#894

ASSESSMENT REPORT FOR THE HUDSON'S HOPE COAL PROPERTY
PEACE RIVER DISTRICT

NTS Sheets: 094A04, 094A05, 093P13, 093O16

Licences: 417329 through 417403 inclusive
Application: 416867

Located at:	Lat. 56.19°	Long. 121.74°
	UTM: 6227941 N	578195 E (NAD 83, Zone 10)

Licences Owned and Operated By: Kennecott Canada Exploration, Inc.
354 – 200 Granville Street
Vancouver, British Columbia
V6C 1S4

Work Conducted Between July, 2006 and October, 2006

Authors: Melanie Kelman
Steve Hovis

March 12, 2007

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BRITISH COLUMBIA

Ministry of Energy & Mines
Energy & Minerals Division
Geological Survey Branch

ASSESSMENT REPORT
TITLE PAGE AND SUMMARY

TITLE OF REPORT [type of survey(s)]: Assessment Report for the Hudson's Hope Coal Property, Peace River District
TOTAL COST: $575,200

AUTHOR(S): Melanie Kelman, Steve Hovis
SIGNATURE(S): Melanie Kelman

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): CX-9-28
YEAR OF WORK: 2006

STATEMENT OF WORK - CASH PAYMENT EVENT NUMBER(S)/DATE(S):

PROPERTY NAME: Hudson's Hope
CLAIM NAME(S) (on which work was done): Hudson's Hope licence 417395

COMMODITIES SOUGHT: coal

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

MINING DIVISION: Liard
NTS: 94A04, 94A05, 93P13, 93O16

LATITUDE 56 ° 8 ' 2.8 " LONGITUDE 121 ° 40 ' 57.3 " (at centre of work)

OWNER(S)
1) Kennecott Canada Exploration, Inc.
2)

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354-200 Granville Street
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OPERATOR(S) [who paid for the work]
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PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
coal, sandstone, siltstone, mudstone, shale, Cretaceous, Fort St. John Group, Bullhead Group, Gething Formation, flat-lying bedding, horizontal bedding

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:

(OVER)

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other	down-hole geophysical surveys	417395	$2200
Airborne			
GEOCHEMICAL (number of samples analysed for ...)			
Soil			
Silt			
Rock	coal core geochemistry (12 samples)	417395	$8000
Other			
DRILLING (total metres; number of holes, size)			
Core	1 hole, 469 m	417395	$275,000
Non-core			
RELATED TECHNICAL			
Sampling/assaying	core logging	417395	$10,000
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY/PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other	reclamation ($230,000)/off-property costs $50,000		$280,000
		TOTAL COST	$575,200

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QUALIFICATIONS AND WORK EXPERIENCE OF AUTHORS

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I am a geologist employed by Kennecott Canada Exploration, Inc. since May 2006. I received a Bachelor of Science in Geology from the University of Saskatchewan in 1994, a Master of Science in Geology from Oregon State University in 1998, and a Doctorate in Geology from the University of British Columbia in 2005. I have worked as a geologist since 2005.

I was directly involved in metallurgical coal exploration operations at the Hudson's Hope property. All details of the work performed are accurately described in this report, and I am not aware of any relevant omissions.

Dated at Vancouver, British Columbia this day of Mar. 12, 2007.

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I am a Project Geologist employed by Kennecott Exploration Inc since June 2002. I received a Bachelor of Science Degree in Geology from the University of Idaho in 1996 and a Master of Science Degree in Geology from the University of Minnesota in 2001. I have practiced my profession since 1997.

I was directly involved in the planning and execution of the exploration for metallurgical coal at the Hudson's Hope property. All details of the work performed are accurately described in this report, and I am not aware of any relevant omissions.

Dated at Salt Lake City, Utah this day of Mar. 12, 2007.

SECTION I: INTRODUCTION

Introduction

This report presents the results of coal exploration activities conducted during 2006 on the Hudson's Hope property in northeastern British Columbia. The property lies within the Peace River coalfield (PRC), which extends from the Alberta-B.C. provincial border northwest to the headwaters of Halfway River north of the Williston Reservoir on the Peace River (Figure 1). It contains coal seams with the potential to yield low-volatile hard coking coal (metallurgical coal), produced when Lower Cretaceous coal-bearing strata were buried more deeply, allowing coal maturation to continue.

Objectives

Work on the Hudson's Hope property was undertaken with the intent to identify and describe any coal seams and collect samples for chemical analysis; this information was to be used to define the character of coal on the property as a preliminary step in outlining an underground-mineable resource of low-volatile coking coal, if such a resource were present. The plan of work consisted of historic data compilation and diamond core drilling.

Location and Access

The project area is located in the Peace River district of northern British Columbia (Figure 1; Plate 1; Plate 2). Most of KCEI's coal licences in this area lie on 1:50,000 NTS map sheet 094A04. A portion of the northernmost row of licences lies on 094A05, and portions of licence application 416867 lie on 093P13 and 093O16. Access to these coal licence blocks can be gained via Highway 29, which runs along the southern border of the property, and the Farrell Creek Road, which extends off Highway 29 and runs along the western border of the property (Plate 1). Six preexisting gas wells and two coalbed methane wells lie on these licence blocks.

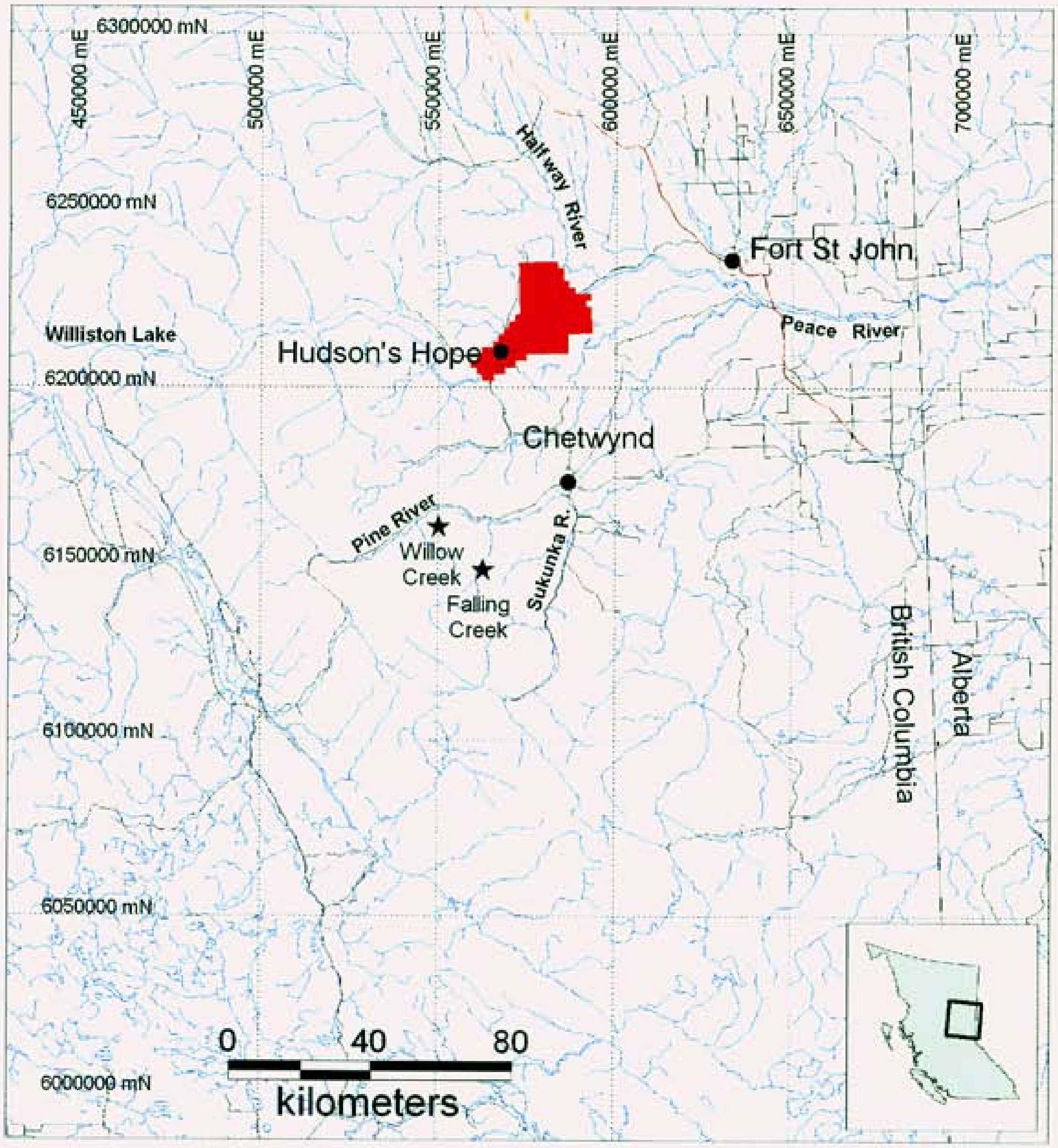

Figure 1. Location of Hudson's Hope property and relevant features within northeastern British Columbia. Property outlines reflect the status of active licences and applications at the time of drilling.

The site where all field work took place, drill site 06DDHH02, is on licence block 417395, on previously cleared land that is part of a private ranch property (Plate 1; Plate 3). This lies within the Farrell Creek watershed. The drill site is accessed via Highway

29: the turnoff onto private property is 21.9 km east of Hudson's Hope, and the unpaved road to the site proceeds a further 1.1 km on private land.

Geographic Setting

The topography of the Peace River district varies from the Rocky Mountains in the west to the Interior Plains in the east. The Peace River or its tributaries drain most of the region, with tributaries of the Fort Nelson River draining the northern portions.

The Hudson's Hope licences are in the Rocky Mountain Foothills (Figure 2), which are characterized by moderately steep mountains, rolling hills, and discontinuous high plateaus. Elevation in the licence block area ranges from approximately 580-670 m, though elevation in the rest of the Foothills may be up to 2000 m.

Mountain ridges in the Rocky Mountain Foothills are typically north-northwest trending with gentle eastern slopes and steeper western slopes. Well-incised creeks are common and there are numerous scattered small lakes and wetlands, particularly in upland areas.

