BC Geological Survey
Coal Assessment Report
1054

COAL ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT:
Coal Assessment Report for the Dillon lease, British Columbia

TOTAL COST: $517,486.42

AUTHOR(S): C.G. Cathyl-Huhn, P.Geo. Lic.Geol. RMSME, 20 August 2019
SIGNATURE(S):

STATEMENT OF WORK EVENT NUMBER(S)/DATE(S):

YEARS OF WORK: 2018 and 2019

PROPERTY NAME: Dillon Lease

COAL LEASE (on which physical work was done): 412964

MINERAL INVENTORY MINFILE NUMBER: 93P 007

MINING DIVISION: Liard
NTS 93 P/5 BCGS: 093P.031 and 093P.041
LATITUDE: 55° 23’ 58.84" North
LONGITUDE: 121° 49’ 35,38" West (at centre of work)

UTM Zone: 10 EASTING: 574317 NORTHING: 6139926 (at centre of work)
NATO zone: 10U Digraph: EG

OWNER: Conuma Coal Resources Limited

MAILING ADDRESS: 200-235 Front Street (PO Box 2140) Tumbler Ridge BC V0C 2W0

OPERATOR: Conuma Coal Resources Limited

MAILING ADDRESS: 200-235 Front Street (PO Box 2140) Tumbler Ridge BC V0C 2W0

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralisation, size and attitude): Bituminous coal, Early Cretaceous, Albian stage, Bullhead Group, Gething Formation, Gaylard Member, Owl Creek Syncline, Warga Thrust, imbricate thrusts, in-pit drilling

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: Primary reference: Coal Assessment Report 957; Secondary references: Coal Assessment Reports 486, 487, 488, 489, 490, 936, 993, and 1049

SUMMARY OF TYPES OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)				ON WHICH TENURES
GEOLOGICAL (scale, area)					
Ground, mapping			none	nil	not applicable
Photo interpretation (at variable scale)			none	nil	no applicable
GEOPHYSICAL (line-km)					
Ground			none	nil	not applicable
Airborne			none	nil	not applicable
Borehole geophysics					
Gamma-Density			2647.52 m	in 12 holes	412964
Resistivity			2247.76 m	in 12 holes	412964
Caliper			2247.76 m	in 12 holes	412964
Gamma-Neutron			2068.04 m	in 10 holes	412964
Deviation			2514 m	in 12 holes	412964
Dipmeter			1968.04 m	in 10 holes	412964
Spectral gamma			271.68 m	in 1 hole	412964
Sonic			268.16 m	in 1 hole	412964
DRILLING (total metres, no. of holes, size, storage location)					
Spot coring	47.26 m	1 hole	6-inch	Brule Mine	412964
Non-core	2425.98 m	13 holes	14.5 cm	n/a	412964
SAMPLING AND ANALYSES				Number of samples	
Proximate (with sulphur)				19 (from 3 boreholes)	412964
Ultimate				0	not applicable
Petrographic				0	not applicable
Vitrinite reflectance				0	not applicable
Coking				0	not applicable
Wash tests (with proximate)				0	not applicable
PROSPECTING (scale/area)		none		0 hectares	not applicable
PREPARATORY / PHYSICAL					
Line/grid (km)		none		0 km	not applicable
Topo/Photogrammetric (scale, area): none				0 hectares	not applicable
Trench (number/metres)			none	0 m	not applicable
Underground development (metres)			none	0 m	not applicable
Bulk sample(s)			none	nil	not applicable

Sections 2.5 and 2.6 remain confidential under the terms of the Coal Act Regulation and have been removed from the public version.

http://www.bclaws.ca/civix/document/id/complete/statreg/251_2004

1 Table of contents

1.1 List of tables

1.2 List of Maps

2 Objectives, situation, and details of work

This report discusses exploration done on the Dillon coal lease, Tenure 412964, during autumn and winter of 2018, followed by core sampling and analytical work in 2019. Included within this report is a detailed geological map of the immediately-adjoing Dillon/Brule exploration area, which straddles the boundary between the Dillon lease and the adjoining Brule lease, both of them owned by Conuma Coal Resources Limited (Conuma). Only work done within the Dillon lease is here-reported.

Geophysical logs are included within **Appendix A**, for boreholes drilled during this period, and lithological interpretations of these logs are presented as **Appendix B**. Results of proximate and additional analyses on raw (unwashed) core samples are presented in **Appendix C**. Work here-discussed was undertaken in support of Conuma's operations within the Rocky Mountain Foothills of British Columbia. Estimated total cost was $517,486.42, at a unit cost of $209.23 per metre drilled.

2.1 Location, tenure, access and infrastructure

General location of the Dillon lease, within the Brazion coalfield of northeastern British Columbia, is depicted in **Map 2-1**, and access routes are shown in **Map 2-2**. The Brazion coalfield is here informally defined as the entire outcrop area of Jurassic and Early Cretaceous coal-measures, lying between the valleys of the Pine and Sukunka rivers. north of the Pine River through to the west bank of the Sukunka River. The coalfield name has no formal standing as a toponymic entity, and it is used within this report for purposes of convenience.

In detail, the Dillon property consists of a single Crown coal lease, Tenure No.412964, covering a total area of approximately 1176 hectares. The Dillon tenure is bounded to the west, southwest, and south by Conuma’s Brule lease, and to the southeast by Conuma’s Burnt River coal licences.

The Dillon lease is situated within the Dawson Creek TSA (Timber Supply Area). Cutting of timber for mining purposes is subject to the terms of a *Free Use Permit* issued by the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO). The property lies within Canfor’s Tree Farm Licence (TFL) No.48.

2.1.1 Access details

Surface access for drilling and other exploratory works is regulated by the provincial government, subject to the *Coal Act Regulations* and the *Mines Act*.

Road access to Dillon is available via two routes, of which the most convenient route is westward from the Sukunka River valley, and a somewhat more involved route is overland from the Pine River Valley, using Conuma’s Falling Creek Connector Road (FCCR) and Brule Connector Road, which allow coal transport from Brule Mine to Conuma’s Willow Creek coal-washery and coal-loading facility.

To reach the property via road from the Sukunka River valley, access commences from the junction of highway BC-29 and the Sukunka Forest Service Road (FSR), which is maintained by the Sukunka Road Users Committee (a group of industrial users of the road). After travelling southward along the Sukunka FSR, following the eastern bank of Sukunka River, the junction with the Blind Creek Road is reached at kilometre 16.5 of the Sukunka FSR. Conuma holds tenure to the Blind Creek Road under a *Special Use Permit* (SUP) from MFLNRO.

The Blind Creek Road crosses Sukunka River on a wood-floored deck-girder bridge suitable for highway loads, and then winds steeply uphill atop the southern canyon wall of Blind Creek.

The southern half of the Dillon lease is served by a network of mining and logging roads, with the logging roads mostly being overgrown with brush and blocked by windfall, thus passable only by all-terrain vehicles or motorbikes. The northwestern portion of the lease is traversed by the Brule Connector Road, a two-lane industrial road which is built to a high geometric standard. Some parts of the lease are only accessible on foot, via old seismic lines which cross the lease. On north- and east-facing slopes, undergrowth is generally thick, hampering cross-country travel.

The municipal airport at Chetwynd is the closest operating fixed-wing airfield to the Dillon lease. Helicopters may be chartered from the Chetwynd airport, or alternatively they may be hired from the Tumbler Ridge airport. With prior permission from the mine's management, helicopters may be landed at Brule Mine. This provision allows for the use of rotary-wing air ambulances. The closest railway service to Dillon is at Conuma's Willow Creek coal-loading facility, situated on the southern bank of Pine River, west of Chetwynd. The most direct coal-haulage route to the railway is via the Falling Creek Connector Road.

Electrical power is available from B.C. Hydro at the Sukunka substation, which feeds a wooden-construction cross-country sub-transmission line to a transformer-station located within the Dillon lease. Telecommunications, including Internet access, are available via satellite and cellular telephone systems. Satellite access is excellent in upland areas, but unreliable in the heavily-wooded hillsides. Cellular coverage also likely to be inconsistent, owing to distance from transmitters, and to blocked line-of-sight in mountainous country.

Base-mapping for the Dillon area is freely available from the provincial government's Base Map Online Store, which affords a facility for downloading representational shaded-relief topographic maps. Map-sheet 93P/5 (1:50,000) of the National Topographic System, and provincial base map sheets 093P.031 and 093P.041 (1:20,000) cover the property.

High-quality maps, based on LIDAR coverage and high-precision global positioning system (GPS) survey lines, have also been created by Brule Mine's surveying crew.

2.2 Physiography, climate and vegetation

The Dillon mining lease occupies a deeply-dissected, otherwise rounded and rolling plateau, bounded to the northwest and north by the steep southern wall of the Mink Creek valley. Elevations range from 950 metres along Blind Creek, to 1325 metres atop an unnamed hill near the northern boundary of the lease. Treeline is not encountered within the property, other than as a consequence of wildfire, mining-associated forest clearance, or logging. Immature second-growth coniferous forest covers most upland areas of the property, with more-abundant broadleaf trees along streams and creeks. South-facing slopes tend to be drier and less sparsely-treed. Soil cover is patchy, consisting mainly, of till, colluvium and alluvium, with pockets of peat and silt within poorly-drained upland areas.

The Dillon lease area has a continental alpine climate, characterised by long, moderately cold, snowy winters and short, rainy summers. Snow and frost may occur in any month of the year. Winds are generally gusty and ongoing, with rare calm periods. Convective thunderstorms frequently occur during summer months, bringing intense rain-showers and occasional hail.

2.3 Property description

The Dillon coal property consists of one coal lease (**Map 2-2**), originally granted to Western Canadian Coal Corp. (WCC), subsequently taken over by Walter Energy, and since acquired by Conuma. **Table 2-1** presents details of the coal tenure at Dillon, whose aggregate area is 1,176 hectares. Historic coal licences (staked by Teck) have since been demised into the Dillon lease.

To maintain good status, coal leases require the payment of an area-based annual rental fee as prescribed by the provincial *Coal Act Regulation*. The annual rental fee for the Dillon lease is $11,760 annually, payable on or before September 9th of each year.

Table 2-1: Coal tenure at Dillon

Tenure Numbers		Land description		Area in hectares (ha)	Dates		Annual rental at $10/ha
Current	Historic	Blocks	Units		Issued on	Renew by	
412964	CL 3079 CL 3080 CL 3084 CL 3085	93P/05 Block F	65, 66, 67, 68, 75, 76, 77, 78 85, 86, 87, 88, 95, 96, 97, 98	1176	Sep. 9, 2004	Sep 9, 2019	$11,760
Totals		1 coal lease / 16 units		1176 ha			$11,760

Note: CL -- Coal Licence (with four-digit number from historic numbering system)

2.4 Summary of exploratory drilling

The Dillon lease has been extensively drilled, with 409 historic (pre-2018) boreholes known to have been put down (with a cumulative total depth of 28,601.42 metres). The distribution of these boreholes is discussed within Coal Assessment Report 957 (Cathyl-Huhn *et al*., 2014).

The majority of the drilling was done by Teck and by WCC and its successor companies. The most recent drilling at Dillon has been an additional 13 boreholes, totalling at least 2473.24 metres, put down by Conuma during the summer, autumn, and winter of 2018 (shown as yellow markers on **Map 2-4**, and documented in **Table A-1** of **Appendix A**).

Total drilling at Dillon now stands at 422 boreholes and at least 31,074.66 metres.

2.4.1 Historic drilling (1977-2013)

During the years 1977, 1978, 1980, 1981, 2002, 2003, 2005, 2009, 2010, and 2013, 409 boreholes (totalling 28,601.42 metres' depth of drilling) were put down within the current boundaries of the Dillon lease. These boreholes are regarded as 'historic' because they predate Conuma's acquisition of the Dillon and Brule leases from Walter Energy, and they have already been reported in various of Teck's and Walter Energy's Coal Assessment Reports, as detailed under this report's references.

The majority of Teck's boreholes were cored, using a highly-mobile Winkie drilling rig. Teck also used a larger diamond-drill for a lesser number of their boreholes, and a rotary-drill for several others. Walter Energy and its predecessor firms drilled mainly by means of air-rotary equipment, with limited coring.

2.4.2 Current drilling (2018)

During the summer, autumn, and winter of 2018, an additional 13 boreholes, totalling at least 2473.24 metres, were drilled within the Dillon lease (as presented in **Table A-1** within **Appendix A** of the present report). A minimal overall length figure is given, on account of no details having been available as concerns a groundwater monitoring well (BM 18-01W) drilled during the summer of 2018.

All boreholes were drilled by means of air-rotary equipment. Large-diameter air-rotary cores were taken in one borehole (BM 18-03W); a core description is presented as **Annex C-2** of Appendix C of this report.

All but one (BM 18-01W) of these boreholes were geophysically logged. Logs are presented within **Appendix A** of the digital copy of this report. Reasons for not logging the one borehole were lack of significant bedrock intersection, and budgetary constraints.

The majority (10) of the boreholes were drilled by RC Drilling Ltd. of Saskatoon, Sakatchewan, using a tracked drill-rig, service truck, towed air-compressor, and a portable light plant.

Two of the remaining three boreholes (BM 18-02W and -03W) were drilled as groundwater monitoring and potential pumping wells by Anderson Water Services Ltd. of Fort St. John, British Columbia, using a water-well rig mounted on a wheeled crane carrier. As with the RC Drilling operation, a supplemental air-compressor was used.

Contractor information and construction details are unavailable for one well (BM 18-01W); this well was intended as a monitoring well to investigate the performance of a saturated backfill installation within the old workings of Dillon Mine.

2.4.3 Cross-reference to statistical tables concerning drilling

Tables A-1 and **A-2**, presented within **Appendix A**, present positions, depths, orientations (if known), and other salient details of year-2018 boreholes within the Dillon lease. Blank entries in **Table A-1**, regarding geophysical logs, indicate that the relevant log(s) were not run, generally owing to downhole conditions.

2.4.4 Geophysical experimentation

Two seldom-run logs were run in BM18-04, one of the year-2018 Dillon holes: Century Geophysical's sonic tool, and their spectral gamma-ray ('KUT-log') tool. These tools were run on an experimental basis, to ascertain whether they might be useful in locating anomalously-mineralised zones of fine-grained rocks (conceptually, marine bands, but now considered more likely to be lacustrine-facies 'lake beds'). No noteworthy anomalies were observed via the running of these logs.

2.4.5 Programme intent, outcome, and deposit-modelling

The year-2018 in-pit structural drilling within the Dillon lease was intended to contribute to reduced ambiguity of structural and coal-thickness modelling results at Brule Mine (whose workings span the boundary between the Dillon and Brule leases). By confirming the presence of coal-zone splits, pinch-outs, and overthrust faulting (including substantial tectonic thickening) of the deemed-mineable coals, the drilling has met its technical objectives.

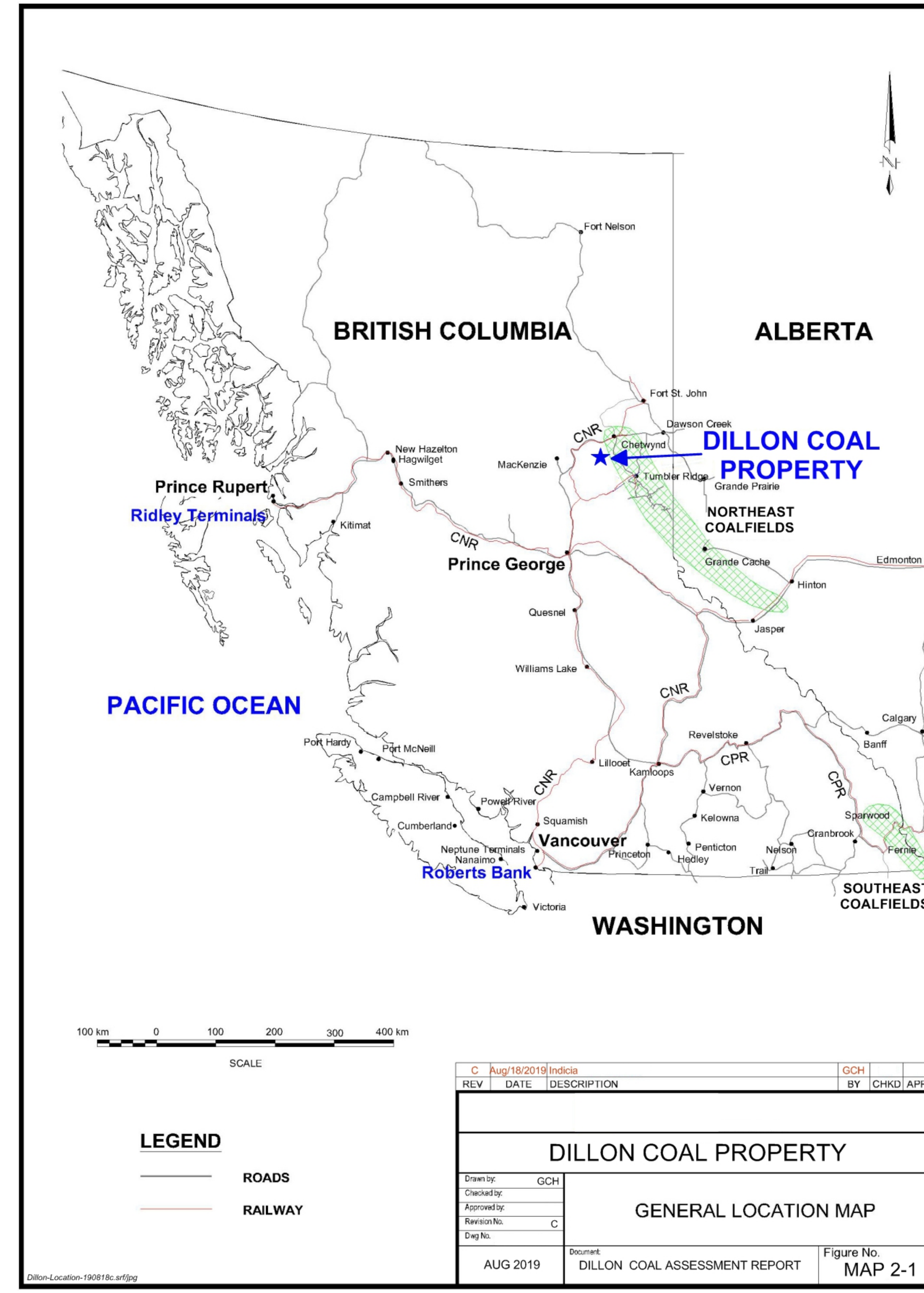
Deposit-modelling work has been conducted by Conuma's Brazion Group geological staff, in close co-operation with mine-planning engineers. Results of the modelling have been incorporated into the updated working plan for Brule Mine.

2.4.6 Discussion of analytical work

Analytical work (as presented in **Appendix C**, and **Annex C-1** thereto) was performed by Birtley Coal and Minerals Testing's Calgary laboratory, on coal and associated rock core samples from two year-2013 geotechnical boreholes (BR 13-01C and BR 13-02C), and one year-2018 groundwater test well (BM 13-03W). Analytical work was done solely on raw (unwashed) samples. No washing tests were done, owing to the low free swelling indices (FSI) of the raw coals.

2.4.7 Tabulation of coal intersections

Table B-1, presented within **Appendix B** of this report, contains lithological interpretations ('lith-files') of downhole geophysical logs from the year-2018 drilling within the Dillon lease. **Table B-2**, also presented within **Appendix B**, contains lithological interpretations for six selected historic (pre-2018) boreholes within the Dillon lease.


