Teck

NI 43-101 Technical Report on

Fording River Coal Operation

British Columbia, Canada

Prepared for:

Teck Resources Limited.

Prepared by:

Mr. Peter Leriche, P.Geo.

Mr. Paul Michaud, P.Eng.

Ms. Jacqueline Pye, P.Eng.

Effective date:

December 31, 2022

CERTIFICATE OF QUALIFIED PERSON

I, Peter Leriche, P.Geo. am employed as a Senior Geologist Supervisor with Fording River Coal Operation of Teck Coal Limited, with an office address of 29 km north of Elkford Highway 43, BC, V0B 1H0.

This certificate applies to the technical report titled “NI 43-101 Technical Report on Fording Coal Operation, British Columbia, Canada” that has an effective date of December 31, 2022 (the “technical report”).

I am a Professional Geoscientist (P.Geo.) of the Engineers and Geoscientists British Columbia; license number 18612. I graduated with a Bachelor of Science degree in Geology from McMaster University, Hamilton, Ontario in 1980.

I have practiced my profession for 37 years. My relevant coal experience includes both exploration and mine production geology at Fording River Operation and Greenhill’s Operation. I have experience supporting technical marketing and the wash plant with regards to quality, coal recovery, and washability. I have actively been involved in and supervised coal quality, exploration, database management, and geological modeling through most of my 11 years at Teck Coal. My duties have included but are not limited to: mining and recovery of coal; blending of coal to produce in-spec clean coal products; annual exploration project management; geological modeling including interpretation, 3D block modeling, and quarterly and annual coal reconciliation; and the annual resource and reserve process. Prior to Teck coal I worked at Rio Tinto, Iron Ore Company of Canada in production geology for six years, and in mineral exploration roles for various companies for 20 years.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101).

I have worked daily at Fording Coal Operation from September 2011 to July 2020 and May 2022 to present, and this familiarity with the operations serves as my scope of personal inspection.

I am responsible or co-responsible for Sections 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 1.12, 1.18, 1.23, 1.24, 1.26; Section 2; Section 3; Section 4; Section 5; Section 6, Section 7; Section 8; Section 9; Section 10; Section 11; Section 12; Section 13; Section 14; Section 19; Section 23; Section 24; Sections 25.1, 25.2, 25.3, 25.4, 25.5, 25.6, 25.12, 25.16, 25.17; Section 26, and Section 27 of the technical report.

I am not independent of Teck Coal Limited as independence is described by Section 1.5 of NI 43–101.

I have been directly involved in Teck Coal mining operations at Fording River for nine years and at the Greenhills Operations for two years.

I have read NI 43–101 and the sections of the technical report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated: 16 February 2023

“signed and sealed”

Peter Leriche, P.Geo.

Teck

CERTIFICATE OF QUALIFIED PERSON

I, Paul Michaud, P.Eng, am employed as a Senior Engineer, Supervisor with the Fording River Coal Operations of Teck Coal Limited ("Teck Coal") with an office address of 29 km north of Elkford Highway 43, BC, V0B 1H0.

This certificate applies to the technical report titled "NI 43-101 Technical Report on Fording River Coal Operation, British Columbia, Canada" that has an effective date of December 31, 2022 (the "technical report").

I am a Professional Engineer (P.Eng.) registered with the Engineers and Geoscientists of British Columbia (Registrant ID #157589). I graduated with a Bachelor of Science degree in Mine Engineering from the University of Alberta, Edmonton, Alberta in 2009.

I have practiced my profession for 13 years. My relevant experience includes mine planning in short, medium and long-range horizons at both Fording River Operations and Line Creek Operations. I have experience preparing daily execution plans, annual budget and life of mine plans which included mine design, blending, capital requirements, costs and mine economic assessments. I also have experience working with the Environmental Teams from Teck Coal and Fording River Operations; providing required data for permits, data for water quality management and potential reclamation areas. I am currently responsible for long design designs, life-of-mine plans and annual Coal Reserve reporting.

I have worked in various mine engineering, project management and supervisory roles for Teck Coal Limited for 13 years. I worked at Fording River Operations from January 2009 to October 2019, progressing up to Senior Engineer. I then transferred to the Line Creek Operations in November 2019 where I was the Senior Engineer, Supervisor until June 2022, when I transferred back to the Fording River Operations as Senior Engineer, Supervisor where I am currently employed.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects ("NI 43–101").

I work on a daily basis at the Fording River Coal Operation, and this familiarity with the operations serves as my scope of personal inspection.

I am responsible for, or co-responsible for Sections 1.1, 1.2, 1.13, 1.14, 1.15, 1.17, 1.19, 1.20, 1.21, 1.22, 1.23, 1.24, 1.25, 1,26; Section 2; Section 3; Section 15; Section 16; Section 18; Section 20; Section 21; Section 22; Sections 25.1, 25.7, 25.8, 25.10, 25.11, 25.13, 25.14, 25.15, 25.16, 25.17, 25.18; Section 26, and Section 27 of the technical report.

I am not independent of Teck Coal as independence is described by Section 1.5 of NI 43–101.

I have read NI 43–101 and the sections of the technical report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated: 15 February 2023

“signed and sealed”

Paul Michaud, P. Eng.

Teck

CERTIFICATE OF QUALIFIED PERSON

I, Jacqueline Pye, P.Eng, am employed as a Senior Engineer, Supervisor Processing with the Fording River Coal Operations of Teck Coal Limited ("Teck Coal") with an office address of 29 km north of Elkford Highway 43, BC, V0B 1H0.

This certificate applies to the technical report titled "NI 43-101 Technical Report on Fording River Coal Operation, British Columbia, Canada" that has an effective date of December 31, 2022 (the "technical report").

I am a Professional Engineer (P.Eng.) with Engineers and Geoscientists of British Columbia (License #44170). I graduated with a Bachelor of Engineering Degree from Dalhousie University in Halifax, Nova Scotia in 2012.

I have practiced my profession for 10 years. My relevant experience includes process optimization, process operations, process maintenance, debottlenecking, washability and feed quality assessment, laboratory analysis and supervision, technical investigations, root cause analysis, coal quality management, project management, budgeting and scheduling, new equipment installations, and commissioning. I have also been responsible for contributing to audits such as ISO14001, greenhouse gas audits, and reserves and resource audits, as well as supporting technical marketing. In my current role I am responsible for leading an engineering team including project engineers, production engineers, and automation specialists. I have worked in various roles within the processing department, including process engineering, project management, operations, and maintenance supervision for Teck Coal for over 10 years. I have previously worked at Elkview Operations (2012–2014) as a process engineer, and Greenhills Operations (2014–2021) as a Process Engineer, Senior Engineer, and Maintenance Supervisor. I transferred to the Fording River Operations in 2021 as a Senior Engineer, Supervisor in the processing department.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects ("NI 43–101").

I work on a daily basis at the Fording River Coal Operation, and this familiarity with the operations serves as my scope of personal inspection.

I am responsible or co-responsible for Sections 1.1, 1.2, 1.16, 1.26; Sections 2.1, 2.2, 2.3, 2.4, 2.6; Section 3; Section 17; Sections 25.1, 25.9; Section 26; and Section 27 of the technical report.

I am not independent of Teck Coal as independence is described by Section 1.5 of NI 43–101.

I have been involved with the Fording River Coal Operation since 2021.

I have read NI 43–101 and the sections of the technical report for which I am responsible have been prepared in compliance with that Instrument.

Teck

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated: 15 February 2023

“signed and sealed”

Jacqueline Pye, P.Eng.

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1.0 SUMMARY

1.1 Introduction

Mr. Peter Leriche, P.Geo., Mr. Paul Michaud, P.Eng., and Ms. Jacqueline Pye, P.Eng., prepared this technical report (the Report) for Teck Resources Limited (Teck) on the Fording River Coal Operations (the Fording River Operations or the Project), located in British Columbia (BC), Canada.

The coal operations are indirectly wholly owned by Teck. The mine operations name is the Fording River Operations (FRO).

Mining commenced in 1971.

1.2 Terms of Reference

The Report provides updated information on the Fording River Operations, and Coal Resource and Coal Reserve estimates. The information will be used to support disclosures in Teck's 2022 Annual Information Form.

Currency is expressed in Canadian dollars (C$) unless stated otherwise. Units presented are typically metric units, such as metric tonnes, unless otherwise noted. The Report uses Canadian English.

Coal Resource and Coal Reserves estimates are reported using the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves (the 2014 CIM Definition Standards). Coal Resources and Coal Reserves are presented on a 100% basis.

1.3 Project Setting

The Fording River Operation is located in the East Kootenay region of southeastern British Columbia, approximately 330 km by road southwest of Calgary, Alberta and about 29 km northeast of the town of Elkford in the southeast corner of British Columbia.

The operations are accessed via Highway 43 through the town of Elkford. Goods are delivered primarily by transport trucks and occasionally by rail. Coal from FRO is transported in unit trains from the site loadout facilities via rail lines operated by Canadian Pacific Railways (CPR) or Canadian National Railways (CNR). The final rail destination is typically either the Westshore Terminals, 1,150 km to the west in Delta, BC, or Neptune Bulk Terminals in North Vancouver, BC. CPR and CNR own their own lines and have line sharing agreements in place to expedite traffic in certain areas.

The Project area has long, cold winters and short, cool, dry summers. Operations are conducted year-round.

The operations are situated in the East Kootenay Region of the Northern Rocky Mountain physiographic province, within the Elk River valley. Elevations range from about 1,300 masl in the valley floor to about

2,250 masl at the upper extent of the mine. Vegetation varies with elevation. Valley bottoms are dominated by Rocky Mountain Douglas fir, lodgepole pine and trembling aspen. Mountain slopes typically host Engelmann spruce, lodgepole pine, western larch and trembling aspen. Higher elevations are treeless. The major river system in the Project area is the Elk River

1.4 Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

Teck Coal Limited owns the mineral tenure as bare trustee and agent for Teck Coal Partnership.

The total Project area is 19,797 ha. There are 16 Crown Grants, totalling 2,644 ha, and seven coal leases covering an area of 17,153 ha.

FRO controls the surface and subsurface coal rights to the properties that are in operation and those that are planned for development.

Teck has 20 authorized water licences that cover water diversion and usage. The water usage rights held are sufficient to support the life-of mine (LOM) plan.

British Columbia levies mineral taxes. There is a two-tier tax system with a minimum rate of 2% on operating cash flow and a maximum rate of 13% on cash flow after taking available deductions for capital expenditures and other permitted deductions. Teck is not required to pay royalties on freehold land.

1.5 Geology and Mineralization

Coal deposits are characterized by the Geological Survey of Canada as being of four deposit types, based on differences in seam geometry as a result of sedimentary processes during coal deposition, and subsequent deformation. Under this classification system, the FRO seams are classified as “complex”. The Geological Survey of Canada also classifies coal deposits on the basis of the probable extraction method that would be used to recover coal. The coal measures in the FRO area are classified as “surface”.

The FRO are located within the Elk Valley Coalfields. The coal measures are situated within the Upper Jurassic to Lower Cretaceous Kootenay Group sediments:

- Morrissey Formation: sandstones; subdivided into the Weary Ridge and Moose Mountain Members; 20–80 m in thickness;
- Mist Mountain Formation: interbedded sandstone, siltstone, mudstone, shale and thin to thick seams of bituminous to semi-anthracite coal; 450–550 m in thickness;
- Elk Formation: interbedded sandstone, siltstone, mudstone, shale and locally thick beds of chert-pebble conglomerate and thin seams of high volatile bituminous coal; 350–450 m in thickness.

The Mist Mountain Formation contains approximately 25 coal seams of potential economic interest, consisting of medium to high volatile bituminous coal. The Mist Mountain Formation depth of burial ranges from surface exposures to >1,500 m. The coal measures on the FRO property contain bituminous grade coal seams with varying volatile matter contents, such that coal quality varies with depth of burial and location along the strike of the deposit. Seams may range in thickness from 1–16 m.

FRO produces the following coal products:

- Hard coking coal (HCC): coke strength after reaction (CSR) 64+;
- Semi-hard coking coal (SHCC): ≤55 CSR ≤63.

1.6 History

Companies that undertook exploration, development and operations prior to Teck Coal's project interest include Canadian Pacific Oil and Gas Ltd., CanPac Minerals Ltd., Fording Coal Limited, and Elk Valley Coal Corporation. Work completed included geological mapping, trenching of coal showings, sampling of both coal outcrops and coal exposed in the trenches, rotary, reverse circulation (RC) and core drilling, excavation and bulk sampling, and Coal Resource and Coal Reserve estimation.

Work completed during Teck's Project interest has included additional RC and core drilling, in-pit geological mapping, petrographic analysis, metallurgical testwork, Coal Resource and Coal Reserve estimation updates, mining studies, and open pit coal operations.

1.7 Drilling

As of December 31, 2022, the Project database contained 5,800 drill holes (984,739 m), consisting of 5,066 RC drill holes (858,629 m), 290 core holes (79,649 m), 328 rotary holes (35,356 m), 22 drill holes classified as "other" (hammer, auger, sonic; 1,578 m) and 84 drill holes (9,527 m) completed for bulk sampling purposes.

A subset of the drill hole database was used for building of the Fording River East and West models. The database cut off for the Fording River West (GROW) model was November 29, 2021. The database cut-off for the Fording River East (FROE) model was November 22, 2021. The data prior to cut-off were used to populate coal seam quality data for the 3D block model used in estimating Coal Resources and Coal Reserves.

Geological logging is done on all core samples collected from the larger diameter core (LDC; 9-inch core) and HQ (6-inch core) diamond drilling. Information recorded includes lithology identification (coal and rock types) and characteristics; recovery estimates; seam quality sample collection; and structural identification.

All exploration and geotechnical drill holes are geophysically logged, where possible, for gamma-neutron, gamma-density, and caliper. Downhole deviation is only run if the drill hole length is >100 m. Resistivity logs are run if available from the contractor. Logs such as acoustic televiewer and dipmeter are only performed if additional information is needed; typically, these are undertaken as required for geotechnical purposes. Geophysical log data, sample data and driller's seam picks are used to determine seam intercepts. If geophysical logs are not available, the driller's picks are used, but that information does not support resource estimation.

Collar surveys are performed using either an onboard drill global positioning system (GPS) instrument or a real time kinetic (RTK) GPS Rover.

Seam true thickness is calculated based on drilled thickness, deviation surveys and dip information. On average, the true seam thickness is less than the drilled seam thickness, depending on the local orientation of the coal seam orientation and the angle of the drill hole.

A total of 79 RC and core holes (18,354 m) have been completed since the database closeout dates and up to December 31, 2022 for Coal Resource estimation. Of this total, nine core drill holes were completed for geotechnical purposes but were sampled for quality when coal was present. A total of 12 LDC holes (1,570 m) were drilled to obtain samples for carbonization and coke testing.

The QP considers that this new drilling should have no material effect on the overall tonnage and coal quality estimates, but represents minor upside potential for Coal Resource estimation when incorporated into an updated model.

1.8 Sampling

RC samples are collected on 0.5 m sample intervals. The 0.5 m interval, called a ply sample, is the maximum sample interval. The samples are collected on a 325 mesh screen on a portable shaker table and bagged in cloth bags.

Core samples are taken in 1 m increments for each coal seam, and placed into separate bags, which are stored in such a way as to minimize sample disturbance prior to shipment to the laboratory.

Bulk samples can be collected via test pit or adit sampling, or from LDC and large diameter reverse flood (LDRF) drilling. Modern bulk sampling uses samples obtained via LDC, or LDRF drilling. Historically, adits or test pits were used. The objective is to obtain an unoxidized, representative sample of the coal seam in a manner that best reflects the method by which the seam will be mined; i.e., if the seam is to be mined by open pit truck/shovel, all rock partings of ≤0.9 m vertical thickness are included in the sample. Thicker partings are excluded. A minimum sample size of 5 t is required for pilot plant washability.

Samples, 1–5 kg in size, are taken of blasthole cuttings of waste rock stratigraphically below the basal seam to delineate areas containing potentially acid-generating (PAG) and non-acid generating (NAG) materials.

Density estimation and assignment to the model blocks from drill holes is completed using a specific gravity formula. This formula estimates the specific gravity (SG) value of coal based on the ash value results received from the laboratory. The average SG value from the 2019 quarterly reconciliation data is 1.41.

A number of laboratories have been used over the Project history: Teck Coal Limited FRO laboratory (not independent), Roke Oil Enterprises Ltd. (independent), Pearson Coal Petrography and Associates (independent), Widco (independent), Century Wireline Services Ltd. (independent), GWIL Industries Birtley Coal and Mineral Testing (independent), NRCan Canmet Energy (independent), Loring Laboratories Ltd. (independent), Hazen Research Inc. (independent), SGS Canada Inc. (independent), and Bureau Veritas (independent). The laboratories follow ASTM procedures for coal analysis. Potentially-acid generating (PAG) samples are analyzed for fizz testing at the Teck Coal FRO laboratory and ABA analysis is carried out at Bureau Veritas. The QA/QC on PAG samples is undertaken at Bureau Veritas.

Collection of 0.5 m ply samples is carried out by the drill contractor and samples are delivered directly to the secure sample storage area adjacent the Teck Coal FRO laboratory. Sample preparation closely follows ISO and ASTM procedures. Sample recovery is a determining factor as to whether the sample is representative of the seam. Samples with >20% recovery are assayed depending on the seam thickness and quality of recovery.

The 0.5 m ply samples are analyzed for raw ash and selectively by FSI by the Teck Coal FRO laboratory. Raw composite samples are analyzed for proximate (moisture, ash, volatiles, fixed carbon), free swelling index (FSI), and sulphur by the Teck Coal FRO laboratory. Clean composite samples are analyzed on an air-dried basis for proximate, FSI, sulphur, and phosphorus (P_2O_5), by the Teck Coal FRO laboratory. Where required, rheology is completed at the Teck Coal EVO laboratory. Mineral ash analysis, fluorine, and any specialized analysis are performed at external laboratories, principally at Gwil Birtley. Each clean coal sample is split and prepped and sent for petrographic analysis at Pearson and Associates, Victoria, BC.

Formal and documented quality assurance and quality control (QA/QC), including umpire assay, started at FRO in 2012. Prior to 2012, geologists performed visual sense checks versus typical assay values for a quality parameter from a given seam.

RC sample collection is audited at least once a week during active RC drilling programs, using a pre-set checklist. A digital record of the audit is retained as part of the QA/QC documentation.

A total of 2% (1:50) of the 0.5 m ply samples are sent to a secondary laboratory for check sample analysis for ash. All raw composite samples are split by the Teck Coal FRO laboratory and the originals are assayed at the Teck Coal FRO laboratory. The split portion of the raw composite samples are sent to a secondary laboratory for mini-washing at 1.50 SG and check (umpire) sample analysis. The secondary laboratory analyzes 10% (minimum 5%) of the raw and clean samples. Check sample assay results from the secondary (umpire) laboratory are plotted against assay results from the Teck Coal FRO laboratory using the acQuire database. Normal quality parameters compared include ash, volatile matter, FSI, sulphur, and P_2O_5. If assay result comparisons fall outside the normal range for a given parameter, a re-run is requested to the FRO laboratory.

Drill hole collar data, associated seam intercepts, seam quality and deviation survey data are stored in the acQuire database. Data are loaded directly from logging software, survey companies, or using set importing templates that load the assay data directly from Excel worksheets sent by the laboratories. The database is regularly backed up, using Teck protocols. All original logs and laboratory reports are stored securely on the network.

Special security methods for the shipping and storage of coal samples are not commonly employed, as coal is a relatively low-value bulk commodity. Raw and clean coal samples are kept by the analytical laboratories for a minimum of one year.

1.9 Data Verification

Once per year, as a minimum, Teck Coal geologists visit the primary laboratory and witness aspects of sample handling and sample analysis.

Drill holes are subject to the following location checks: a check of the collar coordinates of each hole against the planned location; and a visual check of down-hole deviations against survey data from surrounding drill holes. Once the locations are verified by the geologist, the coal contacts are picked within the geophysical data, following set protocols. Analytical data from the laboratory are evaluated for anomalies and atypical results, generally using geostatistical software. Any data that appear erroneous are re-analyzed by the laboratory to check for accuracy.

Data reviews were completed by third party consultants Marston (2011), Snowden (2011), Golder (2021). No material issues were identified.

The QP works at the site, and personally undertook data verification steps including database reviews, review of seam picks, and QA/QC data. He has supervised exploration programs, database management, geological modeling, and has been involved with annual estimation of Coal Resources and Coal Reserves. The QP has frequent discussions with other team members in relation to drill program execution and results, geological interpretations, sampling, data collection, QA/QC, database upload and checking, and geological modelling. As a result of this data verification, the QP concludes that the Project data and database are acceptable for use in Coal Resource and Coal Reserve estimation, and can be used to support mine planning.

1.10 Metallurgical Testwork

The bituminous coal seams at FRO are blended to produce coal with consistent quality. Blending is accomplished at the breaker by combining coal from several stockpiles.

Metallurgical testwork includes coal quality (raw coal analysis and washability), and carbonization testwork. Predicted yields are modeled using the plant delivered ash (which is calculated from breaker delivered ash, breaker reject ash and breaker reject volume), plant reject ash and target clean ash.

Metallurgical testing frequency and type are representative of individual seams on the basis of rank, coking properties and volume, and are done over a range of locations for each seam to ensure that a sufficient sample mass is available for modeling purposes.

Volatile matter, rank, and ash contents are the main items monitored for blending purposes.

Since 2015, trace elements that are evaluated for metallurgical coal samples include phosphorus, fluorine, sulphur, chlorine, arsenic, and mercury.

1.11 Coal Resource Estimation

Coal Resources were estimated for the Fording River East and West areas. Modelling is conducted using the commercially available MinePlan 3D software. The acQuire database cut off for the Fording River West (GROW) model was November 29, 2021. The database cut off for the Fording River East (FROE) model was November 22, 2021. Estimation is supported by 5,709 drill holes that were completed prior to database cut-offs.

The FRO Coal Resource estimates are based primarily on the results of RC drilling samples, and downhole geophysical gamma and density logs. The 3D model is built using the drill intervals of complete seams from the acQuire database. The seam dips and true thicknesses are calculated based on the drill hole data, and the seam polygons are subsequently generated.

The geological model was constructed using coal depth, thickness and quality data. FRO geologists evaluate gamma, density and caliper geophysical logs. The coal seam tops and bottoms are measured primarily from the gamma density log and secondarily from the gamma neutron logs. Gamma density log coal seam thicknesses generally closely represent the mineable coal seam thickness in the mine at the location of the drill hole. The geophysical log measurements of the coal depths are accepted as being correct, as is standard in the industry, and are used as the basis for the coal seam thickness in the geological model.

Model items included topography, waste, and coal parameter data. Where quality information was not amenable to interpolation from drill composites, data were statistically infilled based on geographic location. Computer model block-specific SG values were used for the conversion of volumes of in-place coal to tonnes.

The true thicknesses of the seams were calculated using the dip of the coal seams and the length of the coal composite. True thickness was interpolated into the 3D block model using an inverse distance weighting to the second power (ID2) approach. Other interpolation parameters included a circular search method, and a search distance of 2,500 m. Coal quality data were interpolated into the 3D block model using an inverse distance weighing method. The search distance for each quality criterion was between 500–800 m, and the estimation method power was between 1.5–1.7.

Blocks within the 3D block model are checked to ensure consistency between model outputs versus block file dumps and manual calculations of model items.

A minimum of three drill hole intercepts through an individual coal seam must fall within the associated ellipsoid to confidence-classify a block. The block was assigned the highest level of assurance that was supported by the data.

To assess reasonable prospects of eventual economic extraction, a depth limit was based on a pit shell with an incremental strip ratio limit of 14:1 m^3/t of raw coal. Input costs to the pit shell, and therefore the break-even stripping ratio cut-off calculation are provided in Table 1-1. Depending on area and orientation, geotechnical assumptions for pit slope angles at FRO can range from 40–54.5º (overall highwall angles). For Coal Resource estimation, a generalized pit slope angle of 45º is used.

1.12 Coal Resource Statement

Coal Resources are reported using the 2014 CIM Definition Standards. The QP for the estimate is Mr. Peter Leriche, P.Geo., a Teck Coal employee. Coal Resources are tabulated in Table 1-2 and have an effective date of December 31, 2022. Coal Resources are reported insitu, exclusive of those Coal Resources that were converted to Coal Reserves. Coal Resources that are not Coal Reserves do not have demonstrated economic viability.

Areas of uncertainty that may materially impact the Coal Resource estimates include:

- Changes to long-term coal price assumptions;
- Changes in geological interpretations including the size, shape and distribution of interpreted lithologies;
- Changes to coal recovery assumptions;
- Changes to the input assumptions used to derive the conceptual open pit outlines used to constrain the estimate;
- Variations in geotechnical, hydrogeological and mining assumptions;
- Changes to environmental, permitting and social license assumptions.

Table 1-1: Inputs to Break-Even Stripping Ratio Cut-off

Item	Unit	Values
Selling price	US$/t	145
Waste mining costs	$/bcm	4.06
Coal mining costs	$/bcm	6.06
Processing cost	$/t	12.44
General and administrative costs	$/t	13.42
Other (includes operating leases, royalties, distribution, sustaining capital, reclamation)	$/t	62.64
Recommended break-even stripping ratio	bcmw/mtrc	14.0

Notes: bcm = bank cubic metre; bcmw = bank cubic metre waste; mtrc = tonne raw coal.

Table 1-2: Coal Resource Statement

Pit/Area	Coal Type	Measured (raw coal; t x 1,000)	Indicated (raw coal; t x 1,000)	Total Measured and Indicated (raw coal; t x 1,000)	Inferred (raw coal; t x 1,000)
Swift	Metallurgical	139,897	282,194	422,091	200,155
Operations East (Eagle 6, Turnbull West	Metallurgical	271,571	323,352	594,923	132,584
Castle	Metallurgical	135,829	290,882	426,711	146,841
Bare	Metallurgical	19,819	51,709	71,528	17,165
Totals	***Metallurgical***	***567,116***	***948,137***	***1,515,253***	***496,745***

Notes to Accompany Coal Resource Table:

1. The Qualified Person for the resource estimate is Mr. Peter Leriche, P.Geo., a Teck employee.
2. Coal Resources have been classified using the 2014 CIM Definition Standards. Coal Resources are reported insitu, exclusive of those Coal Resources that have been modified to Coal Reserves. Coal Resources that are not Coal Reserves do not have demonstrated economic viability. The Coal Resources have an effective date of December 31, 2022.
3. The Coal Resources are reported using the following assumptions: average selling price of US$145/t, waste mining cost of $4.06/bcm, coal mining cost of $6.06/bcm; processing cost of $12.44/t, general and administrative cost of $13.42/t, other costs of $62.64/t, and break-even strip ratio of 14 bcmw/mtrc. For Coal Resource estimation, a generalized pit slope angle of 45º is assumed.
4. All estimates have been rounded. Totals may not sum due to rounding.

1.13 Coal Reserve Estimation

Coal Reserves are reported for the Eagle, Swift, Turnbull West and Castle (FRX) areas.

Coal Reserves are based on pit designs and a long-range mine development plan prepared by FRO. Ultimate pit shells were created using long-term product coal pricing and US dollar to Canadian dollar exchange rate estimates. Waste haulage, waste storage and geotechnical issues were considered in the final pit design. If the ultimate pit shell contains Inferred Coal Resources, that coal is set to waste, and is not included in the Coal Reserves.

Coal Resources are converted to Coal Reserves using the following inputs:

- Topographic considerations;
- Mining factors such as loss and dilution as well as additional losses due to mining in highly-faulted zones. These factors are mostly derived from operating experience at FRO;
- SG values for coal, based on empirical formulas, validated over the history of mining at FRO;
- Detailed waste and coal haulage costs;
- Detailed yield assumptions;
- Geotechnical suitability of pits and dumps;
- Detailed site costs;
- Reasonable permittability prospects;
- LOM plan.

1.14 Coal Reserve Statement

Coal Reserves are an estimate of the saleable coal product. The reference point is the exit point of the coal product from the processing plant. Coal Reserves are reported using the 2014 CIM Definition Standards. The QP for the estimate is Mr. Paul Michaud, P.Eng., a Teck employee. Coal Reserves are provided in Table 1-3 and have an effective date of December 31, 2022.

Table 1-3: Coal Reserves Statement

	Coal Type	Proven (clean coal; t x 1,000)	Probable (clean coal; t x 1,000)	Total Reserve (clean coal; t x 1,000)
Eagle	Metallurgical	13,270	54	13,324
Turnbull West	Metallurgical	—	6,655	6,655
Castle	Metallurgical	—	242,913	242,913
Swift	Metallurgical	89,460	851	90,311
Total	***Metallurgical***	***102,730***	***250,473***	***353,203***

Notes to Accompany Coal Reserves Table:

1. The Qualified Person for the reserves estimate is Mr. Paul Michaud, P.Eng., a Teck employee.
2. Coal Reserves have been classified using the 2014 CIM Definition Standards. The reference point is the exit point of the coal product from the processing plant. The Coal Reserves have an effective date of December 31, 2022.
3. The Coal Reserves are reported using the following assumptions: 2022 LOM mining schedule, average selling price of US$145/t, average mining and processing costs of $95.23/t, general and administrative costs of $13.42/t, average other operating costs of $6.94/t minimum mineable seam thickness of 0.9 m; minimum removable parting thickness of 0.70 m; dilution thickness of 0.45–0.6 m; coal loss thickness of 0.15–0.3 m; rock dilution ash of 74.9%; rock dilution specific gravity of 2.18; and parting dilution ash of 70%. Geotechnical assumptions use pit slope angles that range from 40–54.5º (overall highwall angles). More complex criteria are used for footwall slopes that are structure specific. Yield is a function of feed ash and is therefore seam dependent.
4. All estimates have been rounded. Totals may not sum due to rounding.

Areas of uncertainty that may materially impact the Coal Reserve estimates include:

- Changes to long-term coal price assumptions;
- Changes in geological interpretations including the size, shape and distribution of interpreted seams and waste;
- Changes in local interpretations of seam geometry, fault geometry and seam continuity;
- Changes to the input assumptions used to derive the open pit outlines used to constrain the estimate;
- Variations in geotechnical, hydrogeological and mining assumptions;
- Changes to environmental, permitting and social license assumptions.

1.15 Mine Plan

The mining operations use conventional truck-and-shovel methods. As a result of delivery requirements and varying coal seam qualities it is necessary to have multiple coal seams exposed at any time. FRO currently produces coal from six active pit phases (Swift 1A, Swift Lake Mountain, Swift 2N, Swift 2S, Eagle Pushback, Eagle West 2) using open-pit coal mining methods, with primary waste stripping and coal mining completed by shovels and rear dump haul trucks. An additional 25 phases (four in Swift pit, four in Eagle pit, 16 in Castle and one in Turnbull West) are planned.

Geotechnical investigation programs are conducted to support stability assessments throughout the different design model phases. These investigation programs are informed by industry standard guidance. Investigation and monitoring methods inform the resource model, structural model, hydrogeological model, and material strength values. Each pit area has been assessed geotechnically and has specific set of standards that are followed based on multiple factors including bedding angle, rock type and faulting. Pit walls and spoils are monitored with a combination of prisms, GPS units, radar, wireline monitors, and piezometers.

Teck actively manages water within the pits throughout the year by dewatering with the use of surface and shallow well pumps via pipelines to water management infrastructure (refer to discussion in Section 18.6). The pumped water is authorized for use on site for industrial purpose such as dust suppression, truck washing or coal processing. As per the Mine Water Management Plan, consumption of mine influenced water sources are prioritized by site to reduce consumption of clean water after sources. Pit dewatering water is also authorized for discharge to the receiving environment, pending the water quality.

To support the LOM plan, a series of pit shells are produced, and an optimal pit shell is determined for the ultimate pit design. Areas where the pit design differs from the initial shell can be due to geotechnical constraints or where mining outside the pit shell limits is required to provide access to the pits. Any additional waste is included in the overall strip ratio and economics. The review of the design indicates that the phased pit designs align well to the optimum shell generated and neither the updates to the geology or economics significantly alter the design.

Spoils can be placed either in a mined-out pit phase, or placed on original ground. The spoil designs consider disturbance to natural topography and final reclamation requirements, as well as incorporating geotechnical and environmental aspects.

