British Columbia Coal Industry Overview 2015

BRITISH COLUMBIA | Ministry of Energy and Mines

BRITISH COLUMBIA GEOLOGICAL SURVEY

Ministry of Energy and Mines, British Columbia Geological Survey
Information Circular 2016-2

British Columbia Geological Survey
Ministry of Energy and Mines
www.em.gov.bc.ca/geology

BRITISH COLUMBIA | Ministry of Energy and Mines

British Columbia Coal Industry Overview 2015

Ministry of Energy and Mines
British Columbia Geological Survey

Information Circular 2016-2

Ministry of Energy and Mines
Mines and Mineral Resources Division
British Columbia Geological Survey

Front Cover: Metallurgical coal at the Greenhills Mine, Elk River coalfield, southeast B.C. **Photo by J. Riddell.**

Back Cover: The Coal Mountain mine, Crowsnest coalfield, southeast B.C.

This publication is available, free of charge, from the British Columbia Geological Survey website:

www.em.gov.bc.ca/geology

Victoria
British Columbia
Canada

January 2016

British Columbia coal industry overview 2015

British Columbia Geological Survey
Ministry of Energy and Mines

Introduction

In 2015, global metallurgical and thermal coal prices declined for the third consecutive year. This decrease was reflected by production slowdowns at all six active coal mines and a sharp reduction in exploration spending. Coal production tonnage for the province is forecast to decrease approximately 16% from 2014 levels. However coal remains the province's most valuable mined commodity in terms of annual sales (Fig. 1). Coal is currently produced from six mines in two regions (Fig. 2); coking coal is British Columbia's predominant coal product. Five mines in the southeastern part of the province produce mainly coking and PCI (pulverized coal injection) coal. The Quinsam mine on Vancouver Island produces thermal coal. Major markets for British Columbia coal include Asian countries, especially Japan, China, South Korea and India, and countries in South America and Europe.

This pamphlet provides a snapshot of the provincial coal industry. It describes British Columbia's coal regions, industry trends, coal transportation infrastructure, and summarizes mining and exploration activities for the past year. It also describes the tenure system, and lists sources of information and contacts. This publication complements more detailed British Columbia Geological Survey annual publications (see **Information Sources** below).

British Columbia coal industry trends and news in 2015

Global coal prices fell in 2015 for the third straight year. Premium hard coking coal (HCC) dropped to $89 from $121 in 2014, PCI coal to $73 from $107, and thermal coal to $64 from $82 (all prices are per tonne, in $US, estimated, West Coast port price). Prices for steel-making coal are low due to oversupplied coal and steel markets. In the past two years, high-cost coal mining operations have shut down worldwide. The China-Australia Free Trade Agreement signed in June 2015 immediately removed a 3 per cent tariff on coking coal, putting other coking coal exporting nations at a disadvantage. Unfavourable market conditions for B.C. coal products were offset somewhat by low diesel fuel prices, which helped mining operations reduce costs, and the falling exchange rate of the Canadian dollar, which benefited exporters.

Teck Coal took rotating 3-week shutdowns in their five East Kootenay mines over the summer to cut costs then resumed production for the rest of the year. The Quinsam thermal coal mine on Vancouver Island shut down for several weeks over the summer, resuming production in August.

The four coal mines in northeastern British Columbia remained idle following production suspensions in 2013 and 2014.

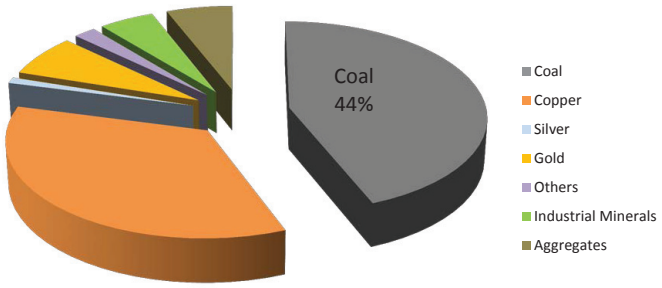

Fig. 1. Forecast production value by mined commodity for British Columbia in 2015. The value of coal production is forecast to be $3.04 billion this year, representing about 44% of all mineral revenue in the province.

The value of coal production for the province is forecast at $3.04 billion for 2015, constituting about 44% of all mineral production value in the province (Fig. 1). This forecast represents a decrease of 16% from 2014 sales levels, due to lower prices and a drop in production tonnage due to mines closing in the northeast Foothills coalfield. Coal exploration in mine expansion areas in southern British Columbia continued, but elsewhere expenditures fell sharply.

New coal license applications numbered 68 in 2015 for a total of 74,100 hectares (Fig. 3). New coal licenses issued numbered 87, covering 70,806 hectares (Fig. 4). No new leases were issued.

Coalfields of British Columbia

The distribution of Upper Jurassic to Tertiary coal coalfields follows the southeast-to-northwest tectonic and physiographic grain of the province (Fig. 2). Currently, most coal mining is in the Rocky Mountain belt of eastern British Columbia. Farther west, coalfields are in the interior of the province, and on west coast islands (Vancouver Island and Haida Gwaii).

In **southeastern British Columbia**, coal deposits are in the Flathead, Crowsnest and Elk River coalfields, which extend northwest from the Canada-USA border for 175 km along the Rocky Mountains (Figs. 2, 5). Economic coal seams are hosted by the Mist Mountain Formation of the Kootenay Group (Jurassic to Lower Cretaceous; Fig. 6). Most of the known resource is metallurgical coal, ranging mainly from high-volatile A bituminous to low-volatile bituminous. Southeastern British Columbia coals are characterized by low total sulphur contents. Potentially mineable coal resources are estimated at 8.0 billion tonnes. Provincial legislation enacted in 2011