BRITISH COLUMBIA
ALBERTA
DILLON COAL PROPERTY
NORTHEAST COALFIELDS
SOUTHEAST COALFIELDS
PACIFIC OCEAN
WASHINGTON
Prince Rupert
Ridley Terminals
Prince George
Vancouver
Roberts Bank
Neptune Terminals
Fort Nelson
Fort St. John
Dawson Creek
Chetwynd
Tumbler Ridge
Grande Prairie
Grande Cache
Hinton
Jasper
Edmonton
Calgary
Banff
MacKenzie
New Hazelton
Hagwilget
Smithers
Kitimat
Quesnel
Williams Lake
Revelstoke
Kamloops
Lillooet
Vernon
Kelowna
Penticton
Princeton
Hedley
Nelson
Trail
Cranbrook
Sparwood
Fernie
Squamish
Powell River
Port Hardy
Port McNeill
Campbell River
Cumberland
Nanaimo
Victoria
CNR
CPR
100 km 0 100 200 300 400 km
SCALE
LEGEND
ROADS
RAILWAY
C Aug/18/2019 Indicia GCH
REV DATE DESCRIPTION BY CHKD APRVD
DILLON COAL PROPERTY
Drawn by: GCH
Checked by:
Approved by:
Revision No. C
Dwg No.
GENERAL LOCATION MAP
AUG 2019
Document: DILLON COAL ASSESSMENT REPORT
Figure No. MAP 2-1
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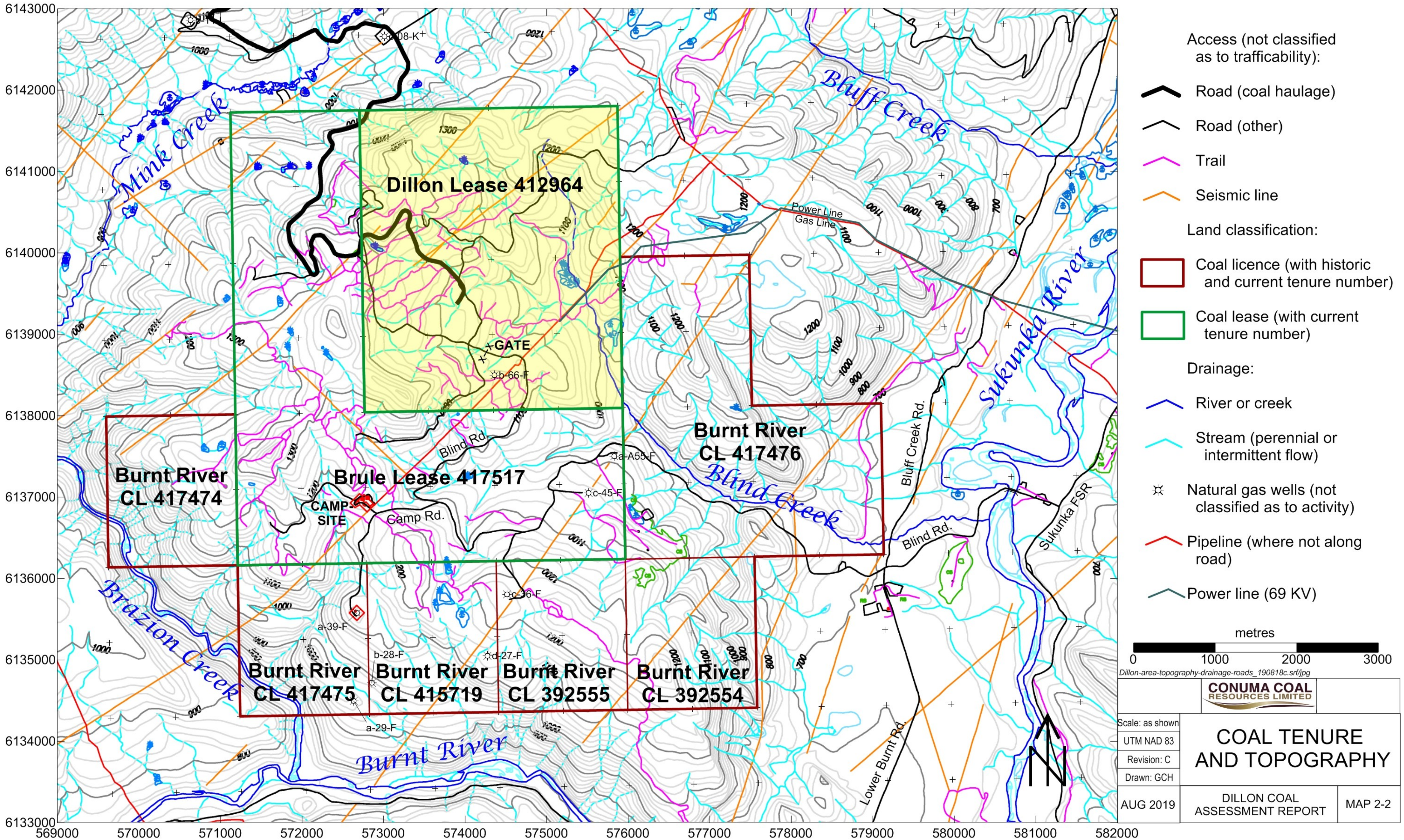
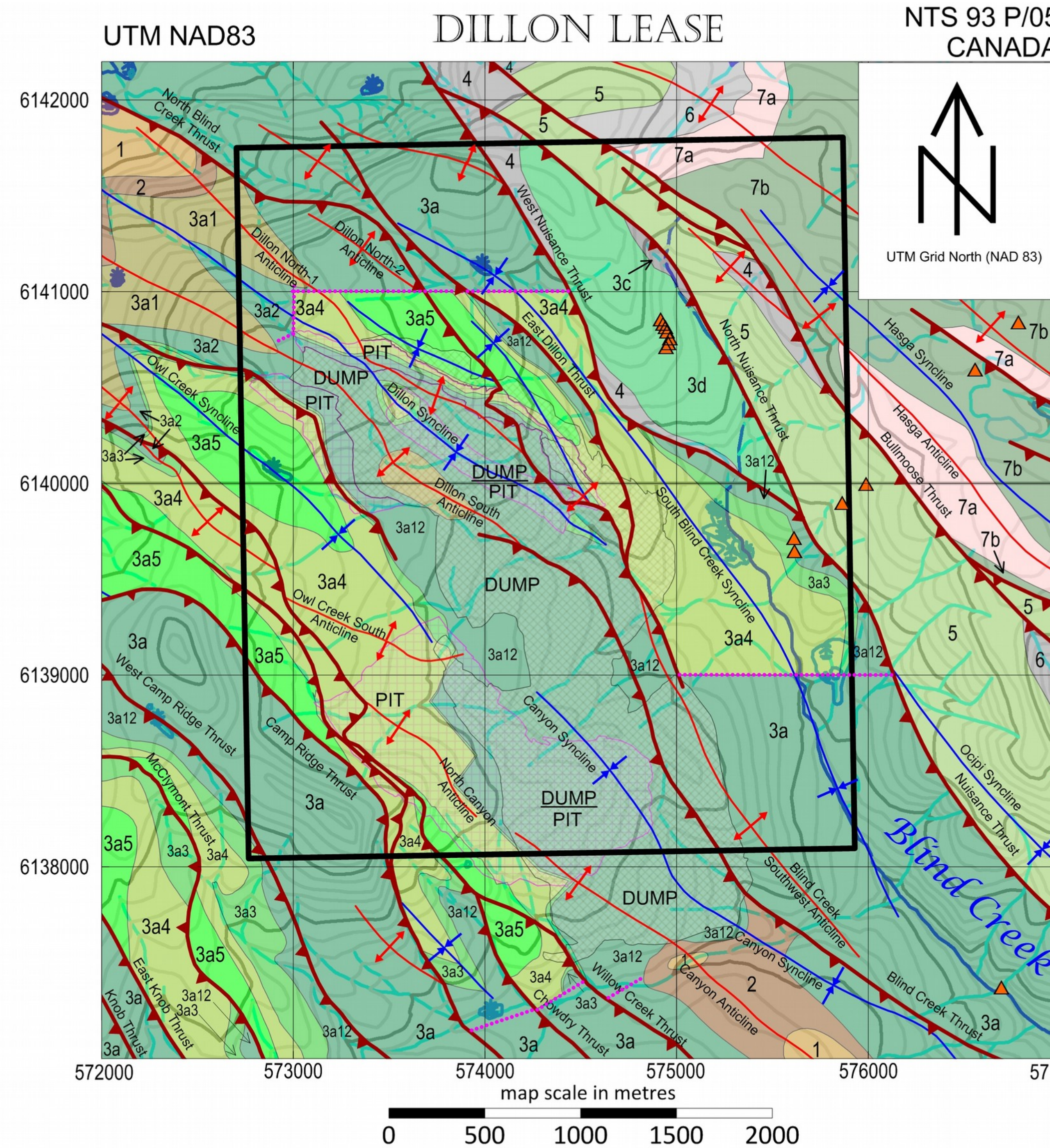

Dillon Lease 412964
Brule Lease 417517
Burnt River CL 417474
Burnt River CL 417476
Burnt River CL 417475
Burnt River CL 415719
Burnt River CL 392555
Burnt River CL 392554
Mink Creek
Bluff Creek
Blind Creek
Sukunka River
Brazion Creek
Burnt River
GATE
CAMP SITE
Camp Rd.
Blind Rd.
Bluff Creek Rd.
Sukunka FSR
Lower Burnt Rd.
Power Line
Gas Line
Access (not classified as to trafficability):
Road (coal haulage)
Road (other)
Trail
Seismic line
Land classification:
Coal licence (with historic and current tenure number)
Coal lease (with current tenure number)
Drainage:
River or creek
Stream (perennial or intermittent flow)
Natural gas wells (not classified as to activity)
Pipeline (where not along road)
Power line (69 KV)
metres
0 1000 2000 3000
Dillon-area-topography-drainage-roads_190818c.srf/jpg
CONUMA COAL RESOURCES LIMITED
Scale: as shown
UTM NAD 83
Revision: C
Drawn: GCH
COAL TENURE AND TOPOGRAPHY
AUG 2019
DILLON COAL ASSESSMENT REPORT
MAP 2-2

DILLON LEASE

UTM NAD83

NTS 93 P/05
CANADA



STRATIGRAPHY

	FORT ST JOHN GROUP (Albian)
7	Boulder Creek Formation -- sandstone, shale, conglomerate and coal
7b	Walton Creek Member -- siltstone, sandstone, conglomerate and coal
7a	Cadotte Member -- conglomerate and sandstone
6	Hulcross Formation -- marine shale and siltstone, minor bentonite; basal grit
5	Gates Formation -- sandstone, shale, conglomerate; minor coal
4	Moosebar Formation -- marine siltstone and shale; bentonite; basal pebbly glauconitic sandstone (not Bluesky Member)
	BULLHEAD GROUP (Barremian to Aptian)
3	Gething Formation -- siltstone, sandstone and conglomerate; minor bentonite and coal
3d	Chamberlain Member -- sandstone and siltstone; minor coal
3c	Bullmoose Member -- marine shale and siltstone; minor sandstone and bentonite
3b	Bluesky Member -- pebbly glauconitic sandstone (not mapped separately at this scale)
3a	Gaylard Member -- siltstone, sandstone and coal; lenses of conglomerate and pebbly sandstone; minor bentonite
3a5	Division 5 -- sandstone and siltstone; minor coal
3a4	Division 4 -- siltstone and sandstone; coal
3a3	Division 3 -- siltstone and shale; coal
3a12 / 3a2	Division 2 -- siltstone and sandstone; minor conglomerate and coal
3a12 / 3a1	Division 1 -- sandstone, conglomerate and siltstone; minor coal
2	Cadomin Formation -- cliff-forming conglomerate and sandstone; minor siltstone and coal
	MINNES GROUP (Tithonian to Valanginian)
1	Bickford, Monach, Beattie Peaks and Monteith Formations -- sandstone, siltstone, shale, conglomerate, quartzite, ironstone and coal (not mapped separately at this scale)

STRUCTURE AND MAPPING

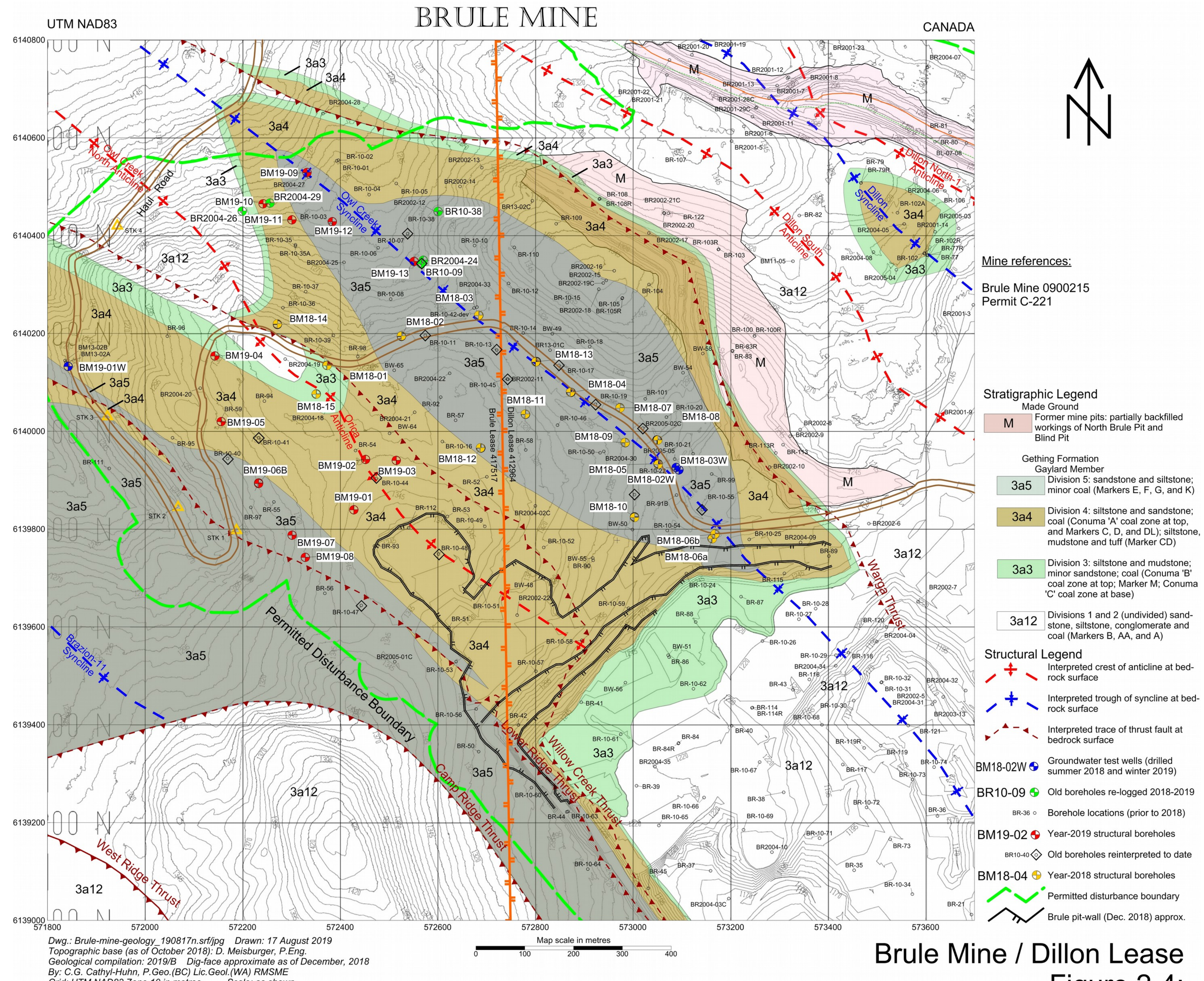
- Anticline
- Syncline
- Strike-slip or tear fault
- Thrust fault -- barbs on overthrust plate
- Limit of detailed stratigraphic mapping
- Outline of Walter's coal licences and leases
- Coal outcrop (as reported by McClymont, 1981)

Author: C.G. Cathyl-Huhn P.Geo. Lic.Geol. RMSME Date: 2019 August 18
Grid system: UTM NAD83 Zone 10N in metres 100 km grid square: ES
Scale: as shown on bar-scale Topography: TRIM-derived rasters
Sources: compiled from work by P.B. Jones (Triad Oil, 1960), B.McClymont (Teck Corporation, 1979, 1981), J.Hughes (Gulf Canada, 1980), and D.J.Hunter and J.M.Cunningham (BCGSB, 1991) and A.Legun (BCGCB, 2003)

CONUMA COAL RESOURCES LIMITED

REV	DATE	DESCRIPTION
M	Aug.18/19	Indicia

Drawn by: GCH Scale: as shown Dwg. No.: Dillon-lease-geology-190818m.srf/jpg	GEOLOGY OF DILLON COAL LEASE 412964
AUG 2019	DILLON COAL ASSESSMENT REPORT — MAP 2-3



Brule Mine / Dillon Lease
Figure 2-4:
Mine-scale geological map

Coals are identified with seam names in those cases where correlations are well-established, with emphasis upon coals which are already recognised as having mineable thickness within the Dillon lease. Other unnamed thinner or more-sporadic coals might also eventually be correlatable with their own seam names, but such detailed work has not yet been undertaken.

The Dillon coal lease contains numerous thin and thick coal beds, moreso than previously-interpreted. A similar circumstance obtains within the recently-drilled portion of the Brule coal lease, as previously-discussed within Coal Assessment Report No.1049 (Cathyl-Huhn, 2019). The reason for this increase in recognition stems from the use of improved geophysical logging tools and interpretive algorithms, and the generally-greater length of individual boreholes, especially within structurally-complex areas.

Details of coal intersections within historic boreholes are also comprehensively-presented within the Coal Assessment Reports produced by Teck, of which the most informative reports are Nos.488 (McClymont, 1979) and 490 (McClymont, 1981). Walter Energy's subsequent Coal Assessment Report No. 957 (Cathyl-Huhn *et al.*, 2014) presents data for coal intersections from historic boreholes drilled subsequent to Teck's sale of the property to Western Canadian Coal.

[redacted]

[redacted]

2.7 Acknowledgements and professional responsibility

Jerry Holmes P.Geo., consulting project manager from Apex Geoscience, acted under the author's direction to capably and nimbly conduct the 2018 in-pit drilling and downhole geophysical programme at Dillon. Randy Clouthier of RC Drilling persevered tirelessly to get the in-pit structural boreholes down to their targets, despite snowfall and extended periods of cold weather. Andres Acevedo P.Geo. logged the cores from boreholes BR 13-01C, BR 13-02C, and BM 18-03W, and with Jerry Holmes' assistance, took the core samples as tabulated in **Appendix C** of this report.

Thanks are also due to Dustin Meisburger P.Eng, formerly manager of mine engineering at Conuma, for assistance with assembly of base-maps. Discussions with consulting structural geologist Dr Peter Jones have continued to be fruitful, building on a base of his five decades studying the tectonics of the Foothills region. Gwyneth Cathyl-Huhn P.Geo. accepts overall professional responsibility for the contents of this report.

3 Geology

Regional and local geology of the Brazion coalfield and of the Dillon mining lease (**Map 2-3**) is known mainly from the extensive work of D.F. Stott (1960; 1963; 1968; 1972; 1973; 1974; 1981; 1998) and D. Gibson (1992), both from the Geological Survey of Canada, and (from the coal industry) B. McClymont (1979; 1981) from Teck, and Dr. M.A. Chowdry (from BP coal, largely-unpublished work, late 1970s and early 1980s).

As well, numerous other relevant coal-company reports are available as Coal Assessment Reports from the British Columbia Geological Survey Branch, as cited in **Section 7** of this report. Full copies of reports (including maps, geophysical logs, and other illustrations) are available for download via the Survey's website, although subsequent printing and plotting are at the reader's expense.

3.1 Regional geology

The Dillon lease and the adjoining Brule lease lie within the Brazion coalfield of northeastern British Columbia, part of the Foothills structural province of the Canadian Cordillera. All rocks exposed at the ground surface are of Early Cretaceous age, belonging to the Minnes (Tithonian to Valanginian stages) and Bullhead (Barremian to Aptian stages) groups.

Where not subsequently eroded, the total undeformed thickness of these rocks is estimated to be 1560 to 1625 metres. Depth to Precambrian continental basement, including both Mesozoic and Palaeozoic rocks, is more substantial, in the range of 10 to 12 kilometres (McMechan, 1984), although some of this thickness is attributable to thrust-induced tectonic stacking of the strata, and to associated shortening across folds (McMechan, 1985).

The majority of sedimentary rocks within the Brazion coalfield are clastic in origin, ranging in grain-size from claystones and mudstones through pebble-conglomerates. Lesser amounts of biologically- and chemically-derived sedimentary rocks are present, comprising coals, banded and nodular ironstones, glauconite-rich sandstones and gritstones, and impure dolomites.

Volcanic rocks constitute a very small component of the Jurassic and Early Cretaceous strata, comprising very fine- to fine-grained tuffs (the 'ash bands' of **Tables B-1** and **B-2**), interpreted to have originated as wind-borne distal ash-fall deposits from contemporaneous eruptions of volcanoes situated within the Coast Plutonic Complex, far to the southwest of the property (Gordee *et al.*, 2003; Mahoney *et al.*, 2009). The volcanic rocks characteristically occur as very thin (at most a few decimetres) yet regionally-extensive bands characterised by distinctive pale colour and anomalously-high natural gamma radioactivity, which are of use as geological and geophysical markers for structural and stratigraphic correlations. No intrusive rocks are known to occur at Dillon, nor within the coalfield in general.

3.1.1 Regional sedimentology and stratigraphy

During much of the Early Cretaceous period, the Western Interior of North America was occupied by a shallow seaway, variably-designated by different authors as the Western Interior Sea, the Boreal Sea, or by analogies of formation names, such as the Clearwater Sea, Hulcross Sea or Moosebar Sea. Seaway depths, magnitude of accommodation space for sediments, and overall shoreline trends, were largely controlled by vertical movements within a block-faulted crystalline basement terrane of Precambrian age, the Peace River Arch (Stelck, 1975).

During the latest Jurassic and earliest Cretaceous periods, sediments of the Minnes Group and the basal part of the Bullhead Group were derived from actively-eroding upland areas within the North American craton, particularly from the Peace River Arch. The receiving basin during this early time period lay to the west of the craton, within an actively-subsiding continental shelf which prograded westwards into the ancestral Pacific Ocean. Subsequently, slightly later within the Early Cretaceous period, sediments of the upper Bullhead Group were derived from actively-rising thrust-faulted tectonic forelands situated to the southwest of the Western Interior Sea, synchronous with the docking of allochthonous tectonic terranes against the western margin of the North American craton, and concomitant plutonic and volcanic activity.

3.1.2 Regional tectonics

The Brazion coalfield's structural geology is moderately complex, on a similar order of complexity as seen to the southeast at deeper structural levels near Sukunka Colliery (Wallis and Jordan, 1974). The overall structural style of the coal-measures is thin-skinned (Barss and Montandon, 1981), dominated by arcuate, northeast-verging, passively-folded, imbricate thrust-faults, with associated tight concentric folds. Thrusts characteristically overlap in *en echelon* manner, with displacement gradually transferring from one fault to another via trains of folds.

Thrusts range in scale from outcrop-scale mesoscopic features with stratigraphic displacements of a few decimetres to a few metres, to throughgoing faults and fault zones (such as the Willow Creek Thrust), whose stratigraphic offsets may locally be as great as several hundred metres, and whose fault-parallel movement may be up to a kilometre.

Age relationships amongst the thrusts are interpreted to be similar to tectono-temporal relationships generally-observed within the Cordilleran fold-thrust belts of northwestern North America, with the oldest thrusts inferred to occupy stratigraphically-higher positions than the younger thrusts.

3.2 Structural geology at property scale

In detail, the Dillon lease occupies a series of moderately- to tightly-compressed and folded structural slices (informally referred to as structural 'plates', following general regional practice) bounded and stacked by northeastward-verging thrust-faults. Folds are concentric and cylindrical within the centre of their strike length, tending to change to conical forms at either end of their strike length. Near-isoclinal *en-echelon* folds have been observed (and their contained coals successfully mined) within the central portion of the Dillon lease. Broader *en echelon* folds have been mined-through within the Dillon portion of Brule Mine, where their wavelengths have at times been less than the spacing of exploration holes.

In some cases, structural shortening and consequent layer-parallel slip has been accommodated by intense shearing within coal beds. The most noteworthy horizon of internal shearing, as indicated by 'breakouts' of caliper-logged boreholes, is within the Marker B coal bed, close beneath the Conuma 'C' coal bed. Shearing within Marker B may represent a local- to property-scale horizon of tectonic detachment, along which thrust faults have.

