BRITISH COLUMBIA

BC Geological Survey
Coal Assessment Report
1034

COAL ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT:	Report Submitted to the Ministry of Energy & Mines to Satisfy Section 8(1) Requirements of the Coal Act Regarding Telkwa Property Coal License(s): **327836, 327837, 327838, 327839, 327845, 328672, 327834, 327840, 327865, 327866, 327936, 327944, 327951, 327952, 327953, 327954, 327964 and 327965**
TOTAL COST:	**$1,080,000 as part of total $1.5 million program**
AUTHOR(S):	Dan Farmer, P.Eng., Chief Operating Officier, Telkwa Coal Limited
SIGNATURE(S):	
NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):	Not applicable; No permits applied for

DATE SUBMITTED:	December 20, 2016
YEAR OF WORK:	2016-17
PROPERTY NAME:	Telkwa
COAL LICENSE(S) AND/OR LEASES ON WHICH PHYSICAL WORK WAS DONE:	n/a

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:	n/a
MINING DIVISION:	Omineca
NTS / BCGS:	093L11
LATITUDE: 54° 37′ 38" *(at centre of work)*	**LONGITUDE:** 127° 09′ 39" *(at centre of work)*
UTM Zone: 9N **EASTING:** 618,725 **NORTHING:** 6,054,860	

OWNER(S):	Telkwa Coal Limited
MAILING ADDRESS:	Suite 1140-1240 West Pender, Vancouver, British Columbia, CANADA | Tel: 604-220-5703
OPERATOR(S) *(who paid for the work)*:	Telkwa Coal Limited
MAILING ADDRESS:	*c/o Malaspina Consultants Inc.*, 880 - 580 Hornby Street, Vancouver, BC, V6AC 3B6

REPORT KEYWORDS *(lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude - do not use abbreviations or codes)*

coal, claystone, siltstone, sandstone, conglomerate, minor tuff, lava beds, Lower-Upper Cretaceous, Skeena Group, Telkwa Basin, Goathorn Creek, Pine Creek, Cabinet Creek, Telkwa North-Avelling Hill, Tenas Creek, in-situ ~125 million tonnes, past-producer, Manalta, Luscar, Bulkley Valley Coal Limited, Carbon Development Corporation, coal license 327836, 327837, 327838, 327839, 327845, 328672, 327834, 327840, 327865, 327866, 327936, 327944, 327951, 327952, 327953, 327954, 327964 and 327965

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:

Not Applicable

SUMMARY OF TYPES OF WORK IN THIS REPORT

GEOLOGICAL (scale, area) *Work to Report:* ☐ *Yes* ☒ *No*		EXTENT OF WORK (in metric units)	ON WHICH TENURES
	Ground, mapping		
	Photo interpretation		

GEOPHYSICAL (line-kilometres) *Work to Report:* ☐ *Yes* ☒ *No*		EXTENT OF WORK (in metric units)	ON WHICH TENURES
	Ground (Specify types)		
	Airborne(Specify types)		
	Borehole		
	Gamma, Resistivity,		
	Resistivity		
	Caliper		
	Deviation		
	Dip		
	Others (specify)		
	Core		
	Non-core		

SAMPLING AND ANALYSES *Work to Report:* ☐ *Yes* ☒ *No*		EXTENT OF WORK (in metric units)	ON WHICH TENURES
Total Number of Samples			
	Proximate		
	Ultimate		
	Petrographic		
	Vitrinite reflectance		
	Coking		
	Wash tests		

PROSPECTING (scale/area) *Work to Report:* ☐ *Yes* ☒ *No*	EXTENT OF WORK (in metric units)	ON WHICH TENURES
Preparatory/Physical		
Line/grid (km)		
Trench (number, metres)		
Bulk sample(s)		

REPORT SUBMITTED TO THE MINISTRY OF ENERGY & MINES TO SATISFY SECTION 8(1) REQUIREMENTS OF THE COAL ACT

Regarding Telkwa Property Coal Licenses:
327836, 327837, 327838, 327839, 327845, 328672, 327834, 327840, 327865, 327866, 327936, 327944, 327951, 327952, 327953, 327954, 327964 and 327965

Submitted On Behalf Of:

Telkwa Coal Limited/Allegiance Coal Limited ("ACL")
Suite 1240 – 1140 West Pender Street, Vancouver, BC, V6E 4G1

Authored By:
Daniel Farmer, P.Eng
Chief Operating Officer
Allegiance Coal Limited
Telkwa Coal Limited

December 20, 2017

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

1.1 General

This report has been prepared to apprise the Minister of activities ongoing at the Telkwa Coal Project in east-central British Columbia.

On 2014-Apr-28, Altius Minerals Corporation ("AMC") of St. John's, NL closed the acquisition of a portfolio of 11 producing coal and potash royalties from Prairie Mines & Royalty Ltd. ("PMRL"), wholly-owned subsidiary of Sherritt International Corporation ("Sherritt"). AMC also acquired 100% ownership of Sherritt's Carbon Development Partnership ("CDP"). CDP's wholly owned company Carbon Development Corporation ("CDC") holds coal licenses on behalf of CDP including those located in the Telkwa Area. A recent reorganization of Altius saw CDP being dissolved and CDC becoming a 100% owned subsidiary of Altius Royalty Corporation ("ARC") which in turn is owned by AMC.

In late 2015 Telkwa Coal Limited ("TCL") acquired farm-in rights to the coal licenses located in Telkwa Area from Altius Minerals Corporation. The farm-in rights are summarized in the Table 1 below:

Table 1: List of Milestones Associated with the Farm in Agreement with Altius Minerals

	Milestone	Completion	Ownership
1	Deliver NI43-101 JORC compliant report	20 Mar 2015	Completed – 10% of project ownership
	Complete internal scoping studies	20 Mar 2016	Completed
	Up-grade the geo-model to a Prefeasibility standard	20 Mar 2016	Completed
	Incur $1M of expenditure	No time limit	Completed – Receive an additional 10% of project equity
2	Complete baseline studies	2018	In progress
	Complete affected party agreements	2018	In progress
	File small mine permit applications	2018	Receive an additional 30% of project equity
3	Granting of a small mine permit by BC regulatory agencies	No time limit	Receive an additional 40% of project equity

Altius will receive a 3% gross sales royalty on coal sold below $100 USD net of transportation costs and has 10% ownership stake in the project up to the large mine production stage.

In 2016, Allegiance Coal Limited ("ACL") purchased Telkwa Coal Limited and it is now a wholly owned subsidiary charged with the development of the Telkwa Coal Project.

In 2017 Telkwa Coal Limited acquired the coal licenses from CDC, and Altius' ownership stake in exchange for Allegiance providing 10% of the outstanding shares to CDC.

1.2 Location & Access

The Telkwa coal license group ("Property") is located approximately 2 km southwest of the community of Telkwa and 15 km south of Smithers which is the large community in this area and which has daily air service. Smithers is ~380 km by rail from Prince Rupert and the Ridley coal handling terminal.

The Property is bisected by the northeast flowing Telkwa River. An all-weather-road originating from Smithers provides access to the north half of the Property and a second all-weather-road originating from Telkwa provides access to the south half of the Property. Numerous logging roads and ATV trails turn from the all-weather-roads providing access to more remote sections of the Property. Figure 1 below illustrates the location of the deposit.

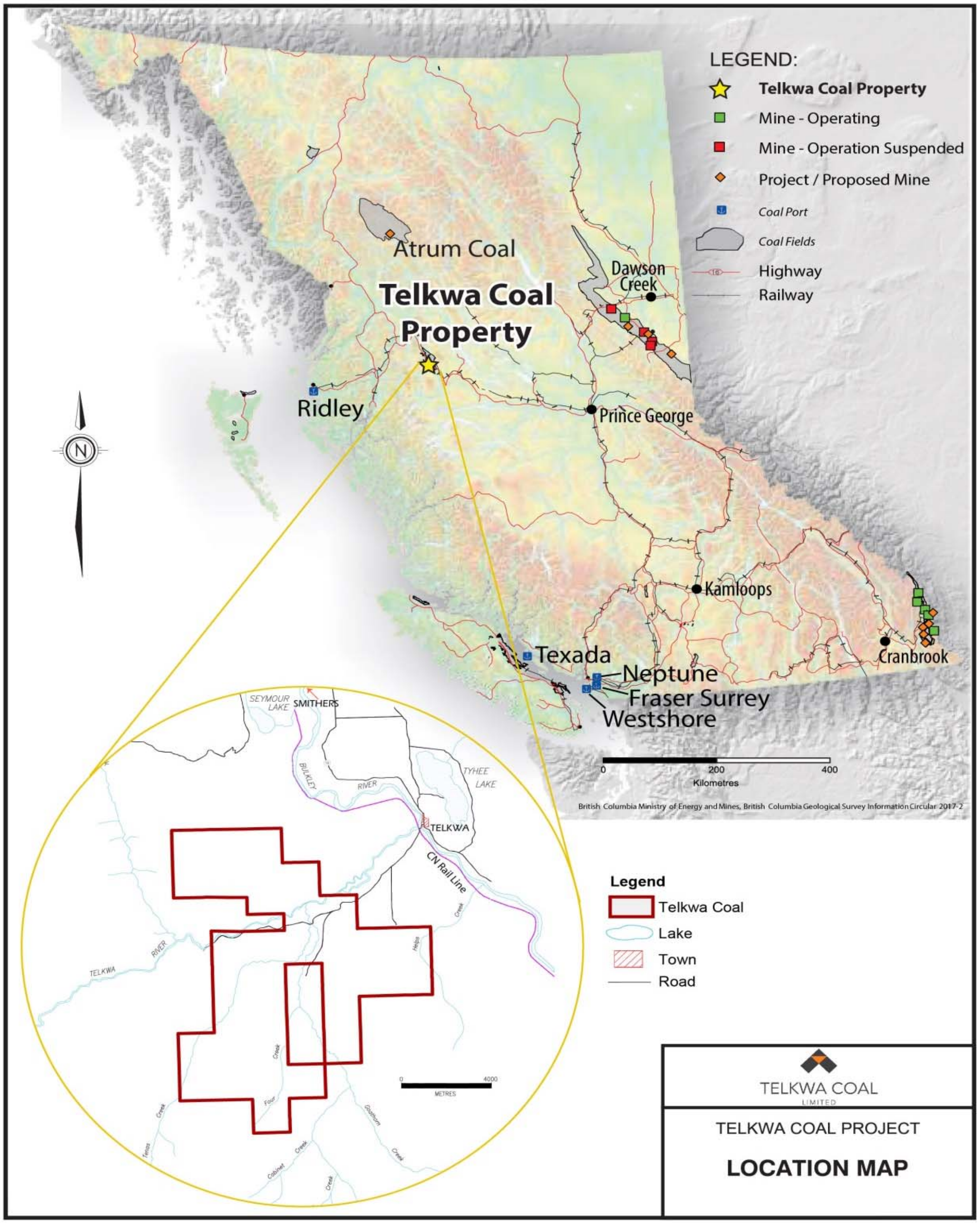


Figure 1: Location Map, Telkwa Coal Property

2.0 MINERAL TENURE

The Property is comprised of 21 Crown Coal Licenses and 5 Freehold titles containing 6,621 hectares. Fifteen (15) licenses are now owned by TCL and comprise a total of 3,766 hectares. In addition to the coal licenses, TCL also holds 1,301 hectares under five (5) Freehold coal titles. Augmenting this land position, an additional six (6) coal licenses issued to Bulkley Valley Coal Limited ("BVCL") comprise 1,554 hectares. TCL has an agreement with BVCL whereby TCL pays BVCL a $2.00 per acre pre-production royalty annually in exchange for the right to explore and develop coal resources upon those coal licenses. The pre-production royalty amounts to a $7,680 payment each year by TCL to BVCL. This agreement is renewable every 5 years with the current agreement expiring on May 31, 2020.

As per the Coal Act and Regulations, annual rentals are due for each coal license based on the number of hectares contained within the coal license and the number of years that the coal license has been issued. Accordingly, the total cost of the annual rentals due in December 2017 is $158,665.

Figure 2 provides a map of the Property showing the distribution of mineral lands. Table 2, provides a listing of mineral licenses and freehold titles that comprise the Property as well as the annual rentals required for each coal license.

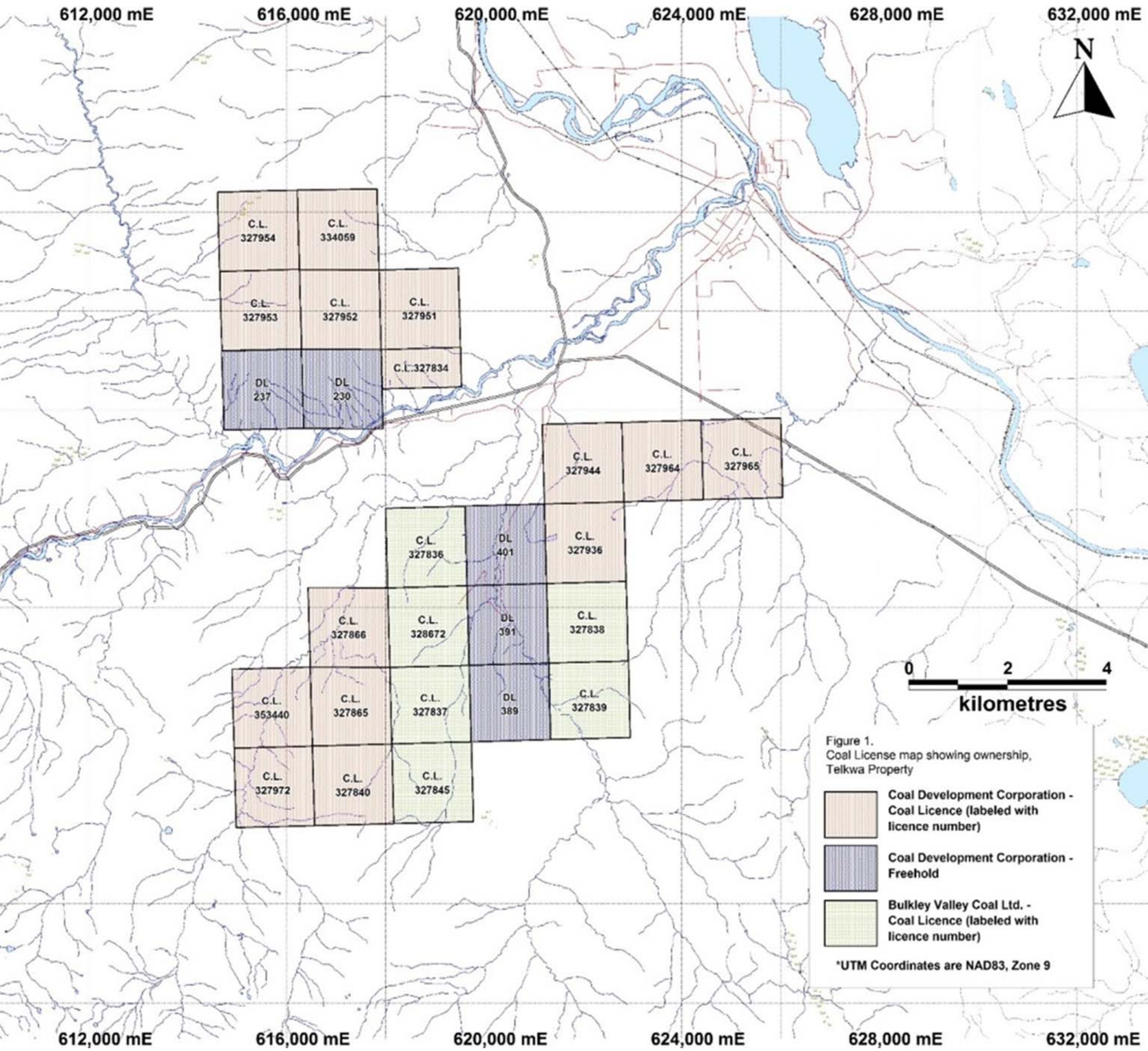


Figure 2 Mineral Land Holdings Map Showing Current Ownership, Telkwa Coal Property

Table 2: Mineral Land Holdings for the Telkwa Property

Tenure No.	Tenure Holder	Tenure Type	Application Date	Good to Date	Years Since Issue	Tenure Hectares		Annual Rental Due
DL 230	TCL	Freehold	---	---	---	259	$	-
DL 237	TCL	Freehold	---	---	---	259	$	-
DL 389	TCL	Freehold	---	---	---	262	$	-
DL 391	TCL	Freehold	---	---	---	262	$	-
DL 401	TCL	Freehold	---	---	---	259	$	-
353440	TCL	Coal License	2/6/1997	2/6/2018	22	259	$	6,475.00
334059	TCL	Coal License	3/1/1995	3/1/2018	24	269	$	6,725.00
327972	TCL	Coal License	7/30/1990	7/30/2017	28	259	$	7,700.00
327836	BVCL	Coal License	9/20/1977	12/31/2017	32	259	$	9,065.00
327837	BVCL	Coal License	6/23/1978	12/31/2017	32	259	$	9,065.00
327838	BVCL	Coal License	6/23/1978	12/31/2017	32	259	$	9,065.00
327839	BVCL	Coal License	6/23/1978	12/31/2017	32	259	$	9,065.00
327845	BVCL	Coal License	6/23/1978	12/31/2017	32	259	$	9,065.00
328672	BVCL	Coal License	9/20/1977	12/31/2017	32	259	$	9,065.00
327834	TCL	Coal License	6/24/1980	12/31/2017	32	130	$	4,550.00
327840	TCL	Coal License	2/1/1980	12/31/2017	32	259	$	9,065.00
327865	TCL	Coal License	9/1/1978	12/31/2017	32	259	$	9,065.00
327866	TCL	Coal License	9/1/1978	12/31/2017	32	259	$	9,065.00
327936	TCL	Coal License	9/1/1978	12/31/2017	32	259	$	9,065.00
327944	TCL	Coal License	9/1/1978	12/31/2017	32	259	$	9,065.00
327951	TCL	Coal License	9/1/1978	12/31/2017	32	259	$	9,065.00
327952	TCL	Coal License	9/1/1978	12/31/2017	32	259	$	9,065.00
327953	TCL	Coal License	9/1/1978	12/31/2017	32	259	$	9,065.00
327954	TCL	Coal License	9/1/1978	12/31/2017	32	259	$	9,065.00
327964	TCL	Coal License	10/7/1983	12/31/2017	32	259	$	9,065.00
327965	TCL	Coal License	10/7/1983	12/31/2017	32	259	$	9,065.00
					TOTALS	**6,621**	**$**	**179,625.00**

3.0 GEOLOGY

3.1 Regional Geology

The Skeena Group sediments of the Telkwa Coalfield are an erosional remnant of Lower Cretaceous sedimentary rock which were initially deposited within a large deltaic complex along the southern flanks of the Bowser Basin. Throughout late Jurassic and early Cretaceous time the Bowser Basin was the focus of rapid sedimentation, subsidence and increased tectonic activity, which resulted in thick accumulations of coal-bearing sedimentary rock. Today the coals associated with this deltaic complex, which intermittently extend along the length of the paleo-shoreline, form an important resource of coal for British Columbia. In the scope of this text the geology of the Telkwa Coalfield is discussed, with particular emphasis paid to the coal measures found within the limits of resource areas identified to date (BCGS 2016a, b and c). The regional geology is displayed on Figure 3.

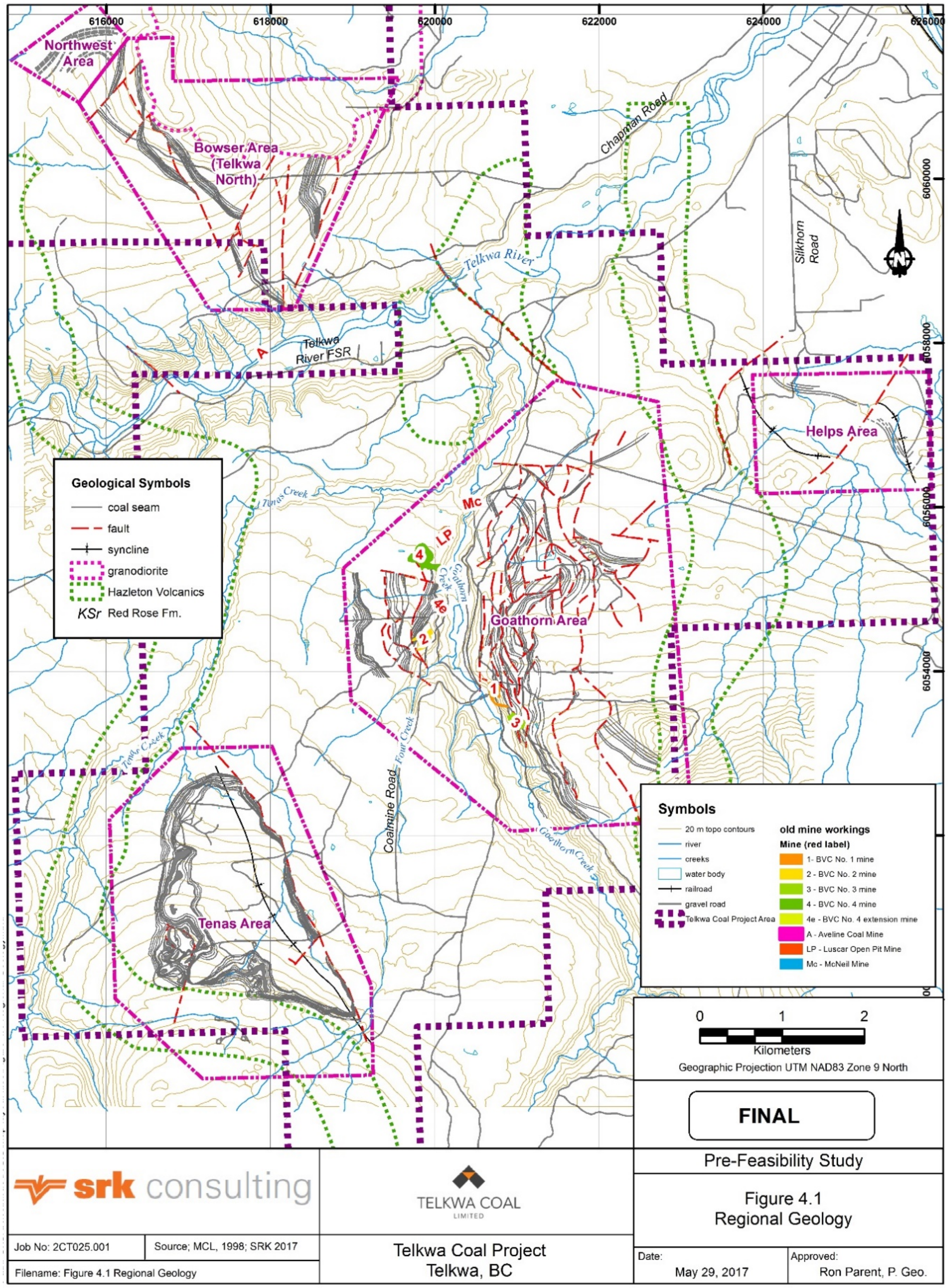


Figure 3: Regional Geology

3.2 Geologic Setting (modified after Ledda, 1998)

Throughout Jurassic and Cretaceous time much of western British Columbia was formed and moulded by a series of terranes that moved slowly toward and eventually collided with the North American craton. The Bowser Basin, and ultimately the Telkwa coalfield, is the product of sedimentation that occurred as one such terrane, the Stikine Terrane, pushed eastward to eventually become sutured to the North American landmass. The stratigraphy of the three areas is discussed in Section 0, and shown on Figures 5 through 6.

The Bowser Basin, a successor basin that had developed during Middle Jurassic time, formed in response to the approaching Stikine terrane and was a centre of deposition. Bounded on the north by the Stikine Arch, on the south by the Skeena Arch and on the east by the early uplifting of the Columbian Orogeny, the Bowser Basin collected sediment from all sources although was dominated by an eastern provenance. The result in the Telkwa area is represented by more than 500 metres (m) of coal-bearing strata referred to as the Lower Cretaceous Skeena Group.