Coal Licence Numbers

Licences: 417329 through 417403 inclusive

Application: 416867

which are contained on the NTS map sheets 094A04, 094A05, 093P13, and 093O16

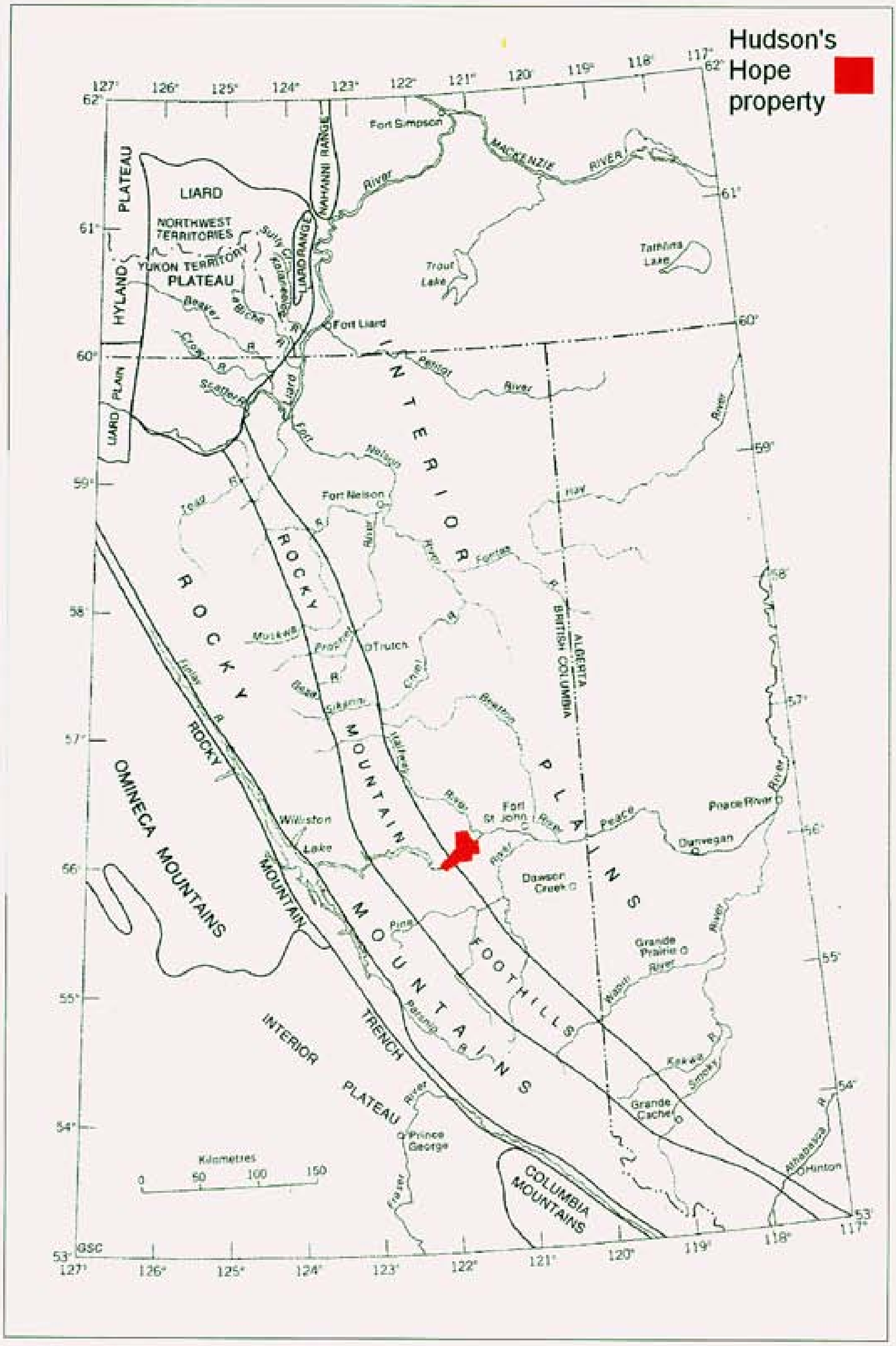

Figure 2. Physiographic belts of western Canada. Modified after Stott (1982).

Previous Work

Coal was first identified in the Peace River district by McKenzie in 1793. The first coal licences were granted in 1908 and several small mines operated on the Bri-Dowling property in the early 1900's, but the remoteness of the area hindered anything other than very small-scale mining until the 1940's. Further exploration work focused on mapping in the vicinity of recognized coal occurrences such as Carbon Creek (Matthews, 1947) and Pine River (McKechnie, 1955), and from 1946 to 1951, the Coal Division of the British Columbia Department of Lands and Forests conducted mapping, trenching, and diamond drilling in the Willow Creek, Noman Creek, and Falling Creek areas. Lack of infrastructure restricted mining to small operations, and less than 100,000 tonnes were extracted prior to 1980. The first comprehensive regional study was done by Stott (1974), who measured and correlated a series of sections extending from the town of Cadomin, Alberta to the Peace River canyon in British Columbia. Interest was renewed in the 1970's as coking coal markets strengthened and many oil companies, including Esso, Gulf Canada, Shell, and BP commenced exploration at this time (Andrews, 2004). Market conditions and possibly other factors contributed to a lack of exploration after 1983, until the rise in demand and prices for coking coal in recent years, with an explosion of interest since 2004 (Young, 2005).

There are two major coal-bearing formations in northeastern British Columbia, both of which crop out extensively in the Peace River coalfield. In the south, economic coal seams are contained in the Gates Formation, a sequence of nonmarine sandstones and coal. In the north, economic seams are contained in the Gething Formation, a sequence of nonmarine sediments and coal.

Mapping in the licence area has been limited due to the paucity of natural outcrops (Plate 2), however, rock exposures along the Peace River indicate that the local strata have relatively gentle dips. The Hudson's Hope licences cover areas where initial geologic data, including oil and gas well logs from the 1960's and 1970's, showed potential for relatively less deformed coal seams at depths between 400 and 700 meters. Coal at these depths would require extraction via underground mining methods. The initial drilling plan was to twin a nearby gas well (2197) because it had coal intersects that were potentially up to 10 m thick. However, it was not economically feasible to drill at that location, so the drill site was moved downhill approximately 2.7 km. This had the additional benefit of moving the hole lower in the stratigraphy, thus making it possible to intersect the coal without having to drill as deeply.

SECTION II: DETAILS OF COSTS INCURRED

Mining District: Peace River

Property Name: Hudson's Hope

NTS Sheets: 094A04, 094A05 (applications on 094B01, 93O16, and 093P13)

Licences Owned and Operated By: Kennecott Canada Exploration, Inc.
354 – 200 Granville Street
Vancouver, B.C.
V6C 1S4

Licence Numbers: 417329 through 417403 inclusive (and adjacent unnumbered applications) which are contained on the NTS map sheets 094A04, 094A05, 094B01, 93O16, and 093P13

Applications: 416867

Located At:	Lat. 56.19°	Long. 121.74°
	UTM: 6227941 N	578195 E (NAD 83, Zone 10)

Dates of Work: Between July 2006 and September 2006**CATEGORY OF WORK**	**DIMENSIONS**	**COST**
Geological Mapping		
reconnaissance		$0
Geophysical		
downhole surveys	469 meters	$2200
Geochemistry	12 Samples Analyzed	$8,000
Surveys	none	
Drilling		
core (diamond)	469 meters	$275,000
Drilling Contractors		
core (diamond)	Boart Longyear Inc.	
Where Core is Stored:	Kennecott field office in Chetwynd, BC	
Logging	469 meters of drill core logged	$10,000
Reclamation Work	0.15 ha	$230,000
On-Property Costs		$525,200
Off-Property Costs		$50,000
Total Expenditures		$575,200

Table 1. Costs incurred for the Hudson's Hope project.

SECTION III: DRILLING AND DRILLING RECORDS

Introduction

Kennecott Exploration commenced operations at the Hudson's Hope drill site in July 2006. The site was located in an unused open area between two cultivated fields on a privately-owned ranch (Plate 3). The first drill hole, 06DDHH01, was abandoned in the overburden. The rig was shifted and drilling resumed. Many technical problems were encountered and progress was slow, however, drill hole 06DDHH02 was completed at 469 m on Sept. 10. Locations of the holes and areas of land used for the drill pad and sumps, and total area affected, are shown in Table 2.

	NAD83 Easting (Zone 10)	**NAD83 Northing (Zone 10)**
Location of drill hole 06DDHH01	1 m from 06DDHH02	1 m from 06DDHH02
Location of drill hole 06DDHH02	581877	6221787
	Area (m^2)	
Area used for drill, sumps, parking	4000	
Area affected by drilling effluent (runoff)	4000	
Total area disturbed by 06DDHH01 and 06DDHH02	**8000**	
Area reseeded after completion of drilling	4000	

Table 2. Locations of drill holes and areas of land affected by drilling activities.

Drilling Equipment and Procedures

All drilling was done with an LY-50 diamond drill and personnel provided by Boart Longyear Inc. Each crew consisted of a driller and a driller helper. Drilling was carried out 24 hours per day, on two shifts. A foreman was intermittently present on the site and was available at all times. During drilling of intervals likely to yield coal, geologists also manned the rig 24 hours a day, in two shifts, in order to supervise coal sampling.

Construction on the drill site commenced on Jul. 19, 2006. Treated 12 x 12" wooden beams were used to create a raised platform on which the drill rested. A sump and a flare pit were dug adjacent to the drill. Due to the possibility of encountering gas, a blow-out protector and gate valve were installed. Due to the unavailability of water at the site, water was brought by truck by Durango, initially from Farrell Creek, then from the Peace River. Water was at first permitted to drain into the sump or to overflow into a low area adjacent to the drill pad and evaporate. However, after the drill hole began to produce large quantities of saline artesian water, water was no longer allowed to evaporate on site but was removed several times daily by Durango and disposed of at municipal sites. The drill deck was monitored constantly for potentially hazardous gases, and drillers and helpers also wore portable gas monitors.

Drilling of the first hole, 06DDHH01, commenced on July 22. The hole was lost on August 2 due to caving in the overburden. The drill was shifted approximately one meter prior to recommencement of drilling.

The second hole, 06DDHH02, collared on Aug. 2; 70 m of overburden were penetrated and casing was inserted down to bedrock and cemented in place. Drill hole parameters are listed in Table 3.

	*06DDHH01	06DDHH02
NAD83 Easting (Zone 10)	581877	581877
NAD83 Northing (Zone 10)	6221787	6221787
Latitude Decimal Degrees	56.13411°	56.13411°
Longitude Decimal Degrees	121.68258°	121.68258°
Latitude Deg Min Sec	56° 08' 02.8"	56° 08' 02.8"
Longitude Deg Min Sec	121° 40' 57.3"	121° 40' 57.3"
Elevation	502 m	502 m
Collar Dip	-90	-90
Collar Azimuth	0	0
Total Depth	86 m	469 m
Date Commenced	Jul. 21, 2006	Aug. 3, 2006
Date Completed	Aug. 2, 2006	Sept. 10, 2006
Hole Diameter	96 mm (HQ)	96 mm (HQ)
Cored Intervals	all	all
Depth to Bedrock	70 m	69
Depth of Casing Left in Hole	72 m	70

*06DDHH01 is ~1 m from 06DDHH02, so identical coordinates are shown for both

Table 3. Drill hole parameters for 06DDHH01 and 06DDHH02.

