growth rate of 36.7%.

The Project is located in the Alberta Health Services North Zone, and health status indicators are available solely at the zone level. The North Zone ranks worse compared to Alberta in a variety of population health indicators such as obesity, physical activity, smoking and self-perceived mental health. For the local geographic area of Hinton, the most frequent cause of death reported between 2013 and 2015 was neoplasms and hypertension was the disease with the highest prevalence rate during this period, similar to the provincial rate (Alberta Health 2017).

Between 2011 and 2016, some industries showed declines in employment, such as mining and oil and gas, manufacturing, and wholesale trade, while others increased including health care and social services, accommodation and food services.

The regional socio-economic analysis for the project consists of Yellowhead County, the Town of Edson, and the Town of Hinton. The key socio-economic considerations for the purpose of the analysis fall into the following categories:

- employment effects;
- regional and provincial economic benefits;
- population effects;
- effects on regional infrastructure and services; and
- traditional land use effects.

The economy of the region has historically been driven by the oil and gas, mining, and forestry sectors. Agriculture and tourism contribute to the regional economy albeit in a less prominent fashion. In general, the labour force participation rate was above the provincial average and the unemployment rate was below the provincial average for both the total and Indigenous working age populations (Statistics Canada, 2016).

Due to a declining oil and gas sector and the recent closure of several mining operations, Coalspur has completed additional regionally specific socio-economic interviews in the fourth quarter of 2020. These interviews will focus on the previous 12 months and will help to understand the impacts of the declining resource sector, COVID 19, and the proposed development of Phase II. As part of this assessment, development timelines of Phase II will be considered in response to employment and income opportunities.

Social infrastructure includes a diverse range of human services and infrastructure including health, education, social, recreation, policing, and emergency services. The town of Hinton, located approximately 10 kilometres from the Vista Mine plant site, is a fully established town with adequate medical, social, and support services infrastructure to support the community. Adequate medical, social, and support services infrastructure is important to a community as a means of:

- supporting the functioning of the community by sustaining the well-being of its residents and building social cohesion; and
- sustaining economic growth by making the community more attractive to those considering investing or relocating to the region.

The Vista Mine is currently established within the community and region and workers employed at the mine are members of the surrounding communities and other cities within the region. The region has a well-developed social infrastructure system. The majority of infrastructure and services are located in the Towns of Hinton and Edson, which also service Yellowhead County residents. Coalspur currently has mutual aid and service agreements in place with the local fire department, EMS, medical facilities, and STARS. Coalspur has developed relationships and provides donations to facilities within the community including donating masks and PPE to local schools to assist them during the COVID-19 pandemic.

Part D: Federal, Provincial, Territorial, Indigenous, and Municipal Involvement and Effects

D.15 Financial Support Provided by Federal Authorities

Coalspur has not received any financial support from the federal government for the execution of the current operations, the VTUM, or Phase II.

D.16 Federal Land Used for the Purpose of the Project

There are no federal lands included in Phase II or the VTUM.

D.17 Regulatory Jurisdictions – Environmental Assessments of the Project

The Phase II application was previously considered by the Minister in 2018 and 2019. With Agency confirmation that Phase II would not be subject to a federal impact assessment, Phase II has proceeded with the development of the Terms of Reference under the provincial jurisdiction of the AER. On July 30, 2020 the projects combined were designated by the Minister of the Environment Climate Change Canada and as such, are subject to the federal Impact Assessment Act.

The Alberta Energy Regulator has jurisdiction for provincial permits, approvals and licences pursuant to the *Coal Conservation Act*, the *Water Act*, and the Alberta *Environmental Protection and Enhancement Act*. The Alberta Historic Resources Management Branch has provincial jurisdiction pursuant to the *Historic Resources Act*.