Sedimentation continued throughout the Lower Cretaceous, during which time deposition was influenced by two regressive / transgressive episodes. As a result, the stratigraphic sequence of the Skeena Group is divisible into four lithostratigraphic units, Units l through lV. The lithologies within Units l and lll are representative of the regressive episodes and, in turn, the periods of significant peat development in the Telkwa area.

3.3 Stratigraphy (modified after Ledda, 1998)

In the Telkwa coalfield, Skeena Group sediments unconformably overlie Jurassic Hazelton volcanics and, where complete, maintain a cumulative thickness of approximately 500 m throughout most of the study area. Porphyritic Tertiary and Cretaceous intrusive dykes and sills commonly disrupt the local stratigraphy, as does a large Tertiary granodiorite plug identified on the northern coal licenses.

Marine and non-marine sandstones and siltstones, with lesser amounts of mudstone and conglomerate dominate the stratigraphic sequence. Coals normally occur within the lower three lithostratigraphic units although they are best represented within Units l and lll. Coal units commonly occur as multiple seams. Main seams are often correlatable over long lateral distances. The coals within Unit l, collectively referred to as Coal Zone 1, are separated from the Unit lll coals by as much as 140 m of mainly marine sediment. Coal seams 2 through 11, represented in Unit lll, collectively contribute 20.5 m of coal to the unit's 85.0 m average thickness (Ledda, 1998). The regional stratigraphy is shown below on Figure 4.

Lithologies between coal seams consist predominantly of interbedded marine and non-marine sandstones, siltstones and, to a lesser degree, carbonaceous mudstones. Bentonites and bentonitic mudstones are also present, most commonly found associated with the coal zones.

Bedrock on the property is typically obscured by glacial sediments that form an irregular mantle over much of the area, with exceptions occurring sporadically or along sections of deeply eroded river and stream valleys such as Goathorn Creek. Thick accumulations of Tertiary sands and gravels also commonly occur, underlying glacial tills, particularly on the south side of the Telkwa River near Cabinet Creek and near the confluence of Goathorn and Tenas Creeks. Till thickness is variable, normally ranging from 1.0 to 25.0 m while Tertiary sediments, where present, range up to 165.0 m in thickness.

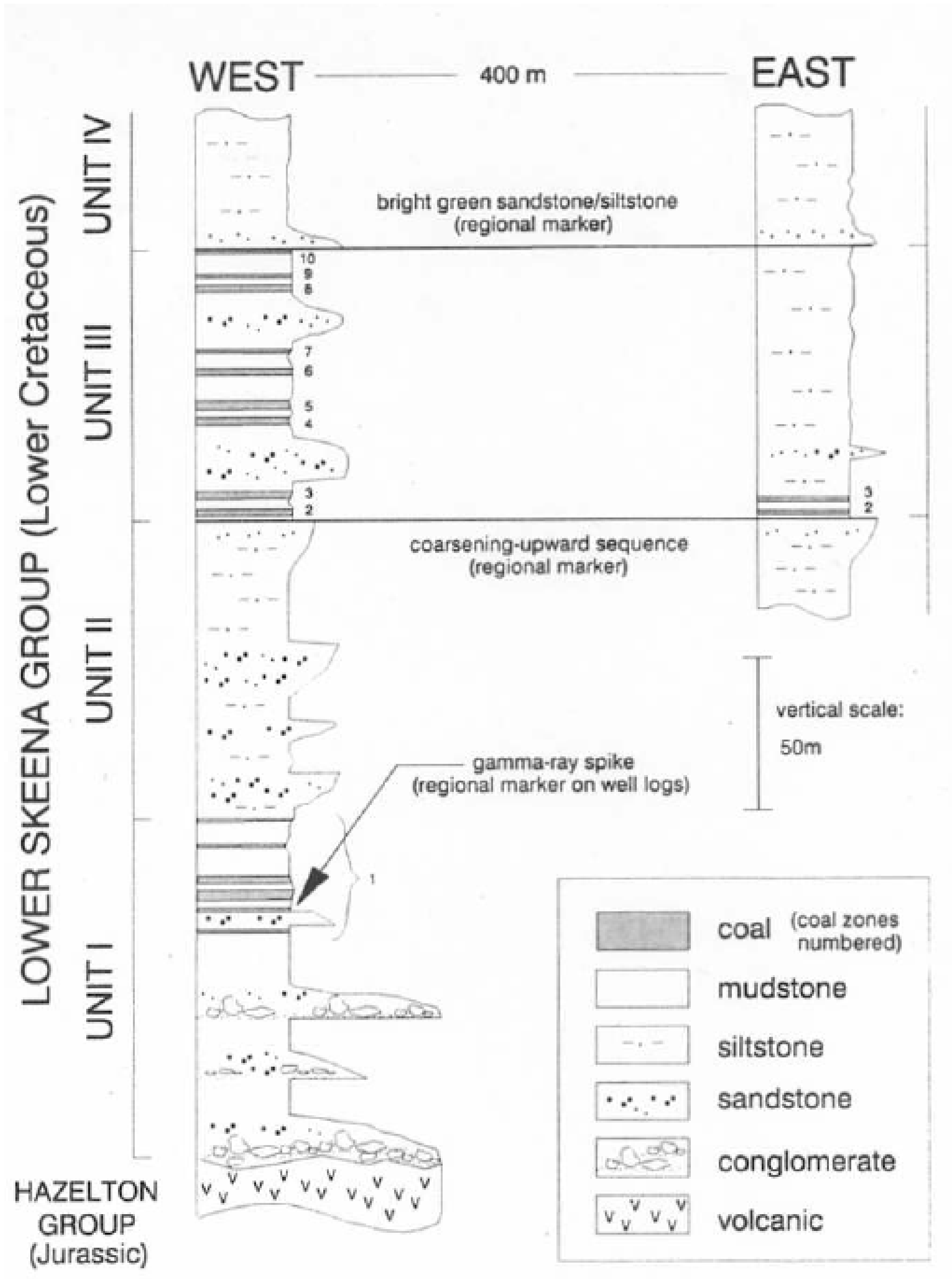


Figure 4: Representative section for Lower Skeena Group in the Goathorn region, Telkwa Coalfield

3.3.1 Unit I (modified after Ledda, 1998)

The basal unit, Unit I, was deposited in a fluvial environment and, in the Telkwa area, rests unconformably over an eroded Hazelton volcanic basement of Jurassic age. Because it was deposited over an undulating surface the Unit l stratigraphy has been observed to display variability in thickness, often over short lateral distances. This variability is most evident in the lower sedimentary assemblage, between the basement contact and the lowermost Unit l coals. As such, Unit l can be in excess of 100 m in thickness and consists mainly of conglomerate, sandstone, mudstone and coal.

Coals within this unit, collectively referred to as Coal Zone 1, formed in poorly drained backswamps and are characterised by lateral variation throughout the study area. Figure 5 through Figure 7 illustrate the typical stratigraphic column for Tenas, Goathorn, and Telkwa North areas. The Unit l coals can consist of up to 12 individual seams that collectively contribute up to 11.9 m of coal to the unit's overall thickness. Sands and gravels were typically deposited in braided channels and bars while mudstones accumulated in floodplains. Indications are that there was periodic marine influence during deposition of the unit. Deposition of Unit I ended with a marine transgression and deposition of Unit II.

3.3.2 Unit II (Ledda, 1998)

Unit II was deposited within a deltaic / shallow marine environment and consists of up to 140 metres of sandstone, silty mudstone and occasional thin coaly mudstone. Sands were deposited in distributary channels and mouth-bars while mudstones and silty mudstones accumulated in interdistributary bays. Thin discontinuous peat beds, none of which are of economic significance, accumulated in local salt marshes.

3.3.3 Unit III (modified after Ledda, 1998)

Unit III is indicative of the second regressive episode for the area and represents the deposition of the 2nd main coal-bearing stratigraphic sequence. The unit averages 85 m in thickness and comprises of sandstone, siltstone, carbonaceous mudstone and thick, laterally extensive coal seams. Restricted nearshore marine, tidal flat and coastal swamp environments persisted throughout much of the deposition of Unit III. Sandstone units were deposited within tidal channels while interbedded sandstones and siltstones were deposited nearshore within intertidal environments. Mudstones are representative of tidal flat deposits. Significant marine influence during deposition of the entire unit is indicated.

Coal zones 2 through 11 are represented in Unit III, collectively contributing to up to 17 coal seams of economic significance. The coal zones were likely formed in freshwater peat swamps, located landward of the tidal flat, somewhat isolated from influxes of brackish water. The presence of sulphur in some of the coal seams suggests, however, that the peat was infiltrated periodically by marine water. Thus, the major coal seams are interpreted to have formed from peat accumulated in a freshwater marsh that was proximal to a brackish environment. The Snuggedy Swamp of South Carolina is considered a modern analogue for the paleoenvironment in which Unit III was deposited.

3.3.4 Unit IV (Ledda, 1998)

Unit IV overlies the coal measures and represents a marine transgression that terminated coal deposition over the study area. The unit exceeds 150 m in thickness and consists of sandstone

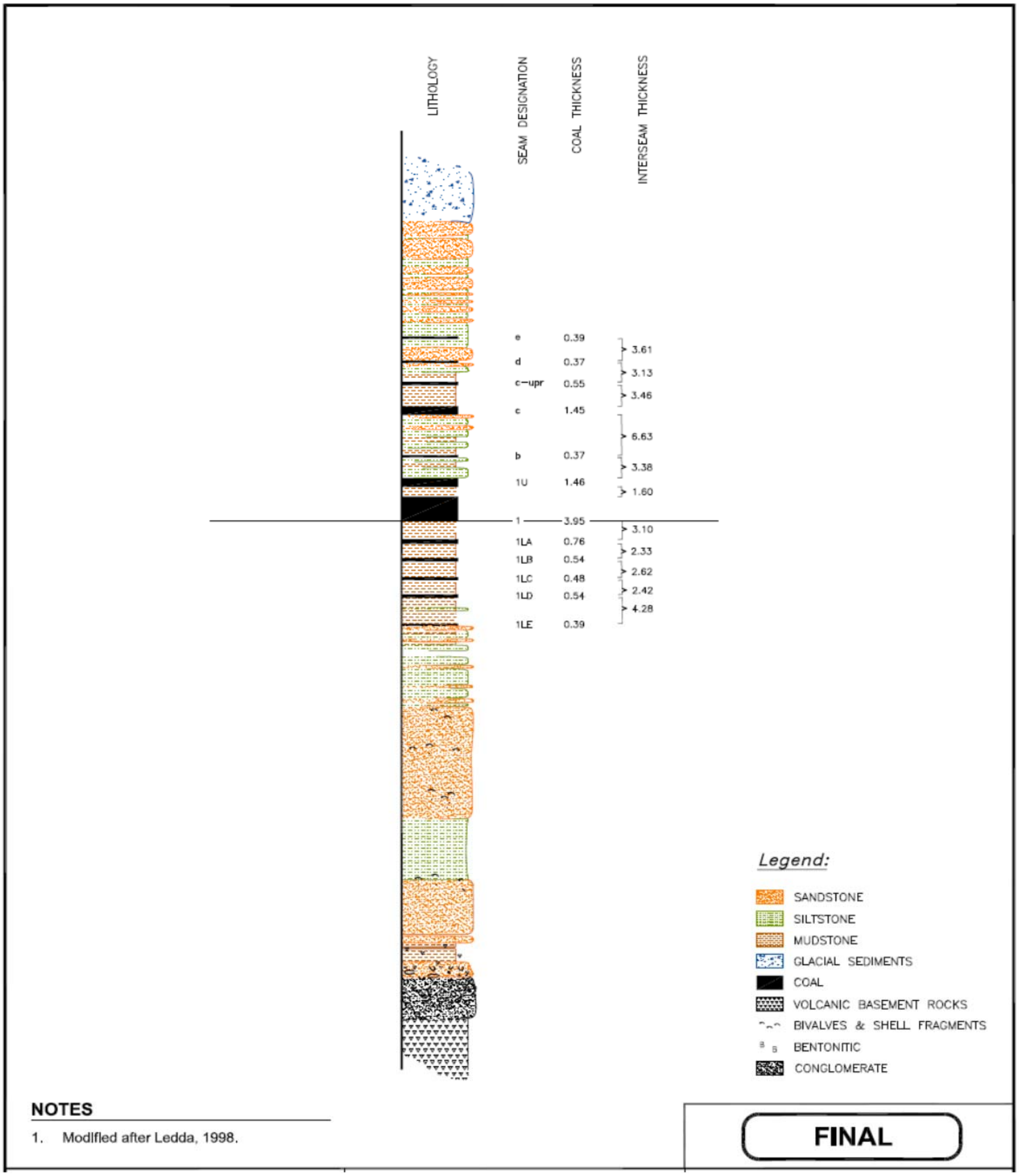


Figure 5: Stratigraphy Tenas area

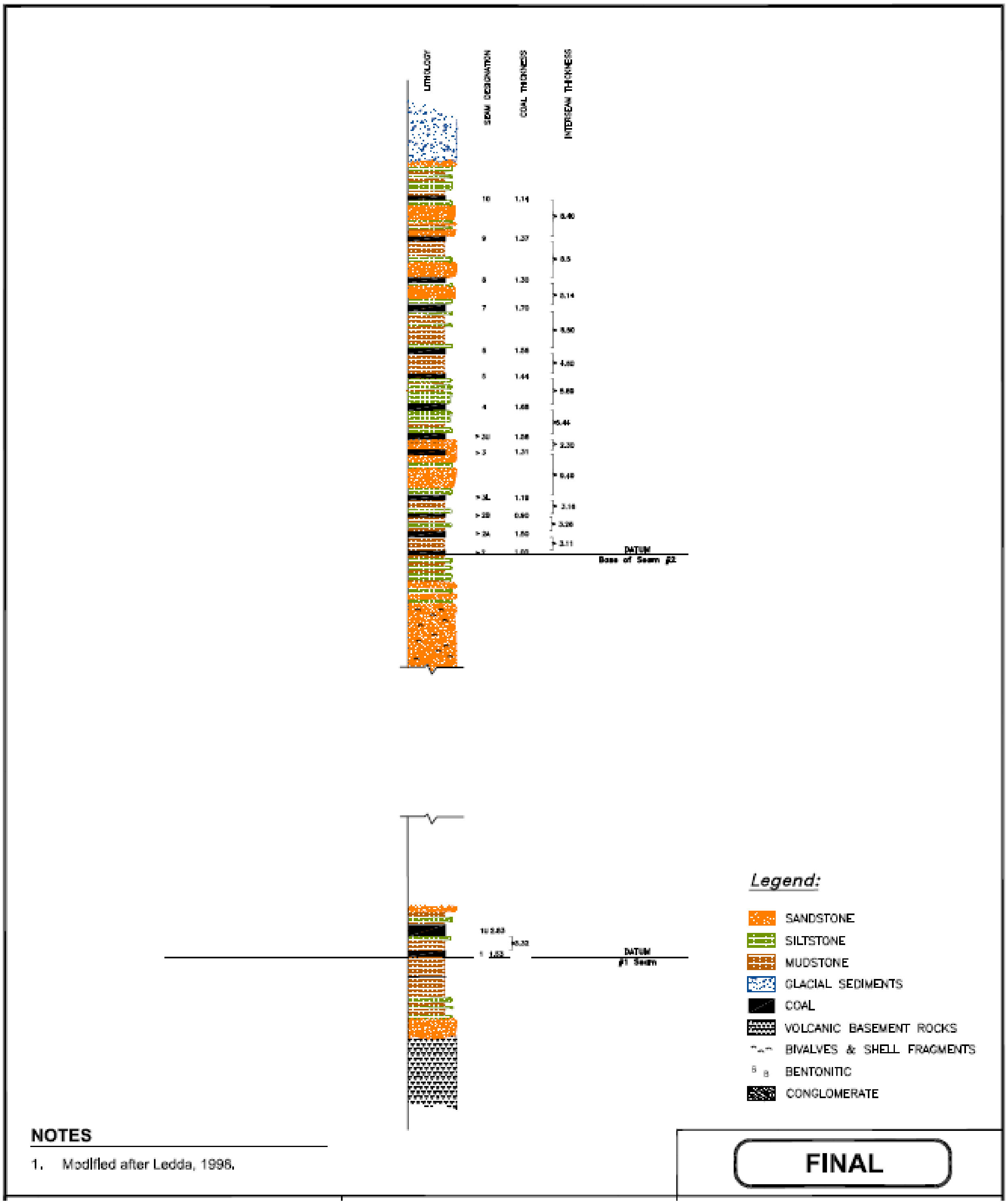


Figure 6: Stratigraphy Goathorn Area

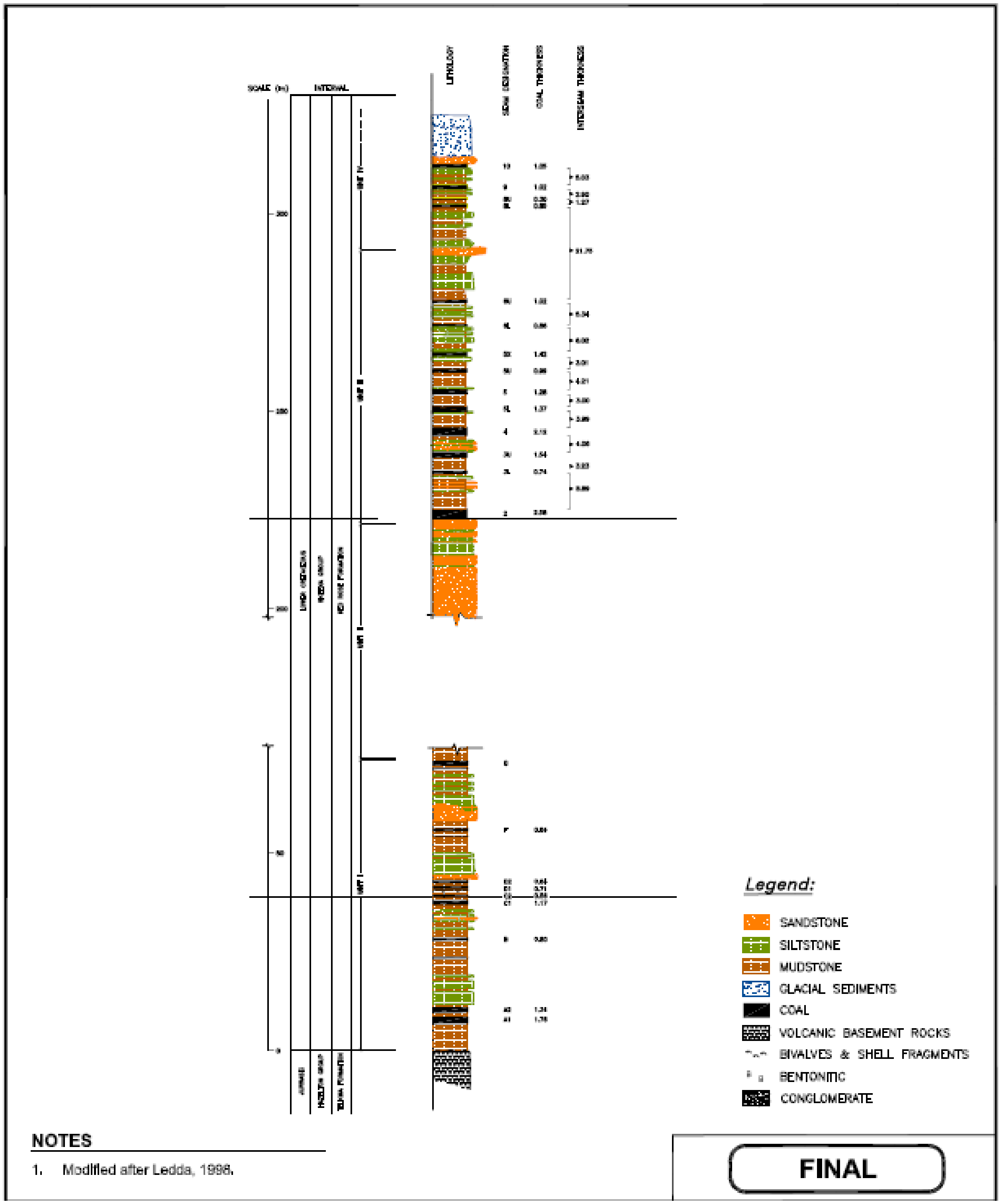


Figure 7: Stratigraphy Telkwa North Area

overlain by silty mudstone. The basal sandstone is a transgressive lag deposit while the remainder represents deposition within a near-shore, shallow marine environment.

3.4 Structural Geology (Ledda, 1998)

Since deposition, the Skeena Group sedimentary package has been modified by faulting and minor folding resultant from continental stresses that persisted throughout much of the Upper Cretaceous and Tertiary. The Telkwa area has undergone at least two episodes of structural significance, the first during the Upper Cretaceous, and the second during the Tertiary.

The Upper Cretaceous in the Bowser Basin reflects a time of deformation, when high angle faulting and plutonism were occurring eastward within the Omineca Crystalline Belt, and increasing uplift was occurring to the west. This was a result of the suturing of the Stikine Terrane to the North American craton and also the effects of additional terranes approaching from the west. Although folding in the Telkwa area was not as significant as in other portions of the basin, high angle faulting roughly trending in a north-south direction is apparent in the Telkwa Coalfield, especially on the south side of the Telkwa River. Where folding has been observed, fold geometries are typical to those found in other parts of the basin, trending northwest to southeast, with shallow dipping west limbs and steeper east limbs. Porphyritic Late Cretaceous dykes and sills also occur locally within the coal measures.

During the Tertiary much of the area on the north side of the Telkwa River was intruded by a large granodiorite and quartz monzonite intrusion. The igneous body, which vertically intruded the Skeena sediments, complicated the structural geology of the area further. This is especially apparent at close proximity to the intrusive body on the northern coal licenses. Structural repercussions in the Skeena sediments appear to be represented by high angle faulting, establishing a mosaic of structural blocks that have been rotated and tilted into a variety of orientations. Each of the resource areas identified to date are representations of such fault blocks. No specific orientation has been observed to the faulting although faults are apparent in concentric geometries near the intrusive body and also appear to crudely radiate from the intrusive edge. Fault displacements have been observed to range from only a few metres to more than 150 metres.

Although bedding orientations within the Telkwa Property resource areas tend to be fault block controlled, each with independent orientations, dips normally range from 10° to 30°. In the fault blocks associated with the Goathorn resource area dips are typically 20° to the east, while within the blocks of Bowser East and West they average 17° to the east and northeast, respectively. In the Northwest Area, block orientations are to the southeast and southwest, with dips ranging from 10° to 35°. The Tenas resource area lies within a closed northwest/southeast trending synform. Orientations along the west limb are consistently northeasterly dipping, normally ranging from 9° to 22°, while along the east limb dips steepen to 45° in a southwesterly direction. Within the Whalen Block orientations vary but typically range from 15° to 25° to the east / southeast. Orientations in the Helps area are directionally variable due to faulting, but are typically 20° to the south.

3.5 Fault Mechanisms (Ledda, 1998)

Information on the faults and fault mechanisms found within the Telkwa resource areas is obtained from surficial geophysics, outcrop investigations, the Goathorn test-pit excavation and drillhole interpretations. Major fault planes (greater than 5 metre displacements) have only rarely been intersected by drillholes although small-displacement shifting or shearing is relatively common.

When observed in cores or test-pit excavations, shear zones associated with major fault planes are near-vertical, not prominent and display little or no alteration or secondary mineralisation. Slickensides associated with small-displacement movement are commonly observed in core, particularly within less competent lithologies such as mudstone and carbonaceous mudstone. Within more competent lithologies such as sandstones and some siltstones, slickensides are rare or absent although minor amounts of secondary mineralisation associated with active or healed fracture zones are occasionally observed. Secondary minerals commonly include calcite and quartz.

The exploration history of the area indicates that loss of drilling fluids and circulation loss occurs occasionally while drilling through overburden lithologies, particularly within poorly consolidated sands and gravels. Fluid losses within bedrock, however, have rarely been observed.

3.6 Coal Seam Development and Interburden Lithologies (modified after Ledda, 1998)

The coal seams that are potential mining targets in the Northwest Area and most of Goathorn Project areas are those that are contained within lithostratigraphic Unit III and include seams 2 through 11. In contrast, in the Tenas Project Area, and a small block of Goathorn East, the main seams of interest are those of the 1 Seam coal sequence of Unit I.