The first geological formation encountered was the Moosebar Formation. The depth to the water table is unclear, but artesian water became problematic at approximately 320 m and was more or less continuous thereafter; it was determined to be salty at 429 m. The highest estimated rate of artesian flow occurred at 428 m and was approximately 75 L per minute. Methane was first encountered between 146 and 170 m (in the Moosebar Formation). Below this depth, methane was encountered repeatedly throughout the remainder of the hole (lower Moosebar Formation and Gething Formation), and dealing with this slowed drilling considerably. The highest methane gas level recorded at the site occurred at a depth of 290 m, and was 100% of the LEL (Lower Explosive Limit). This required evacuation of the drill site. However, most methane measurements were considerably lower. A single unverified encounter with a small amount of hydrogen sulphide (H_2S) occurred at 321 m in the Moosebar on Aug. 17; the driller reported a reading of 28 ppm. This was never repeated.

The hole terminated in the Gething Formation on Sept. 10. Final depth of the hole was 468.8 m. A summary lithological log is shown in Table 4.

From	To	Interval (m)	Formation
0	70	70	Overburden
70	182	112	Upper Moosebar Fm
182	338	156	Lower Moosebar Fm
338	423	85	Gething Fm
423.7	424.3	0.6	Coal
424.3	428.9	4.6	Gething Fm
428.9	429.4	0.5	Coal
429.4	434.5	5.1	Gething Fm
434.5	434.8	0.3	Coal
434.8	468.8	34	Gething Fm

Table 4. Summary lithological log for 06DDHH02.

The hole was cored in its entirety and logged lithologically and geophysically. Downhole logging was conducted on Sept. 11 and proceeded without incident.

Hole Abandonment and Drill Site Reclamation

Reclamation commenced on Sept. 12. Seventy meters of casing were left in the hole. A mud sample was tested at Norwest Labs. After testing confirmed that the mud met disposal standards, water, sawdust (used for water absorption), and waste mud were hauled away and disposed of at municipal sites. The sump and flare pit were filled in. The hole was grouted from bottom to top by Schlumberger on Sept. 12. The casing was cut off below ground level. Repairs were made to the fence and road and the site was reseeded with local vegetation in accordance with the landowner's wishes. The area reseeded was that covered by the drill pad, sump, flare pit, and parking area. A larger area affected by runoff consisted of forest, was minimally disturbed, and did not require revegetation. Reclamation was completed on Sept. 26.

Core and Coal Sampling and Storage

Overall core recovery rate was 95%. Coal core recovery rate is difficult to estimate due to the small thickness of seams but was probably similar to overall core recovery rate. The core is currently stored in Kennecott's Chetwynd, B.C. field office, except for coal samples sent for analysis. Coal was encountered in multiple thin (<52 cm) seams, stringers, and films. Details of coal stratigraphy are given in Section VI below.

In spite of the small coal thicknesses encountered, 12 samples were sent to Birtley Coal and Minerals Testing in Calgary, Alberta for analysis. Due to the fact that there was no initial plan to sample coal seams that thin, the samples were not handled according to the usual coal procedure: they were stored with other core in wooden boxes for several days. Later, when it was decided to send them to the lab, they were packaged in double layers of plastic, labeled appropriately, and stored in the refrigerator. They were bussed to Birtley Labs in plastic buckets. Results are discussed in Section VI.

Appendix I contains a list of coal samples collected. Appendix II comprises a summary of the chemical analyses. Appendix III includes quality control information for Birtley Coal and Minerals Testing.

SECTION IV: GEOLOGICAL WORK

Regional Stratigraphy

The Lower Cretaceous strata of the Rocky Mountain Foothills consist of a series of transgressive-regressive clastic wedges deposited in response to periodic uplift of the Canadian Cordillera (Smith et al., 1984): Triassic rocks are carbonates, Jurassic rocks are marine shales, and Cretaceous rocks are a combination of marine and non-marine sand and mud sequences. This material was derived from the rising Rocky Mountains to the west (Price and Mountjoy, 1970). The Hudson's Hope project focused on the Cretaceous rocks of the upper portion of the Bullhead Group and the lowermost Fort Saint John Group (Table 5). Relevant formations are detailed below, beginning with the oldest.

Minnes Group

The Upper Jurassic to Lower Cretaceous Minnes Group unconformably underlies the Bullhead Group and comprises 0-1800 meters of quartzose sandstone alternating with fine sandstone, mudstone, and minor carbonaceous sediments (Stott, 1973). It is stratigraphically equivalent to the Nikanassin Formation from adjacent areas of Alberta and further southeast.

Bullhead Group

The Bullhead Group consists of two formations in the Hudson's Hope region, the Cadomin Formation and the Gething Formation, of Upper Jurassic to Lower Cretaceous age. (Many sources report the age of the Bullhead Group as Lower Cretaceous only, but a few sources imply that group boundaries are time-transgressive [e.g. Ryan and Lane, 2002] and it is not clear what age these boundaries are in the Hudson's Hope region.)

Cadomin Formation

The Cadomin Formation comprises 0-230 m of massive conglomerate with chert and quartzite pebbles, and minor coarse sandstone, carbonaceous shale, and coal. The contact with the overlying Gething Formation is defined by an upward transition to finer sediments.

Upper Cretaceous		Dunvegan	fine- to coarse-grained sandstone; conglomerate; carbonaceous shale; coal
	Fort St. John	Cruiser	dark grey marine shale with sideritic concretions; minor sandstone
Lower Cretaceous		Goodrich	fine-grained, cross-bedded sandstone; shale; mudstone
		Hasler	silty dark grey marine shale with sideritic concretions; minor sandstone and pebble conglomerate; siltstone in lower part; basal pebble layer
		Boulder Creek	fine-grained, well-sorted sandstone; carbonaceous sandstone; massive conglomerate; siltstone; marine and nonmarine mudstone; minor coal
		Hulcross	dark grey marine shale and siltstone, with sideritic concretions
		Gates	fine-grained, well-sorted marine and nonmarine sandstones; carbonaceous sandstone and mudstone; coal; shale; minor conglomerate
		Moosebar	dark grey marine shale with sideritic concretions; siltstone; glauconitic sandstone; chert pebble conglomerate at base (Bluesky Member)
	Bullhead	Gething	fine- to coarse-grained, brown, calcareous, carbonaceous sandstone; coal; carbonaceous shale and conglomerate; siltstone
		Cadomin	massive conglomerate with chert and quartz pebbles; minor coarse-grained sandstone, carbonaceous shale, and coal
	regional erosional unconformity		
	Minnes		quartzose sandstone; fine-grained sandstone; silty shale; mudstone; minor carbonaceous sediments
Jurassic			

Table 5. Stratigraphic column for Upper Jurassic to Upper Cretaceous sediments of northeastern British Columbia. Modified after Stott (1982).

Gething Formation

The Gething Formation consists of a thick sequence of recessively weathered shale, siltstone, sandstone, and coal of Upper Jurassic to Lower Cretaceous age. It is underlain by conglomerates of the Cadomin Formation. The type section is located in the Peace River Canyon, is 550 m thick, and was described in detail by Gibson (1992), however, the greatest recorded preserved thickness is in the Carbon Creek area, where it is 1100 m thick (Legun, 2002). The Gething Formation thins eastward and southward and is less than 100 m thick at the Alberta border and only 7 m thick at the south end of the coalfield.

The Gething Formation appears to intertongue with the overlying Moosebar Formation. Lateral facies changes in its coal seams and their associated sedimentary rocks are the norm. This, coupled with the presence of complex structures, makes correlation across the Peace River coalfield, and even between closely spaced drill holes, difficult.

The Gething Formation is subdivided according to several different systems whose regional applicability is not always clear. Most commonly it is broken into a lower Gething Member and upper conglomeratic Bluesky Member. Some stratigraphic systems (e.g. Duff and Gilchrist, 1981) include the Bluesky Member as part of the Moosebar Formation, and correlate it with the Chamberlain Member of the Moosebar Formation from further southeast. Duff and Gilchrist (1981) divide the Gething into a lower coal-bearing unit (Lower Gething Member), a middle marine unit (Gething Marine Tongue), and an upper coal-bearing unit (Chamberlain Member); this system appears most relevant towards the centre of the Peace River coalfield (Figure 3). Legun (2002) divides the Gething into a lower Gaylard Member and an upper Bullmoose or Bluesky Member and locally absent Chamberlain Member. In this report, the Bluesky Member is considered as part of the Moosebar Formation, and the Gething Formation is not subdivided further, since drill hole information was insufficient for greater precision. The contact between the Gething Formation and the overlying Bluesky Member is the shift from fine sands to conglomerate.