Despite the pervasive faulting of the coal-measures, normal stratigraphic facing of the rocks is generally preserved. Overturned beds have not been observed within the Dillon lease. Within the tightly-compressed synclines of the central portion of Dillon lease, multiple structural ‘horses’ of overthrust coal have been encountered by historic boreholes..

Thrust faults, as inferred from landforms and from limited ground-surface observations, in general display sinuous map traces. Thrusts are furthermore suspected to curve vertically, in consequence of structural refraction between weak and strong beds, and also due to passive folding above later-formed structural ramps along deeper, younger thrusts.

Structure is locally-complicated by imbricate fans, such as have been encountered by drilling within the trough of the Owl Creek Syncline. In this locality, numerous imbricate slices of the Conuma 'A' and Marker D coal beds have been encountered.

Map 2-3 depicts the interpreted regional-scale pattern of thrusts and folds within and adjacent to the Dillon property, whereas **Map 2-4** depicts the local-scale structural pattern of the area which was drilled within the conjoined Dillon (in 2018) and Brule (in 2018-2019) leases. Some of the structures’ names were first assigned by Teck Corporation’s workers, others have been inherited from more detailed work by Walter Energy staff and by consultants studying the Brule and Dillon mining areas, whilst yet others are newly-coined by the present author for the purposes of the regional geological study which underpins the present report.

At the bedrock surface, positional confidence of faults, folds and associated geological-unit contacts ranges from ‘speculative’ to ‘defined’ within the Dillon coal property, with the highest confidence being associated with the closely-drilled northern part of the lease. Within boreholes, the assurance-of-position of interpreted faults ranges from 'established' (greatest confidence) through 'probable' (high-moderate confidence), to 'possible' (low-moderate confidence).

4 Stratigraphic context of coals and rock-units at Dillon

A generalised stratigraphic profile of the Jurassic-Cretaceous section at Dillon is presented below as **Table 4-1**. Thicknesses of rock-units are estimates from regional stratigraphic trends, with the exception of the Gaylard Member, whose thickness is established by drilling.

Table 4-1: Table of formations, members, and subdivisions

Group/Formation/ Member			Map-Unit	Lithology and thickness		Coal bed details
Bullhead Group	Gething Fm.	Chamberlain Mb.	3d	sandstone and siltstone; minor conglomerate and coal		*completely removed by erosion at Dillon*
		Bullmoose Mb.	3c	marine shale and siltstone; minor sandstone and tuff.		
		Bluesky Mb.	3b	glauconitic pebbly sandstone, pebbly mudstone and conglomerate.		
		Gaylard Mb.	3a	3a5	Division 5 (beds above Conuma 'A' coal): sandstone and silt-stone, coal; 95 to 105 m thick.	minor coals: Markers K,G, F, and E
				3a4	Division 4 (beds above Conuma 'B' coal): siltstone and sand-stone; coal; 45 to 75 m thick.	major coal: Conuma 'A' (at top); minor coals: Markers D, DL, and C.
				3a3	Division 3: siltstone and shale; coal; 8 to 35 m thick.	major coals: Conuma 'B' (at top) and Conuma 'C' (at base); minor coal (Marker M) locally present between Conuma 'A' and 'B' coals.
				3a2	Division 2 (beds below Conuma 'C' coal): siltstone and sandstone; minor conglomerate and coal; 105 m thick?	minor coals: Markers B (near top), AA, and A (near base).
				3a1	Division 1: sandstone, conglomerate and siltstone; minor coal near base; 35 to 70 m thick.	sparsely-drilled within property; difficult to distinguish from Cadomin.
	Cadomin Fm.		2	gritty sandstone; conglomerate; minor siltstone; 8 to 35 m thick?		
Minnes Group	Bickford Fm. (formerly known as the Brenot Fm.)		1	1d	sandstone, siltstone, mudstone and coal; 285 to 300 m thick.	not yet drilled within property.
	Monach Fm.			1c	sandstone and quartzite; minor siltstone and conglomerate; 50 m thick.	
	Beattie Peaks Fm.			1b	sandstone, siltstone and shale; ironstone and coal; 300 m thick.	not yet drilled within property.
	Monteith Fm.			1a	sandstone, shale and conglomerate; quartzite; 600 m thick?	

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The following discussion examines the major rock-units and associated coal beds within the Dillon lease. For convenience, discussion follows the headings of ‘Younger rocks’ (**Section 4.1**), ‘Gething Formation coal-measures’ (**Section 4.2**) and ‘Older rocks’ (**Section 4.3**).

4.1 Younger rocks (map-units 4 through 7)

Rocks younger than the coal-bearing Gaylard Member of the Gething Formation appear to have been completely stripped away by erosion, within much of the Dillon lease area. These younger rocks, comprising the basal part of the Fort St. John Group are however preserved within and adjacent to the northeastern corner of the Dillon lease, northeast of and underlying a major throughgoing thrust (the Bullmoose Thrust) situated within the headwaters of Blind Creek and Bluff Creek.

Several kilometres' thickness of Fort St. John Group rocks are inferred to have originally overlain the Gething coal-measures throughout the Dillon property, and to have therefore caused the deep burial of the Gething coals which resulted in their having reached a low-volatile bituminous rank at Dillon.

4.2 Gething Formation coal-measures (map-unit 3, and 3a through 3d)

The Gething Formation, of early Aptian to early Albian age within the Early Cretaceous (Gibson, 1992), comprises thin to thick interbeds of siltstone, sandstone, mudstone and coal, with lesser amounts of gritstone, pebble-conglomerate, ironstone and tuff. The Gething Formation includes beds formerly designated as the Dresser Formation by Hughes (1964); its current stratigraphic extent was established by Stott (1968).

The Gething Formation originated as a complex of non-marine to shallow-marine sedimentary deposits, laid down by meandering and braided streams and rivers within a widely-extensive belt of coastal deltas, of which two (the Gaylard and Chamberlain paleodeltas) prograded northeastward into the Dillon/Brule/Burnt River area.

Coals of the Gething Formation at Dillon, and their enclosing sedimentary rocks, were deposited between 111 and 123 million years ago (Gibson, *ibid.*), with age-dating on the basis of regional plant-fossil and foraminiferal zonations.

Following upon suggestions made by coal-company geologists (Wallis and Jordan, 1974) and subsequent palaeontologically-supported correlation of borehole logs by the British Columbia Geological Survey (Duff and Gilchrist, 1981), Gibson formally divided the Gething Formation into three members: the upper, non-marine to transitional Chamberlain Member, the middle marine Bullmoose Member, and the basal, non-marine to transitional Gaylard Member. A fourth member of the Gething Formation, the Bluesky Member, is also inferred to be present between the base of the Bullmoose Member and the top of the Gaylard Member. Further to the north from Dillon, the Bluesky is regarded as a formation in its own right.

The Chamberlain coals and their enclosing rocks, together with the underlying marine rocks of the Bullmoose and Bluesky members, have been completely removed by erosion within most of the Dillon lease, although they are inferred to be present within the lease's northeastern corner.

4.2.1 Gaylard Member (map-unit 3a)

The Gaylard Member of the Gething Formation is inferred to be represented at Dillon by approximately 330 metres of siltstone, sandstone, mudstone and minor ironstone, tuff, gritstone and conglomerate, accompanied by three thick coal beds (from top down, the Conuma 'A', Conuma 'B', and Conuma 'C' coal beds, often several metres thick, and at least eight thinner coal beds (collectively termed the ‘Marker’ coals) which seldom exceed 1.5 metres' thickness.

At Dillon, Brule, and Burnt River, the Gaylard coal-measures may be usefully subdivided into five informal 'divisions', based mainly upon gross lithology and the presence of major coal beds. Stratigraphic details of these informal divisions are presented in **Tables 4-1** and **4-6**.

The Gaylard coal-measures are punctuated by bands of lacustrine (less-likely: shallow-marine) rocks. The thickest and most readily-recognised of these bands at Dillon comprises 2 to 9 metres of interbedded mudstone and siltstone with minor very thin bands of sandstone and tuff, designated as 'Marker CD,' within Division 4 of the Gaylard Member. Marker CD can be readily recognised by its elevated natural gamma-radiation response on geophysical logs.

Roof of coals and markers in year-2018 Dillon boreholes:
Part 1 -- Drift and Marker K down to Marker CD -- **Table 4-2**

Borehole	*Collar*	*Drift*	*Mkr K (ply MKA)*	*Mkr K (ply MKB)*	*Mkr G*	*Mkr F*	*Mkr E (ply MEA)*	*Mkr E (ply MEB)*	*Conuma A coal zone*	*Mkr D*	*Mkr DL*	*Mkr CD*
BM18-01W	*unknown*	*no logs run*										
BM18-02W	1277.86	15.45			32.70	39.05	51.00	52.20	65.20	69.30	77.20 97.75	88.20 114.90
BM18-03W	1278.19	16.90			34.00	40.40 41.40	52.80	53.95	67.50	71.80	79.95 102.00	91.00 120.50
BM18-04	1298.12	10.45	11.10	14.00	66.65	74.90 79.60	89.80	90.70	104.10	108.10 141.30	123.30 153.50	138.60 168.45
BM18-05	1279.78	12.30			40.10	46.70 51.55	60.80	61.90	76.50	81.05	90.60 124.10	109.15 132.00
BM18-06A	1265.63	18.00				20.50	29.30	31.00	45.90	50.65	65.00	107.60 111.95
BM18-06B	1265.11	18.90					25.15	26.60	39.70	43.90	61.40	99.30 100.35
BM18-07	1293.07	9.00			48.10	54.30	67.40	68.40	85.80 90.50	96.50	106.30	115.00
BM18-08	1283.89	8.70			38.10 40.20	46.00	59.70	61.00	75.60 80.95 85.40	91.70 93.60	103.95	111.95 135.50
BM18-09	1292.74	9.00	11.90	17.45	58.75	70.25 74.50	86.70	88.35	103.70	107.30	115.85	123.70 130.50
BM18-10	1281.33	8.60							26.65	31.10	39.20	58.50
BM18-11	1317.9	4.30			36.60	44.15	56,25	57.20	69.65	74.40 78.20	87.20	97.15
BM18-13	1301.87	6.45	13.30	15.80	69.60	75.50	86,40	87.55	100.10 121.80	104.70 120.00 124.35	116.00 135.75	150.85 165.40

Roof of coals and markers in year-2018 Dillon boreholes:
Part 2 -- Drift and Marker C down to Marker A -- **Table 4-3**

Borehole	*Collar*	*Drift*	*Mkr C*	*Conuma B (ply CBA)*	*Conuma B (ply CBB)*	*Mkr M*	*Conuma C (ply CCA)*	*Conuma C (ply CCB)*	*Mkr B*	*Mkr AA*	*Mkr A*
BM18-01W	*unknown*	*no logs run*									
BM18-02W	1277.86	15.45	146.90	193.10	195.35	DNR	DNR	DNR	DNR	DNR	DNR
BM18-03W	1278.19	16.90	153.75	202.90	204.75	DNR	DNR	DNR	DNR	DNR	DNR
BM18-04	1298.12	10.45	200.05	229.45	230.35	NR	242.40	242.60	247.70	265.45	DNR
BM18-05	1279.78	12.30	167.10	199.60	201.70	NR	224.75		231.20	242.70	DNR
BM18-06A	1265.63	18.00	131.35 132.60	DNR	DNR	DNR	DNR	DNR	DNR	DNR	DNR
BM18-06B	1265.11	18.90	121.90	151.10	152.45	157.80	166.55		171.35	181.30	236.45
BM18-07	1293.07	9.00	144.00	DNR	DNR	DNR	DNR	DNR	DNR	DNR	DNR
BM18-08	1283.89	8.70	DNR	DNR	DNR	DNR	DNR	DNR	DNR	DNR	DNR
BM18-09	1292.74	9.00	DNR	DNR	DNR	DNR	DNR	DNR	DNR	DNR	DNR
BM18-10	1281.33	8.60	75.80	102.05	103.15 104.95	NR	123.25 126.90	128.70	135.30	152.50	DNR
BM18-11	1317.9	4.30	132.95	158.55	160.35	NR	180.75		188.70 190.30	207.65	DNR
BM18-13	1301.87	6.45	194.30	220.55	221.70	NR	231.80		238.00	252.50	DNR

Roof of coals and markers in selected pre-2018 Dillon boreholes:
Part 1 -- Drift and Marker K down to Marker CD -- **Table 4-4**

Borehole	*Collar*	*Drift*	*Mkr K (ply MKA)*	*Mkr K (ply MKB)*	*Mkr G*	*Mkr F*	*Mkr E (ply MEA)*	*Mkr E (ply MEB)*	*Conuma A coal zone*	*Mkr D*	*Mkr DL*	*Mkr CD*
BR2005-2C	1288.28	6.95			46.20	55.30	66.15	67.20	83.15 88.20 96.65 99.85 106.50	91.75 113.35	123.05	132.05
BR10-17	1300.40	8.60	11.80	13.95	58.05	65.10	75.85	76.85	91.30 94.50	100.60 103.95 105.70	116.30	126.05
BR10-19	1295.44	5.00	9.25	14.40	59.70	68.30	79.30	80.25	98.83	102.85 120.25	113.95 116.60 128.05	142.00
BR10-23	1285.46	4.60			10.60 13.30	19.95	27.75	28.75	44.60	48.30	55.70	61.05
BR10-45	1313.71	2.10			40.90	47.10	58.85	59.65	70.10	74.80 78.20	NR?	102.85
BR10-55	1264.33	14.85				14.85	23.85	24.95	35.00 35.40	41.30	50.15? 70.00	92.15

Roof of coals and markers in selected pre-2018 Dillon boreholes:
Part 2 -- Drift and Marker C down to Marker A -- **Table 4-5**

Borehole	*Collar*	*Drift*	*Mkr C*	*Conuma B (ply CBA)*	*Conuma B (ply CBB)*	*Mkr M*	*Conuma C (ply CCA)*	*Conuma C (ply CCB)*	*Mkr B*	*Mkr AA*	*Mkr A*
BR2005-2C	1288.28	6.95	168.55	205.40	207.00	DNR	DNR	DNR	DNR	DNR	DNR
BR10-17	1300.40	8.60	163.40	190.40	191.65	NR	201.80	202.65	205.50	DNR	DNR
BR10-19	1295.44	5.00	170.80	196.25	197.55	NR	208.15	209.30	211.45	DNR	DNR
BR10-23	1285.46	4.60	88.95	114.40	115.85	NR	129.20	131.10	137.65	DNR	DNR
BR10-45	1313.71	2.10	126.80	149.15	150.85	167.20	168.00		176.95	DNR	DNR
BR10-55	1264.33	14.85	108.20	139.70	141.80 142.50	NR	159.10		168.15	DNR	DNR

***Notes for Tables 4-2 through 4-5**: DNR indicates 'did/does not reach' the horizon in question; NR indicates 'not recognised'*

4.2.1.1 Gaylard lithologies

Siltstone is by far the predominant lithology within the Gaylard Member, characterised by variable levels of bioturbation from patchy to intense, occasionally with bands of nodular or massive (rarely mosaic-textured) ironstone, and muddy to very sandy. Where they closely underlie coal beds, Gaylard Member siltstones are often rooty and somewhat carbonaceous, although immediate floors of coals generally grade upward to variably-carbonaceous mudstones.

Sandstones within the Gaylard Member range in texture from fine- to coarse-grained, rarely very coarse-grained to gritty or pebbly, and they are frequently cross-bedded. Channel-scours are characteristically found at the base of thicker sandstone units. The immediate basal portions of some channel-filling sandstones are sparsely- to moderately-bioturbated. Closely-spaced drilling demonstrates that the Gaylard sandstones vary rapidly in thickness between boreholes. Some of this variation may be due to channel-filling morphologies, whilst in other cases the tops of the sandstones may be bar-forms, draped in a variable thickness of fine-grained sedimentary rocks.

Mudstones within the Gaylard Member are generally silty, at times very silty, and variably-carbonaceous. Nodular ironstone (perhaps also banded ironstone) occasionally occurs in mudstone units. Glauconite is rarely, but notably, present within finer mudstones of Division 5 of the Gaylard, suggesting that such mudstones may host higher-order maximum flooding surfaces. Coaly mudstones are characteristically present as thin (centimetre- to decimetre-scale) partings within coal beds, or as lenses immediately overlying the tops of coal beds.

Coaly mudstones are occasionally associated with elevated fusain contents in the immediately-underlying coals. Such mudstone beds also characteristically display elevated gamma-ray geophysical log responses, allowing the lateral tracing of coalbed splits into laterally-adjacent areas of minimal parting thickness.

Tuff bands (colloquially termed as ‘ash bands’) are occasionally observed within the well-exposed sections of the Gaylard Member within the working-faces of Brule Mine. These bands of pyroclastic volcanic rock appear as distinctively white to very light grey, clay-rich, soft layers, ranging from a few millimetres to a decimetre thick, within their otherwise-unremarkable bounding strata.

4.2.1.2 Gaylard coals

Tables 4-2 through **4-5** (above) summarise the drilled intersections of Gaylard coals within those of the current (year-2018) boreholes drilled within the Dillon lease for which logs are available, and within a selection of pre-2018 boreholes. Depths given are for the roofs of the coals, derived from interpretation of borehole geophysical logs, in metres along the boreholes' trajectories. Stacked depths within table cells indicate the presence of thrust-faulted repeats of the coals

As observed in borehole intersections, coals and associated coaly mudstones comprise 5% to 10% of the Gaylard section at Dillon, with the greatest proportion of coal within the middle third of the Gaylard coal-measures. Where observed in previously-active working-faces of Brule Mine, the Gaylard Member coals range in texture from blocky and well-cleated to intensely-sheared and pulverised, locally forming finely-imbricate masses of ‘cornflakes’.

Three major coals are recognised at Dillon: the Conuma 'A' coal zone (formerly designated as Seam C60 by Teck and Walter) at the top of Division 4, the Conuma 'B' coal zone (formerly designated as the Upper Seam by Teck and Walter) at the top of Division 3, and the Conuma 'C' coal zone (formerly designated as the Lower Seam by Teck and Walter), at the base of Division 3.

The Gaylard coals at Dillon range in visual brightness from ‘dull’ and ‘dull banded’ to ‘dull and bright’, rarely to ‘bright banded’ within the Diessel/CSIRO visual coal classification generally employed within the Rocky Mountain and Insular coalfields of western Canada. Some of the dull coal has very low mineral-matter content, and an anomalous sub-metallic lustre, verging on ‘grey durain’ as is more characteristic of Carboniferous coals rather than Cretaceous coals.

Banding is generally coarse, although it is often obscured by shearing. Within the Stopes macroscopic classification system, the Gaylard coals range from ‘durains’ to ‘clarains’. The Gaylard coals occasionally grade into black coaly mudstone at their upper contacts. Where shearing is pervasive within such contact horizons, it is difficult to visually distinguish sheared coal from sheared coaly rock.

Coal beds locally split and pinch-out laterally; the pattern of splitting is rendered more difficult to decipher in those areas where faults travel along bedding within or adjacent to coal zones. Individual leaves of split coals sometimes retain a distinctive gamma-density geophysical log response, increasing confidence in their lateral correlation away from areas of conjoint coal.

Dillon's major and minor coal beds typically exhibit a zoned patter of variably-carbonaceous lithologies, passing laterally outward from thick low-ash coal, to thinner high-ash 'dirty' coal, to coaly rock, to carbonaceous rock. Recognition of this lateral 'lithefaction' of the coal beds and correlative variably-carbonaceous rocks is supported by lateral variations of geophysical density-log response.

4.2.1.3 Gaylard-Cadomin contact relationship

The basal contact of the Gaylard Member with the underlying Cadomin Formation is abrupt to possibly-erosional at the local scale (Cant, 1996), and interfingering at regional scale (Stott, 1968; Gibson, 1992a), being drawn at the top of a coarse-grained, locally-pebbly, often-gritty bed of sandstone which may grade laterally into typical conglomerates of the Cadomin Formation.