The stratigraphic columns for each of the main resource areas shown on Figures 5 through 7 earlier illustrate the typical stratigraphy found in each of the Project Areas. The illustration also shows some of the regional variations and trends that occur within seam and interseam lithologies throughout the Telkwa Coalfield.

The discussions below have been taken primarily from MCL's 1995-1998 Assessment report (Ledda, 1998) with updates to thickness variations and other information to reflect the work done by the 2017 prefeasibility study.

3.6.1 Unit I Coal Stratigraphy (modified after Ledda, 1998)

The coal seams in lithostratigraphic Unit I, collectively referred to as the 1 Seam package, are separated from the overlying coals of Unit III by up to 140 m of shallow marine origin sediments. Unit I has been drilled extensively since 1992 in the Tenas Project Area, where the seams in that unit are the targets for commercial development. Unit I has also been identified occasionally in the fault blocks of Goathorn East where its coal sequence remains consistently thick although it has been intersected only at depths generally too deep for mining.

In the Tenas Project Area the Unit I seams include as many as 13 seams over a stratigraphic section of 45 m. Most of these seams are not of sufficient thickness to be of commercial interest. Some of the thicker more notable trends identified within the main seams, labeled c, 1U and 1 in descending order, are described as follows:

C Seam: in the Tenas Area and averages 1.45 m in thickness and is separated from the underlying 1U Seam by approximately 10 m of strata. The c Seam, like many of the thinner seams in the Tenas Area, is well developed throughout most of the area but is subject to local lateral variability; it is locally absent from parts of the Tenas Area, most notably the deepest part of the basin formed by the Tenas syncline. In the Goathorn area, where the Unit I stratigraphy is identified, c Seam is typically absent.

1U Seam: This seam in the Tenas and Goathorn areas is very well developed and laterally consistent, averaging 2.15 m in thickness. The sulphur content, however, is laterally variable, often over short distances; the seam has not to date been sufficiently tested to draw the same conclusions for the Goathorn Project Area. In the Tenas Area the 1U Seam is typically separated from the underlying 1 Seam by a siltstone parting that normally ranges from 0.3 m to 2.5 m in thickness. Typically, the parting is absent in the south-central part of the field, increasing progressively in thickness northwesterly across the deposit.

1 Seam: This seam is the thickest and most consistent seam of the Unit I seams. It averages 3.95 m thickness in the Tenas Area, and slightly less in the Goathorn Area. Laterally consistent in the Tenas Area, 1 Seam is normally free of significant partings and includes up to five individual seam plies. The 1 Seam is consistently and predictably low in sulphur. The 1 Seam plies are occasionally affected by local thinning or non-deposition.

3.6.2 Unit III Coal Stratigraphy (modified after Ledda, 1998)

Up to seventeen coal seams occur in lithostratigraphic Unit III and collectively contribute 20.5 m of coal to the Unit's 85.0 m average thickness. Unit III seams are found within the Goathorn East, Goathorn West, and Telkwa North (northwest). The main coal zones in Unit III, mainly being 2 Seam through 11 Seam in ascending order, display some lateral variability throughout their lateral extent. Some of the more notable seams and seam trends are described as follows:

2 Seam: This seam remains consistent throughout much of the property although thin partings are apparent in the Goathorn and Telkwa North (east) areas. The seam does, however, exhibit some thickness variability over short distances especially within the northwest portion of Telkwa North (west). 2U Seam, which overlies 2 Seam, is thin and is present only within the eastern resource areas north of the Telkwa River. 2L Seam also occurs on the northern side of the river but remains of significant thickness only in the western resource areas.

3 Seam: This seam is one of the most consistent seams in the stratigraphic sequence of Unit III. It is found throughout the Project Areas that address Unit III, and is present as 3 and 3U Seams in Telkwa North, with an average of 3.23 m between seams. In the Goathorn Area it splits into 3 distinct seams, 3-upper (3U), 3 main (3), and 3-lower (3L) with average thicknesses of 1.56, 1.31, and 1.19 respectively and average interseam thicknesses of 2.3 m (3U to 3) and 9.5 m between 3L and 3 Seam.

4 Seam: This seam is normally well developed throughout each of the Project Areas but is locally absent from a small area in the southeast portion of Telkwa North (west). 4U Seam, which overlies 4 Seam, is absent from Telkwa North (east) and the eastern half of Telkwa North (west), but occurs throughout the western part of Telkwa North (west), Telkwa North (northwest), and Goathorn. The parting thickness between the 4 and 4U Seams increases progressively in a northwesterly direction attaining a maximum thickness of more than 7.0 m in Telkwa North (northwest).

5 Seam: This seam is a very well developed and is found throughout the property. It splits midway through Telkwa North (west) where it is represented in Telkwa North (northwest)and the west half of Telkwa North (west) as 5L and 5U Seams.

5X Seam: This seam progressively develops only in the Telkwa North (west) area, becoming increasingly apparent on the west half of Telkwa North (west). Within Telkwa North (northwest),the seam continues to thicken and represents one of the thickest and best developed seams of the area.

6 Seam: This seam shows considerable variability between the resource areas, splitting from a single seam in Goathorn to as many as three seams in Telkwa North (east). Throughout Telkwa North (east), Telkwa North (west) and Telkwa North (northwest) the seam occurs as 6L and 6U Seams, separated by a parting normally averaging approximately 5.3 m in thickness. In the Telkwa North (east) area 6L Seam is further split by another parting normally not exceeding 0.5 m in thickness.

7 Seam: Although generally thin and considered uneconomic throughout most of the resource areas 7 Seam is laterally continuous and shows little variability throughout the coalfield. The exception is within Telkwa North (east) where the seam is absent from the sequence.

8 Seam: Although present throughout most of the resource areas, this seam exhibits considerable variability with respect to thickness, often over short lateral distances. 8 Seam, and those seams which overly it, are not well represented within the Telkwa North (east) area since most of the upper portion of the Unit III sequence was eroded from that area prior to glaciation.

9 Seam: Due to its variable thickness and poor quality characteristics, is rarely considered to be of economic significance. The seam is characterized by visible pyrite banding and as a result has higher than average raw sulphur values by comparison with other seams. Like the underlying 8 Seam, it often exhibits seam thickness variability and lateral discontinuity.

10 Seam: This seam is a relatively consistent seam, present throughout most of the Goathorn, Telkwa North (west) and Telkwa North (northwest). The seam varies in thickness, however, often over short lateral distances.

11 Seam: 11 Seam, the roof of which forms the top of lithostratigraphic Unit III, is found throughout the Telkwa North project areas where it is usually a consistent, continuous seam. It does, however, exhibit some regional thinning within the northeast segment of Telkwa North (west).

3.7 Interburden Lithologies (Ledda, 1998)

Host rock lithologies between seams are dominated by siltstone and fine grained sandstone, with lesser amounts of mudstone and carbonaceous mudstone. Four notable sandstone units identified within or proximal to the Unit III stratigraphy are described as follows:

The No. 2 Sandstone: This unit, which underlies the 2 and 2L Seams, is the thickest, most consistent sandstone unit. Forming the top of lithostratigraphic Unit II, it is a massive sandstone formation in excess of 10 m in thickness which has been observed to commonly contain pelecypod shells or shell fragment horizons within it. The sandstone unit is most strongly developed on the north side of the Telkwa River.

The No. 3 Sandstone: This unit, stratigraphically located in Unit III between Seams 3U and 4, is present throughout all of the resource areas but remains thickest and best developed within the Pit 3 area south of the Telkwa River. The sandstone unit thins in Pit 7 and continues to thin, becoming finer-grained westward into Pit 8 and Northwest Project Area.

The No. 7 Sandstone: This unit occurs stratigraphically in Unit III between Seam 7 and 8 and is laterally continuous throughout the resource areas on both sides of the Telkwa River. However it is most strongly developed in the Pit 3 area. The unit commonly is interbedded with finer- grained lithologies, most apparent on the north side of the Telkwa River.

The No. 11 Sandstone: This unit, which is also referred to as Unit IV Sandstone, occurs at the base of lithostratigraphic Unit IV and usually directly overlies Seam 11. This marine sandstone can regionally be correlated across the resource areas, showing only minor variability. The unit does, however, tend to be slightly thinner in Pit 3 than within Pit 8 and Northwest Project Area.

3.8 Detailed Geology

On the basis of geological work carried out in previous years by Luscar Ltd. and various other groups, seven potential resource areas have been identified on the Telkwa property to date. On the north side of the Telkwa River these include the Bowser area (Telkwa North (east and west)), the Whalen Block and Telkwa North (northwest). On the river's south side Goathorn, Tenas, and Helps area have been identified (Ledda, 1998).

The economic coals found within the Goathorn, Bowser, Helps and Northwest resource areas are those of lithostratigraphic Unit III (Seams 2 - 11). In the Tenas area however, the main seams of interest are those of the 1 Seam coal sequence of Unit I. Small areas have also been identified within the Goathorn resource area where Unit l coal measures are represented at mineable depths (Ledda, 1998).

The coal measures rank is considered med high volatile bituminous A as determined by petrographic analysis of four samples in 1989 where the maximum vitrinite reflectance ranged from 0.89 to 1.29 as summarized below in Table 3.

Table 3: Maximum vitrinite reflectance as a function of coal rank (Thomas, 2013)

Rank	Maximum Reflectance (%$R_{o\ max}$)
Subbituminous	< 0.47
High volatile bituminous C	0.47 – 0.57
High volatile bituminous B	0.57 – 0.71
High volatile bituminous A	0.71 – 1.10
Medium volatile bituminous	1.10 – 1.50
Low volatile bituminous	1.50 – 2.05
Semi-anthracite	2.05 – 3.00 (approx.)
Anthracite	> 3.00

The coals are suitable for use as a pulverized coal injection (PCI) coal for use in steelmaking.

Within the coal measures of the Skeena Group sediments, coal rank generally tends to decrease slightly for coal units situated higher in the stratigraphic column. Localised occurrences of medium-volatile and semi-anthracite coals may have resulted from either post-Cretaceous heat sources, deeper burial and subsequent uplift of some coal-bearing units, or from localised higher heat flux from the pre-Cretaceous basement. Increases in coal rank have been observed in coals situated at close proximity to the Tertiary intrusive on the northern resource areas (Ledda, 1998).

The evaluation of coal quality for each of the resource areas of the Telkwa coalfield is based upon the analytical results of core obtained from diamond and rotary drillholes since 1979, and three bulk sample analytical programs (1983, 1989 and 1996). This database has established reliable determinations of the raw and clean quality characteristics of the Telkwa Coalfield (Ledda, 1998).

While the majority of Telkwa coals are relatively consistent with respect to raw calorific value, volatile matter and fixed carbon values, variations in raw ash and sulphur values occur between seams. Sulphur content variations between some seams is attributed to periodic infiltration of marine water into the developing peat swamp, while inundations are thought to have terminated development of some of the coal seams (Ledda, 1998).

3.8.1 Tenas Resource Area

The coal measures of the Tenas resource area – the focus of the capped production PFS – are exclusive to Coal Zone 1 of Unit I and may be correlatable, although fault displaced, to seams found in the vicinity of Cabinet Creek. Exploration has been undertaken annually in the Tenas area since 1992. To date 218 drillholes have been completed within the confines of the resource area. Of these, approximately 201 have intersected the seam sequence, providing a drillhole spacing of 150 m or less throughout most of the field (modified after Ledda, 1998).

A coal quality database has also been established since that time and is currently based upon 40 core holes and an 80 tonne bulk sample. Of those 40 core holes, 17 have also been utilised for ARD analytical work (Ledda, 1998).

Compressional forces directed from the southwest have shaped the Tenas resource area such that the deposit lies today as an erosional remnant of Unit lll stratigraphy within a shallow closed synform. Its syncline axis trends northwest to southeast and plunges from opposite ends toward the centre of the resource area to create a deposit bounded by subcrop on all sides. The stratigraphy of the syncline's west limb trends at approximately 145 degrees and dips gently east / northeastward until it culminates at the axis. Bedding orientations normally range from 9 to 22 degrees, gradually increasing towards the southern limits of the resource area. Dips along the east limb are considerably steeper, ranging up to 45 degrees in a southwest direction. Small-scale faulting is suspected along the axis of the syncline, particularly at its southern end (Ledda, 1998).

Tenas' surficial geology and drillhole locations are presented on Figure 8, and typical cross sections are presented in Figure 9

Although several seams occur within the Unit l stratigraphy of Tenas, most are thin and are not of economic significance. Three seams, however, identified as c-seam, 1-Upper seam, and 1-seam, are consistent in nature and form the majority of the Tenas resource. The c-seam is separated from the 1U-seam by approximately 13.0 m and averages 1.51 m in thickness. The 1U and 1-seam are separated from one another by a siltstone parting that develops midway through the field, and increases in thickness gradually to obtain a maximum thickness of 7.5 m at the Tenas Resource Area's northern limits, Tertiary sediments, presumably associated with the glacial paleochannel of the Tenas Creek drainage, overlie the local coal measures stratigraphy. These sediments become increasingly thicker in a northerly direction. Within the confines of the paleochannel, the thickly interbedded sand, silt and gravel blanket is in excess of 85 m (modified after Ledda, 1998).

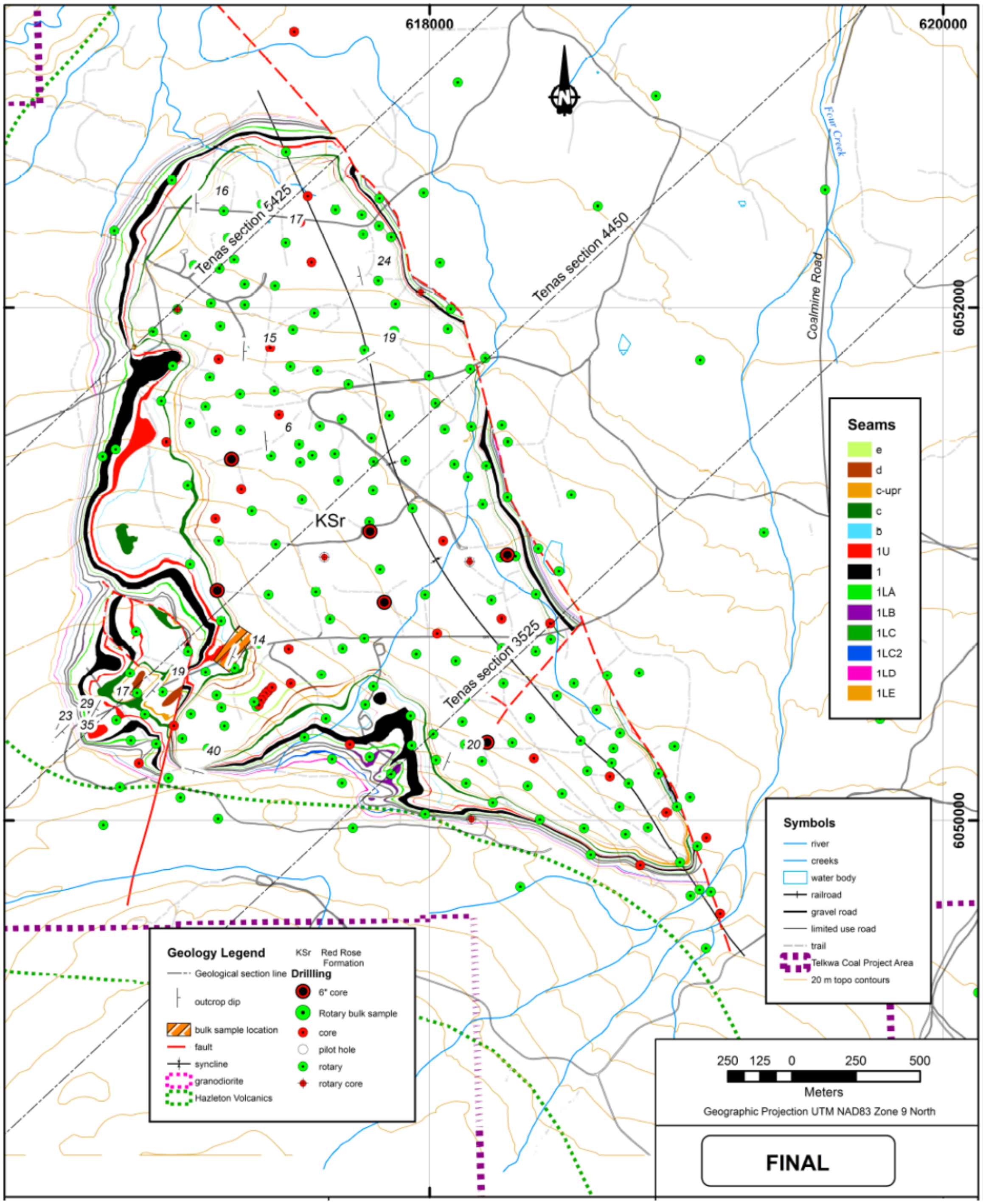


Figure 8: Tenas Surficial Geology and Drillhole Locations

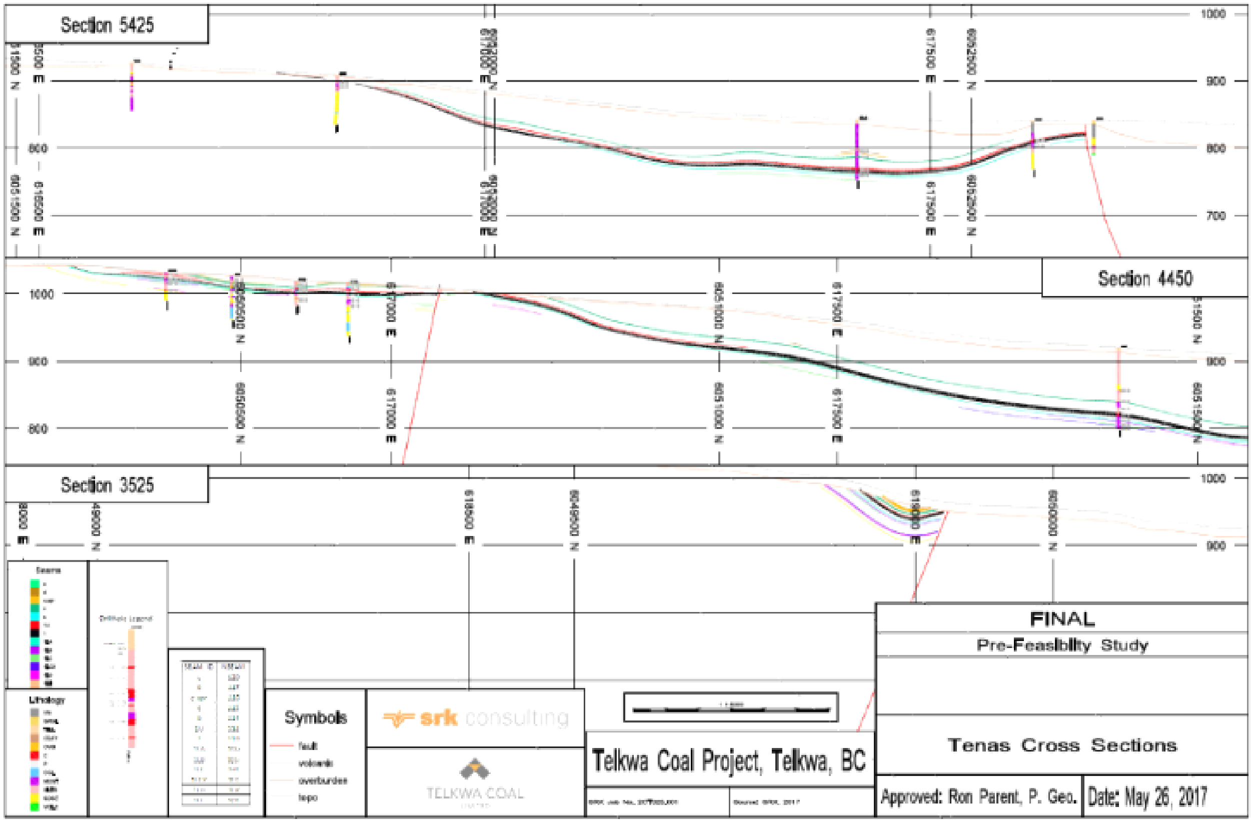


Figure 9: Tenas Cross Sections

3.8.2 Goathorn Resource Area

3.8.2.1 Goathorn East

The Goathorn East (Pits 1, 2 & 3) resource area was extensively explored on a sporadic basis between 1979 and 1997, resulting in considerable volumes of accumulated information on the area's Unit lll coal measure stratigraphy. To date 310 drillholes, 8.4 km of surface geophysics, and the removal of a 219 tonne bulk sample have been completed within the limits of the resource area (modified after Ledda, 1998).

The current drillhole spacing for the Goathorn East Area ranges from 125 to 150 m. Many of the area drillholes were cored, yielding considerable seam quality information for the area. Bedrock and surficial lithologies from 12 of the continuous core holes were sampled and subsequently analysed for ARD purposes. Three additional drillholes, completed through the backfilled material of the reclaimed 1983 Goathorn test-pit, were also sampled and tested for ARD purposes (Ledda, 1998). The resource area geology and all drillholes, are illustrated on Figure 10.

Other than minor occurrences of the 1 Seam package, thrust up as small blocks to surface mineable depths, the Unit lll coal measures (2 to 11 Seams) are represented within the Goathorn East Area. Seam subcrops normally trend in a north/south direction, roughly paralleling the Goathorn Creek valley. Most of the seams deteriorate in an easterly direction, becoming thinner and poorly developed suggesting that locally, during deposition, a restricted nearshore marine environment persisted to the east (Ledda, 1998).

Much of Goathorn East Area is characterised by an east-dipping stratigraphy, repeatedly broken by a series of north/south trending normal faults. Regional dips range from 10 to 35 degrees, averaging 20 degrees, while normal fault displacements range up to 20 metres (Ledda, 1998). A plan view of Goathorn's surficial geology and drillhole locations are shown on Figure 10 and typical geological cross sections are provided by Figures 11 and 12.

