



# **COLONIAL COAL CORP.**

## **ASSESSMENT REPORT**

### **HUGUENOT COAL PROJECT 2010 EXPLORATION PROGRAM** (for the period July 2010 to May 2011)

British Columbia  
Coal Licenses:

416919, 416920, 417014, 417156, and 417614 to 417622

Owner: Colonial Coal International Corp.

Operator: Colonial Coal Corp.

Author: John H. Perry, P.Geol.

**Effective Date: September, 2011**



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**LIST OF ABBREVIATIONS**

BCM ..... Bank cubic metre

bcm/t..... Bank cubic metre per tonne

CSR..... Coke strength after reaction

ddpm ..... Dial divisions per minute

FSI..... Free swelling index

HGI..... Hardgrove Grindability Index

kg..... Kilogram

m ..... Metre

PCI ..... Pulverized coal injection

psi..... Pounds per square inch

Ro..... Reflectance, mean maximum, (%) of vitrinite in oil

S.G. .... Specific gravity

t ..... tonne



## COAL ASSESSMENT REPORT TITLE PAGE AND SUMMARY

**TITLE OF REPORT:** Assessment Report - HUGUENOT Coal Project - 2010 Exploration Program

**TOTAL COST:** \$561,173

**AUTHOR(S):** John H. Perry, P.Geo.

**SIGNATURE(S):**

**NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):** CX-9-036 / August-29-2008

**YEAR OF WORK:** 2010 - 2011

**PROPERTY NAME:** HUGUENOT

**COAL LICENSE(S) AND/OR LEASES ON WHICH PHYSICAL WORK WAS DONE:** 416919, 417014, 417621, 417622

**MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:** Unknown

**MINING DIVISION:** LIARD

**NTS / BCGS:** 93-I/08 and 93-I/09

**LATITUDE:** 54° 31' 9.59" N

**LONGITUDE:** 120° 18' 20.56" W

**UTM Zone:** NAD83/Zone10 **EASTING:** 674383 **NORTHING:** 6044645

**OWNER(S):** COLONIAL COAL INTERNATIONAL CORP.

**MAILING ADDRESS:** 200-595 Howe St., Vancouver, BC, V6C 2T5

**OPERATOR(S) [who paid for the work]:** COLONIAL COAL CORP. (a subsidiary of Colonial Coal International Corp.)

**MAILING ADDRESS:** 200-595 Howe St., Vancouver, BC, V6C 2T5



# Colonial Coal International Corp.

TSX-V: CAD

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**): Coal, coaly zone, claystone, carbonaceous, shale, siltstone, sandstone, conglomerate, Cretaceous, Bullhead Group, Fort St John Group, Gates Formation, Gething Formation, Hulcross Formation, Moosebar Formation, Holtslander South Thrust, Holtslander Synclinorium, Holtslander North Thrust.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:  
 Assessment Report Numbers: 460, 463, 465, 466, plus the as yet unnumbered assessment report filed by Colonial for 2008 Huguenot exploration program (Perry, 2010).

SUMMARY OF TYPES OF WORK IN THIS REPORT		EXTENT OF WORK (in metric units)	ON WHICH TENURES
GEOLOGICAL (scale, area)			
	Ground, mapping		
	Photo interpretation		
GEOPHYSICAL (line-kilometres)			
	Ground (Specify types)		
	Airborne		
	(Specify types)		
	Borehole		
	Gamma, Density,		
	Resistivity		
	Caliper		
	Deviation		
	Dip Meter		
	Others: Neutron		
	Core		
	Non-core		
SAMPLING AND ANALYSES			
Total Number of Samples	Proximate		
	Ultimate		
	Petrographic		
	Vitrinite reflectance		
	Coking		
	Wash tests		
PROSPECTING (scale/area)			
PREPARATORY/PHYSICAL			
Trails (ha)		Constructed: 0.90 Modified: 1.62	417621, 416919 417621, 417622, 416919



## SECTION 1 INTRODUCTION AND PROPERTY DESCRIPTION

### 1.1 INTRODUCTION

This report documents the coal exploration activities carried out by Colonial Coal Corp. (Colonial) on its Huguenot Coal project in northeastern British Columbia, within the Peace River Regional District, between July 2010 and May 2011.

The Huguenot property lies in the Rocky Mountains foothills of northeastern British Columbia, within an area that has been shown to contain thick coal seams with the potential to yield medium volatile hard coking coal. Between the months of July and November, 2010 Colonial carried out a field program that included re-surveying most of the 2008 drillhole locations in addition to access trail construction and modification.

A total of 18 drillholes from 2008, which had originally been surveyed using a handheld GPS, were re-surveyed with a more accurate geodetic survey system. Approximately 1,500 m of newly excavated access trail was constructed and approximately 2,700 m of previously excavated access trail was modified. All work reported herein that occurred between July 2010 and May 2011 is considered to have formed part of the 2010 exploration “campaign”.

### 1.2 LOCATION

The Huguenot Coal property is located in northeastern British Columbia, within the Peace River Regional District, approximately 690 km north-northeast of Vancouver and 115 km southwest of the city of Grande Prairie (Alberta). It is situated close to the Alberta border, between Latitudes 54° 28' N and 54° 35' N, and Longitudes 120° 10' 30" W and 120° 22' 30" W. The project encompasses one contiguous group of coal licences and license applications that lie within the Liard Mining Division and are located on NTS Map Sheets 93-I/08 and 93-I/09.

The property is approximately 12 km in length and covers northwest-southeast trending coal measures situated between current mining operations near Grande Cache, Alberta (Grande Cache Coal Corporation) and Tumbler Ridge (Trend South Coal Mine), which are located approximately 85 km to the east-southeast and 70 km to the northwest, respectively. The town of Tumbler Ridge, which was built in the early 1980s to service the Quintette and Bullmoose coal mines, lies approximately 85 km northwest of the property. The general location of the property is shown in Figure 1-1. The location of the property with respect to regional and local population centres, roads, rail lines, coal mines and other major coal deposits is shown in Figure 1-2.

### 1.3 ACCESSIBILITY

The Huguenot property is remote relative to population centres, but is reasonably easy to access by a network of provincial paved highways and un-paved, all-weather roads built for forestry purposes and oil and gas exploration and development. The main access to the property from Tumbler Ridge is via Highway 52, a paved secondary road (along a section called the Heritage Highway), to an area just west of Stony Lake. Here the route swings south, first along the un-paved, all-weather, Wapiti Forest Service Road (FSR) and then the Red Deer FSR which eventually connects to a westerly-trending gravel road that traverses Huguenot's northern coal licences, along the northwest side of Holtslander Creek. This road, originally built to access an old oil/gas exploration well-site located west of the southern part of the property, is in good drivable condition to approximately 2 km west of where it enters the property. The remainder has been reclaimed, although it could be re-instated relatively easily.



All these roads are maintained year-round in good, drivable condition in support of extensive gas-field development and operational traffic, in addition to seasonal forestry operations throughout the general area. In good weather conditions, it takes about 2 hours to drive from the property to Tumbler Ridge and between 3 and 4 hours to travel to Dawson Creek, Fort St. John, or Grande Prairie.

## **1.4 CLIMATE**

The climate is typical of northeastern British Columbia; that is, short, warm summers and long, cold winters interspersed with periods of very cold temperatures, in the range of  $-15^{\circ}\text{C}$  to  $-30^{\circ}\text{C}$ . The cold spells are usually experienced between January and March, but may occur as early as mid-November. Frost can occur throughout the year and the frost-free period averages less than 60 days per year. Precipitation ranges between 800 mm and 1100 mm annually; it occurs mainly as snow from October through March, with snowfalls of up to 36 mm in 24 hours. The snow pack persists from October to June. The prevailing wind direction is from the southwest and extended periods of high winds in excess of 20 km/h are common on ridge tops and exposed plateaus from October onwards. Throughout this foothills belt, coal exploration programs are typically conducted between June and October, although winter programs can be carried out where there is road access.

## **1.5 LOCAL RESOURCES AND INFRASTRUCTURE**

The property is situated about 170 km east-northeast of city of Prince George and 115 km southwest of the city of Grande Prairie (Alberta); the smaller cities of Fort St John and Dawson Creek are located approximately 160 km to the north and 105 km to the north-northeast, respectively. Each of these cities is serviced by regularly scheduled flights from major western Canadian cities such as Vancouver, Edmonton and Calgary. The location of the property with respect to main population centres is shown in Figure 1-1.

A rail line, which terminates at the Quintette wash plant and coal load-out facility (approximately 14 km south of Tumbler Ridge), is located approximately 70 km northwest of the property. The currently operating Trend South and Perry Creek open pit coal mines are located approximately 25 km south and 15 km west-southwest of Tumbler Ridge, respectively. The rail load-out facility for the Trend South mine is located 4 km north-northeast of the Quintette load-out. The Tumbler Ridge rail line joins the CN Rail main line just north of Prince George and provides direct access to the coal export facility at Ridley Island, Prince Rupert, over a total distance of approximately 1,000 km (see Figure 1-1).

An airstrip suitable for light aircraft is located adjacent to Red Deer Creek, approximately 10 km north of the property. A permanent 250-room trailer camp is situated 6 km southeast of the airstrip.

There have been no improvements made to the property.

With regard to potential future mining operations, the property covers an area sufficient to host potential tailings storage and waste disposal areas, and potential processing plant sites, subject to the acquisition of appropriate surface rights. The project is well located with respect to sources of manpower and water to support possible future mining.

## **1.6 PHYSIOGRAPHY**

The property lies within the foothills (Inner Foothills Belt) of the Rocky Mountains, east of the Hart Ranges. The topography comprises a belt of hills and low mountains dominated by a series of NW-SE oriented ridges that reflect the trend of the geological structure of this region. These ridges are truncated by a series of mature, north-easterly flowing rivers and major creeks that comprise the primary drainage





# Colonial Coal International Corp.

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system. The property is situated approximately mid-way between two major rivers, the Narraway and Wapiti Rivers, located approximately 14 km to the south and north, respectively.

Two creeks cut through the project area; namely, Holtslander Creek and (the informally named) Pika Creek (see Figure 1-3). The former transects the northern coal licenses while the latter drains the central portions of the property. Both empty into Belcourt Creek which is the main drainage in the area.

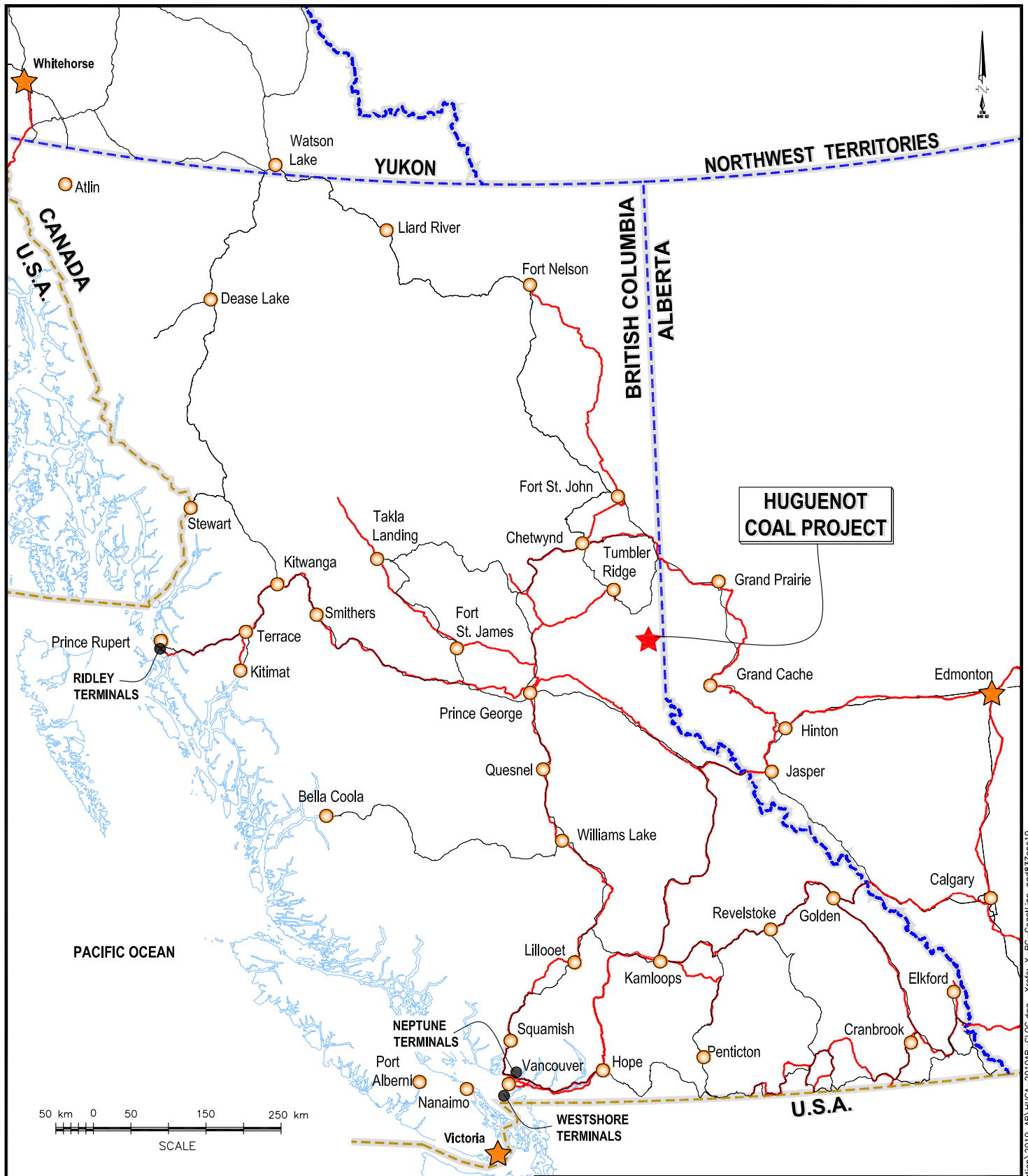
The upper reaches of Belcourt Creek trend E-W and approximate the southern boundary of the property. To the east, the creek flows northwards, to join the Wapiti River northeast of the property. Several minor creeks drain the southern parts of the property and empty directly into Belcourt Creek.

A structurally-controlled, secondary drainage system is also present. Creeks of this type are typically contained within steep-sided valleys that parallel the ridges and enter the rivers and main creeks at right angles. All but the major rivers appear to be affected at some point along their length by the secondary drainage trend.

The topography of the project area is typical of that of the Rocky Mountain Inner Foothills. The topography rises from rolling hills in the east to a series of moderate- to steep-sided massifs that break to stretches of gently-sloping plateau, culminating in steep-sided ridges, in the central and western areas. The highest ridges within the licence block vary in elevation between 1,700 m to 2,000 m while the lowest elevations range between 1,200 m and 1,300 m. The vertical relief over most of the property is in the order of 400 m. Broad alpine saddles often connect the ridges and these features, combined with the primary drainage orientation, occasionally impart a NE-SW-trending grain to the topography.

Vegetation in the area is predominantly boreal to sub-alpine coniferous forest. Tree line in this region varies between 1,750 m and 1,800 m; above these elevations the alpine vegetation consists of stunted and/or dwarf varieties of spruce and fir, juniper, moss, heather and other alpine tundra flora, and occasional sub-alpine meadows. The area is heavily forested at elevations below about 1,500 m. The forest consists mostly of sub-alpine Engelmann and white spruce, sub-alpine fir, and lodgepole pine. Douglas fir, balsam poplar, aspen, willow, and alder are also found. Bogs and black spruce stands cover some lower areas. The timber on most of the property appears to be of little if any economic interest, although merchantable stands of timber are present in areas of lower elevation. Recent logging, evidenced by large cut-blocks, has taken place in the northern parts of the property, either side of Holtslander Creek.

Exposed rock is common above tree line and usually composed of sandstone and conglomerate. Such resistive units can often be traced for several kilometres. Coal seams can be mapped by tracing coal "bloom" that may be present at surface and by mapping resistant seam roof and/or floor lithologies. Rock exposures decrease significantly on the treed slopes where they are often limited to the bottoms and steep sides of creeks. Various surface materials and soils are present. Colluvium is the dominant material at higher elevation with poorly developed regosolic soils in alpine areas. Brunisolic soils are dominant below tree line with podzols developed in areas of better moisture supply. Benches of moraine deposits with assorted luvisolic soils are sometimes present at lower elevations, and major valleys may contain areas of finer-textured lacustrine and scattered organic deposits (mostly as bogs), glacio-fluvial fans and terraces.