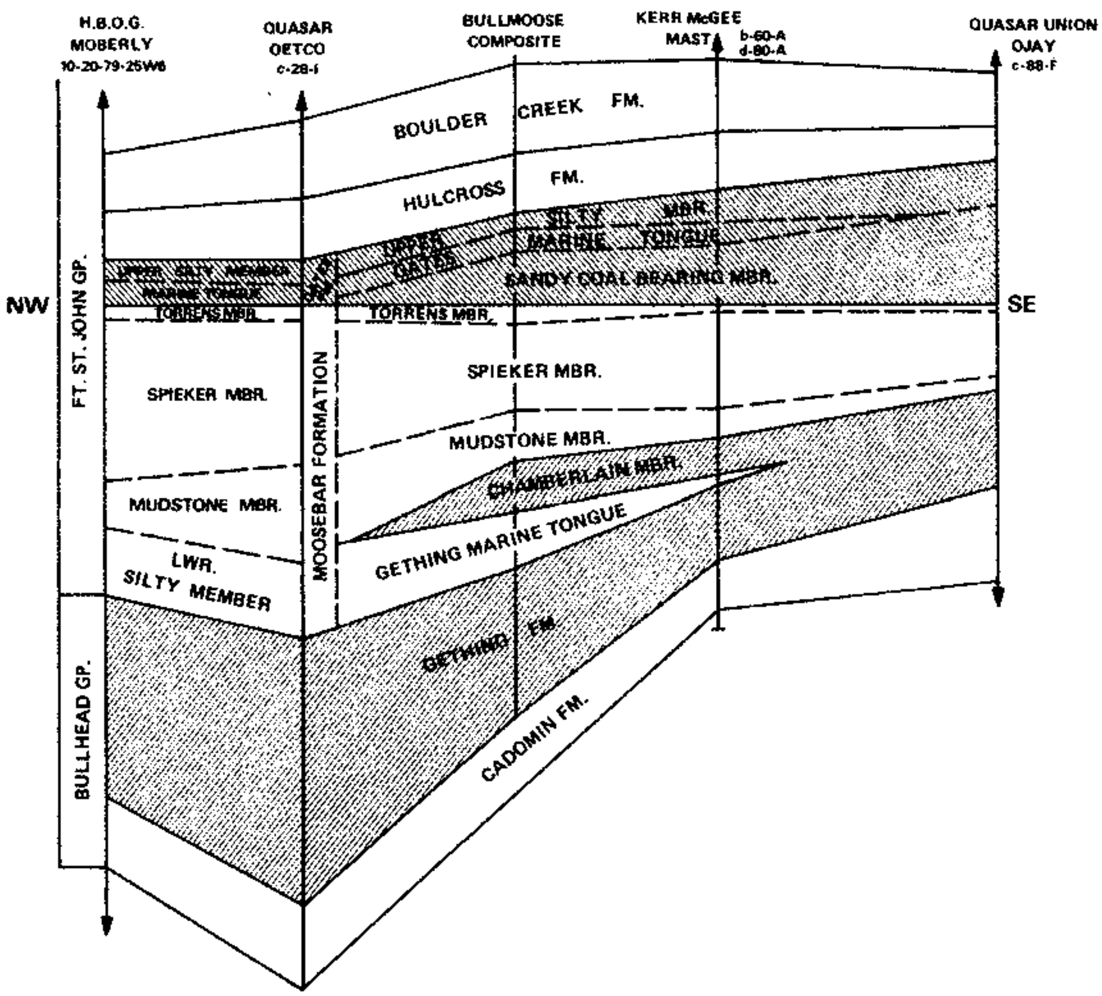

Figure 3. Moosebar-Gething Formation nomenclature and revised stratigraphy proposed by Duff and Gilchrist (1981).

Coals in the Gething Formation are alluvial-deltaic in origin. Locally, they number up to 50 seams, although only four are considered to be of economic value. Most are less than a meter thick, though 5 m seams are reported on the Pine Pass property (Ryan, 1997), individual seams near the top of the formation locally exceed 10 m (Newson, 1980), and 16 and 18 m seams have been reported at Noman Creek and Burnt River, respectively (Duff and Gilchrist, 1981). At some locations, such as the Willow Creek property, the

Gething Formation contains upper and lower coal-bearing zones separated by a barren zone more than 100 m thick. The cumulative thickness of coal measures is 40 m.

Coal rank is as high as semi-anthracite in the central Peace River coalfield, but decreases down to high-volatile bituminous to the southeast and northwest (Karst and White, 1980; Kalkreuth et al., 1989). Of the four seams of economic interest, three contain medium-volatile bituminous and one contains high-volatile bituminous. Rank also varies vertically, with medium-volatile bituminous reported for the seams lower in the Gething and high-volatile bituminous for the upper Gething (Kalkreuth et al., 1989). Most coal is thermal or weak coking coal that typically washes easily to a low ash content and is low in both sulphur and phosphorus (Ryan, 1997).

Duncan (1980) reported results of methane testing in one coal seam as high as 19.5 m^3/tonne at 459 m. The first exploratory petroleum well drilled by the B.C. government was drilled in 1921 a few kilometers east of where the W.A.C. Bennett dam now sits. It intersected water and gas at a shallow depth of 243-290 m, near the top of the Gething Formation, below a permeable conglomerate (Dresser, 1922); the gas may have been the earliest example of methane associated with coal measures in British Columbia. This suggests that the Gething Formation may be a good coalbed methane target.

Fort Saint John Group

The Fort St. John Group is of Lower Cretaceous age. In the Peace River Foothills, it includes the Moosebar, Gates, Hulcross, Boulder Creek, Hasler, Goodrich, and Cruiser Formations (Table 5). In some regions of the Peace River coalfield (e.g. the Pine River region), the Gates, Hulcross, and Boulder Creek Formations are considered as members of the Commotion Formation. In some regions, the Hasler, Goodrich, and Cruiser Formations are combined into the Shaftesbury Formation.

<u>Moosebar Formation</u>

The Moosebar Formation represents the most important marine transgression in the Lower Cretaceous coal measures and extends southeast beyond the coalfield. It consists of dark grey marine shale with sideritic concretions, siltstone, and glauconitic sandstone, plus a basal pebble layer, to a total thickness of 30-595 m (Stott, 1968; Duff and Gilchrist, 1981). It thins to the north and south of the Pine River.

Duff and Gilchrist (1981) subdivide the Moosebar north of Sukunka River into a Lower Silty Member (Gething Marine Tongue), Mudstone Member, Spieker Member, and uppermost Torrens Member, however, the broad applicability of those divisions is not clear, and intertonguing with the underlying Gething Formation makes correlation difficult.

The Moosebar Formation possesses an abrupt basal contact marked by a 0.25-0.5 m bed of chert pebble conglomerate that Stott (1968) correlated to the Bluesky Formation in the subsurface of the plains. Many authors refer to this as the Chamberlain Member in the Foothills, and Stott (1968) suggested that it belongs to the upper Gething Formation, not the lower Moosebar Formation. In this report, the Bluesky is considered as part of the Moosebar Formation, and no other subdivisions are identified. The contact between the Moosebar Formation and the overlying Gates Formation is typically gradational.

Gates Formation

The Gates Formation represents seven major transgressive-regressive cycles (Leckie, 1986). It comprises massive to thickly bedded, fine-grained, well-sorted sandstone that is dominantly quartz and chert, but locally includes thin interbeds of platy sandstone and shale, carbonaceous sandstone and mudstone, coal, and minor conglomerate. Nonmarine sediments are thickest in the south and pinch out northward. Gates Formation coal seams are uneconomic in the Hudson's Hope region.

Hulcross Formation

The Hulcross Formation represents a major marine incursion, with a lower fining upward transgressive unit and an upper coarsening upward regressive unit (Duff and Gilchrist, 1981). It consists of dark grey concretionary marine shales and siltstones, and lacks the pure mudstones found in the Moosebar Formation. Thin iron concretion bands are common throughout. Two tonsteins (clay bands) have been correlated nearly the length of the coalfield (Duff and Gilchrist, 1981). Total thickness is 55-136 m (Stott, 1982). The lower contact with the Gates Formation is commonly marked by a layer of chert pebbles (Stott, 1968). The contact with the overlying Boulder Creek Formation is most commonly gradational but is locally erosional.

Boulder Creek Formation

The Boulder Creek Formation consists of conglomerates and carbonaceous sandstones and some marine mudstone, and is 62-168 m thick (Stott, 1982). The basal unit is a well-sorted sandstone overlain by two or three conglomerate units, each separated by silty units. Thin coal seams are locally present above the lower conglomerate and at one site are 3 m thick (Duff and Gilchrist, 1981).

Hasler Formation

The Hasler Formation comprises silty dark grey marine shale with sideritic concretions, siltstone, minor sandstone and pebble conglomerate. It is 152-459 m thick (Stott, 1982). A pebble layer defines its contact with the underlying Boulder Creek Formation. The upper contact is gradational.

Goodrich Formation

The Goodrich Formation consists of fine-grained cross-bedded sandstone, shale, and mudstone, and is 15-411 m thick (Stott, 1982). Its lower boundary with the Hasler Formation is gradational and is considered to be the base of the thick-bedded sandstone.

Cruiser Formation

The Cruiser Formation consists of dark grey marine shale with sideritic concretions and some sandstone, is 107-244 m thick (Stott, 1982), and straddles the boundary between the Upper and Lower Cretaceous. The top of the Cruiser Formation marks the top of the Fort Saint John Group.

Upper Cretaceous

Dunvegan Formation

The Upper Cretaceous Dunvegan Formation comprises fine- to coarse-grained sandstone, conglomerate, carbonaceous shale, and coal, and is 107-300 m thick (Stott, 1982).

Regional Structure

Laramide convergence along the western margin of North America started in the late Jurassic and continued until the early Tertiary (Leckie, 1986). During that time, several large and exotic terranes collided with the craton margin and compressed miogeoclinal strata on an eastward-verging fold and thrust belt. Adjacent to and east of the fold and thrust belt, a foreland basin developed due to flexure of the crust beneath the increased tectonic load of thrust sheets. This foreland basin contains an offlapping sequence of east-tapering clastic wedges. The oldest wedges are late Jurassic to Early Cretaceous (Kootenay Formation, Nikanassin Formation, Minnes Group) and Early to Mid-Cretaceous (Bullhead and Fort St. John Groups). The lower Cretaceous Gates Formation is part of the second clastic wedge. These clastic wedges were themselves subsequently folded and thrust faulted during late Cretaceous to Early Tertiary time as the deformation front migrated eastward, creating a third clastic wedge ahead of it. The two lower clastic wedges now form the Foothills structural subprovince of the Rocky Mountain Belt (Leckie, 1986). They are highly folded into synclines and anticlines with axes trending northwest; low-amplitude, long-wavelength folds and widely spaced thrusts are characteristic (Legun, 2002). Deformation in the Peace River region is thought to have proceeded from southwest to northeast (Price, 1981), and is estimated to have reached the Inner Rocky Mountain Foothills of Alberta and British Columbia during the Paleocene (Kalkreuth and McMechan, 1984)

Coal rank studies suggest that coalification occurred mainly before the late Cretaceous-Tertiary Laramide deformation (Hacquebard and Donaldson, 1974). Rank variations relate to variations in the thickness of the Gething Formation and variations in the thickness of the post-Gething sedimentary package (Ryan and Lane, 2002), plus variations in the duration of burial beneath younger sediments. Rank increases from west to east across the Foothills largely because diachronous Laramide deformation resulted in an eastward increase in duration and depth of burial (Kalkreuth et al., 1989).

The Hudson's Hope property straddles the Foreland and Foothills domains of the Rocky Mountain fold and thrust belt. The boundary between these provinces is usually taken as the easternmost major thrust fault to breach the surface. Units within the Rocky Mountain fold and thrust belt are characterized by thrust repetition and fault-related folding, and the degree of structural complexity (i.e. the amount of thrust faulting and fault-related folding of beds and earlier faults) typically decreases from the hinterland towards the foreland (Hovis et al., 2005). Because Hudson's Hope is near the edge of the thrust belt, the general degree of structural complexity should be low and predictable, and dips should be shallow; it is unlikely to have been affected by extensive faulting and fault-related deformation.

Surface geology in the Hudson's Hope area suggests that there is a broad and gentle uplift extending north of Hudson's Hope and there are indications of at least locally significant coal. It is probable that dips are easterly and less than five degrees (Young, 2005). A preliminary evaluation suggested that thicker than average northwest-trending coal seams might be present in the Hudson's Hope area (Plate 2).