Table 4-6: Stratigraphic setting of Gaylard Member coals in Dillon lease

Gaylard divisions	Coal beds	Lithology	Typical thickness of coal bed / Typical thickness of intervening strata
Division 5		sandstone and siltstone	at least 10 metres
	Marker K	coaly mudstone and dirty coal (**MK**), typically a doublet, **MKA** and **MKB**	**0.5 to 1.5 metres**
		fine- to coarse-grained sandstone and siltstone; minor gritstone and coal	50 to 60 metres
	Marker G	**coal** – dull and bright, clean to dirty; numerous thin partings of carbonaceous to coaly mudstone; denoted as **MG**.	**0.5 to 1.5 metres**
		variably-carbonaceous mudstone, siltstone and sandstone.	4 to 10 metres
	Marker F	**coal** – bright banded, high gamma-ray response in roof.; denoted as **MF**.	**0.5 to 0.8 metres**
		sandstone, variably-carbonaceous siltstone and mudstone.	20 to 25 metres
	Marker E	**coal** – dull and bright to bright banded (**ME**); occasional carbonaceous mudstone and mudstone/sandstone laminite; denoted as **MEA** and **MEB**.	**0.5 to 1.5 metres**
		fine- to medium-grained sandstone, mudstone and carbonaceous mudstone; occasional ironstone bands near base.	10 to 15 metres
Division 4	**Conuma A coal zone**	**coal** – dull to bright banded, with numerous thin bands of carbonaceous to coaly mudstone and siltstone; denoted as **CA.**	**2.7 to 7.0 metres;** locally amalgamates with underlying **Marker D** coal
		mudstone; minor siltstone; locally thickens due to presence of sandstone.	0.1 to 20 metres; thins northwestward
	Marker D	**coal** – dull to dull and bright, generally sheared; locally intensely-sheared and therefore inferred to host a bedding-parallel tectonic detachment zone; *has variable caking characteristics*; denoted as **MD**	**0.5 to 2.0 metres;** thickens to north
		siltstone and sandstone, with locally-abundant coals up to several decimetres thick (including locally-correlatable coal **DK** within Brule lease)	5 to 15 metres
	Marker DL	**coal** – dull lustrous to dull and bright, locally sheared.; denoted as **DL**	0.5 to 1.2 metres
		siltstone; fine- to medium-grained sandstone, mudstone, minor carbonaceous mudstone and tuff.; includes **Marker CD** (possible lacustrine beds)	15 to 25 metres
	Marker C	**coal** – dull lustrous to bright, locally sheared; denoted as **MC**.	**0.5 to 1.0 metres;** thins northward
		fine- to medium-grained sandstone; mudstone, minor siltstone; occasional bioturbated zones; with high gamma-log response in floor – *marine band*?	10 to 11 metres
	(unnamed)	**coal** – bright, with thin bands of carbonaceous mudstone and siltstone.	**0.4 metres**
		fine- to medium-grained sandstone, mudstone; minor carbonaceous mudstone and siltstone, mainly as thin interbeds (point-bar structure?).	10 to 21 metres
Division 3	**Conuma B coal zone**	**coal** – dull and bright to bright banded, hard (**CB**), locally containing 0.3 to 1.2 m parting of variably-carbonaceous mudstone. Where split, the upper ply is denoted as **CBA**, and the lower ply is denoted as **CBB.**	**0.5 to 4.0 metres;** thins and splits northwestward
		fine-grained sandstone and siltstone; carbonaceous mudstone.	nil to 25 metres; thickens northward
	Marker M	**coal** – dull and bright to bright banded.	**0.5 metres;** Z-split geometry: rising southward
		fine-grained sandstone and siltstone; carbonaceous mudstone.	nil to 3 metres; thickens southward
	Conuma C coal zone	**coal** – bright banded, moderately hard to hard, with well-developed cleat (**CC**); locally containing parting of siltstone or variably-carbonaceous mudstone. Where split, the upper ply is denoted **CCA**, and the lower ply is **CCB**.	**2.0 to 11.0 metres;** thins and splits southward
Division 2		soft, variably-carbonaceous mudstone; minor siltstone.	0.2 to 1.8 metres
	Marker B	**dirty coal** -- dull and bright, very soft; with many very thin partings of carbonaceous mudstone; typically sheared; therefore inferred to host a bedding-parallel tectonic detachment zone; denoted as **MB**.	**0.45 to 1.0 metres**
		fine-grained sandstone, mudstone, minor siltstone.	10 to 15 metres
	Marker AA	**coal** – dull and bright to bright banded, dirty, hard.; denoted as **MAA**	**0.5 to 1.5 metres**
		mudstone, siltstone and channel-filling sandstone with lenses of gritstone and pebble-conglomerate; minor carbonaceous to coaly mudstone.	45 to 75 metres
	Marker A	**coal** – dull and bright to bright banded, hard; locally a doublet of coals, with a central parting of carbonaceous to coaly mudstone; denoted as **MA.**	**0.9 to 1.5 metres**; possibly splits to southeast
Division 1		sandstone, mudstone and siltstone; minor carbonaceous mudstone.	35 to ?70 metres

4.3 Older rocks

Along anticlinal crests, and also within the more deeply-eroded area of the Mink Creek and Brazion Creek valleys, rocks older than and therefore underlying the Gething Formation are locally exposed. These rocks remain virtually-unexplored at the local scale, other than by the few natural-gas wells which have penetrated these formations at depth.

In order from top down, these older formations comprise the Cadomin Formation (the basal unit within the Bullhead Group), and the Bickford, Monach, Beattie Peaks and Monteith Formations (within the Minnes Group), ranging in age from Late Jurassic to Early Cretaceous.

At regional and property scale (as depicted on **Map 2-3**), all four of the constituent formations within the Minnes Group are mapped together as a single unit (map-unit 1); within **Table 4-1**, however, these formations are treated individually (as map-units 1d, 1c, 1b and 1a). In the following discussion, only the Cadomin and Bickford formations are examined in detail, as they have the closest stratigraphic and spatial association to the Gaylard coal-measures.

4.3.1 Cadomin Formation (map-unit 2)

The Cadomin Formation immediately underlies the Gething Formation, forming the basal part of the Bullhead Group (Stott, 1968). As such, the Cadomin Formation includes strata previously assigned to the Dresser Formation of the Crassier Group by Hughes (1964).

The Cadomin Formation comprises one or more thick beds of coarse-grained, gritty to pebbly sandstone and pebble-conglomerate (McLean, 1981) with occasional lenses of siltstone and pebbly gritstone, and rare thin lenses of dirty coal. The Cadomin Formation thus strongly resembles the basal sandstone unit (Division 1) of the Gaylard Member, and its distinction from the overlying Gaylard sandstones rests mainly upon the Cadomin Formation's greater lateral continuity.

At Dillon, the Cadomin Formation is estimated to be 5 to 35 metres thick. Its basal contact with the underlying Bickford Formation – where not concealed by the characteristic talus formed along the Cadomin's outcrop – is erosional, with considerable local scour into the older sediments. Regionally, the base of the Cadomin marks a northeastward-deepening angular contact, cutting down into successively-older rocks of the Minnes Group (Stott, 1973).

4.3.2 Bickford Formation (map-unit 1d)

The Bickford Formation is the stratigraphically-highest and therefore youngest of the four formations which comprise the Minnes Group (Stott, 1981; 1998). The Bickford was previously designated by Hughes (1964) as the Brenot Formation, being the basal part of his now-superseded Crassier Group. The stratigraphic term 'Brenot' remained in local use by coal-industry workers until the earliest 1980s (Hughes, 1980; Stott, 1981).

The Bickford Formation consists of non-marine sandstone, siltstone, mudstone and coal. Within the nearby Burnt River property (where the formation outcrops as ridgelines), channel-filling conglomerates, up to 11 metres thick, occur near the top of the formation (Stott, 1998).The formation's top few metres, immediately beneath the Cadomin's base, is typically bleached and altered to a soft, very light grey to white layer of clay-rich sediment.

Coals of potentially-mineable thickness are known to exist within the Bickford Formation elsewhere within the Brazion coalfield. However, the formation has yet to be drilled at Dillon, and its local coal potential is therefore unknown.

The basal contact of the Bickford Formation with the underlying Monach Formation is generally abrupt at local scale, but interfingering on a regional scale, being drawn at the top of the distinctive quartzitic sandstone beds of the Monach.

4.3.3 Monach Formation (map-unit 1c)

The Monach Formation comprises cliff-forming sandstone and quartzite, with lesser amounts of interbedded siltstone and conglomerate, and occasional thin coals, part of the Minnes Group (Stott, 1998). The coal content of the Monach Formation appears to be minimal, on a regional basis, and the formation's principal economic significance is as a marker bed in drilling and geological mapping.

4.3.4 Beattie Peaks Formation (map-unit 1b)

The Beattie Peaks Formation comprises sandstone, siltstone and shale, locally accompanied by minor ironstone and coal, originating as a regionally-extensive shallow-marine to deep-marine turbidite system (Stott, 1998). Coals of potentially-mineable thickness have been found within the Beattie Peaks Formation elsewhere within the Brazion coalfield, but these coals have not yet been traced into the Dillon area, and they would in any case likely lie at unworkably-great depths.

4.3.5 Monteith Formation (map-unit 1a)

The Monteith Formation forms the basal unit of the Minnes Group (Stott, 1968). The Monteith comprises interbedded sandstone, shale and conglomerate, with lesser amounts of quartzite and occasional thin coals. No mineable coal is known from the Monteith Formation, within the Brazion coalfield, and owing to its inferred great depth at Dillon it is unlikely to be of local exploratory interest.

5 Reclamation

Technical records acquired by Conuma fromWCC, as part of the property acquisition, have not provided sufficient detail to assess past reclamation practice, although it may be presumed, from the senior author’s contemporary experience in the 1970s and 1980s, that some form of roadway decommissioning (including installation of water bars?) was followed by seeding of a then-customary ‘reclamation mix’.

A few attempts to relocate old boreholes in the field have been complicated by dense growth of grasses, shrubs and trees along the suspected alignment of former drillsite-access trails. Furthermore, relocation in the winter months was greatly hampered by the accumulation of snow.

Nearly all of the year-1977 through year-2013 historic boreholes, drilled within the Dillon lease on behalf of WCC and its successor companies, lie within the buffered facility footprint as shown within Brule Mine’s five-year mine plan. Reclamation details of these boreholes were not found in the technical files acquired by Conuma.

Dillon lease's year-2018 in-pit boreholes and hydrological test wells were drilled along existing access trails or roads. Minimal reclamation has been done at these sites, as access must be maintained to the hydrological testholes, and the remainder of the boreholes lie within areas scheduled for near-future mining.

All of the year-2018 Dillon boreholes lie within Brule Mine's permitted disturbance boundary.

6 Statement of estimated costs

Estimated costs by activity and year are presented below as **Table 6-1**. Costs are based upon invoices covering work done on both Dillon and Brule leases, deriving Dillon-specific costs by examining site-specific charges, adjusting as appropriate for respective number of boreholes (geophysics) or respective metreage of drilling (drilling costs). For comparison, provincial average all-in per-metre costs for coal-exploration activities (as reported by Cathyl-Huhn and Avery, 2014) are presented at the base of the table.

Overall estimated costs of the Dillon in-pit hydrological and development drilling programme, are $517,486.42, or $209.23 (Canadian) per metre drilled. $204,017.83 of the drilling cost was attributed to the large-diameter water well (BM18-03W), at a drilling-only unit cost of $954.87 per metre. Unit cost per metre of the Dillon drilling programme is accordingly higher than that previously-reported (in Coal Assessment Report No. 1049) for the Brule drilling programme, which mostly took place in more-severe winter weather.

On the other hand, catwork at Dillon (at a unit cost of $17.29/m drilled) was less-costly than expected, owing to ease of access along existing access roads, and the groundwater component of the drilling programme having been conducted in good summer weather, so as to not require significant catwork.

Estimated exploratory cost breakdown by activity, for Tenure 412964: **Table 6-1**

Year	Boreholes	Number of holes	Metreages (m)		Estimated drilling costs ($)		Estimated other costs ($)					Totals
			Rotary	Core	Rotary	Core	Geophysical logging	Proximate analyses and washability tests	Catwork (snow clearing, water truck, and mobility support)	Personnel (geological supervision)	Photogeological mapping	
2018	BM-18 series	13 holes	>2425.98 m	47.26 m (spot-coring in one well)	$383,833.05 (RC Drilling / Anderson Water Wells	$5,000 (Anderson Water Wells)	$54,143.00 (Century Wireline)	$5427.35) (Birtley Coal and Minerals Testing)	$42,773.92 (Can-West Exploration)	$26,309.10 (Apex Geoscience)	nil	$517,486.42
costs per metre of drilling												
2018	BM-18 series	13 holes	>2425.98 m	47.26 m	$158.22/m	$105.80/m	$21.89/m	$114.84/m	$17.29/m	$10.63/m	n/a	$209.23/m
British Columbia averages (per metre)			n/a	n/a	*$201.53/m*	*n/a*	*$17.56/m*	*n/a*	*$23.30/m*	*$20.49/m*	*n/a*	*n/a*

Note: *hourly coring cost was not separately broken-out in Anderson's invoice. The $5,000 figure is the invoiced rental cost of the coring tools. Metreage of rotary-drilling is a minimum figure, owing to construction details being unavailable for one of the three rotary-drilled groundwater wells.*

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8 Conclusions

In 2018, Conuma Coal Resources Limited (Conuma) undertook an in-pit development drilling programme within the Dillon lease portion of Brule Mine. All drilling was conducted within the mine's permitted disturbance boundary.

Drilling within the Dillon lease (the subject of this report) has improved Conuma's practical understanding of the property's geological structure, and disclosed the existence of overthrust stacks of tectonically-repeated coal beds.

The present work within the Dillon lease, here reported for the 2018-2019 coal lease term, comprises drilling and the compilation of an updated geological map of the mine. This work was conducted by Conuma, as part of a broader examination of its operating and potential future mining properties within the Brazion and Sukunka-Quintette coalfields of northeastern British Columbia, Canada.

Geological modelling is underway, using both in-house expertise and that of consultants, to more-precisely define the coal resources at Brule Mine, and to support ongoing optimisation of the mine-plan.

During the year 2018 drilling programme, 13 air-rotary holes (comprising 3 groundwater test holes, and 10 structural boreholes) were drilled within the Dillon lease, at a total length of at least 2473.24 metres, at an estimated programme cost of $517,486.42, thus a unit cost of $209.23 per metre. The drilling programme met its technical objectives.

The Dillon lease merits further work, as recommended within **Section 9** of this report.

9 Recommendations

1. The Dillon coal lease should continue to be maintained in good standing under the *Coal Act*.
2. A programme of field geological mapping, initially recommended to then-owner WCCP in 2014 (but not undertaken) should be conducted within the well-exposed section of coal-measures along the Brule Connector Road, within the northwestern part of the property.

- Structure of the rocks should be mapped, and an effort made to identify sections of thrust-repeated strata suspected to be present in this area.
- Exposed coals should be excavated to fresh material, and sampled for reflectance, petrography and proximate analysis, with the goal of better determining the local variability in coal-quality parameters, and establishing whether coking coal is likely to be present within or near this area.

3. A similar programme of mapping and sampling is recommended for the proposed haul road within the central part of the property, where coals are predicted to outcrop, but minimal coal-quality data are available.
4. If results of work items 2) and 3) above are favourable, follow-in drill targets may then be identified and tested, with the aim of establishing whether commercially-significant quantities of saleable coal are present within practicable mining geometries.

- Drilling should include a mix of rapidly-drilled air-rotary holes for structural assessment, and diamond-core holes for coal quality assessment.

10 Statement of qualifications

I, C.G. Cathyl-Huhn P.Geo.(BC) Lic.Geol.(WA) RMSME, do hereby certify that:

a) I am currently employed on a full-time basis as Chief Geologist, by Conuma Coal Resources Limited, in their Northeast British Columbia office in Tumbler Ridge, British Columbia.

b) This certificate applies to the current report, titled *Coal Assessment Report for the Dillon lease, British Columbia,* dated August 20th, 2019.

c) I am a member (Professional Geoscientist, Licence No.20550) of the Association of Professional Engineers and Geoscientists of British Columbia, licensed as a geologist (Licence No.2089) in Washington State, and a founding Registered Member of the Society for Mining, Metallurgy and Exploration (SME, Member No.518350). I have worked as a colliery geologist in several countries for over 41 years since my graduation from university.

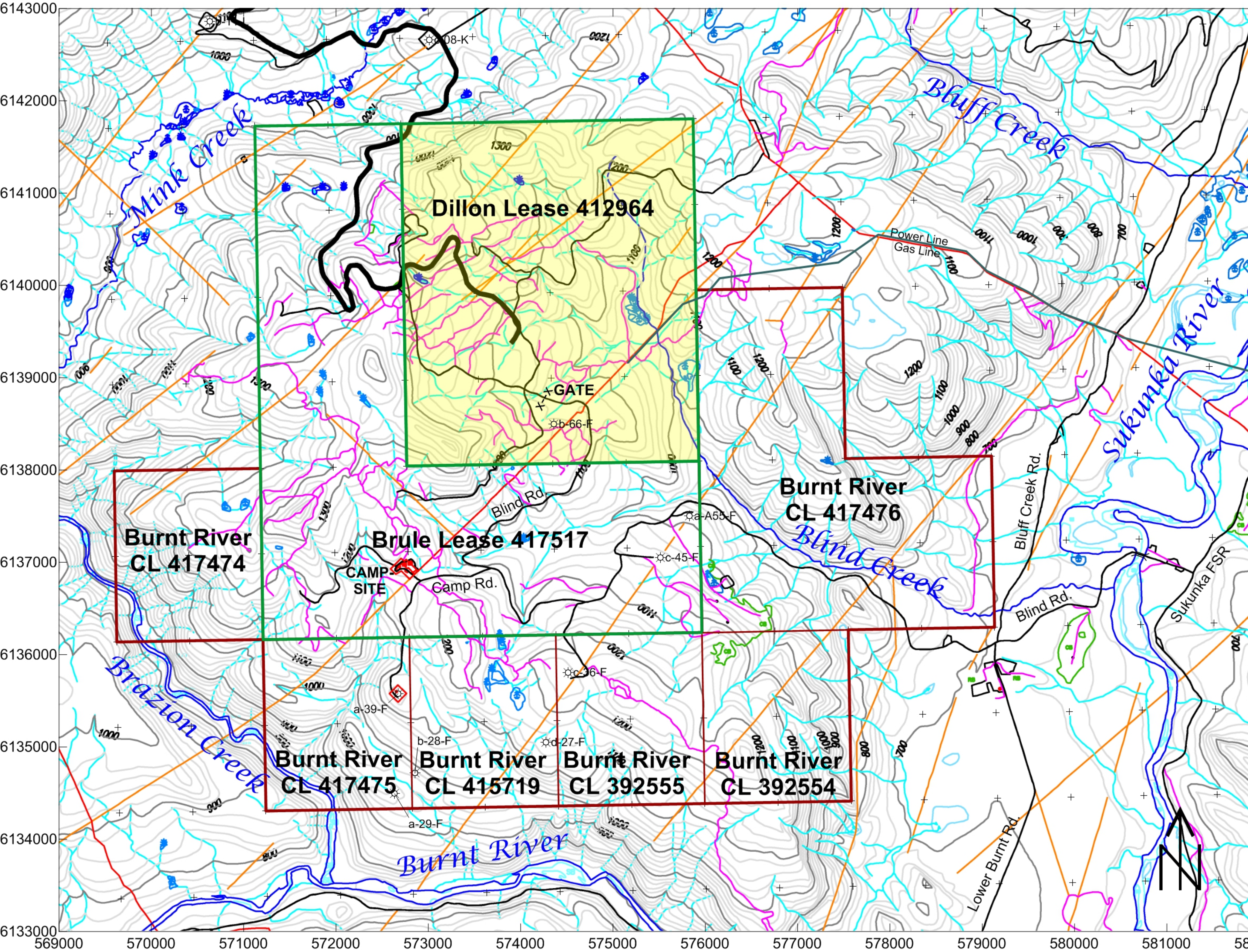
d) I certify that by reason of my education, affiliation with professional associations, and past relevant work experience, having written numerous published and private geological reports and technical papers concerning coalfield geology, coal-mining geology and coal-resource estimation, that I am qualified as a Qualified Person as defined by Canadian *National Instrument 43-101* and as a Competent Person as defined by the Australian *JORC Code*.

e) My most recent visit to the Dillon coal property was on August 15th, 2019.

f) I am the author of this report, titled *Coal Assessment Report for the Dillon lease, British Columbia*, dated August 20th, 2019, concerning the Dillon coal property.

g) As of the date of the writing of this report, I am not independent of Conuma Coal Resources, pursuant to *National Instrument 43-101*.

"original signed and sealed by"
Dated this 20th day of August, 2019. C.G. Cathyl-Huhn P.Geo. Lic.Geol. RMSME



Access (not classified as to trafficability):

- Road (coal haulage)
- Road (other)
- Trail
- Seismic line

Land classification:

- Coal licence (with historic and current tenure number)
- Coal lease (with current tenure number)

Drainage:

- River or creek
- Stream (perennial or intermittent flow)
- Natural gas wells (not classified as to activity)
- Pipeline (where not along road)
- Power line (69 KV)

metres

0 1000 2000 3000

Dillon-area-topography-drainage-roads_190818c.srf/jpg

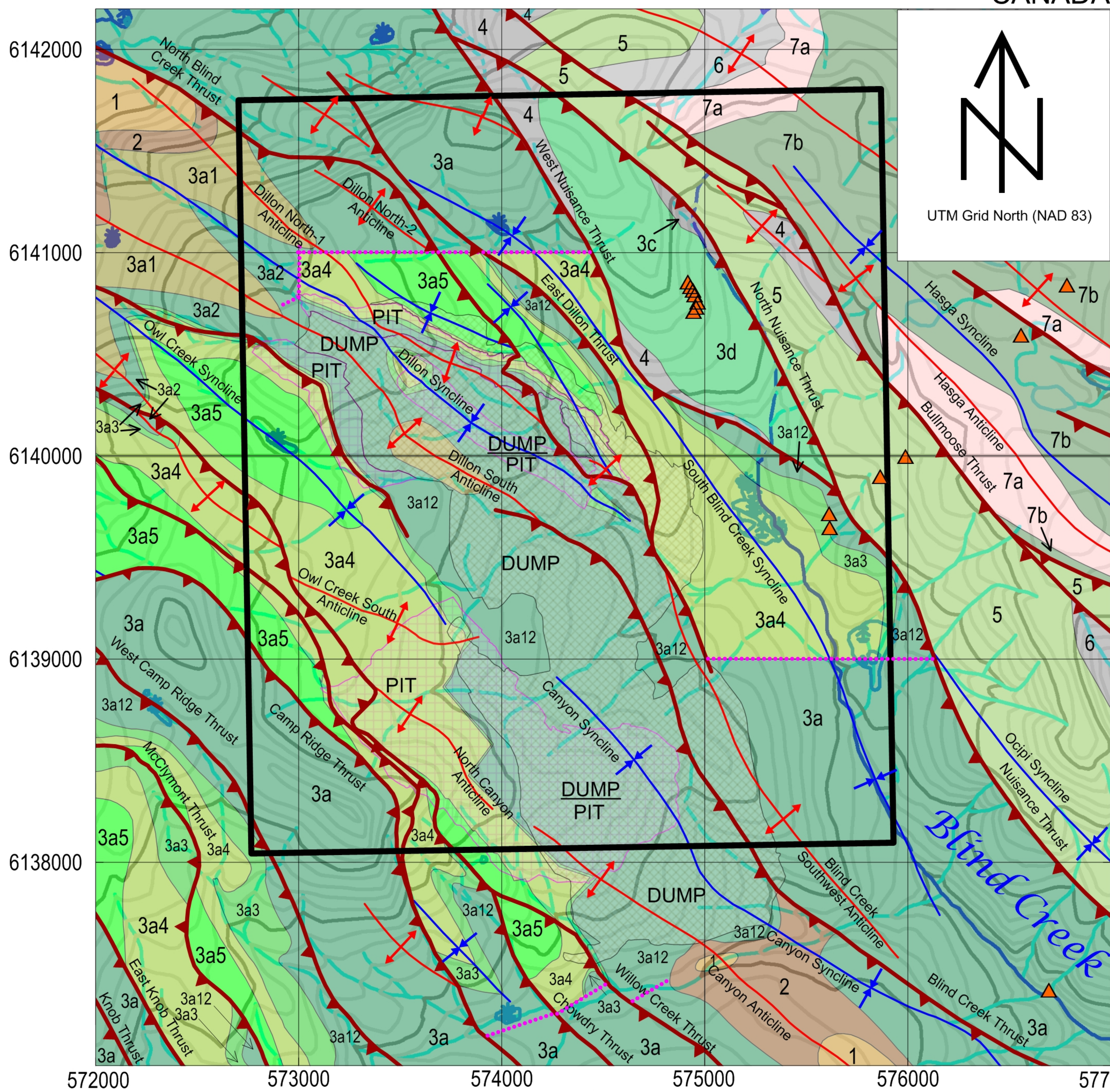
CONUMA COAL RESOURCES LIMITED

Scale: as shown	COAL TENURE AND TOPOGRAPHY
UTM NAD 83	
Revision: C	
Drawn: GCH	
AUG 2019	DILLON COAL ASSESSMENT REPORT	MAP 2-2