**LEGEND:**

- ROAD
- RAILWAY
- PROVINCIAL / INTERNATIONAL BOUNDARY
- COASTLINE
- CITY / TOWN
- PROVINCIAL/TERRITORY CAPITAL
- COAL TERMINALS



**COLONIAL COAL CORP.**

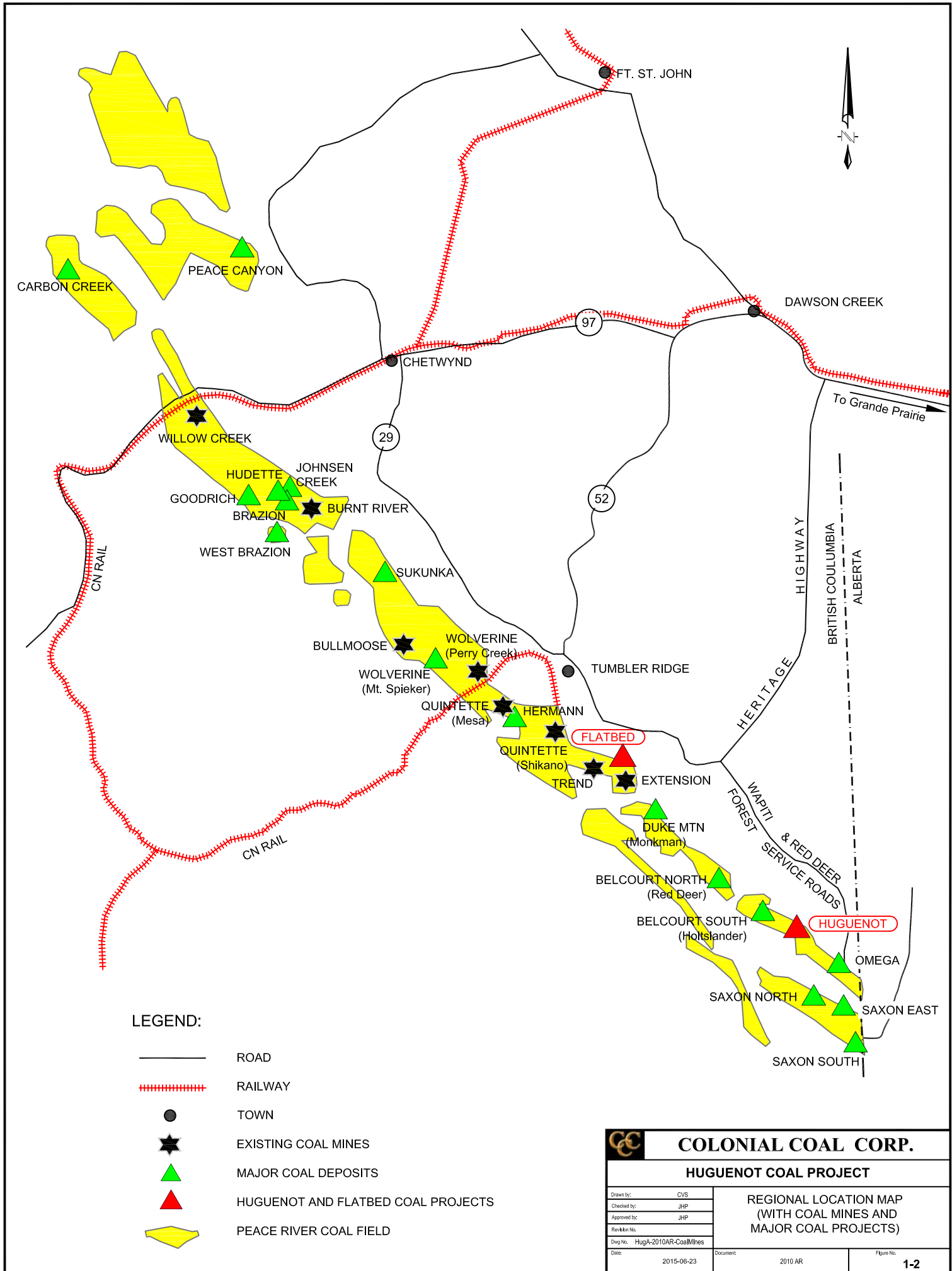
**HUGUENOT COAL PROJECT**

Drawn by:	CS
Checked by:	JP
Approved by:	JP
Revision No.	
Dwg No.	HUGA-2010AR-GLOC
Date:	2015-07-16








**GENERAL LOCATION MAP**


Document: 2010 AR

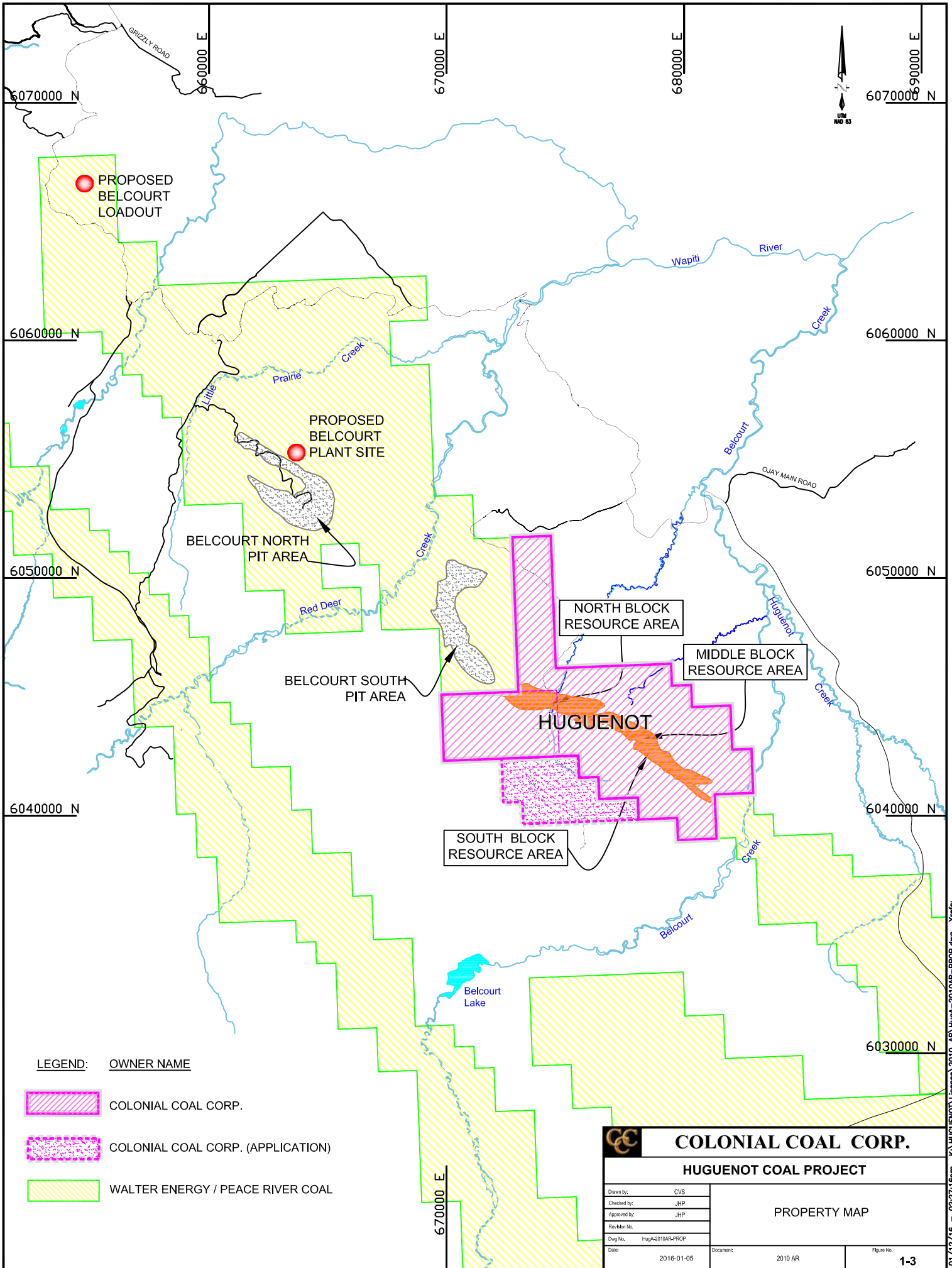
Figure No. 1-1






**LEGEND:**


-  ROAD
-  RAILWAY
-  TOWN
-  EXISTING COAL MINES
-  MAJOR COAL DEPOSITS
-  HUGUENOT AND FLATBED COAL PROJECTS
-  PEACE RIVER COAL FIELD

 <b>COLONIAL COAL CORP.</b>	
<b>HUGUENOT COAL PROJECT</b>	
<b>REGIONAL LOCATION MAP (WITH COAL MINES AND MAJOR COAL PROJECTS)</b>	
Drawn by: CVS	REGIONAL LOCATION MAP (WITH COAL MINES AND MAJOR COAL PROJECTS)
Checked by: JHP	
Approved by: JHP	
Revision No.	
Draw No. HugA-2010AR-CoalMines	Date: 2015-06-23
Date: 2015-06-23	Document: 2010 AR
	Figure No. <b>1-2</b>



**LEGEND: OWNER NAME**

-  COLONIAL COAL CORP.
-  COLONIAL COAL CORP. (APPLICATION)
-  WALTER ENERGY / PEACE RIVER COAL

		<b>COLONIAL COAL CORP.</b>	
<b>HUGUENOT COAL PROJECT</b>			
Drawn by: CVS		<b>PROPERTY MAP</b>	
Checked by: JHP			
Approved by: JHP			
Revision No.			
Dwg No. HugA-2010AR-PROP		Figure No.	
Date: 2016-01-05		Document: 2010 AR	Figure No. <b>1-3</b>

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**SECTION 2 COAL TENURE AND OWNERSHIP**

**2.1 COAL LICENSES**

The Huguenot Coal Project consists of one contiguous block of 13 coal licenses covering 6,467 hectares (ha) plus 10 coal license applications over approximately 17,550 ha, for a total area of some 24,017 ha. The recorded owner of both the issued tenures and the applied for ground is British Columbia numbered company, 0735513 B.C. Ltd. which is a wholly owned subsidiary of Colonial.

The property lies within the Liard Mining Division and is covered by British Columbia Coal Maps 93-I-08 and 93-I-09. Coal license data and descriptions are summarized in Table 2-1 and the locations of the licenses and areas under application are shown in Figure 2-1. Information pertaining to coal license tenure is posted on the British Columbia Ministry of Energy and Mines web site (current for September 12, 2011). The posted records of the British Columbia Ministry of Energy and Mines indicate that the issued licenses are in good standing.

Table 2-1: Huguenot Coal License Information

Coal License No.	Current Owner	Area (ha)	NTS Map Series	Expiry Date
416919	0735513 B.C. Ltd.	1,202	093I049	2012,06,22
416920	0735513 B.C. Ltd.	1,203	093I049	2012,06,22
417014	0735513 B.C. Ltd.	1,352	093I049	2012,07,21
417156	0735513 B.C. Ltd.	901	093I059	2011,12,21
417614	0735513 B.C. Ltd.	151	093I049	2012,08,17
417615	0735513 B.C. Ltd.	301	093I049	2012,08,17
417616	0735513 B.C. Ltd.	76	093I049	2012,08,17
417617	0735513 B.C. Ltd.	151	093I049	2012,08,17
417618	0735513 B.C. Ltd.	301	093I049	2012,08,17
417619	0735513 B.C. Ltd.	76	093I059	2012,08,17
417620	0735513 B.C. Ltd.	301	093I059	2012,08,17
417621	0735513 B.C. Ltd.	301	093I059	2012,08,17
417622	0735513 B.C. Ltd.	151	093I059	2012,08,17
<b>Total Licensed Area</b>		<b>6,467</b>		
Application 417674	0735513 B.C. Ltd.	975	093I049	n.a.
Application 417678	0735513 B.C. Ltd.	150	093I049	n.a.
Application 417779	0735513 B.C. Ltd.	1,800	093I050	n.a.
Application 417780	0735513 B.C. Ltd.	2,700	093I059	n.a.
Application 417781	0735513 B.C. Ltd.	1,200	093I068	n.a.
Application 417782	0735513 B.C. Ltd.	1,650	093I049	n.a.
Application 417783	0735513 B.C. Ltd.	2,100	093I050	n.a.
Application 417784	0735513 B.C. Ltd.	4,725	093I059	n.a.
Application 417785	0735513 B.C. Ltd.	600	093I068	n.a.
Application 417786	0735513 B.C. Ltd.	1,650	093I068	n.a.
<b>Total Applied For Areas</b>		<b>17,550</b>		

No legal surveys have been undertaken either as a requirement for, or subsequent to acquisition of the coal licenses. Within British Columbia, coal lands are acquired simply by application (paper “staking”); claim posts are not required. Colonial does not own surface rights over any of the property; there is no



requirement to own surface rights in order to conduct mineral exploration within the Province. No search of land title, survey records or surface rights has been undertaken for this report. However, it may reasonably be expected that the Crown retains surface rights.

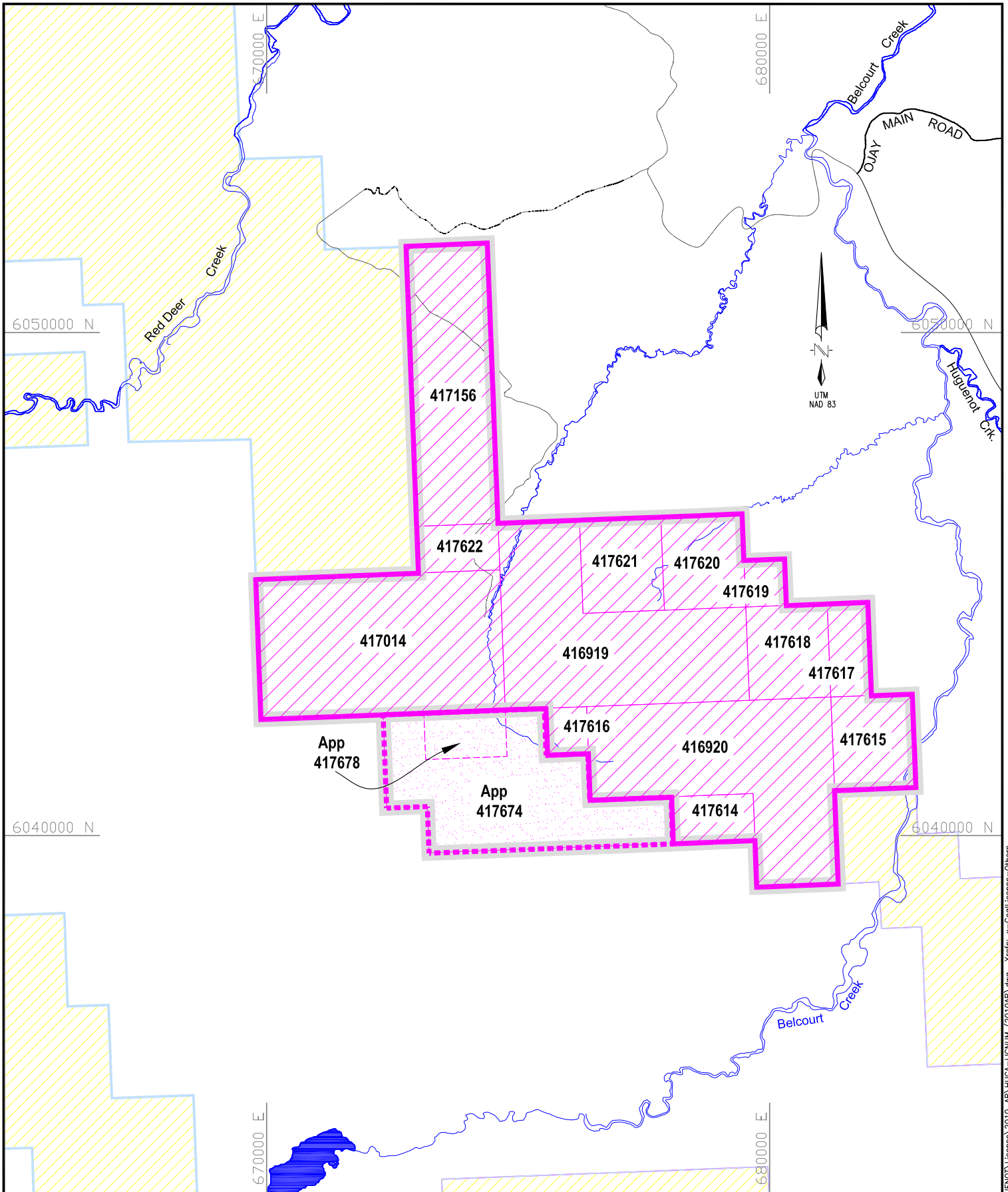
## **2.2 OWNERSHIP**

The property is held beneficially for Colonial by a British Columbia company, 0735513 B.C. Ltd. This company is a wholly-owned subsidiary of Colonial.

The core group of coal licenses (numbers 416919, 416920, and 417014) were originally granted to a Mr. I. Downie in mid-2005, while coal license 417156 was acquired that same year by Western Coal Corporation (Western). Western subsequently transferred this coal license to Belcourt Saxon Coal Limited (BSCL) a joint venture company owned by Western and NEMI Northern Energy and Mining Inc (NEMI). As a result of a swap of other coal licenses between Mr. Downie and BSCL, ownership of C.L. 417156 was transferred to Mr. Downie in exchange for C.L. 417015.

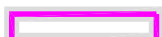
Mr. Downie subsequently transferred ownership of all four coal licenses to 0735513 B.C. Ltd. who, since inception, has held the licenses as trustee for and on behalf of Colonial. The property interests are subject to a retained production royalty of 1.5%.

The ten coal license applications are in the name of 0735513 B.C. Ltd. Applications 417779 to 417786 were applied for in March, 2011.

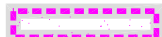


**LEGEND:**

**COLONIAL COAL CORP.**



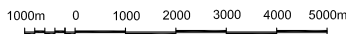
- APPROVED COAL LICENSE



- COAL LICENSE APPLICATION



OTHER OWNERS



SCALE: 1:100,000



**COLONIAL COAL CORP.**

**HUGUENOT COAL PROJECT**

Drawn by:	CVS
Checked by:	JHP
Approved by:	JHP
Revision No.	
Dwg No.	HUGA-LICNUM (2010AR)
Date:	2015-12-10

<b>COAL LICENSES (APPROVED AND UNDER APPLICATION)</b>	
Document	2010 AR
Figure No.	<b>2-1</b>



**SECTION 3 SUMMARY OF EXPLORATION ACTIVITIES**

**3.1 DENISON MINES LTD. 1971-1979**

The area now covered by the current Huguenot Coal Property was once part of the Belcourt Coal Property that was originally acquired and held by Denison Mines Ltd (Denison) in 1970. At that time, the property consisted of 55 contiguous coal licences, totalling approximately 14,209 ha. In April 1978, Denison entered into an agreement with Gulf Canada Resources, Inc. to form the Belcourt Coal Joint Venture (BCJV); Denison, through its subsidiary Denison Coal Ltd, was manager of the project. By mid-1978, the property had expanded to 144 coal licences that covered an area of 36,442 ha. At that time most of the current Huguenot property was referred to as the Holtslander South Block; Denison’s old Huguenot Block referred to an area immediately south of Belcourt Creek.

Work undertaken by Denison on the area now covered by the current Huguenot property from 1971 to 1979 can be outlined as follows:

1971	–	Limited geological reconnaissance to confirm the presence of coal seams within the Lower Cretaceous Gates and Gething Formations.
1975	–	Aerial photography and ground control survey followed by detailed geological mapping.
1976	–	Further geological mapping followed by the completion of two core holes to ascertain seam thickness and coal quality data; one of those holes (BD-7601) is located within the current Huguenot licences.
1977	–	Limited geological mapping and trenching.
1978	–	Subsequent to forming the BCJV, an extensive exploration program was undertaken to gather information on geological structures, coal resources and coal quality, consisting of: detailed geological mapping; hand trenching; drilling and geophysical logging of 5 core holes (HQ); coal core sampling and sample testing; aerial photography was carried out and topographic maps were prepared at various scales for general and detailed coverage.
1979	–	Continuation of work started the previous year (detailed geological mapping; hand trenching; drilling and geophysical logging of 2 core holes (HQ); coal core sampling and sample testing).