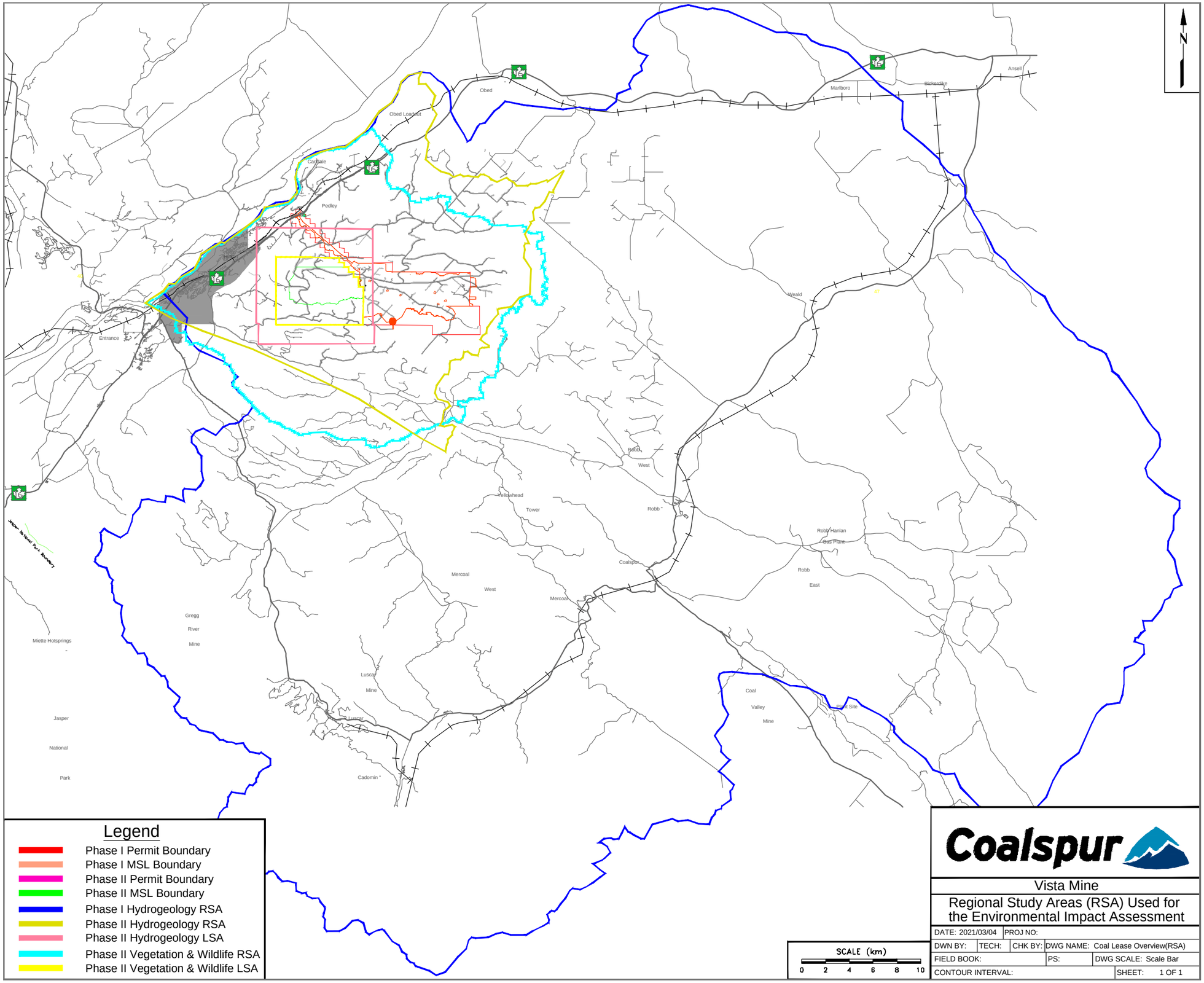
Federally, Environment Canada and Climate Changes has duties through the *Species at Risk Act* and the *Migratory Birds Convention Act*. Fisheries and Oceans Canada has duties through the *Fisheries Act*.

Coalspur is in the last phase of preparing the required environmental impact assessment and associated technical assessments that examine the environmental and socio-economic effects of Phase II to meet the Terms of Reference completed with the AER and agreed to in 2018. Coalspur will reference the *Guide to Preparing Environmental Impact Assessment Reports in Alberta* published by Alberta Environment and Sustainable Resource Development (the Guide) and these agreed upon Terms of Reference when preparing the Environmental Impact Assessment Baseline Information.

The VTUM does not require any federal or municipal approvals. Since the VTUM is located entirely within the existing permit boundary of Phase I, only one new provincial mine license and several amendments to existing provincial approvals are required.

D.18 Study Areas

The Phase II disturbance area will be 633.6 hectares in size which is 44.2% of the currently permitted Phase I development. The VTUM will result in only 2.85 hectares of additional surface disturbance wholly within the Phase I permit area which was previously assessed as part of the Phase I EIA. While the exact location of the VTUM surface facilities may change within the permit boundary due to the delay in timing caused by the federal review process, all facilities for the VTUM will remain within the approved Phase I permit area. The Local and Regional Study Areas (LSA and RSA) varied in geographic extent according to the needs of the different disciplines. **Figure D-1: Regional Study Areas (RSA)** presents the LSA and RSA for Phase II development and Phase I which includes the VTUM.



Legend

- Phase I Permit Boundary
- Phase I MSL Boundary
- Phase II Permit Boundary
- Phase II MSL Boundary
- Phase I Hydrogeology RSA
- Phase II Hydrogeology RSA
- Phase II Hydrogeology LSA
- Phase II Vegetation & Wildlife RSA
- Phase II Vegetation & Wildlife LSA

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Vista Mine

Regional Study Areas (RSA) Used for the Environmental Impact Assessment

DATE: 2021/03/04	PROJ NO:		
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Part E: Potential Effects of the Project

E. 19 Environmental

E.19.1 Fish and Fish Habitat

The activities associated with the VTUM have no anticipated effects on fish and fish habitat as they reside within the existing operating footprint of Phase I. The LSA for Phase II was selected based on the permit area boundary and focuses on the EA aquatics component in the spatial area where specific effects may occur. Waterbodies within the LSA include McPherson Creek, several tributaries to McPherson Creek, a tributary to the McLeod River, a tributary to the Athabasca River, Trail Creek, and a tributary to Trail Creek.