Drill Hole Stratigraphy

Due to the paucity of outcrop, there is little local surface information about the Hudson's Hope property. Plate 2 contains a 1:150,000 geologic map of northeastern British Columbia, compiled using data extracted from the Digital Geology Map of British Columbia (Massey et al., 2005); it does not delineate formations for the Hudson's Hope licence area because the source map indicated only that the area was covered by rocks of the Fort St. John Group. Because of this lack of information, the drill hole 06DDHH02 greatly increased the available knowledge of the Hudson's Hope property.

Bedrock at 06DDHH02 lies beneath 71 m of overburden, which consists of poorly sorted cobbles, pebbles, and finer material; the fine material was flushed away during drilling and was not available for examination. A summary lithological log is shown in Table 3. The formations encountered are described below.

Moosebar Formation

The highest geological unit in 06DDHH02 is the Moosebar Formation. The upper Moosebar is 111 m thick, and the lower Moosebar is 156 m thick; however, the distinction between these upper and lower portions is not apparent in core samples and is only vaguely apparent on geophysical logs. The Moosebar Formation consists of interbedded sandstone and mudstone. The sandstone is grey, fine to medium-grained, laminated to cross-laminated to massive, and locally calcareous. Rare rip-up clasts are present. The mudstone is grey, laminated to massive and locally silty or shaly. Both sandstone and mudstone show evidence for bioturbation and soft sediment deformation, and both contain minor pyrite and siderite. Rare shell fossils or carbonaceous plant fragments occur.

The Bluesky Member forms the base of the Moosebar Formation. It occurs at 339 m and is 5 m thick. It comprises bioturbated pebble sandstone overlying poorly sorted, clast-supported chert pebble conglomerate. It has prominent upper and lower contacts. The contact between the upper Moosebar (shale) and the Bluesky (conglomerate) is clearly visible on gamma, neutron, and density logs.

Gething Formation

The top of the Gething Formation occurs at 344 m. Total thickness is unknown, as the hole terminated in Gething Formation at 469 m. The Gething Formation comprises interbedded sandstone and carbonaceous mudstone. Lithologies range from laminated to cross-laminated to massive, and some segments are bioturbated. Soft-sediment deformation is locally considerable. Some beds are calcareous. Small amounts of coal, in seams up to 52 cm thick, are present; coal characteristics are discussed in greater detail below. Minor pyrite, siderite, and calcite also occur.

Drill Hole Structure

Structural information obtained from 06DDHH02 was minimal. Bedding in the hole is horizontal and beds are not overturned. The most prominent structures are slickensides whose dips vary from 0-45° (from the horizontal) but are most commonly 5-20°. Calcite veins occur in two groups, one with dip angles of 0-20° and one with dip angles of 75-85°. No faults were identified in the core.

The upper Gething Formation contains significant coal seams at other locations (for example, the Bird Seam lies 0-10 m below the top of the Moosebar in the region between Quintette Mountain and Sukunka River [Duff and Gilchrist, 1981]). Because drill hole 06DDHH02 includes the Moosebar-Gething contact and 122 m of Gething Formation, it would also be expected to contain meter-scale coal seams. There are two possible reasons why it does not. Either the lowest 122 m of 06DDHH02 represent a fault-repeated coal-poor segment of the Gething Formation, or Gething Formation coal seams have pinched out or thinned greatly before reaching 06DDHH02. Since the upper Moosebar-Bluesky and Bluesky-Gething contacts are unmistakable and there are no recognizable faults in the hole, it seems likely that the latter explanation is correct: coal seams pinched out before reaching the site.

SECTION V: GEOPHYSICAL SURVEYS

Down Hole Logging

Down hole geophysical surveys were performed by Century Geophysical on 06DDHH02 immediately after the cessation of drilling. A dummy probe was sent down the drill hole prior to geophysical logging in order to minimize the chance of losing a radioactive source down the hole. Three tools were used for the logging; they are described below. Gamma, neutron, density, dipmeter, and deviation logs were recorded to a depth of 440 m; it was not possible to get the geophysical tools down the last 28.8 m of the hole.

Summary geophysical logs are shown in Plate 4.

Tool Description

9055 Multi-Paramenter E-Log, Neutron: This tool contains a single detector, neutron system using a 1.0 curie, Am241 Be source to record neutron porosity of the formation. It also records natural gamma, spontaneous potential, single-point resistance, and borehole deviation.

9139 Compensated Density: This tool uses two focused density detectors to compute borehole compensated density real time while logging. It has a 200 mCi Cesium-137 radioactive source. It also records natural gamma, caliper, medium guard resistivity, and borehole temperature.

9410 Dipmeter: This tool is a formation strike and dip directional probe. It also records natural gamma, X-Y calipers, and bore hole deviation computed from the slant angle and bearing measurements calculated from the inclinometer and magnetometer sensors.

The geophysical data were invaluable for defining formation boundaries and coal seam contacts. The gamma log shows the transition from overburden to bedrock clearly. The gamma and neutron logs clearly show the Moosebar-Gething contact. Thicker coal seams are identifiable on the density, gamma, and neutron logs, but most seams are too thin to show up on geophysical logs. Deviation of the hole was minimal.

SECTION VI: COAL

Coal Seam Stratigraphy and Quality

Coal was first intersected at 424 m, in the Gething Formation, as a 52 cm seam that was bright, brittle, and sheared. Bright banded coal was intersected at 429 m (17 cm thick). Bony coal was intersected at 434 m, in a 4 cm thick seam and a bright 15 cm seam. The deepest intersection occurred at 441 m and comprised 26 cm of bony coal. A few other minor coal occurrences consisted of very thin seams, stringers, or films. It was not possible to identify specific coal seams by name because so little coal was present.

Coal Analyses

Twelve coal samples were analyzed by Birtley Coal and Minerals Testing in Calgary, Alberta.

Birtley Coal and Minerals Testing
505 – 50th Ave SE
Calgary, AB
T2G 2B4
Phone: 403-253-8273
Fax: 403-259-4720

Twelve coal samples were collected and sent for analysis (Appendix I). The suite of tests done was limited due to the small size of samples, but data on moisture and ash content and free swelling index were obtained and are listed in Appendix II. No samples were combined due to the wide vertical separation between the thin seams. Due to the limited scope of the geochemical analyses, it is impossible to determine whether the coal seams in 06DDHH02 are of good coking quality.

Coal Reserves

Due to the small thicknesses of the coal seams encountered in the single hole that was drilled, it is not possible to estimate available coal reserves in the vicinity of 06DDHH02. However, they are unlikely to be of economic value.

SECTION VII: CONCLUSIONS

The purpose of drilling at Hudson's Hope site 06DDHH02 was to determine the presence, depth, and thickness of coal seams in the Gething Formation, to ascertain whether these seams were of coking quality, and to make preliminary advances towards an underground-mineable coking coal resource.

The lack of contact with thick identifiable coal seams in the single drill hole suggests that an economically viable coal resource is not present, and coking properties are unclear. Continuity of seams is unknown since only a single hole was drilled.

Due to the poor showings of coal at 06DDHH02, many of the coal licences north of the Peace River in the Hudson's Hope region will be relinquished or permitted to lapse (Figure 4). All coal applications south of the river will also be abandoned. An application block north of the Peace River, stretching both northeast and southwest of the town of Hudson's Hope, will be retained.

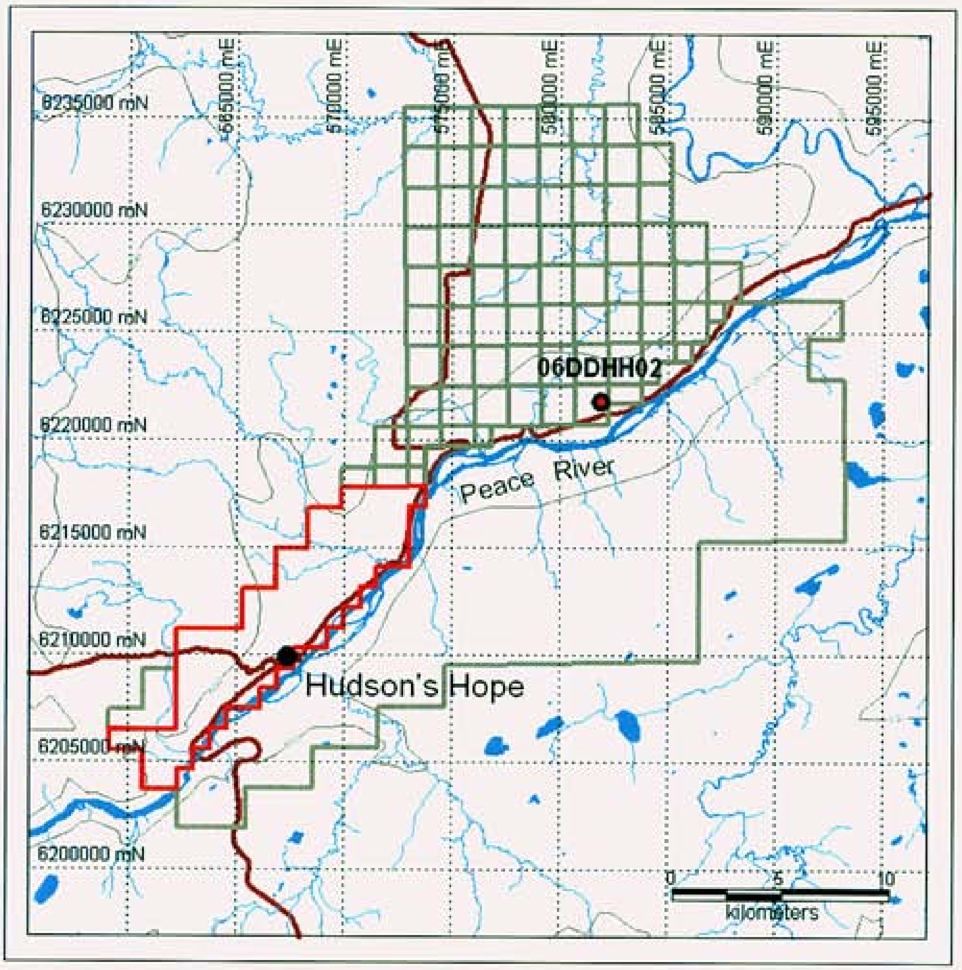

Figure 4. Hudson's Hope updated licence and application status (as of March 2007). Relinquished licences and applications are shown in grey. The single retained application is outlined in red.

SECTION VIII: REFERENCES

Andrews, S., 2004. Peace River Coal Project Information Paper, Kennecott Exploration internal report.