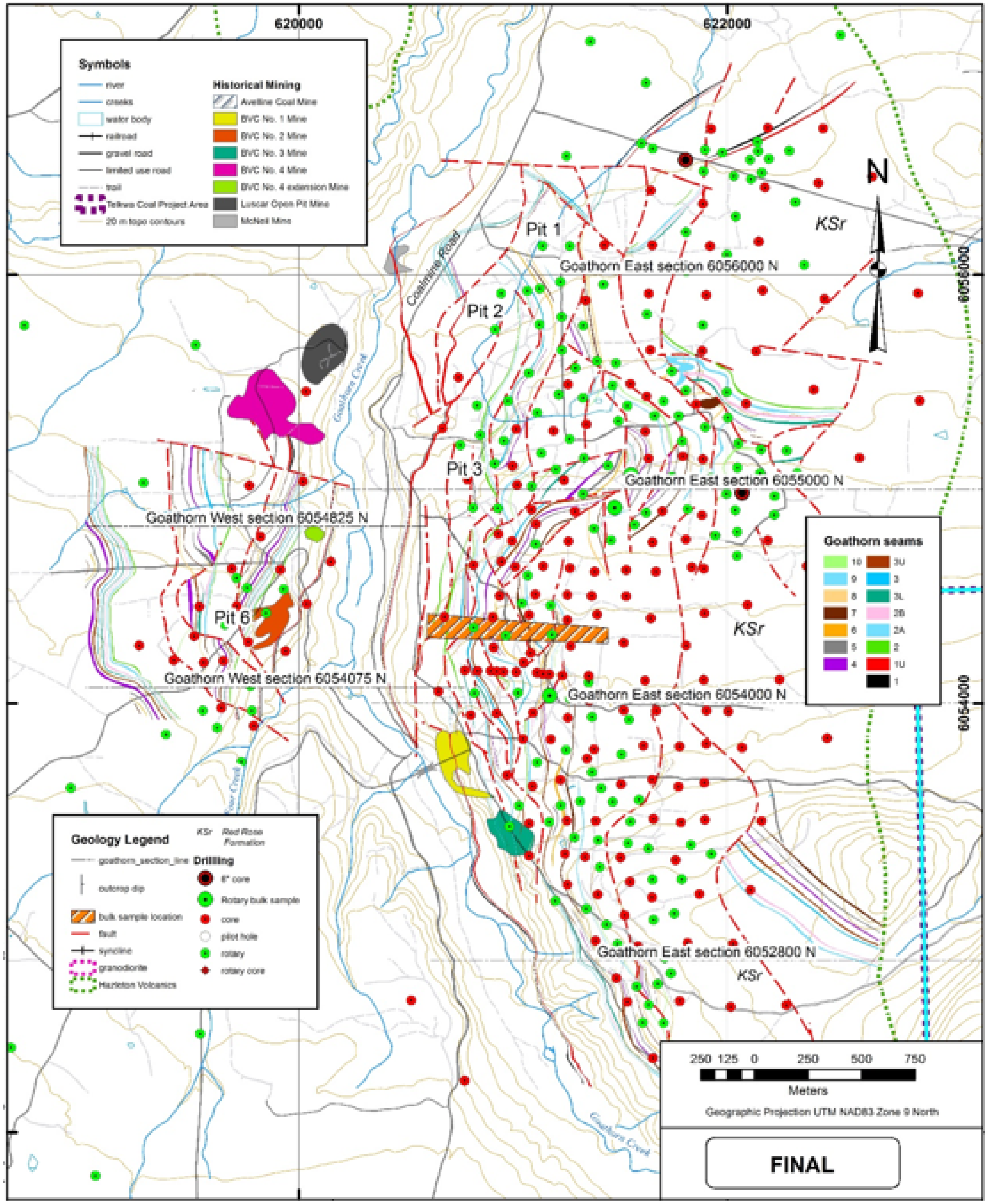


Figure 10: Goathorn Surficial Geology and Drillhole Locations

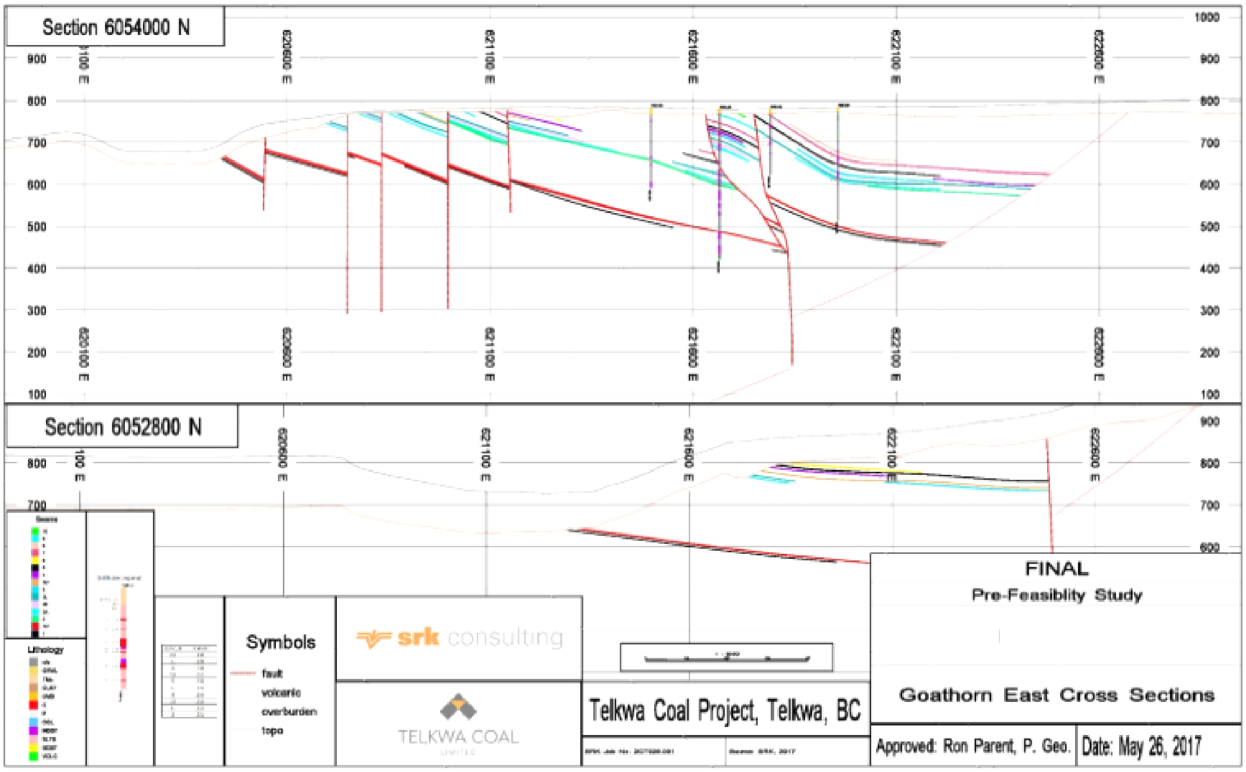


Figure 11: Goathorn East Cross Sections (6052800 and 6054000 N)

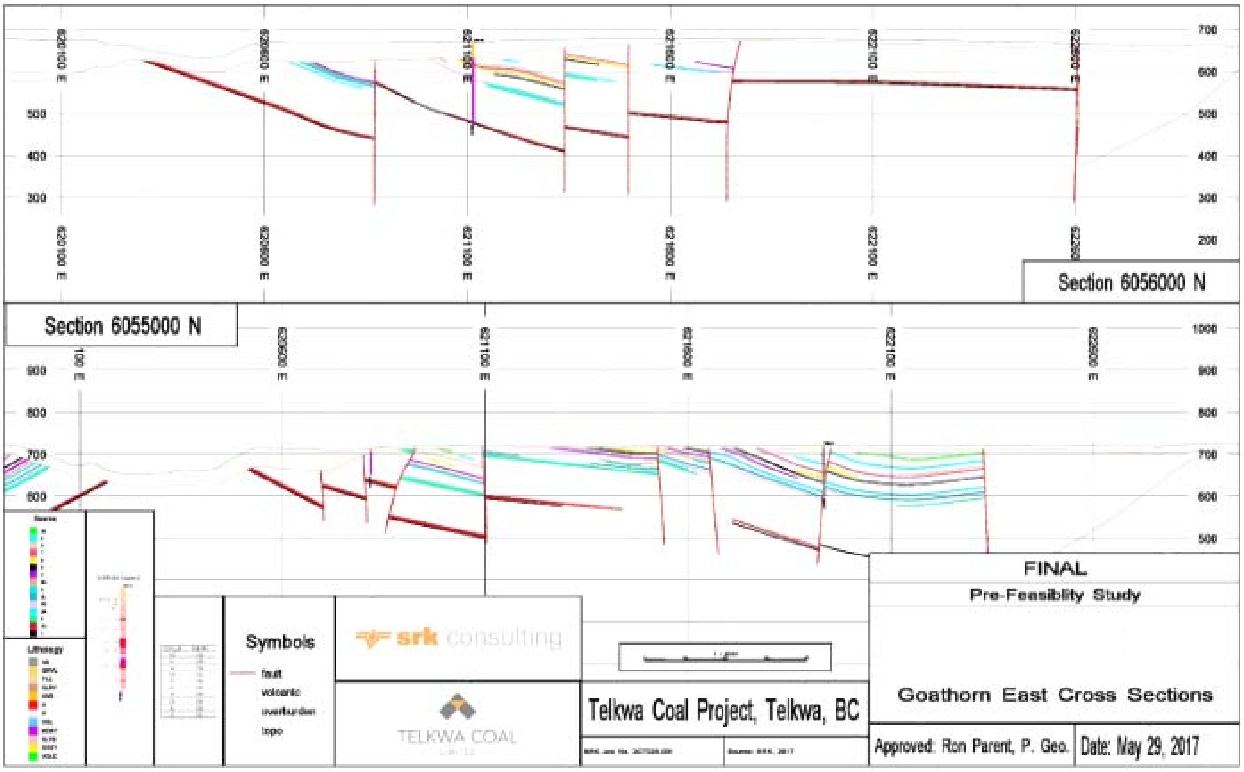


Figure 12: Goathorn East Cross Sections (6055000, 6056000)

3.8.2.2 Goathorn West

The coal measures identified on the west side of Goathorn Creek, and illustrated by Figure 10 above represent the Goathorn West (Pit 6) resource area. Both the Unit l and Unit lll coals are represented within adjacent fault blocks, separated by normal faults with displacements of up to 120 metres. Some of the resource area was undermined during the 1940s and early 1950s by the underground mining activities of Bulkley Valley Collieries, No. 2 Mine. Underground shafts were initiated on outcrops found along the banks of Four and Goathorn Creeks, and pushed northwestward following the seams along their bedding planes (modified after Ledda, 1998).

Bedding orientations throughout the area are random as a result of faulting, which breaks the area into several small fault blocks, each of which is tilted at different orientations (LEDDA, 1998).Figure 13 shows cross-sections 6054825 and, 6054075 through the Goathorn west area.

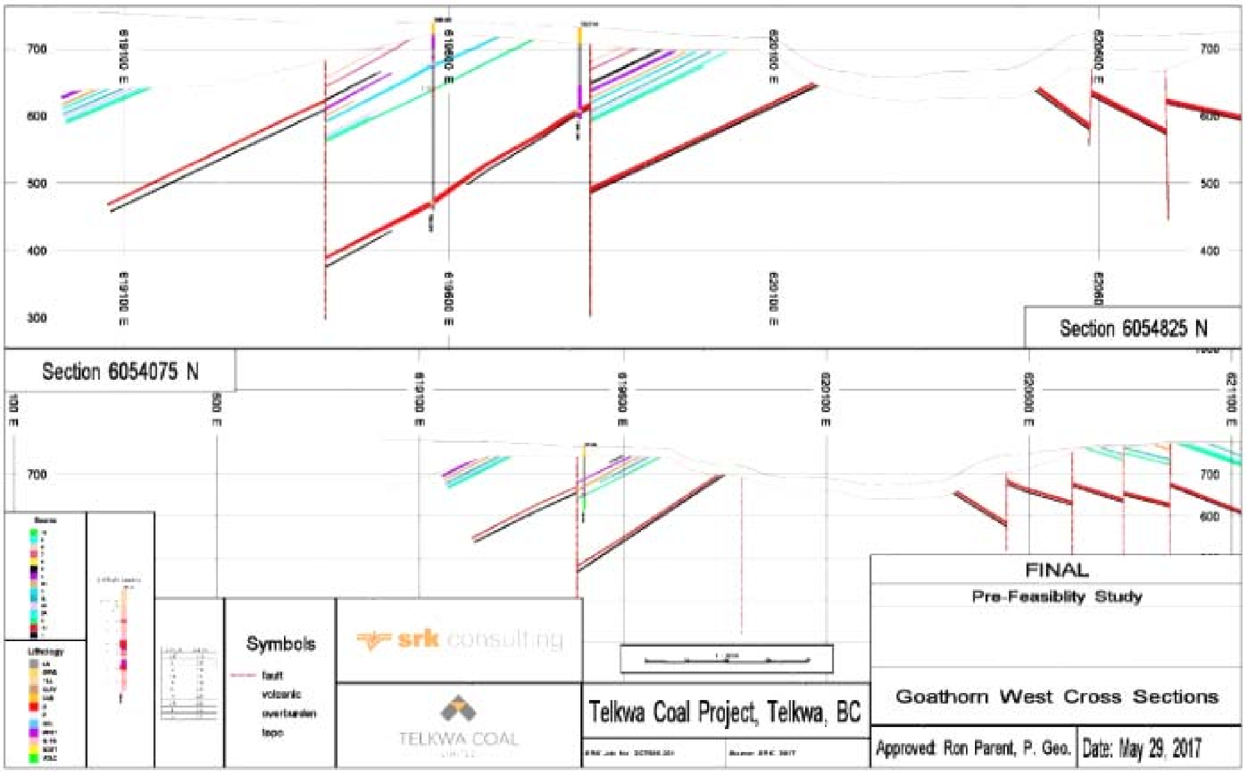


Figure 13: Goathorn West Cross Sections (6054075, 6054825)

3.8.3 Telkwa North (Bowser) Resource Area

The current Telkwa North Area consists of the Bowser East and West Block in addition to the main trend of Unit III coal measures along trend to the northwest. The current data set includes 4 6" core holes, 56 core holes and 38 rotary drillholes.

3.8.3.1 Bowser East Block (Telkwa North – East)

To date drilling has intersected the Unit III coal measures (2 to 11 Seams) within the Bowser - East Block area. The drillhole spacing for the block is currently approximately 125 m. In 1989, a 1.6 t bulk sample was extracted from the block via four 6" diameter core holes (modified after Ledda, 1998 and McKinstry, 1990).

The coal measures of East Block trend in a north-south direction and dip east to northeastward until they terminate against a northeast-southwest trending near vertical fault. This normal fault exhibits considerable displacement (approximately 150 m), juxtaposing thin coal seams possibly of the 1 Seam against the Unit III coal seams found in East Block (LEDDA, 1998).

The coal measures also abruptly terminate to the north where Skeena sediments have been intruded by a large Tertiary granodiorite plug. The intrusive truncates the sediments at nearly 90 degrees to bedding and extends beyond East Block, further disrupting the coal measures of Bowser West Block and

Northwest Area. Small-scale faulting has been identified at close proximity to the intrusive contact in other areas and is suspected at East Block as well.

3.8.3.2 Bowser West Block (Telkwa North - West)

Current exploration for the Bowser - West Block resource area has intersected the seam 2 - 11 coal package of Unit III. Consequently, a drillhole spacing of 150 metres or less is established for the block. Coreholes have yielded seam quality information. ARD samples were collected from coreholes that intersected the Unit lll stratigraphy and two others that intersected the Tertiary intrusive and nearby Unit l coal measures (Ledda, 1998).

Drillhole data indicates that the area consists of two main parallel trending fault blocks, which present a repetition of the Unit III coal-bearing sequence. Displacement on the normal fault separating the two blocks ranges from 40 metres near its southeastern end to 80 metres at its northwestern terminus with the Tertiary intrusive body. Additional normal faulting has also been identified at the block's southeast end. These faults, trending approximately perpendicular to the regional strike of the area, have displacements ranging from 20 to 80 metres and are known to break and juxtapose the 2 to 11 Seam package into a series of smaller fault blocks. Several other small-scale displacement faults have also been identified, commonly occurring at close proximity to the intrusive body (Ledda, 1998).

The coal seams of West Block subcrop to the southwest and are constrained on the northeast by the granodiorite intrusive. An area of intense faulting and the absence of coal-bearing sediments terminates the Bowser resource area to the northwest. Although displaced by normal faulting the coal trend continues to the southeast, and may continue as far south as the Telkwa River, where the trend is presumed fault terminated. Indications are that the coals historically exploited by the Aveling Mine are extensions of the trend, suggesting that additional normal faulting may occur beyond the current limits of drillhole control. Additional exploration is required to further determine the trend geometry in proximity to the Telkwa River (LEDDA, 1998).

Bedding orientations throughout the block area are generally to the northeast, averaging 17 degrees (Ledda, 1998). A plan view of Telkwa North's surficial geology and drillhole locations are shown on Figure 14 and typical geological cross sections are provided by Figures 15.

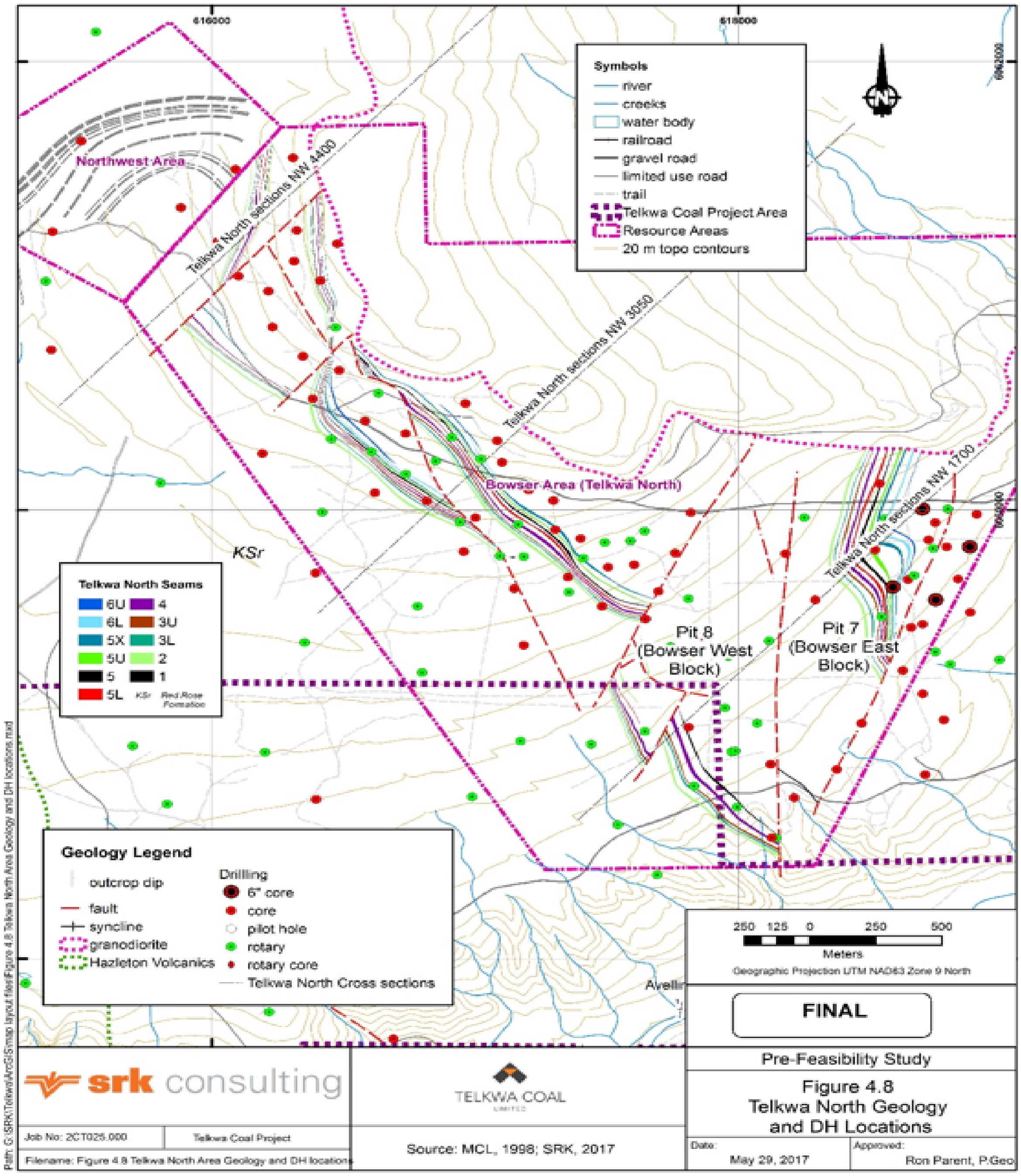


Figure 14: Telkwa North Surficial Geology and Drillhole Locations

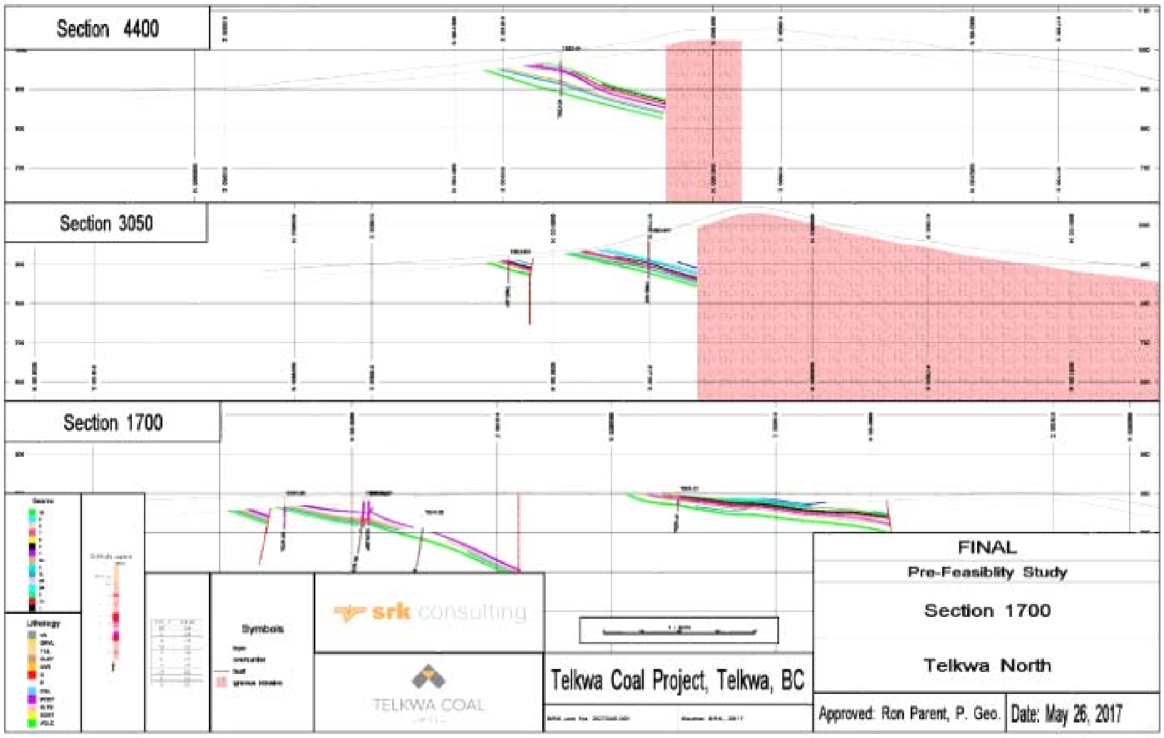


Figure 15: Telkwa North Cross-sections

4.0 PREVIOUS WORK

This section has been adapted from Ledda (1999) who concisely compiled all material previous work done on the Telkwa Property.

Coal was initially discovered in the Telkwa area at about 1900 although production did not commence in the Goathorn Creek area until 1918. On the north bank of the Telkwa River the Aveling (Telkole) Mine produced coal from 1921 to 1922 and again from 1940 to 1945. Telkwa Colliery (McNiel Mine) on the south side of the Telkwa River began producing in 1923 (Malott, 1990). Initial mining production was mainly for local consumption until after 1930 when underground operations were initiated at Bulkley Valley Collieries near Goathorn Creek. Production since that time has been sporadic, however, with underground operations often curtailed by structural complications and inadequate pre-development exploration.

Since 1950 the Telkwa Coalfield has been actively prospected by a variety of companies. Table 4 on the following page provides a tabular summary of the exploration activities completed on the property since that time, while the following provides a descriptive summary of the area's exploration activities.

Table 4: Telkwa Property Exploration History

Year	Total Drill Holes (rotary & core)	Rotary	Core	ARD Cores	Trenches	ARD Trenches	Surface Geology Drill Holes	Piezometers (piezos per site)	Surface Geophysics (kms)	Bulk Sample (resource area)	Company	Total Expenditures
1969	20	20?	0?	-	-	-	-	-	-	-	Canex Aerial Ltd.	$ -
1977/78	10?	10?	0?	-	-	-	-	-	-	-	Cyprus Anvil Mining	$ -
1979	13	13	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1980	-	-	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1981	12	11	1	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1982	72	7	65	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1983	69	-	69	-	-	-	-	-	-	Pit #3 (2191)	Crowsnest Resources Ltd. (CNRL)	$ -
1984	44	-	44	5	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1985	4	-	4	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1986	4	-	4	-	-	-	-	1/1	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1987	-	-	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1988	14	-	14	2	-	-	-	-	3.5	-	Crowsnest Resources Ltd. (CNRL)	$ -
1989	40	18	22	-	16	-	-	5/4	20.3	Pit #7 (6' core)	CNRL/Coal Mining Research Co./GSC	$ -
1990	-	-	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1991	-	-	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	$ -
1992	43	20	23	6	5	5	-	-	3.6	-	Manalta Coal Ltd.	$ 503,100
1993	53	33	20	6	-	-	10	7/5	19.0	-	Manalta Coal Ltd.	$ 627,362
1994	56	48	8	2	-	-	-	-	-	-	Manalta Coal Ltd.	$ 1,265,595
1995	83	71	12	3	5	4	-	4/4	-	-	Manalta Coal Ltd.	$ 1,997,000
1996	155	136	19	13	10	4	18	15/13	-	Tenas (801?)	Manalta Coal Ltd.	$ 2,035,000
1997	121	113	8	8	27	16	7	25/18	-	-	Manalta Coal Ltd.	$ 1,388,440
1998	45	57	8	4	32	19	-	2/2	-	Tenas (6' core)	Manalta Coal Ltd.	$ 560,000
TOTALS	**828**	**507**	**321**	**49**	**95**	**48**	**35**	**59/47**	**46.4**	**-**	**-**	**$ 8,376,497**

- **1951 - The Government of Canada** conducted a regional survey, much of which included the Telkwa license area.