The RSA for the aquatics assessment encompasses the geographic extent of any potential impact to aquatic resources associated with the development of Phase II (**Figure D-1: Regional Study Areas (RSA)**). The RSA for the Phase II encompasses the LSA and includes a portion of the McLeod River extending from its confluence with McPherson Creek downstream approximately 16 km (consistent with the RSA boundary for the water quality assessment) and a portion of the Athabasca River extending from the confluence with Athabasca River Tributary #1, 12 km downstream to near the confluence with Roundcroft Creek (consistent with the RSA boundary for the water quality assessment).

Information obtained during baseline aquatic field programs is the primary source of information for assessing impacts to the aquatic ecosystem potentially arising from construction and operational activities associated with the Phase II development area. In addition, the conclusions from the surface water quality assessment and hydrology assessment will be used for the cumulative impact assessment.

In accordance with this strategy and in support of the fisheries and aquatic resources component of the EIA for Phase II, key to baseline investigations was the identification of fish habitat locations within the Phase II area. Existing (baseline) aquatic resources in watercourses on and adjacent to Phase II have been assessed using both historical information and field investigations.

The VECs selected for assessment include arctic grayling, bull trout, rainbow trout, and benthic invertebrates. Information obtained during baseline aquatic field programs for Phase II and information from Phase II's surface water quality assessment and hydrology assessment were used extensively for the fisheries assessment.

- Provincially and federally, there is one species listed federally as Endangered (Athabasca Rainbow Trout); federally, one species listed as Threatened (bull trout); provincially, there is one species listed as May be at Risk (spoonhead sculpin);
- Provincially, two species that are listed as Sensitive (arctic grayling, bull trout); provincially, two species listed as Undetermined (pearl dace, finescale dace); and one species listed as Exotic/Alien (brook trout). The remaining species are listed as Secure.

Coalspur has been working with regional qualified aquatic environmental specialist, QUAES, to determine the presence of the Athabasca Rainbow Trout (ART) in the RSA. Genetic testing was completed in 2019 and confirms the presence of pure strain ART. Coalspur recognizes that a federal offsetting plan may be required and is working with DFO to determine the appropriate path forward. An ART offsetting program has been established in the region and provides insight and opportunity to work with and expand the existing program. Effects to aquatic species, as defined in subsection 2(1) of the Species at Risk Act, are not anticipated as marine plants are not found in the Project Area.

Coalspur is working closely with a regional recovery and offsetting plan for the protection of genetically pure ART. The project and monitoring program provide real time feedback and opportunity to work collaboratively with an established and regionally significant provincial and federal joint protection program. Information learned from the program may help define future closure and reclamation plans in support of ART recovery plans.

The issues identified as potentially affecting fish habitat potential, the abundance of fish, the health and survival of fish populations (in general) and the abundance, health, and survival of VEC aquatic life within the RSA and LSA are principally related to:

- potential changes to physical habitat components;
- potential changes to flow regime;
- potential changes to water quality (sediment and other chemical contaminants); and
- potential changes to the fisheries resource access and utilization.

E.19.2 Migratory Birds

There are approximately 450 species of migratory birds that can be found in Canada. Most of these birds are listed under the Migratory Birds Convention Act or MCBA. There are 134 of these species that could potentially be within the project area.

Potential impacts to migratory birds include habitat alteration, increased mortality, effects to health through exposure to deleterious substances, sensory disturbance, habitat fragmentation and movement obstruction.

E.20 Federal Lands and Transboundary Effects

The VTUM and/or Phase II are not expected to have any environmental effects to federal lands as no portion of the Project development will occur in these locations. It is not anticipated the Project will impact air quality or hydrology and water quality to other provinces. Both parameters in the Phase I assessment were deemed to be at most regional in geographic extent, which may affect areas outside of the local study area, but within the regional study area. The Project is not expected to result in changes outside of Canada.

E.21 Impact to Indigenous Peoples of Canada

Mining activities will limit the use of the area for traditional land use, hunting, and gathering. The comprehensive Consultation plan established by Coalspur and developed with its Indigenous partners focused on a means to lessen the impact, protect important traditional sites, and implement land use strategies. This is accomplished through timely reclamation, including seed and medicine collection, to minimize the impact of re-establishment in the reclamation and closure stages. Upon completion of an area TEK and TLUS, information is integrated into the closure plans to support traditional use of the land. Engagement with the communities is instrumental in reducing impacts after the mining phase is complete. Through the establishment of Joint Implementation Committees, Coalspur will continue to provide updates regarding existing operations, amendments to operations, and future developments to communities.

Coalspur recognizes that ensuring business development opportunities and active participation in the resource sector help support the retention and sharing of traditional land use and values. Through the establishment of IBAs, Coalspur and its Indigenous partners hope to develop and demonstrate a process by which employment opportunities can be balanced with traditional land use, lessening the impacts during the active mining phase. Coalspur continues to actively engage with the First Nations and Métis by sharing development plans and monitoring data to develop meaningful and timely strategies.