No field work was conducted by BCJV on the old Belcourt property after 1980. Western Canadian Coal Corp carried out a small rotary drilling program during the winter of 1998, on the northern part of the proposed Holtslander North open pit area (later renamed the Belcourt South pit area). In 2005, Belcourt-Saxon Coal Ltd. undertook major drilling programs on the Belcourt North and Belcourt South coal deposits and at Saxon East, Saxon South and Omega.

The historical exploration activities conducted over the area that is now the Huguenot property are summarized in Table 3-1. This table does not include drillholes and trenches that lie outside but proximal to the property that are of importance in defining the geology. The locations of historical drillholes and





trenches that lie both within, and in the immediate vicinity of, the current Huguenot property are shown in Figure 3-1. The results of this work are incorporated into ensuing sections of this report. No work was conducted on or immediately adjacent to the current license block after the 1979 field program.

Table 3-1: Summary of Huguenot Exploration Activities, 1971-1979

Year	Drillholes	Depth (m)	Geophysical Logs	Hand Trenches	Geological Mapping	Other	Assessment Report
1971	-	-	-		Recon.	AP/Topo	457
1975	-	-	-		1: 2,500	AP/Topo	458
1976	1(D/HQ)	59	-		-	Topo	460
1977	-	-	-	25	-	mss	461
1978	5(D/HQ)	1,388	d,g,n,c,fr,dev	84	1: 2,500	Topo	462/463
1979	2(D/HQ)	1,004	d,g,n,c,fr,dev	29	1: 2,500		465
<b>Total</b>	<b>8</b>	<b>2,452</b>		<b>138</b>			

Note: (D/HQ) = diamond drillhole/core size; mss = measured stratigraphic section; AP/Topo = air photography and topographic mapping; d,g,n,c,fr,dev = density, gamma, neutron, caliper, focussed beam resistivity, and deviation survey logs.

The first hole drilled on the property was by Denison in 1976, as a follow-up to earlier geological mapping and trenching programs, in order to confirm initial coal seam thickness estimates and coal quality. Widely-spaced, helicopter-supported drilling was carried out by BCJV during 1978 and 1979 to provide information for structural geological interpretation, resource estimation and coal quality characterization.

Typically, drillholes were logged using slim-line borehole geophysical tools. In most instances, a suite consisting of density, gamma ray, neutron, caliper, focussed electric (resistivity) and hole deviation logs were obtained. These logs were produced at a general scale of 1: 200 with detailed logs at a scale of 1: 20 over thick coal intervals. Three holes were not logged; these were BD-7601 and BD-7803 and BD-7804 (the latter two did not reach the targeted coal measures).

The information gathered during these programs is contained in historical Assessment Reports 457, 458, 460 – 463, 465, and (subject to re-interpretation/revision) in the Assessment Report submitted by Colonial for 2008.

### 3.2 COLONIAL COAL 2008

Colonial first carried out exploration on Huguenot in 2008; fieldwork commenced in early September and was completed by the end of October.

Due to access considerations, work focused on the northern part of the property and was essentially confined to the upper thrust slice (or North Block). The proposed Belcourt South surface mine (of BSCL) is situated immediately north of the Huguenot property; the southern pit limit comes to within 200 m of the property boundary. The geology of Huguenot's North Block is an extension of that defined within the Belcourt South deposit. The purpose of the 2008 work was to confirm and refine the geological interpretation, coal quality and resources previously outlined by Denison and BCJV between 1970 and 1980 and to demonstrate geological, coal seam and coal quality continuity between the North Block and the Belcourt South coal deposit.



Exploration was undertaken throughout the North Block although drilling, mechanized trenching, and associated trail construction was restricted to the northwestern half of the block (i.e., the area northwest of Holtlander Creek). South of the creek, only geological mapping and hand trenching were carried out; some of these activities also extended onto adjacent portions of the Middle Block. Exploration personnel were housed at a local, permanent camp. The completed program consisted of 17 air rotary holes and ten 6-inch core holes (for a total of approximately 2,045 m), 19 mechanical trenches, and 36 hand trenches. The main exploration activities carried out during the 2008 program are summarized in Table 3-2.

Table 3-2: Summary of 2008 Exploration Activities

Drillholes		Metres Drilled	LD Type Rotary/Core (m)	Geophysical Logs	Trenches	Geological Mapping	Drill Trail (km) (constructed / modified)
Type	Number						
Rotary	17	1,623	-	d,g,n,c,fr,dev,(+/- dm)	M: 19	1: 5,000 &	4.69 / 0.81
LD	10	422	334 / 88	d,g,n,c,fr,dev	H: 36	1: 2,500	-
<b>Total</b>	<b>27</b>	<b>2,045</b>	<b>-</b>	<b>-</b>	<b>55</b>	<b>-</b>	<b>5.50</b>

Note: LD = large diameter (Rotary + 6" core); d,g,n,c,fr,dev,dm = density, gamma, neutron, caliper, focussed beam resistivity, deviation, and dip meter logs. M = mechanically excavated trench; H = hand excavated trench. Rec = reconnaissance.

The results of the 2008 Exploration activities are presented in detail in the "The Huguenot Coal Project – 2008 Exploration Program Assessment Report" (Perry, 2010).

### 3.3 COLONIAL COAL 2010

In 2010, limited fieldwork was undertaken between August and November. Work focused on the North Block and included the re-surveying of existing drillholes followed by a program of access trail construction and modification of an existing trail.

The data acquired during the 2010 exploration program did not warrant re-interpretation of the geology or re-assessment of the coal resources and coal quality of the Huguenot Project.

#### 3.3.1 Surveying

The short surveying program was carried out over a two-week period in August. Work focussed on re-surveying as many of the 2008 drillholes as possible in addition to surveying prospective drill sites and identifying possible access routes for the planned 2011 drill program. The 2008 drillholes had originally been surveyed using handheld GPS instruments while the 2010 surveying utilized a more accurate, geodetic, survey system. The 2010 surveying was carried out by Colonial personnel using equipment rented from Brandt Positioning Technology. A total of 18 drillholes from 2008 were re-surveyed. The results from the 2010 survey are presented in Table 3-3.

Table 3-3: 2008 Drillhole Collar Coordinates Resurveyed in 2010

DH ID	NAD 83 Zone 10		
	Easting (m)	Northing (m)	Elev. (m)
HR08-01	673,533.562	6,044,726.953	1,575.114
HR08-02	674,456.841	6,044,975.012	1,348.552
HR08-03	673,613.179	6,044,835.887	1,546.576
HR08-05	672,922.703	6,044,420.016	1,725.399
HR08-06	673,072.548	6,045,128.946	1,603.620
HR08-07	672,886.999	6,044,931.405	1,514.642
HR08-09	673,020.646	6,044,807.236	1,667.376
HR08-12	673,314.286	6,044,531.908	1,625.191
HR08-14	674,314.169	6,044,730.605	1,371.245
HR08-15	674,334.926	6,044,366.710	1,333.535
HR08-16	674,341.237	6,044,550.223	1,330.457
HR08-17	674,349.564	6,044,562.027	1,330.732
HB08-1B	672,890.866	6,044,634.000	1,698.345
HB08-5A	672,976.108	6,044,772.227	1,667.936
HB08-5B	672,977.612	6,044,775.187	1,668.021
HB08-6CA	673,019.173	6,044,809.192	1,667.490
HB08-6CB	673,021.934	6,044,809.370	1,667.357
HB08-8B	673,628.463	6,044,809.660	1,556.141

### 3.3.2 Trail Construction and Maintenance

During November, a short program of access trail construction and re-activation of existing forestry trails was carried out. Approximately 1,500 m of newly excavated access trail was constructed and approximately 2,700 m of previously excavated access trail was modified. The purpose of this work was to facilitate future exploration activities within the southeastern portion of the North Block and to provide a main access route into the Middle and South Blocks.

The status of all access trails on the Huguenot property at the end of 2010 is shown in Figure 3-1, while the total area disturbed is shown in Table 3.4.

Table 3-4: Huguenot 2010 Ground Disturbance

Disturbance Type	Length (m)	Disturbed Area (ha)
Newly Constructed Excavated Trail	1,500	0.9
Modified Existing Excavated Trail	2,700	1.62
<b>Total:</b>		<b>2.52</b>



### 3.3.3 Project Management, Personnel, and Contractors

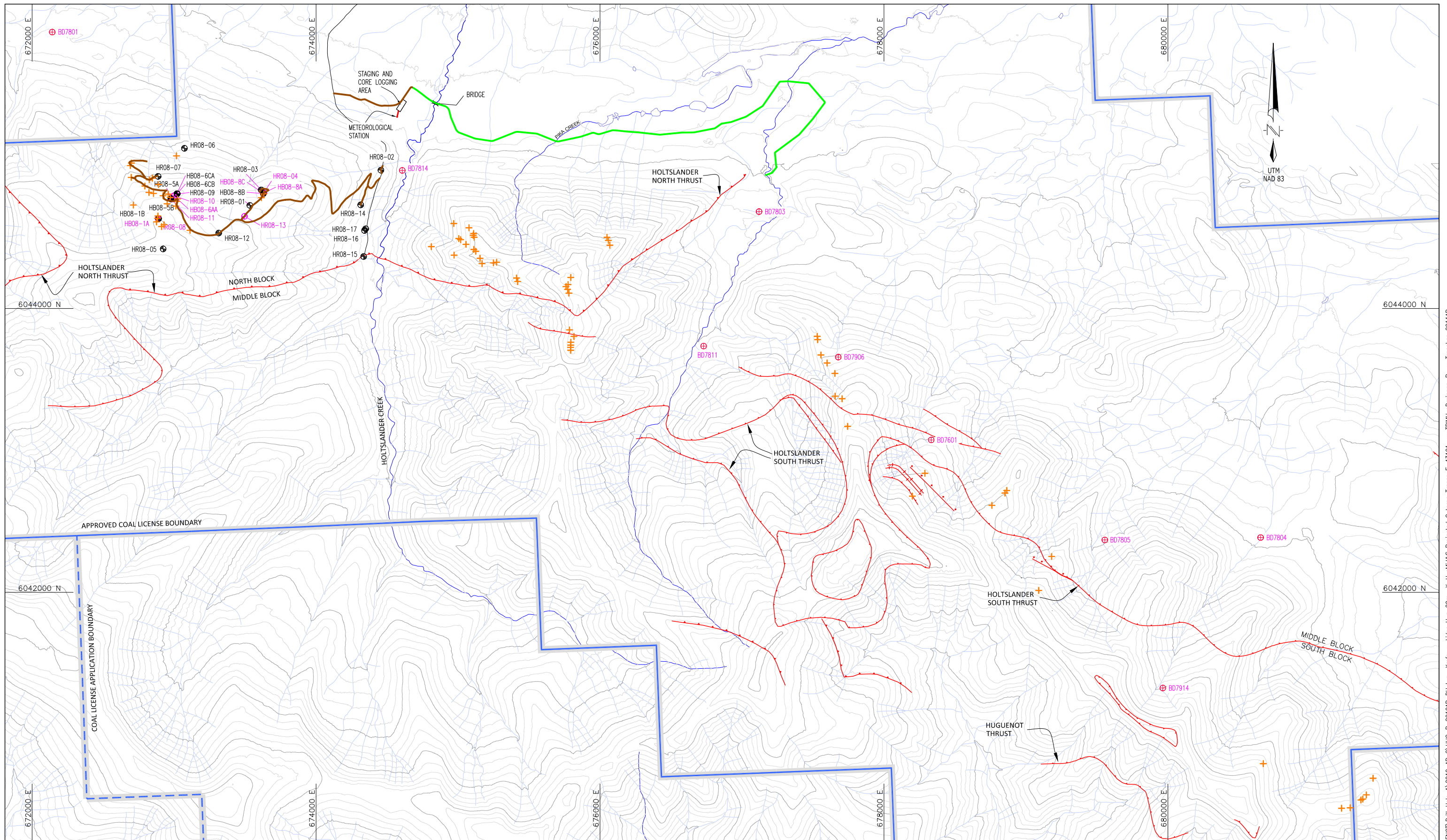
The Huguenot Project is owned by Colonial Coal International Corp. and managed through its subsidiary company, Colonial Coal Corp. The professional and technical members of the Colonial's staff as well as the contractors that contributed to the 2010 exploration program are listed in Tables 3-5 and 3-6, respectively.

Table 3-5: Huguenot 2010 Colonial Corp. Personnel

Name	Position
John Perry, P.Geo.	Chief Operating Officer
Duane Lucas, P.Geo	Project Manager
Adriana Matesoi	Geologist
Fahmi Aminuddin	Junior Geologist
Jan Jarolim	Junior Geologist
Fairnia Farokhi	Field Accounting
Cristina Solano	Drafting/CAD services

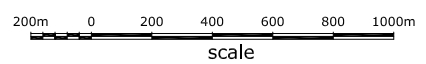
Table 3-6: Huguenot 2010 Contractors

Type of Work Performed	Contracting Company
<b>Field Related</b>	
Heavy Equipment Operations	CanWest Exploration Services Ltd.
Timber Falling and Slashing	CanWest Exploration Services Ltd.
First Aid	CanWest Exploration Services Ltd.
Bridge Rental	Great Northern Bridgeworks Ltd.
Radio Communications Rental	Petron Communications Ltd.
Truck Rental	Driving Force
Field Camp and Catering	P.T.I Premium Camp Services
Fuel	Blue Wave Energy
Surveying Equipment	Brandt Positioning Technology
Field Supplies	Northern Metallic Ltd./Deakin Equipment Ltd.



**LEGEND:**

- Topography
- River
- Property Boundary (Approved / Under Application)
- Road - Main Access
- 2010 Drill Trails
- 2008 Drill Trails
- Fault Thrusts
- 2008 Drill Holes
- 2008 Drill Holes (Resurveyed 2010)
- Pre-2008 Drill Holes
- Pre-2010 Trenches (used for Geological modelling)



<b>COLONIAL COAL CORP.</b>	
<b>HUGUENOT COAL PROJECT</b>	
<b>DRILL HOLE, TRENCH AND TRAIL LOCATIONS</b>	
Drawn by: CVS	Checked by: JHP
Approved by: JHP	Revision No.:
Date: 2016-01-08	Document: 2010 AR
Figure No.:	3-1

K:\HUGUENOT\Drill\_Hole\_1\2010\_AR\_2\HUG-B-2010AR-DH.dwg Xrefs: x-Lidar\_Hug\_20m X-HugMidS Projected Outcrop Traces E-43101 x-TRM\HugDrainage-B x-Trenches 2011AR 01/08/16 - 04:07:35pm



## SECTION 4 GEOLOGICAL SETTING

The Huguenot Coal Project lies within a belt of Mesozoic strata situated along the eastern flank of the Rocky Mountains of northeastern British Columbia. These strata were uplifted during the Laramide Orogeny and now form part of the Rocky Mountain Foothills. Intense folding and thrust faulting strongly affected the strata during mountain-building. The coal seams of greatest potential are found within Lower Cretaceous strata, consisting of the Bullhead and Fort St. John Groups. These strata can be characterized as alternating sequences of marine and non-marine clastic lithologies deposited from a series of transgressive - regressive sedimentary cycles in response to periodic uplift of the Cordillera.

The thickest coal seams are contained within the Gates and Gething Formations and are believed to have formed within deltaic and marine strand-plain depositional environments. Marine strata of the Moosebar Formation separate these two phases of continental sedimentation. Minor coal seams are present within stratigraphically lower (Minnes Group) and higher (Boulder Creek Formation) units. However, these coals are thin and are not considered to have economic potential within the Huguenot region. The stratigraphic sequence in the study area is shown in Figure 4-1 while regional correlation of coal seams at Huguenot correlated with those present to the northwest (at Belcourt) and to the southeast (at Omega) is illustrated in Figure 4-2. The regional geology shown in Figure 4-3 illustrates the relationships between the various formations that occur within and adjacent to the Huguenot property and shows the main structural geological features.

The stratigraphic succession exposed in the Huguenot area ranges in age from late Triassic to Upper Cretaceous. Triassic rocks are essentially restricted to small areas where the major drainages have exposed the core of a regional anticlinorium (the Belcourt Anticlinorium). These are overlain by an Upper Jurassic to Upper Cretaceous sequence of inter-bedded clastic lithologies of both marine and continental origin, some of which contain coal seams. Brief descriptions of the Upper Jurassic and Cretaceous formations encountered in this region are presented below.

### 4.1 REGIONAL STRATIGRAPHY

#### 4.1.1 Minnes Group

This is a thick sequence that ranges in age from Upper Jurassic to Lower Cretaceous. The lower portion of this unit contains massive sandstones and conglomerates while the upper part mostly comprises cyclic beds of argillaceous, fine-grained sandstone, siltstone, carbonaceous shale and coal seams. Coal seams are numerous but they are usually less than one metre thick and are discontinuous. The change from Minnes Group strata to the overlying Cadomin Formation is abrupt. Locally, the contact is disconformable, although there is a marked angular discordance regionally.

#### 4.1.2 Cadomin Formation (Bullhead Group)

The Cadomin Formation is the basal unit of the Lower Cretaceous Bullhead Group and mainly consists of massive to poorly-bedded, coarse- to very coarse-grained conglomerate. A layer of coarse-grained sandstone, located immediately below the conglomerate, is included within this formation. Typically, the conglomerate is poorly sorted and contains well-rounded pebbles, cobbles and boulders of black, white, and green chert, white and grey quartzite, quartz, and (locally) minor limestone. The clasts are set within a siliceous matrix of fine- to coarse-grained sandstone, although portions of the conglomerate may also be clast supported. Discontinuous, lenticular, sandy horizons may be present. Owing to its highly resistant nature, particularly in comparison with contiguous units, the Cadomin is usually well exposed, often forming prominent ridges or linear, positive



topographic features. This, together with the rust coloured gravel produced from the weathered conglomerate, makes the Cadomin Formation one of the best stratigraphic markers in the region. The thickness of this formation is highly variable; on the property it appears to be in the order of 10 m thick.

#### **4.1.3 Gething Formation (Bullhead Group)**

The Gething Formation conformably overlies the Cadomin and forms the upper unit of the Bullhead Group. In the Huguenot area it ranges from 60 m to 100 m in thickness (averaging approximately 70 m) although, regionally, it may be considerably thicker due to various depositional factors. It is primarily a non-marine sequence composed of fine- to coarse-grained, calcareous sandstones, conglomerate, siltstone, carbonaceous claystone, and thin coal seams. Conglomeratic units typically occur in the lower and middle parts of this formation while a series of brown, calcareous, lithic, thinly-bedded (0.5 m to 1 m), and cross-laminated sandstones predominate in the upper parts. These upper sandstones commonly contain pebbles and coal stringers and often exhibit bioturbation and soft sediment deformation.