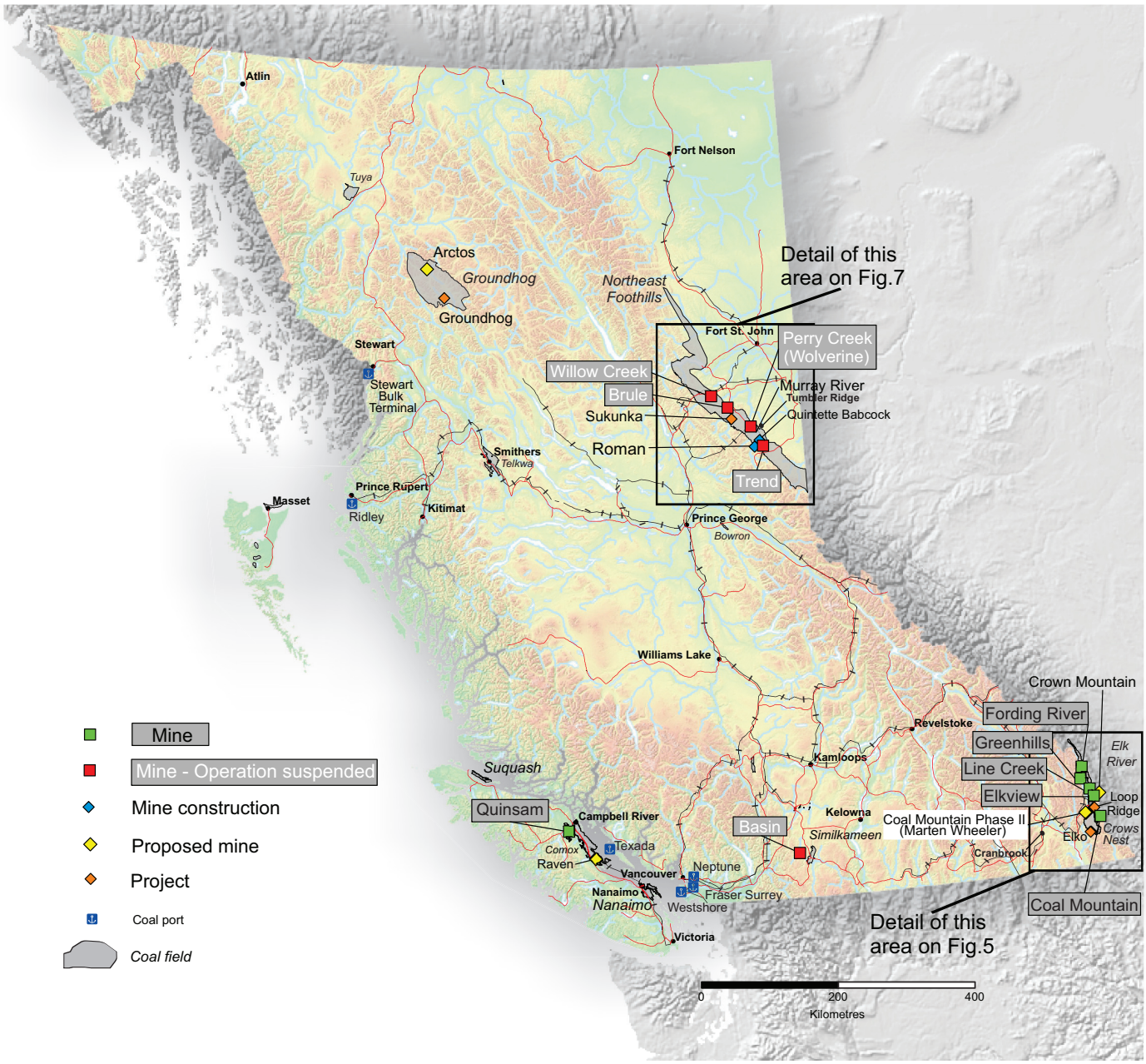

Fig. 2. Coal mines and selected coal projects in British Columbia 2015.

prohibits subsurface resource exploration and development in the Flathead River watershed (Fig. 5), so the Flathead coalfield and part of the Crowsnest coalfield are excluded from coal mining activity.

The **northeastern British Columbia** deposits are in the Foothills and Plains coalfields, together commonly referred to as the Peace coalfield. The Foothills coalfield extends for 400 km along the eastern flank of the Rocky Mountains (Figs. 1, 7). The coals are distributed through a stratigraphic interval of over 3000 m, and are hosted by five Lower Cretaceous units, the most important of which are the Gates Formation (Fort St. John Group), and the Gething Formation (Bullhead Group; Fig. 8). Coal in the Gething and Gates formations are bituminous in rank, ranging from high to low volatile. Metallurgical (coking) coals are predominant, and total sulphur contents are typically low. The Minnes Group (Lower Cretaceous; Fig. 8) hosts coal; however mineable thicknesses and continuity have not been documented, and the Minnes Group coals are not current exploration targets. Significant deposits of weak coking coal are recognized in the Boulder Creek Formation (Lower Cretaceous) between the Pine and Sukunka rivers. On the Plains, coal seams of the Wapiti Formation (Upper Cretaceous) are lower in rank and have potential for thermal coal mining. Potentially mineable coal resources in northeast B.C. coalfields have been estimated at 4.9 billion tonnes, with considerable potential for growth as exploration continues. The marketability

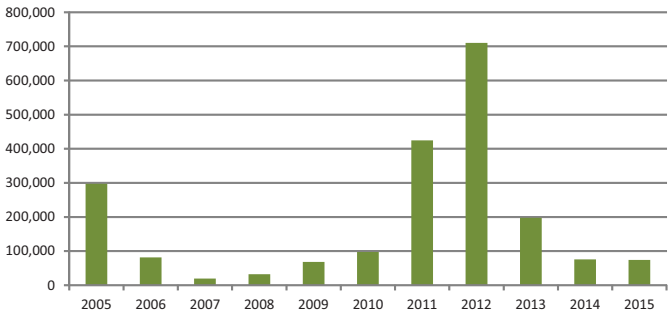

Fig. 3. New coal license applications 2004 to 2015, in hectares. Value for 2015 is as of November 10, 2015.

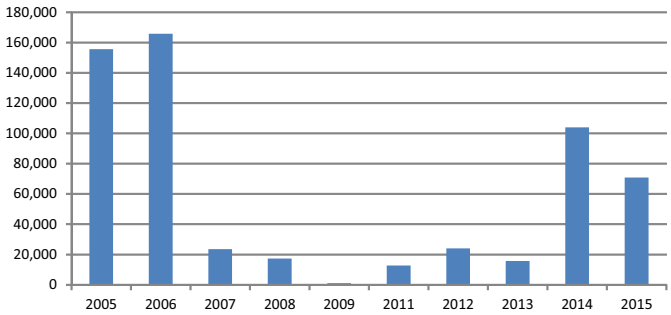

Fig. 4. Coal licenses issued, 2004 to 2015, in hectares. Value for 2015 is as of November 10, 2015.

of Gething Formation coals has benefitted from increased use of pulverized coal injection (PCI) products in steel making.

In **northwestern British Columbia**, the Groundhog-Klappan Coalfield (Fig. 2) covers approximately 2300 km^2 and hosts Canada's only significant anthracite deposits. The estimated potential of the greater Groundhog region is more than 9 billion tonnes of semi-anthracite to meta-anthracite coal. The coal is hosted by Jurassic to Cretaceous deltaic deposits in the Bowser Lake Group. Coal is found in several other smaller Mesozoic basins in the northwestern part of the province, including the Telkwa Coalfield south of Smithers and the Tuya River deposit (Fig. 2).