- **1969 - Canex Aerial Limited** completed a drilling program of approximately 20 boreholes on the Telkwa North licenses.

- **1977 to 1978 - Cyprus Anvil Mining** completed a rotary drilling program within the Telkwa South licenses.

- **1979 - Shell Canada/Crowsnest Resources Ltd.** completed 13 rotary drill-holes, 4 of which were located on Telkwa South licenses, and the remaining 9 situated on the north side of the Telkwa River. Chip samples were not recovered for analytical testing.

- **1981 - Shell Canada/Crowsnest Resources Ltd.** completed a mapping and exploration drilling program which consisted of 11 rotary holes and one diamond drill-hole, all of which were spaced randomly throughout the Telkwa property. Coal samples were recovered from 4 of the rotary holes as well as the diamond drill-hole for analyses.

- **1982 - Shell Canada/Crowsnest Resources Ltd.** drilled 72 boreholes on the property, the majority of which were located on the south side of the Telkwa River. Of the 72 holes, 7 were rotary drill-holes and 65 were diamond drill-holes. Coal samples were collected and analyzed from all holes that intersected significant coal units.

- **1983 - Shell Canada/Crowsnest Resources Ltd.** completed 69 diamond drill-holes on the Telkwa South licenses, most of which were located within what has been designated as the Goathorn East (Pit #3) resource area. Included within the program were a small number of large-diameter core-holes which, along with all other drill-holes that intersected significant coal units, were sampled and had coal analyses performed. Of the 69 boreholes completed, 11 were situated within the proposed Pit #3 test-pit limits, to provide a preview of the pit development.

  Based upon drill-hole information a 219 tonne bulk sample from 7 seams was subsequently extracted from a test-pit located within the Pit #3 area. A full suite of coal quality analyses was performed, including testing on various simulated washplant products.

- **1984 - Shell Canada/Crowsnest Resources Ltd.** completed 44 diamond drill-holes, the majority of which were located within the Pit #3 resource area on the south side of the Telkwa River. Less than 10% of the holes were drilled on the Telkwa North coal licenses. All significant coal units were sampled and analyzed.

- **1985 - Shell Canada/Crowsnest Resources Ltd.** completed 4 diamond drill-holes, all of which were located north of the Telkwa River. All significant coals were sampled and analyzed.

- **1986 - Shell Canada/Crowsnest Resources Ltd.** completed 4 diamond drill-holes, again located on the Telkwa North coal licenses within an area that was designated as the Pits #7 and #8 Resource Area. Coal analyses were performed on all significant seams.
- **1988 - Shell Canada/Crowsnest Resources Ltd.** completed an exploration program exclusive to the Telkwa North licenses which consisted of initially completing approximately 3.5 kilometers of surface geophysics to highlight potential target locations. The area was subsequently drilled with 14 diamond drill-holes from which coal samples were collected and analyzed.

- **1989 - Shell Canada/Crowsnest Resources Ltd.** completed an exploration program consisting of drilling, trenching and surface geophysics on the Telkwa North coal licenses, and reflection seismic exploration within the Pit #3 area of the Telkwa South licenses. In addition a large-diameter coring program was undertaken specifically targeted at obtaining a bulk sample from the Pit #7 resource area.

  The conventional exploration drilling program included 31 bore-holes, 18 of which were rotary drill-holes, and the remaining 13 continuous core diamond drill-holes. Coal samples for analyses were collected from all holes that intersected significant coal units although only cored bore-holes were provided a full analyses. Analytical results from recovered rotary chip samples were not considered representative.

  At proposed wastedump and tailings pond locations 16 trenches were completed to evaluate the characteristics of the surficial lithologies. The Telkwa North surface geophysics included approximately 15.4 kilometers of geophysics shared between the Pit #7 resource area, the Pit #8 proposed waste dump area and the proposed infrastructure facilities location.

  Upon completion of the conventional exploration program four previously drilled sites in the Pit #7 area were selected as locations for large-diameter (6-inch) core-holes. From these a cumulative bulk sample from 7 seams was extracted and provided a complete analysis.

  As part of a joint investigation managed by the Coal Mining Research Company of Devon, Alberta, 4 seismic lines totaling 4.9 kilometers were laid out and a reflection seismic exploration program completed. The area chosen for the investigation was within the Pit #3 resource area where reasonable drill-hole control had previously been established.

- **1989 - The Geological Survey of Canada**, as part of a province-wide study of coal quality, drilled 9 core-holes for a combined total length of 280 meters in the vicinity of the old Bulkley Valley Collieries site near Goathorn Creek. Two of the holes were drilled in the vicinity of the historic Aveling Mine. All coal intersections were sampled and subsequently analyzed.

- **1992 - Manalta Coal Ltd.** of Calgary, Alberta acquired the Telkwa Property coal licenses on May 1st, 1992 from Shell Canada/Crowsnest Resources Ltd.. Later the same year Manalta Coal conducted an exploration program that included 3.6 kilometers of surface geophysics, a regional airborne magnetic survey review, 5 track-hoe trenches and 43 drill-holes. The surface geophysics, trenches and 39 of the 43 holes drilled were located on the Telkwa North licenses, while the remaining 4 drill-holes were completed on the south side of the Telkwa River in the Tenas Creek vicinity.

  Of the 43 bore-holes completed 19 were diamond core-holes, 3 were rotary core-holes and 21 were drilled utilizing conventional rotary drilling techniques. All holes completed in the Tenas Creek area were of the rotary variety although one was rotary cored through its coal measures. All significant coal seam intersections from cored drill-holes were sampled and analyzed.
  Coincidental with the exploration drilling program, representatives from the British Columbia Ministry of Energy, Mines and Petroleum Resources (MEMPR), and the Institute of Sedimentary and Petroleum Geology (ISPG) were on site to conduct coalbed methane desorption tests on selected Telkwa coal samples. The study conducted by the MEMPR and the ISPG was part of a regional study of methane desorption in British Columbia coalfields.

- **1993 - Manalta Coal Ltd.** completed an exploration program consisting of 53 drill-holes shared between the Telkwa North and Telkwa South coal licenses. A geotechnical and surficial geology program was also completed by Piteau Engineering on behalf of Manalta Coal Ltd. which included rock strength testing on selected cores, approximately 19 kilometers of surface geophysics and 10 till sample sites. All surficial geology studies were completed within a proposed tailings pond investigation area located near the Pit #7 and #8 resource areas.

  The Tenas Creek exploration area on the south side of the Telkwa River was the focus of 26 drill-holes, targeted at obtaining additional coal quality information and further delineation of the field's limits. Also within the Telkwa South coal licenses, 5 drill-holes, all of which were cored, were completed within the Pit #3 resource area to obtain additional coal quality information.

  Exploration completed on the Telkwa North coal licenses consisted of 2 drill-holes within the limits of the Pit #8 Resource Area, 11 drill-holes dedicated to further exploration of the Pit #8 coal trend beyond current pit limits, and 9 reconnaissance drill-holes completed proximal to the Pits #7 and #8 resource areas.

Of the 53 bore-holes completed in 1993 11 were diamond drilled coreholes, 10 were rotary core-holes (including one 1993 core-hole on a site utilized the previous year) and 33 were drilled utilizing conventional rotary techniques. All significant coal seam intersections from cored drill-holes were sampled and subsequently analyzed.

- **1994 - Manalta Coal Ltd.** completed their third annual exploration program, consisting of geological surface mapping and the completion of 56 rotary drill-holes, 8 of which were cored at least partially. Work was undertaken on both sides of the Telkwa River, although dominated slightly by drilling activities on the southern coal licenses where 32 drillholes were completed.

  Of the 32 drill-holes completed on the Telkwa South coal licenses 13 were dedicated to further exploration of the Tenas resource area, while 19 exploratory drill-holes were completed to evaluate the coal-bearing potential of the Tenas West coal licenses. Drilling on the Telkwa North licenses included 14 exploratory drill-holes within the MCL (Whalen) Freehold Block, 8 within tentative wastedump areas between Pit #8 and Whalen Block, and 3 drill-holes completed proximal to the Pit #7 resource area. All cored coal seam intersections were sampled and subsequently analyzed.

- **1995 - Manalta Coal Ltd.** completed a summer exploration program, limited exclusively to the Telkwa South coal licenses. A cumulative total of 83 drill-holes totaling approximately 9600 meters, and 5 track-hoe trenches were completed. Of the 83 drill-holes, 3 were continuously cored using a heliportable diamond drilling rig in environmentally sensitive areas near Cabinet Creek, while 9 additional core-holes within the Tenas resource area were completed using conventional coring methods. Coal samples were collected from all cored holes where coal measures were intersected, while rock samples were collected from 3 of the Tenas core-holes. Coal samples were analyzed for their coal quality properties while host rock samples were evaluated for their acid generating potential.

  As in some previous years, a geotechnical and hydrogeological program was completed coincidentally with exploration activities, supported by Piteau Engineering Consultants. Four piezometer installations were completed to monitor groundwater flows in the Tenas area and 5 track-hoe trenches, also in the Tenas area, were completed to investigate the surficial lithologies of potential wastedump sites. The lithologies intersected by the trenches were also sampled and analyzed to evaluate their acid generating potential.

- **1996 – Manalta Coal Ltd.** conducted an extensive exploration program on the Telkwa South coal licenses, which included the completion of 155 rotary drill-holes, 10 trenches, 18 shallow surficial drill-holes and the extraction of an 80 tonne bulk coal sample. Drilling activities were restricted mainly to the Tenas and Goathorn East resource areas, while the bulk sample was collected from two small pits dug near the western subcrop edge of the Tenas resource area.

  From the bulk sample test-pits the 3 mineable Tenas seams (c-seam, 1U-seam and 1-seam), as well as proportional amounts of host roof and floor lithologies, were collected and sampled individually. The 1Useam, 1-seam and associated host lithologies were collected from the main pit, while the c-seam and related lithologies were collected from the 2nd, smaller pit. A complete suite of coal quality analytical tests were subsequently performed, including testing on various simulated proposed products.

  Of the 155 rotary drill-holes completed, 19 were cored at least partially. Six of the core-holes were completed within the proposed test-pit area prior to pit development to determine seam oxidation levels within the sample collection site, and to evaluate the suitability of the site for the collection of a field representative bulk sample. The 13 other coreholes, completed within the Tenas (10) and Goathorn East (3) resource areas, were continuously cored for acid base accounting and coal quality purposes.

  The 18 shallow surficial geology drill-holes were completed to investigate the surficial lithologies of potential tailings pond and wastedump locations. Piezometers were installed within the surficial lithologies of 7 of the bore-holes, while an additional 8 piezometers were installed within the coal seams at 6 conventional drill-sites. Piezometers were also installed within the coal horizons of the 2 testpits prior to backfilling in order to collect groundwater samples and monitor its flow.

  Of the 10 trenches completed in 1996, 6 were completed within the confines of the Tenas test-pits for the purpose of channel sample collection. All of the remaining trenches were completed randomly in the Tenas resource area for the purposes of investigating the area surficial lithologies, and collecting acid base accounting data.

- **1997 – Manalta Coal Ltd.** conducted an exploration drilling program, again limited exclusively to the Telkwa South coal licenses. Completed within the scope of the program were 121 geology drill-holes and 3 geotechnical bore-holes. Twenty-seven trenches, targeted at further investigating the surficial lithologies of the plantsite, tailings pond and Goathorn East resource areas, were also completed.

Included within the conventional drilling component of the program were 72 drill-holes within the Goathorn East (Pit #3) area, 43 within Tenas area and 6 within the Goathorn West (Pit #6) area. The surficial bore-holes were completed within potential wastedump locations of Tenas and Goathorn areas, while the 3 geotechnical holes were completed within the 1983 Pit #3 test-pit reclamation area.

Of the 121 conventional drill-holes completed during the 1997 program, 8 were continuously cored and sampled for coal and rock sample collection purposes. All coal samples were subsequently analyzed for seam quality determinations, while rock samples were analyzed for their acid generating potential. Sixteen of the trenches and each of the reclamation pit drill-holes were also thoroughly sampled and subsequently analyzed for their acid generating potential.

Within the conventional drill-holes, piezometers were installed at 11 locations, including 4 nested sites where multiple stratigraphic horizons were investigated. Each of the 3 reclamation pit drill-holes, and all of the shallow overburden bore-holes, were also installed with piezometers to monitor groundwater flow characteristics.

- **1998 – Manalta Coal Ltd.** conducted an exploration program restricted locally to the Telkwa South coal licenses, which included 45 drill-holes and 32 track-hoe trenches. Included among the 45 drill-holes were 5 large-diameter conventional core-holes from which bulk samples were collected of the Tenas main mineable seams. For control purposes each of the bulk sample core-holes was completed at an existing, historically completed drill-hole location. Three conventional continuous core-holes, also among the 45 drill-holes, were completed for acid base accounting purposes and to collect coal samples for seam quality determinations.

  The trenching component of the exploration program was supported by Piteau Engineering Consultants of Calgary, and was targeted at investigating the surficial lithologies of the proposed plantsite, tailings pond, loadout and haul route corridors. Samples of intersected lithologies were collected from 19 trench locations and subsequently analyzed for their acid generating potential.

  Included within the conventional drilling component of the program were 20 drill-holes within the Goathorn East (Pit #3) area, 8 within Tenas area, 9 within the proposed tailings pond location and 3 within the Goathorn West (Pit #6) area. Continuous cores were collected from among the Tenas, Goathorn East and tailings pond areas. Piezometers were ultimately installed within drill-holes of the Goathorn East and West resource areas.

- **2015 – Telkwa Coal Ltd.** retained the services of Norwest Corporation located in Calgary, AB to prepare a technical report that meets with 43-101 and JORC requirements (Jordan & Lavender, 2015). No new field work nor sampling was completed but rather the work consisted of a review of all prior work and the evaluation of the suitability of that data to meet with 43-101 and JORC requirements. In the process of validating the geological data and interpretation for the Telkwa Area, Norwest first reviewed, verified, and completed any necessary edits of the source data files. The geological database addressed by Norwest included 733 drill holes and 25 trenches. This work lead to a revised resource estimate of 89,113,000 tons measured, 42,037,000 tons indicated and 33,412,000 tons inferred for a total resource of $165,562,000 gross in-situ tons. Tonnages were determined from the coal located at the Tenas, Goathorn and Telkwa North pit areas.

  The review yielded that the Telkwa Property is a project of merit but would need additional technical data especially related to the assessment of coal quality, pollutants and environmental studies before proceeding to a mine development permit application and approval of an environmental assessment.

  In addition to the technical report that was prepared, Telkwa Coal Limited has been busy throughout 2015 with evaluation and scoping work. The list below highlights the main activities that Telkwa Coal Limited has completed or currently still reviewing:

  - Completed the maiden NI 43-101 JORC Compliant Report as per above;
  - Updated the geological model to a Pre-Feasibility standard with SRK Consulting;
  - Continued to source and gather historical data from consultants who undertook work for previous owners and which is missing from our historic files;
  - Scoped the coal wash plant requirements with Sedgman Limited;
  - Met with and scoped coal haulage requirements with CN Rail;
  - Met with and scoped coal export requirements with Ridley Island Coal Terminal;
  - Scoped mine infrastructure requirements and capital expenditure;
  - Undertook coal quality assessment, marketing and pricing with senior coal industry consultant Kobie Koornhof;
  - Commenced preliminary review of the acid rock drainage assessment work with SRK;
  - Built top down cost models for both a Major and a Small mine;
  - Completed financial models and internal scoping studies for both a Major and Small Mine.

5.0 WORK COMPLETED IN 2016 AND 2017

On September 16, 2016, Allegiance Coal which is a publically listed company on the Australia Stock Exchange with headquarters in Sydney Australia purchased Telkwa Coal Limited. Allegiance plans to keep Telkwa Coal Limited as a wholly owned subsidiary company for all work being completed in North America. ACL through its wholly owned subsidiary Telkwa Coal Ltd. completed the following key deliverables between 2016-Dec-31 and 2017-Dec-31:

1. A pre-feasibility study led by SRK Consulting (Canada) Inc. was completed on 30 June 2017 assessing the economic viability of a mine commencing at 250,000 clean tonnes per annum (ctpa) and ramping to 1.75Mctpa. The report was result of the 43-101 report completed in 2015 and confirmed the economic viability of the deposit. The key results from the staged production prefeasibility study are summarized in Tables 5 through 9 below. The complete press release is provided in the attached Appendix A. $1,500,000 was spent to complete this prefeasibility study on various consultants to complete the necessary desktop studies and site visits. The approximate breakdown of expenditures is as follows:
    - Mining and Geology = 40%
    - Processing and Coal Quality = 25%
    - Rail, roads and Power = 10%
    - Costs and Economics = 10%
    - Site Visits = 5%, and
    - Company Salaries = 10%

Table 5: Production Parameters for the Staged Telkwa Prefeasibility Study

Life-of-mine ROM coal production	Tonnes	62,900,000
Life-of-mine saleable coal production	Tonnes	42,500,000
Average ROM coal production Stage 1	Tonnes per annum	340,000
Average ROM coal production Stage 2	Tonnes per annum	2,590,000
Average product coal yield	%	68
Average saleable coal Stage 1	Tonnes per annum	250,000
Average saleable coal Stage 2	Tonnes per annum	1,750,000
Average strip ratio Stage 1 and Stage 2	BCM/ROMt	5.8:1
Coal processing capacity Stage 1	Feed tonnes per hour	190
Coal processing capacity Stage 2	Feed tonnes per hour	350
Mine life (incl. pre-production)	Years	28

Table 6: Average Operating Costs for Life of Mine for the Staged Telkwa Prefeasibility Study (PFS)

	US$ Saleable/t
Site Costs	
Waste removal	23.8
Coal recovery	2.7
Coal processing	3.6
General and administration	4.0
Other	2.5
Transportation, Marketing & Royalties	
Marketing costs	0.2
Haulage (CHPP to Rail Siding)	2.6
Rail to port and loaded	12.7
Third party royalties	2.8
Total all in cash cost FOB pre-tax	**54.8**

Table 7: Key Performance Economic Indicators over Life of mine for the Staged Production PFS

	Units	Value
Pre-tax net present value @ 10%	US$M	416
Internal rate of return	%	37
Payback from Stage 2 commercial production (real terms) of both Stage 1 and 2	Years	1.8

Table 8: Telkwa Property Resources based on the Staged Production PFS

	Measured (Mt)	Indicated (Mt)	Measured+Indicated (Mt)	Inferred (Mt)
Tenas	58.8		58.8	-
Goathorn	59.5	9.2	64.7	0.2
Telkwa North	15.7	3.7	19.4	1.0
Total	**134.0**	**12.9**	**146.9**	**1.2**

Table 9: Telkwa Property Reserves based on the Staged Production PFS

Table 6: Reserves	Product	Tenas Mt	Goathorn Mt	Telkwa Nth Mt	Total Mt
Proven	ROM Coal	29.1	22.1	10.8	62.9
	Clean Coal	20.6	12.6	6.4	39.5
	Saleable Coal	21.0	13.8	7.0	41.8
Probable	ROM Coal	-	0.2	0.7	0.9
	Clean Coal	-	0.1	0.4	0.5
	Saleable Coal	-	0.1	0.5	0.6
Total	**ROM Coal**	**29.1**	**22.3**	**11.5**	**62.9**
	Clean Coal	**20.6**	**12.7**	**6.8**	**40.1**
	Saleable Coal	**21.0**	**13.9**	**7.5**	**42.5**

2. Baseline studies and environmental monitoring was commenced in May 2017 and will run between 12 and 18 months into the future;

3. Engagement with First Nations commenced in February 2017 leading to an agreement signed in May 2017 between TCL and the Office of the Wet'suwet'en.

4. Engagement with the Telkwa Council commenced in May 2017, and

5. A sales agreement between CDC and TCL was completed that formally transferred the coal licenses owned by CDC to TCL.

6.0 FUTURE PLANS

Allegiance Coal's focus through its wholly owned subsidiary Telkwa Coal for the next twelve months will focus on the following key deliverables:

1. Complete a confirmatory exploration drilling program collecting water, coal and rock samples for additional test work in early 2018

2. Complete a feasibility study on a 250,000 clean tonnes per annum operation in support of submitting subsequent regulatory applications to the provincial government

3. Sign a project assessment agreement with the Wet'suwet'en and continue engagement about the project with this nation

4. Complete environmental baseline activities in support of submitting subsequent regulatory applications to the provincial government

5. Continue engagement with community stakeholders

6. Complete community open houses for other stakeholders

7. Complete a further exploration drilling and geotechnical program in late 2018 or early 2019 based on the information found in the early 2018 program

Going forward TCL will assume title of all coal licenses and freehold lands comprising the Telkwa Property as well as ensure all regulatory payments and filings are met.

Dated this 20th day of December, 2017

Daniel J. Farmer, P.Eng.
Chief Engineer, Telkwa Coal Limited

Author and Qualifications

I, Daniel J. Farmer, license number 29936, who is a registered professional engineer in both the province of British Columbia and Alberta, Canada was the responsible professional in putting together this work report. I am currently the Chief Operating Officer for Telkwa Coal Limited and am responsible for all operational, engineering and geological aspects for the project.

I am held numerous roles in the coal industry in western Canada over the past 20 years including the following highlights:

- Mine Engineer and Pit Foreman for 7 years at the Luscar Mine with Cardinal River Coals in Alberta
- Project Manager for the Cheviot Coal project which became operational in 2006
- Mine Operations Manager for the Trend mine in Tumbler Ridge, BC between 2008 and 2012
- Project Manager for the Ram River coal project located outside of Rocky Mountain House, AB
- Chief Engineer for the Telkwa Coal project for the past 3 years.

7.0 REFERENCES

Jordan, G. and Lavender, T. (2015): Technical Report, Telkwa Coal Property, British Columbia - A report prepared for Telkwa Coal Limited, 173 pages.

Ledda, A. (1999): Telkwa Property 1995 to 1998 Geological Assessment Report prepared on behalf of Luscar Limited; Unpublished, 75 pages.

APPENDIX A – Allegiance Coal's Press Release for PFS

ALLEGIANCE COAL
LIMITED

3 July 2017

TELKWA METALLURGICAL COAL PROJECT PRE-FEASIBILITY STUDY RESULTS

The Telkwa metallurgical coal project has significant attributes positioning it to enjoy the highs and survive the lows of the global metallurgical coal market.

PFS EXECUTIVE SUMMARY

- Staged development of a shallow open pit operation commencing with 250 ktpa of saleable coal production (**Stage 1**) ramping to 1.75 Mtpa over 4 years (**Stage 2**).
- Proven and Probable Coal Reserve estimate of 62.9 Mt.
- Mine life of 28 years.
- Average life-of-mine all-in FOB (ex-port) cash cost before tax of US$55 per tonne, positioned in the lowest five percentile of the global seaborne metallurgical coal cost curve.
- Average life-of-mine strip ratio of 5.8:1 BCM/ROMt.
- First 14 years of production, an all metallurgical saleable coal yield of 75%, and a life-of-mine average of 68%.
- Stage 1 initial capital investment of US$51M, this can be reduced to US$21M with a manufacturer funded and operated washplant, and either contract mining or equipment leasing.
- Stage 2 initial capital investment of US$162M, this can be reduced to US$54M with a manufacturer funded and operated washplant, and either contract mining or equipment leasing.
- Unleveraged NPV10% pre-tax of US$416M (A$553M) with an IRR pre-tax of 37%.
- Total initial capital, Stage 1 and 2, is repaid in 1.8 years (real terms) after commencement of Stage 2 production.
- The assumed life-of-mine average coal price for a PCI product is US$110 per tonne, with an exchange rate of CAD:USD 1.33 applied.