Historical exploration reports for the old Belcourt property and previous reports on the current Huguenot property describe three coal zones named, in ascending stratigraphic order, Zones A, B, and C, which are located near the base, middle and top of the formation, respectively. Although these coal zones are currently projected across the length of the property, correlations are tentative over large distances due to variable coal zone development and limited data. The lowermost zone (Zone A) appears to be the best developed. Zone C is located just below the Gething - Moosebar contact; the stratigraphic position of this coal zone is similar to that of the Bird-GT Zone which is believed to have economic potential to the north, at the Trend South Mine.

The presence of thin interbeds of bentonite characterize the uppermost part of the formation, while the upper contact of the Gething is defined by a thin bed of pebble conglomerate with clasts set within a mudstone matrix that contains aphanitic glauconite. This glauconitic horizon is considered equivalent to the Bluesky Formation found further east, and signifies the start of marine sediments belonging to the overlying Moosebar Formation.

#### **4.1.4 Moosebar Formation (Fort St. John Group)**

The Moosebar Formation is the lowermost formation of the Fort St. John Group. The Moosebar - Gething contact is abrupt and is placed at the base of a thin glauconite-bearing conglomerate, which represents the onset of the Moosebar marine transgression. The Moosebar is separated into two zones; a lower claystone/shale zone and an upper zone composed of alternating claystone, siltstone, and sandstone layers. The lower part consists of approximately 20 m of monotonous dark grey to black shale grading upward to laminated siltstone and claystone; numerous sideritic concretions are present throughout. These beds grade upwards into a sequence of alternating claystone, siltstone, and very fine-grained sandstone which form the upper part of the formation. The sandstone beds thicken and become more numerous upwards (together with an overall increase in grain size) with an attendant decrease and gradual disappearance of siltstone and claystone. This inter-layered sequence of sandstone, siltstone, and claystone represents the prodeltaic transition from marine sediments to massive continental sands at the base of the overlying Gates Formation.

The top of the Moosebar Formation is taken at the base of the first thick sandstone unit (typified by the first sandstone bed that is at least one metre in thickness) within the Gates Formation. The arbitrary selection of the Moosebar - Gates contact contributes to regional variability in formation



thickness. Consequently, the thickness of this formation is somewhat variable across the property, but averages about 70 m.

The Moosebar shales are recessive weathering and exposures are normally restricted to areas of high relief where creek channels or gullies often cut along the strike of the easily eroded beds.

#### **4.1.5 Gates Formation (Fort St. John Group)**

The Gates Formation conformably overlies the Moosebar Formation. This formation contains the largest systematically explored coal resources within the North-East Coal Block and is the main coal-bearing unit within the project area. To the north, in the Quintette - Bullmoose area, the Gates is divided into three informal sub-divisions; namely, Torrens member, middle Gates and upper Gates. The main coal seams occur within the middle Gates while thinner, often non-economic, coal seams are present within the upper Gates. No sub-division of the formation has been attempted in the Huguenot area, other than recognition of the Torrens member. However, significant coal seams are present in the equivalents of both the middle and upper Gates. At Huguenot, this formation averages approximately 310 m in thickness. A generalized stratigraphic section through the Gates Formation is illustrated in Figure 4-4.

Gates coal seams appear to have developed directly on marine strandplains. Longshore drift of sand played an important role in the formation of these strandplains, which became isolated behind barrier bar delta fronts. Extensive freshwater lagoons developed, which became sites of significant peat formation (Legun, 2002). Thick, lateral accumulations of peat developed shoreward of thick, regionally extensive sheets of shoreface sand and gravel, traceable along strike for about 230 km (Lamberson and Bustin, 1989).

The Torrens member forms the lowermost sub-division of the Gates Formation. It includes the transition zone strata above the Moosebar contact plus an overlying, resistive, sandstone unit that forms prominent cliffs and ridges that can be used to outline the various structural configurations of the coal measures. At Huguenot, the Torrens member ranges from approximately 40 m to 45 m thick.

The Torrens member is overlain by several cycles of coal deposition represented by fining-upward sequences culminating with coal deposition. Coal seams developed in the lower cycles, particularly Seams 1 and 5, typically show the greatest seam thickness and continuity (see Section 4.2). In the Quintette area, the middle Gates is overlain by a massive medium-to-coarse-grained, conglomeratic sandstone and pebble conglomerate sequence, informally called the Babcock member. At Huguenot, what may be the lateral equivalent of this unit appears to be represented by a thick, sandstone-dominated sequence with occasional conglomeratic lenses, located immediately above Seam 5.

This sandstone unit is overlain by predominantly finer-grained lithologies consisting mostly of intercalated fine-grained sandstone, siltstone and claystone with several thin coal seams (Seam 6 to Seam 10). A very thin bed of chert pebbles with ferruginous cement marks the contact with the overlying marine sediments of the Hulcross Formation.

#### **4.1.6 Hulcross Formation (Fort St. John Group)**

The Hulcross Formation is a marine sequence predominantly composed of blocky, medium to dark grey, sandy shale with thin interbeds of siltstone and very fine-grained, often laminated or cross-laminated, sandstone. While there is some similarity between the Hulcross and Moosebar shales





they can usually be distinguished by their relationships to surrounding strata and the absence of glauconitic sandstones at the base of the Hulcross. Across the Huguenot property, the Hulcross varies in thickness from approximately 30 m to 40 m.

The contact of the Hulcross with the underlying Gates Formation is distinct, and often marked by a very thin, chert-pebble conglomerate with ferruginous cement. The sequence becomes increasingly silty towards the top, and thicker sandstone interbeds develop, resulting in a gradational contact with the overlying Boulder Creek Formation.

#### **4.1.7 Boulder Creek Formation (Fort St. John Group)**

The Boulder Creek Formation is composed of three lithological units. The lower unit consists mainly of light grey, fine- to coarse-grained sandstone and is approximately 20 m thick; coarse-grained sandstones, conglomerates and carbonaceous beds are common. The middle unit is approximately 30 m thick and consists of predominantly grey to black claystone and siltstone with occasional coaly and carbonaceous horizons. The upper 35 m consists mostly of fine- to coarse-grained, grey to brown, sandstone and grey siltstone. A thin pebble conglomerate with a siltstone to claystone matrix marks the upper contact.

The thickness of the Boulder Creek Formation tends to increase as the Hulcross thins; in the Huguenot area it ranges between approximately 85 m and 90 m in thickness.

#### **4.1.8 Shaftesbury Formation (Fort St. John Group)**

The Shaftesbury Formation can be divided into three units which, mapped elsewhere, are referred to, in ascending stratigraphic order, as the Hasler, Goodrich, and Cruiser Formations. The historical coal assessment reports for the Huguenot area indicate that Denison's geologists were able to differentiate between these units, although there was no attempt to map them separately.

The lower unit consists of dark grey to black sideritic claystone, siltstone, with minor sandstone and localized, thin, pebble conglomerates. The unit is almost homogenous and bedding is discernible only by the occasional appearance of thin beds of resistant sandstone. The middle unit is predominantly a grey to brown, medium-grained, laminated to medium-bedded to massive, micaceous sandstone. Carbonaceous claystone and siltstone occur as interbeds. The upper unit comprises dark grey to black, laminated to thin interbeds of silty claystone, siltstone and fine-grained sandstone. Pebble bands occur locally. This unit is characteristically light orange to red in colour due to weathering of ferruginous horizons.

## **4.2 COAL SEAM DEVELOPMENT**

Exploration conducted by Denison throughout the old Belcourt property concentrated upon defining potentially economic coal resources contained within the Gates Formation. Localized potential for Gething coal seams is indicated by several thin seams typically in the order of 1 m to 2.5 m thick. The potential for coal seams in other formations appears very limited. The exploration work conducted in 2008 also focussed on Gates Formation coal seams, although one drillhole to test Gething coal seams was also completed.

#### **4.2.1 Gething**

On the Huguenot property, the Gething Formation typically contains three coal zones. Historically, in ascending order, these have been referred to as Zones A, B, and C. The best developed of these is



Zone A, which is situated just above the contact with the Cadomin Formation. This zone contains up to four coal splits, the thickest two of which occur near the top of the zone. These splits can exceed 1.5 m in thickness, while the others are generally less than 1.0 m thick. In one instance, Denison trenched an 8.2 m coal seam within this lower zone. However, this occurrence is believed to be thickened due to faulting.

Thick sandstone separates Zones A and B; this latter coal zone consists of several thin, poorly developed coal seams. Zone C is close to the Gething - Moosebar contact and consists of two or three thin coal splits. The stratigraphic position of this upper coal zone appears to be similar to that of the Bird-GT Zone (which is mined at the Trend Mine).

Within the North Block, the Gething seams are designated, in ascending order, GT1, GT2, and GT3. Seam GT1 ranges from 1.75 m (BD7811) to 2.17 m (HR08-05), Seam GT2 varies from 0.32 m to 0.61 m, and GT3 is 1.2 m thick. Although geological mapping, trenching, and drilling suggest that the Gething coal seams offer limited potential, additional work is warranted to fully evaluate these coal measures.

#### **4.2.2 Gates**

The Gates Formation is well established as being the most prolific coal-bearing formation in northeastern British Columbia. From northwest to southeast, significant thicknesses of Gates coal first occur in the Bullmoose Mountain area and continue southeast to the provincial border (a distance of almost 140 km) and beyond.

On the Huguenot property, coal seams and coal zones are numbered in ascending stratigraphic order with 1 representing the oldest and 10 the youngest. The term 'coal zone' has been used historically to encompass a number of closely-spaced coal horizons within a distinct lithological unit. Such units were used for correlation in areas where individual coal seams were difficult to recognize due to changes in seam characteristics or their transition into carbonaceous and coaly intervals. Individual coal splits within a coal zone were distinguished by letter (e.g., Seams 6A, 6B, 6C, and 6D). Wherever possible, historical seam/zone/split designations have been maintained, although some modifications have occurred based upon results from the more recent work.

Correlations have been established for the main coal seams across the entire property although correlations have not always been definitively demonstrated for some of the minor seams, particularly in the southern half of the property. Seam correlations are well established between the North Block and the adjoining Belcourt South deposit (situated immediately north of the property). The Torrens sandstone provides a marker horizon for the base of the Gates coal measures.

### **4.3 STRUCTURE**

Structural geology within the region is characterized by large-scale folding and associated thrust faulting within alternating layers of competent sandstone and incompetent mudstone and coal. The regional structural trend is NW-SE, parallel to the Rocky Mountain structural belt. Structural style may vary along and across this trend, reflecting differences between lithologies and distance from the Front Ranges of the Rocky Mountains.

Folding within stratigraphic units dominated by finer-grained lithologies can be extremely complex, and is often typified by short-wavelength, chevron folds. More competent sequences, such as those containing the coal measures, typically form macroscopic, long-wavelength folds ranging from relatively tight anticline-syncline pairs to open, box folds. Less competent strata, contained within the broader competent



sequences, maintain the same structural style as the unit as a whole. Typically, the major fold axes plunge gently too moderately to the northwest or southeast. Folding of major fold limbs is uncommon but, where present, varies from gentle warps to chevron fold pairs.

Often, the macroscopic folds are cut by thrust faults that slice longitudinally through the belt of coal-bearing strata. Commonly, these structures dip towards the southwest, although smaller, northeasterly-dipping thrusts may be present. Within the major thrust sheets, faulting preceded folding; older thrusts are folded, resulting in northeasterly-dipping, but northeasterly-verging, thrusts. On a regional scale, the large thrust faults display staircase-type geometry, characterized by wide “flats” sub-parallel to bedding, joined by narrow “ramps” oblique to bedding. The “flats” are often developed in less competent strata whereas “ramps” are generally contained within competent lithologies. The major faults tend to maintain a constant angle of about 30° to bedding. However, this is not always the case, particularly where smaller structures are involved and where thrusts die out. Minor thrusts frequently splay from the major faults.

The Huguenot Coal Project is located along the northeastern limb of a broad, northwest-plunging anticlinorium (the Belcourt Anticlinorium). Lower Cretaceous coal measures are located along the western and eastern margins of this structure, while Triassic and Jurassic strata occupy the central portions. The western extent of the anticlinorium is defined by a major, westerly-dipping thrust fault that emplaced Palaeozoic rocks upon the Lower Cretaceous strata. Eastward from the core of the Anticlinorium, the Cretaceous succession is continuous, the youngest strata being those of the Kaskapau Formation. The Huguenot property is located within a narrow, northwesterly-trending belt of tight to relatively open folds and associated northeasterly-verging thrust faults that have placed older units upon younger.

The Gates coal measures are repeated by two easterly-dipping and easterly-verging thrust faults, the Holtslander North and Holtslander South Thrusts. The geology of the Lower Cretaceous succession within the property is shown in Figure 4-5; cross-sections illustrating the main structural elements are presented in Figure 4-6 and 4-7. For descriptive purposes, the three structural slices formed by the two main thrusts are referred to as the North, Middle, and South Blocks.

The North Block sits structurally above the Holtslander North Thrust and therefore sits structurally above the Middle and South Blocks. The Holtslander North Thrust is interpreted to be the oldest thrust fault on the property. Within the North Block, the coal measures occupy the western limb of a broad synclinal structure called the Holtslander Synclinorium. This limb is near homoclinal with moderate to steep northeasterly dips. Dip values decrease somewhat at depth, towards the axis of the fold.

The Middle Block, situated between the Holtslander North and Holtslander South Thrust Faults, exhibits moderate to steep, northeast-dipping, near-homoclinal strata that decreases in dip towards the south. A north-south-trending, upright, open, anticline-syncline pair is present along the eastern limit of mapping. Fault imbrications in the floor of the Holtslander South Thrust are also present, but are not currently included within either the Middle or South Block. A high-angle, eastward-dipping reverse fault, referred to as the Pika Fault, bisects the central portions of this block, repeating the Seams 1 to 6L.


The South Block lies structurally below the Holtslander South Thrust. Here, the coal measures occur as steep to very steep, mostly easterly-dipping beds that form the eastern limb of an asymmetric anticline (which is possibly the eastern portion of an asymmetric box fold). Vertical to steep, westerly-dipping, overturned beds occur within the eastern limb of this anticline and in the footwall of the thrust.

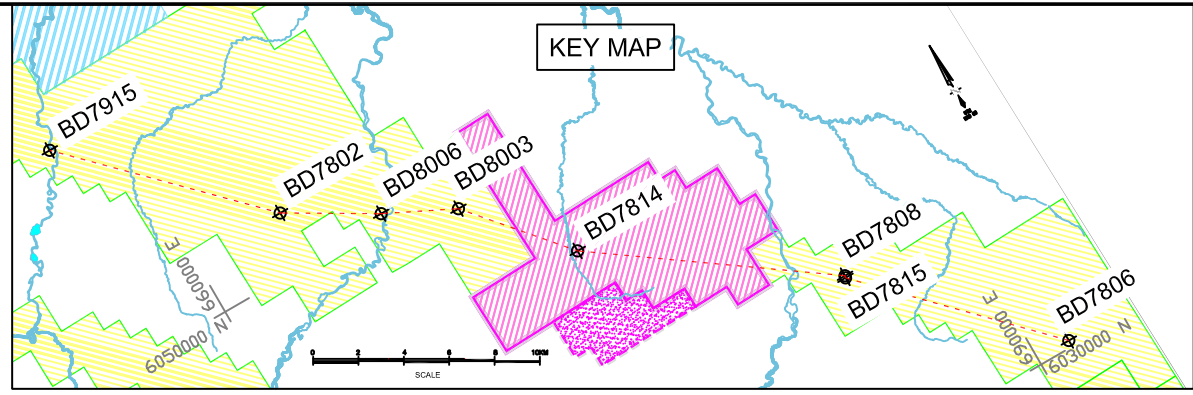
The main elements of the property geology are depicted in Figures 4-5 to 4-7. Selected structural cross-sections through the North Block, developed from historical and 2008 exploration data, are presented in Figures 4-8 to 4-10.

Series	Group	Formation	Lithology	Unit Thickness (Meters)	
LOWER CRETACEOUS	FORT ST. JOHN	Shaftesbury	Dark grey marine shales, sideritic concretions, some sandstone grading to silty, dark grey marine shale, siltstone and sandstone in lower part, minor conglomerate.	+450	
		COMMOTION	Boulder Creek	Fine-grained, well sorted, non-marine sandstone, mudstone and carbonaceous shale, conglomerate, few thin coal seams.	115
			Hullcross	Dark grey marine shale in the north grading to extremely fossiliferous shady beds interlayered with sandstone and thin coal seams in the south.	35
			Gates	Fine-grained marine and non-marine sandstones; conglomerate, coal, shale and mudstone.	365
		Moosebar	Dark grey marine shale with sideritic concretions, glauconitic sandstones and pebbles at base.	60	
	BULLHEAD	Gething	Fine to coarse brown calcareous sandstone, coal, carbonaceous shale, and conglomerate.	70	
		Cadomin	Massive conglomerate containing chert and quartzite pebbles.	10	
	MINNES	Nikanassin	Thin-bedded grey and brown shales and brown sandstones, containing numerous thin coal seams.		