DILLON LEASE

UTM NAD83

NTS 93 P/05
CANADA



map scale in metres

0 500 1000 1500 2000

STRUCTURE AND MAPPING

- Anticline
- Syncline
- Strike-slip or tear fault
- Thrust fault -- barbs on overthrust plate
- Limit of detailed stratigraphic mapping
- Outline of Walter's coal licences and leases
- Coal outcrop (as reported by McClymont, 1981)

Author: C.G. Cathyl-Huhn P.Geo. Lic.Geol. RMSME Date: 2019 August 18
Grid system: UTM NAD83 Zone 10N in metres 100 km grid square: ES
Scale: as shown on bar-scale Topography: TRIM-derived rasters
Sources: compiled from work by P.B. Jones (Triad Oil, 1960), B.McClymont (Teck Corporation, 1979, 1981), J.Hughes (Gulf Canada, 1980), and D.J.Hunter and J.M.Cunningham (BCGSB, 1991) and A.Legun (BCGCB, 2003)

STRATIGRAPHY

FORT ST JOHN GROUP (Albian)

- 7 — Boulder Creek Formation -- sandstone, shale, conglomerate and coal
- 7b — Walton Creek Member -- siltstone, sandstone, conglomerate and coal
- 7a — Cadotte Member -- conglomerate and sandstone
- 6 — Hulcross Formation -- marine shale and siltstone, minor bentonite; basal grit
- 5 — Gates Formation -- sandstone, shale, conglomerate; minor coal
- 4 — Moosebar Formation -- marine siltstone and shale; bentonite; basal pebbly glauconitic sandstone (not Bluesky Member)

BULLHEAD GROUP (Barremian to Aptian)

- 3 — Gething Formation -- siltstone, sandstone and conglomerate; minor bentonite and coal
- 3d — Chamberlain Member -- sandstone and siltstone; minor coal
- 3c — Bullmoose Member -- marine shale and siltstone; minor sandstone and bentonite
- 3b — Bluesky Member -- pebbly glauconitic sandstone (not mapped separately at this scale)
- 3a — Gaylard Member -- siltstone, sandstone and coal; lenses of conglomerate and pebbly sandstone; minor bentonite
- 3a5 — Division 5 -- sandstone and siltstone; minor coal
- 3a4 — Division 4 -- siltstone and sandstone; coal
- 3a3 — Division 3 -- siltstone and shale; coal
- 3a12 [3a2] — Division 2 -- siltstone and sandstone; minor conglomerate and coal
- 3a12 [3a1] — Division 1 -- sandstone, conglomerate and siltstone; minor coal
- 2 — Cadomin Formation -- cliff-forming conglomerate and sandstone; minor siltstone and coal

MINNES GROUP (Tithonian to Valanginian)

- 1 — Bickford, Monach, Beattie Peaks and Monteith Formations -- sandstone, siltstone, shale, conglomerate, quartzite, ironstone and coal (not mapped separately at this scale)

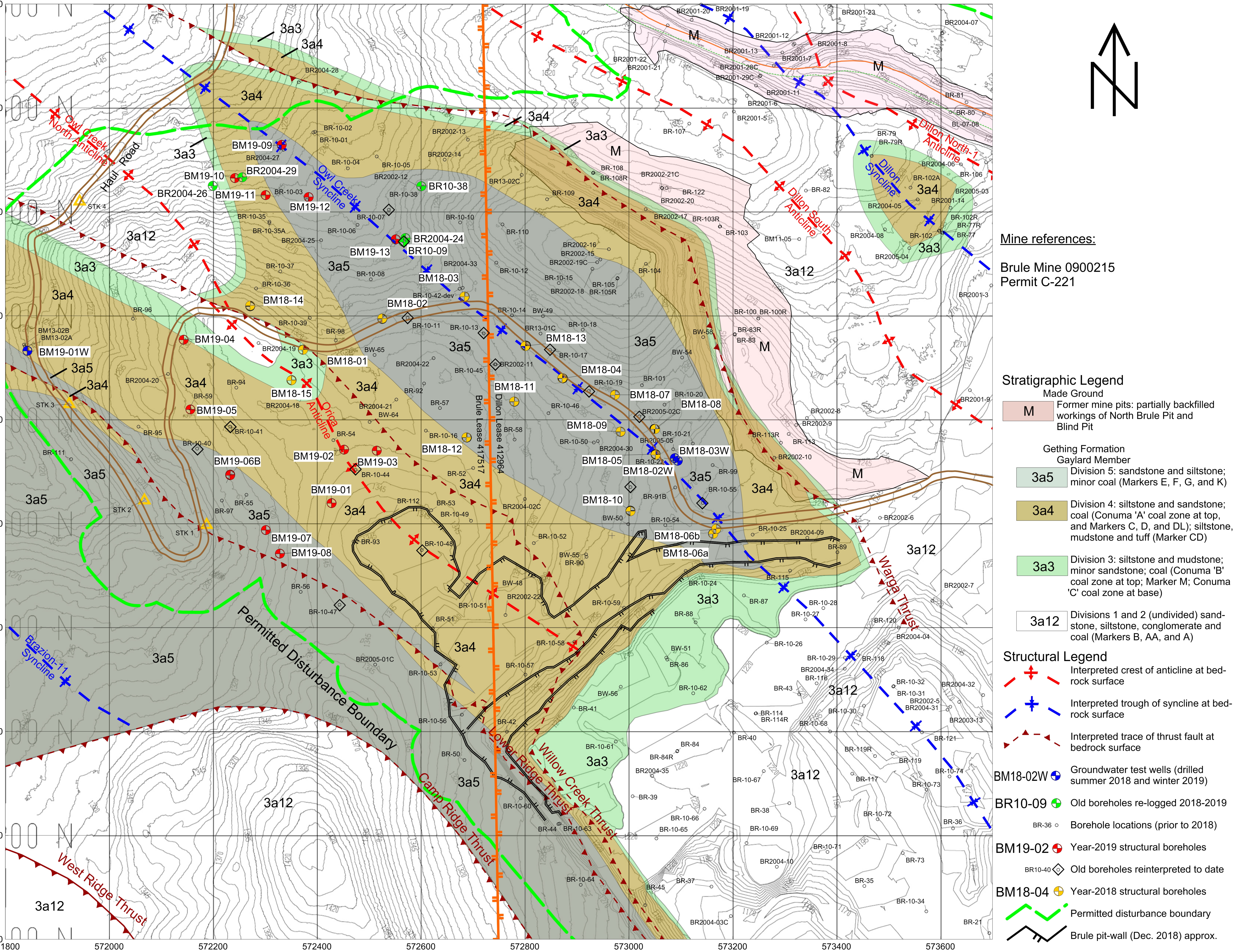
CONUMA COAL RESOURCES LIMITED

REV	DATE	DESCRIPTION
M	Aug.18/19	Indicia

Drawn by: GCH	GEOLOGY OF DILLON COAL LEASE 412964
Scale: as shown	
Dwg. No.: Dillon-lease-geology-190818m.srf/jpg	
AUG 2019	DILLON COAL ASSESSMENT REPORT — MAP 2-3

BRULE MINE

UTM NAD83 CANADA



Dwg.: Brule-mine-geology_190817n.srf/jpg Drawn: 17 August 2019
Topographic base (as of October 2018): D. Meisburger, P.Eng.
Geological compilation: 2019/B Dig-face approximate as of December, 2018
By: C.G. Cathyl-Huhn, P.Geo.(BC) Lic.Geol.(WA) RMSME
Grid: UTM NAD83 Zone 10 in metres Scale: as shown

Brule Mine / Dillon Lease
Figure 2-4:
Mine-scale geological map

Drilling records and geophysical logs: **Appendix A**

Table A-1 presents an inventory of boreholes and geophysical logs for the year-2018 in-pit drilling programme within the Dillon lease.

Table A-2 presents statistical and operational details of the boreholes.

Following **Table A-2**, the digital version of this report presents geophysical logs for the boreholes. Files in LAS, PDF, and TIF format are presented, as received from Century Wireline Services. Logging tool type numbers are given as appropriate, allowing for reference to Century Wireline's technical specifications for the tools.

Spectral gamma-ray (KUT) logging using the Century Type 7201 tool, along with sonic logging using the Century Type 9325A tool, was done in borehole BM18-04. This work supported an experimental assessment of whether this tool combination would be useful in identifying possible 'marine bands' within Marker CD of Division 4 of the Gaylard Member. Results of this logging were, however, unremarkable and inconclusive. Results in three nearby boreholes within the Brule Lease were similarly-unremarkable.

Inventory of boreholes and geophysical logs **Table A-1** -- sheet 1 of 1

Borehole	Drilling method	UTM NAD83 Zone 10 coordinates (surveyed)		Elevation (metres above sea level -- surveyed)	Gamma-density through pipe (9239C tool)		Gamma-density-caliper-resistivity (9239C tool)		Deviation (9058A tool)			Gamma-Neutron (9058A tool)		Dipmeter (9411A tool)		Spectral gamma log (KUT-log -- 7201 tool)		Sonic log (9325A tool)	
		Easting	Northing		TD logger	First reading	TD logger	First reading	Azimuth	Dip	First reading	TD logger	First reading	TD logger	First reading	TD logger	First reading	TD logger	First reading
BM18-01W	Air -rotary	unknown	unknown	unknown	*no logs run*														
BM18-02W	Air -rotary	573093.49	6139920.95	1277.86	199.98	199.76			108.13	89	199								
BM18-03W	Air-cored (partial)	573088.65	6139926.78	1278.19			212.71	212.44	152.28	89.7	188								
BM18-04	Air -rotary	572873.13	6140079.56	1298.12			273.08	272.82	39.33	87.8	272	273.08	272.82	205.54	205.34	271.97	271.68	271.97	268.16
BM18-05	Air -rotary	573051.69	6139933.63	1279.78			253.29	253.02	no data	89	253	253.29	252.86	253.29	253.1				
BM18-06A	Air -rotary	573162.03	6139780.65	1265.63			157.55	157.28	34.03	89.3	253	157.55	157.26	157.55	157.37				
BM18-06B	Air -rotary	573151.69	6139789.47	1265.11			239.97	239.72	56.6	88.9	239	273.08	272.82	239.97	239.81				
BM18-07	Air -rotary	572973.34	6140047.96	1293.07			154.49	154.22	46.82	87.7	154	154.49	154.2	154.49	154.31				
BM18-08	Air -rotary	573049.45	6139982.26	1283.89			154.56	154.3	44.74	87.4	154	154.56	154.24	154.56	154.29				
BM18-09	Air -rotary	572984.25	6139976.8	1292.74			147.87	147.62	139.91	88.3	147	147.87	147.56	147.87	147.49				
BM18-10	Air -rotary	573003.18	6139824.88	1281.33			157.36	157.08	191.4	89.1	157	157.36	157.08	157.36	157.21				
BM18-11	Air -rotary	572779.82	6140034.42	1317.9			230.63	230.38	213.06	88.9	230	230.63	230.28	230.63	230.17				
BM18-13	Air -rotary	572802.16	6140142.33	1301.87			269.14	268.88	40.22	88.3	268	269.14	268.92	269.14	268.95				
13 holes					1 hole	199.76 metres	11 holes	2247.76 metres	12 holes		2514 metres	10 holes	2068.04 metres	10 holes	1968.04 metres	1 hole	271.68 metres	1 hole	268.16 metres

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Borehole construction statistics **Table A-2** -- sheet 1 of 1

Borehole	UTM (NAD 83) Zone 10		Elevation (metres above sea level)	Drilled by	Drill site (internal planning reference)	Total depth (driller) in metres	Total depth (logger) in metres	Notes
	Easting	Northing						
BM18-01W	not	surveyed		*unknown*	*n/a*	*unknown*	*no geophysical logs*	Monitoring well
BM18-02W	573093.49	6139920.95	1277.86	Anderson Water Services Ltd.	n/a	199.98	199.98	Monitoring well
BM18-03W	573088.65	6139926.78	1278.19	Anderson Water Services Ltd.	n/a	213.66	212.71	Proposed water well
BM18-04	572873.13	6140079.56	1298.12	RC Drilling Ltd.	AD	274	273.08	
BM18-05	573051.69	6139933.63	1279.78	RC Drilling Ltd.	AE	257	253.29	
BM18-06A	573162.03	6139780.65	1265.63	RC Drilling Ltd.	AF	164.6	157.55	
BM18-06B	573151.69	6139789.47	1265.11	RC Drilling Ltd.	AF	241	239.97	
BM18-07	572973.34	6140047.96	1293.07	RC Drilling Ltd.	AG	155.5	154.49	
BM18-08	573049.45	6139982.26	1283.89	RC Drilling Ltd.	AI	155	154.56	
BM18-09	572984.25	6139976.8	1292.74	RC Drilling Ltd.	AH	150	147.87	
BM18-10	573003.18	6139824.88	1281.33	RC Drilling Ltd.	BK	158.5	157.36	
BM18-11	572779.82	6140034.42	1317.9	RC Drilling Ltd.	BJ	232	230.63	
BM18-13	572802.16	6140142.33	1301.87	RC Drilling Ltd.	AL	272	269.14	

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Appendix B: Lithological interpretation of geophysical logs

Table B-1 presents interpretations of geophysical logs from year-2018 boreholes drilled within the Dillon lease. **Table B-2** presents corresponding interpretations for selected historic (year-2010) boreholes, also drilled within the Dillon lease. Historic boreholes were selected on the basis of their possibility of improved structural reinterpretation in light of year-2018 drilling results.

Lithology codes are:

- ASH -- high-gamma response horizon, interpreted as volcanic ash (tuff) band
- C -- coal (log-indicated density <1.5)
- CBSH -- carbonaceous rock (log-indicated density >1.9)
- CR -- coaly rock (log-indicated density 1.7 to 1.9)
- DC -- dirty coal (log-indicated density 1.5 to 1.7)
- DRIFT -- unconsolidated surficial materials above rockhead
- FAULT -- fault, classed as POSSIBLE, PROBABLE, or ESTABLISHED
- IRST -- ironstone (anomalously-high density material)
- R -- rock (undifferentiated)

Coal bed codes are:

MKA, MKB -- plies of Marker K	MG -- Marker G
MF -- Marker F	MEA, MEB -- plies of Marker E
CA -- Conuma A coal zone	MD -- Marker D
DL -- Marker DL	MCD -- Marker CD ('lake beds'?)
MC -- Marker C	CB -- Conuma B coal zone
CBA, CBB -- plies of Conuma B	MM -- Mid-Marker
CC -- Conuma C coal zone	CCA, CCB -- plies of Conuma C
MB -- Marker B	MAA -- Marker AA
MA -- Marker A	

Note: the Conuma A coal zone was formerly known as Seam C60; the Conuma B coal zone was formerly known as the Upper Seam; the Conuma C coal zone was formerly known as the Lower Seam. Refer to Coal Assessment Reports 486 through 490 for further details of this historic coal-zone nomenclature.

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes				
From	*To*	*Apparent*	*Lithology*	*Name*
BM18-01W	*No logs run*			
BM18-02W				
0	15.45	15.45	DRIFT	DRIFT
15.45	31.9	16.45	R	
31.9	32.25	0.35	CBSH	
32.25	32.7	0.45	R	
32.7	33.85	1.15	CR	MG
33.85	34.5	0.65	CBSH	MG
34.5	39.05	4.55	R	
39.05	39.4	0.35	CBSH	MF
39.4	39.75	0.35	DC	MF
39.75	40.1	0.35	CR	MF
40.1	51	10.9	R	
51	51.5	0.5	C	MEA
51.5	52.2	0.7	R	
52.2	52.55	0.35	DC	MEB
52.55	52.8	0.25	CBSH	MEB
52.8	58.6	5.8	R	
58.6	58.95	0.35	CR	
58.95	65.2	6.25	R	
65.2	65.65	0.45	DC	CA
65.65	68.35	2.7	C	CA
68.35	68.45	0.1	DC	CA
68.45	68.65	0.2	CR	
68.65	69.15	0.5	CBSH	
69.15	69.3	0.15	CR	
69.3	69.4	0.1	DC	MD
69.4	70.55	1.15	C	MD
70.55	70.8	0.25	DC	MD
70.8	70.95	0.15	CR	
70.95	71.65	0.7	CBSH	
71.65	72	0.35	CR	
72	72.4	0.4	CBSH	
72.4	72.85	0.45	R	
72.85	73.25	0.4	CR	
73.25	73.7	0.45	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
73.7	74.25	0.55	CBSH	
74.25	75.8	1.55	R	
75.8	76.25	0.45	CBSH	
76.25	76.9	0.65	R	
76.9	77.2	0.3	CBSH	
77.2	77.6	0.4	DC	DL
77.6	77.7	0.1	CR	DL
77.7	80	2.3	R	
80	80.4	0.4	DC	
80.4	81	0.6	CBSH	
81	82.2	1.2	R	
82.2	82.9	0.7	CBSH	
82.9	88.2	5.3	R	
88.2	88.75	0.55	R	MCD
88.75	89.4	0.65	CBSH	MCD
89.4	90.2	0.8	CR	MCD
90.2	90.65	0.45	CBSH	MCD
90.65	91.2	0.55	R	MCD
91.2	91.6	0.4	CBSH	MCD
91.6	91.9	0.3	CR	MCD
91.9	93.4	1.5	CBSH	MCD
93.4	93.6	0.2	R	MCD
93.6	95.9	2.3	R	
95.9	96.3	0.4	CBSH	
96.3	97.3	1	R	
97.3	97.45	0.15	FAULT	POSSIBLE
97.45	97.75	0.3	R	
97.75	98.05	0.3	DC	DL
98.05	98.25	0.2	CR	DL
98.25	100.4	2.15	R	
100.4	100.8	0.4	CR	
100.8	102.5	1.7	R	
102.5	102.9	0.4	CBSH	
102.9	108.8	5.9	R	
108.8	109.2	0.4	CBSH	
109.2	109.35	0.15	FAULT	POSSIBLE
109.35	109.75	0.4	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
109.75	112.4	2.65	R	
112.4	113	0.6	CBSH	
113	114.9	1.9	R	
114.9	116.7	1.8	R	MCD
116.7	117.05	0.35	IRST	MCD
117.05	117.4	0.35	R	MCD
117.4	119.4	2	CBSH	MCD
119.4	119.5	0.1	R	MCD
119.5	128.2	8.7	R	
128.2	129.1	0.9	CBSH	
129.1	135.9	6.8	R	
135.9	136.3	0.4	CBSH	
136.3	145.7	9.4	R	
145.7	146.15	0.45	CBSH	
146.15	146.5	0.35	CR	
146.5	146.9	0.4	CBSH	
146.9	148.15	1.25	C	MC
148.15	148.9	0.75	R	
148.9	149.2	0.3	CBSH	
149.2	150.1	0.9	R	
150.1	150.5	0.4	CR	
150.5	151.15	0.65	CBSH	
151.15	160.2	9.05	R	
160.2	160.55	0.35	CR	
160.55	165.2	4.65	R	
165.2	165.3	0.1	FAULT	POSSIBLE
165.3	167.8	2.5	R	
167.8	168.2	0.4	CBSH	
168.2	174.55	6.35	R	
174.55	175	0.45	CBSH	
175	186	11	R	
186	186.1	0.1	FAULT	POSSIBLE
186.1	193.1	7	R	
193.1	195.35	2.25	C	CBA
195.35	195.45	0.1	DC	CBB
195.45	197.4	1.95	C	CBB
197.4	197.8	0.4	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
197.8	198.2	0.4	DC	
198.2	199.98	1.78	R	
199.98	200	0.02	ND	NO DATA
BM18-03W				
0	16.9	16.9	DRIFT	DRIFT
16.9	17.1	0.2	IRST	IRONSTONE
17.1	17.3	0.2	R	
17.3	17.5	0.2	IRST	IRONSTONE
17.5	19.15	1.65	R	
19.15	19.23	0.08	DC	
19.23	19.65	0.42	C	
19.65	19.8	0.15	CBSH	
19.8	33.15	13.35	R	
33.15	33.55	0.4	CBSH	
33.55	34	0.45	R	
34	34.3	0.3	CBSH	MG
34.3	34.45	0.15	CR	MG
34.45	34.55	0.1	CBSH	MG
34.55	34.85	0.3	CR	MG
34.85	35.65	0.8	CBSH	MG
35.65	40.4	4.75	R	
40.4	40.7	0.3	CBSH	MF
40.7	40.8	0.1	FAULT	PROBABLE
40.8	41.4	0.6	R	
41.4	41.6	0.2	CBSH	MF
41.6	42.1	0.5	CR	MF
42.1	42.2	0.1	CBSH	MF
42.2	52.8	10.6	R	
52.8	53.2	0.4	DC	MEA
53.2	53.35	0.15	CBSH	MEA
53.35	53.95	0.6	R	
53.95	54.25	0.3	CR	MEB
54.25	54.45	0.2	CBSH	MEB
54.45	56.05	1.6	R	
56.05	56.4	0.35	CBSH	
56.4	59.9	3.5	R	
59.9	60.2	0.3	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
60.2	67.5	7.3	R	
67.5	68.05	0.55	DC	CA
68.05	70.7	2.65	C	CA
70.7	70.9	0.2	DC	CA
70.9	71.5	0.6	CBSH	
71.5	71.8	0.3	CR	
71.8	72.95	1.15	C	MD
72.95	73.1	0.15	DC	MD
73.1	73.3	0.2	CBSH	
73.3	73.8	0.5	R	
73.8	74.75	0.95	CBSH	
74.75	75.45	0.7	R	
75.45	75.85	0.4	CBSH	
75.85	76.3	0.45	R	
76.3	76.7	0.4	CBSH	
76.7	79.95	3.25	R	
79.95	80.35	0.4	CR	DL
80.35	82.65	2.3	R	
82.65	83.1	0.45	CBSH	
83.1	84.75	1.65	R	
84.75	85.15	0.4	CBSH	
85.15	90.4	5.25	R	
90.4	90.8	0.4	CBSH	
90.8	91	0.2	R	
91	93.45	2.45	R	MCD
93.45	94.55	1.1	CBSH	MCD
94.55	95.5	0.95	R	MCD
95.5	95.95	0.45	CR	MCD
95.95	96.55	0.6	R	MCD
96.55	97.05	0.5	CBSH	MCD
97.05	97.4	0.35	R	MCD
97.4	100.9	3.5	R	
100.9	101	0.1	FAULT	POSSIBLE
101	102	1	R	
102	102.45	0.45	DC	DL
102.45	105.2	2.75	R	
105.2	105.75	0.55	CBSH	
105.75	106	0.25	R	
106	106.45	0.45	CBSH	
106.45	108.15	1.7	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
108.15	108.6	0.45	CBSH	
108.6	109.75	1.15	R	
109.75	111.05	1.3	CBSH	
111.05	113.05	2	R	
113.05	113.3	0.25	CBSH	
113.3	120.5	7.2	R	
120.5	122.8	2.3	R	MCD
122.8	123	0.2	IRST	MCD
123	123.3	0.3	R	MCD
123.3	124.5	1.2	CBSH	MCD
124.5	125	0.5	R	MCD
125	134.4	9.4	R	
134.4	134.65	0.25	CBSH	
134.65	134.9	0.25	CR	
134.9	135.2	0.3	CBSH	
135.2	141.45	6.25	R	
141.45	141.95	0.5	CBSH	
141.95	146.3	4.35	R	
146.3	146.7	0.4	CBSH	
146.7	153.4	6.7	R	
153.4	153.75	0.35	CBSH	
153.75	153.95	0.2	DC	MC
153.95	154.3	0.35	CR	MC
154.3	155.2	0.9	C	MC
155.2	155.6	0.4	CR	MC
155.6	156.45	0.85	R	
156.45	156.9	0.45	CBSH	
156.9	157.6	0.7	R	
157.6	157.8	0.2	CBSH	
157.8	167.3	9.5	R	
167.3	167.55	0.25	FAULT	POSSIBLE
167.55	167.8	0.25	C	
167.8	168.95	1.15	R	
168.95	169.25	0.3	CBSH	
169.25	180.9	11.65	R	
180.9	181.3	0.4	CBSH	
181.3	184.5	3.2	R	
184.5	185	0.5	CBSH	
185	198.15	13.15	R	
198.15	198.25	0.1	FAULT	POSSIBLE