ALLEGIANCE COAL
LIMITED

Allegiance Coal Limited (**Allegiance** or the **Company**) is pleased to present the results of the Staged Production Pre-feasibility Study (**PFS**) of its Telkwa Metallurgical Coal Project located in northwest British Columbia (**Project**). The PFS was undertaken by SRK Consulting (Canada) Inc. (**SRK**) assisted by other mining and resources specialists including Sedgman Canada, and was completed and delivered to the Company on 30 June 2017.

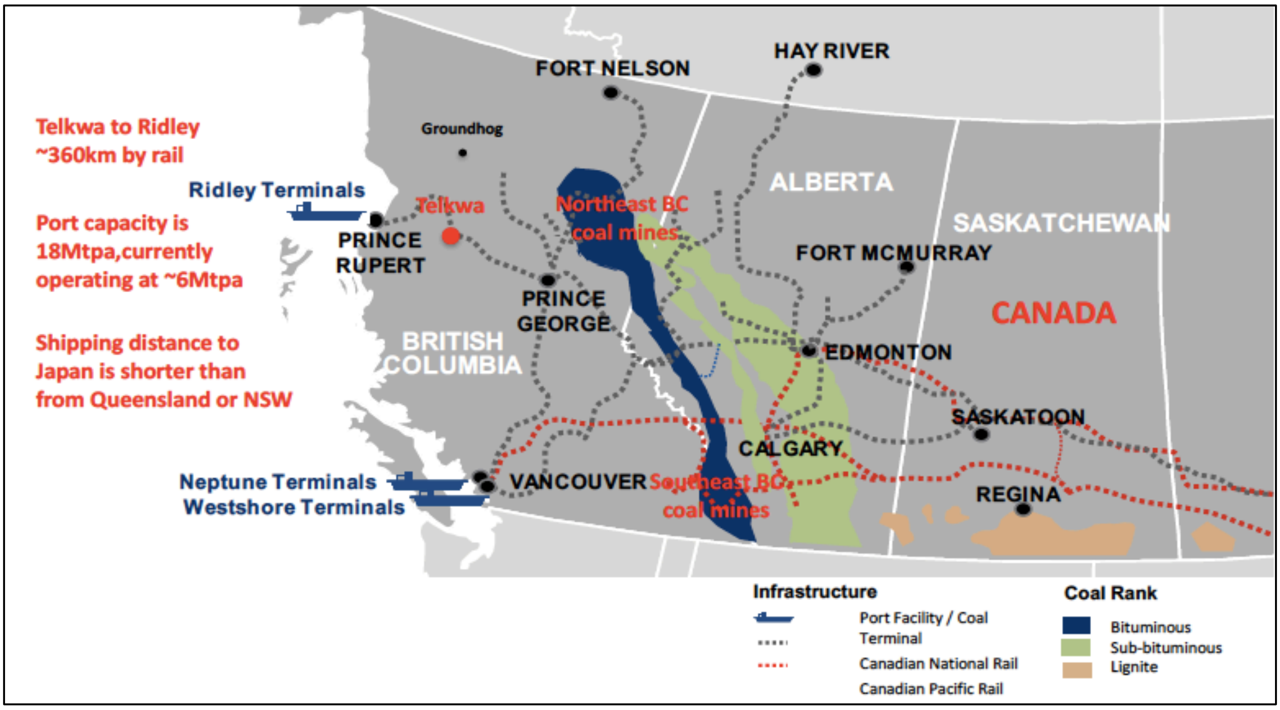
Well positioned in the lowest five percentile on the seaborne metallurgical coal cost curve, the Project has the capacity to withstand the volatility of metallurgical coal prices. It is the Company's view that when coal prices come down, producers higher up the cost curve gradually close, and with supply curtailment, prices recover. Surviving and remaining in business to catch the recovery, is key.

The Board is excited by the PFS results and remains steadfast in its commitment to fast-track the Project to production. The two immediate areas of focus in that regard are:

- A PFS review with particular focus on the reduction of up-front capital, and assessing the level of ramp-up production which achieves the best return on capital for completion Q1 2018; and
- A pre-feasibility study focused solely on Stage 1 development as a stand-alone operation to support an application for a Sub-EA permitting process for completion in Q1 2018 (as is discussed in the section headed 'Staged Permitting and Production', on page 3).

Background

Located on the western side of British Columbia, the Project enjoys simple access to rail and port and, from the Port of Prince Rupert, it is a comparatively short shipping distance to the Asian steel mills.



ALLEGIANCE COAL
LIMITED

As reported previously by the Company, the Project has been the subject of a significant amount of exploration and evaluation, estimated in today's dollars to be in the order of A$40M. As a result, the Company has had to do no drilling for exploration or resource upgrade, though it will need to do some for the permiting process. Its focus therefore, is to undertake largely desktop work to assess the most prudent and efficient way to develop the Project, and to get it permitted, quickly. This led to a staged approach to permitting and production.

Staged Permitting and Production

The staged approach to permitting and production is pivotal to the Board's objective of putting a safe and environmentally sustainable mine into production quickly, that is affordable and achievable.

The Project comprises three shallow open pits all within close proximity of each other: Tenas, Goathorn, and Telkwa North. The pit areas are illustrated in the maps in the section headed, 'Mining & Processing', on pages 7 and 8. The Company's plan is to permit and mine the pits progressively as follows:

- Permit and mine Tenas at a production rate up to 250 ktpa;
- Permit Tenas at a production rate up to 1.75 Mtpa ready to ramp-up in year 3;
- Permit Goathorn at a production rate up to 1.75 Mtpa ready to commence mining in year 15; and
- Permit Telkwa North at a production rate up to 1.75 Mtpa ready to commence mining in year 23.

The Company believes the staged approach will allow operational data to validate environmental predictions and ease the way for additional permitting. It also defers significant costs associated with baseline studies, environmental monitoring, detailed mine planning and permitting to when they need to be spent, and when there is greater certainty that mining will take place in those areas.

The relevance of 250 ktpa in Stage 1 derives from British Columbia mining and environmental legislation. A coal mine producing less than 250 ktpa of saleable coal does not trigger a review under the British Columbia Environmental Assessment Act (Sub-EA). It also does not trigger a Federal Government review under the Canadian Environmental Assessment Act.

The Company must still complete its baseline studies, continue its environmental monitoring, and undertake an effects assessment to support its applications for permits to mine under the British Columbia Mines Act and British Columbia Environmental Management Act. There is a risk that the Federal and/or Provincial Environment Ministers deem it reviewable, notwithstanding the Project is Sub-EA. However, a number of mine projects in British Columbia have successfully proceeded as Sub-EA, several in recent years.

Stage 2 assumes the Tenas Pit will be permitted under a full environmental assessment review process (Full-EA) to increase production above 250 ktpa, and thereafter progressively repeating the Full-EA process for Goathorn and Telkwa North, respectively.

The PFS assumes the ramp-up at Tenas would commence in year three, which assumes the Full-EA review process would take around 3 years from commencement of Stage 1 development. However, there is a risk that the the Full EA process may take longer.

The PFS also assumes the ramp-up would be to a production rate of 1.75 Mtpa of saleable coal. The ramp-up scale was driven solely by the raw coal feed capacity of the smallest and least expensive modular washplant presented by Sedgman. As a result of the PFS review, and further ongoing work particularly in relation to optimizing capital, the scale of the ramp-up may be different.

Summary of PFS Results

A summary of the key results of the Staged Production PFS are set out in Tables 1 to 4 below.

Table 1: Production Parameters Life of Mine	Units	
Life-of-mine ROM coal production	Tonnes	62,900,000
Life-of-mine saleable coal production	Tonnes	42,500,000
Average ROM coal production Stage 1	Tonnes per annum	340,000
Average ROM coal production Stage 2	Tonnes per annum	2,590,000
Average product coal yield	%	68
Average saleable coal Stage 1	Tonnes per annum	250,000
Average saleable coal Stage 2	Tonnes per annum	1,750,000
Average strip ratio Stage 1	BCM/ROMt	2.7:1
Average strip ratio Stage 1 and Stage 2	BCM/ROMt	5.8:1
Coal processing capacity Stage 1	Feed tonnes per hour	190
Coal processing capacity Stage 2	Feed tonnes per hour	350
Mine life (incl. pre-production)	Years	28

Table 2: Initial Capital Base Case	Stage 1 US$M	Stage 2 US$M
Equipment including primary production and ancillary*	9.1	59.9
Pre-strip	3.0	-
Mine access	1.5	7.0
Coal handling preparation plant and related Infrastructure*	20.2	36.3
Water management, power and other	15.2	38.7
Rail siding and Loadout	2.3	19.6
Total Initial Capital (*includes contingency)	**51.2**	**161.6**

Table 3: Operating Costs Life of Mine	US$ Saleable/t
Site Costs	
Waste removal	23.8
Coal recovery	2.7
Coal processing	3.6
General and administration	4.0
Other	2.5
Transportation, Marketing & Royalties	
Marketing costs	0.2
Haulage (CHPP to Rail Siding)	2.6
Rail to port and loaded	12.7
Third party royalties	2.8
Total all in cash cost FOB pre-tax	**54.8**

Table 4: Key Performance Indicators Life of Mine	Units	Value
Average Coal price for a mid-volatile PCI	US$/t	110
Exchange rate Canadian dollars to US dollars	CAD:USD	1.33
Pre-tax net present value @ 10%	US$M	416
Internal rate of return	%	37
Payback from Stage 2 commercial production (real terms) of both Stage 1 and 2	Years	1.8

Coal Resources

The PFS and the statement of Resources and Reserves has been prepared by SRK in accordance with the JORC 2012 Edition (**JORC Code**) and National Instrument NI 43-101 'Standards of Disclosure for Mineral Projects' (**NI 43-101**). These estimates were based on historical drilling undertaken by previous Project owners from 867 documented drill holes of which 310 were cored.

A summary of the Resources is set out in Table 5 below.

Table 5: Resources	Measured Mt	Indicated Mt	M+I Mt	Inferred Mt
Tenas	58.8		58.8	-
Goathorn	59.5	9.2	64.7	0.2
Telkwa North	15.7	3.7	19.4	1.0
Total	**134.0**	**12.9**	**146.9**	**1.2**

The Resources were previously determined by Norwest Corporation in 2015 totalling 131 Mt Measured and Indicated of which 89 Mt (68%) was in the Measured classification. There were 44 Mt of Inferred resource.

In delivering the PFS, SRK updated the geological model and in so doing increased the Measured and Indicated resources to 147 Mt, increasing the Measured tonnes to 134 Mt (91%). The Inferred resource however decreased to 1.2 Mt.

Estimation Methodology

Coal quality and seam thickness parameters were estimated using inverse distance squared within the seam wireframes which control the distribution of interpolated values in 3D. The model is of the coal seams only and the interburden has been modelled by default but to sufficient detail to assist with waste rock characterisation and waste rock management. The model block size ranges from 5 to 25 m along strike (Tenas and Telkwa North are rotated), 5 to 10 m down dip and 5 m in height. Average drillhole spacing for Tenas is 110 m, 125 m for Goathorn and 135 m for Telkwa North. The average core hole spacing (with quality data) is 237 m in Tenas, 157 m in Telkwa North and 173 m in Goathorn.

A key assumption utilized in the resource estimate was the relationship between ash content on an air dried basis and bulk density used for conversion of volume to tonnes. The geological interpretation is based on the "stacking" of seam bottoms along 25 m spaced cross sections from the lowermost seam upward. The main validation method used was a comparison between wireframe solids volume and volume generated from the 3D block model after coding. The model accurately represents the drilled seam true thicknesses to +/- 0.1 m at a given XY location. The elevations may vary up to 3 m at any drillhole intercept. This is due to the sectional nature of the modelling process, projecting all seam intersections a maximum of 12.5 m to the nearest cross section.

ALLEGIANCE COAL
LIMITED

Coal Reserves

As a result of the analysis undertaken in the PFS, which establishes the economic viability of the Measured and Indicated Resources, SRK determined a Reserve estimate of 62.9 Mt of raw coal producing 40.1 Mt of clean coal with total moisture of 8.5 percent. This results in a total of 42.5 Mt of saleable coal with a moisture content of 10 percent at an average mine life yield of 68 percent. Saleable Coal is a term used under CIM Definition Standards which has the same meaning as Marketable Coal under JORC.

A summary of the Reserves is set out in Table 6 below.

Table 6: Reserves	Product	Tenas Mt	Goathorn Mt	Telkwa Nth Mt	Total Mt
Proven	ROM Coal	29.1	22.1	10.8	62.9
	Clean Coal	20.6	12.6	6.4	39.5
	Saleable Coal	21.0	13.8	7.0	41.8
Probable	ROM Coal	-	0.2	0.7	0.9
	Clean Coal	-	0.1	0.4	0.5
	Saleable Coal	-	0.1	0.5	0.6
Total	**ROM Coal**	**29.1**	**22.3**	**11.5**	**62.9**
	Clean Coal	**20.6**	**12.7**	**6.8**	**40.1**
	Saleable Coal	**21.0**	**13.9**	**7.5**	**42.5**

The production targets and forecast financial information outlined in this announcement are based solely on the Proven and Probable Reserves in Table 6 above. Modifying factors such as mining dilution, mining recovery, raw ash and density, and coal yield have been estimated using accepted techniques considered by the Company and SRK. The accuracy of the Reserve estimate is subject to geological data and modelling procedures to estimate the coal resource and to modifying factor assumptions for dilution and loss. While the Project is not in production and such reconciliation is not possible, the assumptions are based on sound principles and experience from mines with similar conditions.

Mining & Processing

Coal production commences in the Tenas Pit, which represents 50 percent of saleable coal, and the first 14 years of mining.

Stage 1 commences with 250 ktpa of saleable coal production in a low capital development relying on existing forestry and public roads to access and haul coal from pit to washplant, to rail siding.

The production schedule is four days per week, Monday to Thursday, 10 hour day shifts only. All operations personnel totaling 35, and trade technicians, will be sourced locally from the towns of Telkwa, Smithers (12 km) and Houston (50 km), which contain a skilled workforce with extensive experience in forestry and hard rock mining.

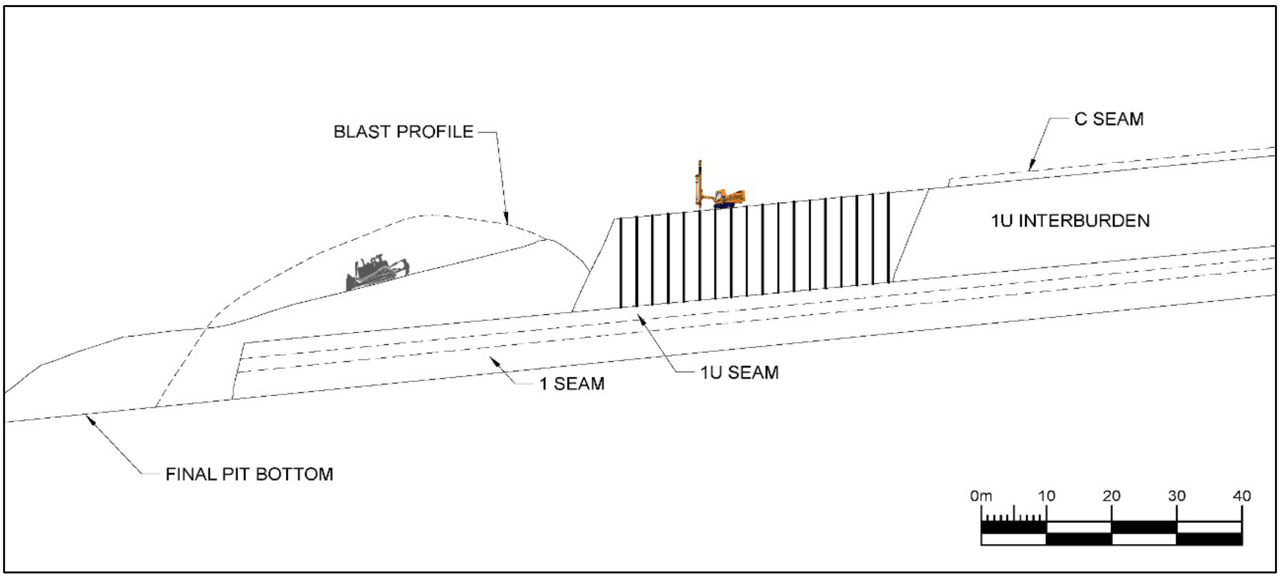
Start-up primary production equipment will also be very simple comprising one 5” drill rig for blasting, one 100t excavator, four dump trucks (50t), two D8 bulldozers (or equivalent) and one front-end loader.

The rail siding is around 800m long, running parallel to CN Rail track. Coal is dropped on a coal pad, from which a front-end loader will pick up the coal and load it into 110t coal wagons.

The google map below illustrates the overall Project layout of Stage 1.

The Tenas Pit is a syncline basin of coal with the west limb shallow dipping. SRK has proposed a mining strategy involving a series of cuts initiated at the lowest point in the north of the pit, progressing uphill to the south.

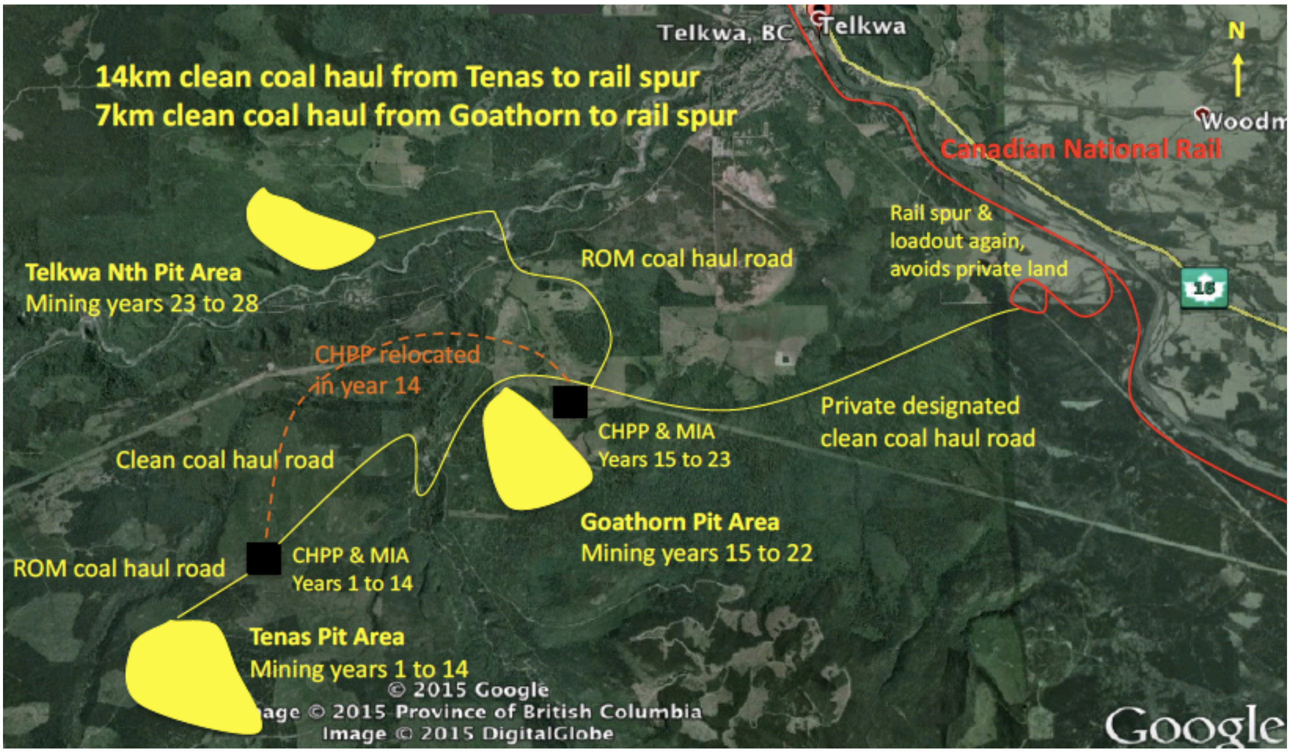
The strategy enables around 50 percent of the waste material to be back filled from start of mining, using dozers to push waste back into the pit bottom. The cost savings in moving waste material with dozers as opposed to an excavator loading a dump truck are significant.



The diagram above illustrates blasting waste rock, dozer push of waste rock into the pit bottom, and exposing the coal seam for mining.

Stage 2 involves an increase in production in year 3 to 740 ktpa and in year 4, to 1.75 Mtpa (averaged). This involves a more substantial investment in mining equipment and infrastructure including a designated private clean coal haul road, and a significantly upgraded rail spur and loading system. The three pits are mined progressively from Tenas to Goathorn, and lastly Telkwa North.

The google map below illustrates the overall Project layout of Stage 2.



The washplant is relocated in year 14 from the Tenas Pit area to the Goathorn Pit area, where it remains until mine closure. The washplant is proposed to be modular, built in a manner that enables it to be relocated.

Sedgman assessed two coal washplant options for the purposes of this PFS. Further assessment of other washplant options will be undertaken in the PFS review. The two options considered were:

- A stand-alone 100tph washplant manufactured by a Chinese supplier which has the capacity to process 750 ktpa of raw coal and, in the case of Telkwa coal, up to 500 ktpa of clean coal; or
- A Sedgman manufactured 190tph modular washplant with a capacity to process up to 1.4 Mtpa of raw coal, up to 1 Mtpa of clean Telkwa coal; and
- With minimal additional capital, introduce a third circuit to the Sedgman plant to reach 350 tph capable of processing 2.5 Mtpa of raw coal, up to 1.75 Mtpa of clean Telkwa coal.

For the pruposes of the PFS, the Sedgman manufactured washplant option was selected. The washplant will be configured with dense media cyclones and flotation during Stage 1, and expanded by the introduction of a reflux classifier to meet the increased production requirements in Stage 2.

Washed coal will be stockpiled at the washplant, then trucked 24.3 km along forestry and public roads to the rail siding during Stage 1, and 14 km along a designated private haul road during Stage 2 while mining at the Tenas Pit, and 7 km while mining at the Goathorn Pit. The clean coal haul road and rail siding/spur are on Government and CN Rail owned land, and do not require the acquisition of any privately owned land.

Infrastructure & Transport

A key contributor to the low capital and low operating costs of the Project is its location to infrastructure.

A 25 kV power line runs to the northern edge of Goathorn. The power line will be extended 3 km to a substation located at the washplant situated at the northern tip of the Tenas Pit area. The haul roads planned for Stages 1 and 2 have already been discussed and illustrated on the maps in the prior section.

An 800m rail siding will be built to receive 15, 110t coal wagons during Stage 1. Coal will be dropped on to a pad with a storge capacity of 3,300t. Coal will then be loaded with a front-end loader. Wagons will be loaded three times a week for a 24 hour return trip to Ridley Island Coal Terminal (**RICT**).

A 4.5 km rail spur and loadout loop at the same location will replace the rail siding in Stage 2, where coal will be loaded via a 300t bin. Siding stockpile will store 25,520t. Trains will comprise 116, 110t coal wagons and again operate at around three trips to RICT per week.

Once loaded, it is then a 360km haul to RICT. RICT currently has 18 Mtpa handling capacity which can be expanded to 25 Mtpa within 24 months. The forecast tonnage for this calender year is around 6 Mtpa. In its peak in 2013, RICT exported 13.4 Mtpa.

There is ample capacity for Telkwa coal with no requirement for upfront bond payments or take or pay commitments. The average ship size at RICT in the last 12 months has been 80 Mt panamax vessels. Most coal producers who export from RICT share hulls, and this is anticipated in the case of Telkwa coal.

Coal Quality & Product Options

The seaborne metallurgical coal market for 2017 is estimated by coal analysts to be in the order of 316 Mt.