NOTE:

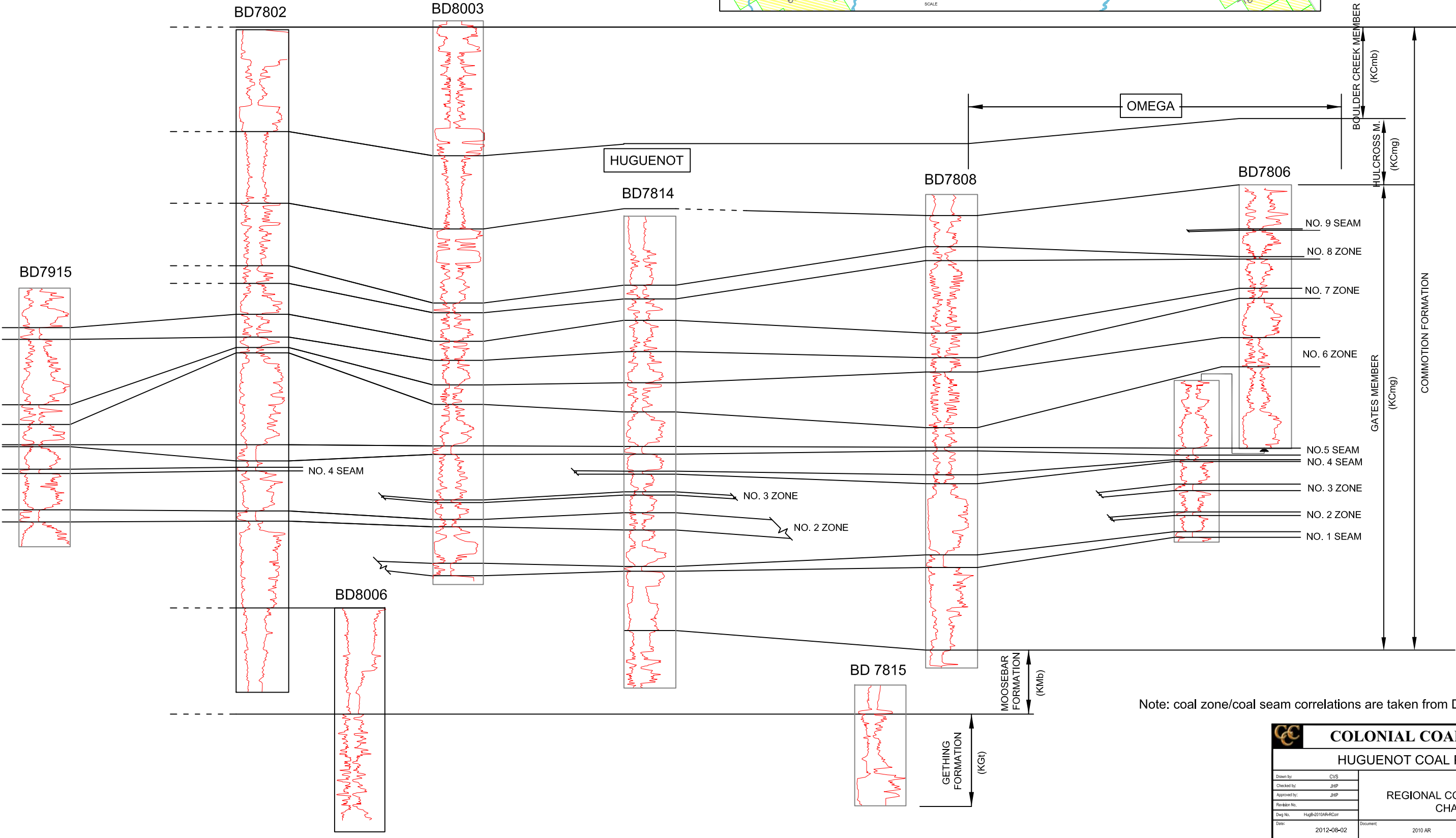
MODIFIED FROM DENISON MINES LIMITED (1979b)

		<b>COLONIAL COAL CORP.</b>			
<b>HUGUENOT COAL PROJECT</b>					
Drawn by:	CVS	TABLE OF FORMATIONS			
Checked by:	JHP				
Approved by:	JHP				
Revision No.					
Dwg No.	HUG-A-2010AR-FORM				
Date:	2015-06-23	Document	2010 AR	Figure No.	<b>4-1</b>



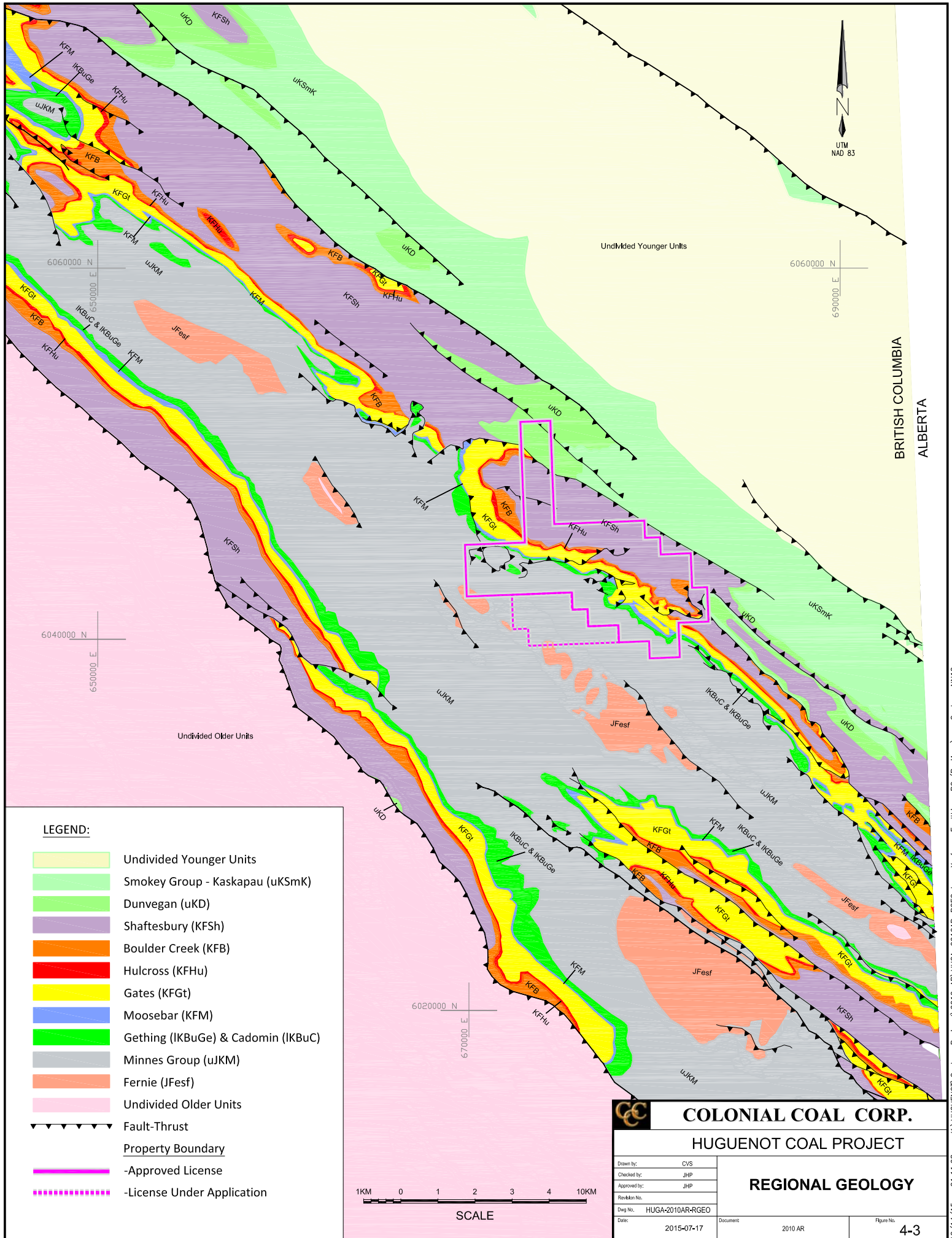
BELCOURT NORTH

BELCOURT SOUTH



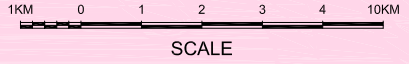
Note: coal zone/coal seam correlations are taken from Denison (1981)

<b>COLONIAL COAL CORP.</b>	
<b>HUGUENOT COAL PROJECT</b>	
Drawn by: CVS Checked by: JHP Approved by: JHP Revision No.: Date: 2012-08-02	<b>REGIONAL CORRELATION CHART</b> Document: 2010 AR Figure No. 4-2

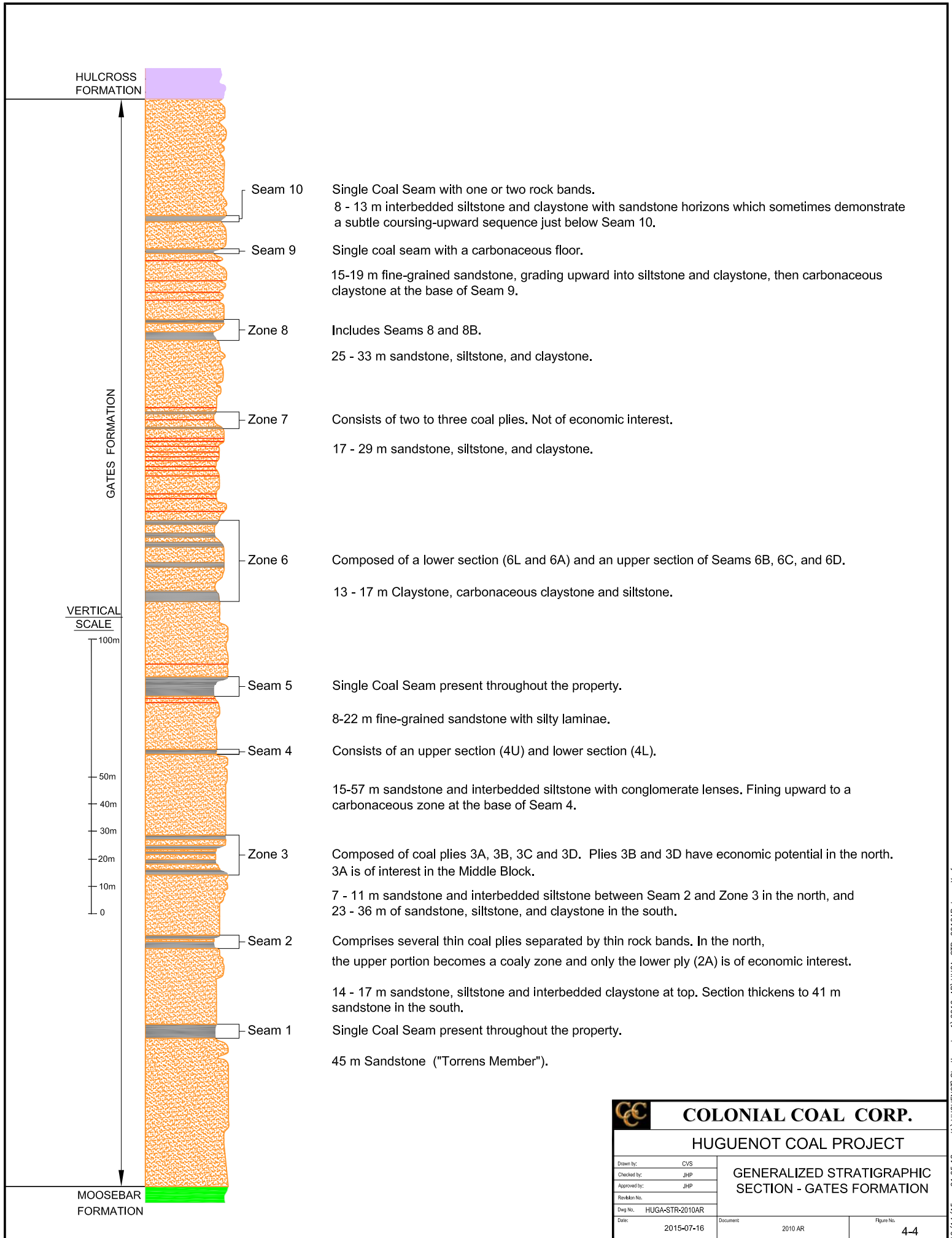


**LEGEND:**

- Undivided Younger Units
- Smokey Group - Kaskapau (uKSmk)
- Dunvegan (uKD)
- Shaftesbury (KFSH)
- Boulder Creek (KFB)
- Hulcross (KFHu)
- Gates (KFGt)
- Moosebar (KFM)
- Gething (IKBuGe) & Cadomin (IKBuC)
- Minnes Group (uJKM)
- Fernie (JFest)
- Undivided Older Units
- Fault-Thrust
- Property Boundary
- Approved License
- License Under Application



<b>COLONIAL COAL CORP.</b>													
<b>HUGUENOT COAL PROJECT</b>													
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Checked by:	JHP												
Approved by:	JHP												
Revision No.:													
Dwg No.:	HUGA-2010AR-RGEO												
Date:	2015-07-17												
Document	2010 AR												
Figure No.	<b>4-3</b>												



HULCROSS FORMATION


GATES FORMATION

VERTICAL SCALE

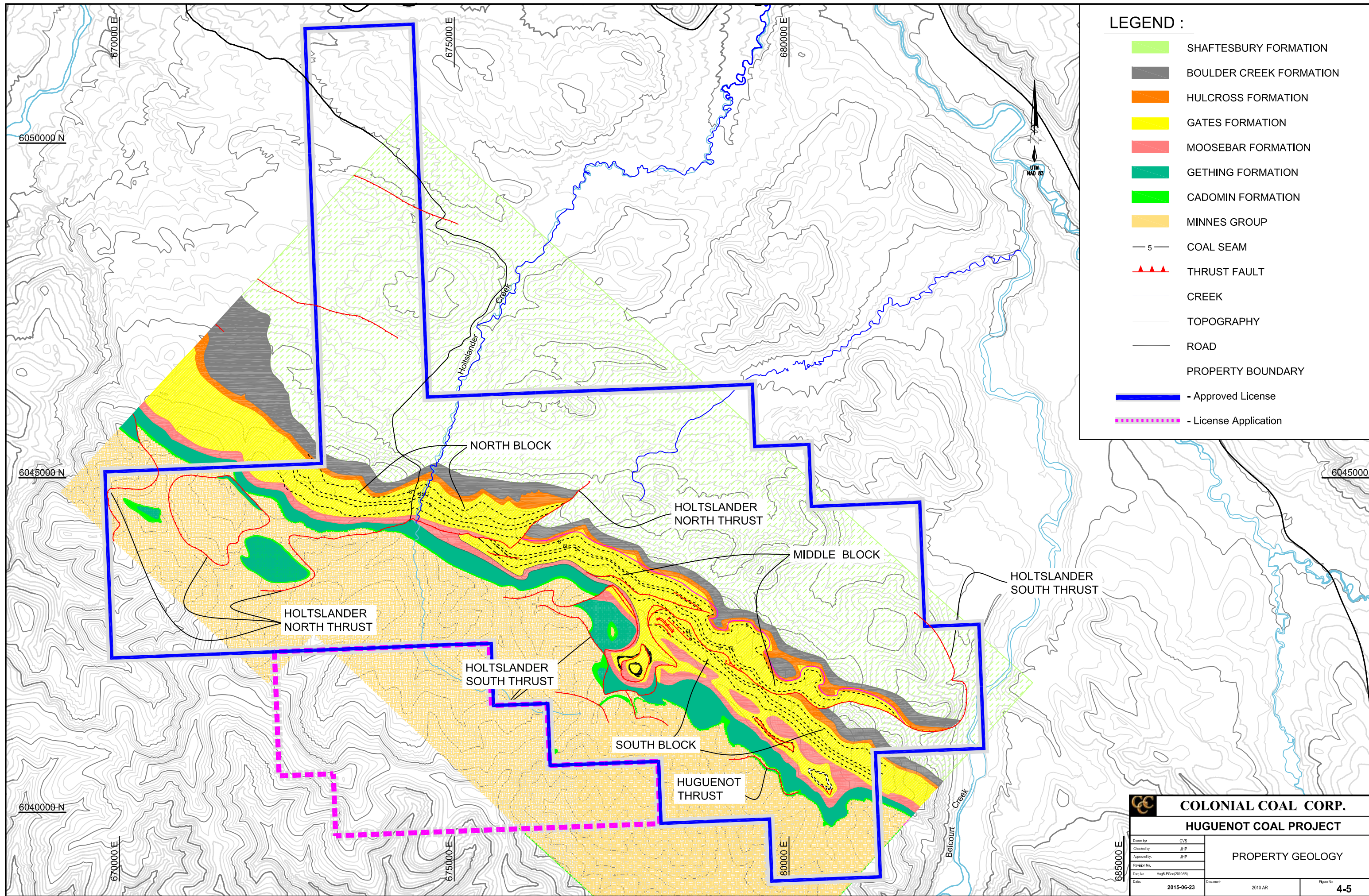


MOOSEBAR FORMATION

- Seam 10 Single Coal Seam with one or two rock bands.  
8 - 13 m interbedded siltstone and claystone with sandstone horizons which sometimes demonstrate a subtle coursing-upward sequence just below Seam 10.
- Seam 9 Single coal seam with a carbonaceous floor.  
15-19 m fine-grained sandstone, grading upward into siltstone and claystone, then carbonaceous claystone at the base of Seam 9.
- Zone 8 Includes Seams 8 and 8B.  
25 - 33 m sandstone, siltstone, and claystone.
- Zone 7 Consists of two to three coal plies. Not of economic interest.  
17 - 29 m sandstone, siltstone, and claystone.
- Zone 6 Composed of a lower section (6L and 6A) and an upper section of Seams 6B, 6C, and 6D.  
13 - 17 m Claystone, carbonaceous claystone and siltstone.
- Seam 5 Single Coal Seam present throughout the property.  
8-22 m fine-grained sandstone with silty laminae.
- Seam 4 Consists of an upper section (4U) and lower section (4L).  
15-57 m sandstone and interbedded siltstone with conglomerate lenses. Fining upward to a carbonaceous zone at the base of Seam 4.
- Zone 3 Composed of coal plies 3A, 3B, 3C and 3D. Plies 3B and 3D have economic potential in the north. 3A is of interest in the Middle Block.  
7 - 11 m sandstone and interbedded siltstone between Seam 2 and Zone 3 in the north, and 23 - 36 m of sandstone, siltstone, and claystone in the south.
- Seam 2 Comprises several thin coal plies separated by thin rock bands. In the north, the upper portion becomes a coaly zone and only the lower ply (2A) is of economic interest.  
14 - 17 m sandstone, siltstone and interbedded claystone at top. Section thickens to 41 m sandstone in the south.
- Seam 1 Single Coal Seam present throughout the property.  
45 m Sandstone ("Torrens Member").