In the **southern interior** of British Columbia, numerous small Tertiary basins contain coal. Tertiary basin coals in the Similkameen, Merritt, and Hat Creek coalfields range from lignite to high-volatile bituminous, and are generally low in sulphur content.

On **Vancouver Island**, coal in the Nanaimo and Comox coalfields is hosted by several units in the Nanaimo Group (Upper Cretaceous). Coal ranks are generally in the high-volatile bituminous range; ash and sulphur contents vary.

Coal mining and exploration in 2015

Annual coal production in British Columbia dipped in 2015. The annual production forecast for 2015, as reported by operators, is between 24 and 25 million tonnes, down from about 29.7 million tonnes in 2014. Production has ranged between 22 and 31 million tonnes for the past 20 years. Coal mining statistics for 2015 including production rates and reserves, are summarized in Table 1; coal mine locations are shown in Figures 2, 5, and 7.

Coal exploration expenditures in British Columbia amounted to approximately $69.1 million in 2015, down from $105 million in 2014, well below the $150 million record set in 2012. Most spending was on expansion projects adjacent to active mines and advanced coal projects in the Rocky Mountains belt of southeastern and northeastern B.C. (Table 2).

Southeastern British Columbia

Mining

Teck Coal Ltd., the world's second-largest exporter of metallurgical coal, operates five large open-pit coal mines in the Elk Valley area (Fig. 5). The mines at **Fording River, Greenhills, Line Creek, Elkview,** and **Coal Mountain** produce more than 90% of Canada's total annual metallurgical coal exports. The main product is metallurgical coal (85%), with some thermal and pulverized coal injection (PCI) coal (15% combined). All five are open-pit, truck and shovel mines. Based on Teck Coal's Q3 2015 forecasts, volumes of clean coal production from southeastern B.C. for 2015 are forecast at approximately 25 million tonnes, down from 26.5 million tonnes in 2014.

The Elk Valley Coalfield includes the **Fording River**, **Greenhills** (Fig. 9) and **Line Creek** operations, where coal beds are in the Alexander Creek and Greenhills synclines (Fig. 10). The Crowsnest Coalfield lies in the Fernie Basin, a broad north-trending synclinorium (Fig. 11) that hosts the current **Elkview** and **Coal Mountain** operations. Pulverized Coal Injection (PCI) coal is the main product shipped from **Coal Mountain** (Fig. 12).

In recent years, Environmental Assessment approval of major mine projects in the Elk Valley has been conditional on developing a regional watershed management plan. In November 2014, Teck received approval from the British Columbia Ministry of Environment for the Elk Valley Water Quality Plan, which addresses the management of contaminants released by mining activities. It is a public policy document intended to guide regulatory decisions about water quality and mining in the Elk Valley. It considers water diversion and treatment, and establishes water quality targets for selenium, nitrate, sulphate, cadmium, and calcite.

The plan required public consultation and was developed with advice from a Technical Advisory Committee chaired by the British Columbia Ministry of Environment, and including representatives from Teck, the Ktunaxa Nation, the US Environmental Protection Agency, the State of Montana, and Environment Canada. The West Line Creek water-treatment facility is currently being commissioned. It is the first of six that Teck plans for the Elk Valley, including one at Fording River Operations for 2018.

Exploration

In the southeast, $35.46 million was spent on coal exploration in 2015, in large part on mine lease and mine evaluation

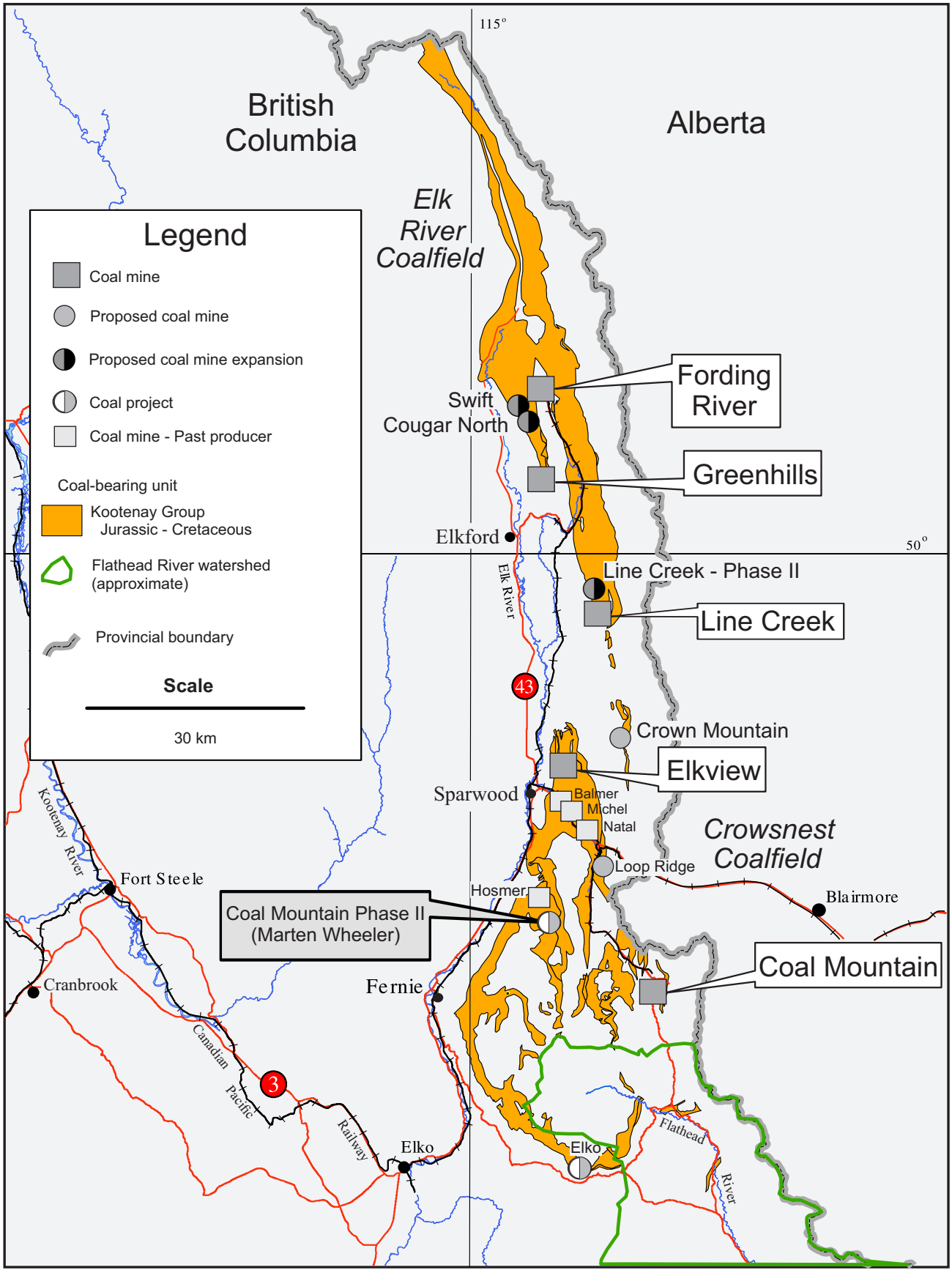

Fig. 5. Coal mines and selected exploration projects, southeastern British Columbia.