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
198.25	202.7	4.45	R	
202.7	202.9	0.2	CBSH	
202.9	204.75	1.85	C	CBA
204.75	205.15	0.4	DC	CBB
205.15	207.85	2.7	C	CBB
207.85	208	0.15	DC	CBB
208	208.15	0.15	CR	
208.15	208.65	0.5	CBSH	
208.65	212.44	3.79	R	
212.44	213.7	1.26	ND	NO DATA
BM18-04				
0	10.45	10.45	DRIFT	DRIFT
10.45	11.1	0.65	R	
11.1	11.55	0.45	DC	MKA
11.55	14	2.45	R	
14	14.15	0.15	CBSH	MKB
14.15	14.4	0.25	CR	MKB
14.4	14.55	0.15	CBSH	MKB
14.55	66.65	52.1	R	
66.65	67.05	0.4	CBSH	MG
67.05	67.45	0.4	CR	MG
67.45	67.55	0.1	DC	MG
67.55	68.1	0.55	CR	MG
68.1	74.9	6.8	R	
74.9	75.15	0.25	CBSH	MF
75.15	77	1.85	R	
77	77.55	0.55	FAULT	PROBABLE
77.55	79.6	2.05	R	
79.6	79.85	0.25	CBSH	MF
79.85	89.8	9.95	R	
89.8	89.95	0.15	CBSH	MEA
89.95	90.25	0.3	CR	MEA
90.25	90.7	0.45	R	
90.7	91.1	0.4	DC	MEB
91.1	103.9	12.8	R	
103.9	104.1	0.2	CBSH	
104.1	104.35	0.25	DC	CA
104.35	106.75	2.4	C	CA
106.75	106.95	0.2	CR	
106.95	107.15	0.2	CBSH	
107.15	107.6	0.45	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
107.6	107.8	0.2	CBSH	
107.8	108.1	0.3	CR	
108.1	108.35	0.25	DC	MD
108.35	109.55	1.2	C	MD
109.55	109.7	0.15	CBSH	
109.7	110.8	1.1	R	
110.8	111.2	0.4	CR	
111.2	111.4	0.2	DC	
111.4	114.5	3.1	R	
114.5	115.35	0.85	CBSH	
115.35	115.9	0.55	R	
115.9	116.1	0.2	CBSH	
116.1	116.3	0.2	DC	
116.3	116.45	0.15	CBSH	
116.45	117.55	1.1	R	
117.55	117.65	0.1	CBSH	
117.65	117.9	0.25	CR	
117.9	118.2	0.3	CBSH	
118.2	120.7	2.5	R	
120.7	120.9	0.2	FAULT	POSSIBLE
120.9	123.3	2.4	R	
123.3	123.5	0.2	CBSH	DL
123.5	123.7	0.2	C	DL
123.7	123.9	0.2	CBSH	DL
123.9	140	14.7	R	
138.6	140	1.4	R	MCD
140	140.15	0.15	CBSH	MCD
140.15	140.35	0.2	CR	MCD
140.35	140.6	0.25	CBSH	MCD
140.6	141.1	0.5	R	MCD
141.1	141.2	0.1	FAULT	PROBABLE
141.2	141.3	0.1	R	
141.3	141.5	0.2	CR	MD
141.5	141.6	0.1	DC	MD
141.6	141.72	0.12	CR	MD
141.72	141.95	0.23	DC	MD
141.95	143.35	1.4	C	MD
143.35	143.6	0.25	DC	MD
143.6	145.5	1.9	R	
145.5	146.3	0.8	CR	
146.3	147.85	1.55	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
147.85	148	0.15	CBSH	
148	148.8	0.8	R	
148.8	149	0.2	CBSH	
149	150.8	1.8	R	
150.8	151.25	0.45	CBSH	
151.25	153.5	2.25	R	
153.5	153.75	0.25	CBSH	DL
153.75	154	0.25	DC	DL
154	154.15	0.15	CBSH	DL
154.15	163.8	9.65	R	
163.8	164.65	0.85	CBSH	
164.65	165.45	0.8	R	
165.45	166.35	0.9	CBSH	
166.35	168.45	2.1	R	
168.45	169.25	0.8	R	MCD
169.25	169.6	0.35	CBSH	MCD
169.6	174.5	4.9	R	MCD
174.5	174.95	0.45	CBSH	MCD
174.95	179	4.05	R	MCD
179	183.5	4.5	R	
183.5	183.9	0.4	CBSH	
183.9	186.25	2.35	R	
186.25	186.55	0.3	CBSH	
186.55	199.35	12.8	R	
199.35	199.7	0.35	CBSH	
199.7	199.85	0.15	R	
199.85	200.05	0.2	CBSH	
200.05	200.6	0.55	C	MC
200.6	200.85	0.25	DC	MC
200.85	201.7	0.85	R	
201.7	201.9	0.2	CBSH	
201.9	202.1	0.2	CR	
202.1	202.25	0.15	CBSH	
202.25	205	2.75	R	
205	209.6	4.6	R	
209.6	210	0.4	CR	
210	210.4	0.4	R	
210.4	210.8	0.4	CBSH	
210.8	220.8	10	R	
220.8	221.15	0.35	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
221.15	229.2	8.05	R	
229.2	229.45	0.25	CBSH	
229.45	230.35	0.9	C	CBA
230.35	230.7	0.35	DC	CBB
230.7	231.45	0.75	C	CBB
231.45	231.65	0.2	CR	
231.65	232	0.35	CBSH	
232	242.15	10.15	R	
242.15	242.4	0.25	CBSH	
242.4	242.6	0.2	DC	CCA
242.6	243.75	1.15	C	CCA
243.75	246.55	2.8	C	CCB
246.55	246.8	0.25	CBSH	
246.8	247.7	0.9	R	
247.7	247.98	0.28	CBSH	MB
247.98	248.3	0.32	CR	MB
248.3	248.5	0.2	CBSH	MB
248.5	265.45	16.95	R	
265.45	265.65	0.2	CBSH	MAA
265.65	265.9	0.25	C	MAA
265.9	266.1	0.2	DC	MAA
266.1	266.65	0.55	CR	MAA
266.65	266.9	0.25	CBSH	MAA
266.9	267.5	0.6	R	
267.5	267.6	0.1	CBSH	
267.6	268.5	0.9	R	
268.5	268.9	0.4	CBSH	
268.9	270.55	1.65	R	
270.55	270.7	0.15	CBSH	
270.7	272.82	2.12	R	
272.82	274	1.18	ND	NO DATA
BM18-05				
0	12.3	12.3	DRIFT	DRIFT
12.3	12.5	0.2	R	
12.5	12.7	0.2	IRST	IRONSTONE
12.7	18.6	5.9	R	
18.6	18.75	0.15	CBSH	
18.75	39.5	20.75	R	
39.5	39.8	0.3	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
39.8	40	0.2	ASH	ASH BAND
40	40.1	0.1	R	
40.1	40.3	0.2	CBSH	MG
40.3	40.75	0.45	DC	MG
40.75	42.05	1.3	CBSH	MG
42.05	46.4	4.35	R	
46.4	46.65	0.25	ASH	ASH BAND
46.65	46.7	0.05	R	
46.7	47.05	0.35	CR	MF
47.05	50.2	3.15	R	
50.2	50.3	0.1	FAULT	POSSIBLE
50.3	51.45	1.15	R	
51.45	51.55	0.1	ASH	ASH BAND
51.55	51.8	0.25	CBSH	MF
51.8	52.1	0.3	DC	MF
52.1	52.4	0.3	CR	MF
52.4	52.6	0.2	CBSH	MF
52.6	60.8	8.2	R	
60.8	61	0.2	CBSH	MEA
61	61.15	0.15	DC	MEA
61.15	61.4	0.25	CBSH	MEA
61.4	61.9	0.5	R	
61.9	62.05	0.15	CBSH	MEB
62.05	62.4	0.35	DC	MEB
62.4	62.6	0.2	CBSH	MEB
62.6	76.3	13.7	R	
76.3	76.5	0.2	CBSH	
76.5	79.4	2.9	C	CA
79.4	79.7	0.3	DC	CA
79.7	80	0.3	CR	
80	80.45	0.45	R	
80.45	80.6	0.15	CBSH	
80.6	80.9	0.3	CR	
80.9	81.05	0.15	CBSH	
81.05	81.25	0.2	DC	MD
81.25	83.35	2.1	C	MD
83.35	83.6	0.25	CBSH	
83.6	84.35	0.75	R	
84.35	85	0.65	CBSH	
85	86	1	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
86	86.35	0.35	CBSH	
86.35	86.95	0.6	R	
86.95	87.3	0.35	CBSH	
87.3	90.4	3.1	R	
90.4	90.6	0.2	CBSH	
90.6	90.8	0.2	C	DL
90.8	90.9	0.1	CBSH	
90.9	93.65	2.75	R	
93.65	94.45	0.8	CBSH	
94.45	95.25	0.8	R	
95.25	96.2	0.95	CBSH	
96.2	97.35	1.15	R	
97.35	97.8	0.45	IRST	IRONSTONE
97.8	102.4	4.6	R	
102.4	102.9	0.5	CBSH	
102.9	109.15	6.25	R	
109.15	109.4	0.25	R	MCD
109.4	109.85	0.45	CBSH	MCD
109.85	111.2	1.35	R	MCD
111.2	111.45	0.25	CBSH	MCD
111.45	111.7	0.25	CR	MCD
111.7	111.85	0.15	CBSH	MCD
111.85	112	0.15	CR	MCD
112	112.55	0.55	CBSH	MCD
112.55	116.5	3.95	R	MCD
116.5	116.7	0.2	CBSH	MCD
116.7	116.85	0.15	CR	MCD
116.85	117.05	0.2	CBSH	MCD
117.05	120.85	3.8	R	MCD
120.85	122.75	1.9	R	
122.75	123	0.25	CR	
123	123.15	0.15	CBSH	
123.15	123.7	0.55	R	
123.7	124	0.3	FAULT	PROBABLE
124	124.1	0.1	R	
124.1	124.35	0.25	C	DL
124.35	124.6	0.25	DC	DL
124.6	124.8	0.2	CBSH	
124.8	128.1	3.3	R	
128.1	128.35	0.25	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
128.35	128.55	0.2	DC	
128.55	128.75	0.2	CBSH	
128.75	132	3.25	R	
132	138.5	6.5	R	MCD
138.5	139.5	1	R	
139.5	139.95	0.45	CBSH	
139.95	140.1	0.15	CR	
140.1	140.5	0.4	CBSH	
140.5	142	1.5	R	
142	142.4	0.4	CBSH	
142.4	142.7	0.3	CR	
142.7	143	0.3	CBSH	
143	143.15	0.15	CR	
143.15	143.3	0.15	CBSH	
143.3	149.75	6.45	R	
149.75	149.8	0.05	FAULT	POSSIBLE
149.8	150.35	0.55	R	
150.35	150.7	0.35	CBSH	
150.7	151.05	0.35	R	
151.05	151.4	0.35	CBSH	
151.4	164.25	12.85	R	
164.25	164.4	0.15	IRST	IRONSTONE
164.4	166.4	2	R	
166.4	166.63	0.23	CBSH	
166.63	166.8	0.17	CR	
166.8	167.1	0.3	CBSH	
167.1	167.75	0.65	C	MC
167.75	167.85	0.1	DC	MC
167.85	168	0.15	C	MC
168	168.2	0.2	DC	MC
168.2	169	0.8	R	
169	169.3	0.3	ASH	ASH BAND
169.3	169.8	0.5	R	
169.8	170.55	0.75	CBSH	
170.55	173.6	3.05	R	
173.6	173.7	0.1	IRST	IRONSTONE
173.7	175.5	1.8	R	
175.5	175.9	0.4	CR	
175.9	185.7	9.8	R	
185.7	186.1	0.4	CR	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
186.1	199.4	13.3	R	
199.4	199.6	0.2	CBSH	
199.6	201.7	2.1	C	CBA
201.7	202.2	0.5	DC	CBB
202.2	204.05	1.85	C	CBB
204.05	204.3	0.25	CR	
204.3	204.6	0.3	CBSH	
204.6	204.75	0.15	CR	
204.75	205	0.25	CBSH	
205	224.5	19.5	R	
224.5	224.75	0.25	CBSH	
224.75	230.8	6.05	C	CC
230.8	231	0.2	CBSH	
231	231.2	0.2	R	
231.2	231.4	0.2	CBSH	MB
231.4	231.6	0.2	CR	MB
231.6	231.9	0.3	DC	MB
231.9	232.05	0.15	C	MB
232.05	232.2	0.15	CBSH	MB
232.2	241.5	9.3	R	
241.5	241.85	0.35	IRST	IRONSTONE
241.85	242.7	0.85	R	
242.7	242.95	0.25	CBSH	MAA
242.95	243.6	0.65	CR	MAA
243.6	243.9	0.3	DC	MAA
243.9	244	0.1	R	MAA
244	244.5	0.5	CR	MAA
244.5	244.8	0.3	CBSH	MAA
244.8	248	3.2	R	
248	248.3	0.3	CBSH	
248.3	252.45	4.15	R	
252.45	252.75	0.3	CBSH	
252.75	253.02	0.27	R	
253.02	257	3.98	ND	NO DATA
BM18-06A				
0	18	18	DRIFT	DRIFT
18	18.6	0.6	R	
18.6	18.75	0.15	CBSH	
18.75	20.4	1.65	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
20.4	20.5	0.1	ASH	ASH BAND
20.5	20.85	0.35	CBSH	MF
20.85	23.2	2.35	R	
23.2	23.65	0.45	CBSH	
23.65	25.8	2.15	R	
25.8	26.05	0.25	CR	
26.05	29.3	3.25	R	
29.3	29.5	0.2	CBSH	MEA
29.5	29.7	0.2	DC	MEA
29.7	29.9	0.2	CBSH	MEA
29.9	30.7	0.8	R	
30.7	31	0.3	CR	
31	31.15	0.15	DC	MEB
31.15	31.35	0.2	CBSH	MEB
31.35	36.4	5.05	R	
36.4	36.6	0.2	CBSH	
36.6	36.75	0.15	C	
36.75	36.9	0.15	DC	
36.9	40	3.1	R	
40	40.25	0.25	CBSH	
40.25	42.85	2.6	R	
42.85	43.15	0.3	CBSH	
43.15	43.95	0.8	R	
43.95	44.1	0.15	CBSH	
44.1	45.7	1.6	R	
45.7	45.9	0.2	CBSH	
45.9	49.1	3.2	C	CA
49.1	49.4	0.3	CR	
49.4	49.95	0.55	R	
49.95	50.5	0.55	DC	
50.5	50.65	0.15	CR	
50.65	52.35	1.7	C	MD
52.35	52.6	0.25	CR	
52.6	52.85	0.25	CBSH	
52.85	53	0.15	R	
53	53.4	0.4	CBSH	
53.4	53.75	0.35	R	
53.75	54.35	0.6	CBSH	
54.35	54.5	0.15	CR	
54.5	55	0.5	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
55	55.2	0.2	DC	
55.2	55.45	0.25	CR	
55.45	55.9	0.45	R	
55.9	56.8	0.9	CBSH	
56.8	57.1	0.3	R	
57.1	57.3	0.2	CR	
57.3	57.4	0.1	CBSH	
57.4	58.15	0.75	CR	
58.15	58.6	0.45	CBSH	
58.6	59.2	0.6	R	
59.2	59.7	0.5	CBSH	
59.7	60.25	0.55	CR	
60.25	60.4	0.15	CBSH	
60.4	60.55	0.15	CR	
60.55	61	0.45	CBSH	
61	61.3	0.3	CR	
61.3	61.5	0.2	CBSH	
61.5	63.6	2.1	R	
63.6	64.1	0.5	CBSH	
64.1	65	0.9	R	
65	65.2	0.2	CR	DL
65.2	65.5	0.3	C	DL
65.5	65.7	0.2	CBSH	
65.7	67.1	1.4	R	
67.1	67.4	0.3	IRST	IRONSTONE
67.4	67.55	0.15	R	
67.55	67.9	0.35	CBSH	
67.9	69	1.1	R	
69	69.4	0.4	CBSH	
69.4	69.6	0.2	R	
69.6	70.2	0.6	CBSH	
70.2	71.45	1.25	R	
71.45	71.85	0.4	CBSH	
71.85	72.85	1	R	
72.85	73.3	0.45	CR	
73.3	73.4	0.1	CBSH	
73.4	73.9	0.5	R	
73.9	74.15	0.25	CBSH	
74.15	74.3	0.15	CR	
74.3	74.6	0.3	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
74.6	74.9	0.3	R	
74.9	75	0.1	IRST	IRONSTONE
75	76.3	1.3	R	
76.3	76.6	0.3	CBSH	
76.6	79.75	3.15	R	
79.75	80	0.25	CBSH	
80	82.7	2.7	R	
82.7	82.85	0.15	CBSH	
82.85	84.2	1.35	R	
84.2	84.7	0.5	CBSH	
84.7	97.1	12.4	R	
97.1	97.3	0.2	FAULT	POSSIBLE
97.3	97.6	0.3	R	
97.6	98.1	0.5	CBSH	
98.1	107.6	9.5	R	
107.6	111.05	3.45	R	MCD
111.05	111.8	0.75	R	
111.8	111.95	0.15	FAULT	PROBABLE
111.95	115.2	3.25	R	MCD
115.2	120.05	4.85	R	
120.05	120.5	0.45	CBSH	
120.5	130.8	10.3	R	
130.8	131.35	0.55	CBSH	
131.35	131.95	0.6	DC	MC
131.95	132.5	0.55	C	MC
132.5	132.6	0.1	FAULT	PROBABLE
132.6	132.75	0.15	DC	MC
132.75	133.05	0.3	CR	MC
133.05	133.15	0.1	DC	MC
133.15	133.4	0.25	C	MC
133.4	133.6	0.2	CBSH	
133.6	134.05	0.45	R	
134.05	134.35	0.3	ASH	ASH BAND
134.35	135.3	0.95	R	
135.3	135.7	0.4	CBSH	
135.7	135.85	0.15	R	
135.85	136.4	0.55	CBSH	
136.4	143.45	7.05	R	
143.45	143.8	0.35	CBSH	
143.8	157.28	13.48	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
157.28	164.6	7.32	ND	NO DATA
BM18-06B				
0	18.9	18.9	DRIFT	DRIFT
18.9	24.85	5.95	R	
24.85	25.15	0.3	CBSH	
25.15	25.3	0.15	DC	MEA
25.3	25.4	0.1	C	MEA
25.4	25.5	0.1	DC	MEA
25.5	25.75	0.25	C	MEA
25.75	26.05	0.3	CBSH	
26.05	26.6	0.55	R	
26.6	26.8	0.2	CBSH	MEB
26.8	27	0.2	DC	MEB
27	27.2	0.2	CBSH	MEB
27.2	37.3	10.1	R	
37.3	37.5	0.2	CBSH	
37.5	39.45	1.95	R	
39.45	39.7	0.25	CR	
39.7	42.8	3.1	C	CA
42.8	42.95	0.15	DC	CA
42.95	43.4	0.45	CBSH	
43.4	43.6	0.2	CR	
43.6	43.9	0.3	FAULT	PROBABLE
43.9	46.5	2.6	C	MD
46.5	46.7	0.2	CR	
46.7	47.2	0.5	R	
47.2	47.4	0.2	CBSH	
47.4	47.85	0.45	CR	
47.85	48	0.15	CBSH	
48	48.25	0.25	CR	
48.25	48.9	0.65	CBSH	
48.9	49	0.1	R	
49	49.35	0.35	IRST	IRONSTONE
49.35	49.6	0.25	R	
49.6	49.8	0.2	CR	
49.8	50	0.2	DC	
50	50.15	0.15	CR	
50.15	50.4	0.25	R	
50.4	50.6	0.2	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
50.6	50.75	0.15	DC	
50.75	50.9	0.15	CR	
50.9	51	0.1	C	
51	51.6	0.6	CR	
51.6	53.2	1.6	CBSH	
53.2	53.9	0.7	R	
53.9	54.3	0.4	CBSH	
54.3	54.6	0.3	R	
54.6	54.8	0.2	DC	
54.8	55.8	1	CBSH	
55.8	59.9	4.1	R	
59.9	60	0.1	CBSH	
60	60.15	0.15	R	
60.15	60.3	0.15	CBSH	
60.3	60.55	0.25	R	
60.55	60.7	0.15	CBSH	
60.7	61.4	0.7	R	
61.4	61.6	0.2	CR	DL
61.6	61.8	0.2	C	DL
61.8	62	0.2	DC	DL
62	64.2	2.2	R	
64.2	64.6	0.4	CBSH	
64.6	66.3	1.7	R	
66.3	66.5	0.2	CBSH	
66.5	66.85	0.35	DC	
66.85	67.15	0.3	CR	
67.15	67.35	0.2	CBSH	
67.35	69.9	2.55	R	
69.9	70.3	0.4	CBSH	
70.3	70.6	0.3	R	
70.6	70.7	0.1	CBSH	
70.7	80.65	9.95	R	
80.65	80.9	0.25	IRST	IRONSTONE
80.9	87.7	6.8	R	
87.7	87.85	0.15	IRST	IRONSTONE
87.85	90.9	3.05	R	
90.9	91	0.1	CBSH	
91	91.5	0.5	R	
91.5	91.6	0.1	CBSH	
91.6	91.7	0.1	FAULT	POSSIBLE