 <b>COLONIAL COAL CORP.</b>	
<b>HUGUENOT COAL PROJECT</b>	
<b>GENERALIZED STRATIGRAPHIC SECTION - GATES FORMATION</b>	
Drawn by: CVS	
Checked by: JHP	
Approved by: JHP	
Revision No.	
Dwg No. HUGA-STR-2010AR	
Date: 2015-07-16	Document 2010 AR
	Figure No. <b>4-4</b>

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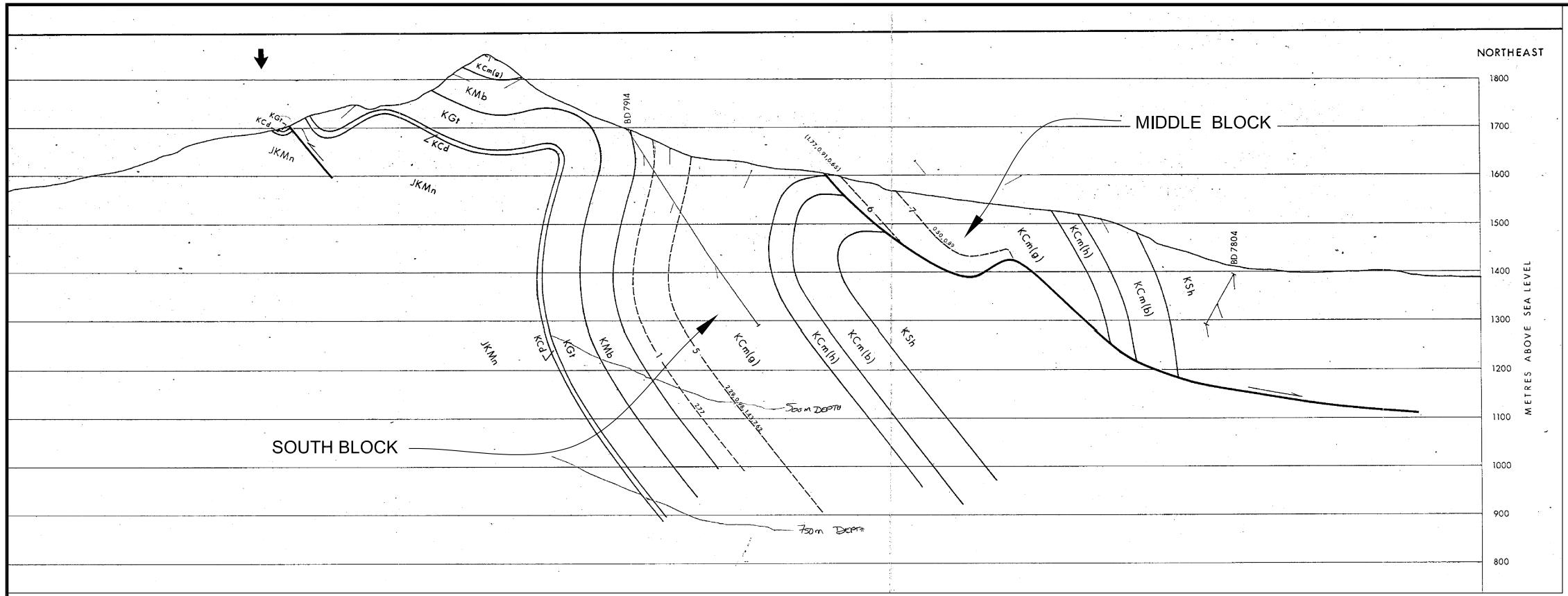


- LEGEND :**
- SHAFTESBURY FORMATION
  - BOULDER CREEK FORMATION
  - HULCROSS FORMATION
  - GATES FORMATION
  - MOOSEBAR FORMATION
  - GETHING FORMATION
  - CADOMIN FORMATION
  - MINNES GROUP
  - COAL SEAM
  - THRUST FAULT
  - CREEK
  - TOPOGRAPHY
  - ROAD
  - PROPERTY BOUNDARY
  - Approved License
  - License Application

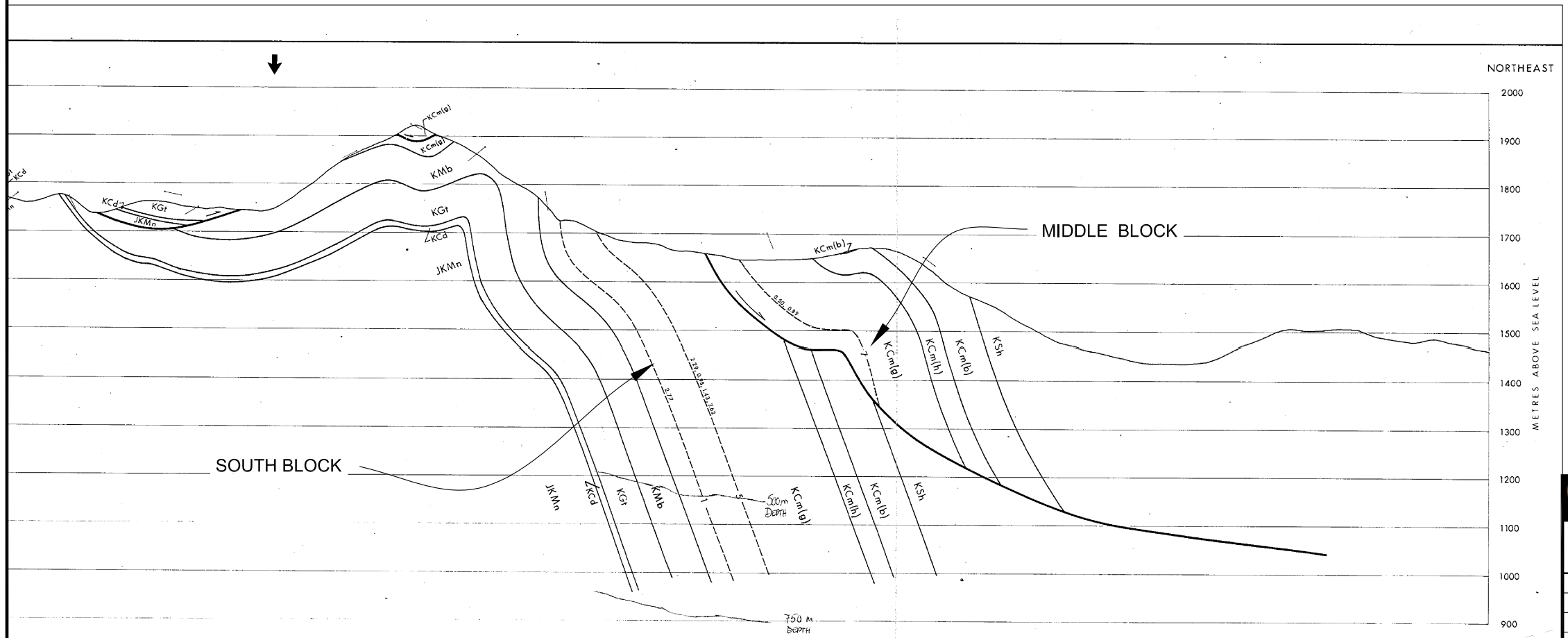
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<b>HUGUENOT COAL PROJECT</b>	
<b>PROPERTY GEOLOGY</b>	
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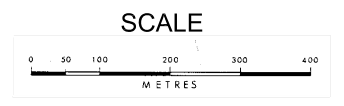
SECTION T21000



SECTION T22800

**LEGEND:**

- KSh SHAFTESBURY FORMATION
- KCm(b) BOULDER CREEK FORMATION
- KCm(h) HULCROSS FORMATION
- KCm(g) GATES FORMATION
- KMb MOOSEBAR FORMATION
- KGt GETHING FORMATION
- KCd CADOMIN FORMATION
- JKMn MINNES GROUP
- BD7914 DRILL HOLE
- ↓ BASELINE LOCATION
- ≡ THRUST FAULT
- BEDDING
- 2.77 TRUE THICKNESS OF COAL SEAM OR INDIVIDUAL COAL SPLIT



NOTE:  
 THE LOCATIONS OF THE CROSS-SECTIONS  
 ARE SHOWN ON FIGURE 8.1  
 TAKEN FROM DENISON (1979b)

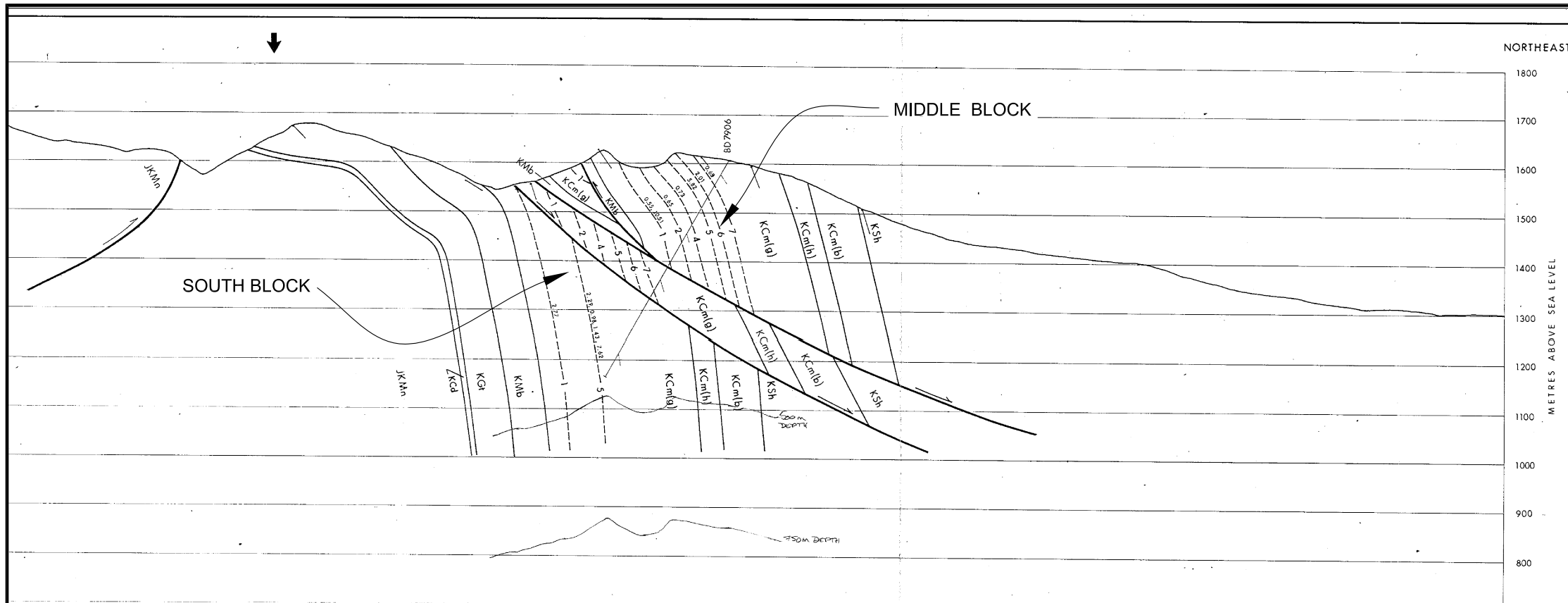
**COLONIAL COAL CORP.**

**HUGUENOT COAL PROJECT**

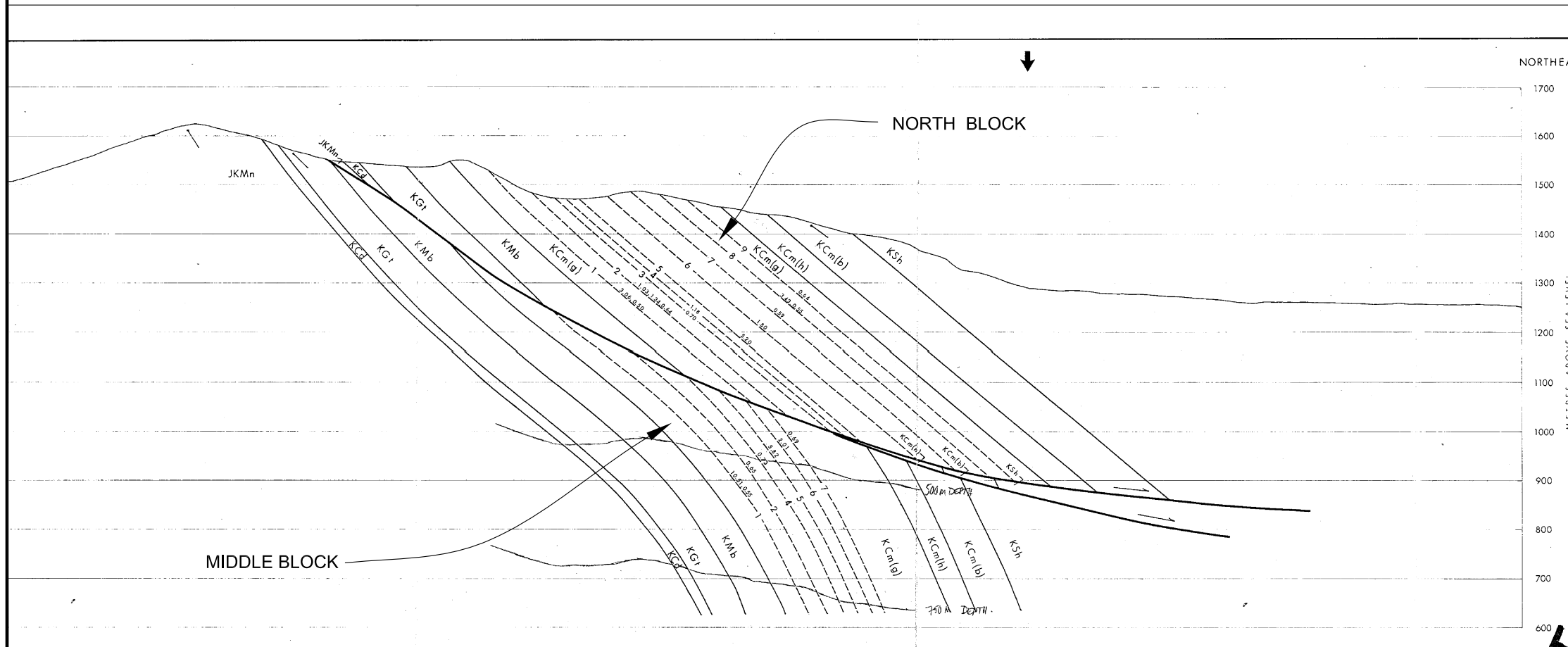
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Revision No.	
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Date:	2015-06-23

**STRUCTURAL  
 CROSS-SECTIONS  
 T21000 - T22800**

Document:	2010 AR	Figure No.	4-6
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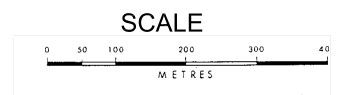
SECTION T24200




SECTION T27600

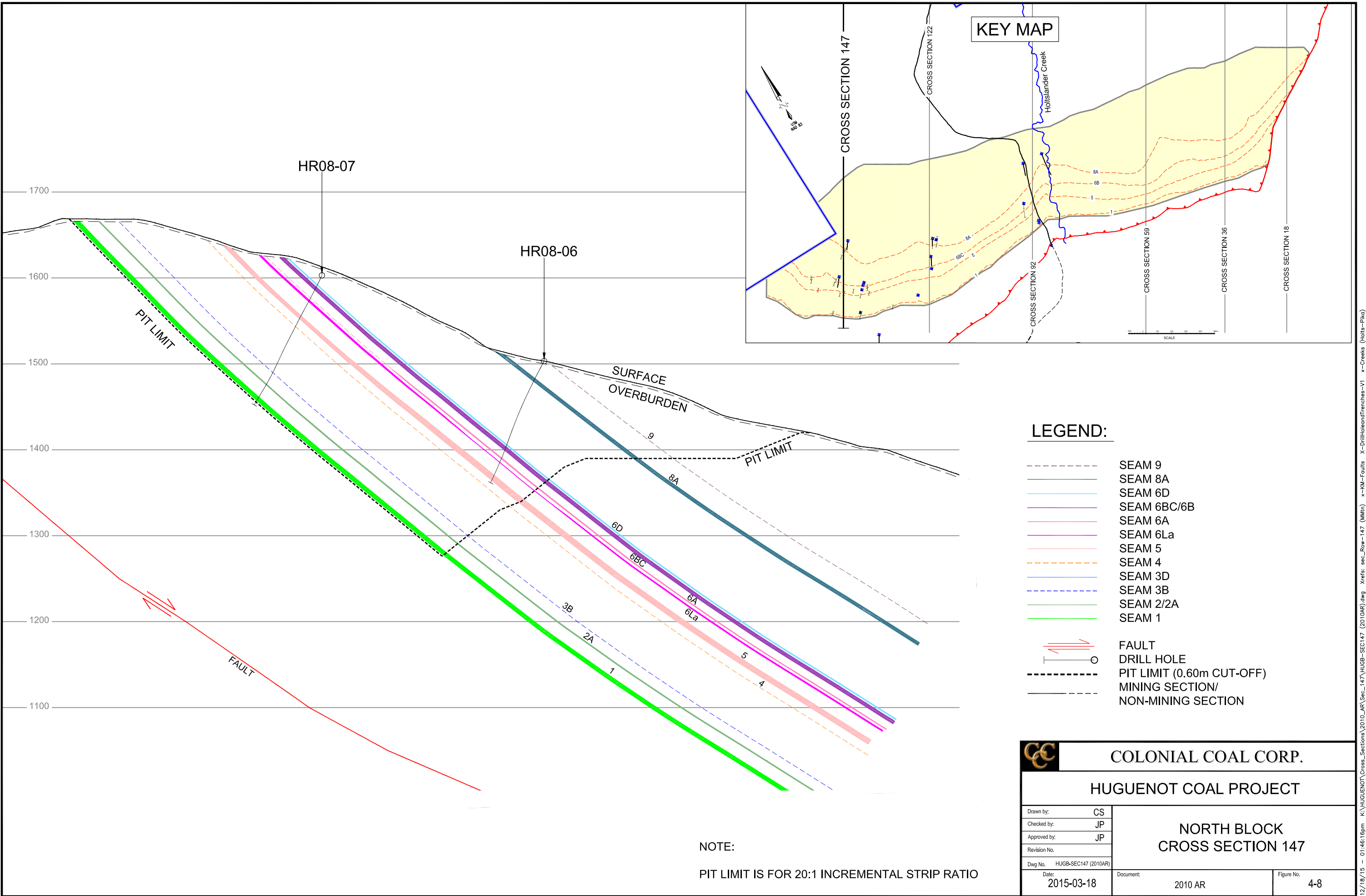
**LEGEND:**

- KSh SHAFTESBURY FORMATION
- KCm(b) BOULDER CREEK FORMATION
- KCm(h) HULCROSS FORMATION
- KCm(g) GATES FORMATION
- KMb MOOSEBAR FORMATION
- KGt GETHING FORMATION
- KCd CADOMIN FORMATION
- JKMn MINNES GROUP
- BD7914 DRILL HOLE
- ↓ BASELINE LOCATION
- ▲— THRUST FAULT
- BEDDING
- 2.77— TRUE THICKNESS OF COAL SEAM OR INDIVIDUAL COAL SPLIT



NOTE:  
 THE LOCATIONS OF THE CROSS-SECTIONS ARE SHOWN ON FIGURE 8.1  
 TAKEN FROM DENISON (1979b)