E.21.1 Physical and Cultural Heritage

In the Province of Alberta, historical resources are defined and regulated under the Alberta *Historical Resources Act*. Historical resources include historical, archaeological, and paleontological resources. These resources include sites, artifacts, fossils, and certain types of traditional use sites identified by First Nations and Métis. The project area is near Hinton and the

historical Coal Branch towns, resulting in elevated potential for the presence of historic period sites.

A regional physical and cultural heritage assessment has been completed, which included the original Phase I, where the VTUM is proposed and was inclusive of an additional 20 kilometres beyond the boundaries of Phase I, including Phase II. Standard field procedures followed for the Historical Resource Impact Assessment (HRIA) field program included surface reconnaissance, inspection of exposures, and shovel prospecting in areas of elevated site potential. The HRIA programs recorded 45 precontact and historical sites associated with the project area.

The paleontological field assessment for this project involved inspecting bedrock exposures for fossil material. There were no paleontological remains identified in the development zones during the archaeological HRIA program.

Of the total of 45 historical resource sites recorded during the HRIA, 38 were located within existing Phase I. The remaining sites have been identified and reviewed as part of Phase II and, where required, setbacks and protection and mitigation plans have been established. Protection, mitigation, and buffer distances support the protection of the high value sites in the field. Due to the public nature of this document, the level or nature of the artifacts found will not be disclosed in the IPD. A more detailed response will be provided in the Detailed Project Description. No sites intersect with the surface disturbance of the VTUM.

E.21.2 Historical Resources

A total of four significant historical resource sites were recorded within the regional area that lies within the existing Phase I area or directly adjacent to the currently proposed disturbance footprint for Phase II. These sites are of high local or regional archaeological significance and no impact to these sites from the mining operations are proposed.

Figure E-1: Historical Resource Impact Assessment below shows the areas assessed as part of the HRIA. Overlapping the HRIA area, Coalspur has supported the completion of TLUS and TEK assessments with its First Nations partners.