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
91.7	91.9	0.2	CBSH	
91.9	93.7	1.8	R	
93.7	94.1	0.4	CBSH	
94.1	99.3	5.2	R	
99.3	99.4	0.1	R	MCD
99.4	99.5	0.1	CBSH	MCD
99.5	100.3	0.8	R	MCD
100.3	100.35	0.05	FAULT	POSSIBLE
100.35	100.6	0.25	CBSH	MCD
100.6	100.7	0.1	CR	MCD
100.7	102.8	2.1	R	MCD
102.8	109.1	6.3	R	
109.1	109.4	0.3	CBSH	
109.4	121.9	12.5	R	
121.9	122.1	0.2	CR	MC
122.1	122.4	0.3	DC	MC
122.4	123	0.6	C	MC
123	123.25	0.25	DC	MC
123.25	124.25	1	R	
124.25	124.35	0.1	ASH	ASH BAND
124.35	124.9	0.55	R	
124.9	125.3	0.4	CBSH	
125.3	130.25	4.95	R	
130.25	130.6	0.35	CR	
130.6	131.5	0.9	R	
131.5	131.6	0.1	CBSH	
131.6	150.9	19.3	R	
150.9	151.1	0.2	CBSH	
151.1	152.45	1.35	C	CBA
152.45	153.4	0.95	C	CBB
153.4	153.7	0.3	CR	
153.7	154	0.3	CBSH	
154	157.8	3.8	R	
157.8	158	0.2	CBSH	MM
158	166.35	8.35	R	
166.35	166.55	0.2	CBSH	
166.55	170.65	4.1	C	CC
170.65	171.35	0.7	R	
171.35	171.65	0.3	CBSH	MB
171.65	171.9	0.25	CR	MB

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
171.9	172.1	0.2	DC	MB
172.1	172.35	0.25	CR	MB
172.35	177.6	5.25	R	
177.6	177.7	0.1	CBSH	
177.7	181.3	3.6	R	
181.3	181.8	0.5	CBSH	MAA
181.8	182.15	0.35	CR	MAA
182.15	182.25	0.1	DC	MAA
182.25	182.6	0.35	CR	MAA
182.6	182.8	0.2	CBSH	MAA
182.8	188.95	6.15	R	
188.95	189.4	0.45	CBSH	
189.4	190.2	0.8	R	
190.2	190.6	0.4	CBSH	
190.6	194.4	3.8	R	
194.4	194.6	0.2	CR	
194.6	194.8	0.2	CBSH	
194.8	200.6	5.8	R	
200.6	200.9	0.3	CBSH	
200.9	201.8	0.9	R	
201.8	202	0.2	CBSH	
202	202.35	0.35	CR	
202.35	202.5	0.15	CBSH	
202.5	203.6	1.1	R	
203.6	203.95	0.35	CBSH	
203.95	212.95	9	R	
212.95	213.1	0.15	CBSH	
213.1	225.3	12.2	R	
225.3	225.7	0.4	IRST	IRONSTONE
225.7	236.45	10.75	R	
236.45	239.1	2.65	C	MA
239.1	239.25	0.15	CR	
239.25	239.4	0.15	CBSH	
239.4	241	1.6	ND	NO DATA
BM18-07				
0	2.5	2.5	DRIFT	DRIFT
2.5	3.3	0.8	PEAT	DRIFT
3.3	9	5.7	DRIFT	DRIFT
9	24.1	15.1	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
24.1	24.25	0.15	CBSH	
24.25	30.05	5.8	R	
30.05	30.2	0.15	CBSH	
30.2	39.5	9.3	R	
39.5	39.7	0.2	CBSH	
39.7	46.65	6.95	R	
46.65	46.75	0.1	CBSH	
46.75	47.4	0.65	R	
47.4	47.7	0.3	CBSH	
47.7	48.1	0.4	R	
48.1	48.65	0.55	CBSH	MG
48.65	48.9	0.25	CR	MG
48.9	49	0.1	DC	MG
49	49.15	0.15	CR	MG
49.15	49.3	0.15	C	MG
49.3	49.4	0.1	CR	MG
49.4	49.5	0.1	DC	MG
49.5	49.7	0.2	CR	MG
49.7	50.3	0.6	CBSH	MG
50.3	52.75	2.45	R	
52.75	52.95	0.2	CBSH	
52.95	54.2	1.25	R	
54.2	54.3	0.1	ASH	ASH BAND
54.3	54.5	0.2	CBSH	MF
54.5	55.3	0.8	R	
55.3	55.4	0.1	CBSH	
55.4	67.4	12	R	
67.4	67.5	0.1	CBSH	MEA
67.5	67.6	0.1	DC	MEA
67.6	67.95	0.35	CBSH	MEA
67.95	68.4	0.45	R	
68.4	68.6	0.2	CBSH	MEB
68.6	68.9	0.3	DC	MEB
68.9	70.2	1.3	R	
70.2	70.55	0.35	CBSH	
70.55	80.5	9.95	R	
80.5	80.8	0.3	CBSH	
80.8	85.65	4.85	R	
85.65	85.8	0.15	CBSH	
85.8	86.05	0.25	DC	CA

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
86.05	90.1	4.05	C	CA
90.1	90.3	0.2	DC	CA
90.3	90.4	0.1	FAULT	ESTABLISHED
90.4	90.5	0.1	CR	
90.5	90.7	0.2	DC	CA
90.7	94.05	3.35	C	CA
94.05	94.3	0.25	DC	CA
94.3	94.9	0.6	CBSH	
94.9	95.5	0.6	R	
95.5	95.7	0.2	CBSH	
95.7	96.5	0.8	CR	
96.5	98	1.5	C	MD
98	98.1	0.1	DC	MD
98.1	98.3	0.2	C	MD
98.3	98.5	0.2	CBSH	
98.5	99.3	0.8	R	
99.3	99.6	0.3	CBSH	
99.6	100	0.4	CR	
100	100.25	0.25	CBSH	
100.25	100.7	0.45	R	
100.7	101.1	0.4	CR	
101.1	103	1.9	R	
103	103.4	0.4	CBSH	
103.4	106.3	2.9	R	
106.3	106.5	0.2	DC	DL
106.5	111.1	4.6	R	
111.1	111.85	0.75	CBSH	
111.85	112.25	0.4	IRST	IRONSTONE
112.25	115	2.75	R	
115	121.3	6.3	R	MCD
121.3	121.5	0.2	CBSH	MCD
121.5	121.9	0.4	CR	MCD
121.9	123.1	1.2	R	MCD
123.1	143.2	20.1	R	
143.2	143.6	0.4	CBSH	
143.6	144	0.4	R	
144	144.45	0.45	C	MC
144.45	145.9	1.45	R	
145.9	146.05	0.15	CBSH	
146.05	146.3	0.25	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
146.3	146.8	0.5	CBSH	
146.8	152.25	5.45	R	
152.25	152.6	0.35	CBSH	
152.6	152.9	0.3	R	
152.9	153	0.1	CBSH	
153	153.55	0.55	R	
153.55	154	0.45	CBSH	
154	154.22	0.22	R	
154.22	155.5	1.28	ND	NO DATA
BM18-08				
0	8.7	8.7	DRIFT	DRIFT
8.7	10.25	1.55	R	
10.25	10.4	0.15	CBSH	
10.4	10.9	0.5	R	
10.9	11	0.1	CBSH	
11	15.7	4.7	R	
15.7	16.3	0.6	CBSH	
16.3	16.85	0.55	R	
16.85	17.05	0.2	CR	
17.05	18.2	1.15	R	
18.2	18.5	0.3	CBSH	
18.5	18.7	0.2	R	
18.7	19.4	0.7	CBSH	
19.4	21.8	2.4	R	
21.8	22.5	0.7	CBSH	
22.5	26.85	4.35	R	
26.85	27	0.15	CBSH	
27	37.1	10.1	R	
37.1	37.5	0.4	CBSH	
37.5	37.7	0.2	CR	
37.7	37.8	0.1	DC	
37.8	38	0.2	CR	
38	38.1	0.1	R	
38.1	38.5	0.4	CBSH	MG
38.5	38.6	0.1	CR	MG
38.6	38.8	0.2	C	MG
38.8	39.6	0.8	DC	MG
39.6	39.75	0.15	CR	MG
39.75	40.1	0.35	DC	MG

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
40.1	40.2	0.1	FAULT	POSSIBLE
40.2	40.75	0.55	DC	MG
40.75	40.85	0.1	CR	MG
40.85	41.8	0.95	CBSH	MG
41.8	45.25	3.45	R	
45.25	45.85	0.6	ASH	ASH BAND
45.85	46	0.15	R	
46	46.15	0.15	CBSH	MF
46.15	47.15	1	R	
47.15	47.3	0.15	IRST	IRONSTONE
47.3	47.9	0.6	R	
47.9	48.1	0.2	CBSH	
48.1	48.25	0.15	R	
48.25	48.4	0.15	CBSH	
48.4	48.9	0.5	R	
48.9	49.1	0.2	CBSH	
49.1	52.65	3.55	R	
52.65	53	0.35	CBSH	
53	59.7	6.7	R	
59.7	59.95	0.25	CBSH	MEA
59.95	60.3	0.35	C	MEA
60.3	60.45	0.15	CBSH	MEA
60.45	61	0.55	R	
61	61.2	0.2	CBSH	MEB
61.2	61.4	0.2	DC	MEB
61.4	61.6	0.2	CBSH	MEB
61.6	75.4	13.8	R	
75.4	75.6	0.2	CBSH	
75.6	75.9	0.3	DC	CA
75.9	78.15	2.25	C	CA
78.15	78.65	0.5	DC	CA
78.65	78.75	0.1	C	CA
78.75	79.1	0.35	DC	CA
79.1	79.5	0.4	CBSH	
79.5	79.6	0.1	CR	
79.6	79.8	0.2	CBSH	
79.8	80.35	0.55	R	
80.35	80.4	0.05	CBSH	
80.4	80.5	0.1	FAULT	ESTABLISHED
80.5	80.95	0.45	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
80.95	85.2	4.25	C	CA
85.2	85.4	0.2	FAULT	ESTABLISHED
85.4	90	4.6	C	CA
90	90.1	0.1	DC	CA
90.1	90.3	0.2	C	CA
90.3	90.5	0.2	DC	CA
90.5	90.7	0.2	CBSH	
90.7	91.1	0.4	R	
91.1	91.3	0.2	CBSH	
91.3	91.7	0.4	CR	
91.7	91.85	0.15	DC	MD
91.85	92	0.15	FAULT	PROBABLE
92	92.15	0.15	CR	
92.15	92.7	0.55	CBSH	
92.7	93.6	0.9	CR	
93.6	94.8	1.2	C	MD
94.8	95.4	0.6	R	
95.4	96	0.6	CBSH	
96	96.2	0.2	DC	
96.2	96.5	0.3	CR	
96.5	96.7	0.2	CBSH	
96.7	97	0.3	R	
97	97.1	0.1	CBSH	
97.1	97.3	0.2	CR	
97.3	97.9	0.6	CBSH	
97.9	98.35	0.45	R	
98.35	98.9	0.55	CBSH	
98.9	103.95	5.05	R	
103.95	104.45	0.5	DC	DL
104.45	107.2	2.75	R	
107.2	108.1	0.9	CBSH	
108.1	108.95	0.85	R	
108.95	109.25	0.3	CBSH	
109.25	111.95	2.7	R	
111.95	114.5	2.55	R	MCD
114.5	114.9	0.4	R	
114.9	115.55	0.65	CBSH	
115.55	117.35	1.8	R	
117.35	118	0.65	IRST	IRONSTONE
118	122.2	4.2	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
122.2	122.7	0.5	CBSH	
122.7	134.7	12	R	
134.7	134.9	0.2	CBSH	
134.9	135	0.1	CR	
135	135.5	0.5	CBSH	
135.5	136.1	0.6	C	MC
136.1	136.2	0.1	CR	
136.2	136.35	0.15	CBSH	
136.35	137.3	0.95	R	
137.3	137.5	0.2	ASH	ASH BAND
137.5	138	0.5	R	
138	138.5	0.5	CBSH	
138.5	144.6	6.1	R	
144.6	144.95	0.35	CBSH	
144.95	151.8	6.85	R	
151.8	152.6	0.8	CBSH	
152.6	154.3	1.7	R	
154.3	155	0.7	ND	NO DATA
BM18-09				
0	9	9	DRIFT	DRIFT
9	11.6	2.6	R	
11.6	11.9	0.3	DC	MKA
11.9	12.1	0.2	CR	MKA
12.1	12.3	0.2	DC	MKA
12.3	12.5	0.2	C	MKA
12.5	12.8	0.3	CR	MKA
12.8	17.45	4.65	R	
17.45	17.7	0.25	DC	MKB
17.7	17.9	0.2	C	MKB
17.9	18.1	0.2	CBSH	MKB
18.1	21.5	3.4	R	
21.5	21.7	0.2	CBSH	
21.7	31.8	10.1	R	
31.8	32.1	0.3	CBSH	
32.1	33	0.9	R	
33	33.2	0.2	CBSH	
33.2	45.1	11.9	R	
45.1	45.3	0.2	CBSH	
45.3	45.5	0.2	DC	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
45.5	45.75	0.25	CBSH	
45.75	58.2	12.45	R	
58.2	58.3	0.1	CBSH	
58.3	58.75	0.45	R	
58.75	58.95	0.2	CBSH	MG
58.95	59.8	0.85	CR	MG
59.8	60.8	1	CBSH	MG
60.8	70.15	9.35	R	
70.15	70.25	0.1	ASH	ASH BAND
70.25	70.7	0.45	CBSH	MF
70.7	71.7	1	R	
71.7	71.8	0.1	FAULT	POSSIBLE
71.8	74.25	2.45	R	
74.25	74.5	0.25	ASH	ASH BAND
74.5	74.6	0.1	CBSH	MF
74.6	74.7	0.1	CR	MF
74.7	74.85	0.15	CBSH	MF
74.85	77.9	3.05	R	
77.9	78.3	0.4	CBSH	
78.3	86.7	8.4	R	
86.7	86.95	0.25	CBSH	MEA
86.95	87.15	0.2	C	MEA
87.15	87.35	0.2	CR	MEA
87.35	87.6	0.25	CBSH	MEA
87.6	88.35	0.75	R	
88.35	88.6	0.25	CR	MEB
88.6	103.45	14.85	R	
103.45	103.7	0.25	CBSH	
103.7	106.2	2.5	C	CA
106.2	106.6	0.4	CR	
106.6	106.9	0.3	CBSH	
106.9	107	0.1	R	
107	107.15	0.15	CBSH	
107.15	107.3	0.15	CR	
107.3	107.9	0.6	DC	MD
107.9	109.1	1.2	C	MD
109.1	109.5	0.4	DC	MD
109.5	109.7	0.2	CBSH	
109.7	112.1	2.4	R	
112.1	112.2	0.1	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
112.2	112.7	0.5	R	
112.7	112.85	0.15	CBSH	
112.85	112.95	0.1	CR	
112.95	113.1	0.15	CBSH	
113.1	113.6	0.5	CR	
113.6	113.9	0.3	CBSH	
113.9	114.15	0.25	FAULT	POSSIBLE
114.15	114.95	0.8	CR	
114.95	115.15	0.2	CBSH	
115.15	115.85	0.7	R	
115.85	115.9	0.05	CBSH	DL
115.9	116.05	0.15	CR	DL
116.05	116.5	0.45	C	DL
116.5	116.75	0.25	CBSH	DL
116.75	118.05	1.3	R	
118.05	118.3	0.25	CBSH	
118.3	118.45	0.15	CR	
118.45	118.6	0.15	CBSH	
118.6	119.7	1.1	R	
119.7	119.8	0.1	CBSH	
119.8	120	0.2	CR	
120	120.3	0.3	C	
120.3	120.5	0.2	DC	
120.5	120.8	0.3	CBSH	
120.8	121.7	0.9	R	
121.7	121.9	0.2	CBSH	
121.9	122.15	0.25	CR	
122.15	122.4	0.25	DC	
122.4	123.25	0.85	CR	
123.25	123.4	0.15	DC	
123.4	123.7	0.3	R	
123.7	126.15	2.45	R	MCD
126.15	126.35	0.2	CBSH	MCD
126.35	126.8	0.45	CR	MCD
126.8	126.95	0.15	CBSH	MCD
126.95	129.6	2.65	R	MCD
129.6	129.8	0.2	IRST	MCD
129.8	130.4	0.6	R	MCD
130.4	130.5	0.1	FAULT	POSSIBLE
130.5	130.6	0.1	CBSH	MCD

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
130.6	130.8	0.2	C	MCD
130.8	130.95	0.15	DC	MCD
130.95	131.8	0.85	C	MCD
131.8	134.9	3.1	R	
134.9	135.35	0.45	CBSH	
135.35	136.85	1.5	R	
136.85	137.2	0.35	CBSH	
137.2	147.62	10.42	R	
147.62	150	2.38	ND	NO DATA
BM18-10				
0	8.6	8.6	DRIFT	DRIFT
8.6	10.85	2.25	R	
10.85	11.05	0.2	CBSH	
11.05	11.3	0.25	DC	
11.3	11.5	0.2	CBSH	
11.5	11.6	0.1	ASH	ASH BAND
11.6	14.35	2.75	R	
14.35	14.55	0.2	CBSH	
14.55	14.95	0.4	R	
14.95	15.4	0.45	CBSH	
15.4	17.5	2.1	R	
17.5	17.65	0.15	CBSH	
17.65	19	1.35	R	
19	19.3	0.3	CBSH	
19.3	20.4	1.1	R	
20.4	20.65	0.25	CBSH	
20.65	22.8	2.15	R	
22.8	23.1	0.3	CBSH	
23.1	25.3	2.2	R	
25.3	25.6	0.3	CBSH	
25.6	26.4	0.8	R	
26.4	26.65	0.25	CBSH	
26.65	30	3.35	C	CA
30	30.15	0.15	CR	
30.15	30.65	0.5	CBSH	
30.65	30.85	0.2	R	
30.85	31.05	0.2	CBSH	
31.05	31.1	0.05	CR	
31.1	3.5	0.4	DC	MD

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
31.5	31.65	0.15	C	MD
31.65	31.75	0.1	DC	MD
31.75	32.75	1	C	MD
32.75	33	0.25	CR	
33	34.3	1.3	CBSH	
34.3	35	0.7	CR	
35	35.1	0.1	CBSH	
35.1	35.15	0.05	CR	
35.15	35.5	0.35	CBSH	
35.5	35.7	0.2	R	
35.7	36.15	0.45	CBSH	
36.15	36.65	0.5	CR	
36.65	36.9	0.25	CBSH	
36.9	37.3	0.4	CR	
37.3	37.6	0.3	CBSH	
37.6	37.7	0.1	R	
37.7	37.95	0.25	CBSH	
37.95	38.25	0.3	CR	
38.25	38.4	0.15	CBSH	
38.4	38.6	0.2	R	
38.6	38.8	0.2	CBSH	
38.8	39	0.2	R	
39	39.2	0.2	CBSH	
39.2	39.45	0.25	C	DL
39.45	39.65	0.2	CBSH	
39.65	44.9	5.25	R	
44.9	45	0.1	CBSH	
45	45.25	0.25	R	
45.25	46	0.75	CBSH	
46	53.3	7.3	R	
53.3	54.2	0.9	CBSH	
54.2	58.5	4.3	R	
58.5	59.1	0.6	R	MCD
59.1	59.6	0.5	CBSH	MCD
59.6	59.9	0.3	R	MCD
59.9	61.7	1.8	R	
61.7	62.6	0.9	CBSH	
62.6	67.25	4.65	R	
67.25	67.95	0.7	CBSH	
67.95	71.1	3.15	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
71.1	71.4	0.3	CBSH	
71.4	75.1	3.7	R	
75.1	75.3	0.2	CBSH	
75.3	75.8	0.5	CR	
75.8	76.3	0.5	C	MC
76.3	76.4	0.1	DC	MC
76.4	76.5	0.1	C	MC
76.5	76.85	0.35	CR	
76.85	78.05	1.2	R	
78.05	78.45	0.4	CBSH	
78.45	80.7	2.25	R	
80.7	80.95	0.25	CBSH	
80.95	81.3	0.35	CR	
81.3	81.4	0.1	CBSH	
81.4	82.95	1.55	R	
82.95	83.4	0.45	CBSH	
83.4	94.3	10.9	R	
94.3	94.65	0.35	CBSH	
94.65	102.05	7.4	R	
102.05	103.15	1.1	C	CBA
103.15	103.5	0.35	DC	CBB
103.5	104.5	1	C	CBB
104.5	104.6	0.1	FAULT	ESTABLISHED
104.6	104.95	0.35	CR	
104.95	106.1	1.15	C	CBB
106.1	106.2	0.1	CR	
106.2	106.8	0.6	CBSH	
106.8	123.1	16.3	R	
123.1	123.25	0.15	CBSH	
123.25	123.4	0.15	DC	CCA
123.4	124	0.6	C	CCA
124	124.2	0.2	FAULT	PROBABLE
124.2	126.75	2.55	R	
126.75	126.9	0.15	CBSH	
126.9	128.7	1.8	C	CCA
128.7	134.15	5.45	C	CCB
134.15	134.3	0.15	DC	CCB
134.3	134.5	0.2	CBSH	
134.5	135.3	0.8	R	
135.3	135.5	0.2	CBSH	MB