 <b>COLONIAL COAL CORP.</b>	
<b>HUGUENOT COAL PROJECT</b>	
Drawn by: CS Checked by: JP Approved by: JP Revision No.: Dwg No.: HUGB-T24200-T27600 (2010AR)	<b>STRUCTURAL          CROSS-SECTIONS          T24200 - T27600</b>
Date: 2015-06-23	Document: 2010 AR Figure No. 4-7




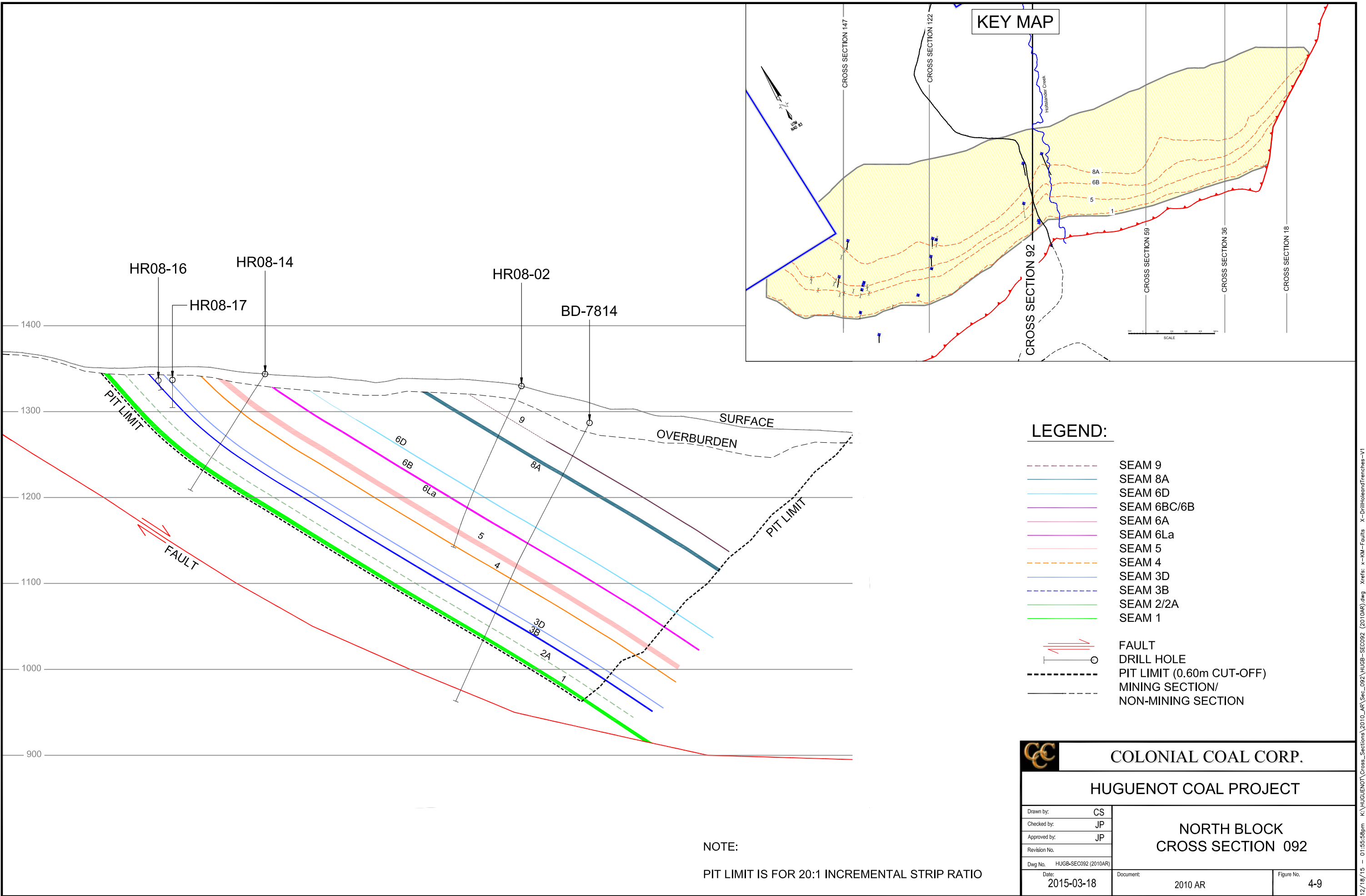
**KEY MAP**

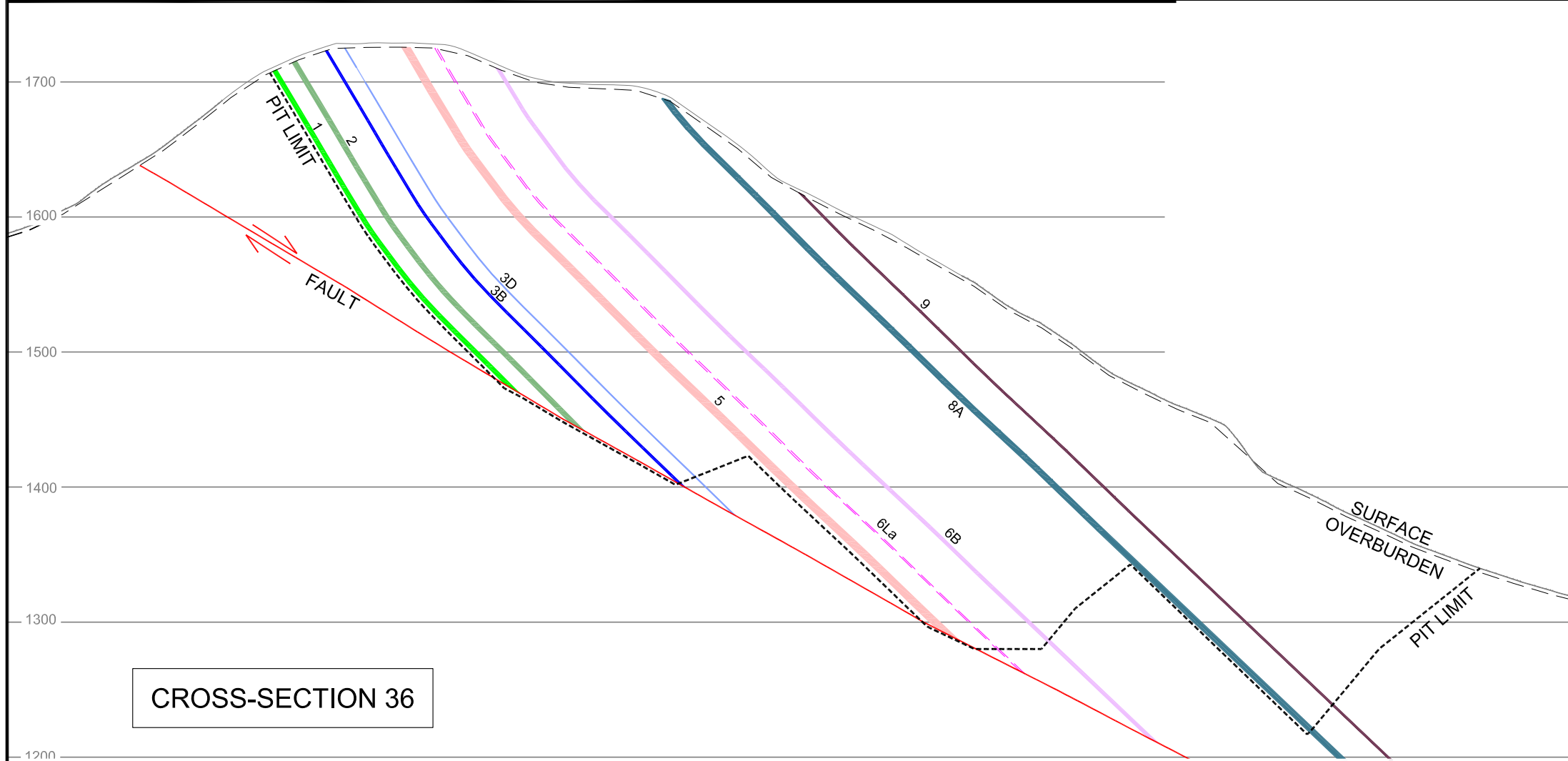
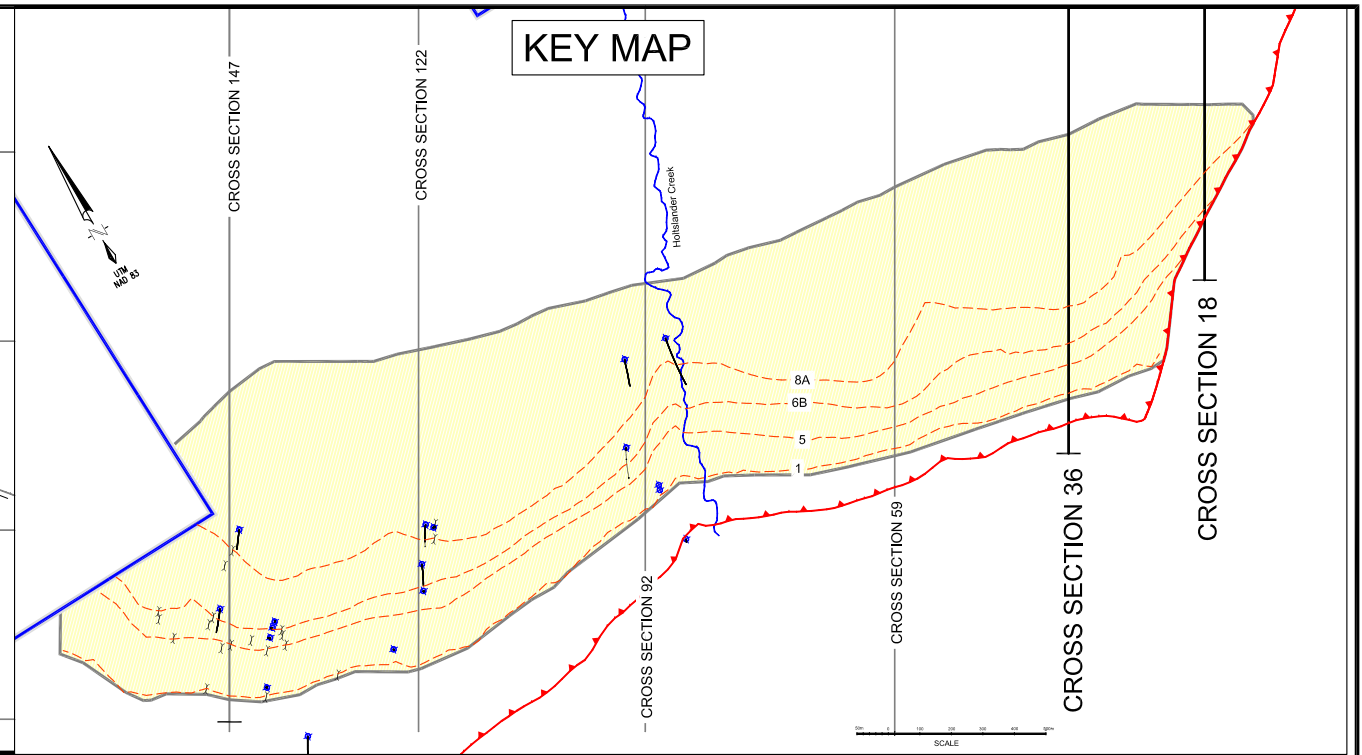
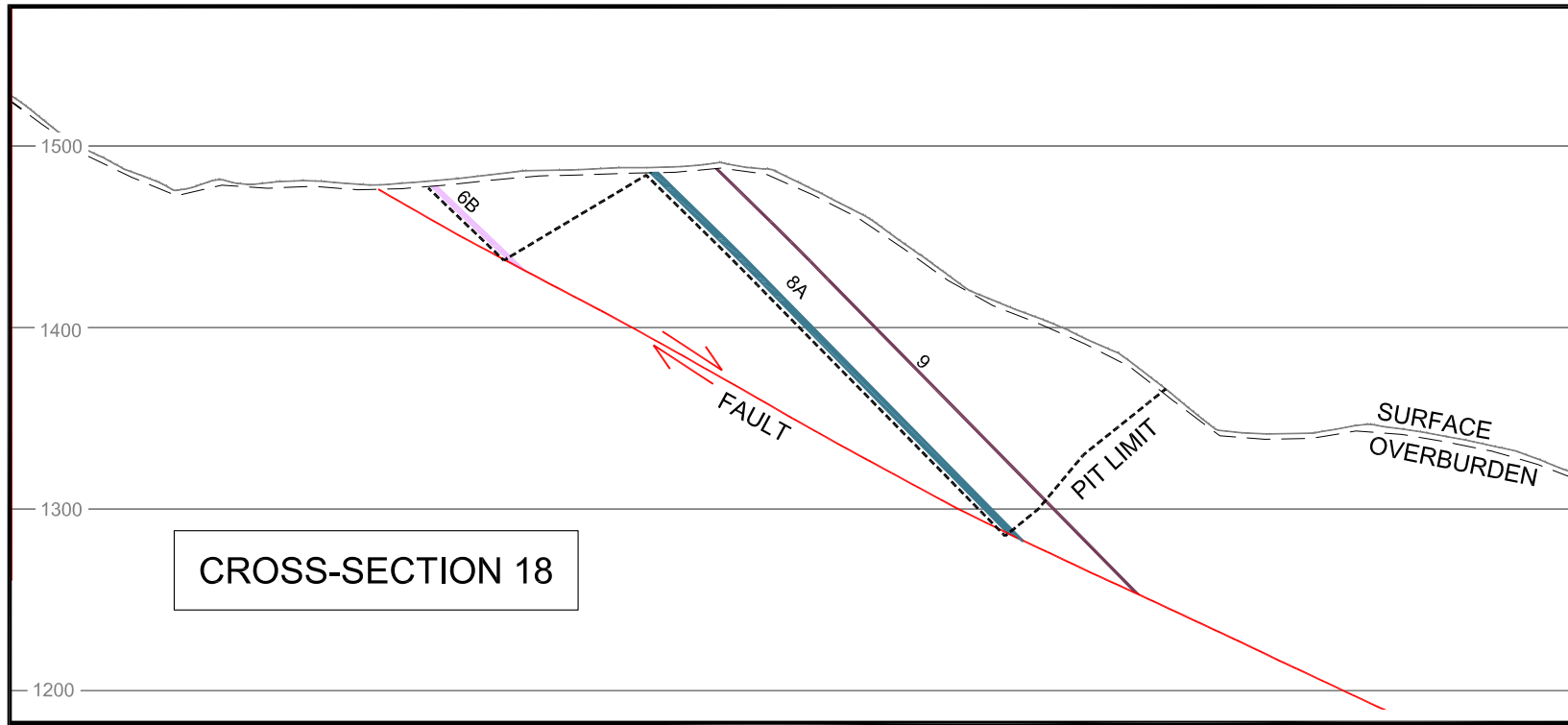
**LEGEND:**

- SEAM 9
- SEAM 8A
- SEAM 6D
- SEAM 6BC/6B
- SEAM 6A
- SEAM 6La
- SEAM 5
- SEAM 4
- SEAM 3D
- SEAM 3B
- SEAM 2/2A
- SEAM 1
- FAULT
- DRILL HOLE
- PIT LIMIT (0.60m CUT-OFF)
- MINING SECTION/  
--- NON-MINING SECTION

**NOTE:**  
PIT LIMIT IS FOR 20:1 INCREMENTAL STRIP RATIO

 <b>COLONIAL COAL CORP.</b>	
<b>HUGUENOT COAL PROJECT</b>	
<b>NORTH BLOCK CROSS SECTION 147</b>	
Drawn by: CS	<b>2010 AR</b>
Checked by: JP	
Approved by: JP	
Revision No.	<b>4-8</b>
Dwg No. HUGB-SEC147 (2010AR)	
Date: 2015-03-18	Document: 2010 AR
	Figure No.






**LEGEND:**

- SEAM 9
- SEAM 8A
- SEAM 6D
- SEAM 6BC/6B
- SEAM 6A
- SEAM 6La
- SEAM 5
- SEAM 4
- SEAM 3D
- SEAM 3B
- SEAM 2/2A
- SEAM 1
- FAULT
- DRILL HOLE
- - - PIT LIMIT (0.60m CUT-OFF)
- - - MINING SECTION/  
NON-MINING SECTION

**NOTE:**  
PIT LIMIT IS FOR 20:1 INCREMENTAL STRIP RATIO

		<b>COLONIAL COAL CORP.</b>	
<b>HUGUENOT COAL PROJECT</b>		<b>NORTH BLOCK CROSS SECTIONS 018 &amp; 036</b>	
Drawn by:	CS	<b>Figure No.</b> 4-10	
Checked by:	JP		
Approved by:	JP		
Revision No.			
Dwg No.	HUGB-SEC18_36 (2010AR)	Date:	2015-03-18
		Document:	2010 AR



**SECTION 5 COAL QUALITY**

No coal quality data were acquired during this reporting period that required adjustment to coal quality interpretations or discussions presented for the 2008 exploration program. A summary of coal quality for the North Block for both raw and clean coal is presented below while detailed coal quality characteristics and carbonization data are presented in Perry & Morris (2010) and Perry (2010).

**5.1 NORTH BLOCK**

**5.1.1 Raw Coal Quality**

The overall, in-situ (or raw) coal quality data for the major seams and for some of the minor seams for which there are reliable data (essentially determined by core recovery) are presented in Table 5-1. Historic, 1978 and 1979, data were obtained from higher recovery cores from diamond drilling while the 2008 data were obtained from simulated head raw samples, compiled as splits from each of the main, bulk sampled (as 6" core) coal seams.

Residual moisture values are typical of un-oxidized coals found within the Gates Formation of the North-East Coal Block; that is, usually less than 1%. Volatile matter on a Dry-Mineral Matter-Free (dmmf) basis ranges from 24.66% to 26.54%. This would normally be taken to indicate that all the coal seams fall within the medium volatile bituminous classification. However, maximum reflectance values from coal petrography indicate that the seam series 6BCD and Seam 8A fall just within the high volatile A bituminous rank.