Dresser, J., 1922. Summary report on exploration for oil and gas in the Peace River district. *B.C. Dept. of Lands*. 14 pp.

Duff, P. McL. D., and Gilchrist, R.D., 1981. Correlation of Lower Cretaceous coal measures, Peace River coalfield, British Columbia. *British Columbia Ministry of Energy, Mines, and Petroleum Resources*, Paper 1981-3: 1-31.

Duncan, D.N., 1980. Bri-Dowling Creek Exploration Report. *Ministry of Employment and Investment*, Coal Assessment Report No. 469.

Gibson, D.W., 1992. Stratigraphy, sedimentology, coal geology and depositional environments of the Lower Cretaceous Gething Formation, northeastern British Columbia and west-central Alberta. *Geological Survey of Canada*, Bulletin 431: 1-78.

Hacquebard, P.A., and Donaldson, J., 1974. Ranks studies of coals in the Rocky Mountains and Inner Foothills belt, Canada. *Geological Society of America Special Paper*, 153: 75-94.

Hovis, S.T., Crawford, J., and Coombes, S.F., 2005. Assessment Report for the Falling Creek Property, Peace River District.

Karst, R., and White, G.V., 1980. Coal rank distribution within the Bluesky-Gething stratigraphic horizon of northeast B.C. *in:* Geological Fieldwork 1979, *British Columbia Ministry of Energy, Mines, and Petroleum Resources*, Paper 80-1.

Kalkreuth, W., Langenberg, W., and McMechan, M., 1989. Regional coalification pattern of Lower Cretaceous coal-bearing strata, Rocky Mountain Foothills and Foreland, Canada – implications for future exploration. *International Journal of Coal Geology*, 13: 261-302.

Kalkreuth, W., and McMechan, M., 1984. Regional pattern of thermal maturation as determined from coal-rank studies, Rocky Mountain Foothills and Front Ranges north of Grande Cache, Alberta – implications for petroleum generation. *Bulletin of Canadian Petroleum Geology*, 32(3): 249-271.

Leckie, D.A., 1986. Rates, controls, and sand-body geometries of transgressive-regressive cycles: Cretaceous Moosebar and Gates Formations, British Columbia. *Bulletin of the American Society of Petroleum Geologists*, 70: 516-535.

Legun, A.S., 2002. Overview of coalbed methane geology in northeast British Columbia. *in:* Geological Fieldwork 2001, *British Columbia Ministry of Energy, Mines, and Petroleum Resources*, Paper 2002-1.

Massey, N.W.D., MacIntyre, D.G., Desjardins, P.J., and Cooney, R.T., 2005. Digital Geology Map of British Columbia. *British Columbia Ministry of Energy, Mines, and Petroleum Resources*, Open-File 2005-2.

Matthews, W.H., 1947. Geology and coal resources of the Carbon Creek-Mount Bickford map area. *B.C. Department of Mines*, Bulletin 24.

McKechnie, N.D., 1955. Coal reserves of the Hasler Creek-Pine River area, British Columbia, *B.C. Department of Mines*, Bulletin 36.

Newson, A.C., 1980. Pine Pass Coal Project, N.E. British Columbia, Norcen Energy Resources Ltd., Coal Assessment Report 588, British Columbia Ministry of Energy, Mines, and Petroleum Resources.

Price, R.A., 1981. The Cordilleran Foreland thrust and foldbelt in the southern Canadian Rocky Mountains. *in:* K.R. McClay and N.J. price (editors), Thrust and Map Tectonics, Geological Society of London Special Publication, 9: 427-448.

Price, R.A., and Mountjoy, E., 1970. Geologic structure of the Canadian Rocky Mountains between Bow and Athabasca Rivers – a progress report. *Geological Association of Canada Special Paper*, No. 6: 7-25.

Ryan, B.D., 1997. Coal quality variations in the Gething Formation, northeast British Columbia (93 O, J, I). *in:* Geological Fieldwork 1996, *British Columbia Ministry of Energy, Mines, and Petroleum Resources*, Paper 1997-1.

Ryan, B., and Lane, B., 2002. Adsorption characteristics of coals with special reference to the Gething Formation, northeast British Columbia. *in:* Geological Fieldwork 2001, *British Columbia Ministry of Energy, Mines, and Petroleum Resources*, Paper 2002-1.

Smith, D., Zorn, C., and Sneider, R., 1984. The paleogeography of the Lower Cretaceous of western Alberta and northeastern British Columbia in and adjacent to the deep basin of the Elmsworth area. *American Association of Petroleum Geologists Memoir*, 38: 79-114.

Stott, D.F., 1968. Lower Cretaceous Bullhead and Fort St. John Groups, between Smoky and Peace Rivers, Rocky Mountain Foothills, Alberta and British Columbia. *Geological Survey of Canada Bulletin,* 152.

Stott, D.F., 1973. Lower Cretaceous Bullhead Group between Bullmoose Mountain and Tetsa River, Rocky Mountain Foothills, northeastern British Columbia, *Geological Survey of Canada Bulletin,* 219.

Stott, D.F., 1974. Lower Cretaceous coal measures of the foothills of west-central Alberta and northeastern British Columbia. *Canadian Mining and Metallurgical Bulletin*, Vol. 67, No. 749: 87-101.

Stott, D.F., 1982. Lower Cretaceous Fort St. John Group and Upper Cretaceous Dunvegan Formation of the Foothills and Plains of Alberta, British Columbia, District of Mackenzie, and Yukon Territory. *Geological Survey of Canada Bulletin,* 328: 124 pp.

Young, L., 2005. Interim Review of Coal Targets, Peace River District, Kennecott Exploration internal report.

APPENDIX I:
SAMPLES SENT FOR CHEMICAL ANALYSIS

sample number	from (m)	to (m)	thickness (m)	sample type
103100	359.07	359.13	0.06	coal
103101	364.11	364.16	0.05	coal
103102	389.61	389.65	0.04	coal
103103	390.8	390.94	0.14	coal
103104	423.8	423.92	0.12	coal
103105	424.15	424.35	0.2	coal
103106	428.9	429	0.1	coal
103107	429.21	429.38	0.17	coal
103108	433.57	433.61	0.04	coal
103109	434.45	434.6	0.15	coal
103110	440.9	441.1	0.2	coal
103111	465.84	465.89	0.05	coal

APPENDIX II:

GEOCHEMICAL ANALYSES

KENNECOTT EXPLORATION COMPANY

DESPATCH NUMBER: SLC06-0200

DRILLHOLE ID: 06-DD-HH-02

SAMPLES RECEIVED: September 18, 2006

REPORT DATE: September 27, 2006

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61079	NA103100	158	1.90	0.58	7.33	35.55	56.54	7.5	adb
				2.47	7.19	34.87	55.47		arb
					7.37	35.76	56.87		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	89.64	1.38	89.64	1.38
1.30 - 1.40	1.99	3.99	91.63	1.44
1.40 - 1.50	0.66	4.96	92.29	1.46
1.50 - 1.60	0.33	34.61	92.62	1.58
1.60 - 1.70	0.07	38.14	92.69	1.61
1.70 - 1.80	0.01	40.00	92.70	1.61
+1.80	7.30	67.63	100.00	6.43

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61080	NA103101	162	1.23	0.78	22.41	29.68	47.13	8.0	adb
				2.00	22.13	29.31	46.55		arb
					22.59	29.91	47.50		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	37.57	3.86	37.57	3.86
1.30 - 1.40	14.55	10.84	52.12	5.81
1.40 - 1.50	14.55	16.64	66.67	8.17
1.50 - 1.60	9.70	21.19	76.37	9.83
1.60 - 1.70	5.45	36.30	81.82	11.59
1.70 - 1.80	2.42	41.25	84.24	12.44
+1.80	15.76	67.13	100.00	21.06

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61081	NA103102	102	1.96	0.70	20.36	25.87	53.07	7.0	adb
				2.65	19.96	25.36	52.03		arb
					20.50	26.05	53.44		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	10.15	6.31	10.15	6.31
1.30 - 1.40	34.52	11.87	44.67	10.61
1.40 - 1.50	30.46	24.37	75.13	16.19
1.50 - 1.60	22.34	32.55	97.47	19.94
1.60 - 1.70	1.01	41.06	98.48	20.15
1.70 - 1.80	0.51	48.33	98.99	20.30
+1.80	1.01	85.53	100.00	20.96

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61082	NA103103	472	3.39	0.82	6.91	21.66	70.61	1.5	adb
				4.18	6.68	20.93	68.22		arb
					6.97	21.84	71.19		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	36.44	1.65	36.44	1.65
1.30 - 1.40	56.22	4.00	92.66	3.08
1.40 - 1.50	2.67	23.47	95.33	3.65
1.50 - 1.60	0.67	22.41	96.00	3.78
1.60 - 1.70	0.22	28.58	96.22	3.83
1.70 - 1.80	0.22	34.65	96.44	3.90
+1.80	3.56	66.70	100.00	6.14

Note: the highlighted samples are not in the head raw sample as there is insufficient sample to make up the head raw.

GWIL INDUSTRIES Birtley Coal & Minerals Testing Division

KENNECOTT EXPLORATION COMPANY

DESPATCH NUMBER: SLC06-0200

DRILLHOLE ID: 06-DD-HH-02

SAMPLES RECEIVED: September 18, 2006

REPORT DATE: September 27, 2006

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61083	NA103104	480	2.29	0.62	4.22	28.36	66.80	7.5	adb
				2.90	4.12	27.71	65.27		arb
					4.25	28.54	67.22		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	79.89	1.47	79.89	1.47
1.30 - 1.40	14.73	7.73	94.62	2.44
1.40 - 1.50	3.13	17.23	97.75	2.92
1.50 - 1.60	0.45	28.70	98.20	3.04
1.60 - 1.70	0.45	45.42	98.65	3.23
1.70 - 1.80	0.45	52.40	99.10	3.45
+1.80	0.90	74.42	100.00	4.09

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61084	NA103105	898	1.22	0.65	3.77	23.86	71.72	4.0	adb
				1.86	3.72	23.57	70.85		arb
					3.79	24.02	72.19		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	46.07	1.46	46.07	1.46
1.30 - 1.40	49.36	3.53	95.43	2.53
1.40 - 1.50	2.46	9.40	97.89	2.70
1.50 - 1.60	0.59	21.21	98.48	2.81
1.60 - 1.70	0.23	30.74	98.71	2.88
1.70 - 1.80	0.12	41.91	98.83	2.93
+1.80	1.17	60.97	100.00	3.61

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61085	NA103106	403	2.23	0.91	39.97	13.39	45.73	0.5	adb
				3.12	39.08	13.09	44.71		arb
					40.34	13.51	46.15		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	0.50	1.86	0.50	1.86
1.30 - 1.40	1.76	23.74	2.26	18.90
1.40 - 1.50	5.79	23.42	8.05	22.15
1.50 - 1.60	35.02	31.18	43.07	29.49
1.60 - 1.70	30.23	39.33	73.30	33.55
1.70 - 1.80	11.59	46.73	84.89	35.35
+1.80	15.11	67.55	100.00	40.21

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61086	NA103107	561	4.99	0.61	13.94	21.30	64.15	1.5	adb
				5.57	13.24	20.24	60.95		arb
					14.03	21.43	64.54		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	6.81	2.31	6.81	2.31
1.30 - 1.40	47.85	5.69	54.66	5.27
1.40 - 1.50	32.30	19.30	86.96	10.48
1.50 - 1.60	9.73	30.30	96.69	12.47
1.60 - 1.70	1.17	37.49	97.86	12.77
1.70 - 1.80	0.39	41.95	98.25	12.89
+1.80	1.75	68.40	100.00	13.86

Note: the highlighted samples are not in the head raw sample as there is insufficient sample to make up the head raw.