Drilling and blasting operations, and production monitoring are conventional to coal operations, as are the equipment types and usage.

The Coal Reserves support a mine life to 2064. The coal production plan includes coal from FRO being produced at GHO and coal from GHO being produced at FRO. This is possible due to the proximity of the two mine sites and is done in a manner which optimizes production and coal quality needs by each site.

1.16 Recovery Plan

The process plant uses conventional equipment and a conventional process. The flowsheet design was based on testwork results, study designs and industry-standard practices.

The basic operation of a coal processing plant is separation by gravity for the coarser particles. Based on the difference in specific gravity of coal and rock, the coal can be separated to a desired specification. The finest coal fractions are separated through surface properties (flotation). Size separation is accomplished through sieves, vibrating screens, and cyclones. Each technique contributes to the recovery of clean coal from the raw coal feed.

The plant power consumption averages 71 million kWh/year. The average water usage by the plant is 2,470 m^3/h when the plant is operating. This consumption is drawn from a combination of potable water and tailings pond return water. On average, potable water accounts for approximately 4% of the stated consumption. The main reagents used in the plant include kerosene, MIBC, and flocculant.

1.17 Infrastructure

Surface infrastructure to support operations is in place, and includes:

- Open pit areas;
- Processing facilities: coal preparation plant including wash, drying facilities and clean coal storage facilities, together with management and engineering offices, change house, maintenance shops, warehouse, assay laboratory facilities;
- Mine facilities: management and engineering offices, change house, heavy and light vehicle workshops, wash bay, warehouse, explosives magazine, mine access gate house, return water pump house;
- Administration buildings: facilities for overall site management, safety inductions, and general and administrative functions;
- Raw coal stockpiles;
- Breaker;
- Waste dumps;
- Haul roads;
- Raw coal and clean coal conveyor system

- Rail load-out facilities;
- Water management facilities: stormwater and sediment ponds, water storage tanks, water diversions, culverts;
- Tailings storage and coarse coal refuse storage facilities;
- Landfill facility;
- Sewage treatment facility;
- Electrical power system;
- Fuel storage facilities;
- Explosive raw product storage and explosive bulk truck maintenance facility;
- Water treatment facilities, including saturated rock fills and the Fording River South active water treatment plant.

Natural gas is provided to the site via pipeline.

Some new haul roads, spoil piles and environmental control systems will be required for future developments and are included in the mine planning and project economics. These will require permitting.

Raw coal is stockpiled in several areas of the mine. The stockpiles are placed according to available space, with preferred locations near the breaker or active pits.

The Eagle 4 South Backfill Spoil is the only active combined coarse and fine refuse (CCFR) storage facility at FRO. It is a dry stack facility and does not contain dams. The current facility is permitted to meet storage requirements until February 2024. Work is currently ongoing to expand the Eagle 4 South Backfill CCFR. The expansion is expected to provide CCFR storage for currently permitted Coal Reserves, ending in 2040.

The FRO tailings management system consists of two active fluid tailings storage facilities. The South Tailings Pond which receives fluid tailings deposited directly from the FRO process plant, and Turnbull South which receives dredged tailings from the South Tailings Pond. The South Tailings Pond is bounded by two embankments, the West Dam to the west and north and the Main Dam to the south, to the east the facility is bounded by natural topography. Turnbull South is an inactive open pit bounded by bedrock. FRO has two inactive tailings storage facilities (TSFs), the North Tailings Pond and 2 Pit 3 Pit tailings storage area (2P-3P TSA).

Managing the movement and discharge of mine-influenced and non-contact water to the receiving environment requires the implementation of effective strategies, activities, and practices to meet site objectives and to support regional objectives, such as those outlined in the Elk Valley Water Quality Plan.

Water management activities at FRO include intercepting, diverting, storing, consuming, and reducing total suspended solids concentrations in surface water prior to discharge to the receiving environment. Managing water quality (aside from total suspended solids) is also supported at FRO with the development of non-contact water diversions (clean water diversion) and development of water treatment facilities including the Fording River South active water treatment facility. Water movement is managed at FRO using several types of water management infrastructure, including sediment/sedimentation/settling ponds, tailings storage facilities, diversions (channels and pipelines), inactive and backfilled pits, sumps, rock drains, culverts, ditches, pumped systems, and associated infrastructure or equipment. Water discharges to the receiving environment through authorized discharges per the *Environmental Management Act* (EMA) Permit 424 and EMA Permit 107517.

Water usage is licenced through under the *Water Sustainability Act*, and no changes can occur without considering the existing authorizations. Water management structures include dam structures, catch basins, sediment and settling ponds, conveyance ditches, and the TSF. The catch basins, ponds, and ditches are used to control the effects of sediment-laden water prior to discharge catchments that feed the Elk River. Dewatering of the active pits is required to maintain safe and productive mining, and pit dewatering will be required throughout the remainder of pit life.

Mining personnel are recruited from across Canada with most living in the Elk Valley, within the towns of Elkford, Sparwood or Fernie. There is no on-site accommodation, and personnel drive-in-drive-out to the operations.

Power to the site is supplied by BC Hydro via the BC & Alberta link, known as the Kan-Elk line. There is a single 138 kV power line into the FRO property, which is a spur line of a main hydroelectric line. The major power consumer is the process plant, which averages 71 million kWh/year.

1.18 Markets and Contracts

No market studies are relevant as the operations have sales contracts in place. All sales contracts are entered into by Teck Coal Limited, as nominee and agent for Teck Coal Partnership. Such contracts are typically one-year terms, and renegotiated annually. Markets for the metallurgical coal products include Asia, Europe, North and South American customers. FRO produces metallurgical coal for the global steel industry.

Quarterly priced sales represent approximately 40% of sales, with the sales balance priced at levels reflecting market conditions when sales are concluded.

Major site contracts include fuel supply, explosives and accessories, and exploration drilling and maintenance support as needed. Westbound rail service at origin is currently provided by CPR. CPR transports a portion of these westbound shipments to Kamloops, B.C., and interchanges the trains with CNR for further transportation to the west coast. The remaining westbound shipments are transported by CPR from the mines to the terminals in Vancouver. CPR transport is under a tariff that expires in April 2023, and negotiations with CPR for a new westbound contract to replace the tariff are underway. A long-term agreement, until December 2026, is in place with CNR for shipping steelmaking coal from our four B.C. operations via Kamloops to Neptune Bulk Terminals (Neptune) and other west coast ports, including Trigon Terminals (formerly Ridley Terminals Inc.), located in Prince Rupert. Contracts are also in place with all terminal facilities to offload, stockpile, blend FRO coal to Teck's product specifications and, load bulk cargo vessels. Teck holds a 46% interest in Neptune Bulk Terminals. Customers arrange for ocean-going bulk carriers to transport the coal from the terminals to their facilities for end use for approximately 60% of the total number of shipments. For the remaining 40% of shipments, Teck arranges for the ocean-going bulk carriers to transport the coal to customer facilities. Contracts are negotiated and renewed as needed. Contract terms are within industry norms, and typical of similar contracts in BC that Teck is familiar with.

1.19 Environmental, Permitting and Social Considerations

Baseline studies were completed in support of initial operations. Mining operations commenced in 1983. Additional permitting activities are undertaken as required.

1.19.1 ENVIRONMENTAL CONSIDERATIONS

The Fording River Operations Environmental Management System (EMS) is certified under the ISO 14001 standard and is consistent with other Teck operations in which the pursuit of sustainability guides the approach to business. The EMS reflects the commitment made by Teck and FRO to comply with applicable legal and regulatory requirements, including the prevention of pollution, and continual improvement. FRO's EMS also provides the framework for identifying actual and potential environmental aspects, environmental emergencies, measuring and monitoring requirements, opportunities for continual improvement and environmental objectives and targets. Employees participate in the EMS by conforming to standard practices and procedures, which identify their roles and responsibilities when interacting with various environmental aspects.

In April 2013, the BC Minister of Environment issued Ministerial Order No. M113, which required Teck to prepare an area-based management plan for the Elk River watershed and the Canadian portion of the Koocanusa Reservoir. From 2013 to 2014, Teck developed the area-based management plan, the Elk Valley Water Quality Plan. The Elk Valley Water Quality Plan included an Initial Implementation Plan that outlines the mitigation planned to achieve limits for the concentration of selenium, sulphate, nitrate, and cadmium in surface water at specific locations throughout the Elk Valley and in the Koocanusa Reservoir. In November 2014, the BC Ministry of Environment issued Permit 107517 to Teck under the EMA. Many of the actions and commitments that Teck made in the Elk Valley Water Quality Plan Initial Implementation Plan were incorporated into the permit requirements. In July 2022, Teck submitted to regulators an Implementation Plan Adjustment in accordance with EMA Permit 107517 and Mines Act C-Permit requirements. The objective of this plan is to outline the timing and sizing of treatment and other water quality mitigations that support the objectives of the Elk Valley Water Quality Plan and to best meet EMA Permit 107517 commitments based on the latest understanding and progress.

Other areas of note related to environmental considerations around water, include:

- Since 2014, Teck has made significant progress on implementing water treatment in the Elk Valley with four water treatment facilities built and either fully operational or in commissioning;
- An applied research and development program is in place and is focusing on improving the effectiveness of water treatment technologies and investigating approaches to managing constituents at source;
- Fish census data obtained in late 2019 showed unexpected and substantial reductions in populations of Westslope Cutthroat trout in some mine-affected waters in the Elk Valley. Teck initiated an Evaluation of Cause process to investigate and report on the cause of the decline. Teck assembled a team of qualified scientists to develop recovery action plans.

All large water management facilities employ automated monitoring systems and a comprehensive inspection and maintenance program to ensure that sediment ponds are operating within capacity and expected performance to maintain effluent permit discharge limits. An assessment of all major water retention structures on site was started in 2020 and a comprehensive list of recommendations to improve structure performance and reduce risk associated with water quality and quantity is anticipated to be completed in 2022–2023.

Vegetation management is an integrated part of FRO's operation. This includes the planning for re-vegetation for reclamation activities, management of invasive plants, and rare plant surveys. A wildlife mitigation management plan is in place.

Design of layouts for waste rock spoils include considerations for spoil slope stability and selenium management strategies. Tailings facilities are developed to contain tailings within an enclosed area.

1.19.2 CLOSURE AND RECLAMATION PLANNING

The approach to reclamation design and implementation is directed by FRO's overarching end land use and biodiversity objectives:

- Long term safety and stability of drainages, landforms, and features;
- Water quality that meets acceptable quality guidelines for safe release to the surrounding environment and use by local flora and fauna;
- A net positive impact on biodiversity by maintaining or re-establishing self-sustaining landscapes and ecosystems that leads to agreed, viable, long term and diverse land use objectives in Teck's operating areas.

Provisional ongoing progressive reclamation and closure costs are considered in the economic analysis that supports the Coal Reserves. Due to the length of the mine life, the net present value of final closure costs is considered negligible in the economic analysis. Estimates of final closure costs are updated every five years, or as required through major permit amendments, and submitted to the relevant regulatory authorities.

Teck has a bonding schedule as part of the Mines Act permits, with the amount of the bond to be paid and the schedule set out in the permits.

1.19.3 PERMITTING CONSIDERATIONS

As of December 31, 2022, all necessary licences and permits and their subsequent amendments are in place for current operations at FRO.

FRO's Environment Department, in coordination with Sustainable Development team, is responsible for obtaining, implementing and maintaining regulatory permits for the operation. The FRO Environmental Management System (EMS) and registration of the FRO EMS to ISO 14001-2004, applies to all permit and regulatory conditions activities within the operations land base.

Major permits will be required for the following areas that are included in the LOM plan:

- Fording River Extension (FRX/Castle);
- Turnbull West.

1.19.4 SOCIAL CONSIDERATIONS

Strengthening the relationship with the Ktunaxa Nation and the Ktunaxa Nation Council is an important objective for Teck. In November 2007, the two parties signed a joint Working Protocol Agreement and in 2010 a Consultation Agreement. In 2016, an Impact Management and Benefits Agreement was signed between Teck and the Ktunaxa Nation, which supersedes the previous two agreements.

The Impact Management and Benefits Agreement formalizes the long-standing relationship with the Ktunaxa Nation and creates a framework for greater cooperation and clarity on topics, including consultation and engagement, the environment and land stewardship, cultural resource management, and employment and business opportunities (including project-specific effects to Ktunaxa Nation interests). Consultation and engagement between Teck and Ktunaxa Nation Council associated with reclamation and closure are, and will continue to be, undertaken through the processes established in the Impact Management and Benefits Agreement such as the Environmental Working Group, Procurement and Employment Operational Working Group, and the Cultural Working Group.

Teck also works with a number of local partners and organizations on economic, social and environmental initiatives.

1.20 Capital Cost Estimates

Capital and operating costs forecasts are prepared to meet a ±25% accuracy range.

Capital expenditures for development of new mining areas and equipment acquisitions and replacements are developed and a schedule of the spending is prepared. Costs are based on vendor quotes, and forecasts based on past operating experience, depending on the level of detail required for the cost estimate, and the timing of the capital expenditure.

The LOM capital cost estimate for the period 2023–2064 is summarized in Table 1-4.

In this table:

- Mining equipment includes the capital costs required to purchase haul trucks, shovels, drills, loaders and support equipment;
- Plant and infrastructure include expenditures required to sustain plant operations and maintain the integrity of site utilities;
- Pit development includes exploration, permitting, access, pre-development work, and infrastructure costs;
- Sustainability includes the capital costs required for water treatment, reclamation, and infrastructure required to minimize environmental impact.

1.21 Operating Cost Estimates

Anticipated LOM operating costs for the period 2023–2064 are included in Table 1-5.

Operating costs include:

- Mining and processing costs include all labour, fuel, electrical power, consumables, repair parts and external services;
- Transportation costs include logistical costs related to the transport of clean coal products from site to customers;
- “Other” includes exploration and head office allocations and non-capitalized exploration and reclamation.

The operating costs include allocations for costs incurred when a portion of the coal is sent to the Greenhills plant for treatment. This is not a consistent practice, but occurs on an as-required, as-needed basis. Costs incurred from processing this coal are billed back to the Fording River Operations on a dollar per tonne basis.

Table 1-4: LOM Capital Cost Estimate

Capital Expenditures	(C$ M)
Mining equipment	2,290
Plant & infrastructure	209
Infrastructure	121
Pit development	672
Sustainability	1,153
Total capital	***4,445***

Note: Numbers have been rounded.

Table 1-5: LOM Operating Cost Estimate

Operating Costs	Average (C$/t clean coal)
Mining and processing	95.23
Transportation	37.29
Other	6.94
Total cash costs	***139.45***

1.22 Economic Analysis

Teck is using the provision for producing issuers, whereby producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production and where no material production expansion is planned.

Coal Reserve declaration is supported by overall site positive cash flows and net present value assessments.

1.23 Risks

The major risks facing the operations are water management and quality, and obtaining the required permits to allow the execution of the LOM plan as envisaged.

The highest risk mining permit required is for the FRX project on Castle Mountain which is required inside the five-year window. Also, inside the five-year window, several additional minor permits are required to support mining in Swift and Eagle pit areas. Permits are also required to support pit backfill plans and mixed coal refuse disposal.

1.24 Opportunities

The risk analysis for the 2022 LOM plan identified the following key opportunities:

- Target drilling activities to upgrade Inferred Coal Resources to higher confidence categories;
- Reduce greenhouse gas emissions from mining operation activities;
- Continue optimization of the mine plan during each year of future mining operations.

1.25 Interpretation and Conclusions

Under the assumptions in this Report, the FRO Coal Reserve declaration is supported by overall site positive cash flows and net present value assessments, which supports Coal Reserves. The mine plan is achievable under the set of assumptions and parameters used in the Report.

1.26 Recommendations

As FRO is an operating mine, with no planned production rate expansions, the QPs have no meaningful recommendations to make.

2.0 INTRODUCTION

2.1 Introduction

Mr. Peter Leriche, P.Geo., Mr. Paul Michaud, P.Eng., and Ms. Jacqueline Pye, P.Eng., prepared this technical report (the Report) for Teck Resources Limited (Teck) on the Fording River Coal Operations (the Fording River Operations or the Project), located in British Columbia (BC), Canada (Figure 2-1).

The coal operations are indirectly wholly owned by Teck through Teck Coal Partnership Teck Coal Limited (Teck Coal), a wholly-owned subsidiary of Teck Coal Partnership, is the Project operator.. The mine operations name is the Fording River Operations (FRO).

Mining commenced in 1971, with first coal shipped in 1972.

2.2 Terms of Reference

The Report provides updated information on the Fording River Operations, and Coal Resource and Coal Reserve estimates. The information will be used to support disclosures in Teck's 2022 Annual Information Form.

Currency is expressed in Canadian dollars (C$) unless stated otherwise. Units presented are typically metric units, unless otherwise noted. The Report uses Canadian English.

Coal Resource and Coal Reserves estimates are reported using the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves (the 2014 CIM Definition Standards). Coal Resources and Coal Reserves are presented on a 100% basis.

The Coal Resource and Coal Reserve estimates make reference to metallurgical coal. Metallurgical coal is a grade of coal that can be used to produce good-quality coke. Coke is an essential fuel and reactant in the blast furnace process for primary steelmaking. Metallurgical coal is low in ash, moisture, sulphur and phosphorus content.

2.3 Qualified Persons

The following Teck employees serve as the qualified persons for this Technical Report as defined in National Instrument 43-101, Standards of Disclosure for Mineral Projects, and in compliance with Form 43-101F1:

- Mr. Peter Leriche, P.Geo. Senior Geologist Supervisor;
- Mr. Paul Michaud, P.Eng., Senior Engineer Supervisor, Long Range Mine Planning;
- Ms. Jacqueline Pye, P.Eng., Senior Engineer, Supervisor Processing.

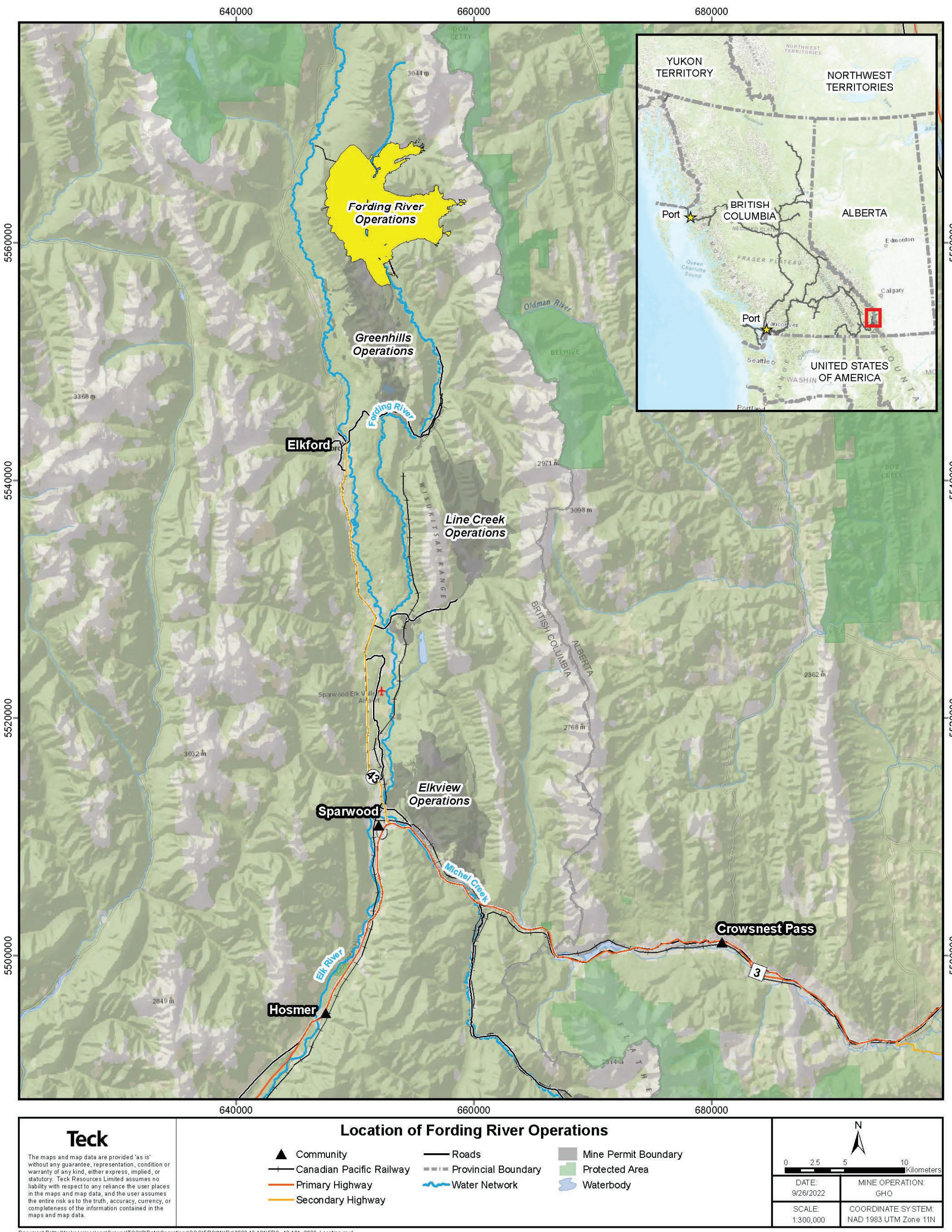
Location of Fording River Operations
Fording River Operations
Greenhills Operations
Line Creek Operations
Elkview Operations
Elkford
Sparwood
Hosmer
Crowsnest Pass
Fording River
Michel Creek
Elk River
Oldman River
BRITISH COLUMBIA
ALBERTA
YUKON TERRITORY
NORTHWEST TERRITORIES
UNITED STATES OF AMERICA
Port
640000
660000
680000
5560000
5540000
5520000
5500000
Teck
Community
Canadian Pacific Railway
Primary Highway
Secondary Highway
Roads
Provincial Boundary
Water Network
Mine Permit Boundary
Protected Area
Waterbody
N
Kilometers
DATE: 9/26/2022
MINE OPERATION: GHO
SCALE: 1:300,000
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N

Figure 2-1: Project Location Plan

2.4 Site Visits and Scope of Personal Inspection

Mr. Leriche, Mr. Michaud, and Ms. Pye are employed by Teck Coal at FRO and work on site each working day.

Mr. Leriche worked at the FRO site from 2011 to mid-2020, and returned to the site in mid-2022. He actively supervises coal quality, exploration programs, and geological modeling. Mr. Leriche's supervisory duties at FRO include but are not limited to: mining and recovery of coal; blending of coal to produce in-spec clean coal products; annual exploration project management including planning, execution, and data management; geological modeling including interpretation, 3D block modeling, quarterly and annual coal reconciliation, and the annual R&R process.

Mr. Michaud has been employed with Teck Coal since January 2009, during which time he worked at FRO from January 2009 to October 2019, then returned in June 2022. Mr. Michaud actively supervises life-of-mine (LOM) plans, mine designs (including pits and waste dumps) and annual Coal Resource and Coal Reserve reporting. He also participates in production forecasting and annual business planning.

Ms. Pye has been employed at the FRO site since February 2021. She supervises the process plant engineering and automation teams, and she is responsible for process improvements, plant capital project execution, and long-term planning, as well as plant separation efficiency.

2.5 Effective Dates

The Report has a number of effective dates including:

- Date of closure of database used for resource estimation:
    - Fording River West, including resource areas Swift and Lake Mtn: November 29, 2021;
    - Fording River East, including resource areas Eagle, Turnbull Mtn, Henretta, FRX (formerly Castle), and Bare Mountain: November 26, 2020;
- Date of last drilling information included in the report: December 31, 2022;
- Date of Coal Resource estimate: December 31, 2022;
- Date of Coal Reserve estimate: December 31, 2022.

The overall effective date of the Report is the date of Coal Reserve estimate, which is December 31, 2022.

2.6 Information Sources and References

The reports and documents listed in Section 2.7 and Section 27.0 of this Report were also used to support the preparation of the Report.

Additional information was sought from Teck personnel where required.

2.7 Previous Technical Reports

Teck has previously filed the following technical reports on the Project:

- Jensen, E., Knight, A., Mills, D., and Musil, B., 2011: NI 43-101 Technical Report on Coal Resources and Reserves of the Fording River Operations: effective date December 31, 2011;
- Hannah, T., and Acott, C., 2009: Technical Report Fording River Operations: Report prepared by Marston Canada Ltd. For Teck Coal Ltd., effective date January 19, 2009;
- Minnes, E.H., and Mucalo, P.S., 2008: Technical Report on Coal Resources and Reserves of the Fording River Operations: report prepared by Marston Canada Ltd for Elk Valley Coal Corp., Fording Canadian Coal Trust and Teck Cominco Ltd., effective date February 29, 2008.

3.0 RELIANCE ON OTHER EXPERTS

This section is not relevant to this Report.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Introduction

The Fording River Operation is located in the East Kootenay region of southeastern British Columbia, approximately 330 km by road southwest of Calgary, Alberta and about 29 km northeast of the town of Elkford in the southeast corner of British Columbia.

The Project mining centroid is approximately latitude 50°11'30.50" N and longitude 114°51'11.47" W. The plant site is situated at latitude 50°11'15.47" N and longitude 114°52'42.34" W.

4.2 Project Ownership

The Fording River Operations are indirectly 100% owned by Teck. The direct ownership is Teck Coal Partnership, which is 100% indirectly held by Teck.

4.3 Mineral Tenure

The total Project area is approximately 19,797 ha, consisting of seven coal leases (approximately 17,153 ha) and 16 Crown Grants (private mineral holding) that cover 2,644 ha.

The title holdings are shown in Figure 4-1 and summarized in Table 4-1.

The coal leases and licenses are renewed annually, per the BC *Coal Act*. Crown Grants are an interest in land as a fee simple estate in ownership. These rights are held in perpetuity by Teck Coal as long as the assessed property and mineral taxes are paid annually. All required payments were current at the Report effective date.

There are no obligations that must be met on the part of the landowner to undertake or complete any exploration or development work to actively maintain the coal tenures.

4.4 Surface Rights

FRO controls the surface and subsurface coal rights to the properties that are in operation and those that are planned for development.

All FRO operations and associated infrastructure such as tails and waste storage are contained within lands on which Teck Coal owns the surface rights in fee simple (freehold) or located on Crown-granted coal licences and leases which, by virtue of the *Coal Act* sections 9(3)a and 16(3)a, allow Teck Coal, as the Recorded Holder to enter, occupy and use the surface area of the location to produce coal. This surface area is sufficient to contain mining and process plant waste and reject material projected in the current life-of-mine (LOM) plan.

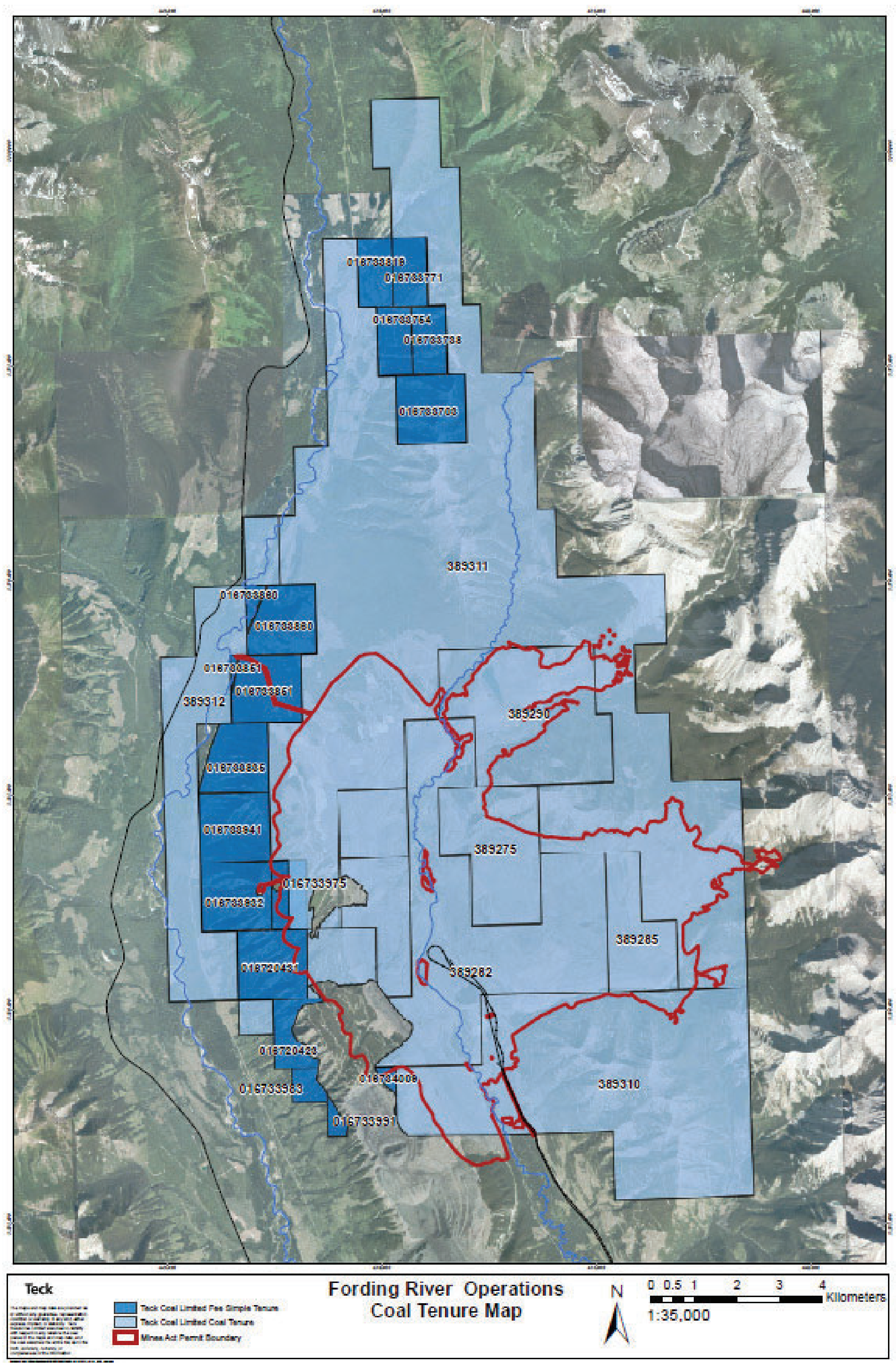

Figure 4-1: Mineral Title Holdings

Note: Figure prepared by Teck, 2023.

Table 4-1: Mineral Title Holdings

Tenure ID	Parties	Type	Status	Grant Date	Expiry Date	Area (ha)
016-720-423	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	114
016-720-431	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	260
016-733-703	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	257
016-733-738	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	127
016-733-754	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	128
016-733-771	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	130
016-733-819	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	131
016-733-835	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	227
016-733-851	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	258
016-733-860	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	256
016-733-932	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	262
016-733-941	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	261
016-733-975	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	127
016-733-983	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	56
016-733-991	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	29
016-734-009	Teck Coal Limited (100%)	Crown Grant (BC)	Active	1/1/1901	6/30/2023	21
389275	Teck Coal Limited (100%)	Coal Lease (BC)	Active	1/1/1974	1/1/2025	995
389282	Teck Coal Limited (100%)	Coal Lease (BC)	Active	5/19/1977	5/19/2028	2,138
389285	Teck Coal Limited (100%)	Coal Lease (BC)	Active	3/17/1982	3/17/2033	649

Tenure ID	Parties	Type	Status	Grant Date	Expiry Date	Area (ha)
389290	Teck Coal Limited (100%)	Coal Lease (BC)	Active	10/1/1991	10/1/2028	1,099
389310	Teck Coal Limited (100%)	Coal Lease (BC)	Active	5/9/1998	5/9/2028	2,880
389311	Teck Coal Limited (100%)	Coal Lease (BC)	Active	5/9/1999	5/9/2029	8,096
389312	Teck Coal Limited (100%)	Coal Lease (BC)	Active	1/30/2000	1/30/2030	1,296
						19,797

Note: Date format is month, day, year.