All steel mills use a blend of different coals in the process of making steel. This is driven to a large extent by the steel mills using alternatives to hard coking coal to help reduce the overall cost of the coal used in their blast furnances. It is estimated that 118 Mt (37%) of 2017 seabourne metallurgical coal supply will come from PCI and semi-coking coals – 61 Mt of PCI (19%) and 57 Mt (18%) of semi-coking.

Ultimately, the steel mills will determine how they use Telkwa coal in their blast furnaces. The PFS assumes that the coal is sold as a PCI coal. However, once shipments of Telkwa coal have been delivered to and used by steel mills, and its performance as a coking coal better understood, Telkwa coal could well be sold as a semi-coking coal for blending with hard coking coals, at a premium to the PCI price.

Telkwa coal will be washed at an SG of 1.6. For the Tenas Pit, which has lower raw ash, a clean coal yield of 75 percent is expected, and for the Goathorn and Telkwa North Pits, a clean coal yield of 63 percent. This equates to a life-of-mine all metallurgical coal yield of 68 percent. For the first 14 years of mining, coal is mined from the Tenas Pit.

The quality parameters for Tenas coal are summarized in Table 6 below, and are compared to similar products exported from NSW.

Table 6: Tenas Coal Quality	Units	Tenas	NSW SSCC	NSW HV PCI
Total moisture	%	**9.0**	6-10.5	6-10.5
Volatile matter	%	**24.6**	33-37	33-39
Ash	%	**9.5**	6.5-10.5	9-10.5
Sulphur	%	**0.9**	0.5-10.5	0.35-0.85
Fixed carbon	%	**65.3**	50-60	55
Calorific value	Kcal/kg	**7,245**	N/A	7,250
Free swell index		**3-4**	3-6	N/A
HGI		**64**	N/A	40-50
Reflectance	%	**0.84**	0.80	0.65-0.85
Maximum fluidity	Ddpm	**2-17**	100-500	N/A
Coal strength reactivity (calculated)	%	**37-43**	25-30	N/A

From years 15 to 28, coal is mined progressively from the Goathorn Pit and lastly the Telkwa North Pit. The quality parameters for Goathorn and Telkwa North coal are largely the same as Tenas although ash and sulphur are slightly higher.

Whilst it is not an immediate priority given the Goathorn and Telkwa North pits will be mined 15 years after commencement of production, the Company will undertake more coal quality testwork on Goathorn and Telkwa North, as most of the exploration in these two areas was undertaken in the 1970s and the 1980s. Since then, technology relating to coal quality testing and analysis has advanced significantly and more accurate data is expected to be obtained.

Coal Pricing

Kobie Koornhof & Associates (**Koornhof**), a highly respected coal market specialist, provided SRK with a market outlook for metallurgical coal along with a price range for Telkwa coal as both a semi-coking coal and a PCI. Koornhof assumed a long term price range for premium benchmark coking coal of US$140 to US$170 per tonne. Against the benchmark Koornhof then applied typical pricing parameters for premium low-vol PCI and semi-soft coking coal, and against that, priced Telkwa coal.

The benchmark parameters used for pricing are summarized in Table 7 below.

Table 7: Assumptions of Benchmark Pricing	Price as % of HCC	Long term price US$/t
Premium low vol coking coal	100%	$140 - $170
Premium low vol PCI	70-75%	$98 - $128
Semi-soft coking coal	65-70%	$91 - 119

Using a value in use methodology (including an adjustment for sulphur), Koornhof summarises the price of Telkwa coal in Table 8 below.

Table 8: Long term price of potential Telkwa products	PCI US$/t	SSCC US$/t
Telkwa coal	85-112	87-115

It is the Company's view that there are many other intangible factors which will arise in discussions and negotiations with the Asian steel mills on product pricing:

- With Australia supplying around 65 percent of the global seaborne metallurgical coal market, Asian steel mills are exposed to supply disruptions and delays caused by weather events, and limited port capacity in Australia. It is now a publicly stated strategy that some Asian steel mills will focus and commit to alternative sources of supply. British Columbia with its vast metallurgical coal resources, under-utilised port capacity, particularly at RICT, and competitive shipping distance, offers an excellent alternative.

- The steel mills take great comfort from the fact that a low cost producer can survive significant falls in metallurgical coal prices and continue to supply coal. Reliable supply also mitigates the risk of price volatility, and this can often be as important to a steel mill as the quality of the coal itself.

Operating Costs

Operating costs have been estimated applying first principles and covering all aspects of the mining operation including waste removal, coal recovery, coal processing, haulage, road, maintenance, water management, reclamation and site administration.

Operating costs are summarized in Table 9 below.

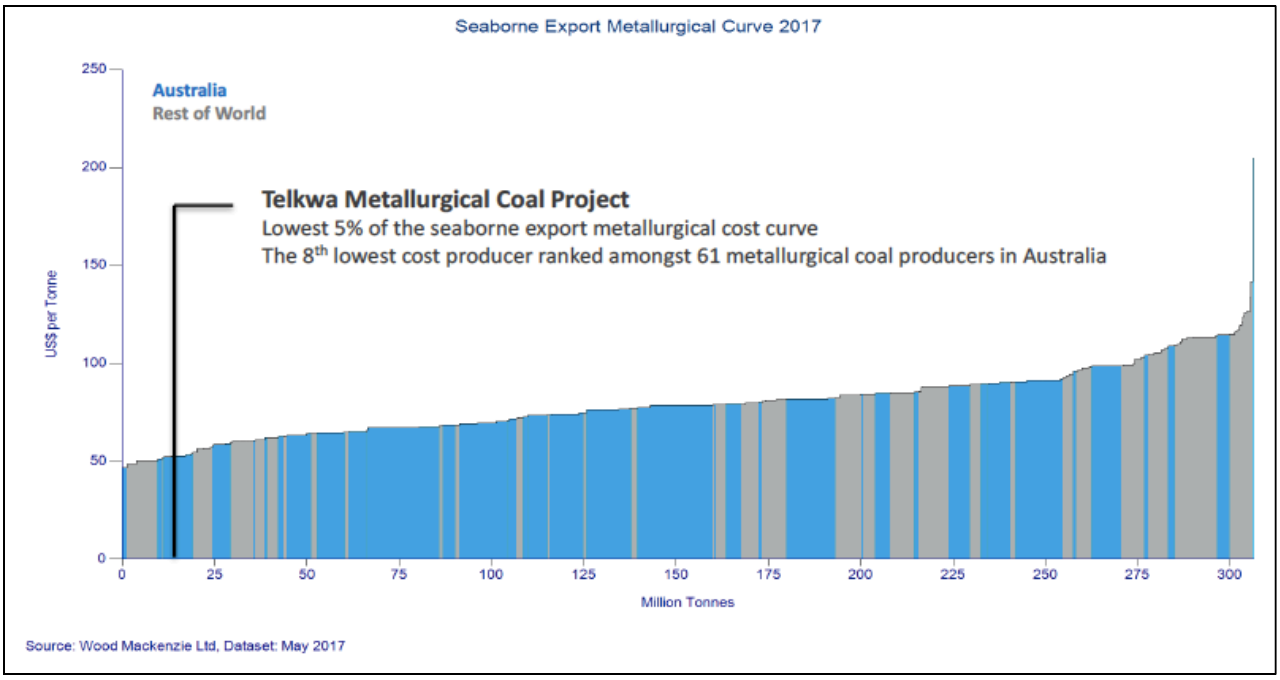
Table 9: Operating Costs		US$ saleable/t
Site Costs		
Waste removal	Combination of load, haul and dozer push	23.8
Coal recovery	Load and haul	2.7
Coal processing	190tph modular and scalable washplant	3.6
Other site costs	Water management and reclamation	2.5
General and admin		4.0
Freight Costs		
Marketing		0.2
Haulage	Clean coal load and haul from CHPP to siding	2.6
Rail and port		12.7
Royalties	Payable to third parties	2.8
Total Operating Costs	**Pre corporate tax & BC Govt. mineral tax**	**54.8**

The Project has potential to be a very low cost producer and is well positioned to be a reliable, long term supplier of metallurgical coal to Asian steel mills.

As potentially the lowest cost producer of metallurgical coal in British Columbia, and in the lowest five percentile of coal producers in the global seaborne metallurgical coal market, the Project has capacity to weather the volatility of metallurgical coal prices.

In addition, relative to Australian producers of metallurgucal coal, the Project would rank in FOB cost the 8th lowest amongst 61 producers, and in the lowest 10 percentile in Australia.

The graph below highlights the Project's extremely low positioning on the seaborne metallurgical coal cost curve.



Initial Capital

Capital cost estimates were provided by SRK for mining, water management and water treatment, Sedgman for processing plant and related infrastructure, AECOM for rail construction, ACL for mine access capital and Lex Engineering for powerline construction.

Table 10 below summaries the base case initial capital expenditure to full production.

Table 10: Initial Capital Base Case	Stage 1 US$M	Stage 2 US$M
Equipment including primary production and ancillary*	9.1	59.9
Pre-strip	3.0	-
Mine access	1.5	7.0
Coal handling preparation plant and related Infrastructure*	20.2	36.3
Water management, power and other	15.2	39.1
Rail siding and loadout	2.3	19.6
Total Initial Capital (*includes contingency)	**51.2**	**161.6**

For the purposes of the PFS, contingency was applied in the range of 5 to 10 percent varying by area.

The sustaining capital during the first three years is US$2.3M and sustaining capital for the rest of the life of mine is US$187M.

Stage 1 capital incorporated a sufficient amount of Stage 2 capital to avoid capital slippage in the ramp-up. If the Project was never going to ramp-up, or was to ramp-up to a lower level of production, Stage 1 initial capital would likely be significantly lower. Assessing the best return, on the lowest possible initial capital, is a key objective of the PFS review.

Estimators were not asked to consider options to reduce start-up capital expenditure by considering other washplant options, financing or leasing plant and equipment, or contract mining. The primary purpose of the PFS in terms of capital, was to establish the base case from which the Company could then assess capital reduction options in its PFS review leading into its feasibility study.

Obvious gains in reducing initial capital to be assessed by the Company during the PFS review are, amongst others, noted in Table 11 below.

Table 11: Capital Reduction Options	Stage 1 US$M	Stage 2 US$M	Total US$M
Start-up capital base case	51.2	161.7	212.8
Manufacturer financed and operated washplant	24.6	4.8	29.4
Finance mining equipment or contract mining	5.5	102.7	108.3
Reduced Start-up Capital potential	**21.1**	**54.2**	**75.2**

With such a low cash cost, equipment and plant finance or lease options and contract mining are a very real opportunity for the Company to reduce initial and sustaining capital risk. It should also be noted that Stage 2 initial capital can in part be funded from Stage 1 retained earnings.

Project Economics

In addition to the coal production inputs discussed throughout this announcement, additional inputs into the key performance indicators of the Project economics are set out in Table 12 below.

Table 12: Additional inputs to Key Performance Indicators	Units	Value
Average Coal price for a mid-volatile PCI coal	US$/t	110
Exchange rate Canadian to US dollars	Multiple	1.33
BC Minerals tax rate (deductible from corporate taxes)*	%	15
BC Corporate tax rate	%	11
Federal Corporate tax rate	%	15

*BC Minerals Tax Rate comprises of net current proceeds rate of 2.0% and a net revenue tax rate of 13.0%

The Project key performance indicators are summarized in Table 13 below.

Table 13: Key Performance Indicators	Units	Value
Pre-tax NPV10%	US$M	416
Pre-tax IRR	%	37
Post-tax NPV10%	US$M	243
Post-rax IRR	%	30
Payback from commencement of Stage 2 full production (real terms)	Years	1.8

The key performance indicators were applied only to the base case initial capital expenditure scenario as financing plant and equipment, or contract mining, were not considered in this PFS.

Clearly however, a material reduction in initial capital expenditure in the orders of magnitude indicated in Table 11 will likely have a positive material impact on the key performance indicators. And given the

Project's position on the cost curve, it has ample operating cost capacity to leverage the balance sheet to a prudent level, or accommodate contract mining.

Sensitivity analysis was undertaken to determine the effect on the post-tax $NPV_{10\%}$ of \$243M, and the IRR of 30%, from variations on both coal price and cost (operating costs and capital expenditure).

The results of the sensitivity analysis are set out in Tables 14 and 15 below.

Table 14: Sensitivity		Operating and Capital Costs (US$M)						
NPV	US$243	1,822	2,083	2,343	2,603	2,863	3,124	3,384
Price: US$ per tonne of clean coal	77	179	121	62	3	-57	-120	-183
	88	259	201	142	84	25	-34	-94
	99	338	280	222	164	105	47	-12
	110	417	359	301	243	185	127	68
	121	496	438	380	322	264	206	148
	132	575	517	459	401	343	285	227
	143	654	596	538	480	422	364	306

Table 15: Sensitivity		Operating and Capital Costs (US$M)						
IRR	30%	1,822	2,083	2,343	2,603	2,863	3,124	3,384
Price: US$ per tonne of clean coal	77	31%	24%	17%	10%	0%	0%	0%
	88	38%	31%	24%	18%	13%	6%	0%
	99	44%	37%	30%	24%	19%	14%	9%
	110	50%	42%	35%	30%	24%	20%	15%
	121	56%	47%	40%	34%	29%	25%	20%
	132	61%	52%	45%	39%	34%	29%	25%
	143	66%	57%	50%	43%	38%	33%	29%

The results show that the Project can withstand a 30 percent decrease in coal prices resulting in a post-tax $NPV_{10\%}$ of US\$3M and a post-tax IRR of 10%. The Project would also sustain a positive return with a 30 percent increase in costs resulting in a positive post-tax $NPV_{10\%}$ of US\$68M and an post-tax IRR of 15%.

Risks

SRK noted a number of Project risks in the PFS. The majority of them related to the need for more data which can be obtained from a modest drilling program to build a greater knowledge base in relation to various aspects of the Project, and a large number related to matters in respect of which engineering design would mitigate risk. Of SRK's assessment, the Company believes the following are the key risks in relation to the Project:

- Environment: The impact of mining on the environment is always an issue irrespective of the type of mine and its location. Once the Company has completed its environmental effects assessment of the Project, targeted for Q4 2018, the Company will have a solid understanding of what the impacts might be.

- Water Management: Related to the first point of environmental impact, one area of particular concern to the Company is water management. The Project has several streams within its vicinity which all feed into a major river system. Ensuing that the Project discharges clean surface water back into the river system is a matter of high priority to the Company.

- Permitting: There is no guarantee that the Project will be granted all permits required to operate a mine at whatever stage of planned production. Whilst British Columbia is in a first world country, with a very prescriptive mine permitting regime, there is always uncertainty and doubt as to whether Government ministries will support a particular mining activity.

- Finance: Notwithstanding the Company's confidence in this regard, there is no guarantee that if and when the Project is permitted and ready for development, there will be funding available to do so. Whilst the Project is very low down the cost curve and can withstand a material drop in the price of coal, the volatility of commodity prices in a downward trend often dampens the interest of investors in a particular commodity, such that funding may be difficult to secure.

- Coal performance: unless and until a particular coal has been tested for its performance in a blast furnace, there remains an uncertainty as to how it will actually perform, and this may have an impact on coal pricing.

Conclusion

The Staged Production PFS confirmed two very important assumptions by the Company in relation to the Project:

- First, at whatever level of production the Project adopts, it will be one of the lowest cost producers of seaborne metallurgical coal. The Company intentionally tested this assumption by assessing the mine at a very low production level, alongside a mine at a significantly greater production level. The all-in FOB cash cost difference, was only US$2 per tonne.

- Second, in its base case, the cumulative capital expenditure to reach 1.75 Mtpa clean coal production was just US$213M, which in the Company's view, relative to projects of a similar scale in British Columbia, is very low.

That has now given the Company the confidence to pursue the Sub-EA process and continue with its baseline studies, environmental monitoring and effects assessment, to put itself into a position in Q4 2018 to file applications for permits to operate a mine up to 250 ktpa of saleable coal.

It has also given the Company the confidence that it should be able to raise capital for the development of the Project as and when required. The Company is in discussions with possible joint venture and off-take partners, and a number of financial institutions have expressed an interest in assisting in raising the necessary funding from the capital markets in due course.

Next Steps

Key objectives and deliverables over the next 18 months, subject to funding and not already stated in this announcement are:

- Immediately undertake a PFS review with particular focus on:
    - Minimising initial capital required to be invested in Stage 1;
    - Optimizing both Stage 1 and Stage 2 capital in the production ramp-up; and

ALLEGIANCE COAL LIMITED

    - Releasing the results of that review in Q1 2018;

- Complete a pre-feasibility study on Stage 1 as a stand-alone mine operation of the Tenas Pit to provide a project description for the purposes of the Sub-EA process, and releasing the results of that review in Q1 2018;

- Commence a feasibility study at the start of Q1 2018 of a stand-alone Stage 1 mine operation of the Tenas Pit for completion and delivery by the end of Q2 2018;

- Continue discussions with potential Project joint venture partners and off-take parties;

- Continue to grow and develop the relationship with First Nations and commence wider engagement in relation to the Project with the Telkwa and neighbouring communities; and

- Continue baseline studies in the Tenas Pit area which were recently commenced along with ongoing environmental monitoring and environmental assessment.

For more information, please contact:

Mr Malcolm Carson
Chairman, Allegiance Coal Limited
Mobile: +61 417 692 849
Email: mcarson@allegiancecoal.com.au

Mr Mark Gray
Managing Director, Allegiance Coal Limited
Mobile: +61 412 899979
Email: mgray@allegiancecoal.com.au

Competent Persons Statement

The information in this ASX Announcement that relates to Mineral Resources and Reserves is based on information and supporting documentation prepared by Mr Ron Parent and Mr Robert McCarthy. Mr Parent is a Professional Geologist registered with the Association of Professional Engineers and Geoscientists of British Columbia. Mr McCarthy is a Professional Engineer registered with the Association of Professional Engineers and Geoscientists of British Columbia. Mr Parent and Mr McCarthy are independent consultants to the Company, and have sufficient experience which is relevant to the style of mineralisation and the type of deposit under consideration and to the activity which they undertook to qualify as Competent Persons as defined in the JORC Code (2012 Edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves"). Mr Parent and Mr McCarthy as competent persons for this announcement have consented to the inclusion of the information in the form and context in which it appears herein.

ALLEGIANCE COAL
LIMITED

APPENDIX - JORC TABLE 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (e.g., cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representativeness and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	• All boreholes, where conditions permitted, were geophysically logged with some or all of the following tools: deviation, gamma, density, caliper, neutron, dip. • Geophysical logging operators routinely calibrated their tools between programs. • Core holes were sampled, where core recovery permitted, as whole core collected for coal quality analysis and rock geochemistry. • The results from the geophysical logging were used to determine the lithology of the strata in the hole. • The cored intervals are compared to the geophysical log in order to determine sample intervals and core loss. • Samples from these programs were sent to the Crowsnest Resources Limited (CNRL) company laboratory and to Loring Laboratories in Calgary. • A bulk sampling test pit was also excavated with a 219 tonne sample collected from 7 seams. The samples from this test pit were tested by Birtley Laboratory in Calgary.
Drilling techniques	• Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• A variety of drilling techniques were utilized on this project including mainly core, air rotary or a combination of both. • From 1979 to 1989 the drilling was done for CNRL using top-head drive Ingersoll Rand (IR) rotary rigs and Longyear 38 diamond core rigs. Core diameter was 1 7/8" NQ core plus some 6" diameter cores. • From 1992 to 1998 the drilling was done for Manalta using top-head drive Failing 1250 and IR rotary rigs and an Acker diamond core rig. Core diameter was 1 7/8" NQ core. Sampling of coal was done by the diamond core rig. Rotary coring to obtain 10 cm (4") diameter core was also used. • Core was not orientated.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• The cored intervals were compared to the geophysical log in order to determine sample intervals and core loss. • The drilling contractor was responsible for ensuring that core recovery was maximized. • Due to the nature of the deposit, core recovery was generally not affected by coal quality. • Core recovery records were reported on the written core description sheets for each core hole. The average recovery from 1992 to 1998 was typically in the 80% to 100% range and was typically better than that achieved during the CNRL tenure period
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core photography. • The total length and percentage of the relevant intersections logged.	• All core was logged using similar logging criteria included lithology, weathering, core quality/hardness and observation of structural features. • The logging with respect to the down hole logs is quantitative and core photographs are available in some instances. • All boreholes, where conditions permitted, were geophysically logged with some or all of the following tools: deviation, gamma, density, caliper, neutron, dip. • Geophysical logging operators routinely calibrated their tools between programs. • The geophysical logs were used to determine the lithological intervals in rotary holes where no core was retrieved. In

Criteria	JORC Code explanation	Commentary
		general, coal was determined by its low response on the density tool (~<1.8 g/cc). Once determined if the interval was coal or not, a lithotype for rock intervals was determined by observing the gamma log response, which had the lowest response in clean sandstones with little clay content and the highest response in shales due to the high clay content, which contained K that emits radiation.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representativeness of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• All samples taken were of whole core. • Of the few rotary sampled holes, none of the analytical data were used in the resource estimate. • Quality control was provided via referencing the geophysical log. The analytical results were checked for reasonableness against the gamma and density results. There should be a direct relationship between density and ash content. • Whole core material of each seam or ply, either as single samples or a series of samples by depth increments, were sent to the laboratory for analysis. All coal core samples were bagged on site before being transported to Loring and Birtley Laboratories in Calgary for coal quality test work.
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	• Both Loring Labs and Birtley Laboratories are ISO 9001 certified, adhere to ASTM preparation and testing specifications and have quality control processes in place.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• The verification in terms of coal quality was by comparison of analytical results with the geophysical log. The sampling and analytical results were overseen and reviewed by qualified geologists. • Anomalously thick intersections in the dataset were checked to ensure correctness. • Twinning of holes is generally not required except in the absence of a geophysical log. • In general all core logs and intervals were recorded using handwritten logs, some of which were transcribed into spreadsheets or other software. • Data prior to 1992 have paper geophysical logs, however all hole drilled from 1992 – 1998 have log asci (.las) files in digital format. • All of the data has been stored in an MSAccess database.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• All drillholes have been surveyed using total station survey equipment. Extensive documentation of survey traverses is available as part of the record. • All data points used in the resource estimate were surveyed in NAD27. These were converted to NAD83 for the purposes of this study and future work. • Topographic contours at 2 m intervals provide appropriate topographic control.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s)	• Average drillhole spacing for Tenas is 110 m, 125 m for Goathorn and 135 m for Telkwa North. The average core hole spacing (with quality data) is 237 m in Tenas, 173 m in Goathorn, and 157 m in Telkwa North. • The resource classification is based on an assessment of the

Criteria	JORC Code explanation	Commentary
	and classifications applied. • Whether sample compositing has been applied	geological (seam thickness) and coal quality continuity. This has then been summarised using the distance from nearest acceptable data point (drillhole) for coal seam thickness identification and an assessment of the confidence in coal seam continuity / correlation. The drillhole spacing and continuities are considered appropriate to define Measured, Indicated and Inferred Resources on the following basis: ○ Measured = within 75 m of drillhole utilized in the model (that is, holes identified as appropriate for use in the current resource estimate); ○ Indicated = within 75 m to 150 m of drillhole; ○ Inferred = within 150 m to 300 m of drillhole.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• Drilling was oriented on cross sections at 25 m spacing oriented perpendicular to local trend. • Drilling was vertical and coal seams dip at between 0 and 65 degrees. Seam thickness intercepts are corrected to true from apparent thickness using the locally interpreted seam dip.
Sample security	• The measures taken to ensure sample security.	• No known special sample security measures were applied at the time of sample submission to the laboratories,
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• extensive checks and comparisons between data has been undertaken to verify and validate data for this resource estimate

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties, such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.	• Coal tenure is held in the form of coal licenses (22 parcels for 5579 Ha) and freehold coal (5 parcels for 1301 Ha). The coal licenses are held by Carbon Development Corporation (CDC) and Bulkley Valley Coal Limited (BVCL). • The property and license ownership are under a joint venture agreement signed between CDC owner Altius Minerals and Telkwa Coal Limited. • The tenure is secure and maintenance payments are all up to date. • The only known impediment to obtaining a license to operate will be negotiations with select land holders in the area for development.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• In the period from 1979 to 1998 a total of 867 documented drillholes were completed on the Telkwa property by CNRL and Manalta. Of those, 525 were drilled using conventional rotary methods, while 310 were cored. In 47 of the drill-holes, 59 piezometers were selectively installed at various stratigraphic levels. 32 surficial bore-holes have also been completed to date on the property. In addition, there are reports of about 30 holes being drilled by Cyprus and Canex sporadically in the period from 1969 to 1978; this data has not been compiled due to the poor quality of the records. • Additionally, surface geophysics has been conducted periodically by both CNRL and Manalta with the intention of tracing coal seams on surface.
Geology	• Deposit type, geological setting and style of mineralisation.	• These medium to high volatile bituminous coal deposits are part of the Red Rose formation of the Skeena Group. • The Skeena Group sediments of the Telkwa Coalfield are an erosional remnant of Lower Cretaceous sedimentary rock which were initially deposited within a large deltaic complex along the southern flanks of the Bowser Basin. Throughout late Jurassic and early Cretaceous time the Bowser Basin was the focus of rapid sedimentation, subsidence and increased tectonic activity, which resulted in thick accumulations of coal-bearing sedimentary rock.