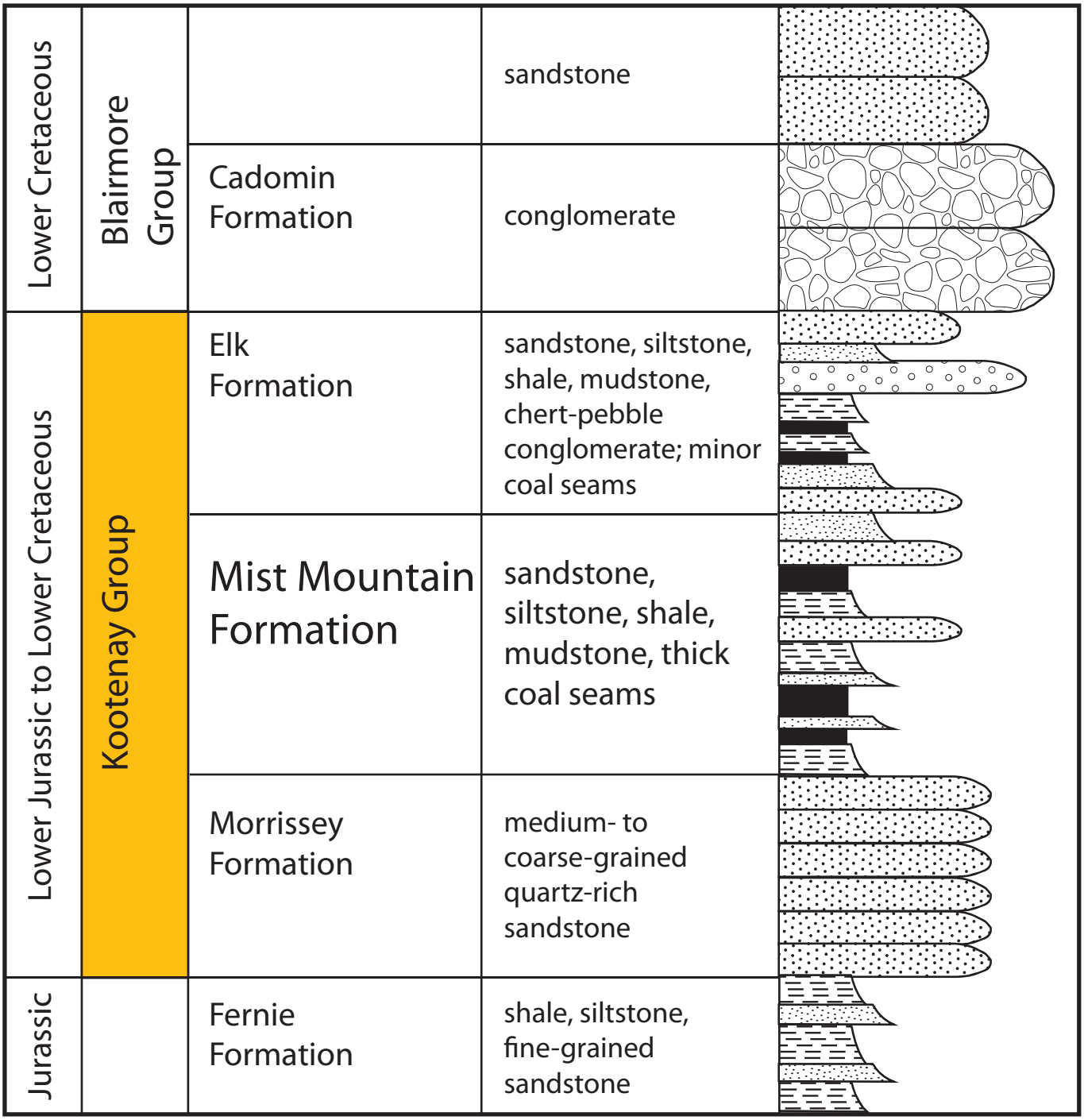

Fig. 6. Coal stratigraphy of southeast British Columbia.

drilling. All five Teck operations had expansion projects in the exploration, permitting, or development stage (Table 2).

At **Fording River** Operations, the **Swift** project expansion received environmental assessment approval in September 2015, and the project is now working to satisfy requirements. Exploration drilling continued at Swift and at the Fording mine site in active pits.

At the **Greenhills** Mine, drilling focused on the active Cougar pit, and baseline work continued to advance pre-application of the Cougar Pit Extension (CPX) project.

At **Line Creek** Operations, the Burnt Ridge Extension (BRX) project entered the pre-application stage of Environmental Assessment in 2014. The BRX project will connect the current operating area to the recently approved Phase II area by extending the current Burnt Ridge South pit to the north.

At **Elkview** mine, the Baldy Ridge Extension (BRE) entered the pre-application stage of Environmental Assessment in 2014. Exploration drilling in the current mine boundary was

Table 1. Coal mines in British Columbia; production and reserve numbers for 2015.

Mine	Operator	Deposit Type/ Commodity	Forecast 2015 Production	Reserves as of Dec. 31, 2014
Brule	Walter Energy, Inc.	ULV PCI coal	Production suspended in 2014	16.6 Mt
Coal Mountain	Teck Coal Limited	PCI and thermal coal	2.3 Mt	7.2 Mt
Elkview	Teck Coal Limited	HCC	6.3 Mt	215.2 Mt HCC
Fording River	Teck Coal Limited	HCC and thermal coal	7.9 Mt	620.4 Mt HCC 4.5 Mt thermal
Greenhills	Teck Coal Limited	HCC, PCI and thermal coal	5.2 Mt	60.6 Mt HCC 3.7 Mt PCI 1.2 Mt thermal
Line Creek	Teck Coal Limited	HCC, PCI and thermal coal	3.1 Mt	66.8 Mt HCC 3.1 Mt PCI 8.8 Mt thermal
Quinsam & 7 South	Hillsborough Resources Limited	Thermal coal	Approximately130,000 t washed coal	unavailable
Trend	Anglo American plc	HCC	Production suspended in 2014	8.3 Mt
Willow Creek	Walter Energy, Inc.	HCC and ULV PCI	Production suspended in 2013	16.6 Mt
Wolverine (Perry Creek)	Walter Energy, Inc.	HCC	Production suspended in 2014	8.8 Mt
Roman	Anglo American plc	HCC	Mine opening postponed	25.8 Mt
Quintette (Babcock)	Teck Coal Limited	HCC and thermal coal	Mine opening postponed	39.1 Mt
HCC = hard coking coal; PCI = pulverized coal injection; ULV = ultra low volatile				

directed at planning for the next phases of mining in the Baldy and Natal pits.