4.5 Water Rights

FRO was granted three consumptive water use licences for vehicle washing (C133241), dust control (C133242) and coal washing (C133243) effective April 20, 2017. The licences require water use monitoring at 22 points of diversion, 18 of which have been related to instream flow requirements associated with one of the three monitoring locations on the Fording River and Henretta Creek (Measuring Points A, B, and C).

Teck has 20 authorized water licences that cover water diversion and usage. The water usage rights held are sufficient to support the LOM plan.

4.6 Royalties and Encumbrances

Coal on Crown land is subject to lease rentals and coal production royalties. Teck is not required to pay royalties on freehold land.

British Columbia levies mineral taxes. There is a two-tier tax system with a minimum rate of 2% on operating cash flow and a maximum rate of 13% on cash flow after taking available deductions for capital expenditures and other permitted deductions.

4.7 Permitting Considerations

Permitting is discussed in Section 20.

4.8 Environmental Considerations

Environmental considerations are discussed in Section 20.

Environmental liabilities for the operations are typical of those that would be expected to be associated with an operating coal mine, including roads, site infrastructure, open pits, and waste and tailings disposal facilities.

Teck Coal, via FRO, is required to rehabilitate disturbed areas after the completion of mining activities. FRO has made provisions to limit environmental liability by reclaiming disturbed areas on an ongoing basis as they become available. Short- and long-term reclamation requirements are reassessed annually, and an annual reclamation plan is submitted to the British Columbia government, as required as a condition of the mine permit (refer to Section 20).

4.9 Social License Considerations

Social licence considerations are discussed in Section 20.

4.10 Comments on Section 4

To the extent known to the QP, there are no other significant factors and risks known that may affect access, title, or the right or ability to perform work on the Project that are not discussed in this Report.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 Accessibility

The operations are accessed via Highway 43 through the town of Elkford.

Goods are delivered primarily by transport trucks and occasionally by rail.

Coal from FRO is transported in unit trains from the site loadout facilities via rail lines operated by Canadian Pacific Railways (CPR) or Canadian National Railways (CNR). CPR rails coal to Kamloops, BC, and then CNR rails to port facilities. The final rail destination is either the Westshore Terminals, 1,150 km to the west in Delta, BC, Neptune Bulk Terminals in North Vancouver, BC, or the Trigon Terminal (formerly Ridley Terminals Inc.) at Prince Rupert, BC. CPR and CNR own their own lines and have line sharing agreements in place to expedite traffic in certain areas.

5.2 Climate

The Project area has long, cold winters and short, cool, dry summers.

The climate results from a combination of the continental location, mountainous topography, and westerly maritime air masses that bring moisture-laden air to the area. Local convective storms during summer months can provide significant amounts of precipitation in relatively short periods of time. The area is often dominated by cold continental Arctic air masses and easterly-moving maritime Arctic air masses during the winter, resulting in snowfall. Monthly precipitation varies from a low of 34.9 mm to as much as 69.3 mm.

Average monthly temperatures range from a maximum of 24ºC to a minimum of -18ºC. Temperature and air inversions can occur in winter and fall, respectively.

Pacific frontal systems produce strong south to southwesterly upper-level winds, especially during winter months. Valley winds are governed by valley orientation while mountain top winds are more closely associated with geostrophic winds. In general, the higher the elevation the greater the precipitation values and mean wind speed, and the lower the mean temperature.

Operations are conducted year-round.

5.3 Local Resources and Infrastructure

Coal mining activity has been ongoing in the region for many years, and the infrastructure is well developed, including all-weather roads and railroads.

Mining personnel are recruited from across Canada, with most living in the Elk Valley, within the towns of Elkford, Sparwood or Fernie.

Additional information on Project infrastructure is included in Section 18.

5.4 Physiography

The operations are situated in the Kootenay Region of the Northern Rocky Mountain physiographic province, within the Elk River valley. Elevations range from about 1,300 masl in the valley floor to about 2,250 masl at the upper extent of the mine.

Vegetation varies with elevation; valley bottoms are dominated by Rocky Mountain Douglas fir, lodgepole pine and trembling aspen. Mountain slopes typically host Engelmann spruce, lodgepole pine, western larch and trembling aspen. Higher elevations are treeless.

The major river system in the Project area is the Fording River which joins the Elk River approximately 30 kilometers south of the property.

5.5 Comments on Section 5

In the opinion of the QP:

- The existing local infrastructure, availability of staff, methods whereby goods are transported to and from the Project area are well-established and well understood by Teck, and can support the declaration of Coal Resources and Coal Reserves, and supports the mine plan;
- There are surface rights to support the mine plan (refer to discussion in Section 4.4);
- Within the mineral leases, there is sufficient area for the infrastructure that supports current operations, and infrastructure requirements that may be needed for future mining operations (refer to discussion in Section 18).

Operations are conducted year-round.

6.0 HISTORY

6.1 Exploration History

George M. Dawson of the Geological Survey of Canada identified the coal measures in the Fording River valley in 1886.

As part of an 1881 crown land agreement with the federal government, the Canadian Pacific Railway in 1902 filed for coal rights on several lots of land in the Elk and Fording River valleys. Between 1939 and 1947, the CPR sold or transferred all of its Elk and Fording River holdings to its mining subsidiary, the Consolidated Mining and Smelting of Canada (Cominco). In 1947 Cominco decided to surrender all but 11.5 of CPR's original lots or 7,360 acres. The outstanding lots that comprise the remainder of what is now the Fording River Operations were staked in 1966 by Canadian Pacific Oil and Gas (CPOG), a division of Canadian Pacific Investments Ltd (CPI).

The FRO began existence in 1968 as the primary asset of Fording Coal Limited, owned 60% by CPI and 40% by Cominco. FRO commenced production in 1971 and the first coal shipment occurred in 1972. Mining was concentrated on the west side of the Fording River valley, primarily using draglines to expose the coal for hauling to the processing plant.

Canadian Pacific Limited acquired Cominco's share of Fording Coal Limited in 1986. Mining operations were gradually moved across the valley to Eagle Mountain in the early 1980s, to where the source of raw coal is now centered, and mining by truck/shovel has taken over as the primary method of exposing coal.

Fording Coal Ltd became an independent, publicly-owned company, Fording Inc., in October 2001 following the reorganization of Canadian Pacific Limited. Fording Inc., was converted into an income trust named Fording Canadian Coal Trust in 2003. As part of that conversion, Fording Inc. contributed the Fording River Operations and other assets to Fording Coal Partnership (later named Elk Valley Coal Partnership).

The Fording Canadian Coal Trust held 60% of the Elk Valley Coal Partnership, which held the Canadian metallurgical coal properties previously held by Fording Coal Ltd., Teck Cominco Ltd., CONSOL Energy Inc. and Luscar Energy Partnership. The remaining 40% interest in Elk Valley Coal Partnership was held by Teck The Elk Valley Coal Partnership controlled the metallurgical coal operations through its nominee Elk Valley Coal Corporation, a wholly-owned subsidiary of Elk Valley Coal Partnership.

On October 30, 2008, Teck acquired all the assets of Fording Canadian Coal Trust, thus making Teck the sole owner of Elk Valley Coal Partnership and, by extension Elk Valley Coal Corporation, which it renamed to Teck Coal Limited.

Exploration activities performed in the Project area are summarized in Table 6-1.

6.2 Production

The production since mine start-up is provided in Table 6-2.

Table 6-1: Exploration History

Year	Legal Owner	Exploration Work Completed
Pre-1968	Canadian Pacific Oil and Gas Ltd.	Ground mapping, trenching, and surface sampling in the lower Fording Valley. 4 rotary drill holes and several adits were driven for coal quality assessment.
1968–1977	CanPac Minerals Ltd.	Ground mapping, trenching, core drilling and bulk sample collection via adit to support commencement of mining in 1971. Continued rotary drilling to support operations.
1977–2003	Fording Coal Limited	Ground mapping and trenching, core, reverse circulation (RC), and rotary drilling to support production and resource development. The last adits for bulk sampling were driven in 1983.
2003–2008	Elk Valley Coal Corporation	Most of the exploration work consisted of RC drilling to support production and resource development.
2008–present	Teck Coal Limited	93 core holes (26,300 m),1,414 RC (386,704 m), and 55 bulk samples (8,498 m) via large diameter drill holes. Coal and interburden potentially-acid generating (PAG) sampling.

Table 6-2: Production History

Year	Production Clean Coal (t)	Year	Production Clean Coal (t)
1972	1,025,865	2000	8,930,452
1973	2,241,553	2001	9,319,430
1974	1,920,597	2002	8,108,105
1975	2,879,162	2003	8,851,509
1976	1,637,560	2004	9,159,541
1977	2,807,279	2005	9,205,390
1978	2,790,024	2006	7,695,235
1979	2,923,410	2007	7,866,751
1980	3,475,940	2008	8,093,198
1981	3,690,698	2009	6,037,452
1982	3,900,155	2010	7,535,008
1983	2,758,089	2011	7,772,500
1984	3,965,353	2012	8,768,789
1985	3,926,615	2013	8,656,028
1986	4,627,363	2014	8,077,700
1987	4,842,223	2015	7,454,778
1988	5,729,844	2016	7,333,614
1989	5,418,712	2017	8,204,846
1990	6,164,116	2018	9,001,215
1991	6,007,537	2019	7,884,000
1992	2,513,080	2020	6,839,208
1993	6,558,538	2021	8,256,000
1994	6,968,388	2022	7,993,852
1995	7,173,351		
1996	7,742,497		
1997	8,140,185		
1998	7,831,830		
1999	8,187,710		

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The southeastern portion of the Canadian Cordillera contains a complex history of plate tectonic processes and terrane accretion (Figure 7-1).

Foreland basin subsidence during the Mesozoic resulted in a coarsening-upwards sequence of deep-water basin to coastal plain sandstones, shales, and coals being deposited adjacent to the uprising Canadian Cordillera in the Jurassic to Early Cretaceous. The Fernie Formation and Kootenay Group represent the first of a series of coarsening-upwards clastic wedges that were deposited in the foreland basin. Thrust faulting resulted in the wedges propagating to the east, and structural repetition of the coal seams within the Mist Mountain Formation of the Kootenay Group (Katay, 2017). Coal forms between 8–12% of the total thickness of the Mist Mountain Formation at most locations.

The Kootenay Group sediments were affected by the late Cretaceous to early Tertiary Laramide Orogeny, which produced a number of north–south-trending thrust faults. Subsequent northerly-trending normal faults have also displaced and further divided the sedimentary units. On a local scale the geology varies from broad open synclines to tight folds complicated by thrusts that often repeat the coal section.

7.2 Project Geology

7.2.1 LITHOLOGIES

Fording River Operations are located within the Elk Valley Coalfields. The coal measures are situated within the Upper Jurassic to Lower Cretaceous Kootenay Group sediments.

From earliest to latest, the Kootenay Group includes:

- Morrissey Formation: sandstones; subdivided into the Weary Ridge and Moose Mountain Members; 20–80 m in thickness;
- Mist Mountain Formation: interbedded sandstone, siltstone, mudstone, shale and thin to thick seams of bituminous to semi-anthracite coal; 450–550 m in thickness;
- Elk Formation: interbedded sandstone, siltstone, mudstone, shale and locally thick beds of chert-pebble conglomerate and thin seams of high volatile bituminous coal; 350–450 m in thickness.

The stratigraphy within the Project area is summarized in Table 7-1 and shown in Figure 7-2.

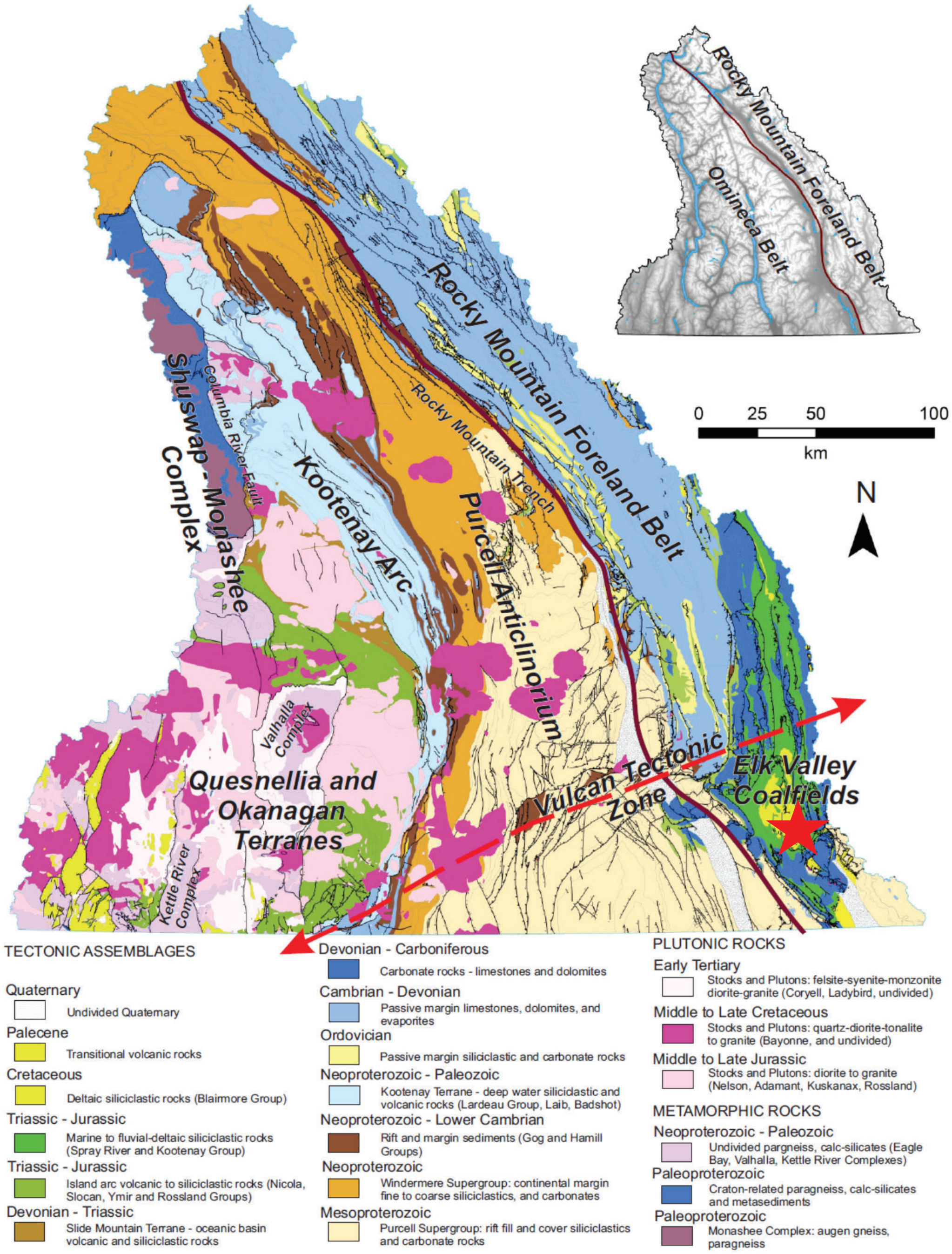

Figure 7-1: Regional Geology Plan

Note: Figure from Katay, 2017.

Table 7-1: Project Stratigraphy

<table>
<tr><th>Period</th><th colspan="3">Litho-Stratigraphic Units</th><th>Principal Rock Types</th></tr>
<tr><td>Recent</td><td colspan="3"></td><td>Colluvium</td></tr>
<tr><td>Quaternary</td><td colspan="3"></td><td>Clay, silt, sand, gravel, cobbles</td></tr>
<tr><td>Lower Cretaceous</td><td colspan="3">Blairmore Group</td><td>Massive-bedded sandstones and conglomerates</td></tr>
<tr><td rowspan="4">Lower Cretaceous to Upper Jurassic</td><td rowspan="4">Kootenay Group</td><td colspan="2">Elk Formation</td><td>Sandstone, siltstone, shale, mudstone, chert pebbles</td></tr>
<tr><td colspan="2">Mist Mountain Formation</td><td>Sandstone, siltstone, shale, mudstone, multiple coal seams</td></tr>
<tr><td rowspan="2">Morrissey Formation</td><td>Moose Mountain Member</td><td>Medium to coarse grained quartz–chert sandstone</td></tr>
<tr><td>Weary Ridge Member</td><td>Fine to coarse grained, slightly ferruginous quartz–chert sandstone</td></tr>
<tr><td>Jurassic</td><td colspan="3">Fernie Formation</td><td>Shale, siltstone, fine-grained sandstone</td></tr>
<tr><td rowspan="2">Triassic</td><td colspan="3">Spray River Formation</td><td>Sandy shale, shale, quartzite</td></tr>
<tr><td colspan="3">Rocky Mountain Formation</td><td>Quartzites</td></tr>
<tr><td>Mississippian</td><td colspan="3">Rundle Group</td><td>Limestone</td></tr>
</table>

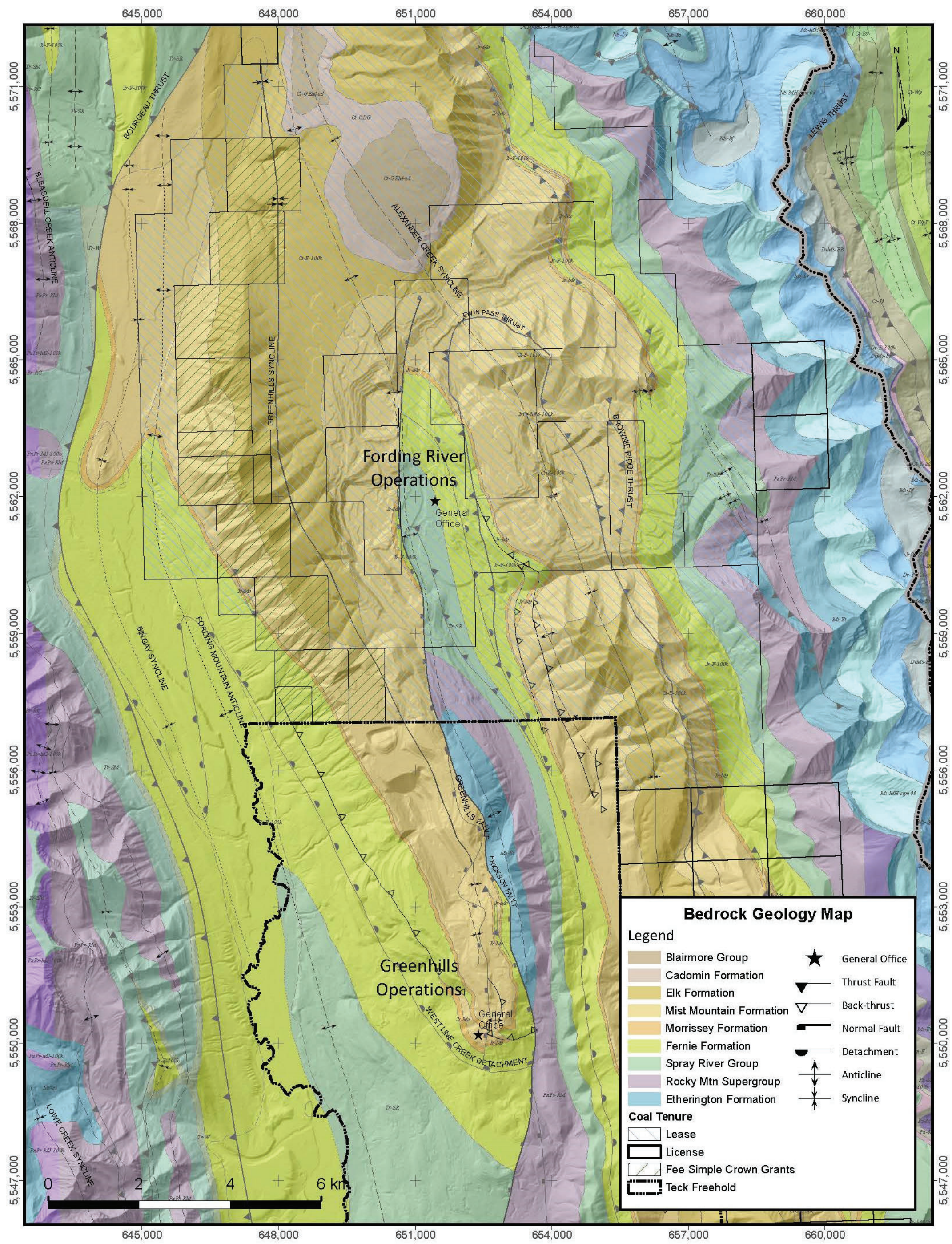

Figure 7-2: Project Geology Plan

Note: Figure prepared by Teck, 2022.

The Mist Mountain Formation contains approximately 25 coal seams consisting of low to high volatile bituminous coal. The coal currently or planned to be mined at the FRO are contained on Eagle, Castle and Turnbull mountains, and on the northeast flank of the Greenhills Range. Current operations are located in the Eagle, Swift, and Lake Mountain pits.

7.2.2 STRUCTURE

Within the coal measures, there are three structurally-separated coalfields, the Elk Valley, Crowsnest, and Flathead coalfields. The Elk Valley coalfield is located within the Alexander Creek and Greenhills synclines, which are separated by a normal fault. The western edge of the Mist Mountain Formation, and therefore the distribution of the Elk Valley coalfield, is controlled by the Bourgeau Fault (refer to Figure 7-2). To the east of this fault, the Greenhills syncline plunges to the north, and its eastern limb is truncated by the north-trending normal Erickson fault. East of the Erickson fault is the Alexander Creek syncline, which is in turn cut by the Ewin Pass thrust fault (Ryan, 2001).

The coal seams in both synclines are typically fragmented and sheared. Thicker seams are generally lower in the section, tend to host major thrusts, and therefore are frequently extensively sheared (Ryan, 2001).

Greenhills Syncline

The east limb of the asymmetric Greenhills syncline dips westerly at 15–25°, except in areas near the Erickson Fault, where 45–55° dips are common. The west limb exhibits much steeper dips, commonly in the 35–45° range. The Greenhills Syncline plunges northward (340–350°), at less than 5°, and then thins out and seems to end to the north in the area of the Osborne Creek Depression (Teck Coal, 2011).

Erickson Fault

The Erickson Fault, which locally runs along the base of the Greenhills Range, west of the Fording River, is one of the major regional faults. From south to north, this westerly dipping (40–70°) normal fault brings Mist Mountain strata progressively into contact with Rundle, Rock Mountain, Spray River, Fernie and Morrissey strata. The downthrown block is to the west (Teck Coal, 2011).

Near the south end of Lake Mountain, the Erickson Faults begins to “splay” into two zones. The main fault runs along the eastern margin of Lake Mountain, and the subsidiary fault runs to the west and appears to thin out and end northward. The steep northward dip exhibited in the Lake Mountain strata could be due to influence from these flanking “splays” of the fault. The flat-lying region to the north of Lake Mountain (Osborne Creek Depression area) is completely void of outcrop, and the Erickson Fault has not been traced either through or to the north of this area (Teck Coal, 2011).

7.2.3 MINERALIZATION

The Mist Mountain Formation depth of burial ranges from surface exposures to >1,500 m. The coal measures on the FRO property contain bituminous grade coal seams with varying volatile matter contents. The coal quality varies with depth of burial and location along the strike of the deposit.

Aggregate coal thickness on Eagle Mountain can reach more than 70 m in thickness in the nose of synclines and anticlines. Approximately eight medium volatile seams that are used in hard coking coals (HCC) are currently being mined in Eagle Pit. In Swift pit, seven low to medium volatile seams are currently being mined. Swift seams are used in both hard coking coals and semi-hard coking coal products. In the Lake Mountain pit, a wide variety (040 to 120 seams) of low to high volatile seams are mined, which go into both hard coking and semi-hard coking coal products.

Figure 7-4 to Figure 7-8 are cross-sections showing the relative positions of the coal seams in the FRX, Eagle, Turnbull Mountain, Swift, and Lake Mountain areas. Figure 7-3 shows the locations of the cross-sections in those figures.

FRO produces the following coal products, as shown on Figure 7-9 and Figure 7-10:

- Hard coking coal (HCC): coke strength after reaction (CSR) 64+;
- Semi-hard coking coal (SHCC): ≤55 CSR ≤63.

7.3 Prospects

Prospects and targets are discussed in Section 9.

7.4 Comments on Section 7

In the opinion of the QP, the understanding of the deposit setting, lithologies, and geological and structural controls on mineralization is sufficient to support estimation of Coal Resources and Coal Reserves.

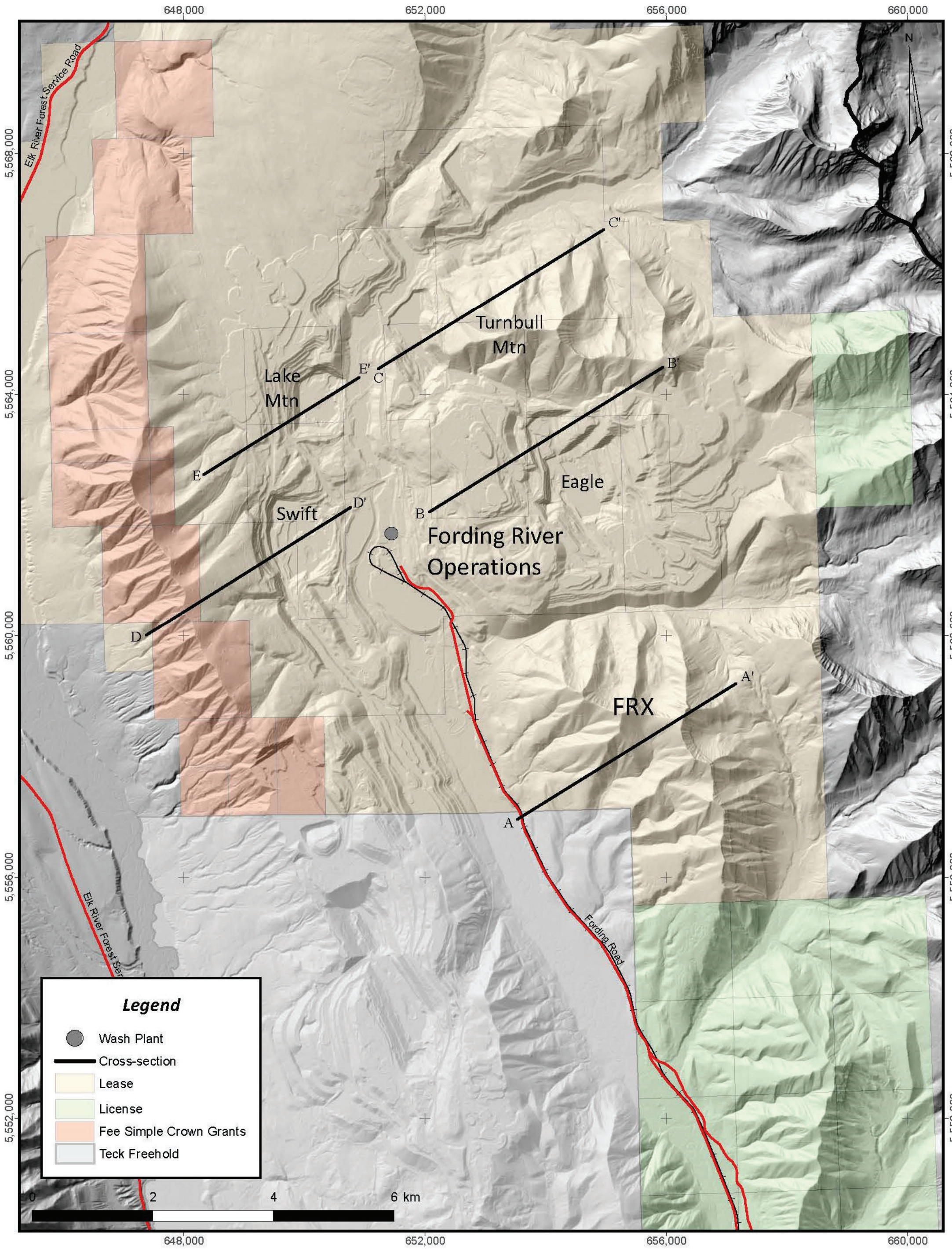

Figure 7-3: Plan Showing Cross-Section Locations

Note: Figure prepared by Teck, 2022.

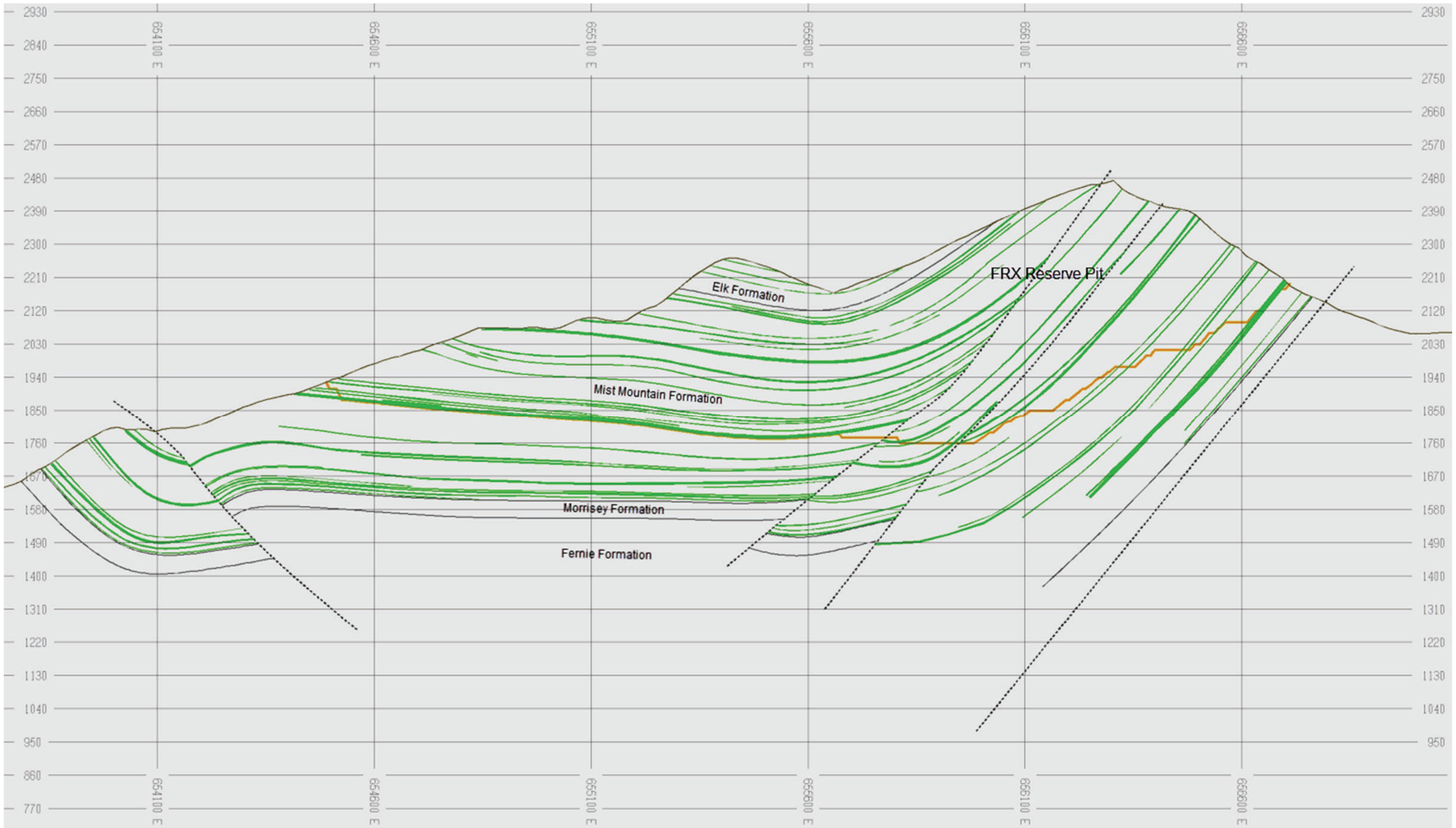

Figure 7-4: FRX Cross-Section A–A'

Note: Figure prepared by Teck, 2022. Section looks north–northwest. Grid units are in metres. Solid grey marks major formational contacts, dotted lines show faults, green is coal seams, brown is the current pit topography, solid black shows the original topography, yellow is the reserve pit shell, and dashed black line is the mined-out surface.