ALLEGIANCE COAL
LIMITED

Criteria	JORC Code explanation	Commentary
		• The geology type classification for Canadian coal deposits is "moderate to complex". Minimum open pit mineable thickness for moderate coal deposits is 0.5 m; and for complex 0.8 m. • The main economic seams range from a minimum mineable thickness of 0.5/0.8 m to 9 m in thickness.
Drill hole Information	• A summary of all information material to the understanding of the exploration results, including a tabulation of the following information for all Material drill holes: • Easting and Northing of the drill hole collar • Elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • Dip and azimuth of the hole • Down hole length and interception depth • Hole length • If the exclusion of this information is justified on the basis that the information is not Material, and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• Modern exploration of the Telkwa Project started with Cyprus Anvil Mining in 1978 and since then over 800 exploration drillholes and 3 bulk samples have been carried out on the property. • Other ancillary activities such as trenching, geological mapping and surface geophysics have also been carried out.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• All compositing was length based. • Seams consist of minimum 2:1 coal to rock ratio with a maximum internal "parting" of 0.3 m for moderate and 0.5 m for complex. • Seam composites were made from compositing of lithological intervals (Coal or Parting) honouring the seam code. • Coal quality intervals are cross referenced with the seam composites
Relationship between mineralisation widths and intercept lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. • If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	• Composited seam intervals were assigned a dip from a geological section and the true thickness of the intervals was established
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to, a plan view of drill hole collar locations and appropriate sectional views.	• Diagrams have been developed for the project by SRK in accordance with JORC Code requirements. • Diagrams include location maps, drillhole plots and geology cross-sections.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• Not applicable. While full details of all the exploration results have not been released, there are no significant or material issues not summarised in this Table 1.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported, including (but not limited to): • Geological observations • Geophysical survey results • Geochemical survey results • Bulk samples – size and method of treatment • Metallurgical test results • Bulk density, groundwater, geotechnical and rock characteristics • Potential deleterious or contaminating substances	• Bulk samples have contributed considerably to the understanding of the quality characteristics of the Telkwa coals and have been extracted from each of the three main resource areas. On each, a complete suite of coal quality analyses was performed, including testing on a variety of simulated preparation plant products. • In 1983, a 219 tonne bulk sample was collected from 7 major seams within the Goathorn East (Pit 3) area. In 1989, a bulk sample was extracted from the Bowser (Telkwa North – East Pit) area via a large-diameter coring program. And, in 1996, an

Criteria	JORC Code explanation	Commentary
		80 tonne bulk sample was collected from the three mineable seams in Tenas area. • Total sulphur and three forms of sulphur (organic, inorganic, and sulphate) have been estimated for the various seams so as to determine the potential for water treatment.
Future work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions, or large-scale step-out drilling).	• Any additional work will involve drilling mainly in support of acid rock drainage and geotechnical evaluations.

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. • Data validation procedures used.	• By overlaying the geophysical log density data on the lithological intervals, the coal intercepts were assigned a density value which was then checked for reasonableness (i.e. density from geophysics should be between 1.3 and 1.8 g/cc). • Downhole geophysical data was used to validate and verify seam intercepts and to assist with seam correlation and stratigraphy. • Other data validation included visual inspection of every seam intersection on cross section to allow for proper seam correlations and to look for anomalies in the stratigraphic interval. • For Data capture and current database storage MS Access is utilized, along with cataloguing and electronic filing of all pertinent data stored on the SRK server.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	• A site visit was conducted on April 11, 2017 by: ○ Ron Parent – Resource Competent Person (SRK) ○ Bob McCarthy – Reserve Competent Person (SRK) ○ Ed Saunders – Geotech (SRK) ○ David Maarse – Water Lead (SRK) ○ Karl Haase – Processing (Sedgman) • The visit consisted of an aerial tour via helicopter and a ground tour on accessible roads. The core storage facility was observed as well as several outcrops.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• There is a high level of confidence in the geological interpretation, especially in areas of the resource that have been included in the reserves. • Stratigraphic sequence is well understood and correlations are relatively straightforward: the current interpretation has modified the seam nomenclature in places. • Structure and faulting are commonly shallow dipping with predominantly normal faulting up to 100m displacement. Local thrust faulting is observed in the Goathorn area. • Limits of the deposits need to be better defined; since some of the sub-crop or structurally controlled boundaries have not been fully defined. • No alternative interpretations are considered as the current interpretation is well supported by available data. • The geological model is a thickness model, whose data is composited from drillhole seam intersections and confirmed by geophysical log intercepts. • The coal quality parameters do not affect the quantity of coal, but the recovery and generation of a suitable product.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The Tenas deposit is approximately 3 km north-south by 2 km east-west, reaching a maximum depth of 400 m for the lowermost 1Le Seam. • Goathorn East is 5 km by 2 km reaching a maximum depth of 650 m for lowermost 1 Seam. • Goathorn West is 1.5 km by 800 m reaching a maximum depth of 300 m lowermost 1 Seam. • Telkwa North is 1.6 km by 3.6 km reaching a maximum depth of 300 m for the lowermost 2 Seam.

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed • Any assumptions behind modelling of selective mining units.	• Coal quality and seam thickness parameters were estimated using inverse distance squared within the seam wireframes which control the distribution of interpolated values in 3D • The model is of the coal seams only and the interburden has been modelled by default but to sufficient detail to assist with waste rock characterisation and waste rock management. • The current resource estimate is comparable with previous resource estimates completed in 1989, 1997, and 2015 • Sulphur (total, organic, inorganic, and sulphate) have been interpolated in the model where data was available • The model block size ranges from 5 to 25 m along strike (Tenas and Telkwa North are rotated), 5 to 10 m down dip and 5 m in height. • Average drillhole spacing for Tenas is 110 m, 125 m for Goathorn and 135 m for Telkwa North. The average core hole spacing (with quality data) is 237 m in Tenas, 157 m in Telkwa North and 173 m in Goathorn.
Estimation and modelling techniques (continued)	• Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	• A key assumption utilized in the resource estimate was the relationship between ash content on an air dried basis and bulk density used for conversion of volume to tonnes. • The geological interpretation is based on the "stacking" of seam bottoms along 25 m spaced cross sections from the lowermost seam upward. • The main validation method used was a comparison between wireframe solids volume and volume generated from the 3D block model after coding. • The model accurately represents the drilled seam true thicknesses to +/- 0.1 m at a given XY location. The elevations may vary up to 3 m at any drillhole intercept. This is due to the sectional nature of the modelling process, projecting all seam intersections a maximum of 12.5 m to the nearest cross section.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• The tonnages are estimated on an air-dried basis, while the moisture content measurements are available within the coal quality testing results.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• All coal quality parameters modelled were on an air-dried basis. • To assist in developing the coal reserves, coal yields were based on washability testing at a cut-point of 1.6 g/cc. • Clean coal objective of the process will be 8.5% with a target saleable product at the port at 10% moisture.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• Minimum coal ply thickness = 0.5 m for Tenas and 0.8 m for Goathorn and Telkwa North. • Maximum included parting thickness = 0.3 m for Tenas and 0.5 m for Goathorn and Telkwa North • Minimum coal:rock ratio = 2:1 • The resources are all considered potentially surface mineable, and restricted to a 20:1 BCM:tonne cut-off strip ratio depth. Despite there being previous underground mining on the property, no underground resources are considered at this time.
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment	• Metallurgical amenability was simulated from testwork using industry standard models for coal beneficiation • Ash content of dilution is assumed 80%, sizing of Ash as similar to sizing of coal and with a density of 2.5 g/cc.

Criteria	JORC Code explanation	Commentary
	processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• Potential for ARD was studied extensively in the 1990s to support feasibility studies and environmental assessments • The Property hosts both NAG and PAG seam interburden and overburden rock. Tenus, Goathorn and Telkwa North have been characterized to estimate NAG and PAG rock in each phase. • The ratio of NP to MPA, NPR was used as the basis for classifying each interburden and the overburden zone as NAG or PAG. Much of the rock is NAG • Methods used to estimate NP and MPA in the 1990s are different from those used currently and to varying degrees over-estimate both NP and MPA resulting in uncertainty in the threshold NPR used to delineate PAG and NAG strata. • The ratio selected to define PAG rock is NPR≤3.0 which allows for the uncertainty in NP. A lower value may be suitable as understanding of the mineralogical characteristics of the rock improves. • To assign estimated volumes to NAG or PAG, the samples within each phase and seam interburden / overburden were binned into three NPR groups, < 2.0, from 2.0 to 3.0, and > 3.0. If the < 2.0 NPR sample length was more than 40% of total sample length for a given interburden and phase then the rock was labelled as PAG. • The intent of the mine plan was to schedule and maximize the opportunity for backfill PAG rock into the pits as early as possible and minimize amount of external storage of PAG rock • There is no Tailings Management Facility. Both CCR and fines rejects will be co-emplaced with PAG rock • A water treatment facility is planned for managing pH of PAG water • Optimization of PAG management including blending PAG rock into NAG rock and /or submerging PAG should be investigated in future
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• The bulk density (BD) was assumed based on an empirical relationship with the air dried ash for high volatile bituminous coal. This empirical formula was extracted from Table 1 of Geological Survey of Canada Paper 88-21: BD (adb) = 1.2713 + 0.0092 x ASH (adb)

Classification	• The basis for the classification of the Mineral Resources into varying confidence categories.
	• Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).
	• Whether the result appropriately reflects the Competent Person's view of the deposit.
		• The resource classification is based on an assessment of the geological (seam thickness) and coal quality continuity.
		• This has then been summarised using the distance from nearest acceptable data point (drillhole) for coal seam thickness identification and an assessment of the confidence in coal seam continuity / correlation.
		• The drillhole spacing and continuities are considered appropriate to define Measured, Indicated and Inferred Resources on the following basis:
		  ○ Measured = within 75 m of drillhole utilized in the model (that is holes identified as appropriate for use in the current resource estimate);
		  ○ Indicated = 75 m to 150 m of drillhole;
		  ○ Inferred = 150 m to 300 m of drillhole.

Criteria	JORC Code explanation	Commentary
		• The surface resources (those resources considered to have prospects to be open pit mineable) are restricted to within a 20:1 COSR bcm/tonne coal from surface, which is considered reasonable for coal of this type.
Audits or reviews.	• The results of any audits or reviews of Mineral Resource estimates.	• Peer review by SRK personnel was carried out on the geological interpretation. No external audit or review of the resource estimate for this model was carried out. The resource estimates are similar to those from previous studies performed with the same data and any differences are not deemed to be material.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• The resources estimates are assumed to be within +/- 15 to 25% on a global basis (or over an assumed annual mining volume) and this accuracy is considered appropriate for the classification classes of Indicated and Measured Coal Resources, and appropriate to support at least a PFS level of study and reserve assessment.

Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. • Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	• The coal resources used for the development of reserves was estimated by Ron Parent, PGeo, per the processes reported in Sections 1 to 3 of this Table 1. • The coal resources are reported inclusive of the coal reserves.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken, indicate why this is the case.	• A site visit was conducted on April 11, 2017 by: ○ Ron Parent – Resource Competent Person (SRK) ○ Bob McCarthy – Reserve Competent Person (SRK) ○ Ed Saunders – Geotech (SRK) ○ David Maarse – Water Lead (SRK) ○ Karl Haase – Processing (Sedgman) • The visit consisted of an aerial tour via helicopter and a ground tour on accessible roads. The core storage facility was observed as well as several outcrops and water courses.
Study status	• The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. • The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	• Manalta Coal previously completed a pre-feasibility study (PFS) on the Telkwa Coal Project in 1997. • This coal reserve is based upon a PFS where geological confidence is sufficient and mine engineering has been completed to a level required to determine technical and economic viability, supported by a mine plan and schedule. • Modifying factors considered material to the development and economic extraction of the coal resource have been taken into account.
Mining factors or assumptions	• The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). • The choice, nature and appropriateness of the selected mining method(s) and other mining	• The project uses a combination truck and shovel open cut mining as well as dozer pushing in Tenas to execute an up-dip mining method. • The basis of design is a Lerchs-Grossman economic pit optimization combined with a cut-off strip ratio analysis to determine the ultimate pit limits. The ultimate pit shell was then developed into a detailed pit design and broken into

Criteria	JORC Code explanation	Commentary
	parameters including associated design issues such as pre-strip, access, etc. • The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling. • The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). • The mining dilution factors used. • The mining recovery factors used. • Any minimum mining widths used. • The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. • The infrastructure requirements of the selected mining methods.	practical pit phases and mining cuts. • Conventional mobile equipment (excavators and large haul trucks) is used for overburden mining and waste rock stripping. In Tenas, waste rock over the IU/1 Seam is dozer pushed on to mined out footwalls. • Coal loss and dilution were assumed for the contacts at the hanging wall and footwall of each seam. Coal loss and dilution thickness applied to the Tenas deposit was 7.5 cm for each contact (15 cm total per seam). Dilution and coal loss for the Goathorn and Telkwa North pit were set at 10 cm for each contact (20 cm total per seam). • The minimum seam thickness for mining was set at 0.8 m for all deposits. • Pit slope criteria were developed by SRK as part of the PFS and were largely driven by the slope of the seam bedding in each sector of the pit. Many pit walls are simply foot walls daylighting into the overburden and topography. Where high wall benching is required, the bench face angles are determined by the slope of the bedding plain and 8 m benches are required over a maximum height of 45 m. Thus, pit slopes vary from 35 to 60 degrees. Pit slopes in areas with identified faults that reduce the rock mass strength were adjusted appropriately. • Coal resources with limited geological certainty are classified as inferred and cannot be converted to Coal Reserves. Thus, any inferred coal resources are considered as waste in this study and there are no inferred resources included in the production schedule or coal reserve estimate. • The financial evaluation of the proposed mine plan and schedule is sufficient to support economic viability of the Coal Reserve. • The primary infrastructure required for the development of the open cuts at Telkwa are water containment and management facilities. Numerous ditches are required for both containing contact water and diverting non-contact water from the mining areas. Contact water is collected in sedimentation ponds before discharge. Contact water coming from potentially acid generating sources is collected in separate ponds for treatment before discharge.
Metallurgical factors or assumptions	• The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. • Whether the metallurgical process is well-tested technology or novel in nature. • The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. • Any assumptions or allowances made for deleterious elements. • The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. • For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	• Process flowsheet is a traditional three-circuit approach with customised equipment sizing to allow for nominal throughput for this specific coal • All metallurgical processes and technology have been used extensively within the coal industry worldwide • Testwork to date was completed under Australian Standard methods at the time of the testwork and is suitable for this level of study • In-seam dilution is included in the sample testing and process simulations • It has been assumed that the organic liquids used for float-sink has had no effect on the coal properties • Two bulk samples have been completed in the past with one pilot scale testwork being completed. Pilot testwork was completed on a 19 mm x 0 mm size fraction using a DSM heavy media cone for 19 mm x 0.6 mm and two stage spiral/water only cyclone for below 0.6 mm fraction. Due to the testwork practices, this pilot wash was not suitable for use as a framework for this study and the results were not used in the analysis. • 1998 and 1996 bulk samples were used in the process simulations and it is believed from these results that the coal is fairly homogeneous within seams, however further testwork to confirm this assumption is recommended • The current proposed plant will produce a clean coal which is

Criteria	JORC Code explanation	Commentary
		of PCI marketable specification and the coal reserve is based on these coal specifications – ROM coal is based on 5% moisture and ultimate saleable coal is 10% moisture.
Environmental	• The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	• For geochemistry data, refer to section titled "Environmental factors or assumptions" • Existing data on background surface and ground water quality and flow has allowed for the development of a conceptual site water balance and preliminary water quality modelling. • The results indicate that due to background levels already exceeding BCWQG that a site-specific water quality objective will need to be developed for aluminium. • In addition, due to the conservativeness of the water quality model utilizing MDL where measurements were below MDL, a number of parameters were predicted to exceed BCWQG. It is anticipated that with better water quality data using lower MDLs that the model can be refined and the parameters could achieve compliance • If necessary, the water treatment plant could be designed to incorporate additional design measures, operating pH, polishing units, reagents for co-precipitation of elements.

Infrastructure	• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	• The Telkwa Site is served by the following infrastructure for the development:
		    ○ A 138 kV power line is to the east and a 25 kV powerline is to the north of the property.
		    ○ A high capacity main rail line owned and operated by CN rail which is already in use for the transport of coal unit trains is approximately 7 km east of the property. Initial discussion between Allegiance and CN rail have occurred and CN has agreed that the rail capacity is sufficient for this project
		    ○ The port of Prince Rupert is located 375 km to the west and has sufficient capacity for this project
		• The project is located to nearby towns of Smithers, Telkwa, and Houston for the supply and accommodation of labour
		• The site is currently serviced by a Forestry Service Road and current topography will allow the construction of a dedicated coal haul road between the rail and the proposed plant site
		• The proposed plant site will be on crown land with a coal license owned by the proponent

Costs	• The derivation of, or assumptions made, regarding projected capital costs in the study.
	• The methodology used to estimate operating costs.
	• Allowances made for the content of deleterious elements.
	• The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.
	• The source of exchange rates used in the study.
	• Derivation of transportation charges.
	• The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.
	• The allowances made for royalties payable, both Government and private.
		• The costing of the PFS has assumed an Owner Operated approach, wherein, all infrastructure and equipment is purchased by Allegiance Coal Ltd. (ACL) and operated by ACL.
		• Costs are developed from first principles wherever possible, utilizing inputs from engineering firms and vendors. The designs upon which these costs are based are to PFS level.
		• Engineering work has been undertaken to establish the capital cost requirement for the project, including the mine, processing plant, and rail, as well as other supporting infrastructure.
		• Capital costs for the project are supported by work conducted by:
		    ○ SRK Consulting – mining, water management, water treatment
		    ○ Sedgman –process plant and mine infrastructure area
		    ○ AECOM – rail infrastructure
		    ○ Lex Engineering – powerline construction
		• Operating costs are based on work by:
		    ○ SRK Consulting – all mining costs inclusive of mobile equipment, support services and labour, water management and water treatment
		    ○ Sedgman – processing and mine infrastructure area
		    ○ ACL – site general & administrative costs, rail and port

Criteria	JORC Code explanation	Commentary
Revenue factors	• The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. • The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	• ACL plans to produce a PCI quality coal at an average rate of 1.8 Mt. • Commodity pricing for the project was advised by ACL based on the study conducted by Kobie Koornhof & Associates. • An average price of US$110/t coal product was assumed for the Telkwa Project. • An exchange rate of 1.33 CA$:US$ was applied to calculate the revenue. • Commodity price and exchange rate have been agreed between SRK and ACL representatives. • Private royalty to Altius Mineral was applied at a rate of 3.0% on revenue.

Market assessment	• The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.
	• A customer and competitor analysis along with the identification of likely market windows for the product.
	• Price and volume forecasts and the basis for these forecasts.
	• For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.
		• Per Kobie Koornhof and Assoc., the coal to be produced at Telkwa can be classified as a medium volatile (midvol) PCI coal and as such is expected to find a market in the international steel industry.
		• The coal will compete primarily with PCI coals from Australia, and to a lesser extent with coals from Russia and Venezuela. These coals are evaluated based on the carbon content in the coal, which gives an indication of the extent to which a particular coal can be used to replace a certain amount of the coke that is used in the blast furnace for the production of hot liquid iron.
		• Competitor coals are:
		  o Ultra low vol PCI
		  o Low Vol PCI
		  o Midvol PCI
		  o High Vol PCI

Economic	• The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. • NPV ranges and sensitivity to variations in the significant assumptions and inputs.	• An after-tax technical-economic model (TEM) was prepared by SRK Consulting to test the economic viability of the Coal Reserve. • The TEM took into account project revenue, freight and selling costs, royalty to Altius Minerals, capital costs, operating costs and corporate/administrative costs. • The project economics were evaluated using a standard discounted cash flow method at a nominal mid-period discount rate of 10%. An inflation rate of 1.8% was applied to working capital, depreciation and tax estimates. • The economic analysis was conducted in Canadian dollars. Results are reported in US dollars using an exchange rate of 1.33 CAD:USD. • Based on the economic analysis, the current mine plan results in a positive post-tax NPV10% of US$243M and an IRR of 30%. • Sensitivity analyses showed that the project can withstand a 30% decrease in commodity prices resulting in positive post-tax NPV10% of $3M and IRR of 10%. The project would also sustain positive return with a 30% increase of both capital and operating costs resulting in a post-tax NPV10% of $68M and 15% post-tax IRR.
Social	• The status of agreements with key stakeholders and matters leading to social licence to operate.	• The Property is within the traditional territory of the Wet'suwet'en Nation (OW). In April 2017, the company signed a Communication and Engagement Agreement with the OW, the first of four agreements to be signed. The next agreement is the Project Assessment Agreement. • The company has commenced engagement with several of the land owners, stakeholder groups and local and provincial government. A comprehensive community engagement strategy is being developed • The company has engaged local community, Smithers and Telkwa environmental expertise to carry out the baseline data programs
Other	• To the extent relevant, the impact of the following	• While not expected to remain material, residual risks, early

Criteria	JORC Code explanation	Commentary
	on the project and/or on the estimation and classification of the Ore Reserves: • Any identified material naturally occurring risks. • The status of material legal agreements and marketing arrangements. • The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	identified risks associated to the project include: ○ Environment: Until ACL has completed an environmental affects assessment of the Project, targeted for Q3 2018 after completion of its baseline studies, ACL cannot be certain as to the impact of the Project on the environment. ○ Water Management: Related to the environmental impact, one area of concern is water management. The Project has several streams within its vicinity which all feed into a major river system. The streams are spawning grounds for salmon. Ensuring that the Project discharges clean surface water back into the river system is a matter of high priority. ○ Permitting: There is no guarantee that the Project will be granted all permits required to operate a mine. There is always uncertainty and doubt as to whether Government ministries will support a particular mining activity. ○ Coal performance: unless and until a particular coal has been tested for its performance in a blast furnace, there remains an uncertainty as to how it will actually perform, and this may have an impact on coal pricing.
Classification	• The basis for the classification of the Ore Reserves into varying confidence categories. • Whether the result appropriately reflects the Competent Person's view of the deposit. • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	• Proved and Probable Coal Reserves are declared based on the Measured and Indicated Mineral Resources contained with the pit design and scheduled in the LOM plan. • The financial analysis showed that the economics of Telkwa are positive. • No Probable Coal Reserves have been derived from Measured Mineral Resources.
Audits or reviews	• The results of any audits or reviews of Ore Reserve estimates.	• No external review or audits have been completed on this coal reserve estimate. • SRK and the PFS team performed high level reviews of key inputs such as washability to ensure appropriateness.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. • It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• The relative accuracy and confidence level of the Coal Reserve estimate is inherent in the Reserve Classification. • The accuracy of the reserve estimate is subject to geological data and modelling procedures to estimate the coal resource and to modifying factor assumptions for dilution and loss. The accuracy can only truly be confirmed when reconciled against actual production. While Telkwa is not in production and such reconciliation is not possible, the assumptions are based on sound principles and experience from mines with similar conditions. • Modifying factors such as mining dilution, mining recovery, ROM ash and density, and coal yield have been estimated using accepted techniques.