GWIL INDUSTRIES Birtley Coal & Minerals Testing Division

KENNECOTT EXPLORATION COMPANY

DESPATCH NUMBER: SLC06-0200
DRILLHOLE ID: 06-DD-HH-02
SAMPLES RECEIVED: September 18, 2006
REPORT DATE: September 27, 2006

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61087	NA103108	119	1.68	0.63	19.99	23.99	55.39	7.0	adb
				2.30	19.65	23.59	54.46		arb
					20.12	24.14	55.74		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	13.45	3.47	13.45	3.47
1.30 - 1.40	52.94	14.25	66.39	12.07
1.40 - 1.50	20.17	21.95	86.56	14.37
1.50 - 1.60	3.36	33.23	89.92	15.07
1.60 - 1.70	1.68	42.38	91.60	15.57
1.70 - 1.80	1.68	50.33	93.28	16.20
+1.80	6.72	70.32	100.00	19.84

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61088	NA103109	734	1.77	0.67	11.83	23.71	63.79	5.0	adb
				2.43	11.62	23.29	62.66		arb
					11.91	23.87	64.22		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	23.12	1.94	23.12	1.94
1.30 - 1.40	55.88	6.64	79.00	5.26
1.40 - 1.50	11.49	20.96	90.49	7.26
1.50 - 1.60	5.11	33.26	95.60	8.65
1.60 - 1.70	0.99	43.31	96.59	9.00
1.70 - 1.80	0.43	50.35	97.02	9.19
+1.80	2.98	74.77	100.00	11.14

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61089	NA103110	674	1.48	0.62	4.47	27.57	67.34	6.5	adb
				2.09	4.40	27.16	66.34		arb
					4.50	27.74	67.76		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	74.96	1.23	74.96	1.23
1.30 - 1.40	16.59	3.00	91.55	1.55
1.40 - 1.50	3.47	11.41	95.02	1.91
1.50 - 1.60	1.06	20.07	96.08	2.11
1.60 - 1.70	0.30	30.76	96.38	2.20
1.70 - 1.80	0.15	36.17	96.53	2.25
+1.80	3.47	64.09	100.00	4.40

HEAD RAW ANALYSIS - re-constituted from float sink fractions

LAB NO:	SAMPLE ID:	Rec'd wt (grams)	ADM%	MOIST%	ASH%	VOL%	F.C.%	FSI	BASIS
61090	NA103111	188	1.60	0.51	2.34	28.91	68.24	8.0	adb
				2.10	2.30	28.45	67.15		arb
					2.35	29.06	68.59		db

FLOAT SINK ANALYSIS (-6.3 mm), air dried basis

S.G.	WT%	ASH%	CUM WT%	CUM ASH%
-1.30	82.08	1.91	82.08	1.91
1.30 - 1.40	16.08	3.08	98.16	2.10
1.40 - 1.50	1.11	10.64	99.27	2.20
1.50 - 1.60	0.55	16.35	99.82	2.28
1.60 - 1.70	0.11	22.58	99.93	2.30
1.70 - 1.80	0.01	28.64	99.94	2.30
+1.80	0.06	58.15	100.00	2.33

Note: the highlighted samples are not in the head raw sample as there is insufficient sample to make up the head raw.

GWIL INDUSTRIES Birtley Coal & Minerals Testing Division

APPENDIX III:

SUPPLEMENTAL INFORMATION FOR BIRTLEY COAL AND MINERALS TESTING

Quality Control Procedures

Bulk Handling, Sampling and Processing

- Whether received loose (in a dump truck) or packaged (in barrels or bags), a bulk sample is dumped onto a clean steel mixing pad outdoors or a clean concrete floor indoors for homogenization and sample extraction

- ASTM prescribed procedures or alternate acceptable methods* are closely adhered to in the sampling stage, with particular attention given to minimum weight of sample taken in the reduction step to maintain representativeness of the sub-sample

- During homogenizing and sampling, special care is taken to prevent unnecessary attrition of coal particles which can bias the size consist of the sample. Also, dusting losses during this stage are kept to a minimum by considering the wind factor before work is initiated outdoors

- Applicable portions of samples are kept indoors for further testing while the residual material is left covered outdoors

B. Sample Preparation

- Upon receipt, individual samples are first sorted and placed in order, either numerically, lithologically, or in some chronological manner prior to being catalogued. Each sample is then sequentially assigned its own unique laboratory number

- Sample Preparation Technicians examine the samples to identify certain aspects of a sample or its container when received, e.g. potential weight loss or damage during shipping, and physical characteristics like color, smell, mass, average size, etc. of the sample. Observations are recorded and relayed to the client if discrepancies exist between sample shipped and that received

- A plastic tag, encoded with the laboratory number and a concise description of the sample, accompanies said sample at all times during preparation. A series of samples are processed in numerical sequence whenever possible

- All equipment (screens, crushers/mills, rifflers, pans/receptacles) including the analytical pulp container as well as all float sink liquids are cleaned between samples. Workbenches are cleared of debris before samples are weighed and processed

- Before each use screens are inspected for tears and aperture correctness

- A sample's initial weight (usually as received weight) is recorded for mass balance and for cross checking purposes

**Coal samples vary in physical characteristics often from mine to mine and sometimes from seam to seam. Applicable sampling methods may be adjusted from the norm to suit the particular sample. Therefore, procedural applications for one client's coal may not be wholly relevant to that of another client's coal.*

C. Laboratory Analysis

- ASTM methods for coal analyses are used where applicable. We also use ISO procedures, as well as modified methods for some tests where applicable and necessary. Procedures followed adhere to the specific client needs

- When a prolonged series of measurements is made (ex. sequential calorific values or SC-32 sulfur analyses) control samples (ex. benzoic acid) as well as duplicate runs of samples are made
- Check analyses are performed alongside most analyses. For example, a mineral analysis of ash is done in duplicate in a batch of samples to be analyzed. Unknown check samples are also given to laboratory technicians to check instrument and operator repeatability
- Where applicable, cumulative analyses are checked with the head sample results. For example, float sink cumulative ash should be within limits for the ash result for the size that was float sank
- If there is a problem with checks, instrumentation, or if control samples are outside limits, the technician notifies the supervisor and then depending on the problem corrects it themselves or the supervisor investigates and rectifies if required
- Notebooks are kept for each instrument to record maintenance and problems and the dates associated with them
- To verify sample test reproducibility Birtley subscribes to the CANSPEX program. This program compares test results of duplicate blind samples sent to subscribing laboratories and reports comparative results to the subscribers. Birtley can then compare its test results against the consensus of the other participating laboratories (~100) from around the world.
- Control charts are kept of the upper and lower limits of repeatability and reproducibility for the CANSPEX round robin program. If problem areas exist, it is then possible to assess and rectify those problems

(This information is quoted verbatim from the Birtley Coal and Minerals Testing brochure.)

Statement of Qualifications of Lab Personnel

Operations Manager

Ms. Heather Dexter graduated with a Chemical Technology Diploma from the Southern Alberta Institute of Technology (SAIT) in 1984. In 1989 Heather joined Birtley as a Laboratory Technologist and over the last 17 years has served in various roles including Safety Coordinator, Office Manager and Training Coordinator. Since joining Birtley, Heather completed a Business Management Certificate at SAIT (1999) and has been working on her Bachelor of Science Degree from the University of Waterloo in Ontario. Her current key roles include: supervising, training and coordinating laboratory staff; maintaining quality control systems; communicating with clients and determining testing requirements; and preparing reports for clients.

Sample Preparation Supervisor

Mr. Jack Abad joined Birtley in 1973 as a Plant Technician and has been promoted through various jobs to his current position as Supervisor. Over the past 30 years, Jack has gained considerable experience with all coal types and is considered an expert on all aspects of sample preparation. Jack is currently responsible for supervising and coordinating sample preparation, quality control, advising and designing programs for special projects, and preparing reports of results.

(This information is quoted verbatim from the Birtley Coal and Minerals Testing brochure.)