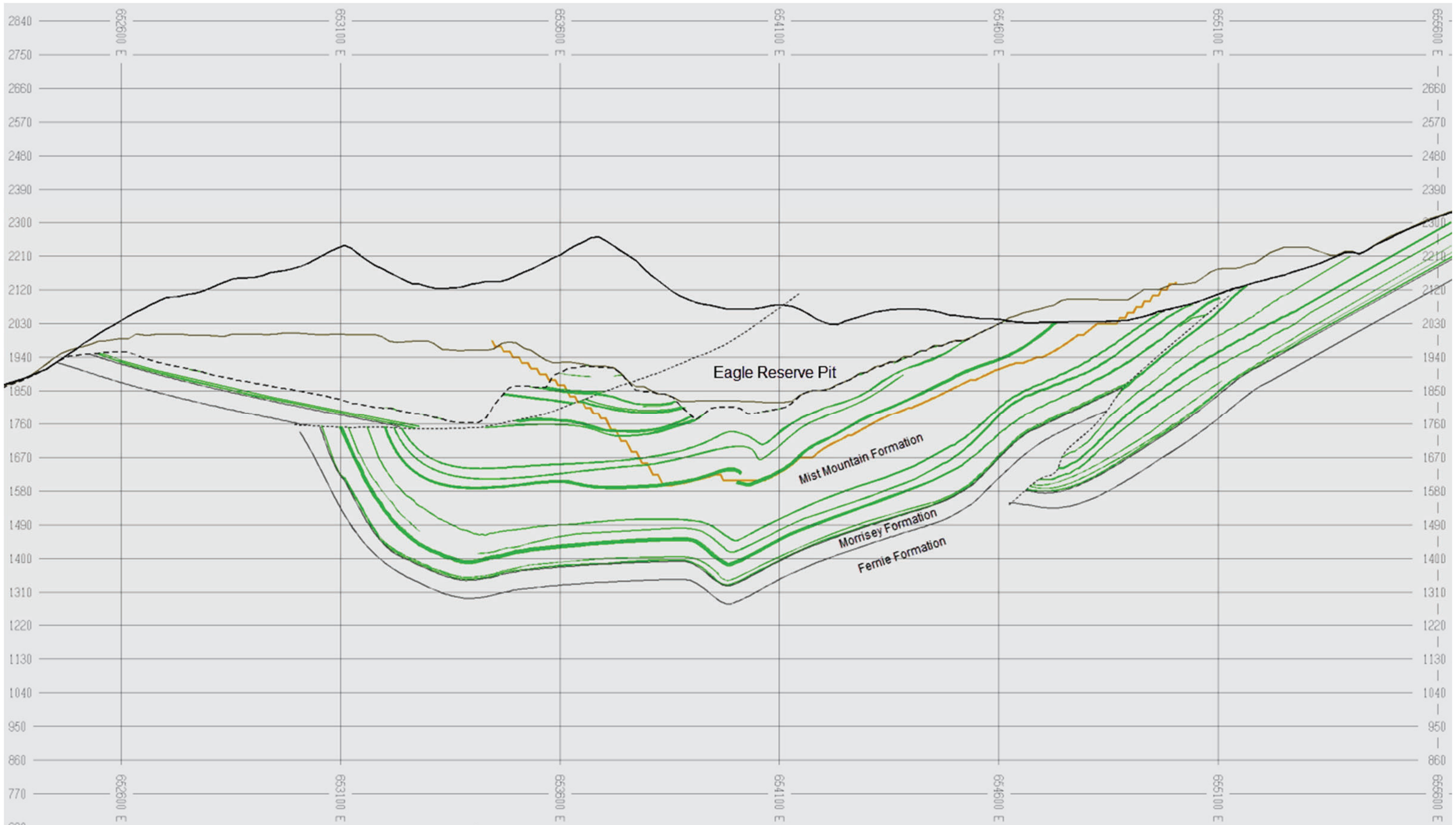

Figure 7-5: Eagle Pit Cross-Section B–B'

Note: Figure prepared by Teck, 2022. Section looks north–northwest. Grid units are in metres. Solid grey marks major formational contacts, dotted lines show faults, green is coal seams, brown is the current pit topography, solid black shows the original topography, yellow is the reserve pit shell, and dashed black line is the mined-out surface.

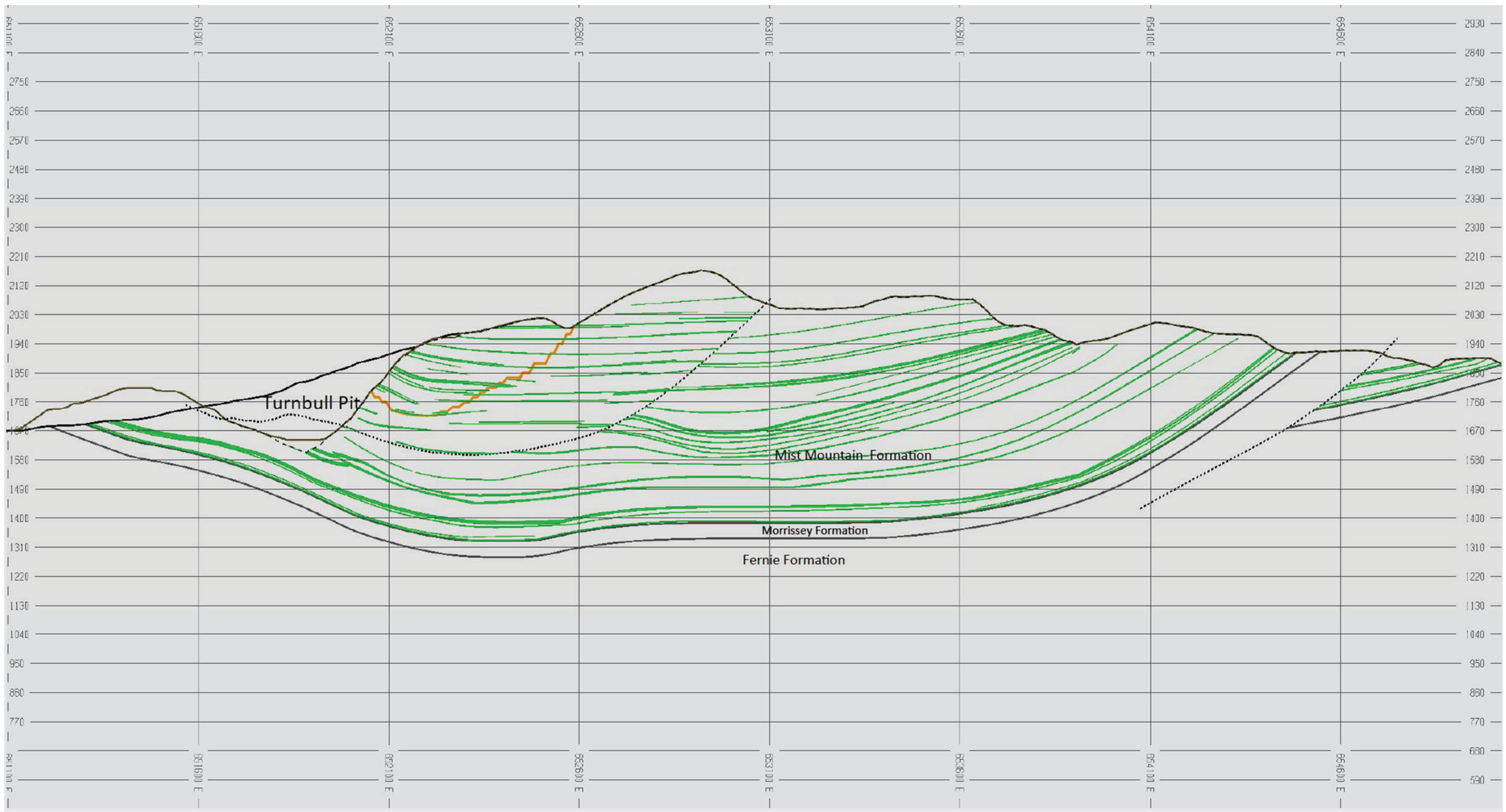

Figure 7-6: Turnbull Mountain Cross-Section C–C'

Note: Figure prepared by Teck, 2022. Section looks north–northwest. Grid units are in metres. Solid grey marks major formational contacts, dotted lines show faults, green is coal seams, brown is the current pit topography, solid black shows the original topography, yellow is the reserve pit shell, and dashed black line is the mined-out surface.

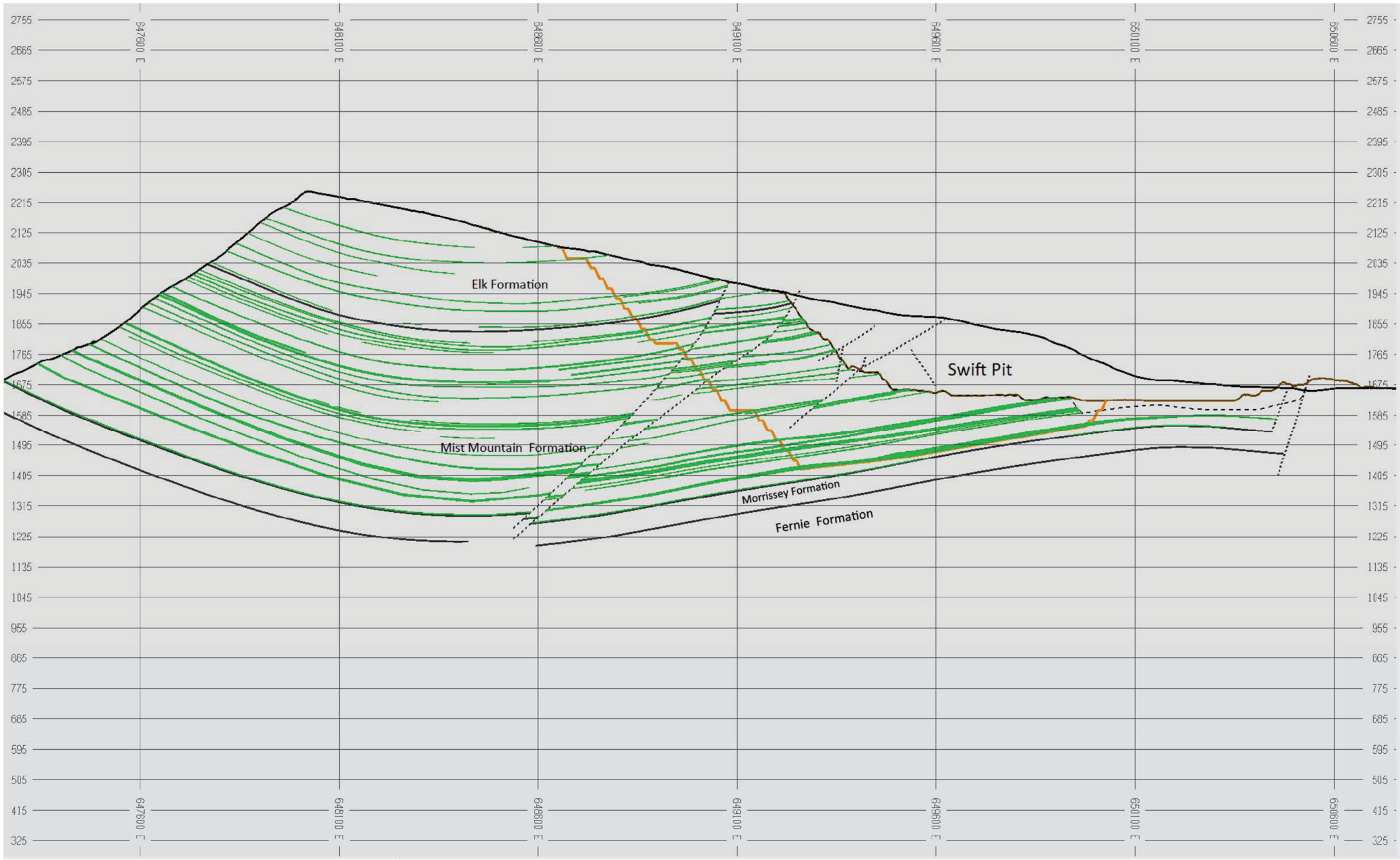

Figure 7-7: Swift Cross-Section D–D'

Note: Figure prepared by Teck, 2022. Section looks north–northwest. Grid units are in metres. Solid grey marks major formational contacts, dotted lines show faults, green is coal seams, brown is the current pit topography, solid black shows the original topography, yellow is the reserve pit shell, and dashed black line is the mined-out surface.

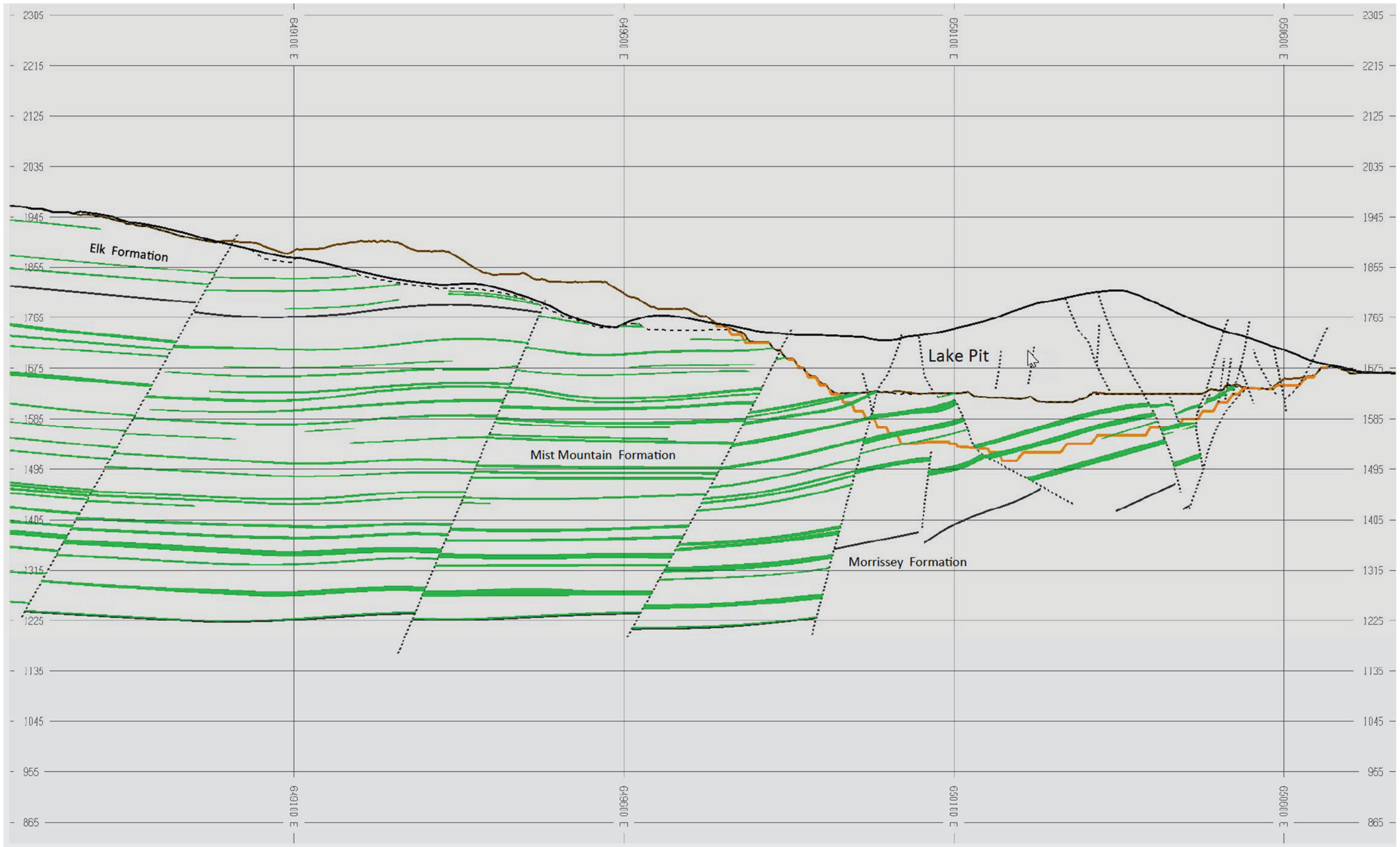

Figure 7-8: Lake Mountain Cross-Section E–E'

Note: Figure prepared by Teck, 2022. Section looks north–northwest. Grid units are in metres. Solid grey marks major formational contacts, dotted lines show faults, green is coal seams, brown is the current pit topography, solid black shows the original topography, yellow is the reserve pit shell, and dashed black line is the mined-out surface.

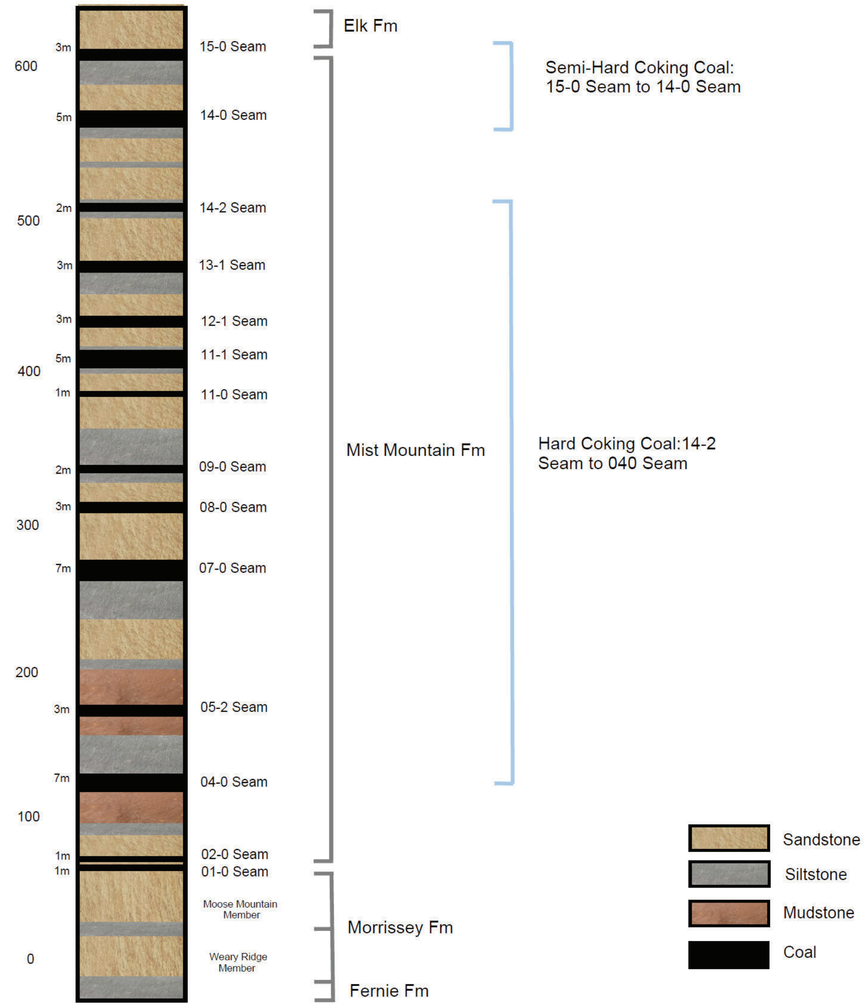

Figure 7-9: Coal Product by Seam, Fording River East, Eagle Pit Area

Note: Figure prepared by Teck, 2022.

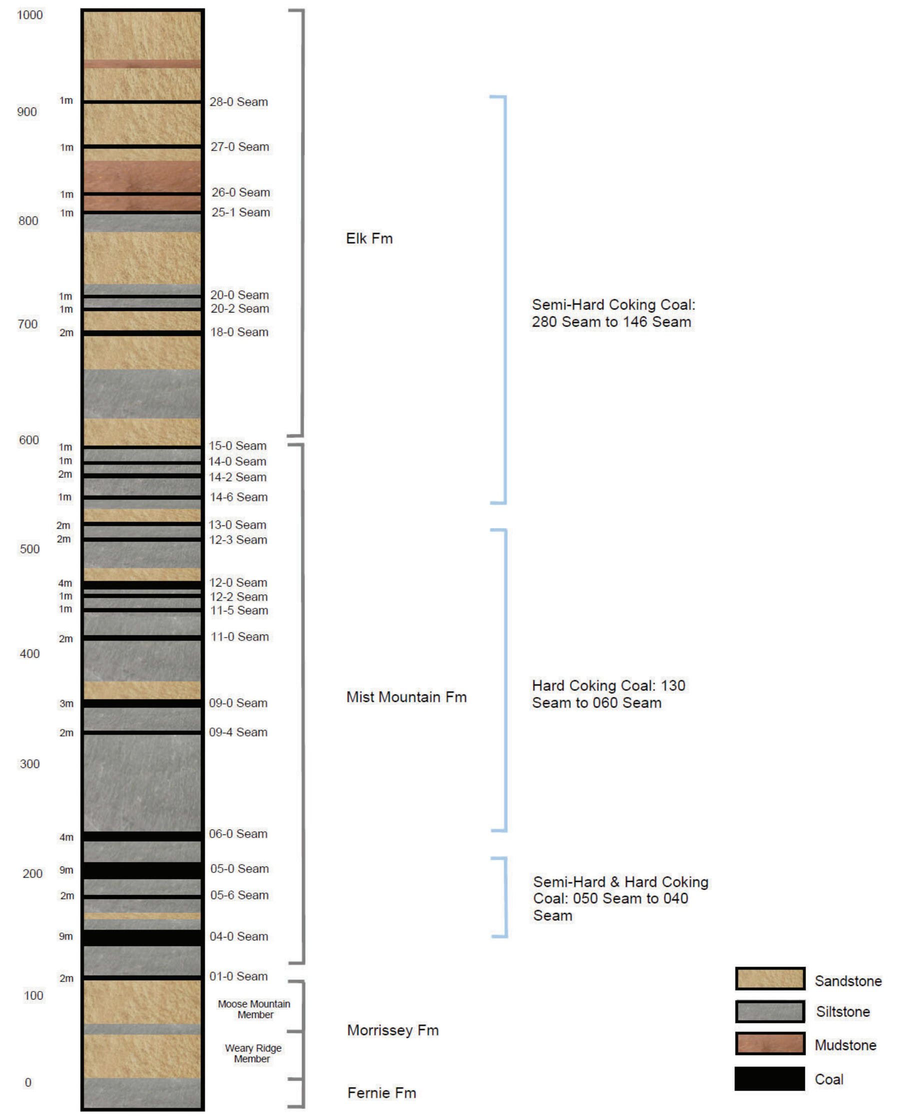

Figure 7-10: Coal Product by Seam, Fording River West, Swift Pit Area

Note: Figure prepared by Teck, 2022

8.0 DEPOSIT TYPES

8.1 Overview

Coal deposits originated as peat-forming materials that accumulated at or near their place of growth, within swamps and marshes occurring in deltaic, alluvial and lacustrine environments.

Coals that are suitable for the production of metallurgical coke are referred to as metallurgical coals. Coals that are used to fuel electric power generating plants are referred to as thermal coals. Most of Canada`s metallurgical coal deposits, including the FRO, are located in the Rocky Mountain Ranges of southeastern British Columbia and southwestern Alberta, and in the Inner Foothills Belt of northeastern British Columbia and west–central Alberta.

The ranks of coals, from those with the least carbon to those with the most carbon, are lignite, sub-bituminous, bituminous and anthracite. In addition to carbon, coals contain hydrogen, oxygen, nitrogen and varying amounts of sulphur. High-rank coals are high in carbon and therefore they have great heat value but are low in hydrogen and oxygen. Low-rank coals are low in carbon but high in hydrogen and oxygen content.

8.2 Deposit Type by Seam Geometry

Coal deposits are characterized by the Geological Survey of Canada as being of four deposit types, based on differences in seam geometry as a result of sedimentary processes during coal deposition, and subsequent deformation. The four types are low, moderate, complex and severe.

The coal measures in the Fording River area are classified as “complex”. Complex deposits have the following characteristics:

- Have been subjected to relatively high levels of tectonic deformation;
- Tight folds, some with steeply inclined or overturned limbs, may be present, and offsets by faults are common;
- Individual fault-bounded plates generally retain normal stratigraphic sequences, and seam thicknesses have only rarely been substantially modified from their pre-deformational thickness.

8.3 Deposit Type by Mining Method

The Geological Survey of Canada also classifies coal deposits on the basis of the probable extraction method that would be used to recover coal. Classifications include surface, underground, non-conventional, and sterilized. The coal measures in the Fording River area are classified as “surface”. Surface deposits are amenable to extraction by removal of overburden from the surface using truck/shovel, dragline or other surface mining techniques.

8.4 Comments on Section 8

The coal deposits of the FRO are typical of those found within the Canadian Inner Foothills and Rocky Mountain areas, and have been subjected to a relatively high tectonic deformation. In the opinion of the QP, exploration programs are appropriate for the geological complexity in the Project area.

9.0 EXPLORATION

9.1 Grids and Surveys

FRO uses the NAD83/UTM zone 11N grid system. The topography surface used to generate the Coal Reserve and Coal Resource estimate was built in MinePlan 3D software using aerial data collected from drone surveys that are flown in operating areas each month. The accuracy of this data is approximately ±5 cm.

9.2 Geological Mapping

Geological mapping was carried out by Canadian Pacific Oil and Gas prior to start up of mining in 1971.

Regional outcrop mapping, including FRO, commenced in the mid-1970s by the B.C. Ministry of Energy, Mines and Petroleum. The following is a summary list of this work that was primarily completed after to the start-up of mining at FRO in 1971

- Pearson, D.E. and Grieve, D.A., 1979: Elk Valley Coalfield (82J/2). Geological Fieldwork 1979, B.C. Ministry of Energy, Mines and Petroleum Resources, Paper 1980-1, pp. 91–96;
- Grieve, D.A. and Pearson, D.E., 1980: Geology and Rank Distribution of the Elk Valley Coalfield; in Geology in British Columbia 1977-1981, B.C. Ministry of Energy, Mines and Petroleum Resources, pp. 17–23;
- Grieve, D.A. and Pearson, D.E., 1982: Geology of the Greenhills Range, Elk Valley Coalfield; B.C. Ministry of Energy, Mines and Petroleum Resources, Preliminary Map 51;
- Grieve, D.A. and Price, R.A., 1987: Geological Setting of the South Half of the Elk Valley Coalfield; B.C. Ministry of Energy, Mines and Petroleum Resources, Preliminary Map 63.

In-pit geological observations and raw ash measurements are currently carried out on a daily basis by the Coal Quality Geologist/Engineer. Observations are recorded on daily coal notes packages for mine operations and past to modeling geologists for inclusion, when necessary, in the geological models. Information collected includes:

- Seam thicknesses;
- Waste rock splits;
- Significant structures;
- Coal type; metallurgical vs oxidized;

- Raw ash measurements of coal piles using ash probe

This information is used to minimize coal loss and dilution, so that no excess rock is added, and no economic coal is left behind.

9.3 Geochemical Sampling

Major seams were bulk-sampled using the adit method prior to and after commencement of mining. The adits were driven to obtain bulk samples for various analyses including quality parameters, carbonization and wash curve predictions for wash plant design.

Geochemical sampling consisting of outcrop, trench, and coal pile sampling is carried out, as required, at FRO to support daily operations, and these samples are not used to inform resource models.

Sampling for potentially acid generating (PAG) waste rock, when mining below the basal coal seam in Morrissey Formation, is collected from a representative portion of blasthole cuttings. The purpose is to delineate areas where PAG rock exists as it requires specific spoiling instructions. The analysis of PAG is completed by a "fizz test" using hydrochloric acid by Teck Coal's on-site laboratory at FRO. Additional selected analysis for "fizz test" and acid base accounting (ABA) is carried out by Bureau Veritas, Burnaby, BC, when required.

9.4 Geophysics

The downhole geophysics performed during logging is described in Section 10.

9.5 Petrology, Mineralogy, and Research Studies

Petrographic analysis is carried out, on an as-required basis, by an independent laboratory, typically David E. Pearson & Associates Ltd., located in Victoria, British Columbia.

9.6 Comments on Section 9

In the QP's opinion, the exploration programs completed to date were appropriate to the style of the deposit. Drill data supersedes the data collected during the pre-mining geochemical sampling campaigns.

10.0 DRILLING

10.1 Introduction

As of December 31, 2022, the Project database contained 5,800 drill holes (984,739 m), consisting of 5,066 reverse circulation (RC) drill holes (858,629 m), 290 core holes (79,649 m), 338 rotary holes (35,356 m), 22 drill holes classified as “other” (hammer, auger, sonic; 1,578 m) and 84 drill holes (9,527 m) completed for bulk sampling purposes.

A drill summary table is provided in Table 10-1 and Table 10-2. Collar locations are shown in Figure 10-1.

A subset of the drill hole database was used for building of the Fording River East and West models. The database cut off for the Fording River West (GROW) model was November 29, 2021. The database cut-off for the Fording River East (FROE) model was November 22, 2021. The data prior to cut-off were used to populate coal seam quality data for the 3D block model used in estimating Coal Resources and Coal Reserves. The drilling used in estimation is identified in Table 10-1.

Drill holes in the 3D block model were filtered from the Project database based on the following conditions:

- To ensure the same dataset was used to align the geology with the 2022 LOM plan;
- Model boundary limits;
- Data confidence;
- Drill holes without quality data (e.g., production holes).

10.2 Drill Methods

Exploration drilling is typically phased, as follows:

- Primary phase or step-out drilling for initial resource definition is conducted in areas that are outside of current mining areas, on which no or little previous exploration drilling activity has occurred. Drill hole depths are shallow to deep (200–700 m) and spaced at approximately 400–600 m;
- Follow-up drilling is used to assess the continuity of the coal seams, provide accurate correlations between the primary phase drill holes, supply additional coal quality information, and increase the confidence of the resource. This typically consists of a program of shallow to deep (200–700 m) RC holes spaced at 150–250 m intervals, depending on the anticipated structural complexity of the area;

Table 10-1: Drill Summary Table (RC, core, and rotary)

Year Range	Ownership	Area	RC		Core		Rotary	
			# Holes	Metres	# Holes	Metres	# Holes	Metres
Pre-2008	Pre-Teck	FRO East N–T, E, H	2,376	278,166	120	38,540	189	15,114
		FRO East S–C and B	341	92,850	10	240	10	4,638
		FRO West	935	100,909	67	14,569	139	15,604
		Subtotal	3,652	471,925	197	53,349	338	35,356
2009–database cut-off date	Teck Coal Limited	FRO East N–T, E, H	707	158,296	37	7,674		
		FRO East S–C and B	124	53,052	28	13,043		
		FRO West	513	159,026	19	3,559		
		Subtotal	1,344	370,374	84	24,276	0	0
Total Drilling used in Resource Estimation			***1,172***	***286,327***	***4,996***	***842,299***	***281***	***77,625***
Database cut-off date to December 31, 2022	Teck Coal Limited	FRO East N–T, E, H	31	4,712				
		FRO East S–C and B	6	2,317	9	2,024		
		FRO West	33	9,301				
		Subtotal	70	16,330	9	2,024	0	0
All Drilling			***1,334***	***324,799***	***5,066***	***858,629***	***290***	***79,649***

Note: See the database cut-off dates listed in Section 10.1. Rotary drilling includes rotary, singlewall rotary, and doublewall rotary types

Table 10-2: Drill Summary Table (other, bulk samples, totals)

Year Range	Ownership	Area	Other		Bulk Sample			Total Drilling Activity	
			# Holes	Metres	# Holes	Metres	# Bulk Samples	# Holes	Metres
Pre-2008	Pre-Teck	FRO East N–T, E, H	16	1,360	14	332	6	2,715	333,512
		FRO East S–C and B			7	639	12	368	98,367
		FRO West			8	58	8	1,149	131,140
		Subtotal	16	1,360	29	1,029	26	4,232	563,019
2009–database cut-off date	Teck Coal Limited	FRO East N–T, E, H	1	86	10	1,188	3	755	167,244
		FRO East S–C and B			4	588	13	156	66,683
		FRO West	5	132	29	5,152	59	566	167,869
		Subtotal	6	218	43	6,928	75	1,477	401,796
Total Drilling used in Resource Estimation			***25***	***3,255***	***22***	***1,578***	***72***	***7,957***	***101***
Database cut-off date to December 31, 2022	Teck Coal Limited	FRO East N–T, E, H						31	4,712
		FRO East S–C and B			10	1,034	10	25	5,375
		FRO West			2	536	5	35	9,837
		Subtotal	0	0	12	1,570	15	91	19,924
All Drilling			***22***	***1,578***	***84***	***9,527***	***116***	***5,800***	***984,739***

Notes: See the database cut-off dates listed in Section 10.1. “Other” includes unidentified type, sonic, auger, hammer. Bulk sampling includes all holes and meters associated with collecting bulk samples: LDC, LDRF, adit, bulk samples. Table excludes water wells (except if drilled through coal), trenches, SRF drilling, test pits, outcrop points, blastholes, production.