Exploration drilling at **Coal Mountain** focused mainly in active pits. The Coal Mountain Phase 2 (previously named the Marten-Wheeler project) entered the pre-application phase of the Environmental Assessment (EA) process in September 2014 as a proposed extension of the current Coal Mountain operation. As part of cost-cutting measures announced by Teck in November of 2015, development work will be suspended and the project will be withdrawn from the environmental assessment process.

Jameson Resources Limited continued to advance their **Crown Mountain** project, after entering the pre-application stage of the Canadian Environmental Assessment process in 2014.

CanAus Coal Limited continued drilling at their **Loop Ridge** project in the Michel Creek area. They are working towards the pre-application stage of environmental assessment.

Texas and Oklahoma Coal Company (Canada) Limited conducted geological mapping and used historical data to prepare a preliminary resource model at their **Elko** project at the south end of the Crowsnest Coalfield.

Northeastern British Columbia

Mining

The four coal mining operations that were suspended in 2013 to 2014 remained idle throughout 2015 (Fig. 7). Stockpiles of mined coal were transported from the **Brule** and **Trend** mines

Table 2. Selected coal exploration and development projects in British Columbia 2015.

Property name	Operator name	Status	2015 activity	Region
Cougar (Greenhills Operations)	Teck Coal Limited	Exploration	Drilling	Southeast
Crown Mountain	Jameson Resources Limited	Pre-application (EA)	Pre-feasibility	Southeast
Elko	Texas and Oklahoma Coal Company (Canada)	Exploration	Mapping, resource modelling	Southeast
Elkview (Baldy Ridge Extension)	Teck Coal Limited	Pre-application (EA)	Drilling	Southeast
Fording-Swift	Teck Coal Limited	EA certificate received	Environmental	Southeast
Groundhog	Atrum Coal	Exploration	Resource modelling	Northwest
Line Creek Phase II & **Burnt Ridge Extension**	Teck Coal Limited	Approved (EA) Pre-application	Pre-stripping	Southeast
Marten-Wheeler (Coal Mountain Phase II)	Teck Coal Limited	Pre-application (EA) withdrawn November 2015	Environmental, geotechnical mine design	Southeast
Michel Creek (Loop Ridge)	CanAus Coal Limited	Pre-application (EA)	Drilling, resource modelling, coal quality, environmental	Southeast
Murray River	HD Mining International Limited	EA certificate received	Decline construction, drilling	Northeast
Quinsam	Hillsborough Resources Limited	Mining and Exploration	Exploration on hold	South Coast (Vancouver Island)
Quintette - Babcock	Teck Coal Limited	Mining permit in place	Development on hold	Northeast
Roman Mountain	Anglo American plc (Peace River Coal Inc.)	Mining permit in place	Development on hold	Northeast
Sukunka	Glencore	Pre-application (EA)	Engineering, environmental, resource model update	Northeast
Henretta 4, Eagle (Fording River Operations)	Teck Coal Limited	Pre-application (EA)	Drilling, coal quality	Southeast