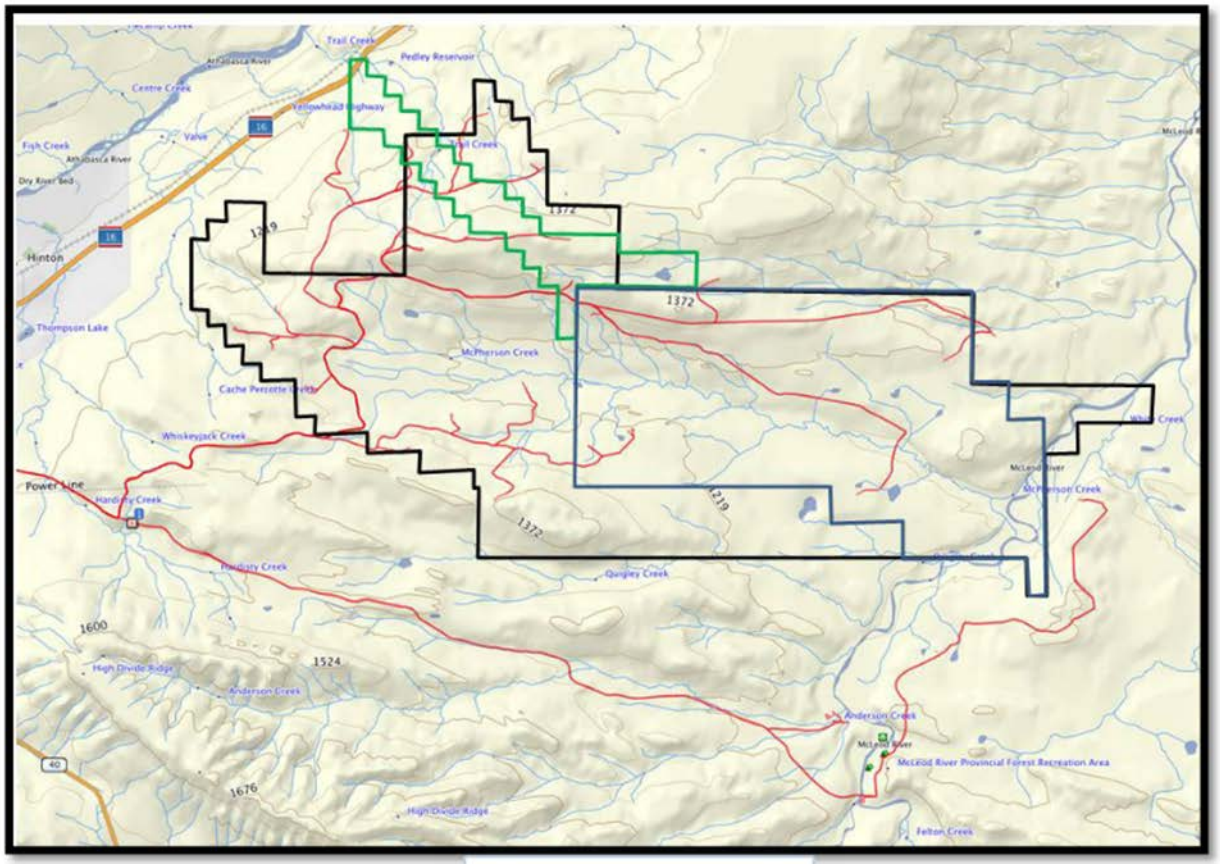

Figure E-1: Historical Resource Impact Assessment

Within the regional area, a total of 179 archaeological sites have been discovered. Of these sites, 143 are precontact sites, 34 are historic period, and two are known to have both precontact and historical components. 39% of the previously recorded sites were, or are, worthy of additional investigation for data recovery prior to disturbance. Following development of the project, 67% of the known significant historical resources in the surrounding region will be extant and available for future study of both precontact and historic periods. Many of the sites already removed have been appropriately studied and information collected prior to removal. Therefore, it can be expected that implementation of the *Historical Resources Act* on any future developments will result in an appropriate balance between information loss, information gain from mitigation, and preservation of a large sample of sites for future research. The development of the project will leave 74% of the known significant historical resources within the Mine Permit area intact, including several sites with some of the highest research potential currently known in the region.

E.22 Socio-Economic Impact

The Socio-Economic Impact Assessment (SEIA) addresses the human environment with and without the project. The key socio-economic issues considered in the analysis fall into the following categories:

- employment effects;
- regional and provincial economic benefits;
- population effects;
- effects on regional infrastructure and services; and
- traditional land use effects.

Key indicators used to assess the effects of the project on communities in the RSA are:

- workforce;
- population change;
- income;
- effects of population changes on service providers and physical infrastructure;
- effects of increased traffic on the regional road network; and
- traditional land use and culture.

The key indicators used to assess the project's income and taxation consequences for governments are:

- municipal taxes;
- provincial corporate tax and resource royalty income; and
- federal corporate tax income.

For the purpose of the socio-economic analysis, the RSA consists of Yellowhead County, the Town of Edson, and the Town of Hinton and includes information collected during Consultation with First Nation and Métis communities.

The Socio-Economic assessment currently under development includes:

- Economic and Fiscal Analysis;
- Population Effects Analysis;
- Service Provider and Infrastructure Effects Analysis; and

- Socio-Economic Effects on Indigenous communities.

Phase II has resulted in multiple IBAs that are currently in place with Indigenous stakeholders. In accordance with these IBAs, significant portions of the funds to be paid to many of Coalspur's Indigenous stakeholders are dependent upon the timely production from Phase II. Such IBAs may contain provisions with respect to training, employment and business opportunities; support for social, cultural and community initiatives; and financial provisions and cash payments. A prolonged delay in the Phase II project will result in direct and negative impacts to these partners and their communities. This delay comes at a time when Indigenous peoples and the Alberta public are in desperate need of economic stimulus.

Coalspur has continued to work with First Nations and Métis peoples to address the health and social impacts of Indigenous peoples as a result of the project. Through IBAs and the establishment of working groups, Coalspur works directly with stakeholders to provide the needed support to address these concerns. Coalspur also addresses concerns raised by all stakehoders during the application process to ensure that health and social impacts to First Nation and Métis people are mitigated.

E.23 Greenhouse Gas Emissions

E.23.1 Executive Summary

Coalspur recognizes Canada's goal for net-zero emissions by 2050 as well as Canada's current target under the Paris Agreement to reduce GHG emissions by 30% below 2005 levels by the year 2030. The Vista Mine incorporates GHG emission reduction strategies that aim to reduce and minimize the different emission sources that exist within and that are associated with the mining operations. These opportunities include the consideration and use of best available technologies (BATs) and best environmental practices (BEPs) for reducing GHG emissions including emissions from the proposed VTUM and Phase II.

Coalspur's market in Japan, Korea, and Taiwan will continue to rely on coal and these nations have taken steps to mitigate and reduce their emissions. They will import the coal from elsewhere but desire the higher calorific value (CV) coal that the Vista Mine provides. This allows them to reduce the amount of coal burned to produce the same heat, thus reducing emissions. The development of new high CV projects such as the VTUM and Phase II reduces carbon emissions by replacing lignite and/or low-grade suppliers that contribute to higher carbon emissions in all GHG emission categories. Coal from the Vista Mine goes to supercritical plants which are High Efficiency – Low Emissions (HELE) generating assets that have implemented additional GHG mitigation and reduction strategies. In addition to lower carbon

emissions, these units also employ mitigation technology for NOx, SO_2 and PM to address air quality and health concerns.

Coal produced at the Vista Mine is closer to the APAC markets than other coal suppliers, reducing GHG emissions emitted during transportation. Unit-train movements to transport coal from the Vista Mine are among the lowest carbon (GHG) intense in the world and are half the rail distance to Canadian port(s) than that of U.S. coal that is exported via Western Canada. Vista coal is loaded into vessels that are among the largest bulk carriers in the world further reducing the carbon intensity.

The development of the VTUM and Phase II would replace a higher GHG emission coal sourced elsewhere. Coal will be burned in these markets even if they are not served by coal mines in Canada. The Vista Mine, along with the VTUM and Phase II developments, will provide the economic benefit to Canada as well as the economic benefit to local, regional, and Indigenous communities while reducing global GHG emissions.