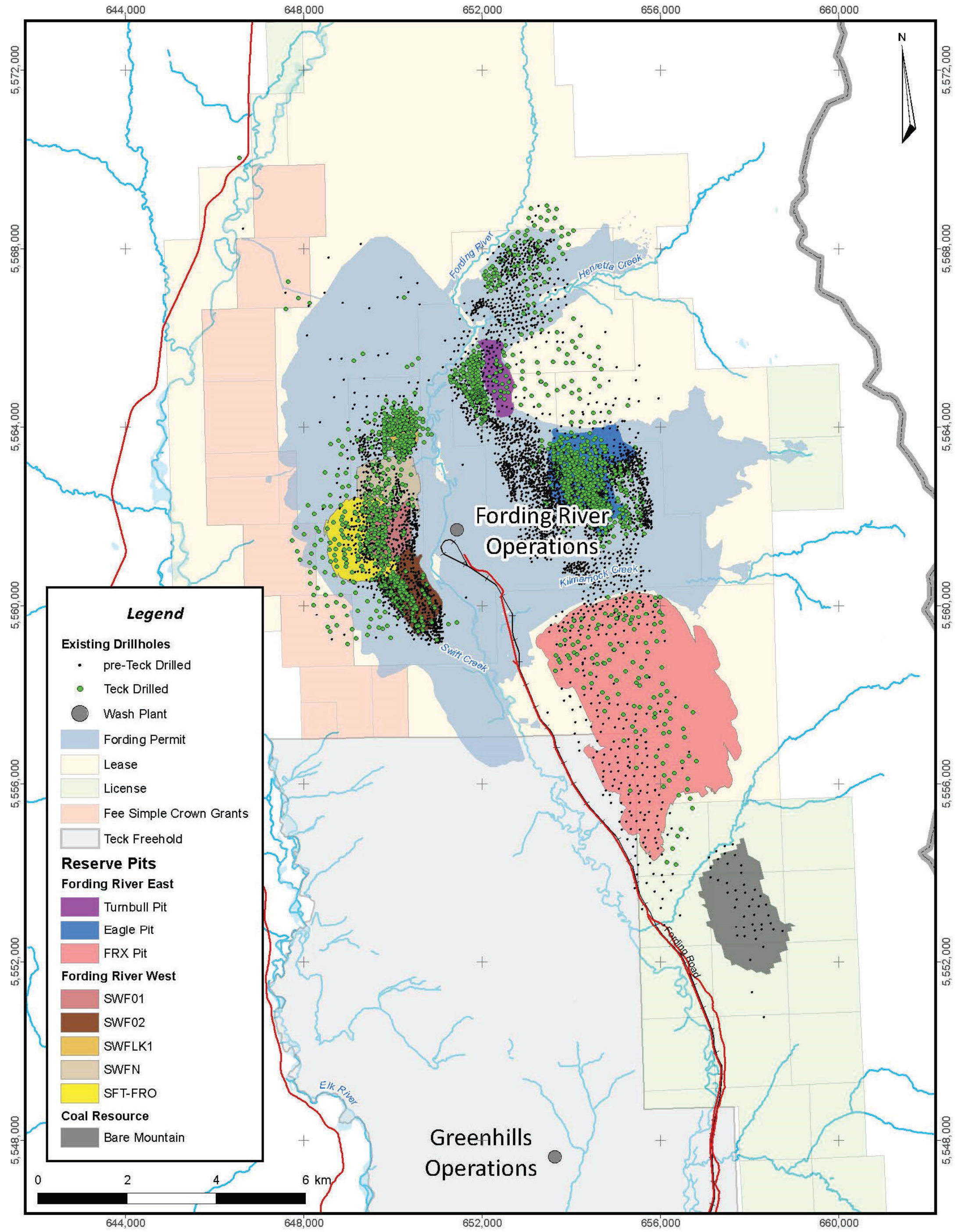

Figure 10-1: Drill Collar Location Plan

Note: Figure prepared by Teck, 2023.

- Infill drilling provides geological and insitu coal quality information at sufficient detail to allow completion of the final mine design. Infill drill holes are typically shallow to moderate in depth (100–400 m) and closely spaced at approximately 50–100 m, depending on the structural complexity.

In-pit drilling is conducted to provide detailed and accurate coal seam location and volume, insitu quality parameter data, and structural information for the next approximately 18–24 months of mining operations. The objective is to have drill holes intercepting the coal seam or seams at an approximate 75 m spacing along the strike of the seam.

Production drill test holes are selected according to the same criteria as the in-fill exploration holes, but these drill holes are typically designed to intersect the coal seam at 50 m spacing along the seam strike and between existing exploration holes. These holes are used for near-surface geological interpretation and coal volume to support short range plans.

Currently most of the exploration drilling is RC, with centre-sample return. Core drilling is carried out for mainly geotechnical purposes, however data from these holes is also used to inform the block model.

Large diameter reverse flood (LDRF) was used from 2008 to 2015 to collect bulk samples of seams for washability and coking characteristic analysis. The diameter of LDRF holes was approximately 16 inches. A hammer bit was used to ream the pilot hole to the top of the coal seam, at which point a mill-tooth bit was used to retrieve the sample consisting of variable size chips of coal. The depth for sample collection was limited to approximately 100 m for this sample recovery method. The LDRF drilling method produced bulk samples with sometimes variable coke quality and was replaced by LDC as the primary bulk sampling method.

From 2016 to present, bulk sampling has been carried out using large diameter core (LDC) drilling, which involves hammering with an 11-inch diameter drill bit, through the rock above the coal seam to be sampled. Once the coal is reached, the bit is changed to a 9-inch inside diameter bit and the coal is cored and recovered intact. Core is placed in core boxes with depth marker blocks added. The core is photographed, logged and a subsample is collected and sent to the FRO laboratory to confirm ash percentage. To achieve an approximate 600–800 kg clean coal sample, a minimum of 15 lineal metres of 9-inch core is collected, which sometimes involves drilling multiple holes approximately 5 m apart. The core constituting a sample is combined, homogenized, and analyzed at the Gwil Birtley Laboratory, prior to being dispatched to Hazen Research Inc. (Hazen) for washing, and then the clean coal concentrate is sent to Canadian Centre for Mineral and Energy Technology (Canmet) for carbonization and coke testing.

10.3 Logging and Handling Procedures

10.3.1 GEOLOGICAL LOGGING

Geological logging is done on all core samples collected from the LDC (9-inch core) and HQ (152 mm core) core drilling.

The information collected from the core logging includes:

- Lithology identification (coal and rock types) and characteristics;
- Recovery estimates;
- Seam quality sample collection;
- Structural identification;
- Detailed geotechnical information, when required.

The coal seam data are stored in an acQuire database and additional information such as the logs is stored in Excel spreadsheets.

10.3.2 GEOPHYSICAL LOGGING

FRO has a standardized practice for geophysical logging.

All exploration drill holes are geophysically logged, where possible, for gamma-neutron, gamma-density, and caliper. Downhole deviation is run on all drill holes that are >100 m in length. Resistivity logs are run if available from the contractor. Logs such as acoustic and optical televiewer and dipmeter are carried out if additional information is needed; typically, these are undertaken as required for geotechnical purposes. Selected production drill holes are geophysically logged by gamma-density.

Geophysical log data or recorded seam intervals from driller's reports can be used to determine seam intercepts. If geophysical logs are not available, the seam intervals from driller's reports are recorded in the geological database, however this information is not used in the resource model.

10.4 Recovery

Since 2010, the drill crew has been using a 325-mesh screen while recovering samples to maximize recovery. In the past coarser screens were used which resulted in greater sample loss.

Recoveries on RC samples are calculated in the acQuire database and are based on sample length, drill hole diameter and specific gravity of the sample.

10.5 Collar Surveys

Collar surveys are performed as follows:

- Production drill holes: All collar locations are surveyed with the onboard drill global positioning system (GPS) instrument, or less frequently collected with a real time kinetic (RTK) GPS Rover. Locations are automatically entered into the acQuire drill hole database;

- Exploration drill holes: All collar locations are surveyed in FRO UTM NAD 83 with an RTK GPS, and locations are entered into the acQuire drill hole database.

10.6 Down Hole Surveys

Down hole deviation surveys are completed as part of the borehole geophysical program if the drill holes are longer than 100 m. This is completed by a third-party contractor.

10.7 Drilling Since Database Close-Out Date

A total of 79 RC and core holes (18,354 m) have been completed since the database closeout dates and up to December 31, 2022 for Coal Resource estimation. Of this total, nine core drill holes were completed for geotechnical purposes but were sampled for quality when coal was present. A total of 12 LDC holes (1,570 m) were drilled to obtain samples for carbonization and coke testing.

The QP considers that this new drilling should have no material effect on the overall tonnage and coal quality estimates, but represents minor upside potential for Coal Resource estimation when incorporated into an updated model.

10.8 Sample Length/True Thickness

Seam true thickness is calculated based on drilled thickness, deviation surveys and dip information. On average, the true seam thickness is less than the drilled seam thickness, depending on the local orientation of the coal seam orientation and the angle of the drill hole.

10.9 Comments on Section 10

In the QP's opinion, the quantity and quality of the lithological, geotechnical, geophysical, collar and downhole survey data collected in the exploration, infill and production drill programs completed are sufficient to support Coal Resource and Coal Reserve estimation.

There are no material drilling, sampling or recovery factors known to the QP that could materially impact the accuracy and reliability of the results, and therefore impact the Coal Resource and Coal Reserve estimation.

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Sampling Methods

11.1.1 RC DRILL HOLES

The RC sampling protocol consists of the following:

- When the coal seam is reached, down feed must be stopped immediately, and the depth recorded to the nearest 0.1 m. This depth is the start point for the first 0.5 m sample;
- Drill for 0.5 m, and then stop. All material collected on the screen from the 0.5 m interval is to be bagged, and the sample tagged;
- When the bottom of the coal seam is reached, a final 1.0 m interval below the bottom of the coal seam is drilled. This material is bagged and analyzed regardless of its composition (i.e. shale, siltstone, and sandstone).

The 0.5 m interval, called a ply sample, is the maximum sample interval. The samples are collected on a 325 mesh screen on a portable shaker table and bagged in cloth bags.

11.1.2 CORE HOLES

Core is downloaded from the core tube into a core tray lined with plastic. Footage markers are placed in the core box, at the end of each cored interval. Core boxes are lidded, then transferred to the logging and sampling facility.

During the logging process, care is taken in handling the core, in particular, washing the drill mud from the core so as to keep disturbance to a minimum. Samples are taken, usually in 1 m increments for each coal seam, and placed into plastic or cloth bags, prior to shipment to the laboratory.

11.1.3 BULK SAMPLES

Bulk samples are required to obtain washability and carbonization data for coal seams from new mining areas to understand processing characteristics and coke quality to reduce risk for customers.

Bulk samples can be collected via test pit, or adit sampling, or from LDC and LDRF drilling. The objective is to obtain an unoxidized, representative sample of the coal seam in a manner that best reflects the method by which the seam will be mined. If the seam is to be mined by open pit truck/shovel, all rock partings of ≤0.7 m vertical thickness are included in the sample and thicker partings are excluded. With LDC drilling, a minimum of 15 lineal metres of core are extracted for washability analyses and to achieve a clean coal sample of approximately size of 600–800 kgs.

Historically bulk sampling, most pre-1980, was carried out using samples collected by adits or test pitting. Since Teck Coal assumed ownership in 2008, samples have been obtained by LDRF (2008–2015) and LDC (2016 to Report effective date) drilling.

11.1.4 POTENTIALLY ACID GENERATING MATERIAL SAMPLING

Every three years, samples are collected throughout the stratigraphic sequence during exploration programs and sent to an external laboratory for fizz testing and ABA (acid base accounting). During mining, samples are taken of blasthole cuttings of waste rock stratigraphically below the basal seam to delineate areas containing potentially acid-generating (PAG) and non-acid generating (NAG) materials. PAG material must be separately stored. Samples are typically 1–5 kg in size. Samples are analyzed by fizz test at the FRO laboratory, and selected samples are sent to an external laboratory for fizz testing and ABA.

11.2 Density Determinations

Density estimation and assignment to the model blocks from drill holes is completed using a specific gravity formula. This formula estimates the specific gravity (SG) value of coal based on the ash value results received from the laboratory.

The formula has been verified for use through analysis of samples by the FRO laboratory by a water displacement method. Actual SG values determined in the laboratory are compared against the SG curve determined using the SG formula.

SGs are calculated on a block-by-block basis using interpolated ash values. The SG calculation is:

- SG = 211.43 ÷ (172.08 – ash%).

11.3 Analytical and Test Laboratories

The laboratories used over the life of the operations, where known, are summarized in Table 11-1. The laboratories follow ASTM procedures for coal analysis.

PAG samples are analyzed for fizz testing at the Teck Coal FRO laboratory and ABA analysis is carried out at Bureau Veritas. The QA/QC on PAG samples is undertaken at Bureau Veritas.

11.4 Sample Preparation and Analysis

Collection of 0.5 m ply samples is carried out by the drill contractor and samples are delivered directly to the secure sample storage area adjacent the Teck Coal FRO laboratory. Samples are securely stored until either all analyses performed by the FRO laboratory are complete, or the samples have been shipped to an external laboratory.

All sample collection and processing are regularly evaluated by Teck Coal geologists.

Table 11-1: Analytical and Test Laboratories, Geophysical Logging Contractors

Company	Laboratory	Purpose	Independent	Accreditations
Canadian Pacific Oil and Gas Ltd.	Teck Coal Limited FRO Laboratory (operations laboratory)	Analysis		
	Roke Oil Enterprises Ltd (location not known)	Geophysical downhole logging	Yes	
CanPac Minerals Ltd.	Teck Coal Limited FRO Laboratory	Analysis		
	Roke Oil Enterprises Ltd	Geophysical downhole logging	Yes	
Fording Coal Limited	Teck Coal Limited FRO Laboratory	Analysis		
	Pearson Coal Petrography and Associates (Victoria, BC	Petrography including oxidation and maceral identification and Sapozhnikov testing	Yes	ISO & ASTM
	Roke Oil Enterprises Ltd	Geophysical downhole logging	Yes	
	Widco (location unknown)	Geophysical downhole logging	Yes	
	Century Wireline Services Ltd (Red Deer, AB)	Geophysical downhole logging	Yes	
Elk Valley Coal Corporation	Teck Coal Limited FRO Laboratory	Analysis		
	GWIL Industries Birtley Coal and Mineral Testing (Calgary, AB)	Proximate, rheology, MAA, trace element, oxidation, sizing, attrition testing	Yes	ASTM
	Pearson coal Petrography and Associates	Petrography including oxidation and maceral identification and Sapozhnikov testing	Yes	ISO & ASTM
	NRCan Canmet Energy (Ottawa, ON)	Carbonization and coke testing incl coke petrography	Yes	ASTM
	Century Wireline Services Ltd	Geophysical downhole logging	Yes	
Teck Coal Limited	Teck Coal Limited FRO Laboratory	Analysis	No	
	GWIL Industries Birtley Coal and Mineral Testing	Proximate, rheology, MAA, trace element, oxidation, sizing, attrition testing	Yes	ASTM
	Loring Laboratories Ltd (Calgary, AB)	Proximate, rheology, MAA, trace element, oxidation, sizing	Yes	ISO

Company	Laboratory	Purpose	Independent	Accreditations
	Pearson Coal Petrography and Associates	Petrography including oxidation and maceral identification and Sapozhnikov testing	Yes	ISO & ASTM
	NRCan Canmet Energy	Carbonization and coke testing incl coke petrography	Yes	ASTM
	Hazen Research Inc. (Golden, CO)	Pilot scale coal washing, proximate analysis	Yes	ISO
	SGS Canada Inc. (Delta BC)	Trace element and Sapozhnikov testing	Yes	ISO ASTM
	Bureau Veritas (Burnaby, BC)	PAG testing, ABA, trace elements waste	Yes	ISO
	Century Wireline Services Ltd	Geophysical downhole logging	Yes	

Note: MAA = mineral ash analysis. Sapozhnikov testing is used to determine the plastometric indices of bituminous coal.

11.4.1 SAMPLE PREPARATION

RC and drill core samples are delivered to the FRO laboratory by the drill crew and the laboratory personnel process the samples in the following manner:

- Sample intercepts were recorded from the sample tag in each bag. Each increment is weighed and recorded. These incremental weights are used to calculate sample recovery;
- Samples were coned and quartered, and an appropriate size sample is extracted. The sample size is dependent on the number of analyses that will be requested. This is weighed wet, dried and weighed again to calculate moisture;
- The samples are riffled to quarter allotments. One quarter is pulverized. Ash content and free swelling index (FSI) values are determined;
- The remainder of the quartered sample was retained in case additional analysis was required.

Sample preparation closely follows ISO and ASTM procedures.

Sample recovery is a determining factor as to whether the sample is representative of the seam. Samples with >20% recovery are assayed depending on the seam thickness and quality of recovery.

Composite samples are selected by a qualified FRO geologist and are prepared by the FRO laboratory. Choosing composite samples is based on the ash content of each 0.5 m ply sample coupled with a gamma-density geophysical signature that indicates coal. Two or more ply samples are selected that comprise a composite of an individual coal seam. The composite is prepared by the FRO laboratory and sent to a secondary laboratory and floated at 1.50 SG to create a clean coal sample. The clean coal sample is then sent back to the FRO laboratory for analysis.

11.4.2 ANALYSIS

The 0.5 m ply samples are analyzed for raw ash and selectively by FSI by the Teck Coal FRO laboratory.

Raw composite samples are analyzed for proximate (moisture, ash, volatiles, fixed carbon), FSI, and sulphur by the FRO laboratory.

Clean composite samples are analyzed on an air-dried basis for proximate, FSI, sulphur, and phosphorus (P_2O_5), by the FRO laboratory. Where required, rheology is completed at the EVO laboratory. Mineral ash analysis, fluorine, and any specialized analysis are performed at external laboratories, principally at Gwil Birtley.

Each clean coal sample is split and prepped and sent for petrographic analysis at Pearson and Associates, Victoria, BC.

11.5 Quality Assurance and Quality Control

Formal and documented QA/QC, including umpire assay, started at FRO in 2012. Prior to 2012, geologists performed visual sense checks versus typical assay values for a quality parameter from a given seam.

RC sample collection is audited at least once a week during active RC drilling programs, using a pre-set checklist. A digital record of the audit is retained as part of the quality assurance and quality control (QA/QC) documentation.

A total of 2% (1:50) of the 0.5 m ply samples are sent to a secondary laboratory for check sample analysis for ash. All raw composite samples are split by the FRO laboratory and the originals are assayed at the FRO laboratory. The split portion of the raw composite samples are sent to a secondary laboratory for mini-washing at 1.50 SG and check (umpire) sample analysis. The secondary laboratory analyzes 10% (minimum 5%) of the raw and clean samples. All clean samples are sent to the FRO laboratory for analysis as described in Section 11.4.2.

Check sample assay results from the secondary (umpire) laboratory are plotted against assay results from the FRO laboratory using the acQuire database. Normal quality parameters compared include ash, volatile matter, FSI, sulphur, and P_2O_5. If assay result comparisons fall outside the normal range for a given parameter, a re-run is requested to the FRO laboratory. As required, FRO geologists, will meet with the FRO laboratory personnel upon completion of the check samples and assessment of the QA/QC results, to review the results of the QA/QC program for exploration coal samples.

Additional QA/QC checks include:

- The weight of ply samples, as reported from the laboratory, is uploaded into acQuire. The weight of each sample, in combination with the ash of each sample and the drill hole diameter, are used to calculate the theoretical recovery of each interval within acQuire;
- The ash content of 0.5 m intervals is assessed against the geophysical density logs of the RC drill hole. The "Depth Adjustment Tool" is used to view variable adjustment % and guide decisions on compositing. If the ply sample ash does on align with the geophysical density log, a re-run of the ply is requested;
- The ash content of raw composites is compared against the calculated average raw ash content of the ply samples that comprised the composite, which checks for obvious errors. If there is an obvious error, re-runs are requested.

11.6 Databases

Drill hole collar data, associated seam intercepts, seam quality and deviation survey data are stored in the acQuire database.

Data are loaded directly from geophysical logging software, survey instruments, or using set importing templates that load the assay data directly from MS Excel worksheets sent by the laboratories. This minimizes any transcription errors.

As data returns from the laboratory, before it is loaded to acQuire, a visual check is done of the qualities to ensure no obvious outliers are present. If there is something unusual, a request is sent to the laboratory for re-analysis. Random visual checks are then completed on screen comparing the laboratory data to the data imported into acQuire.

The database is regularly backed up, using Teck IT protocols. All original logs and laboratory reports are stored securely on the network. Some of the historical assay data, when available, has been digitally scanned and is stored on the secure network.

11.7 Sample Security

Special security methods for the shipping and storage of coal samples are not commonly employed, as coal is a relatively low-value bulk commodity.

11.8 Sample Storage

Raw and clean coal samples are kept by the analytical laboratories for a minimum of one year.

11.9 Comments on Section 11

There are no material issues with the sample preparation, security, and analytical procedures known to the QP that could materially impact the accuracy and reliability of the results, and therefore impact the Coal Resource and Coal Reserve estimation.

12.0 DATA VERIFICATION

12.1 Internal Data Verification

The processes used to ensure accurate geological data and repeatability between experienced geologists that compile the data are documented in standard practices and procedures at FRO. The data verification begins with a check of the actual collar coordinates of each hole against the planned hole location. The planned hole locations are laid out and the as-drilled hole locations are recorded with high precision GPS equipment in the field. Downhole deviation data for drill holes is collected by Century Wireline Services, the service provider normally contracted to perform the geophysical logging. Downhole deviation is checked visually against surrounding hole traces as a validation step when storing the data in the acQuire database.

Once the as-drilled collar location and drill hole trace are verified by the geologist, the logs are picked following set protocols. The rules regarding how a gamma-density log has the seam contacts picked are governed by documentation and training to ensure that all geologists are picking logs in the same manner. Once the coal contacts are picked on each geophysical log, the seam intercepts entered into the acQuire database by the geologist in charge of the exploration program.

The Senior Geologist, Supervisor or Senior Geologist reviews and approves the coal contact picks for accuracy. As the geological interpretation is updated based on new drill hole data, it is also verified by the Senior Geologist, Supervisor or nominee.

Analytical data from the laboratory are evaluated for anomalies and atypical results. Any data that appear erroneous or outside an acceptable range are reanalyzed by the laboratory to check to determine the correct assay.

An important step in data accuracy and repeatability is that the laboratories and the geologists use the same procedures for each exploration drill hole. There is also a document that sets out all of the steps required to build a geological model, to ensure separate model builds are accurate and comparable.

Once per year, as a minimum, Teck Coal geologists visit the primary laboratory and observe aspects of sample handling and sample analysis.

12.2 External Data Verification

12.2.1 MARSTON (2011)

Marston Canada Ltd. (Marston) undertook a data review in 2011A total of 20 representative exploration drill hole files, on four random cross-section lines, were selected to evaluate the quality of the geological data generated and the extent to which exploration information was interpreted and recorded from downhole sources. A random selection of geophysically-logged blast hole files was also examined.

Marston concluded that there were no material issues with the information examined.

12.2.2 SNOWDEN (2011)

Snowden Group reviewed the drilling, sampling, sample delivery and on-site laboratory in October 2011. There was no specific data verification that was carried out by Snowden.

The drill hole database was in the final stages of being migrated to acQuire, which Snowden considered to be industry best practices. Snowden recommended an internal audit be carried out to confirm the veracity of the data in the new acQuire database. They also recommended that FRO institute a more robust QAQC program.

12.2.3 Golder (2021)

Golder reviewed the following parameters under the geology part of the audit:

- Geological management
- Geological data collection
- Suitability of drill hole and sample database
- QA/QC
- Geological and mineralization interpretation
- Coal Resource estimate

No non-compliances or critical issues were identified during the audit process. Twenty-five sub-parameters audited were considered strengths, meeting or exceeding industry standards. There were five sub-parameters identified that were considered potential weaknesses.

12.3 Verification Performed by Qualified Person

The QP has worked in the Elk Valley coal fields for the last 11 years, nine of which were at FRO. He has been involved in and supervised exploration programs, database management, geological modeling, and annual estimation of Coal Resources and Coal Reserves, all of which have required the QP to undertake elements of data verification.

The QP was personally involved, during 2012, in instituting a QA/QC system for FRO, and was responsible for increasing the type and amount of validation completed during the modeling process. He has validated his own geological models, and peer reviewed models completed by others. The QP has checked and reviewed seam picks in drill logs against those intervals noted in the database. He has also performed checks on older drill data by comparing the historical drill logs to nearby newer logs and assessing the fit of the older data with the current geological interpretation.

The QP has frequent discussions with other team members in relation to drill program execution and results, geological interpretations, sampling, data collection, QA/QC, database upload and checking, and geological modelling.

As a result of this data verification, the QP concludes that the Project data and database are acceptable for use in Coal Resource and Coal Reserve estimation, and can be used to support mine planning.

12.4 Comments on Section 12

The checks performed by Teck and FRO staff, including the continuous QA/QC checks conducted by Project geologists on the assay data and geological data are in line with, or above, industry standards for data verification. These checks have identified no material issues with the data or the Project database.

The QP has performed site visits, as outlined in Section 2.4. The QP personally performed data verification checks as set out in Section 12.3.

As a result of the data verification, the QP concludes that the Project data and database are acceptable for use in Coal Resource and Coal Reserve estimation, and can be used to support mine planning.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

The bituminous coal seams at FRO are blended to produce coal with consistent quality. Blending is accomplished at the breaker by combining coal from pit as well as from several stockpiles. Each stockpile contains coal from different seams with similar quality. Oxidized coal is reported in the block model, but is treated as waste in the LOM plans. The LOM plan includes the use of coal of selected quality by block as it is released during the production schedule. This determines the overall quality of the products, and to account for changing quality of the coal as the mine advances. Items covered in the LOM include:

- Annual metallurgical coal release by pit;
- Annual metallurgical coal release by seam;
- Metallurgical coal produced for sale;
- Plant yield;
- Fines percent of blend;
- Release and resulting blended component qualities.

13.2 Metallurgical Testwork

In addition to coal quality data collected from the RC samples as discussed in Section 11 as part of new information collected for future pits, carbonization data are also required to support economic extraction.

13.2.1 BULK SAMPLES

Bulk samples are required to obtain washability and carbonization data for coal seams from new mining areas to confirm projections. LDC and LDRF drilling methods are generally used to obtain bulk coal samples. The objective, for either method, is to obtain an unoxidized, representative sample of the coal seam in a manner that best reflects the method by which the seam will be mined; i.e. if the seam is to be mined by open pit truck/shovel methods, all rock partings of 0.70 m vertical thickness or thinner are included in the sample. Thicker partings are excluded. A minimum sample size of approximately 1 t is required for pilot plant washability evaluations.

13.2.2 WASHABILITY TESTS

The collected bulk samples are sent to Gwil Industries for raw coal analysis and for washability testing by the float sink method, which is used to define the setpoints for the pilot plant. Selected homogenized raw coal samples are sent to Hazen for pilot plant washing. The pilot plant circuits are set up to simulate the circuitry used in the FRO process plant. Results from the pilot plant washability can therefore be used to anticipate how the coal seam will be washed by the FRO plant.

Other tests generally associated with the pilot plant washability tests can include:

- Screen analysis;
- Float sink analysis;
- Froth flotation test;
- Australian wet attrition test;
- Proximate analysis;
- Ultimate analysis;
- Mineral analysis of ash;
- Rheological tests.

13.2.3 CARBONIZATION TESTS

A representative sample (approximately 500 kg) of clean coal from pilot scale washing is sent to a coal a metallurgical facility (CANMET) for moveable wall coke oven carbonization and coke tests. Results from the carbonization and coke tests are used primarily for marketing purposes.

Other tests generally associated with the moveable wall coke oven test include:

- Proximate analysis of feed coal and resultant coke;
- Gieseler fluidity;
- Dilatation and contraction;
- Ash fusion temperature;
- Gross calorific value;
- Coal pulverization sieve analysis;
- Grindability;
- Petrographic analysis;

- Screen analysis of coke;
- ASTM coke tumbler test;
- JIS coke tumbler test;
- Apparent specific gravity of coke;
- Coke reactivity index (CRI);
- Coke strength after reaction (CSR).

13.3 Recovery Estimates

Predicted yields are modeled using the plant feed ash, which is calculated from breaker delivered ash, breaker reject ash and breaker reject volume. The following formula is used:

- Plant Yield = 114.56 - (1.69 * plant feed ash).

This relationship between the plant feed ash and plant yield is periodically evaluated to ensure a close match to actual plant performance.

Figure 13-1 shows the plant yield forecast for the life-of-mine (LOM) plan, and Figure 13-2 shows the clean coal production forecast.

13.4 Blending Considerations

Volatile matter, rank, and ash contents are the main items monitored in support of blending.

13.5 Metallurgical Variability

Metallurgical testing frequency and type are representative of individual seams on the basis of rank, coking properties and volume, and are done over a range of locations for each seam to ensure that sufficient sample variability is captured and is available for modeling purposes.

13.6 Deleterious Elements

Since 2015, trace elements that are evaluated for metallurgical coal samples include phosphorus, fluorine, sulphur, chlorine, arsenic, and mercury.

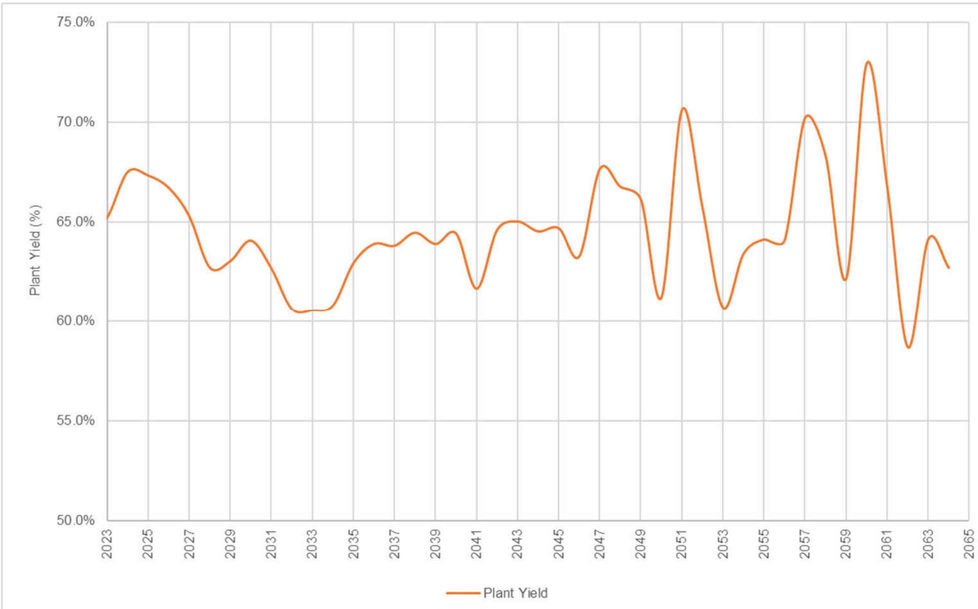

Figure 13-1: Plant Yield Forecast

Note: Figure prepared by Teck, 2023.