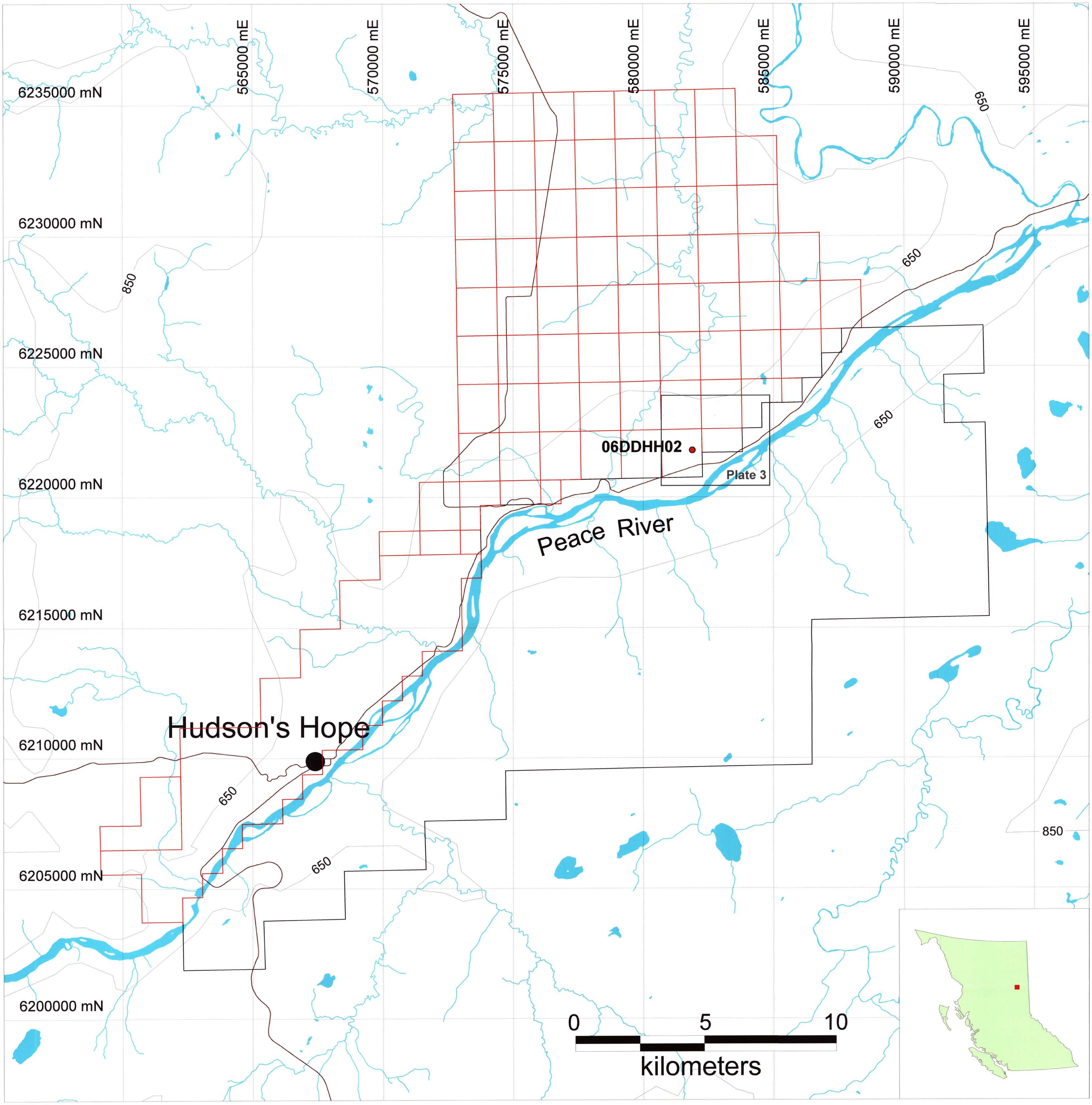

Plate 1. 1:50,000 map of KCEI's Hudson's Hope coal licences (red) and applications (black) at the time of the 2006 drilling, and the location of Plate 3 (grey). Contour interval = 200 m.

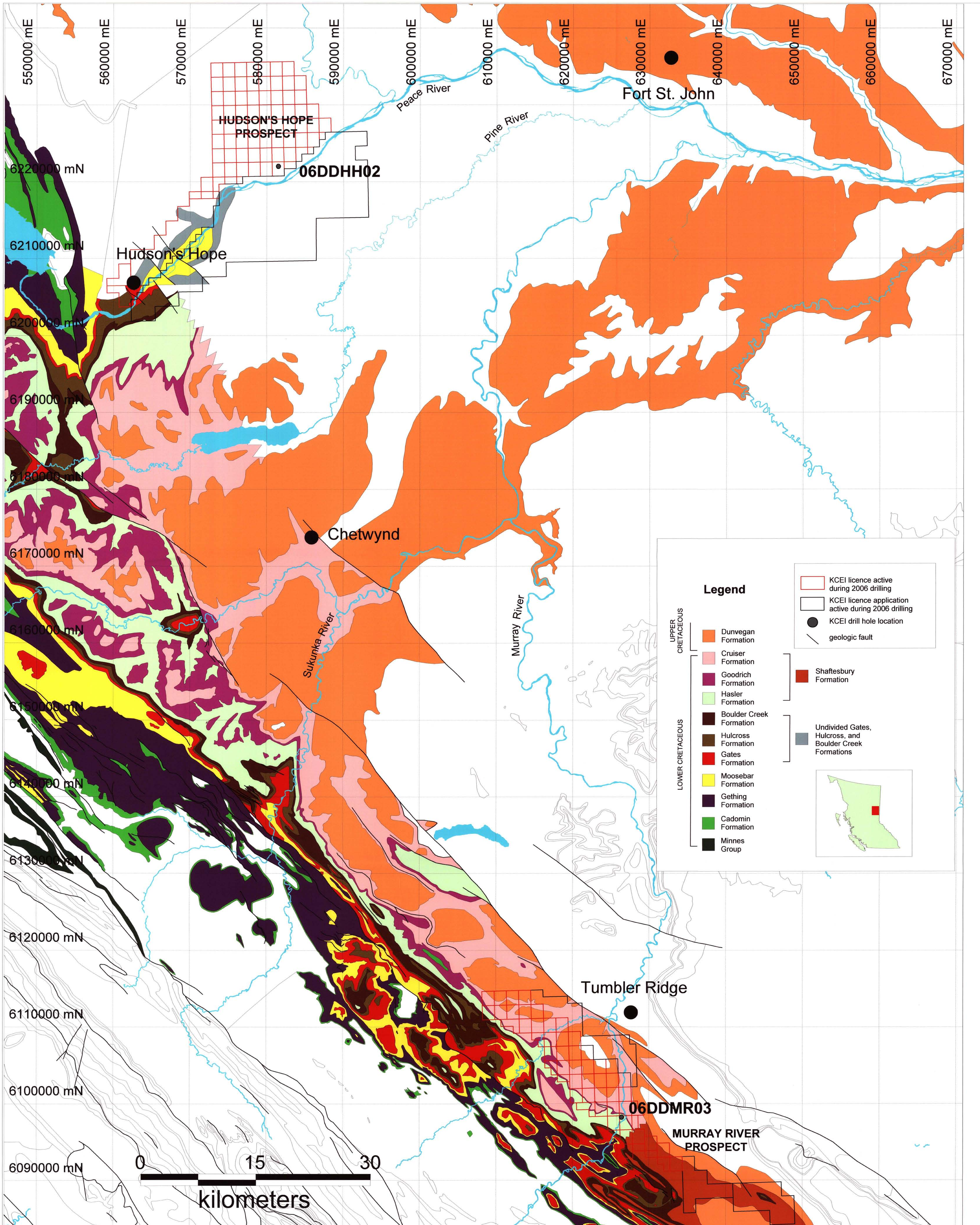

Plate 2. Geologic map of northeastern British Columbia, showing KCEI's licences and applications that were active at the time of drilling. Geology is from Crown Publications' "New Digital geology of B.C." (2005).

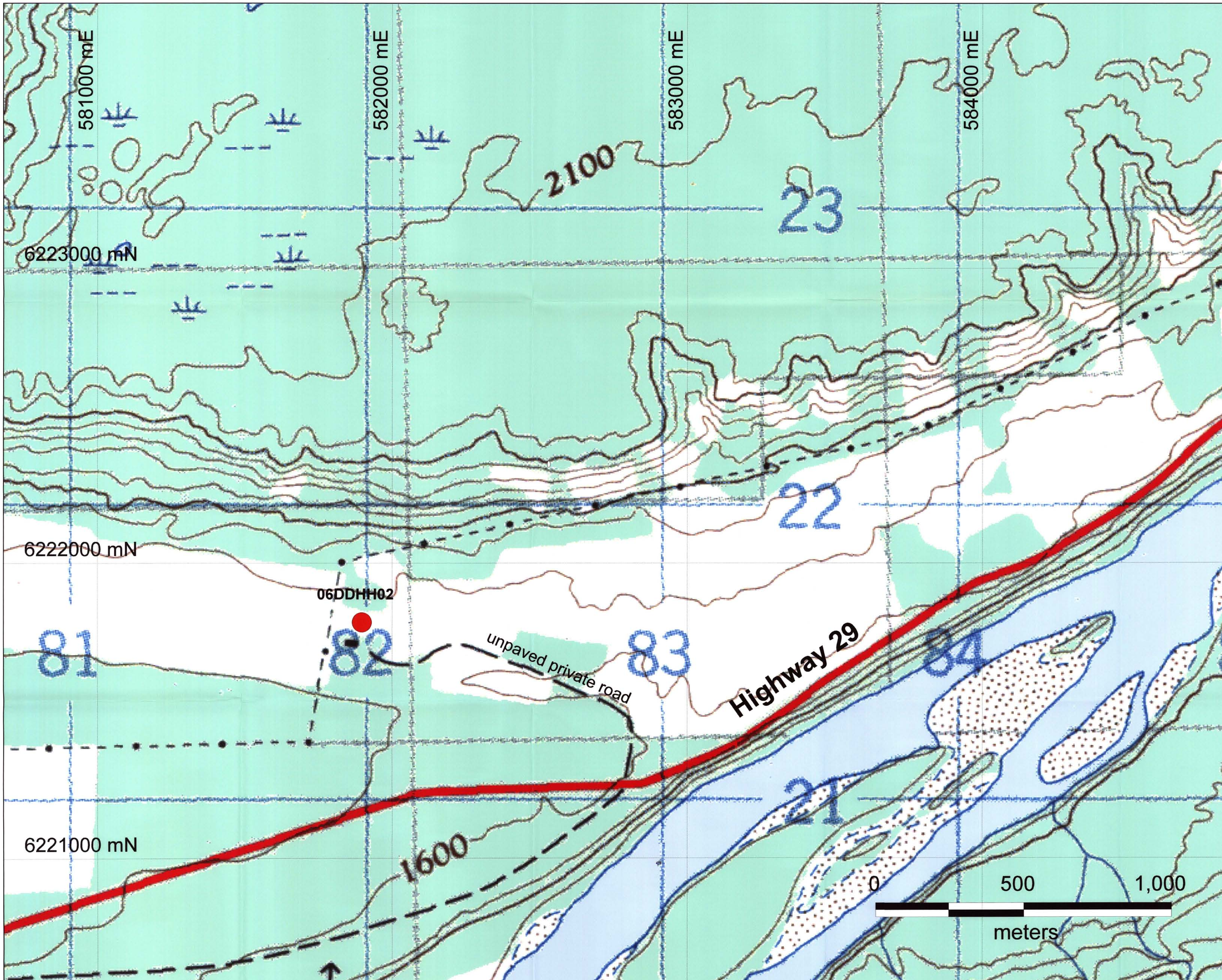

Plate 3. 1:5000 map of Hudson's Hope drill site. The area covered by this map is outlined with a black box on Plate 1.

STRIP LOG: 06-DD-HH-02

Easting	Northing	RL	Azimuth	Dip	Depth
581892.0	6221794.0	502.0	0.0	-90.0	469.0

STRIP		PAT	LABEL
2	Lithology	(black)	Coal
		(brown)	Gething
		(blue)	Lower Moosebar
		(yellow)	Overburden
		(blue)	Upper Moosebar

Plate 4

Kennecott Canada
Hudson Hope, BC
September, 2006