Table 5-1: North Block In-Situ Coal Quality Summary (air dried basis)

Seam	Data Point	RM %	Ash %	VM %	FC %	S %	Dmmf VM %	% Core Rec.
8A <sup>1</sup>	HB08-8-C	0.81	25.49	21.15	52.55	0.37	26.54	94.6
6D	HB08-6C-B	0.64	8.56	23.71	67.09	0.73	25.34	100
6BCD <sup>1</sup>	HB08-6C-B	0.71	27.86	20.07	51.36	0.51	25.59	94.0
6BC <sup>2</sup>	HB08-6C-B	0.69	16.93	22.83	59.55	0.45	26.36	93.0
6B	HB08-6C-B	0.66	11.08	23.83	64.43	0.47	26.12	100
6La	HB08-6A-A	0.66	27.16	19.10	53.09	0.33	24.05	91.1
5	HB08-5-B	0.48	14.29	22.31	62.91	0.34	25.07	97.3
4	BD 7906 <sup>3</sup>	0.62	7.60	22.72	69.06	0.56	24.09	85.0 <sup>4</sup>
3B	BD 7814	0.67	33.05 <sup>5</sup>	18.54	47.74	0.31	24.85	84.3
1	HB08-1-A	0.68	11.91	22.39	65.02	0.43	24.66	90.3

<sup>1</sup> includes internal rock bands omitted from resource estimates but expected to be included as part of run-of-mine material; <sup>2</sup> adjusted to remove rock band above 6C; <sup>3</sup> located in Middle Block; <sup>4</sup> coal loss; <sup>5</sup> approx. 28% if adjusted for core loss.

Huguenot coals are low to very low in sulphur; values range between 0.31% and 0.73%, although most are less than 0.6%. The variability exhibited in raw ash contents primarily reflects the thickness and continuity of in-seam rock partings. Although inherent ash (such as mineral matter) produces some variability, its effect is usually minor in comparison to the in-seam partings. Seam raw ash contents used to determine specific gravities for resource estimations were adjusted for core loss.

## 5.1.2 Clean Coal Quality

Current clean coal quality data for the major seams and for some of the minor seams for which there are reliable data (essentially determined by core recovery) are presented in Table 5-2. Again, dmmf volatile matter contents suggest that all the seams fall within the medium volatile bituminous rank. Clean coal FSI levels are good for Gates Formation coals. Concentration of sulphur from the unwashed raw coal into a washed clean coal is not evident. Phosphorus content is consistently low.

Table 5-2: North Block Clean Coal Quality Summary (dry basis)

Seam	Ash %	VM %	FC %	S %	FSI	% P (in coal)	Dmmf VM %	Theoretical Yield %	% Core Rec.
8A <sup>1</sup>	7.85	26.23	65.92	0.44	6.5	0.036	27.85	66.92	94.6
6BCD <sup>1</sup>	6.85	26.05	67.11	0.57	6.5	0.045	27.39	66.62	94.0
6La	9.11	22.92	67.97	0.39	6	0.070	24.50	62.94	91.1
5	8.04	23.74	68.22	0.36	6	0.036	25.19	85.47	97.3
3B	8.01	23.98	67.06	0.49	8	0.026	25.68	62.30	84.3
1	7.70	23.76	68.54	0.4	6.5	0.035	25.13	92.85	90.3

Notes: Data points used are the same as those listed in Table 5-1; <sup>1</sup> includes internal rock bands omitted from resource estimates but expected to be included as part of run-of-mine material.

In-seam yield values (i.e., with no out-of-seam dilution) obtained from cleaning to approximately 8% ash, are good to excellent. Yields can be expected to vary somewhat across the deposit due to variations in rock band thickness, the number of coal plies and rock bands included in the mining sections and core recoveries.



## SECTION 6 RESOURCE ESTIMATES

No new data were acquired during this reporting period that would require re-estimation or re-classification of coal resources. A summary of coal resources estimated for the Huguenot Project is presented below while detailed discussion of resource estimation methodology is presented in Perry & Morris (2010) and Perry (2010).

### 6.1 NORTH BLOCK

#### 6.1.1 Introduction

Coal resource estimations for the North Block of the Huguenot property were carried out by Moose Mountain Technical Services (MMTS). Only areas considered to be potentially surface mineable were targeted for evaluation. Coal that might be mined using underground methods was not addressed.

The current geological interpretation of the North Block was developed by geologists employed by Colonial. Geological modelling was completed by MMTS using Colonial's geology. MMTS conducted data validation, reviewed the geological interpretation, plus the formatting and treatment of data to support model development. In addition, MMTS constructed the 3D resource model and carried out resource estimation and resource classification.

The North Block resource estimates were completed in accordance with the procedures and criteria of GSC Paper 88-21 as required by NI 43-101. The total in-situ coal resource estimates inside a 20:1 incremental strip ratio pit for the North Block are:

- using a 0.6 m minimum thickness: 45.2 million tonnes (Mt) of Measured and Indicated (Measured = 31.3 Mt; Indicated = 13.9 Mt), plus 10.3 Mt of Inferred
- using a 1.0 m minimum thickness: - 36.7 Mt of Measured and Indicated (Measured = 26.4 Mt; Indicated = 10.3 Mt), plus 9.2 Mt of Inferred.

The overall strip ratio is 12.0:1 (BCM waste: tonnes coal) for the 0.6 m minimum thickness model, and 12.86:1 (BCM waste: tonnes coal) for the 1.0 m minimum thickness model. Metallurgical coal makes up approximately 99% of the stated resources.

Summaries of the overall resource estimates for both the 0.6 m and 1.0 m minimum, mineable, seam thickness models are presented in Table 6-1 while resources by seam are presented in Table 6-2.





Table 6-1: Huguenot Overall Resource Estimates

Resource Category	Model 1: 0.6 m Cut-off			Model 2: 1.0 m Cut-off		
	Total (Mt)	Metallurgical (Mt)	Oxidized (Mt)	Total (Mt)	Metallurgical (Mt)	Oxidized (Mt)
Measured	31.3	31.0	0.3	26.4	26.0	0.4
Indicated	13.9	13.9	0.0	10.3	10.3	0.0
Total (Meas. + Ind.)	45.2	44.9	0.3	36.7	36.3	0.4
Inferred	10.3	10.2	0.1	9.2	9.2	0.0

Table 6-2: Huguenot Resource Estimates by Seam

Seam	Model 1: 0.6 m Cut-off				Model 2: 1.0 m Cut-off			
	Measured	Indicated	Total (Meas. + Ind.)	Inferred	Measured	Indicated	Total (Meas. + Ind.)	Inferred
9	200	500	700	600	-	300	300	500
8A	3,400	1,800	5,200	1,700	2,900	1,000	3,900	1,100
6D	700	100	800	-	-	-	-	-
6BC	2,800	600	3,400	-	2,800	300	3,100	-
6B	1,200	1,300	2,500	1,200	1,100	1,100	2,200	1,200
6A	200	-	200	-	-	-	-	-
6La	2,400	1,000	3,400	700	2,300	800	3,100	600
5	10,000	3,900	13,900	3,000	9,600	3,100	12,700	3,000
4	700	200	900	-	-	-	-	-
3D	400	300	700	300	-	-	-	-
3B	1,300	800	2,100	600	500	600	1,100	600
2A	600	1,200	1,800	1,200	-	1,200	1,200	1,200
1	7,400	2,200	9,600	1,000	7,200	1,900	9,100	1,000
<b>Total:</b>	<b>31,300</b>	<b>13,900</b>	<b>45,200</b>	<b>10,300</b>	<b>26,400</b>	<b>10,300</b>	<b>36,700</b>	<b>9,200</b>

**6.2 MIDDLE AND SOUTH BLOCKS**

Overall historical coal resources for the Gates Formation, over the entire Huguenot property, using minimum mining thickness cut-offs, were: 0.5 m = 179 Mt; 1.0 m = 159 Mt; 2.0 m = 134 Mt; and, 3.0 m = 111 Mt (Denison, 1979b).

Of these totals, the resources allocated to the Middle and South Blocks were:

Middle Block: >0.5 m = 71 Mt; >1.0 m = 59 Mt; >2.0 m = 58 Mt; and, >3.0 m = 52 Mt.

South Block: >0.5 m = 52 Mt; >1.0 m = 52 Mt; >2.0 m = 44 Mt; and, >3.0 m = 26 Mt.

Based upon the foregoing, the overall coal resource potential of the Gates Formation for the combined Middle and South Blocks is estimated to range from approximately 84 to 113 Mt. These are order of magnitude estimates and do not meet the criteria for a NI 43-101 compliant Mineral Resource. It is uncertain if further exploration will result in any of this tonnage being delineated as a mineral resource.



## SECTION 7 INTERPRETATION AND CONCLUSIONS

During the reporting period no data were acquired to warrant re-interpretation of the geology or re-assessment of the coal quality and coal resources of the North Block, or of the Huguenot Project as a whole.

Detailed description of the geological setting, coal seams, coal quality, carbonization characteristics, and resource estimates are all still current from the previous exploration campaign detailed in the assessment report filed for 2008-2010 entitled "Assessment Report, Huguenot Coal Project 2008 Exploration Program (covering the period May 2008 to June 2010)".

The interpretation and conclusions contained within that report are still considered current and are re-stated below.

### 7.1 INTERPRETATION

*The North Block of the Huguenot property covers coal measures belonging to the Gething and Gates Formations. The presence of potentially economic coal seams within the Gates Formation is demonstrated by substantial amounts of drilling, trenching, and geological mapping, sampling testing from both historical and recent (2008) exploration. Potentially important coal seams within the Gething Formation have also been demonstrated, although these coal seams have seen significantly less work than those belonging to the Gates Formation.*

*Verification of the structural geology, coal development, and assurance of existence of the Gates coal measures within the North Block of the Huguenot property were established by site visits, data reviews and subsequent verification of the geological model and resource estimations.*

*Gates and Gething Formation coal measures covered by the property's Middle and South Blocks have been the focus of historical, but not recent work. Exploration has included substantial geological mapping and trenching, wide-spaced drilling, coal sampling and testing. While definition of the geology of the Gates coal measures within these Blocks is not at the same level of advancement as the North Block, appropriate verification of the historical interpretations and resource estimations has been established by site visits and data reviews.*

### 7.2 CONCLUSIONS

*The primary purpose of the 2008 exploration program on the North Block of the Huguenot project was to determine the presence, depth, and thickness of coal seams in the Gates Formation, to determine the coal quality parameters, and to define potentially surface mineable coking coal resources according to N.I. 43-101 classification standards*

*Based upon Geological Survey of Canada criteria, the Geology Type for the North Block is classified as Moderate. Coal resources were estimated at three levels-of-assurance, namely: Measured (located up to 450 metres from the closest data point); Indicated (located 450 to 900 metres from the nearest data point); and, Inferred (located 900 to 2,400 metres from the closest measurement (although this distance limit was not reached)). The data density supports the resource tonnages estimated to date and the coal quality assigned to them. The results of the exploration and their interpretation have been consistent over time, lending confidence to the conclusions that have been reached. The North Block deposit remains open to infill drilling, with the likelihood of up-grading the level-of-assurance of the coal resources.*



Future exploration planned for the North Block relates mostly to the up-grading of areas of Inferred resource classification into the Measured and Indicated categories, drilling down-dip of the existing drillholes to confirm structural continuity, acquisition of additional, fresh, samples to perform rheology and carbonization tests (which will include minor coal seams in a new simulated product coal). This work will substantially reduce, if not remove, any levels of uncertainty that might currently exist

The North Block resource estimates are in accordance with the procedures and criteria of GSC Paper 88-21 as required by N.I. 43-101. Overall in situ resource estimates are:

- Using a 0.60 m thickness cut-off: 45.2 Mt of Measured and Indicated (Measured = 31.3 Mt; Indicated = 13.9 Mt), plus 10.3 Mt of Inferred.
- Using a 1.0 m thickness cut-off: 36.9 Mt of Measured and Indicated (Measured = 26.4 Mt; Indicated = 10.5 Mt), plus 9.3 Mt of Inferred.

These resources are considered to be of immediate interest.

Metallurgical coal resources are estimated as:

- 44.9 Mt of Measured and Indicated, plus 10.2 Mt of Inferred (using a 0.60 m thickness cut-off).
- 36.3 Mt of Measured and Indicated, plus 9.2 Mt of Inferred (using a 1.0 m thickness cut-off).

Drilling, trenching and detailed mapping has outlined areas within the property where coal resources present an opportunity for high tonnage, low to moderate strip ratio surface mining. Underground mining potential exists below and alongside potentially surface mineable resources. Other than roads and access trails, there are no major infrastructure elements within or around the project area that can be used in mine development.

Using ASTM criteria, Gates Formation coals on the Huguenot property are classified as medium volatile bituminous, although rank determinations using mean maximum reflectance values range from 1.05 (Seam 8A) to 1.17 (Seams 5 and 6La). Reflectance values for the stratigraphically lower coal seams (i.e., Seam 6La and below), confirm their classification as medium volatile bituminous rank. However, the values obtained for seams stratigraphically higher than 6La fall just below the medium volatile bituminous - high volatile bituminous boundary, and these coals should be classified as high volatile bituminous A rank. When combined into a simulated product, the coals return overall mean maximum reflectance values that correspond to a medium volatile bituminous rank. Analysis of a washed, simulated product reported (on a dry basis): ash = 8.10%, volatile content = 23.43%, fixed carbon = 68.47%, FSI = 6.5, and phosphorus = 0.047%. This clean composite has a low base: acid ratio of 0.078, as determined from the mineral composition of ash.

The coals are of metallurgical quality and would form a suitable coking coal product after beneficiation in a wash plant.

Based upon washability and coal quality data, process simulation (using Limn process simulation software) indicated that a product ash in the range 7.5% to 8.0% (air dry basis) is probably optimal.

Initial carbonization tests indicate that Huguenot coals can be expected to form a coking coal with favourable coking indices, low to very low sulphur, and low phosphorus contents. It remains for future work to supply fresh samples for carbonization in order to assess the coal's maximum coking potential. Such samples should incorporate any minor seams that may be considered mineable and represent other parts of the North Block.



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*The overall Gates Formation coal resource potential for the combined Middle and South Blocks of the property is estimated to range from approximately 84 Mt to 113 Mt, in-place and of immediate interest and of similar coal quality as that defined on the North Block.*

*Based upon the results of 2008 exploration program and the data available from historical exploration, it can be concluded that further work on the property is justified. Future work programs should:*

- conduct confirmation drilling south of Holtslander Creek to complete the definition of the geology, resources and coal quality across the entire length of the North Block and bring all North Block coal resources into Measured and Indicated resource categories*
- conduct additional bulk sampling to include all seams that could potentially be mined and provide “fresh” coal for rheological and carbonization tests*
- undertake a conceptual mining study to evaluate the mining potential of the North Block*
- conduct exploration throughout the Middle Block to bring coal resources and quality into, at least, the Indicated resource category*
- conduct additional exploration within the South Block in order to confirm Geology Type, and to bring coal resources and quality into, at least, the Inferred resource category*
- evaluate the resource potential of coal seams in the Gething Formation.*

*The programs conducted on the Middle and South Blocks will also include bulk sampling and testing, plus additional carbonization tests on a simulated “product,” to characterize the coking potential of the coal across the property as a whole.*



## SECTION 8 EXPENDITURES

The expenditures for the 2010 Huguenot field program are summarized in Table 8-1 below.

Table 8-1: Expenditures for the 2010 Huguenot Field Program

<b>FIELD</b>	
Trails & Mechanized Trenching	\$ 186,200
Camp (Room & Board)	\$ 27,050
Personnel (Colonial)	\$ 5,100
First Aid	\$ 7,000
Truck Rental	\$ 900
Helicopter	\$ 5,250
Equipment Rental	\$ 3,000
Supplies	\$ 1,150
Surveying & Base Maps	\$ 13,600
Travel & Accommodation	\$ 6,600
Fuel	\$ 16,500
Communications	\$ 800
Environmental & Wildlife	\$ 38,000
Permitting	\$ 18,850
Miscellaneous	\$ 1,350
<b>Sub-Total:</b>	<b>\$ 331,350</b>
<b>LABORATORY</b>	
Coal Quality	\$ 2,073
Water Quality	\$ 1,610
<b>Sub-Total:</b>	<b>\$ 3,683</b>
<b>OFFICE</b>	
Geology (Staff & Consulting(Field & Office))	\$ 167,790
Environmental, Archaeology, ARD	\$ 23,100
CAD & Drafting	\$ 35,250
<b>Sub-Total:</b>	<b>\$ 226,140</b>
<b>Total:</b>	<b>\$ 561,173</b>



## SECTION 9 REFERENCES

Denison Coal Limited (1977): 1976 Exploration Report, January 1977. B.C. Min. of Mines Geol. Branch Assessment Report No. 460.

Denison Mines Limited (1979a): Belcourt Project, Geological Report, March 1979. B.C. Min. of Mines Geol. Branch Assessment Report No. 463.

Denison Mines Limited (1979b): Belcourt Project, Geological Report, December 1979. B.C. Min. of Mines Geol. Branch Assessment Report No. 465.

Denison Mines Limited (1981): Belcourt Joint Venture, Geological Report, July 1981. B.C. Min. of Mines Geol. Branch Assessment Report No. 466.

Lamberson M.N., Bustin, R.M. (1989): Petrology, Sedimentology and Geochemistry of Gates Formation Coals, Northeastern B.C., Preliminary Results; in Geological Fieldwork 1988; B.C. Ministry of Energy, Mines and Petroleum Resources, Paper 1989-1, pp 571-576.

Perry, J. H. and Morris, R. J. (2010): Huguenot Coal Project Technical Report, Liard Mining Division, British Columbia, Colonial Coal Corporation.

Perry, J. H. (2010): Assessment Report, Huguenot Coal Project 2008 Exploration Program (covering the period May 2008 to June 2010), Colonial Coal Corp.



## SECTION 10 STATEMENT OF QUALIFICATION: JOHN H. PERRY, P.GEO

I, John H. Perry, P.Geo., do hereby certify that:

- I am Chief Operating Officer for Colonial Coal International Corp., with offices at 200-595 Howe Street, Vancouver, B.C., V6C 2T5
- I hold the following academic qualifications:
  - B. Sc. (Hons) Geology, University of Exeter, UK – 1972
  - Post-Graduate studies in Geology, University of Calgary, Alberta – 1972-1976
- I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia, (Member #19598) and I am a fellow of the Geological Society, London, UK.
- I have practiced my profession for over 39 years on coal, metallic and industrial mineral and gemstone projects within Canada and internationally. My experience with coal projects is extensive; it ranges from early exploration through resource/reserve delineation and includes multiple feasibility-level studies and work conducted within a producing coal mine. Coal projects have been undertaken throughout western Canada and internationally; this includes many projects located in northeast B.C.
- I have overseen the preparation of this Coal Assessment Report entitled: “Huguenot Coal Project: 2010 Exploration Program (covering the period July 2010 to May 2011)”. Effective Date: September, 2011.

Dated: December 20, 2015

(signed) “John H. Perry”

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JOHN H. PERRY, P.Geo.