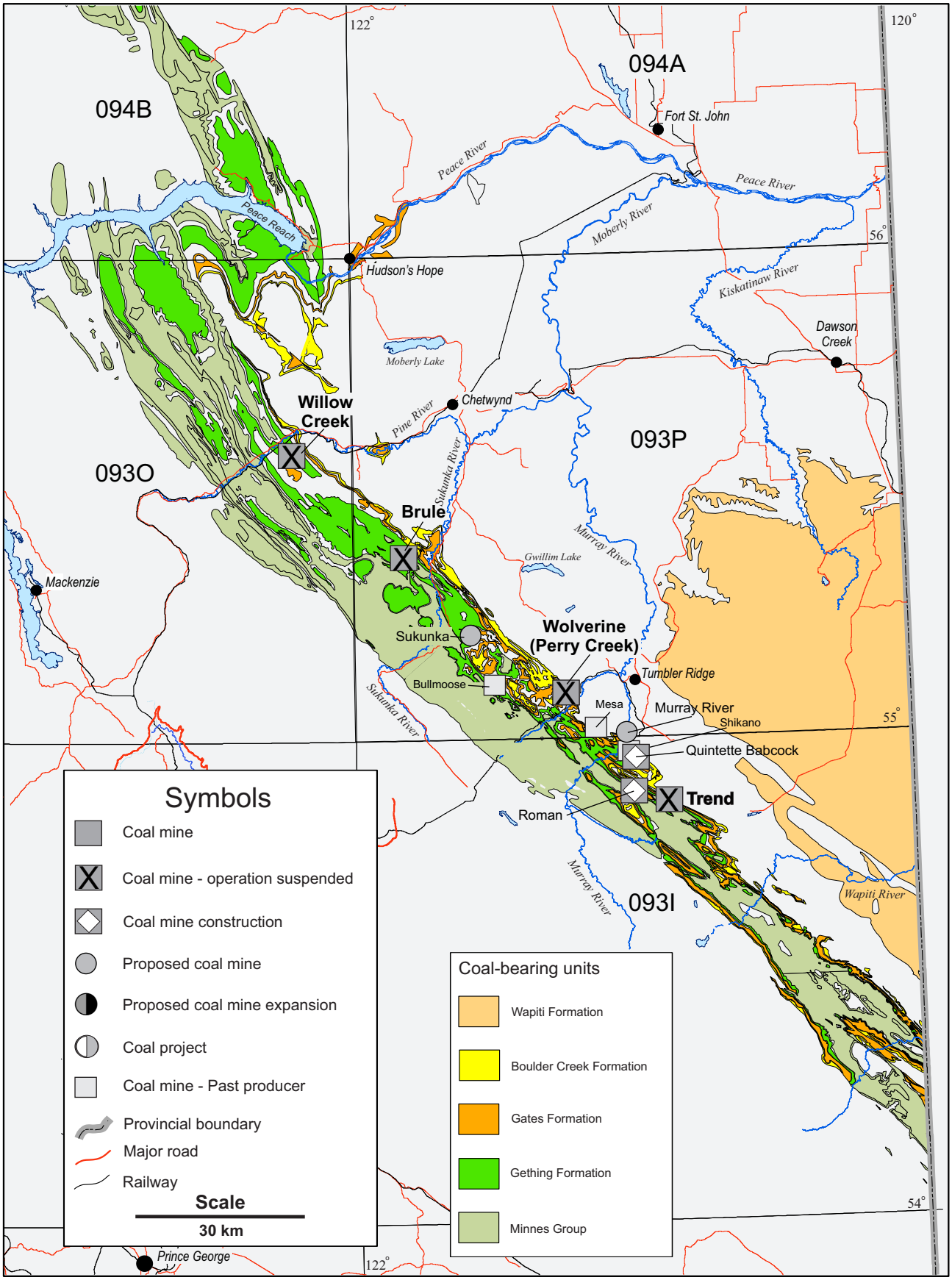

Fig. 7. Coal mines and selected exploration projects, northeastern British Columbia.

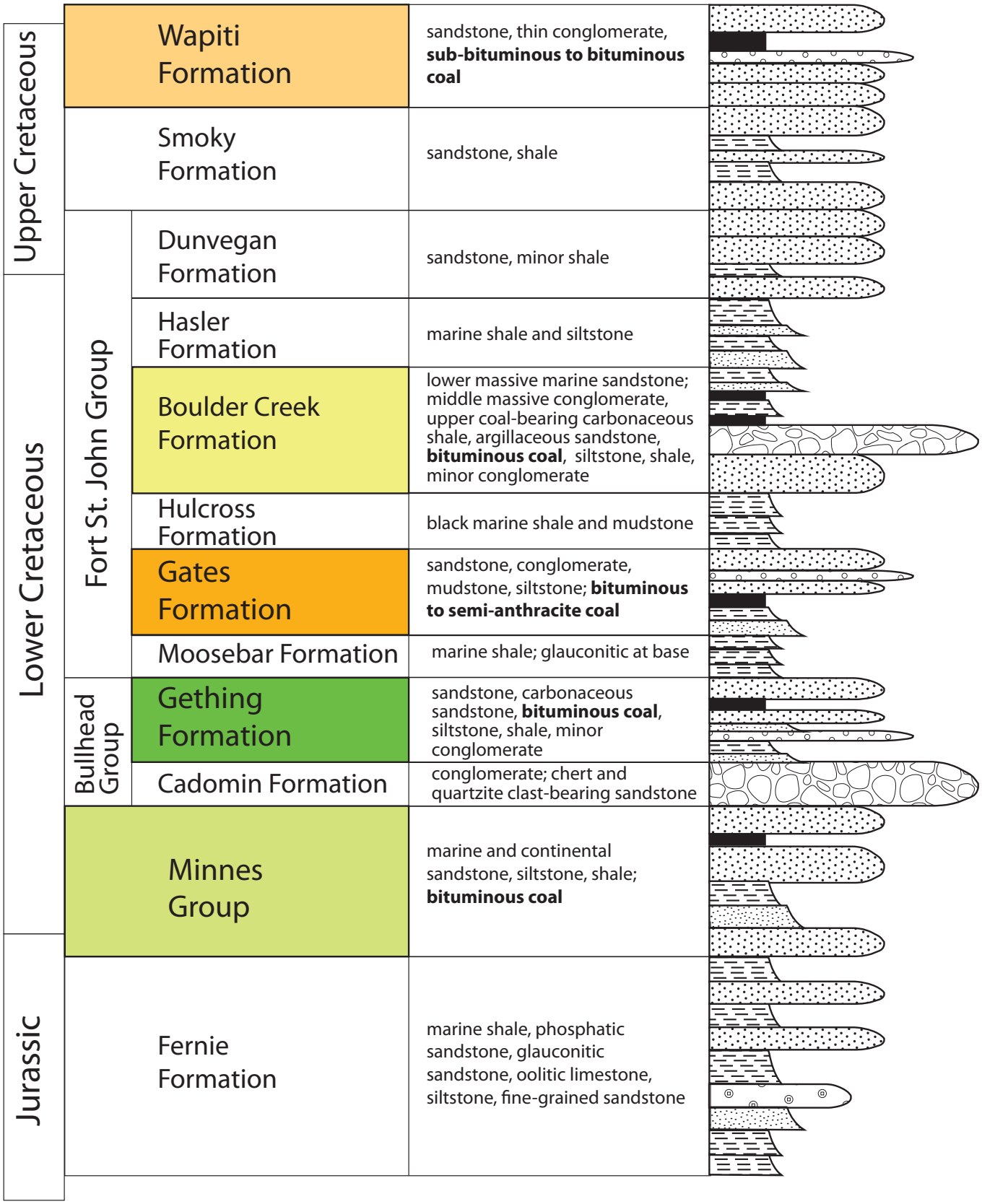

Fig. 8. Coal stratigraphy of northeast British Columbia.

Fig. 9. Coal beds in the Greenhills syncline in the Elk Valley, exposed at the Greenhills mine.

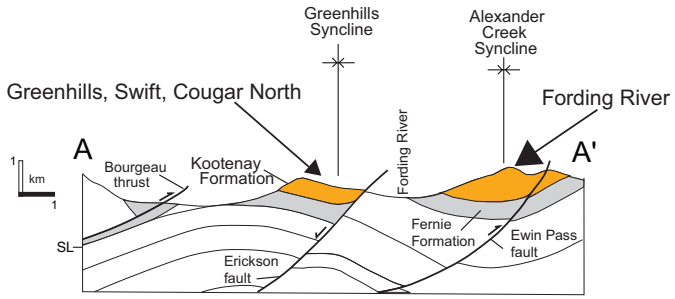

Fig. 10. Cross-section A-A' (Fig. 5) across the Greenhills and Alexander synclines.

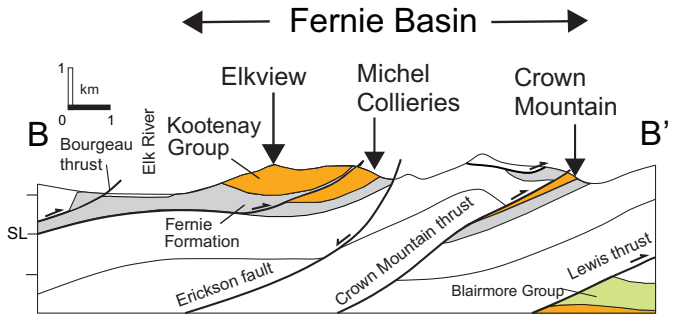

Fig. 11. Cross-section B-B' (Fig. 5) across the Fernie Basin.