E.23.3 GHG Emissions from Coal Production

Canada's contribution to global GHG emissions is declining and represents about 1.6 percent of the global total (CAIT 2017). This decline is anticipated to continue due to its reduction efforts and the expected rapid increase in emissions from developing and emerging countries, particularly China, India, and Indonesia.

Coal production is an important economic contributor in Canada, but only accounts for 0.4% of the country's total greenhouse gas (GHG) emissions. By comparison, emissions from the oil and gas sector account for 26.5% of the country's GHG emissions. Environment and Climate Change Canada (ECCC) annually submits its National Inventory Report on GHG emission sources and sinks to the United Nations Framework Convention on Climate Change. The most recent report submitted in 2020 presents sources and trends from data collected between 1990 and 2018. GHG emissions are expressed in carbon dioxide equivalents (CO_2e). In 2018, GHG emissions from coal production (including emissions from thermal dryers, heaters, onsite transportation, and fugitive emissions from underground and surface mines) accounted for 3 Mt CO_2e of Canada's 729 Mt CO_2e of total emissions. **Figure E-3** below shows the breakdown of Canada's emissions by economic sector including coal production. **Figure E-4** shows a comparison between GHG emissions from coal production and major contributors of GHG emissions in Canada.

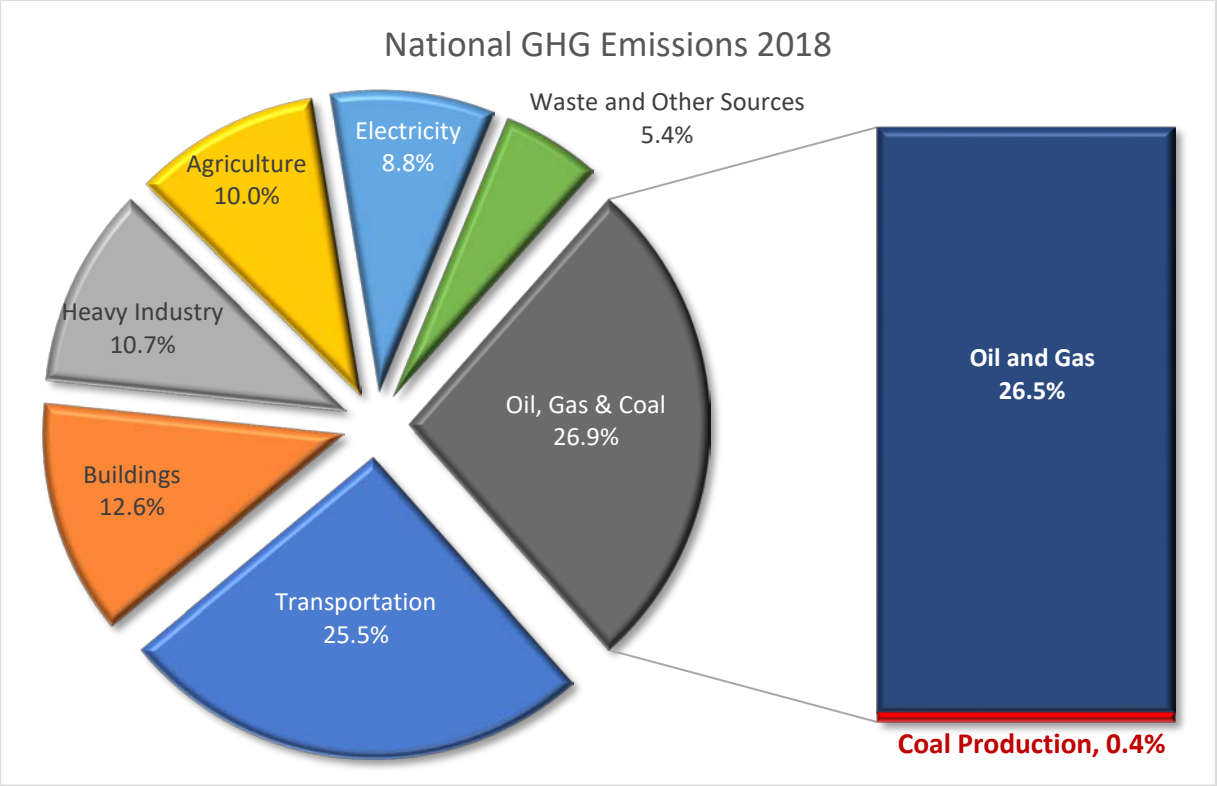

Figure E-3: Canada's GHG Emissions by Economic Sector

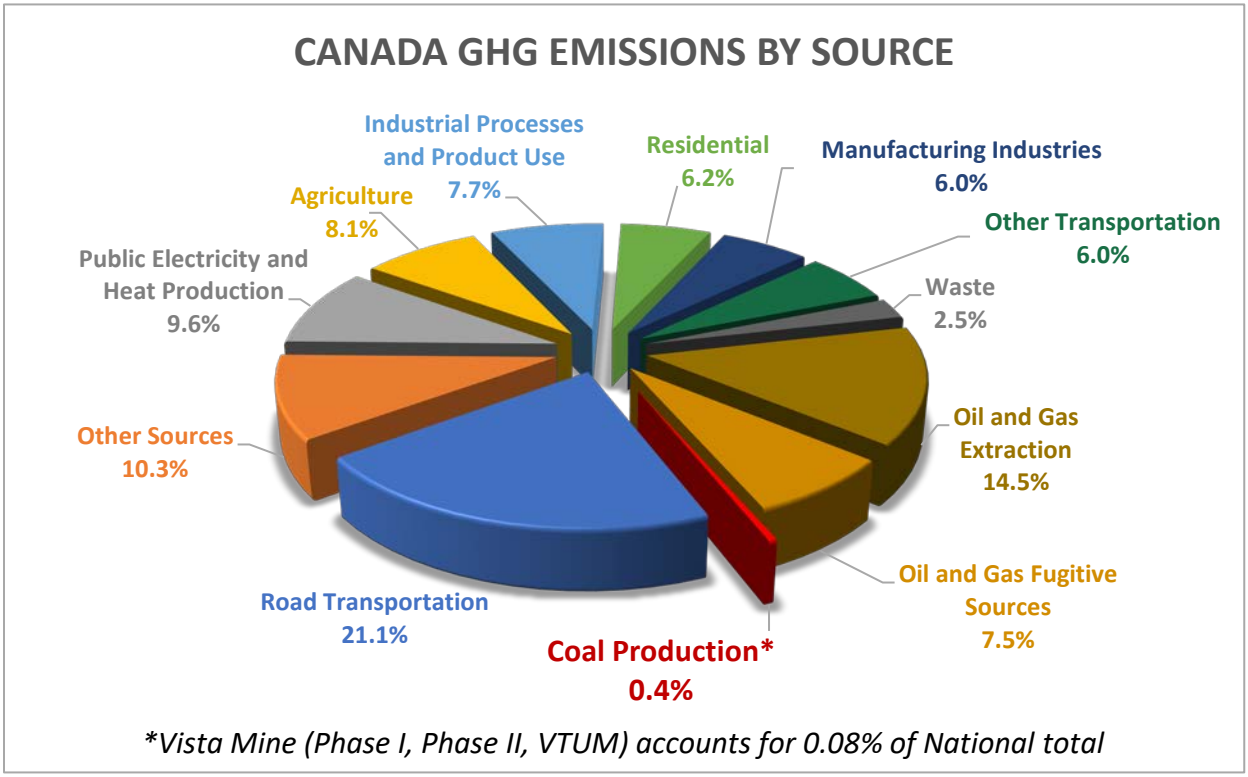

Figure E-4: Canada GHG Emissions by Source

E.23.4 Best Available Technologies and Best Environmental Practices

Coalspur has been able to minimize the GHG intensity of the coal mined at the Vista Mine and further reduce GHG emissions by incorporating GHG reduction concepts in the design and operation of the mine. These concepts present emission reduction strategies to reduce and minimize the emission sources that exist within the mining operations. Utilizing BATs and BEPs the Vista Mine has reduced GHG emissions and will incorporate similar strategies in the proposed VTUM and Phase II.

The following BAT/BEPs are utilized at the Vista Mine and are further described below:

- Use of an electrically powered overland conveyor transporting raw coal to the CHPP – eliminating diesel emissions from diesel powered trucks.
- CHPP – removes impurities, transporting less overall material of higher calorific value coal to end users.
- Use of electrically powered overland conveyor to transport coarse coal refuse (CCR) from the CHPP to the coarse refuse disposal area versus using a truck fleet, eliminating diesel emissions from the transport of the material.
- Processed coal conveyed downhill to loadout, minimizing electrical energy usage.
- Central location of raw coal handling infrastructure minimizing haul distances traveled by diesel powered trucks. The VTUM and Phase II will utilize the existing infrastructure.
- Mine design that minimizes haul distances traveled by diesel powered trucks to out of pit dump locations.
- Use of dozers instead of shovels/trucks to move overburden into previously mined out areas.
- Optimization of the Drill & Blast Program to minimize energy consumption during material movement.
- Engineering design of haul ramps to minimize grades reducing fuel consumption.
- Utilizing a newer equipment fleet that predominately meets Canadian Tier 4 standards.
- Idle equipment policy that minimizes run time on equipment not utilized in a productive capacity.
- No utilization of thermal coal dryers.

A preliminary estimate of maximum annual net greenhouse gas emissions associated with Phase II and the VTUM are presented in **Table E-3**. Canada's Greenhouse Gas Quantification Requirements, 2019, was used for emission factors and quantification methodologies. Acquired emission are based on Alberta's electricity emissions from 2018 as published, however grid electricity emissions in Alberta are expected to decrease dramatically.

Table E-3: Net Tonnes of GHG CO_2e Emissions

	Phase II	**VTUM**
Direct Emissions	288,000	28,000
Acquired Emissions	66,000	6,000
Total Net Emissions	354,000	34,000

Figure E-6 below provides a graph showing the annual estimated net emissions for Phase I, Phase II, and the VTUM with the anticipated permitting timelines under the provincial process and the operational timelines shown in **Schedule 1** and **Schedule 2**. The baseline information reflects the information reported to ECCC in year 1 of the current operation and extends through the end of the mine life based on production and equipment estimations.