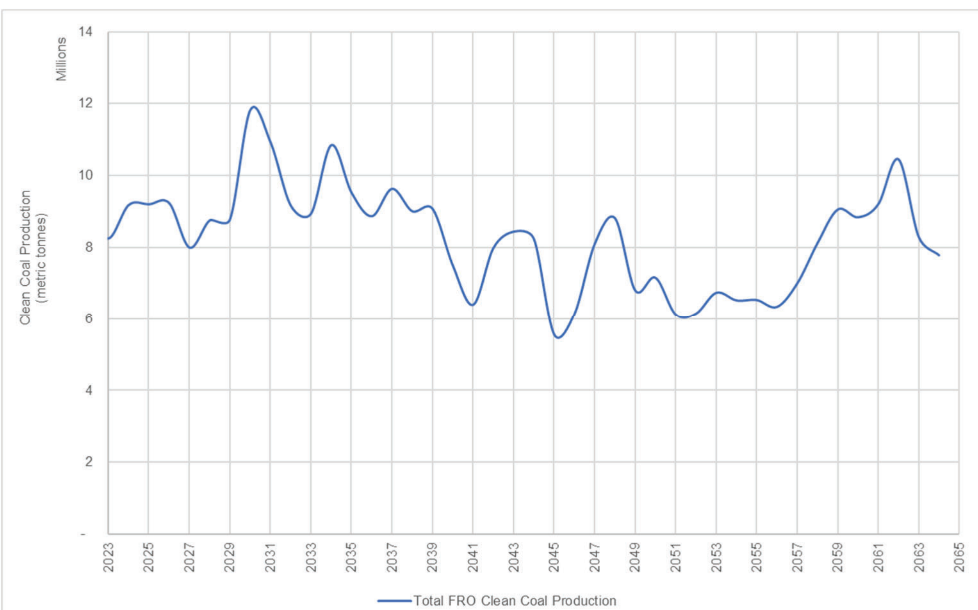

Figure 13-2 Clean Coal Production Forecast

Note: Figure prepared by Teck, 2023.

13.7 Comments on Section 13

FRO performs a reconciliation of the modeled coal volume, ash content delivered to the wash plant and predicted yield based on an ash/yield curve. Reconciliations are performed on a quarterly basis and accumulated on an annual basis. Improvement actions, when necessary, are implemented based on the results from the reconciliation process.

In the QP's opinion, FRO has taken adequate measures to assess the processing and metallurgical characteristics of the coal seams and blends. The data is successfully used for blending, plant processing and marketing strategies and is used in the Coal Resources and Coal Reserves.

14.0 MINERAL RESOURCE ESTIMATES

14.1 Introduction

Coal Resources were estimated for the Fording River East and West areas. Coal Resources were converted to Coal Reserves for the Fording River East and West areas. Coal Resources are reported in this section exclusive of those Coal Resources converted to Coal Reserves.

Modelling is conducted using the commercially available MinePlan 3D software. The acQuire database cut off for the Fording River West (GROW) model was November 29, 2021. The database cut off for the Fording River East (FROE) model was November 22, 2021. Estimation is supported by 5,709 drill holes that were completed prior to database cut-offs.

The FRO Coal Resource estimates are based primarily on the results of RC drilling samples, and downhole geophysical gamma and density logs. The 3D model is built using the drill intervals of complete seams from the acQuire database. The seam dips and true thicknesses are calculated based on the drill hole data, and the seam polygons are subsequently generated.

14.2 Geological Models

The geological model was constructed using coal depth, thickness and quality data.

14.2.1 THICKNESS

Geological models were prepared from interpolated thickness estimations, when possible, for each coal seam. Thickness estimations are based on drill hole intercepts from the top and bottom of each seam. The resource estimate was based on a minimum true thickness of 0.9 m for a coal composite. This estimate was used to define potentially surface-mineable coal in the individual seams.

FRO geologists evaluate gamma, density and caliper geophysical logs. The coal seam tops and bottoms are measured primarily from the gamma density log and secondarily from the gamma neutron logs. Gamma density log coal seam thicknesses generally closely represent the mineable coal seam thickness in the mine at the location of the drill hole. The geophysical log measurements of the coal depths are accepted as being correct, as is standard in the industry, and are used as the basis for the coal seam thickness in the geological model.

14.2.2 ASH CONTENT

Composite quality results are entered into the acQuire database to provide an indicative value of the in-situ ash content of the coal seam, as defined by the geophysical logs. The composite sample raw quality results are matched to the geophysical log and corrected to true seam thickness (depth adjusted) in the acQuire database to be interpolated in the 3D block model. The ash content of the coal composite sample is applied to the geophysical log seam thickness and used to model the in-situ coal ash.

14.2.3 TOPOGRAPHY, WASTE AND SEAM MODELS

The 3D block models are based on volumes; the “Topo%” model item stores the volume percentage of the model block existing below topography.

Separate model items list up to three waste types and two coal seams per block, as either metallurgical (met) or oxidized or weathered metallurgical coal (oxide). These items are stored as volumetric proportions of each block.

Additional volumetric items that account for waste above or in front of a coal seam, rehandle material and unconsolidated overburden may also be included; as a quality assurance check, the sum of all the volumetric items in a block must never exceed the Topo% item.

Additional model items for each coal parameter are:

- Seam name;
- Raw ash;
- Raw SG;
- Raw VM
- Run-of-mine (ROM) ash;
- ROM SG;
- Plant yield
- FSI
- Moisture
- Fixed carbon
- Clean sulphur;
- Clean phosphorus;
- Petrographic parameters including Romax

Where quality information cannot be interpolated from drill composites, block data are filled based on average statistics. Blocks filled based with average statistics for a parameter are normally well outside reserve shells.

14.3 Density Assignment

Computer model block-specific SG values were used for the conversion of volumes of in-place coal to tonnes using the FRO laboratory-validated specific gravity formula (refer to Section 11.2).

14.4 Estimation/Interpolation Methods

The true thicknesses of the seams are calculated using the dip of the coal seams and the length of the coal composite. True thickness is interpolated into the 3D block model using an inverse distance weighting to the second power (ID2) approach. Other interpolation parameters include a circular search method, and a search distance of 2,500 m. This procedure is completed using the "True Thickness Tools" package in MinePlan3D software.

Coal quality data are interpolated into the 3D block model using an inverse distance weighing method. The search ellipse distance for each quality criterion is between 500–800 m, and the estimation method power is between 1.5–1.7.

Drill spacing data are provided in Table 14-1. In the QP's opinion, the data spacing is acceptable.

14.5 Block Model Validation

The annual LOM build steps and validation are documented in an internal report. During all models builds validation steps are undertaken throughout the process. At the end of each model build a selection of blocks are chosen to check model outputs versus block file dumps and manual calculations of model items.

The 3D block model is peer reviewed by the Geology and Database QP prior to releasing for mine planning.

14.6 Classification of Coal Resources

The process of classification is completed in the computer model. Model blocks that contain coal are initially assigned a classification below the level of Inferred. Ellipsoid search envelopes with the distance from the centroid along the three axes equal to the distances are used to determine if the block is to be classified as Measured or Indicated.

A minimum of three drill hole intercepts through an individual coal seam must fall within the associated ellipsoid to classify the block. The block is assigned the highest level of assurance that is supported by the data.

Criteria are as summarized in Table 14-2.

Table 14-1: Drill Spacing

Zone/Area	Average Drill Hole Spacing (m)
FRX	299
Eagle	89
Turnbull	147
Henretta	214
Swift	175

Table 14-2: Confidence Classification Criteria

Confidence Category	Search Distance (m)			Minimum # of Data Points
	Model - X	Model- Y	Model - Z	
Measured	200	150	200	3
Indicated	400	300	400	3
Inferred	800	600	800	3

14.7 Reasonable Prospects of Eventual Economic Extraction

The depth limit was based on a pit shell with an incremental strip ratio limit of 15:1 m^3/t of raw coal. Input costs to the pit shell, and therefore the break-even stripping ratio cut-off calculation are provided in Table 14-3.

Depending on area and orientation, geotechnical assumptions for pit slope angles at FRO can range from 40–54.5º (overall highwall angles). For Coal Resource estimation, a generalized pit slope angle of 45º is used.

14.8 Coal Resource Statement

Coal Resources are reported using the 2014 CIM Definition Standards, and are reported insitu, exclusive of Coal Reserves. Coal Resources that are not Coal Reserves do not have demonstrated economic viability.

The QP for the estimate is Mr. Peter Leriche, P.Geo., a Teck employee. Coal Resources are tabulated in Table 14-4 and have an effective date of December 31, 2022.

Table 14-3: Inputs to Break-Even Stripping Ratio Cut-off

Item	Unit	Values
Selling price	US$/t	145
Waste mining costs	$/bcm	4.06
Coal mining costs	$/bcm	6.06
Processing cost	$/t	12.44
General and administrative costs	$/t	13.42
Other (includes operating leases, royalties, distribution, sustaining capital, reclamation)	$/t	62.64
Recommended BESR	bcmw/mtrc	14.0

Notes: bcm = bank cubic metre; bcmw = bank cubic metre waste; mtrc = tonne raw coal.

Table 14-4: Coal Resource Statement

Pit/Area	Coal Type	Measured (raw coal; t x 1,000)	Indicated (raw coal; t x 1,000)	Total Measured and Indicated (raw coal; t x 1,000)	Inferred (raw coal; t x 1,000)
Swift	Metallurgical	139,897	282,194	422,091	200,155
Operations East (Eagle 6, Turnbull West	Metallurgical	271,571	323,352	594,923	132,584
Castle	Metallurgical	135,829	290,882	426,711	146,841
Bare	Metallurgical	19,819	51,709	71,528	17,165
Totals	***Metallurgical***	***567,116***	***948,137***	***1,515,253***	***496,745***

Notes to Accompany Coal Resource Table:

1. The Qualified Person for the resource estimate is Mr. Peter Leriche, P.Geo., a Teck employee.
2. Coal Resources have been classified using the 2014 CIM Definition Standards. Coal Resources are reported insitu, exclusive of those Coal Resources that have been modified to Coal Reserves. Coal Resources that are not Coal Reserves do not have demonstrated economic viability. The Coal Resources have an effective date of December 31, 2022.
3. The Coal Resources are reported using the following assumptions: average selling price of US$145/t, waste mining cost of $4.06/bcm, coal mining cost of $6.06/bcm; processing cost of $12.44/t, general and administrative cost of $13.42/t, other costs of $62.64/t, and break-even strip ratio of 14 bcmw/mtrc. For Coal Resource estimation, a generalized pit slope angle of 45º is assumed.
4. All estimates have been rounded. Totals may not sum due to rounding.

14.9 Factors That May Affect the Coal Resource Estimate

Areas of uncertainty that may materially impact the Coal Resource estimates include:

- Changes to long-term coal price assumptions;
- Changes in geological interpretations including the size, shape and distribution of interpreted seams and waste;
- Changes to the input assumptions used to derive the open pit outlines used to constrain the estimate;
- Variations in geotechnical, hydrogeological and mining assumptions;
- Changes to environmental, permitting and social license assumptions.

14.10 Comments on Section 14

The QP is of the opinion that Coal Resources were estimated using industry-accepted practices, and conform to the 2014 CIM Definition Standards. Coal Resources are based on open pit mining assumptions.

The Coal Resources are forward-looking information and actual results may vary.

There are no other environmental, legal, title, taxation, socioeconomic, marketing, political or other relevant factors known to the QP that would materially affect the estimation of Coal Resources that are not discussed in this Report.

There is upside potential for the Project if some or all of the Measured and Indicated Coal Resources can be converted to Coal Reserves, and if some or all of the Inferred Coal Resources can be converted to higher-confidence categories and subsequently to Coal Reserves.

15.0 MINERAL RESERVE ESTIMATES

15.1 Introduction

Coal Reserves are reported for the Eagle, Swift, Turnbull West and Castle (FRX) areas.

Coal Reserves are based on pit designs and a long-range mine development plan prepared by FRO. Ultimate pit shells were created using long-term product coal pricing and US dollar to Canadian dollar exchange rate estimates. The pits are designed using pit shells derived from Lerchs-Grossman algorithm using representative costs with consideration of mining schedule.

Waste haulage, waste storage and geotechnical issues were considered in the final pit designs. Any Inferred Coal Resources in the pit shell are treated as waste and are not included in the Coal Reserves.

Three non-coal surfaces are incorporated into the model:

- Current topography;
- Mined-out surface
- Original ground.

These surfaces are used to ensure that previously-mined areas of coal and overburden are properly accounted for. All material between the topography and the mined-out surface is coded as rehandle and reported with a swell factor of 30%. Data for these surfaces come from monthly surveys and periodic flyovers.

Coal Resources are converted to Coal Reserves using the assumptions discussed in the following sub-sections, and the mining methods outlined in Section 16.

15.2 Topography

The current topographic surface is used during the block model generation to identify valid blocks, assigned to existing blocks as Topo%, representing the total volume percentage of any given block remaining. The coal blocks are then rationalized so that the total volume is equal to Topo% multiplied by the block volume to ensure no block contains more coal than volumetrically allowed. If there is a discrepancy once waste is added into the block, the waste volume is adjusted until the total material volume matches Topo%. Coal volume is not adjusted.

15.3 Mining Parameters

Coal volumes used for reserves reporting are adjusted for mining factors such as loss and dilution as well as additional losses due to mining in highly-faulted zones. These factors are mostly derived from operating experience at FRO.

Mining parameters for Coal Reserve estimation are as follows:

- Minimum mineable seam thickness: 0.9 m;
- Minimum removable parting thickness: 0.70 m;
- Dilution thickness: Fording River East (FROE) = 0.45 m; Fording River West (GROW) = 0.6 m;
- Coal loss thickness: Fording River East (FROE) = 0.15 m; Fording River West (GROW) = 0.3 m;
- Rock dilution ash: 74.9%;
- Rock dilution SG: 2.18;
- Parting dilution ash: 70%.

Additional seam discounting can be applied around faults or certain thin seams.

SG values for coal are based on empirical formulas, validated over the history of mining at FRO. SG converts modelled coal volumes to weight. To estimate the weight for reference point reporting of reserves, clean coal product, a plant yield factor is used, whereby the yield is a ratio of the weight of coal product exiting the process plant over the weight of coal to enter (or delivered to) the process plant. Yield is based on a delivered ash relationship which is derived from historical plant performance. Clean coal quality information interpolated is as follows:

- Clean moisture [CMOI];
- Clean VM [CVM];
- Clean fixed carbon [CFC];
- Clean sulphur [CSUL];
- Clean FSI [CFSI];
- Clean phosphorus [%P].

With the exception of the clean (product) coal tonnes, the coal tonnage figures, and ash content are estimated in the model on an air-dried moisture content basis. They are not converted to an as-received moisture content basis during the modelling process used to determine in-situ and run-of-mine (ROM or delivered) coal. This procedure allows for the use of the FRO regression factors for project plant yield. Regressions are based on ROM tonnes and ash content, both expressed on an air-dried moisture content basis, and the regression curves account for additional moisture in the clean (product) coal.

With a clean strip ratio for the Coal Reserve of 10.8 bcm waste/clean tonne coal, 3.8 billion bcm of waste must be mined.

Pits are typically designed with the following design factors, unless specific geotechnical criteria are required:

- Wall face angle: 65°.
- Catch bench width: 9.5 m;
- Inter-ramp angle (single bench): 42.3°;
- Inter-ramp angle (double bench): 49.6°;
- Waste dump angle: 37°;
- Haul road width: 54.5 m;
- Bench height: 15 m;
- Haul road grade: 9% average.

15.4 Coal Reserve Statement

Coal Reserves are an estimate of the saleable coal product. The reference point is the exit point of the coal product from the processing plant. Coal Reserves are reported using the 2014 CIM Definition Standards.

The QP for the estimate is Mr. Paul Michaud, P.Eng., a Teck employee. Coal Reserves are tabulated in Table 15-1 and have an effective date of December 31, 2022.

Table 15-1: Coal Reserves Statement

	Coal Type	Proven (clean coal; t x 1,000)	Probable (clean coal; t x 1,000)	Total Reserve (clean coal; t x 1,000)
Eagle	Metallurgical	13,270	54	13,324
Turnbull West	Metallurgical	—	6,655	6,655
Castle	Metallurgical	—	242,913	242,913
Swift	Metallurgical	89,460	851	90,311
Total	***Metallurgical***	***102,730***	***250,473***	***353,203***

Notes to Accompany Coal Reserves Table:

1. The Qualified Person for the reserves estimate is Mr. Paul Michaud, P.Eng., a Teck employee.
2. Coal Reserves have been classified using the 2014 CIM Definition Standards. The reference point is the exit point of the coal product from the processing plant. The Coal Reserves have an effective date of December 31, 2022.
3. The Coal Reserves are reported using the following assumptions: 2022 LOM mining schedule, average selling price of US$145/t, average mining and processing costs of $95.23/t, general and administrative costs of $13.42/t, average other operating costs of $6.94/t, minimum mineable seam thickness of 0.9 m; minimum removable parting thickness of 0.70 m; dilution thickness of 0.45–0.6 m; coal loss thickness of 0.15–0.3 m; rock dilution ash of 74.9%; rock dilution specific gravity of 2.18; and parting dilution ash of 70%. Geotechnical assumptions use pit slope angles that range from 40–54.5º (overall highwall angles). More complex criteria are used for footwall slopes that are structure specific. Yield is a function of feed ash and is therefore seam dependent.
4. All estimates have been rounded. Totals may not sum due to rounding.

15.5 Factors That May Affect the Coal Reserve Estimate

Areas of uncertainty that may materially impact the Coal Reserve estimates include:

- Changes to long-term coal price assumptions;
- Changes in geological interpretations including the size, shape and distribution of interpreted seams and waste;
- Changes in local interpretations of seam geometry, fault geometry and seam continuity;
- Changes to the input assumptions used to derive the open pit outlines used to constrain the estimate;
- Variations in geotechnical, hydrogeological and mining assumptions;
- Changes to environmental, permitting and social license assumptions.

15.6 Comments on Section 15

The QP is of the opinion that Coal Reserves were estimated using industry-accepted practices, and conform to the 2014 CIM Definition Standards. Coal Reserves are based on open pit mining.

The Coal Reserves are forward-looking information and actual results may vary.

There are no other environmental, legal, title, taxation, socioeconomic, marketing, political or other relevant factors known to the QP that would materially affect the estimation of Coal Reserves that are not discussed in this Report.

16.0 MINING METHODS

16.1 Introduction

The mining operations use conventional truck-and-shovel methods. As a result of delivery requirements and varying coal seam qualities it is necessary to have multiple coal seams exposed at any time.

FRO currently produces coal from six active pit phases (Swift 1A, Swift Lake Mountain, Swift 2N, Swift 2S, Eagle Pushback, Eagle West 2) using open-pit coal mining methods, with primary waste stripping and coal mining completed by shovels and rear dump haul trucks. An additional 25 phases (four in Swift pit, four in Eagle pit, 16 in Castle and one in Turnbull West) are planned. The locations of the phases are shown in Figure 16-1 and Figure 16-2.

16.2 Geotechnical Considerations

Geotechnical investigation programs are conducted to support stability assessments throughout the different design model phases. These investigation programs are informed by industry standard guidance. These programs generally consist of:

- Core drilling to characterize the rock type and collect samples for laboratory testing;
- Reverse circulation drilling to identify the location of the coal seams and interburden;
- Test pits to characterize the overburden soils, identify the depth of bedrock, and to collect samples for laboratory testing.

All geotechnical investigation holes and select geological exploration holes are surveyed with optical and acoustic televiewer, to identify structural discontinuities and orientation. Additionally, select holes have instrumentation installed to measure pore pressures, and/or the performance of the facility during the execution phase.

All these investigation and monitoring methods inform the resource model, structural model, hydrogeological model, and material strength values.

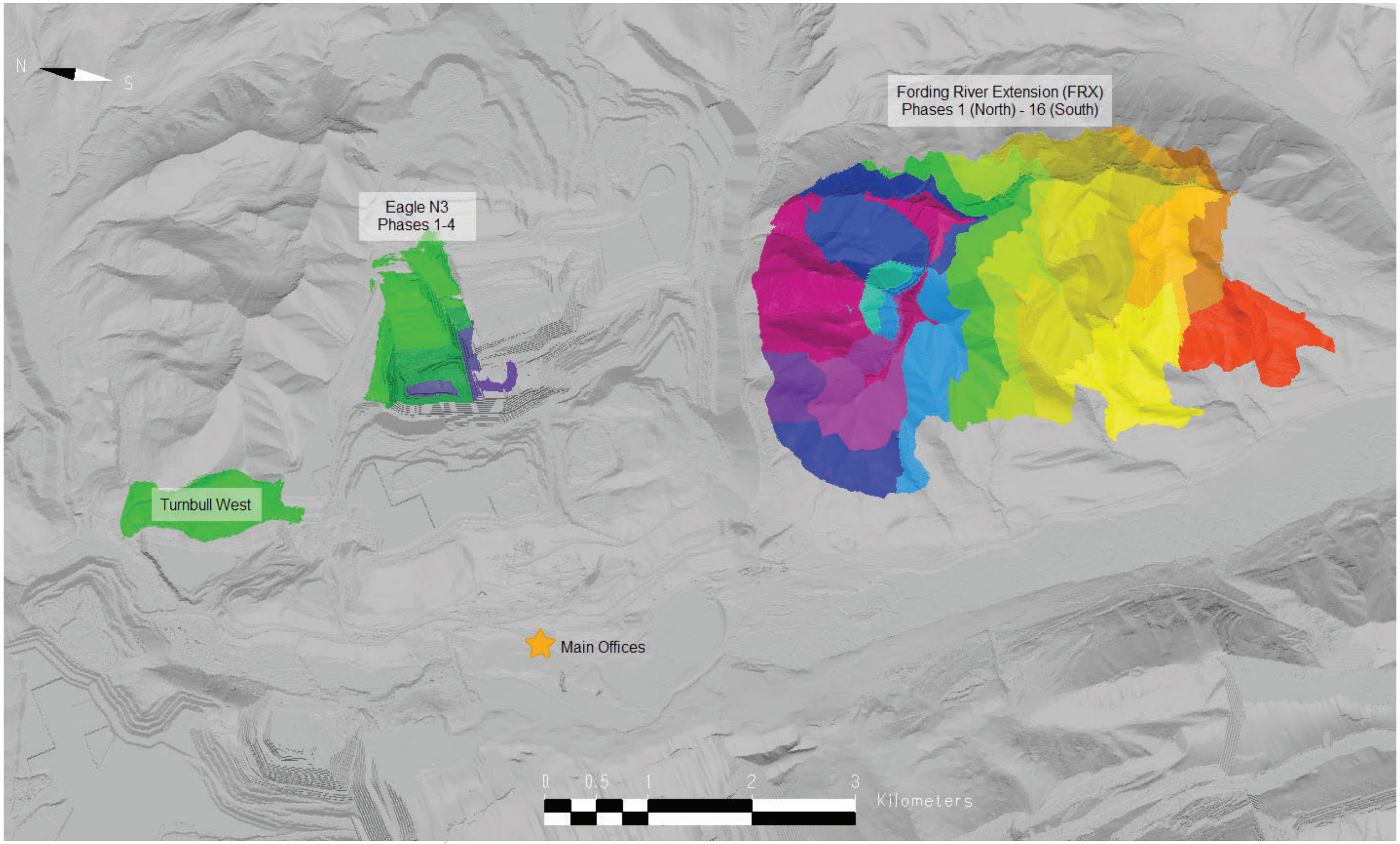

Figure 16-1: Pit Phases East

Note: Figure prepared by Teck, 2023.

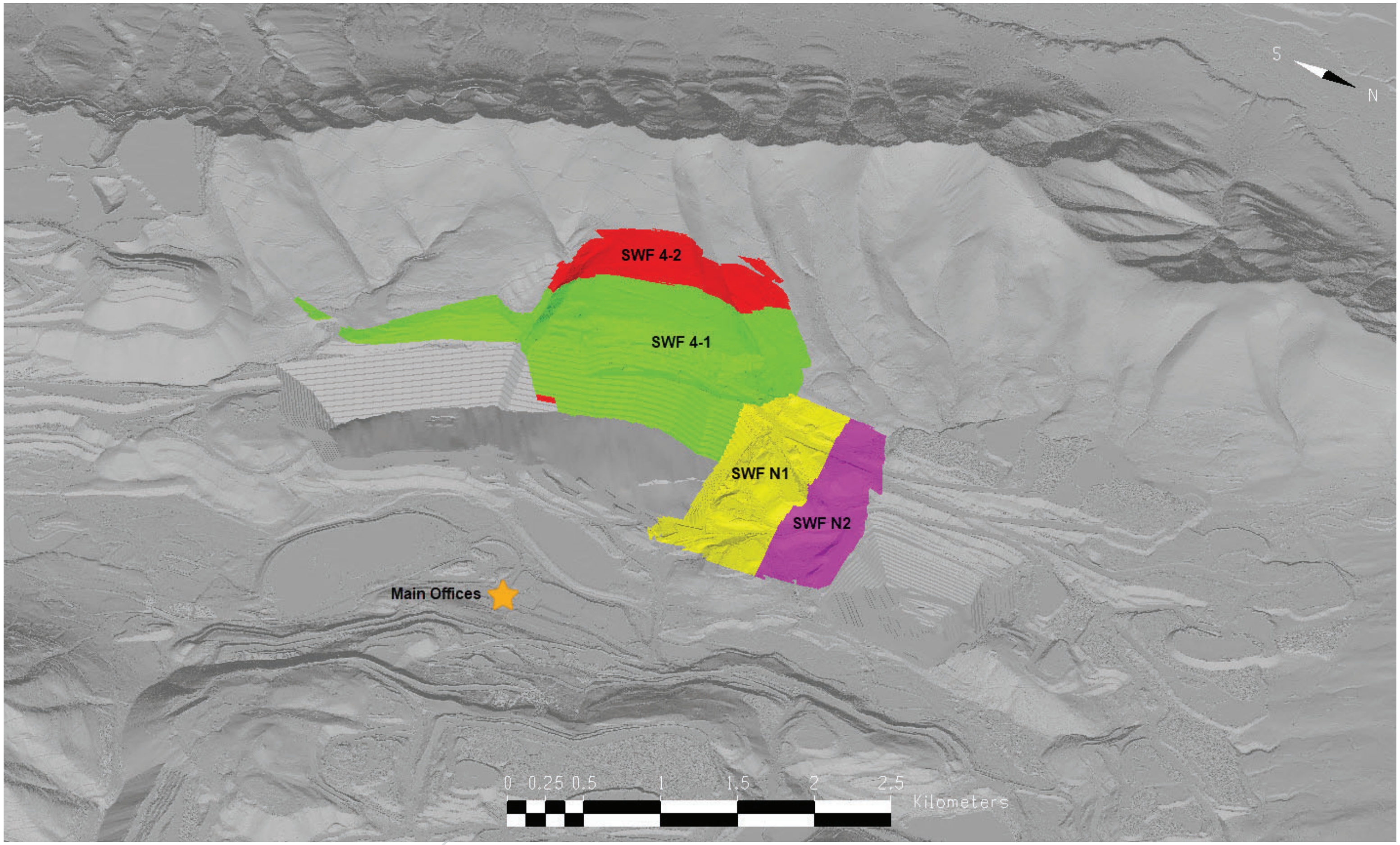

Figure 16-2: Pit Phases West

Note: Figure prepared by Teck, 2023.

The following design criteria is generalized, each area has been assessed geotechnically and has specific set of standards that are followed based on multiple factors including bedding angle, rock type and faulting:

- The Eagle pit designs typically use bench heights of 15 m with a 65º face angle. The wall in Eagle is typically double-benched, with 11.5 m wide safety benches, resulting in an overall wall angle of 49.6º;
- The Swift pit designs typically use bench heights of 15 m with a 65º face angle except for Swift Lake Mountain, which uses same bench heights but with a 70º face angle due to the rock characteristics in that area. In the Swift Phases the wall is double-benched, with 10 m safety benches, resulting in an overall wall angle of 51º. In Swift Lake Mountain the walls are single benched with 12.5 m safety benches and an overall wall angle of 40º;
- Turnbull West (TBW) pit design uses bench height of 15 m but designed to be double benched with a 11m safety bench every 2 benches (30 m) and 65º face angle. This results in an overall wall angle of 51.5º;
- Castle pit design uses bench height of 15 m but designed to be double benched with a 12 m safety bench every two benches (30 m) and 65º face angle. This results in an overall wall angle of 48º.

Walls set in the footwall side of the pit vary in criteria across the mine property depending on bedding angle and localized structure.

Where walls come into contact with rehandle, a 13 m berm is left, and the rehandle is sloped up at 37º. Spoils are built with a swell factor of 1.3, and inter-bench angles that vary from 20–37º, depending on configuration and reclamation requirements.

Waste dump piles are typically built in two different construction methods:

- Top down: these dumps are dumped from high elevation and are designed to have a 37º face from crest to toe.
- Bottom up: these dumps are dumped in lifts from bottom of the valley up. Designs for these types of spoils use a spoil face angle of 37º, 11 m safety bench every 15 m for an overall angle of 26º.

Pit walls and spoils are monitored with a combination of prisms, GPS units, radar, wireline monitors, and piezometers. These systems are linked to near real time data collection and analysis software that has the capability to sound an alarm when thresholds have been exceeded.

16.3 Hydrological and Hydrogeological Considerations

The Mine Water Management Plans outline how pumping activities are managed to minimize impacts to water quality and quantity while maintaining proper function associated water infrastructure. The purpose of the Mine Water Management Plans is to satisfy regulatory requirements under the *Environmental*

Management Act (EMA) Permits 424 and 107517, Water Sustainability Act Approvals A4-7511 and A4-7132, and the Health, Safety and Reclamation Code.

Teck actively manages water within the pits throughout the year by dewatering with the use of surface and shallow well pumps via pipelines to water management infrastructure (refer to discussion in Section 18.6). The pumped water is authorized for use on site for industrial purpose such as dust suppression, truck washing or coal processing. As per the Mine Water Management Plan, consumption of mine influenced water sources are prioritized by site to reduce consumption of clean water after sources. Pit dewatering water is also authorized for discharge to the receiving environment, pending the water quality.

The discharge strategy outlined below is used when pit water is to be released to the receiving environment. It consists of the following four steps:

- Initially characterizing the quality of the water to be discharged;
- Establishing that the water scheduled for discharge is not acutely toxic to aquatic life;
- Determining acceptable discharge rates using a mass balance approach
- Monitoring during discharge to:
  - Continue to characterize the quality of the water being discharged;
  - Identify what, if any, change to water quality is occurring in the receiving environment and if detectable changes are consistent with expectations

Steps 1 and 2 are one-time activities that are undertaken prior to the initial discharge of pit water to the receiving environment. Steps 3 and 4 are intended to be iterative, with information collected from on-going monitoring influencing the rates of discharge over time.

16.4 Mine Design and Mining Sequence

A Lerch-Grossman based analysis of the block model provides a starting point for the pit design process. Using this method, a series of pit shells are produced, and an optimal pit shell is determined for the ultimate pit design that forms the basis of the LOM plan. Areas where the pit design differs from the initial shell can be due to geotechnical constraints or where mining outside the pit shell limits is required to provide access to the pits. Any additional waste is included in the overall strip ratio and economics. The review of the design indicates that the phased pit designs align well to the optimum shell generated and neither the updates to the geology or economics significantly alter the design.

Electric cable-shovels are utilized to load overburden and interburden waste into a mixed fleet of 364 t, 290 t and 227 t capacity end dump trucks, exposing the steeply-dipping coal seams in a series of benches.

Before loading, the waste is subject to drilling and blasting, which fragments the rock so that it can be dug by the shovels. Mine waste is backfilled into mined out pits whenever practical and to external spoils as required. The coal is loaded by front-end loaders, which receive assistance from bulldozers that push the coal into piles on the bench. The coal is delivered to a stockpile by the breaker by large haul trucks, where it is fed to a breaker then transported by conveyor to the processing plant.

The completed pits and spoils are reclaimed in a manner that fulfills requirements set out in the granted mining permits.

16.5 Spoils

Teck uses the following terminology for spoils:

- In-pit spoils is where waste rock is placed in a mined-out pit. They are also referred to as “backfill spoils” because the waste rock is used to fill in the previously mined out area;
- Ex-pit spoils are spoils where waste rock is placed on original ground.