Fig. 12. Mining at Coal Mountain, southeastern British Columbia.

in 2015, but no new coal was mined. The planned reopening of the Teck Coal's **Quintette** mine at Mount Babcock remains on hold pending a recovery in prices, as does the opening of the new **Roman Mountain** mine.

Exploration

In 2015, coal exploration spending totalled $31.0 million in northeastern B.C.

Glencore plc continued engineering and environmental studies to support their **Sukunka** project Environmental Assessment application, which was accepted for review. An

open-pit mining operation with up to 3 million tonnes per year production of saleable metallurgical coal is proposed. An updated geological model increased coal resources.

HD Mining International Ltd. continued constructing a decline at their **Murray River** project to extract an underground bulk coal sample (Fig. 13). As of December, 2015, the decline was 1351 metres long and approached a depth of 400 metres. Underground exploration drilling targeted the first workable seam. Engineering and environmental studies continued. The Province of British Columbia issued a conditional Environmental Assessment certificate on October 1 for a longwall mining operation with a production capacity of 4.8 million tonnes per year.

Northwestern British Columbia

Exploration

Following a 2014 prefeasibility study update, Atrum Coal NL completed engineering studies and refined the resource model for the Groundhog North component of their **Groundhog** project. An underground mine producing 3.2 million tonnes per year of anthracite is planned.

On May 4, 2015 the British Columbia Government announced an agreement to acquire 61 coal licenses in the Groundhog Coalfield, including the Arctos Anthracite project, from Fortune Minerals and POSCO Canada. The purchase agreement provides a 10-year option for Fortune Minerals and POSCO Canada to re-purchase the licences at the original price ($18 million) after the Province and the Tahltan Nation have developed a shared vision for the Klappan River area. A copy of the agreement is available online: https://news.gov.bc.ca/stories/agreement-secures-opportunity-for-progress-on-shared-vision-for-klappan.

Vancouver Island

Mining

Hillsborough Resources Limited continued to produce thermal coal from the **Quinsam** Mine, an underground room-and-pillar operation in the Comox Coalfield. Continued low prices resulted in operations being suspended from June until August. Forecast 2015 production is less than 150,000 tonnes, down from 220,000 tonnes in 2014 and 348,000 tonnes in 2013.

Exploration

Compliance Energy Corporation withdrew the **Raven** metallurgical coal project from the Environmental Assessment pre-application process in March. No new coal exploration was undertaken on Vancouver Island in 2015.

Transportation infrastructure

Coal produced in the Elkview and Crowsnest coalfields in southeastern British Columbia is transported by rail to Westshore Terminals in Delta and Neptune Bulk Terminals in North Vancouver for export. (Fig. 2). The coalfields of northeastern British Columbia are connected by rail to the Ridley Island Terminals near Prince Rupert. Thermal coal from the Quinsam mine is shipped to international markets from facilities on Texada Island in the Strait of Georgia and Neptune Terminals near Vancouver, and to domestic markets by truck and barge.

Fig. 13. The new 1351 m decline at the Murray River project near Tumbler Ridge.

Port upgrades and expansions continue. The Westshore facility is part way through a $275 million upgrade to increase annual capacity from 33 to 36 million tonnes. The expansion began in 2014 and is scheduled to be completed in 2018. In North Vancouver, the Neptune terminal continues its coal port modernization project, which will reduce the coal storage area and increase annual shipping capacity from 12.5 to 15.5 million tonnes per year. The Ridley Terminal coal port, near Prince Rupert, suspended the second half of an expansion project in 2014, which will remain on hold pending restart of coal mining in northeastern British Columbia.

Port Metro Vancouver granted a permit to Fraser Surrey Docks in August 2014 to add a coal shipping facility to its existing terminal on the Fraser River, with an annual capacity of four million tonnes. Fraser Surrey Docks intended to receive coal by rail from Wyoming and load it on to barges for shipping to the deep-water port at Texada Island, where it would be loaded on ocean-going freighters. In June 2015, Fraser Surrey Docks applied to amend its permit to load directly from the Surrey facility to ocean-going vessels; the application was

approved by Port Metro Vancouver in December 2015.

Coal tenure

The Mineral Titles Branch of the British Columbia Ministry of Energy and Mines maintains a website that provides information about Coal Titles regulations and resources for researching and acquiring coal tenures in the province (Table 3). Coal tenure in British Columbia is held in two forms: **coal licence** or **coal lease**. The **coal licence** is the initial stage of coal tenure, and is appropriate for exploration. It is analogous to a mineral claim. Acquisition is initiated by a **coal license application**; a Free Miner Certificate is not required to acquire a coal licence. Coal licence holders have the exclusive right to explore and develop Crown-owned coal resources as defined in the Coal Act. Production is limited to a 100,000-tonne sample for testing purposes. A **coal lease** is the appropriate tenure to hold when a mineable resource has been proven and the project is ready to switch from exploration to production of coal. Regularly updated coal tenure and application maps, both for specific areas and the entire province, can be viewed online (Table 3.)

An application for a coal licence is made to the Minister and must be accompanied by: the prescribed application fee; the prescribed rent in respect of location; and a plan and description of the location under Section 11 of the Coal Act. The application fee is $25 per hectare plus $7 per hectare first year rental. Coal licenses must be renewed annually by the anniversary date of the tenure acquisition. Annual renewal requirements include remittance of the annual rental fees and submission of a technical report on all exploration work during the previous year (Table 3).

Before carrying out exploration that involves mechanized ground disturbance, the licence holder must possess a permit under the Mines Act. The application for approval of exploration activities is termed a Notice of Work (NOW). A Notice of Work can be submitted at the same time as the coal license application (Table 3), but the work cannot begin until tenure is granted.

A coal lease gives the holder the exclusive right to explore for, develop, and produce a coal resource on the lease location. The tenure holder must first have held a coal licence over the same location. The initial term for a coal lease is 30 years, followed by 15 years upon renewal. All appropriate approvals and authorizations must be in place before commencing work on a coal lease (Table 3).

An environmental assessment is a key component for proposed major mine construction and expansion projects; please visit the Environmental Assessment Office (EAO), an independent agency of the Government of British Columbia (Table 3).

British Columbia Geological Survey information sources

Founded in 1895, the British Columbia Geological Survey integrates historical data with active research programs and, drawing on continuously advancing concepts and technologies in the Earth sciences, thus supports the coal and mineral industries. The British Columbia Geological Survey preserves, archives, and provides free web-based access to over a century's worth of geoscience information (Table 4). Each year in January, the British Columbia Geological Survey releases its Geological Fieldwork volume (a summary of field activities and current research), a summary of exploration and mining, and the present coal industry overview (Table 4).