A delay in the permitting timelines for the VTUM and Phase II would subsequently delay the emissions beyond 2030 and deter from Canada's current goal under the Paris Agreement to reduce GHG emissions by 30% below 2005 levels by the year 2030. The technologically advanced, world class GHG reduction strategy implemented at the Vista Mine makes it among the lowest GHG intense coal mining operations in the world. Coal produced at the Vista Mine replaces coal previously produced at now idled and depleted mines in Canada as well as much more GHG intense coal mining operations in developing countries with much less stringent environmental regulations and policies.

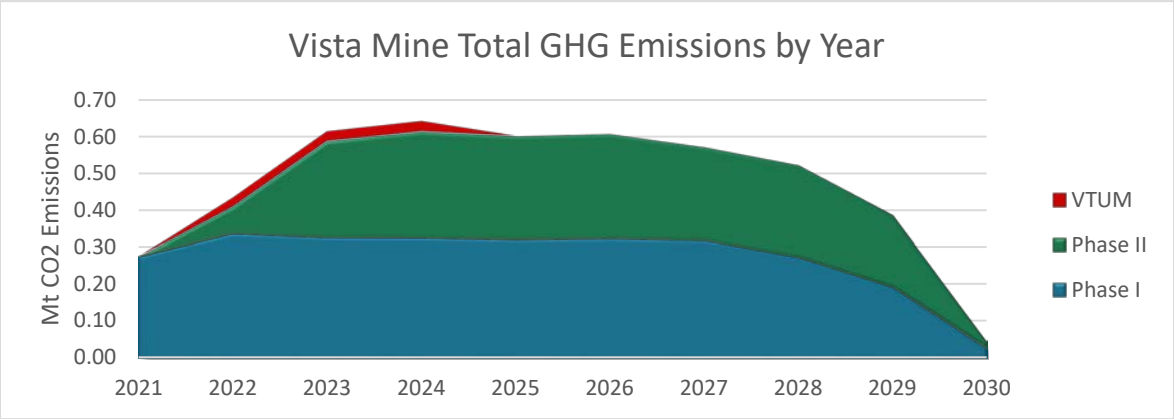

Figure E-6: Vista Mine Total GHG Emissions by Year

E.23.4 Goals

Coalspur's business success is contingent on responsible resource development which requires dedicated stewardship of air issues and air emissions in conjunction with maintaining a competitive export coal operation. Coalspur is committed to responsible environmental management and continues to do their part to minimize impacts. Coalspur will continue to develop effective management and operational approaches to comply with regulations designed to reduce GHG emissions. Coalspur's greenhouse gas emission goals are:

- to continually improve efficiencies in energy use, thus reducing the GHG footprint in an economically viable way; and
- to deliver on a long-term plan that meets industry standards and enhances economic competitiveness.

Coalspur believes that execution of the GHG management programs can be achieved with proactive preparation, planning and continued cooperation with industry regulators and in the communities where they operate. Coalspur's long-term GHG management options fall into two broad categories. These categories are:

- continuous improvement in demonstrated, cost-effective technologies (particularly combustion technologies) during the operational phase;
- alternative mining techniques that reduce fugitive and GHG emissions through lower surface disturbance; and
- Mitigation and Sustainability – technology and path to net-zero carbon emissions by 2050.

E.24 Waste Generated

E.24.1 Air Emissions

Air emissions associated with Phase II include:

- Oxides of nitrogen and sulphur dioxide emission from the mine fleet, combustion sources and blasting operations;
- Carbon monoxide, volatile organic compound and other hydrocarbon emissions from the mine fleet and combustion sources;
- Particulate matter from road dust, material movement of soil and coal, and combustion sources;
- Greenhouse gas emission from combustion sources and fugitive releases from coal;
- Metals released from diesel combustion and present in dust from soil and overburden.

Emissions from the VTUM are the same, however, in much lower quantities. All air emissions are operationally managed to have minimized or no impact to the surrounding environment.

E.24.2 Water

Sediment loading or increase in Total Suspended Solids (TSS) from runoff of disturbed areas is the primary risk to surface water quality associated with mining. Acid rock drainage is not a concern and all testing results show acid rock drainage will not occur under conditions present at the mine. Phase II will continue to use the established closed loop system associated with the McPherson Tailings cells which does not discharge processed water to the environment.

Surface water upstream of Phase II activities will be diverted around disturbance areas and returned to the downstream watercourse and reclamation activities and will be phased such that they commence before the entire area is developed. Affected waters will be diverted to a series of settling ponds and treated prior to offsite release. All release points are inspected daily to ensure water quality meets regulatory approvals.

E.24.3 Land

Waste generated on site are disposed of at approved facilities. Non-regulated domestic waste products are disposed of at approved landfills. Regulated waste products, which include batteries, aerosols and various waste oil products are disposed of through third-party waste management facilities. Recyclable material includes scrap metal, cardboard, paper, plastics, and tires. Coarse and fine coal refuse is generated by the CHPP and later reclaimed onsite.