In-pit spoils are designed at 37º, leaving approximately 10 m of catchment every 30 m when above roads.

Ex-pit spoils are typically designed in lifts using an overall slope angle of 26–37º. The locations of the current ex-pit spoils are included in Section 18.

The spoil designs consider disturbance to natural topography and final reclamation requirements, as well as incorporating geotechnical and environmental aspects. Environmental considerations make allowances for re-sloping, buffer zones offset from watercourses, wildlife corridors, and drainage patterns to minimize leaching of elements of concern. Where feasible, water diversions are incorporated into spoil designs to divert clean water around the spoils.

16.6 Production Plan

The Coal Reserves support a mine life to 2064. The coal production plan includes coal from FRO being produced at GHO and coal from GHO being produced at FRO. This is possible due to the proximity of the two mine sites and is done in a manner which optimizes production and coal quality needs by each site.

16.7 Blasting and Explosives

Drilling is currently done with electric drills that use 311 mm diameter bits. Holes are drilled vertically. Normally, drilling is designed to blast one bench (15 m) at a time.

Drilling is completed with offset patterns from bench to bench so that there is no potential to drill into previous bench bootlegs that may exist. Coal seam locations are determined as the machine drills each hole. This information is used to design explosive charges for each hole.

Hole spacing and burden dimensions are designed to provide the necessary explosive energy to break the rock sufficiently so that it can be dug productively and at the same time minimize coal seam disturbance.

A pattern consists of a block of multiple holes. Once a pattern is drilled and the holes have been primed and loaded with explosive it is tied in and shot. The tie-in incorporates delays that provide progressive relief for the rock to break into as the rows of holes detonate. This provides better fragmentation, waste pile looseness, reduced coal seam disturbance and reduced fly rock.

Explosives are ammonium-nitrate based. ANFO products are used in dry holes and Heavy ANFO products consisting of blends of ANFO and emulsion are loaded where water resistance is needed.

Blasting operations are carefully planned to provide blasted waste for the mining fleet in a timely fashion.

16.8 Production Monitoring

The four main methods of sampling coal seams and pushed coal piles in the pit and breaker pocket include:

- Grab sampling consists of taking shovel scoops of the material to be sampled and placing it in a sample bag. Scoops are taken at the top, middle and bottom of the pile that is being sampled to eliminate any bias related to grain size;
- Trench or channel sampling. The seam is typically marked out using a GPS and roughly traced with a dozer. A raw sample is taken for percent light transmittance to ensure there is no seam oxidation. A dozer cleans off the seam, and a trench is excavated along a laid-out tape measure that is runs from hanging wall to footwall and is perpendicular to strike. The trench is divided into equal size units, and an equivalent amount of coal is sampled from each unit thickness. The surveyed location of the hanging wall and footwall are entered into the geological database;
- Ash probe sampling is performed to obtain an ash content, which is used to determine stockpile location, assess dilution, and to verify modeled ash assumptions;
- Blasthole cuttings sampling requires a sample to be taken through the entire pile thickness.

16.9 Mining Equipment

The main production equipment at FRO is comprised of Electric Cable shovels and large rear end dump truck. A list of equipment included in the 2022 LOM plan is summarized in Table 16-1. The unit numbers show the peak units.

Table 16-1: Equipment Fleet

Equipment Type	Units
P&H 4800XP AC electric cable shovels	1
P&H 4100XPC electric cable shovels	4
P&H 4100XPB electric cable shovel	2
P&H 4100XP electric cable shovel	1
PC5500 diesel hydraulic shovel	2
LeTourneau L1850 front end loaders	3
Caterpillar 994 front end loaders	3
Komatsu WA 1200-3 front end loader	1
Bucyrus Erie 49R production drills	5
Caterpillar MD6640 production drill	4
Haulpak 830E waste/coal rear dump haul truck	6
Haulpak 930E rear dump haul truck	73
Haulpak 980E rear dump haul truck	9
Caterpillar 797F rear dump haul truck	8
Caterpillar 794 rear dump haul truck	6
Hitachi 5000 rear dump haul truck	4
Bulldozers	23
Graders	11
Backhoes	8
Scrapers	2
Water trucks	7
Rubber tire dozer	5

17.0 RECOVERY METHODS

17.1 Introduction

The process plant uses conventional processing equipment based on industry standards and best practice. Coal separation is completed by heavy media cyclones in the coarse circuit, and a combination of hydrocyclones, a reflux classifier, and flotation in the fines circuit.

The basic operation of a coal processing plant is separation by gravity for the coarser particles. Based on the difference in specific gravity of coal and rock, the coal can be separated to a desired specification. The finest coal fractions are separated through surface properties (flotation). Size separation is accomplished through sieves, vibrating screens, and cyclones. Each technique contributes to the recovery of clean coal from the raw coal feed.

17.2 Plant Flowsheet

The plant flowsheet is provided in Figure 17-1.

17.3 Plant Design

Plant specifications and the plant equipment list is provided in Table 17-1.

17.3.1 BREAKER

Run of mine coal is fed to the breaker, where it is tumbled in the breaker drum. The softer feed (typically coal) is broken on impact and passed through perforated breaker plates with 4” (10 cm) openings. Broken coal is either fed to the plant surge bin or the raw coal bench for future surge capacity. Rejects from the breaker are piled and subsequently hauled to the coarse coal reject spoils using loaders and trucks.

Deslime screens are large vibrating screens used to split the coal feed into different sizes. Material >0.75 mm reports to the coarse circuit. Material <0.75 mm reports to the fines circuit.

Heavy media cyclones are used to separate coarse rock from coarse coal. Coarse coal is floated on a dense magnetite slurry and is recovered to the overflow of the cyclone through the air vortex. Coarse rock sinks through the magnetite slurry and is subsequently discharged from the underflow.

Magnetite is used to control separation density. Magnetite is a fine dense iron ore that the processing plant dilutes with water to create a dense media with an SG range of 1.40–1.52. The density of the magnetite slurry controls how much coal and ash are recovered in the product. Magnetite is recovered through the drain and rinse sections of the clean coal and reject vibrating screens, and then passed through magnetic separators.

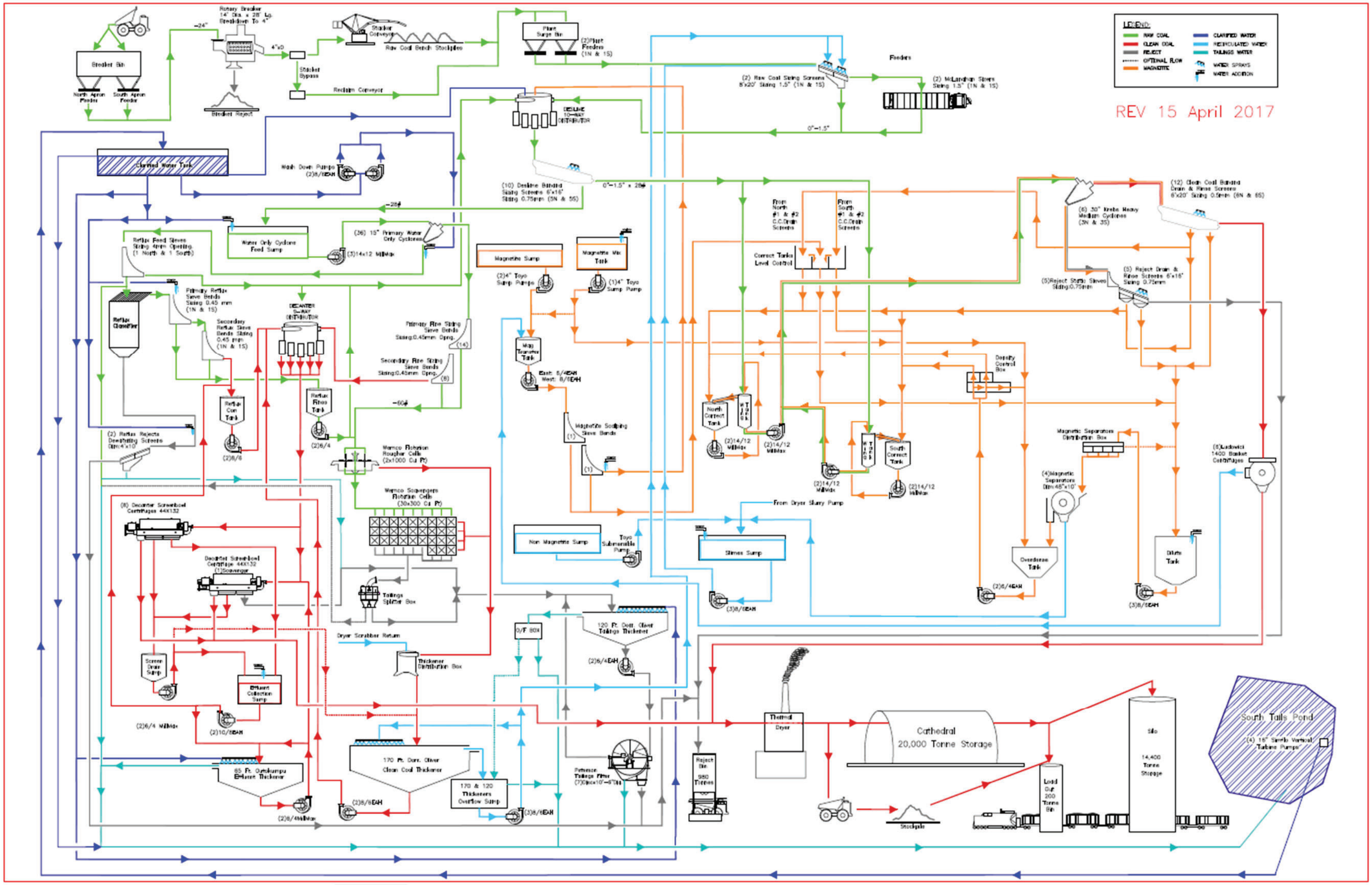

Figure 17-1: Process Flowsheet

Note: Figure prepared by Teck, 2017.

Table 17-1: Plant Equipment List

Component	Design Capacity	FRO Feed (avg)
Deslime screens	1,764 t/h oversize (98 t/h/m width)	1,152 t/h
Heavy media cyclones	1,134 t/h raw	1,152 t/h
	3,541 m^3/hr volume	3,540 m^3/h
Clean coal screens	1,620 t/h oversize (75 t/h/m width)	662 t/h
Magnetic separators	1,308 m^3/h	1,000 m^3/h
Centrifuges	1,800 t/h	662 t/h
Refuse screens	450 t/h oversize (50 t/h/m width)	472 t/h
Water only cyclone tonnage	900 t/h	806 t/h
Water only cyclone flow	5,890 m^3/hr	3,632 m^3/h
Reflux feed sieves	568 m^3/h	329 m^3/h
Reflux classifier	233 t/h	201 t/h
High frequency screen	100 t/h	101 t/h
120' refuse thickener	263 t/h	86 t/h
	3,677 m^3/h	1,461 m^3/h
Fine coal sieves	3,696 m^3/h	2,942 m^3/h
Flotation Roughers + Scavengers (combined)	3,732 m^3/h	2,970 m^3/h
170' thickener	527 t/h	233 t/h
	7,382 m^3/h	1,549 m^3/h
65' effluent thickener	77 t/h	100 t/h
	1,079 m^3/h	895 m^3/h

Component	Design Capacity	FRO Feed (avg)
Decanter centrifuges	81 t/h each = 729 t/h	754 t/h
	205 m^3/h each = 1,845 m^3/h	1,717 m^3/h
Reagent distribution - kerosene	6.9 GPM = 17.5 L/min	2,000 mL/min
Reagent distribution - MIBC	4.6 GPM = 11.3 L/min	185 mL/min
Flocculent system	265 L/min	60 L/min

Note: GPM = gallons per minute; t/h = tonnes per hour; L/min = litres per minute; h = hour; MIBC = methyl isobutyl carbinol;

In the fines circuit, water only cyclones and reflux classifiers are used in a two-stage separation to recover mid size (0.25 x 0.75mm coal). Water only cyclones use the same principles as a heavy media cyclone to separate coal from rock, with the fine coal being used to create its own dense media. As the water-only cyclones are less efficient than heavy media cyclones, reflux classifiers are used to recover any coal that is missed in the primary separation. Reflux classifiers use the upwards flow of fluidization water and measured discharge of high density refuse to lift low density coal out of a bed.

Two stages of flotation cells (roughers and scavengers) are used to separate the finest coal. Kerosene is used to increase hydrophobicity of coal, and methyl isobutyl carbinol (MIBC) is used to form bubbles when agitated. The hydrophobic coal sticks to the bubbles and floats to the top, while the rock sinks and goes out the underflow. The resulting concentrate (froth) goes to the clean coal thickener prior to dewatering in decanter centrifuges, and underflow from the second stage of separation goes to the refuse thickener and tailings disposal systems.

17.3.2 DRYER

Discharge from coarse coal centrifuges and decanter (fine coal) centrifuges are combined to feed the dryer. The dryer uses natural gas to heat up air that passes through the fluidized bed on the rod deck. This hot air evaporates the moisture from the coal. The dryer takes coal from the plant at about 14% moisture and dries it to approximately 8% moisture.

17.3.3 STORAGE AND RAIL LOADOUT

FRO has one clean coal silo which can hold up to 14,400 t of coal, a cathedral storage area with a capacity of 20,000 t, and a clean coal stockpile. These clean coal storage areas hold the coal before it is railed. FRO loads trains of up to 16,200 t to ship to the ports for sale to customers. After loading, the cars are sprayed with a flocculant to prevent dusting during transportation.

17.4 Yields

Yield forecasts were included in Section 13.4.

17.5 Energy, Water, and Process Materials Requirements

17.5.1 POWER

The plant power consumption averages 71 million kWh/year. This is estimated and more accurate numbers will be available in the future based on recently installed metering in the electrical substation.

17.5.2 WATER

The average water usage by the plant is 2,470 m^3/h when the plant is operating. This consumption is drawn from a combination of potable water and tailings pond return water. On average, potable water accounts for approximately 4% of the stated consumption.

17.5.3 REAGENTS

The main reagents used in the plant include kerosene, MIBC, and flocculant.

18.0 PROJECT INFRASTRUCTURE

18.1 Introduction

Surface infrastructure to support operations is in place, and includes:

- Open pit areas;
- Processing facilities: coal preparation plant including wash, drying facilities and clean coal storage facilities, together with management and engineering offices, change house, maintenance shops, warehouse, assay laboratory facilities;
- Mine facilities: management and engineering offices, change house, heavy and light vehicle workshops, wash bay, warehouse, explosives magazine, mine access gate house, return water pump house;
- Administration buildings: facilities for overall site management, safety inductions, and general and administrative functions;
- Raw coal stockpiles;
- Breaker;
- Waste dumps;
- Haul roads;
- Raw coal and clean coal conveyor system;
- Rail load-out facilities;
- Water management facilities: stormwater and sediment ponds, water storage tanks, water diversions, culverts;
- Tailings storage and coarse coal refuse storage facilities;
- Landfill facility;
- Sewage treatment facility;
- Electrical power system;

- Fuel storage facilities;
- Emulsion mixing facility;
- Explosive raw product storage and explosive bulk truck maintenance facility;
- Water treatment facilities, including the saturated rock fills and the Fording River South active water treatment plant.

Natural gas is provided to the site via pipeline.

A layout plan showing the facilities constructed to support mining operations is provided in Figure 18-1.

Some new haul roads, spoil piles and environmental control systems will be required for future developments and are included in the mine planning and project economics. These will require permitting.

18.2 Road and Logistics

18.2.1 ROAD

The mining operations are accessed via an all-weather highway, extending north from the terminus of Highway 43 from the town of Elkford.

Goods are delivered primarily by transport trucks and occasionally by rail.

18.2.2 RAIL

Coal is transported in unit trains from the site loadout facilities by CPR to terminals in Vancouver or Prince Rupert. Unit trains can switch to CN rail lines and locomotives at Kamloops to expedite delivery to the Westshore or Neptune terminal facilities at Vancouver. A minor amount of coal is transported eastbound to Thunder Bay or elsewhere in North America.

Additional information on the load-out is provided in Section 17.4.3.

18.3 Stockpiles

Raw coal is stockpiled in several areas of the mine. The stockpiles are placed according to available space, with preferred locations near the breaker or active pits.

Clean coal is stockpiled near the plant drier, and the rail.

FRO also maintains multiple salvaged soil piles for future reclamation purposes.

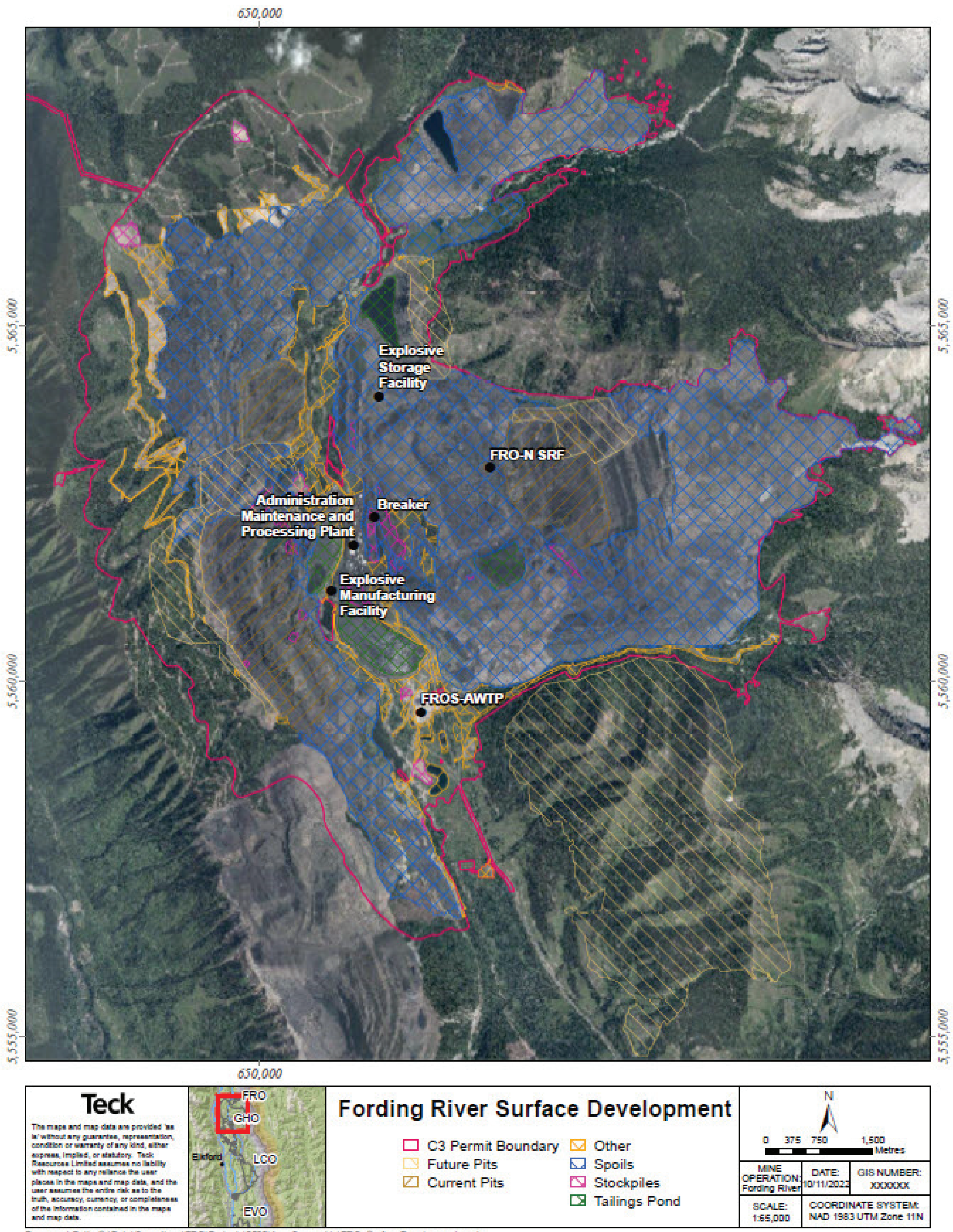

Figure 18-1: Infrastructure Layout Plan

Note: Figure prepared by Teck, 2022. SRF = saturated rock fills; AWTP = active water treatment plant.

18.4 Spoil Piles

Historically, waste rock has been deposited in spoil piles to the West, South and East of Eagle Pit phases and North and South of the Swift Pit phases. Waste rock has also been backfilled in previously-mined areas.

The spoil pile design assumptions are provided in Section 16.5.

18.5 Coarse Coal Refuse

The Eagle 4 South Backfill Spoil is the only active combined coarse and fine refuse (CCFR) storage facility at FRO. It is a dry stack facility and does not contain dams. The current facility is permitted to meet storage requirements until February 2024. Work is currently ongoing to expand the Eagle 4 South Backfill CCFR. The expansion is expected to provide CCFR storage for currently-permitted Coal Reserves to 2040. Once permits are received for FRX and Turnbull West, FRO will determine facility locations to provide CCFR storage capacity for the remaining mine life.

FRO has seven inactive coarse coal refuse facilities, A-Spoil, Box Yard spoil, Kilmarnock/Toe Berm spoil, Impact Berm spoil, Blake spoil, Turnbull West spoil and Taylor Rejects spoil. No further activity at these facilities is planned.

18.6 Tailings Storage Facility

The FRO tailings management system consists of two active fluid tailings storage facilities. The South Tailings Pond which receives fluid tailings deposited directly from the FRO process plant, and Turnbull South which receives dredged tailings from the South Tailings Pond. The South Tailings Pond is bounded by two embankments, the West Dam to the west and north and the Main Dam to the south, to the east the facility is bounded by natural topography. Turnbull South is an inactive open pit bounded by bedrock.

The South Tailings Pond has an emergency spillway that is designed to pass the 24-hour probable maximum flood and is operated to maintain adequate storage to contain an environmental design flood equivalent to a 10-day one-in-100-year flood. The South Tailings Pond can store approximately 325,000 m^3 of water below the spillway invert. No further embankment raises are permitted at the South Tailings Pond, so in order to maintain capacity for ongoing tailings production the facility is dredged annually (April to October) to Turnbull South. The dredging program is designed to remove adequate volumes of tailings to maintain capacity in the South Tailings Pond through winter months (November to March).

The Turnbull South facility has sufficient capacity to store the inflow design flood (72-hour duration event, ⅓ between one-in-1,000-year flood and the probable maximum flood), this equates to approximately 2.5 Mm^3 of water while maintaining 1.2 m freeboard (C-3 permit requirement) and 3.2 Mm^3 of water to the bedrock low point.

FRO has two inactive tailings storage facilities (TSFs), the North Tailings Pond and 2 Pit 3 Pit tailings storage area (2P-3P TSA). The North Tailings Pond has sufficient capacity to store the inflow design flood

(72-hour duration event, ⅔ between one-in-1,000-year flood and the probable maximum flood), this equates to approximately 270,000 m^3 of water while maintaining the minimum freeboard of 0.35 m (as per CDA 2013), and approximately 350,000 m^3 of water to the minimum embankment crest. Tailings deposition to the NTP ceased in 2006 and there are currently no plans for future deposition in the facility. The 2P-3P TSA consists of three in-pit TSFs, 2 Pit, 3 Pit South, and 3 Pit North. 3 Pit South has an embankment structure that was constructed to maintain 0.5 m of freeboard between the embankment crest and upstream tailings surface. Tailings deposition to 2P-3P TSA ceased in 2015. The 2P-3P TSA does not actively retain water, and there are currently no plans for tailings deposition in these facilities. In 2021, 3 Pit North was mined out as part of mining in the active Swift Pit. 3 Pit South and 2 Pit are scheduled to be mined out as part of the current LOM plan.

18.7 Water Management

Water management is key to the sustained future of the operation. Managing the movement and discharge of mine-influenced and non-contact water to the receiving environment requires the implementation of effective strategies, activities, and practices to meet site objectives and to support regional objectives, such as those outlined in the Elk Valley Water Quality Plan.

Water management activities at FRO include intercepting, diverting, storing, consuming, and reducing total suspended solids concentrations in surface water prior to discharge to the receiving environment. Managing water quality (aside from total suspended solids) is also supported at FRO with the development of non-contact water diversions (clean water diversion) and development of water treatment facilities including the Fording River South active water treatment facility. Water movement is managed at FRO using several types of water management infrastructure, including sediment/sedimentation/settling ponds, tailings storage facilities, diversions (channels and pipelines), inactive and backfilled pits, sumps, rock drains, culverts, ditches, pumped systems, and associated infrastructure or equipment. Water discharges to the receiving environment through authorized discharges per EMA Permit 424 and EMA Permit 107517.

A hierarchy of controls strategy is used to support the FRO water management objective and the planning and development of water management activities based on the different water-land contact scenarios, in which the preferred to least preferred order of water management options is to prevent, reduce and treat. This framework will be adapted to the unique circumstances of FRO and will evolve over time based on new information.

Water-land contact scenarios are categorized using the following two definitions:

- Non-contact water: runoff and groundwater from land not impacted by mining activities, typically up gradient of mining activities but can be down gradient if below an interceptor channel or other infrastructure intended to mitigate the impact of mining disturbances;
- Mine-influenced water: contact surface water or groundwater from disturbed mine property such as pits, waste rock spoils and roads.

Water management at FRO is an essential component of operational planning which ensures availability of water, ample capacity and structural integrity within the water management infrastructure in order to handle anticipated flows and volumes. Drainage structures onsite are managed as per FRO's Mine Water Management Plan. The Mine Water Management Plan is part of Teck's Sustainability Goals and is intended to be an overarching document guiding water management at FRO. It involves a comprehensive approach to water management allowing information to be centralized and facilitating staff from various departments to collaborate in its implementation.

The preferred water strategy for operations is summarized in Table 18-1.

Water management structures include dam structures, catch basins, sediment and settling ponds, conveyance ditches, and the TSF. The catch basins, ponds, and ditches are used to control the effects of sediment-laden water prior to discharge catchments that feed the Fording River. Dewatering of the active pits is required to maintain safe and productive mining, and pit dewatering will be required throughout the remainder of pit life.

Various tools, procedures and plans are implemented at FRO to support the goals of water management. These are detailed in FRO's Mine Water Management Plan and include:

- Summary of major catchments and associated water management infrastructure;
- Summary of water use, conveyance, and discharge practices;
- Overview of tools used on site including the site water balance model, regional water quality model and weather/flood forecasting tools;
- Description of inspection and maintenance requirements to sustain infrastructure on site;
- Summary of water management and monitoring plans governing site practices.

18.8 Camps and Accommodation

Mining personnel are recruited from across Canada with most living in the Elk Valley, within the towns of Elkford, Sparwood, or Fernie. There is no on-site accommodation, and personnel drive-in-drive-out to the operations.

There is a 480-bed lodging facility in Elkford that can be allocated by Teck to meet contractor or employee housing needs that Teck may have in the Elk Valley. The conditions of use are subject to negotiations with the District of Elkford.

Table 18-1: Land Use Types and Preferred Management Practices

Classification	Land Use Types	Preferred Management Practices	
Non-contact Water	Land not impacted by mining activities	Prevent	Assess feasibility for clean water diversions to minimize runoff to mining areas and support water quality and/or quantity management at the operation
			Adhering to the Mine Water Management Plans minimizes the introduction of mine-influenced water to areas not impacted by mining activities
		Reduce	Reduce the use of non-contact water for consumptive purposes (e.g., dust suppression, coal processing)
Mine-influenced water	Cleared land, light-duty roads	Prevent/reduce	Erosion and sediment control
		Treat	Capture and convey runoff to sediment ponds or infiltration sumps and ditches via overland flow routes
			Use of flocculant as per flocculant management plans
	Haul roads and operation areas	Treat	Capture and convey runoff to sediment ponds and localized sumps. Mud cells along haul roads may be used upstream of the sediment ponds for heavy solids removal
			Use of flocculant as per flocculant management plans
	Spoils	Reduce	Swale to natural ground; avoid runoff down spoil faces
			Collect available runoff in toe channels or infiltration sumps and ditches via overland flow routes
Mine-influenced water	Spoils	Reduce	Spoil placement, in order of priority: manage for geotechnical stability; assess opportunity to avoid (or defer) placing spoils into undisturbed drainages
			Maximizing in pit spoiling
			Pump mine-influenced water to the appropriate discharge location
		Treat	Construct and operate water treatment facilities as approved in the Implementation Plan Adjustment (IPA)[3]
			Assess opportunity to divert high concentration water directly to the water treatment facility

Classification	Land Use Types	Preferred Management Practices	
	Water retention infrastructure	Reduce	Operational water management, in order of priority: manage for geotechnical stability, freeboard allowance, and operational water quantity and quality requirements through storage and release strategies (if capacity for storage is available), the use of channels, pumping, piping, etc.
			Maximize the use of mine-influenced water for consumptive purposes (e.g., dust suppression, processing, truck washing)
			Maximize re-use of water within operations, Implement water reduction strategies.
	Pits (active mining faces)	Prevent	Source control: use liners in blasting practices to prevent nitrogen leaching
		Reduce	Capture pit water originating from runoff, precipitation and groundwater (from high wall depressurization and blasting pattern support) in the active mining faces. Then, convey it away from active pit areas to allow for operations, to local sumps, sediment ponds, backfilled pits or dormant/inactive pits prior to treatment and/or discharge to the receiving environment.
			Maximize the use of mine-influenced water for consumptive purposes (e.g., dust suppression, coal processing, truck washing)
	Backfilled pits	Reduce	Maximize the use of mine-influenced water for consumptive purposes (e.g., dust suppression, processing, truck washing)
			Allow inactive pits to fill with water to submerge backfilled waste and limit oxidization and improve water quality
		Treat	Assess feasibility of backfilled pits to use as Saturated Rock Fills (SRF) and optimize design if appropriate
Mine-influenced water	Dormant/inactive pits	Reduce	Storage and release strategy: use inactive pits to store water from other areas (e.g., pit water from active mining faces) for controlled release in accordance with approved pit pumping plans.
			Controlled release strategy: manage pumping rates to dewater flooded pits based on approved pumping plans and/or to manage water quantity to support Environmental Flow Needs requirements

Classification	Land Use Types	Preferred Management Practices	
			Maximize the use of mine-influenced water for consumptive purposes (e.g., dust suppression, processing, truck washing)

18.9 Power and Electrical

Power to the site is supplied by BC Hydro via the BC & Alberta link, known as the Kan-Elk line. There is a single 138 kV power line into the FRO property, which is a spur line off a main hydroelectric line.

The major power consumer is the process plant, which averages 71 million kWh/year.

18.10 Water Supply

Water usage is licenced through under the *Water Sustainability Act*, and no changes can occur without considering the existing authorizations.

Water use is necessary on site to support site's operational and domestic needs. Water use at FRO prioritizes recycling, reuse as well as mine influenced and stored water sources. To sustain operational needs FRO was granted three consumptive water use licences as discussed in Section 4.5.

Water sourced from groundwater wells at the north end of the site is used to support water supply needs in the general office/plant area. Two wells supply water for to the greenhouse.

19.0 MARKET STUDIES AND CONTRACTS

19.1 Market Studies

No market studies are relevant as the operations have sales contracts in place. All sales contracts are entered into by Teck Coal Limited, as nominee and agent for Teck Coal Partnership.

Markets for the metallurgical coal products include Asia, Europe, North and South American customers.

FRO produces metallurgical coal for the global steel industry. These are classified as either HCC or SHCC (refer to Section 7.2.3).

19.2 Commodity Price Projections

FRO production can sometimes be blended with the products produced from other Teck operations which is then sold by Teck.

Quarterly-priced sales represent approximately 40% of coal sales, with the sales balance priced at levels reflecting market conditions when sales are concluded. Approximately 90% of coal sales are committed under long-term or annual contracts while the remaining 10% is sold on a spot basis.

Sales distribution of FRO products reflects overall geographic reach of Teck's diversified steel-making coal customers.