MapPlace is a web service that allows clients to browse, visualize, and analyze geoscience data. Since 1995, MapPlace has provided open geoscience data and custom map-making tools to aid in the discovery of coal and mineral potential in British Columbia. MapPlace allows users to generate custom maps by querying multiple sources, including the: industry and government document archive (Property File); online mineral inventory (MINFILE); mineral assessment report database (ARIS); coal assessment report database (COALFILE); regional geochemistry survey (RGS); Mineral Titles Online (MTO) tenure database; British Columbia Geological Survey publication catalogue, and extensive collections of bedrock and surficial geology maps.

MINFILE is a mineral inventory database that contains geological, location, and economic information on more than 14,000 metallic, industrial mineral, and coal occurrences in British Columbia. COALFILE is the database of coal reports. It contains a collection of over 960 assessment reports dating from 1900, many of which were submitted by exploration companies in compliance with the Coal Act. COALFILE contains details of coal exploration reports in a relational database, including data for over 15,000 boreholes, 541 bulk samples, 995 maps, and 3580 trenches. A search engine leads clients to a summary page for each coal assessment report. The reports, boreholes, bulk samples and trenches are spatially referenced on MapPlace.

Industry contacts

The corporate websites of coal exploration and mining groups active in British Columbia are listed in Table 5.

Contacts at the Ministry of Energy and Mines and the British Columbia Geological Survey

Ministry of Energy and Mines and British Columbia Geological Survey personnel (Table 6) are available for consultation. Should you wish to be receive notification of British Columbia Geological Survey publications released throughout the year, please subscribe to our newsletter by emailing Geological.survey@gov.bc.ca.

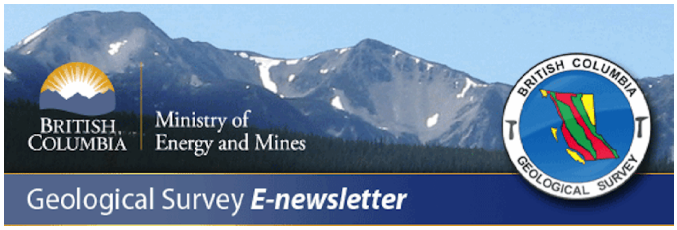

Table 3. Websites to access coal tenure information.

To access	Click
Coal titles	www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/mineral-titles/coal-titles
Coal and mineral tenure: online viewer map and downloadable spatial data	www.mtonline.gov.bc.ca/
Coal licence application and other forms	www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/mineral-titles/coal-titles/forms-maps-publications/coal-titles-forms
Coal Act and Regulation	www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/mineral-titles/coal-titles/legislation
Annual technical report requirements	www.empr.gov.bc.ca/Mining/Geoscience/Coal/Pages/Reporting_Information.aspx
Notice of Work (FrontCounter BC)	www.frontcounterbc.ca/apps/now.html
Permitting and Reclamation	www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/permitting
Environmental Assessment Office	www.eao.gov.bc.ca/ea_process.html

Table 4. Websites to access British Columbia Geological Survey publications, maps and databases, at no charge.

To access	Click
British Columbia Geological Survey publication catalogue	www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/InformationCirculars/Pages/default.aspx
British Columbia Coal Industry Overview, 2015 (this volume)	www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/InformationCirculars/Pages/IC2016-2.aspx
British Columbia Geological Survey geological fieldwork	www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/Fieldwork/Pages/default.aspx
British Columbia Geological Survey coal geology page	www.empr.gov.bc.ca/Mining/Geoscience/Coal/Pages/default.aspx
Provincial overview of Exploration and mining in British Columbia, 2015	www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/InformationCirculars/Pages/IC2016-1.aspx
Table of British Columbia coal resources (British Columbia Geological Survey GeoFile 2010-11, by B. Northcote)	www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/GeoFiles/Pages/2010-11.aspx
British Columbia coal assessment reports and COALFILE	www.empr.gov.bc.ca/Mining/Geoscience/Coal/CoalBC/Pages/CoalDataReports.aspx
MINFILE	www.empr.gov.bc.ca/MINING/GEOSCIENCE/MINFILE/Pages/default.aspx
MapPlace	www.mapplace.ca webmap.em.gov.bc.ca/mapplace/minpot/coal.cfm

Table 5. Industry contacts.

Coal Association of Canada	www.coal.ca
Teck Coal Limited	www.teck.com
Walter Energy, Inc.	www.walterenergy.com
Hillsborough Resources Limited	www.hillsboroughresources.com
Anglo American Canada plc	www.angloamerican.ca
Canadian Kailuan Dehua Mines Co. Ltd.	www.kailuandehua.com
Fortune Minerals Limited	www.fortuneminerals.com
Compliance Energy Corporation	www.complianceenergy.com
Crowsnest Pass Coal Mining Ltd.	www.crowsnestpasscoal.com
Cardero Resource Corp.	www.cardero.com
Colonial Coal International Corporation	www.ccoal.ca
Glencore Limited	www.sukunkaproject.ca
Canadian Dehua International Mines Group Inc.	www.dehua.ca/
Jameson Resources Limited	www.jamesonresources.com.au/
Texas and Oklahoma Coal Company (Canada)	www.texascoal.com/
Atrum Coal	www.atrumcoal.com/
HD Mining International Limited	www.hdminingintl.com/

Table 6. British Columbia Ministry of Energy and Mines contacts.

Gordon Clarke Director, Mineral Development Office British Columbia Geological Survey, Vancouver	604-660-2094 gordon.clarke@gov.bc.ca
Janet Riddell Coal Geologist British Columbia Geological Survey, Victoria	250-952-0434 janet.riddell@gov.bc.ca
Jennifer Anthony Director, Coal Titles Mineral Titles Branch, Victoria	250-356-0185 jennifer.anthony@gov.bc.ca
Jessica Norris Coal Assessment Report Geologist British Columbia Geological Survey, Victoria	250-952-0425 jessica.norris@gov.bc.ca
Fiona Katay Regional Geologist, Kootenay – Boundary Cranbrook	250-426-1758 fiona.katay@gov.bc.ca
Paul Jago Regional Geologist, Northeast & Omineca Prince George	250-565-4316 paul.jago@gov.bc.ca
Bruce Northcote Regional Geologist, Southwest coast Vancouver	604-660-2713 bruce.northcote@gov.bc.ca
Jeff Kyba Regional Geologist, Skeena – Smithers Smithers	250-847-7787 jeff.kyba@gov.bc.ca
Jim Britton Regional Geologist, Thompson – Okanagan – Cariboo Kamloops	250-371-3903 jim.britton@gov.bc.ca