19.3 Contracts

Major site contracts include fuel supply, explosives and accessories, and exploration drilling and maintenance support as needed. Westbound rail service at origin is currently provided by CPR. CPR transports a portion of these westbound shipments to Kamloops, B.C., and interchanges the trains with CNR for further transportation to the west coast. The remaining westbound shipments are transported by CPR from the mines to the terminals in Vancouver. CPR transport is under a tariff that expires in April 2023, and negotiations with CPR for a new westbound contract to replace the tariff are underway. A long-term agreement, until December 2026, is in place with CNR for shipping steelmaking coal from our four B.C. operations via Kamloops to Neptune Bulk Terminals (Neptune) and other west coast ports, including Trigon Terminals (formerly Ridley Terminals Inc.), located in Prince Rupert. Contracts are also in place with all terminal facilities to offload, stockpile, blend FRO coal to Teck's product specifications and, load bulk cargo vessels. Teck holds a 46% interest in Neptune Bulk Terminals. Customers arrange for ocean-going bulk carriers to transport the coal from the terminals to their facilities for end use for approximately 60% of the total number of shipments. For the remaining 40% of shipments, Teck arranges for the ocean-going bulk carriers to transport the coal to customer facilities.

Contracts are negotiated and renewed as needed. Contract terms are within industry norms, and typical of similar contracts in BC that Teck is familiar with.

19.4 Comment on Section 19

The QP has reviewed commodity pricing assumptions, marketing assumptions and the current major contract areas, and considers the information acceptable for use in estimating Coal Reserves and in the economic analysis that supports the Coal Reserves.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

20.1 Introduction

Baseline studies began in support of initial operations. Mining operations commenced in 1971. Teck has continued with baseline studies in support of ongoing operations and in support of regulatory applications and approvals.

20.2 Environmental Considerations

The FRO Environmental Management System (EMS) is certified under the ISO 14001 standard and is consistent with other Teck operations in which the pursuit of sustainability guides the approach to business. The EMS reflects the commitment made by Teck and FRO to comply with applicable legal and regulatory requirements, including the prevention of pollution, and continual improvement. FRO's EMS also provides the framework for identifying actual and potential environmental aspects, environmental emergencies, measuring and monitoring requirements, opportunities for continual improvement and environmental objectives and targets. Employees participate in the EMS by conforming to standard practices and procedures, which identify their roles and responsibilities when interacting with various environmental aspects.

Teck is committed to environmental management best practices and to achieve continual improvement in the company's environmental performance. Through this policy Teck committed to:

- Elk Valley Water Quality Plan;
- Seep Monitoring Plan;
- Tributary Management Plan;
- Calcite Management Plan;
- Biodiversity Management Plan;
- Invasive Plant Management Plan;
- Grizzly Bear Denning Management Plan;
- Soil Salvage Management Plan;
- Mine Water Management Plans;
- Erosion and Sediment Control Management Plan;

- Flocculent Management Plan;
- Nitrogen Source Control Plan;
- Metal Leaching and Acid Rock Drainage Management Plan;
- Fugitive Dust Control Management Plan;
- Air Quality and Noise Control Management Plan;
- Combusting Waste Rock Management Plan;
- Dredged Tailings Relocation Management Plan;
- Archaeological and Paleontological (Fossil) Chance Find Management Procedure;
- Wildlife Mitigation Management Plan;
- Five Year Reclamation and Closure Plan;
- Fish and Fish Habitat Offsetting and Effectiveness Monitoring Plan;
- Public Access Management Plan.

20.2.1 ELK VALLEY WATER QUALITY PLAN

The Elk Valley water quality plan covers the entirety of the Elk Valley area and is not restricted solely to the FRO.

In April 2013, the BC Minister of Environment issued Ministerial Order No. M113 (Order), which required Teck to prepare an area-based management plan for the Elk River watershed and the Canadian portion of the Koocanusa Reservoir. In this plan, Teck was required to identify the actions Teck would take to manage water quality downstream of Teck's steelmaking coal mines in the Elk River watershed and the Canadian portion of the Koocanusa Reservoir.

From 2013 to 2014, Teck developed the area-based management plan, the Elk Valley Water Quality Plan. Teck had input from the public, Indigenous Nations, provincial and federal governments, technical experts, and other Communities of Interest. Teck submitted the Elk Valley Water Quality Plan to the Minister in July 2014, and it was approved in November that same year. The Elk Valley Water Quality Plan included an Initial Implementation Plan that outlines the mitigation planned to achieve limits for the concentration of selenium, sulphate, nitrate, and cadmium in surface water at specific locations throughout the Elk Valley and in the Koocanusa Reservoir. These limits, both short-term and long-term, are meant to stabilize and reverse increasing concentrations of the four constituents named in the Order.

In November 2014, the BC Ministry of Environment issued Permit 107517 to Teck under the EMA. Many of the actions and commitments that Teck made in the Elk Valley Water Quality Plan Initial Implementation Plan were incorporated into the permit requirements. To comply, Teck must meet the requirements in the EMA Permit 107517, including the construction and operation of treatment facilities on the timelines specified and achievement of water quality limits. At the same time, site-specific Mines Act C-Permits were amended to include a condition for an Implementation Plan Adjustment to be submitted to the Chief Inspector on a three-year cycle. Additionally, Site Performance Objectives were set at Order stations to achieve and maintain area-based protection of aquatic ecosystem health, whereas compliance limits were set at or near the downstream boundary of each operation to measure regulatory compliance at specified compliance point locations.

In July 2022, Teck submitted to regulators an Implementation Plan Adjustment in accordance with EMA Permit 107517 and Mines Act C-Permit requirements. The objective of this plan is to outline the timing and sizing of treatment and other water quality mitigations that support the objectives of the Elk Valley Water Quality Plan and to best meet EMA Permit 107517 commitments based on the latest understanding and progress. Water quality constituents included in the 2022 Implementation Plan Adjustment are nitrate, selenium and sulphate. Cadmium treatment is not required to meet permit limits. The Implementation Plan Adjustment defines treatment facilities from current to past 2100 that will expand selenium and nitrate treatment capacity up to 206,500 m^3/day. Additionally, the plan includes 38,000 m^3/day of sulphate treatment.

Water Operations and Existing Treatment

Since 2014, Teck has made significant progress on implementing water treatment in the Elk Valley with four water treatment facilities built and either fully operational or in commissioning. These treatment facilities include the West Line Creek active water treatment facility (AWTF), EVO saturated rock fill (SRF) Phase 1, FRO AWTF-S and the FRO-N1 SRF Phase 1. Additionally, two clean water diversions are in place, the FRO Kilmarnock Creek diversion and the EVO South Gate Creek diversion.

Research and Technology Development Program

The current Applied Research and Technology Development Program at Teck was initiated approximately in 2011 and since then Teck has performed over a decade of research and development in the Elk Valley with the program focusing on improving the effectiveness of water treatment technologies and investigating approaches to managing constituents at source.

Adaptive Management Plan

The Adaptive Management Plan guides the process for updating the Implementation Plan Adjustment. The adaptive management cycle comprises six steps: assess, design, implement, monitor, evaluate and adjust.

Calcite Management Plan

This is a regional plan developed to identify management solutions to the issues of calcite precipitation in receiving environment waters as set through the Elk Valley Water Quality Plan. Treatment plans for calcite management are prevention via anti-scalant addition systems and calcite remediation via physical excavation and stream bed restoration.

Upper Fording River and Harmer Grave West Cutthroat Trout Recovery Projects

Fish census data obtained in late 2019 showed unexpected and substantial reductions in populations of Westslope Cutthroat trout in some mine-affected waters in the Elk Valley.

In response to a decline in the abundance of Westslope Cutthroat Trout in the upper Fording River, Teck initiated an Evaluation of Cause process to investigate and report on the cause of the decline between 2017 and 2019. An Evaluation of Cause was also initiated for the Harmer-Grave Watershed upstream of the Harmer Sediment Pond to investigate and report on the cause of the decline between 2016 and 2019.

Based on Evaluation of Cause findings for the upper Fording River, Teck assembled a team of qualified scientists to develop a recovery action plan for the upper Fording River Westslope Cutthroat Trout. Teck is planning to provide updates on this plan when data are available.

The Harmer-Grave Evaluation of Cause preliminary findings indicate that the population decline was primarily associated with a loss of juveniles due to failed, or poor, recruitment during this period. The Harmer-Grave Watershed Westslope Cutthroat Trout Recovery Project has been developed to address the population decline by supporting the Westslope Cutthroat Trout population recovery while building long-term population resilience. Teck has assembled a team of qualified scientists to develop a recovery action plan for the Harmer-Grave Watershed. Teck is planning to provide updates on this plan when data are available.

Until additional results are available, and mitigations are demonstrated to be successful, Teck may face delays in permitting or restrictions on mining activities in their Elk Valley.

Environment and Climate Change Canada 2020 Direction

On October 29, 2020, Environment and Climate Change Canada (ECCC) issued a Direction under the Fisheries Act to Teck Coal, requiring measures to be taken to reduce selenium in the Elk Valley in waters affected by Teck's Fording River and Greenhill Operations. The Direction includes 11 measures, of which six were completed at the Report effective date.

Proposed Coal Mining Effluent Regulation

In February 2018, the government of Canada proposed new regulations under the Fisheries Act related to coal mining effluent. While these regulations are still in development, they could impose significant costs and operating limitations on Teck's steelmaking coal operations. In the absence of these new regulations, coal mining activities cannot be conducted in compliance with the Fisheries Act and Teck may face significant liability as a result. Federal regulatory issues may create additional difficulties in obtaining permits for the Elk Valley operations, whether or not charges are eventually laid, or Teck is successful in defending any charges.

20.2.2 WATER MANAGEMENT INFRASTRUCTURE

The water management infrastructure is discussed in Section 18.7.

20.2.3 VEGETATION AND WILDLIFE MANAGEMENT

Teck maintains a Regional Invasive Plant Management Plan to track invasive plant infestations, with the objective of minimizing the loss or degradation of reclaimed land, productive forest, wildlife habitat, and associated biodiversity.

Vegetation monitoring is ongoing to evaluate revegetation success at reclaimed sites. Monitoring is also undertaken over undisturbed sites.

Teck maintains an active wildlife monitoring and relocation program and associated models that include wildlife surveys, records of human–wildlife interactions, use of motion sensor cameras to monitor wildlife habitat use and occupancy, and relocation and salvage of amphibian, reptile, and fish species.

20.2.4 SPOIL PILES

Design of layouts for waste rock spoils include considerations for spoil slope stability and selenium management strategies.

Selenium management strategies follow guidelines contained in the report issued by the Strategic Advisory Panel on Selenium Management (SAPSM) (Swanson, 2010).

The geotechnical assessment of spoils considers the requirements in the Guidelines for Mine Waste Dump and Stockpile Design (Hawley and Cunning, 2017) and also cross references with British Columbia Mine Waste Rock Pile Research Committee (BCMWRPRC) Guidelines on investigation and design (Piteau Associates Engineering Ltd., 1991), operation and monitoring (Klohn Leonoff Ltd., 1991), review and evaluation of failure (Broughton, 1992), and rock drain research program (Piteau Engineering Ltd., 1997).

20.2.5 TAILINGS DISPOSAL

Tailings facilities are operated and managed through best applicable practices and consider guidance from Teck's policies and procedures, the Global Industry Standard for Tailings Management, Mining Association of Canada, Canadian Dam Association and relevant government agencies. Designs for these facilities are established considering consequences on human life, the environment, and the economy.

20.3 Closure Considerations

The approach to reclamation design and implementation is directed by FRO's overarching end land use and biodiversity objectives:

- Long term safety and stability of drainages, landforms, and features;
- Water quality that meets acceptable quality guidelines for safe release to the surrounding environment and use by local flora and fauna;
- A net positive impact on biodiversity by maintaining or re-establishing self-sustaining landscapes and ecosystems that leads to agreed, viable, long term and diverse land use objectives in Teck's operating areas.

Teck is committed to successfully returning areas disturbed by mining activities to a self-sustaining state by re-vegetating using native plant species and, if required, other mitigation options in the mitigation hierarchy. This involves identifying potential impacts, finding ways to avoid or minimize those impacts, and subsequently achieving gains through rehabilitation, offsets, and other conservation actions. Teck first tries to reduce impacts on biodiversity by avoiding areas of high biodiversity value (e.g., redesigning waste rock piles using a bottom-up design to minimize the footprint and avoid future instabilities and additional disturbance). Following those mitigation efforts, attempts are made to minimize disturbance and reclaim disturbed areas as soon as feasible after mine activities are complete (i.e., progressive reclamation as facilities are no longer required for operations). In cases where impacts remain on the landscape after avoidance, minimization, and rehabilitation, restoration and/or averted loss, offsets would be designed and implemented to support Teck's net positive impact goal.

Reclamation practices and prescriptions are based on established and innovative reclamation techniques, and on the history of successful reclamation conducted at Teck mines to date. The anticipated outcome of this approach is the re-instatement of vegetation dynamics and successional trajectories such that, over time, the landscape is capable of providing ecosystems similar to those that existed prior to mine disturbance.

The reclamation plan is based on the current approved permits and is considered a high-level conceptual plan that will change throughout the active mining period.

Provisional ongoing progressive reclamation and closure costs are considered in the economic analysis that supports the Coal Reserves. Due to the length of the mine life, the net present value of final closure costs is considered negligible in the economic analysis. Estimates of final closure costs are updated every five years, or as required through major permit amendments, and submitted to the relevant regulatory authorities

Teck has a bonding schedule as part of the Mines Act permits, with the amount of the bond to be paid and the schedule set out in the permits.

In December 2021, Teck adopted the Teck Closure Standard that conforms with the International Council on Mining and Metals' and the Mining Association of Canada's "Towards Sustainable Mining" initiative guidance on closure. Teck Coal's objective is to have all sites closure planning substantially completed by the end 2023.

20.4 Permitting

All necessary licences, authorizations, and permits with their subsequent amendments are in place for current operations at FRO.

FRO's Environment Department, in coordination with Sustainable Development team, is responsible for obtaining, implementing and maintaining regulatory permits for the operation. The FRO Environmental Management System (EMS) and registration of the FRO EMS to ISO 14001-2004, applies to all permit and regulatory conditions activities within the operations land base.

Major permits will be required for the following areas that are included in the LOM plan:

- Fording River Extension (FRX/Castle);
- Turnbull West.

20.5 Social Considerations

The Project area lies within ʔamakʔis Ktunaxa, the territory of the Ktunaxa Nation and within the Ktunaxa district of Qukin ʔamakʔis or Raven's Land. Qukin ʔamakʔis extends from the headwaters of the Elk River downstream to near the town of Elko, an area of more than 3,500 km2.

Strengthening the relationship with the Ktunaxa Nation and the Ktunaxa Nation Council is an important objective for Teck. In November 2007, the two parties signed a joint Working Protocol Agreement, and in 2010, a Consultation Agreement. In 2016, an Impact Management and Benefits Agreement was signed between Teck and the Ktunaxa Nation Council, which supersedes the previous two agreements.

Upon signing in 2016, the Impact Management and Benefits Agreement superseded the Working Protocol and Consultation Agreements and clearly outlines specific obligations and commitments for Teck and the Ktunaxa Nation Council with respect to all future projects in the Elk Valley.

The Impact Management and Benefits Agreement formalizes the long-standing relationship with the Ktunaxa Nation Council and creates a framework for greater cooperation and clarity on topics, including consultation and engagement, the environment and land stewardship, cultural resource management, and employment and business opportunities (including project-specific effects to Ktunaxa Nation interests). The Impact Management and Benefits Agreement also includes dispute resolution processes and guidance on how both parties will proceed should a dispute arise. Consultation and engagement between Teck and Ktunaxa Nation Council associated with development, operations, reclamation and closure are, and will continue to be, undertaken through the processes established in the Impact Management and Benefits Agreement such as the Environmental Working Group, Procurement and Employment Operational Working Group, and the Cultural Working Group.

Teck also works with a number of local partners and organizations on economic, social and environmental initiatives including:

- The Elk Valley/Crowsnest Pass Communities of Interest Advisory Initiative (COIAI) is an advisory initiative created to foster dialogue and communications about Teck's operations and their areas of influence within these communities. This initiative corresponds with one of Teck's community sustainability goals: to put processes in place to maximize community benefits and collaboration. The initiative is one way industry, groups and individuals can work together to tackle issues and challenges in the community. It is also a vehicle to share information about Teck's operations and activities with the community and to gain feedback from them;
- The Elk Valley Economic Initiative (EVEI) is a partnership between Teck, the local Elk Valley communities of Elkford, Fernie and Sparwood, and local First Nations groups to attract, expand and diversify business opportunities in the region;
- The Elkford Community Effects Advisory Committee (ECEAC) is a committee through which Teck and the community of Elkford share information and feedback on the operation of the Elk Valley Lodge workforce accommodation;
- The Elk River Alliance (ERA) is an organization that brings together individual citizens, local governments, companies, and community groups, with the shared purpose of keeping the Elk River watershed healthy.

Further, Teck participates in regular and Committee of the Whole Council meetings with local governments in the District of Elkford, the District of Sparwood, the City of Fernie, the Regional District of East Kootenay Area "A", and the Municipality of the Crowsnest Pass. Topics of interest include updates on upcoming regulatory and project work as well as economic contributions.

Additional collaboration and engagement occur through annual open houses held to share information on topics of importance to residents and local land users (including recreationalists involved in hunting, fishing, trapping, biking, snowmobiling, and all-terrain vehicle use) such as water, land access and reclamation. Teck supports the broader community through the work of a dedicated Community Liaison and a

Community Investment program. Teck operates a feedback mechanism accessible via phone and email and offering the possibility of reporting feedback of any kind either anonymously or by leaving contact information for a timely response.

21.0 CAPITAL AND OPERATING COSTS

21.1 Introduction

FRO is an on-going operation with significant operating history. Annual budget plans, as well as long-range plans are developed on a regular basis. The plans forecast mine waste volumes, coal tonnage, and operating and capital mine expenditures on an annual basis. The plans are based on historical and projected equipment operating productivities and costs and are reviewed to ensure that the projected equipment and labour operating hours and associated costs are valid.

All aspects of the mining process are included in the operating plans, including waste mining, coal mining and processing, and logistical and reclamation activities. Indirect costs such as taxes, royalties, administration and overhead are also detailed on an annual basis. Included in the planning process is an estimate of the future expected price of FRO coal, which is jointly provided by Teck's marketing and finance departments.

As part of the long-range planning process, sensitivity analyses are carried out to evaluate changes in operating and capital expenditures as well as variations in coal pricing and exchange rates.

Capital and operating costs forecasts are prepared to meet a ±25% accuracy range.

21.2 Capital Cost Estimates

Capital expenditures for development of new mining areas and equipment acquisitions and replacements are developed based on requirements to support the mine plan and a schedule of the spending is prepared. Costs are based on vendor quotes, and forecasts based on past operating experience, depending on the level of detail required for the cost estimate, and the timing of the capital expenditure.

Large equipment replacements (shovels, loaders, trucks, drills) are calculated based on the mine schedule and the equipment's standard life expectancy. Other costs are based on a five-year estimation window, in which detailed estimates are provided for specific capital spend by each department. Costs for the remaining mine life after the five-year window are based on average expenditure, and pro-rated based on material movement each year.

LOM capital cost forecasts are summarized in Table 21-1 for the period 2023–2064.

Table 21-1: LOM Capital Cost Estimate

Capital Expenditures	(C$ M)
Mining equipment	2,290
Plant & infrastructure	209
Infrastructure	121
Pit development	673
Sustainability	1,153
Total capital	***4,445***

Note: numbers have been rounded.

In this table:

- Mining equipment includes the capital costs required to purchase haul trucks, shovels, drills, loaders and support equipment;
- Plant and infrastructure include expenditures required to sustain plant operations and maintain the integrity of site utilities;
- Pit development includes exploration, permitting, access, pre-development work, and infrastructure costs;
- Sustainability includes the capital costs required for water treatment, reclamation, and infrastructure required to minimize environmental impact.

21.3 Operating Cost Estimates

Anticipated LOM operating costs are included in Table 21-2 for the period 2023–2064.

In this table, operating costs include:

- Mining and processing costs include all labour, fuel, electrical power, consumables, repair parts and external services;
- Transportation costs include logistical costs related to the transport of clean coal products from site to customers;
- “Other” includes exploration and head office allocations and non-capitalized exploration and reclamation.

Table 21-2: LOM Operating Cost Estimate

Operating Costs	Average (C$/t clean coal)
Mining and processing	95.23
Transportation	37.29
Other	6.94
Total cash costs	***139.45***

The operating costs include allocations for costs incurred when a portion of the coal is sent to the Greenhills plant for treatment. This is not a consistent practice, but occurs on an as-required, as-needed basis. Costs incurred from processing this coal are billed back to the Fording River Operations on a dollar per tonne basis.

22.0 ECONOMIC ANALYSIS

Teck is using the provision for producing issuers, whereby producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production and where no material production expansion is planned.

Coal reserve declaration is supported by overall site positive cash flows and net present value assessments.

23.0 ADJACENT PROPERTIES

This section is not relevant to this Report.

24.0 OTHER RELEVANT DATA AND INFORMATION

This section is not relevant to this Report.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 Introduction

The QPs note the following interpretations and conclusions, based on the review of data available for this Report.

25.2 Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

Teck holds a 100% indirect Project interest.

Information from legal experts and Teck's in-house experts support that the mining tenure held is valid and sufficient to support a declaration of Coal Resources and Coal Reserves.

Teck holds sufficient surface rights to allow mining activities.

Royalties are payable to the Province of British Columbia.

25.3 Geology and Mineralization

The Project "geology type" is classified by the Geological Survey of Canada as "complex".

The "deposit type" is classified as a "surface mining" type, also based on Geological Survey of Canada criteria.

The quality of the coal in the Mist Mountain Formation seams varies with depth of burial and location along the strike of the deposit. Most coal products produced by FRO require a blend of coal mined from two or more seams, and possibly coal from different mining areas.

The geological understanding of the settings, lithologies, and structural controls on the coal seams is sufficient to support estimation of Coal Resources and Coal Reserves. The geological knowledge of the area is also considered sufficient to reliably inform mine planning.

25.4 Exploration, Drilling and Analytical Data Collection in Support of Mineral Resource Estimation

The exploration programs completed to date are appropriate for the "complex" style.

Sampling methods are acceptable for Coal Resource and Coal Reserve estimation.

Sample preparation, analysis and security are generally performed in accordance with coal industry accepted practices and standards.

The quantity and quality of the lithological, geotechnical, collar and down-hole survey data collected during the exploration and delineation drilling programs are sufficient to support Coal Resource and Coal Reserve estimation. The collected sample data adequately reflect seam dimensions, seam true widths of mineralization, and the "complex" seam style. Sampling is representative of the coal quality.

The data verification programs concluded that the data collected from the Project adequately support the geological interpretations and constitute a database of sufficient quality to support the use of the data in Coal Resource and Coal Reserve estimation.

25.5 Metallurgical Testwork

Metallurgical testwork and associated analytical procedures were appropriate to the mineralization type, appropriate to establish the optimal processing routes, and were performed using samples that are typical of the coal seams found within the Project area.

Samples selected for testing were representative of the various seam types. Samples were selected from a range of depths within the FRO area. Sufficient samples were taken so that tests were performed on sufficient sample mass.

The bituminous coal seams at FRO are blended to produce coal with consistent quality for either HCC or SHCC products.

Predicted yields are continuously evaluated to more closely match the actual plant performance.

25.6 Coal Resource Estimates

The Coal Resource estimation for the Project conforms to industry best practices and is reported using the 2014 CIM Definition Standards.

The Coal Resources are forward-looking information and actual results may vary.

Factors that may affect the Coal Resource estimate include: changes to long-term coal price assumptions; changes in geological interpretations including the size, shape and distribution of interpreted lithologies; changes to coal recovery assumptions; changes to the input assumptions used to derive the conceptual open pit outlines used to constrain the estimate; variations in geotechnical, hydrogeological and mining assumptions; and changes to environmental, permitting and social license assumptions.

There is upside potential for the Project if some or all of the Measured and Indicated Coal Resources can be converted to Coal Reserves, and if some or all of the Inferred Coal Resources can be converted to higher-confidence categories and subsequently to Coal Reserves.

25.7 Coal Reserve Estimates

The Coal Reserve estimation for the Project incorporates industry-accepted practices and meets the requirements of the 2014 CIM Definition Standards.

The Coal Reserves are forward-looking information and actual results may vary.

Coal Resources were converted to Coal Reserves using a detailed mine plan, an engineering analysis, and consideration of appropriate modifying factors.

Areas of uncertainty that may materially impact the Coal Reserve estimates include: changes to long-term coal price assumptions; changes in geological interpretations including the size, shape and distribution of interpreted seams and waste; changes in local interpretations of seam geometry, fault geometry and seam continuity; changes to the input assumptions used to derive the open pit outlines used to constrain the estimate; variations in geotechnical, hydrogeological and mining assumptions; changes to environmental, permitting and social license assumptions.

25.8 Mine Plan

Mining operations are conducted year-round.

The open pit mine plans are appropriately developed to maximize mining efficiencies, based on the current knowledge of geotechnical, hydrological, mining and processing information on the Project.

The mining operations use conventional truck-and-shovel methods. As a result of delivery requirements and varying coal seam qualities it is necessary to have multiple coal seams exposed at any time.

FRO currently produces coal from six active pit phases (Swift 1A, Swift Lake Mountain, Swift 2N, Swift 2S, Eagle Pushback, Eagle West 2) using open-pit coal mining methods, with primary waste stripping and coal mining completed by shovels and rear dump haul trucks. An additional 25 phases (four in Swift pit, four in Eagle pit, 16 in Castle and one in Turnbull West) are planned.

The Coal Reserves support a mine life to 2064. The coal production plan includes coal from FRO being produced at GHO and coal from GHO being produced at FRO. This is possible due to the proximity of the two mine sites and is done in a manner which optimizes production and coal quality needs by each site.

As part of day-to-day operations, Teck will continue to perform reviews of the mine plan and consider alternatives to, and variations within, the plan. Alternative scenarios and reviews may be based on ongoing or future mining considerations, evaluation of different potential input factors and assumptions, and corporate directives.

25.9 Recovery Plan

The process methods in use are conventional to the industry. The processes are widely used in the coal industry with no significant elements of technological innovation.

25.10 Infrastructure

All key infrastructure is built, and the mine is operating. Some new haul roads, spoil piles and environmental control systems will be required for future developments and are included in the mine planning and Project economics.

The existing infrastructure, staff availability, existing power, water, and communications facilities, and the methods whereby goods are transported to the mine are all in place and well-established, and can support the estimation of Coal Resources and Coal Reserves.

Mining operations are conducted on a year-round basis.

25.11 Environmental, Permitting and Social

Baseline studies began in support of initial operations. Mining operations commenced in 1971. Teck has continued with baseline studies in support of ongoing operations and in support of regulatory applications and approvals. Environmental and social management plans were developed in support of operations.

Teck continues to implement the Elk Valley water quality plan to address increasing selenium, nitrate and sulphate water concentrations, assess and track levels of cadmium, while at the same time allowing for continued sustainable mining within the watershed. The Elk Valley water quality plan also lays out a strategy to address calcite formation associated with historical and current mining activities.

Vegetation management is an integrated part of FRO's operation. This includes the planning for re-vegetation for reclamation activities, management of invasive plants, and rare plant surveys. A wildlife mitigation management plan is in place.

Design of layouts for waste rock spoils include considerations for spoil slope stability and selenium management strategies. Tailings facilities are developed to contain tailings within an enclosed area.

Provisional ongoing progressive reclamation and closure costs are considered in the economic analysis that supports the Coal Reserves. Due to the length of the mine life, the net present value of final closure costs is considered negligible in the economic analysis. Estimates of final closure costs are updated every five years, or as required through major permit amendments, and submitted to the relevant regulatory authorities

Teck has a bonding schedule as part of the Mines Act permits, with the amount of the bond to be paid and the schedule set out in the permits.

All necessary licences, authorizations, and permits with their subsequent amendments are in place for current operations at FRO. Major permits will be required for the following areas that are included in the LOM plan:

- Fording River Extension (FRX/Castle);
- Turnbull West.

An Impact Management and Benefits Agreement is in place with the Ktunaxa Nation Council.

Teck also works with a number of local partners and organizations on economic, social and environmental initiatives.

Teck's currently proposed Fording River Extension Project, which would support extending the mine life at FRO, is being reviewed pursuant to Provincial and Federal environmental assessment legislation. Within the Provincial environmental assessment process, the currently proposed Fording River Extension Project is at the dispute resolution stage between the Ktunaxa Nation Council and Province of British Columbia.

25.12 Markets and Contracts

Markets for the metallurgical coal products include Asia, Europe, North and South American customers.

FRO production is blended with the products produced from other Teck operations, then sold by Teck.

Quarterly-priced sales represent approximately 40% of coal sales, with the sales balance priced at levels reflecting market conditions when sales are concluded.

Major site contracts include fuel supply, explosives and accessories, and exploration drilling and maintenance support as needed. C Westbound rail service at origin is currently provided by CPR. CPR transports a portion of these westbound shipments to Kamloops, B.C., and interchanges the trains with CNR for further transportation to the west coast. The remaining westbound shipments are transported by CPR from the mines to the terminals in Vancouver. CPR transport is under a tariff that expires in April 2023, and negotiations with CPR for a new westbound contract to replace the tariff are underway. A long-term agreement, until December 2026, is in place with CNR for shipping steelmaking coal from our four B.C. operations via Kamloops to Neptune and other west coast ports, including Trigon Terminals, located in Prince Rupert. Contracts are also in place with all terminal facilities to offload, stockpile, blend FRO coal to Teck's product specifications and, load bulk cargo vessels. Teck holds a 46% interest in Neptune Bulk Terminals. Customers arrange for ocean going bulk carriers to transport the coal from the terminals to their facilities for end use.

The QP has reviewed commodity pricing assumptions, marketing assumptions and the current major contract areas, and considers the information acceptable for use in estimating Coal Reserves and in the economic analysis that supports the Coal Reserves.

25.13 Capital Cost Estimates

The capital cost estimates are prepared at a ± 25% accuracy.

The LOM capital cost estimate for the period 2023–2064 totals C$4,445 million. Included in that estimate are:

- Mining equipment includes the capital costs required to purchase haul trucks, shovels, drills, loaders and support equipment;
- Plant and infrastructure include expenditures required to sustain plant operations and maintain the integrity of site utilities;

- Pit development includes exploration, permitting, access, pre-development work, and infrastructure costs;
- Sustainability includes the capital costs required for water treatment, reclamation, and infrastructure required to minimize environmental impact.

25.14 Operating Cost Estimates

The operating cost estimates are prepared at a ± 25% accuracy.

The LOM average cash cost estimate for the period 2023–2064 is C$190.76/t of clean coal. Included in that estimate are:

- Mining and processing costs include all labour, fuel, electrical power, consumables, repair parts and external services;
- Transportation costs include logistical costs related to the transport of clean coal products from site to customers;
- Other" includes exploration and head office allocations and non-capitalized exploration and reclamation.

The operating costs include allocations for costs incurred when a portion of the coal is sent to the Greenhills plant for treatment or visa versa. This is not a consistent practice, but occurs on an as-required, as-needed basis. Costs incurred from processing this coal are billed back to site that owns the reserves on a dollar per tonne basis.

25.15 Economic Analysis

Teck is using the provision for producing issuers, whereby producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production and where no material production expansion is planned.

Coal reserve declaration is supported by overall site positive cash flows and net present value assessments.

25.16 Risks

The major risks facing the operations are water management and quality, and obtaining the required permits to allow the execution of the LOM plan as envisaged.

The highest risk mining permit required is for the FRX project on Castle Mountain which is required inside the five-year window. Also, inside the five-year window, several additional minor permits are required to support mining in Swift and Eagle pit areas. Permits are also required to support pit backfill plans and mixed coal refuse disposal.

25.17 Opportunities

The risk analysis for the 2022 LOM plan identified the following key opportunities:

- Target drilling activities to upgrade Inferred Coal Resources to higher confidence categories;
- Reduce greenhouse gas emissions from mining operation activities;
- Continue optimization of the mine plan during each year of future mining operations.

25.18 Conclusions

Under the assumptions in this Report, the FRO Coal Reserve declaration is supported by overall site positive cash flows and net present value assessments. The mine plan is achievable under the set of assumptions and parameters used in the Report.

26.0 RECOMMENDATIONS

As FRO is an operating mine, with no planned expansions, the QPs have no meaningful recommendations to make.

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