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
135.5	135.7	0.2	CR	MB
135.7	135.95	0.25	DC	MB
135.95	136.2	0.25	C	MB
136.2	136.4	0.2	CBSH	MB
136.4	145.8	9.4	R	
145.8	146.3	0.5	CBSH	
146.3	152.5	6.2	R	
152.5	153.15	0.65	CBSH	MAA
153.15	153.25	0.1	CR	MAA
153.25	153.5	0.25	DC	MAA
153.5	154.3	0.8	CR	MAA
154.3	154.45	0.15	CBSH	MAA
154.45	157.36	2.91	R	
157.36	158.5	1.14	ND	NO DATA
BM18-11				
0	4.3	4.3	DRIFT	DRIFT
4.3	7.85	3.55	R	
7.85	8	0.15	DC	
8	8.15	0.15	CBSH	
8.15	36.6	28.45	R	
36.6	36.75	0.15	CR	MG
36.75	36.9	0.15	CBSH	MG
36.9	37	0.1	DC	MG
37	37.3	0.3	CR	MG
37.3	37.4	0.1	DC	MG
37.4	37.6	0.2	CR	MG
37.6	37.75	0.15	CBSH	MG
37.75	38	0.25	CR	MG
38	38.5	0.5	CBSH	MG
38.5	43.95	5.45	R	
43.95	44.15	0.2	ASH	
44.15	44.35	0.2	CBSH	MF
44.35	44.9	0.55	CR	MF
44.9	45.2	0.3	CBSH	MF
45.2	45.7	0.5	R	
45.7	46	0.3	CBSH	
46	56.25	10.25	R	
56.25	56.4	0.15	CBSH	MEA
56.4	56.7	0.3	DC	MEA

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
56.7	56.9	0.2	CBSH	MEA
56.9	57.2	0.3	R	
57.2	57.4	0.2	DC	MEB
57.4	57.55	0.15	CR	MEB
57.55	57.7	0.15	CBSH	MEB
57.7	69.65	11.95	R	
69.65	70	0.35	C	CA
70	70.15	0.15	DC	CA
70.15	72.7	2.55	C	CA
72.7	72.85	0.15	DC	CA
72.85	73.55	0.7	CBSH	
73.55	73.7	0.15	R	
73.7	74.1	0.4	CBSH	
74.1	74.4	0.4	CR	
74.4	74.55	0.15	DC	MD
74.55	74.7	0.15	CR	MD
74.7	75.8	1.1	C	MD
75.8	76	0.2	DC	MD
76	76.25	0.25	CBSH	
76.25	78	1.75	R	
78	78.1	0.1	FAULT	ESTABLISHED
78.1	78.2	0.1	CBSH	
78.2	79.05	0.85	C	MD
79.05	79.25	0.2	CR	
79.25	79.45	0.2	CBSH	
79.45	82.5	3.05	R	
82.5	83.25	0.75	CBSH	
83.25	83.7	0.45	R	
83.7	83.85	0.15	CBSH	
83.85	84.15	0.3	DC	
84.15	84.85	0.7	R	
84.85	85.25	0.4	CR	
85.25	87.2	1.95	R	
87.2	87.45	0.25	CBSH	DL
87.45	87.6	0.15	C	DL
87.6	87.8	0.2	CR	DL
87.8	97.15	9.35	R	
97.15	101.35	4.2	R	MCD
101.35	101.5	0.15	CBSH	MCD
101.5	101.6	0.1	IRST	MCD

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
101.6	102.25	0.65	R	MCD
102.25	102.5	0.25	CBSH	MCD
102.5	102.85	0.35	ASH	MCD
102.85	103.3	0.45	R	MCD
103.3	103.75	0.45	IRST	MCD
103.75	104.05	0.3	R	MCD
104.05	106.4	2.35	R	
106.4	106.5	0.1	CBSH	
106.5	106.8	0.3	C	
106.8	107	0.2	DC	
107	107.25	0.25	CBSH	
107.25	107.95	0.7	R	
107.95	108.15	0.2	CBSH	
108.15	108.45	0.3	CR	
108.45	108.65	0.2	CBSH	
108.65	125.2	16.55	R	
125.2	125.6	0.4	IRST	IRONSTONE
125.6	125.9	0.3	R	
125.9	126.1	0.2	CBSH	
126.1	129.7	3.6	R	
129.7	130.05	0.35	IRST	IRONSTONE
130.05	132.15	2.1	R	
132.15	132.4	0.25	CBSH	
132.4	132.55	0.15	CR	
132.55	132.95	0.4	R	
132.95	133.6	0.65	C	MC
133.6	133.75	0.15	DC	MC
133.75	133.95	0.2	CBSH	
133.95	135.6	1.65	R	
135.6	136.2	0.6	CBSH	
136.2	136.4	0.2	R	
136.4	136.75	0.35	CBSH	
136.75	138.5	1.75	R	
138.5	138.65	0.15	CBSH	
138.65	139.05	0.4	R	
139.05	139.4	0.35	CBSH	
139.4	140.15	0.75	R	
140.15	140.5	0.35	CBSH	
140.5	150.75	10.25	R	
150.75	151.4	0.65	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
151.4	158.25	6.85	R	
158.25	158.55	0.3	CBSH	
158.55	159.5	0.95	C	CBA
159.5	160	0.5	R	
160	160.35	0.35	CBSH	
160.35	161.45	1.1	C	CBB
161.45	162.6	1.15	CBSH	
162.6	180.15	17.55	R	
180.15	180.4	0.25	CBSH	
180.4	180.75	0.35	CR	
180.75	187.2	6.45	C	CC
187.2	187.45	0.25	DC	CC
187.45	187.65	0.2	CBSH	
187.65	188.7	1.05	R	
188.7	188.9	0.2	CBSH	MB
188.9	189.05	0.15	CR	MB
189.05	189.1	0.05	CBSH	MB
189.1	189.3	0.2	CR	MB
189.3	189.4	0.1	CBSH	MB
189.4	189.5	0.1	CR	MB
189.5	189.7	0.2	DC	MB
189.7	189.95	0.25	C	MB
189.95	190.2	0.25	CR	MB
190.2	190.3	0.1	FAULT	PROBABLE
190.3	190.45	0.15	CBSH	MB
190.45	190.7	0.25	CR	MB
190.7	190.95	0.25	C	MB
190.95	191.15	0.2	CBSH	MB
191.15	198.15	7	R	
198.15	198.4	0.25	CBSH	
198.4	199.4	1	R	
199.4	200	0.6	CBSH	
200	204.25	4.25	R	
204.25	204.45	0.2	IRST	IRONSTONE
204.45	204.65	0.2	R	
204.65	204.8	0.15	IRST	IRONSTONE
204.8	205.55	0.75	R	
205.55	205.65	0.1	IRST	IRONSTONE
205.65	207.65	2	R	
207.65	207.9	0.25	CBSH	MAA

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
207.9	208.15	0.25	CR	MAA
208.15	208.55	0.4	CBSH	MAA
208.55	209	0.45	DC	MAA
209	209.1	0.1	CBSH	MAA
209.1	209.25	0.15	CR	MAA
209.25	209.35	0.1	CBSH	MAA
209.35	210.1	0.75	CR	MAA
210.1	210.45	0.35	CBSH	MAA
210.45	219.3	8.85	R	
219.3	219.7	0.4	CBSH	
219.7	220.75	1.05	R	
220.75	220.95	0.2	IRST	IRONSTONE
220.95	224.3	3.35	R	
224.3	224.65	0.35	IRST	IRONSTONE
224.65	229.65	5	R	
229.65	230.15	0.5	CBSH	
230.15	230.38	0.23	R	
230.38	232	1.62	ND	NO DATA
BM18-13				
0	6.45	6.45	DRIFT	DRIFT
6.45	13.3	6.85	R	
13.3	13.5	0.2	CBSH	MKA
13.5	13.7	0.2	C	MKA
13.7	13.85	0.15	CBSH	MKA
13.85	15.8	1.95	R	
15.8	16	0.2	DC	MKB
16	16.2	0.2	CBSH	MKB
16.2	23.4	7.2	R	
23.4	23.75	0.35	CBSH	
23.75	69.15	45.4	R	
69.15	69.4	0.25	ASH	ASH BAND?
69.4	69.6	0.2	R	
69.6	69.75	0.15	CBSH	MG
69.75	70.2	0.45	DC	MG
70.2	70.3	0.1	CR	MG
70.3	70.5	0.2	DC	MG
70.5	70.7	0.2	CR	MG
70.7	71.45	0.75	CBSH	MG
71.45	75.5	4.05	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
75.5	75.85	0.35	CBSH	MF
75.85	80.7	4.85	R	
80.7	81.1	0.4	CBSH	
81.1	86.4	5.3	R	
86.4	86.6	0.2	CBSH	MEA
86.6	86.8	0.2	DC	MEA
86.8	87.05	0.25	CBSH	MEA
87.05	87.2	0.15	ASH	ASH BAND?
87.2	87.55	0.35	R	
87.55	87.7	0.15	CR	MEB
87.7	87.9	0.2	DC	MEB
87.9	88.05	0.15	CBSH	MEB
88.05	100.1	12.05	R	
100.1	101.4	1.3	C	CA
101.4	102.9	1.5	C	CA
102.9	103.15	0.25	DC	CA
103.15	103.45	0.3	CBSH	
103.45	103.8	0.35	R	
103.8	104.1	0.3	CBSH	
104.1	104.7	0.6	CR	
104.7	104.85	0.15	DC	MD
104.85	106	1.15	C	MD
106	106.2	0.2	CR	
106.2	108.1	1.9	R	
108.1	108.35	0.25	CBSH	
108.35	108.7	0.35	CR	
108.7	109	0.3	CBSH	
109	109.6	0.6	R	
109.6	110	0.4	DC	
110	110.5	0.5	CBSH	
110.5	111	0.5	R	
111	111.85	0.85	CBSH	
111.85	112.2	0.35	CR	
112.2	113.2	1	R	
113.2	113.55	0.35	CBSH	
113.55	115.8	2.25	R	
115.8	116	0.2	CBSH	
116	116.4	0.4	DC	DL
116.4	117.95	1.55	R	
117.95	118.15	0.2	CBSH	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
118.15	119.7	1.55	R	
119.7	119.8	0.1	CR	
119.8	120	0.2	FAULT	ESTABLISHED
120	120.3	0.3	DC	MD
120.3	121.2	0.9	C	MD
121.2	121.3	0.1	R	
121.3	121.4	0.1	FAULT	ESTABLISHED
121.4	121.55	0.15	R	
121.55	121.8	0.25	CR	
121.8	124.35	2.55	C	CA
124.35	124.5	0.15	DC	MD
124.5	125.5	1	C	MD
125.5	125.8	0.3	DC	MD
125.8	128.35	2.55	R	
128.35	128.6	0.25	CBSH	
128.6	128.75	0.15	CR	
128.75	129.05	0.3	CBSH	
129.05	129.7	0.65	R	
129.7	130.05	0.35	DC	
130.05	130.75	0.7	CBSH	
130.75	131.15	0.4	R	
131.15	131.65	0.5	CBSH	
131.65	132	0.35	CR	
132	132.2	0.2	CBSH	
132.2	135.75	3.55	R	
135.75	135.95	0.2	CR	DL
135.95	136.1	0.15	C	DL
136.1	136.3	0.2	CR	DL
136.3	150.85	14.55	R	
150.85	151.1	0.25	R	MCD
151.1	151.3	0.2	CBSH	MCD
151.3	151.8	0.5	R	MCD
151.8	152.1	0.3	IRST	MCD
152.1	154	1.9	R	MCD
154	154.25	0.25	CBSH	MCD
154.25	154.8	0.55	R	MCD
154.8	155	0.2	CRSH	MCD
155	155.2	0.2	C	MCD
155.2	155.4	0.2	CR	MCD
155.4	156.3	0.9	R	MCD

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (continued)				
From	*To*	*Apparent*	*Lithology*	*Name*
156.3	156.4	0.1	FAULT	POSSIBLE
156.4	165.4	9	R	
165.4	165.6	0.2	R	MCD
165.6	165.8	0.2	CBSH	MCD
165.8	166	0.2	R	MCD
166	166.4	0.4	IRST	MCD
166.4	169.1	2.7	R	MCD
169.1	169.3	0.2	CBSH	MCD
169.3	169.7	0.4	C	MCD
169.7	172.8	3.1	R	MCD
172.8	172.95	0.15	CBSH	MCD
172.95	173.1	0.15	CR	MCD
173.1	173.8	0.7	CBSH	MCD
173.8	175.55	1.75	R	MCD
175.55	175.9	0.35	IRST	MCD
175.9	177.15	1.25	R	MCD
177.15	181.2	4.05	R	
181.2	181.6	0.4	CBSH	
181.6	184.1	2.5	R	
184.1	184.3	0.2	CBSH	
184.3	186	1.7	R	
186	186.2	0.2	CBSH	
186.2	189.6	3.4	R	
189.6	190	0.4	CBSH	
190	193.15	3.15	R	
193.15	193.5	0.35	CBSH	
193.5	194.3	0.8	R	
194.3	195.25	0.95	C	MC
195.25	196.3	1.05	R	
196.3	196.8	0.5	CBSH	
196.8	200.5	3.7	R	
200.5	200.9	0.4	CR	
200.9	201.15	0.25	R	
201.15	201.5	0.35	CBSH	
201.5	210.4	8.9	R	
210.4	210.8	0.4	CBSH	
210.8	220.3	9.5	R	
220.3	220.55	0.25	CR	
220.55	221.15	0.6	C	CBA
221.15	221.5	0.35	R	

Table B-1: Interpretation (metres) of geophysics from Dillon 2018 boreholes (concluded)				
From	*To*	*Apparent*	*Lithology*	*Name*
221.5	221.7	0.2	CBSH	
221.7	221.9	0.2	DC	CBB
221.9	222.75	0.85	C	CBB
222.75	223.25	0.5	CBSH	
223.25	231.7	8.45	R	
231.7	231.8	0.1	CBSH	
231.8	232.15	0.35	DC	CC
232.15	237	4.85	C	CC
237	237.2	0.2	CBSH	
237.2	238	0.8	R	
238	238.25	0.25	CBSH	MB
238.25	238.5	0.25	CR	MB
238.5	238.65	0.15	DC	MB
238.65	238.8	0.15	CBSH	MB
238.8	252.5	13.7	R	
252.5	253.2	0.7	CR	MAA
253.2	253.4	0.2	DC	MAA
253.4	253.95	0.55	CR	MAA
253.95	254.15	0.2	CBSH	MAA
254.15	254.4	0.25	R	
254.4	254.8	0.4	CBSH	
254.8	255.55	0.75	R	
255.55	256	0.45	CBSH	
256	257.8	1.8	R	
257.8	258.1	0.3	CBSH	
258.1	262.6	4.5	R	
262.6	262.85	0.25	CBSH	
262.85	263	0.15	CR	
263	263.2	0.2	CBSH	
263.2	267.95	4.75	R	
267.95	268.2	0.25	CR	
268.2	268.4	0.2	CBSH	
268.4	268.88	0.48	R	
268.88	272	3.12	ND	NO DATA

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Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes

From	*To*	*Apparent*	*Lithology*	*Name*
BR2005-2C				
0	6.95	6.95	DRIFT	DRIFT
6.95	26.8	19.85	R	
26.8	27	0.2	CR	
27	35.45	8.45	R	
35.45	45	9.55	R	
45	45.3	0.3	CBSH	
45.3	45.45	0.15	CR	
45.45	46.2	0.75	R	
46.2	46.8	0.6	DC	MG
46.8	46.95	0.15	CR	MG
46.95	47.1	0.15	DC	MG
47.1	47.25	0.15	R	MG
47.25	47.55	0.3	CR	MG
47.55	47.75	0.2	DC	MG
47.75	48.13	0.38	CR	MG
48.13	48.3	0.17	DC	MG
48.3	48.45	0.15	CR	MG
48.45	48.55	0.1	DC	MG
48.55	48.75	0.2	R	MG
48.75	48.85	0.1	CR	MG
48.85	48.95	0.1	R	MG
48.95	49.1	0.15	CR	MG
49.1	55.1	6	R	
55.1	55.3	0.2	ASH	ASH BAND
55.3	55.8	0.5	CR	MF
55.8	58.7	2.9	R	
58.7	59.15	0.45	CBSH	
59.15	66.15	7	R	
66.15	66.4	0.25	DC	MEA
66.4	67.2	0.8	R	
67.2	67.4	0.2	DC	MEB
67.4	83.15	15.75	R	
83.15	86.15	3	C	CA
86.15	86.35	0.2	DC	CA
86.35	86.5	0.15	CR	CA
86.5	86.65	0.15	DC	CA
86.65	87.7	1.05	R	
87.7	87.8	0.1	FAULT	ESTABLISHED
87.8	88.2	0.4	R	

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
88.2	90.55	2.35	C	CA
90.55	90.8	0.25	DC	CA
90.8	90.95	0.15	CBSH	
90.95	91.75	0.8	R	
91.75	92.2	0.45	DC	MD
92.2	92.3	0.1	CR	
92.3	96.2	3.9	R	
96.2	96.25	0.05	FAULT	ESTABLISHED
96.25	96.65	0.4	R	
96.65	99.5	2.85	C	CA
99.5	99.85	0.35	FAULT	ESTABLISHED
99.85	104.05	4.2	C	CA
104.05	104.35	0.3	DC	CA
104.35	105.8	1.45	R	
105.8	105.95	0.15	CR	
105.95	106.2	0.25	CBSH	
106.2	106.5	0.3	FAULT	ESTABLISHED
106.5	109.65	3.15	C	CA
109.65	109.85	0.2	CBSH	CA
109.85	110.05	0.2	C	CA
110.05	113.05	3	R	
113.05	113.35	0.3	CR	
113.35	113.55	0.2	DC	MD
113.55	113.65	0.1	CR	
113.65	123.05	9.4	R	
123.05	123.3	0.25	DC	DL
123.3	127.3	4	R	
127.3	127.5	0.2	CR	
127.5	132.05	4.55	R	
132.05	136.8	4.75	R	MCD
136.8	137.1	0.3	IRST	MCD
137.1	137.35	0.25	R	MCD
137.35	137.5	0.15	CBSH	MCD
137.5	137.75	0.25	R	MCD
137.75	137.9	0.15	CBSH	MCD
137.9	138	0.1	ASH	MCD
138	139.1	1.1	R	MCD
139.1	147.7	8.6	R	
147.7	147.85	0.15	CR	
147.85	167.6	19.75	R	

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
167.6	167.7	0.1	CR	
167.7	167.85	0.15	R	
167.85	168.1	0.25	CR	
168.1	168.55	0.45	R	
168.55	168.65	0.1	DC	MC
168.65	169	0.35	C	MC
169	169.15	0.15	DC	MC
169.15	169.3	0.15	C	MC
169.3	169.7	0.4	CR	MC
169.7	172.3	2.6	R	
172.3	172.5	0.2	CR	
172.5	180.3	7.8	R	
180.3	180.65	0.35	CR	
180.65	181.15	0.5	R	
181.15	181.4	0.25	CBSH	
181.4	205.4	24	R	
205.4	207	1.6	C	CBA
207	207.15	0.15	DC	CBB
207.15	208.4	1.25	C	CBB
208.4	208.55	0.15	DC	CBB
208.55	208.6	0.05	CR	
208.6	212.71	4.11	R	
212.71	215.18	2.47	ND	NO DATA
BR10-17				
0	8.6	8.6	DRIFT	DRIFT
8.6	11.8	3.2	R	
11.8	12.15	0.35	C	MKA
12.15	13.95	1.8	R	
13.95	14.3	0.35	CR	MKB
14.3	23.8	9.5	R	
23.8	24.45	0.65	CBSH	
24.45	44.55	20.1	R	
44.55	44.65	0.1	FAULT	POSSIBLE
44.65	58.05	13.4	R	
58.05	58.55	0.5	CR	MG
58.55	58.6	0.05	CBSH	MG
58.6	58.7	0.1	CR	MG
58.7	59	0.3	CBSH	MG
59	59.2	0.2	CR	MG

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
59.2	59.65	0.45	DC	MG
59.65	60	0.35	CR	MG
60	60.55	0.55	CBSH	
60.55	64.9	4.35	R	
64.9	65.1	0.2	ASH	ASH BAND
65.1	65.2	0.1	CBSH	MF
65.2	65.5	0.3	CR	MF
65.5	65.8	0.3	CBSH	MF
65.8	75.85	10.05	R	
75.85	76.3	0.45	C	MEA
76.3	76.85	0.55	R	
76.85	77.15	0.3	DC	MEB
77.15	86.5	9.35	R	
86.5	86.8	0.3	CBSH	
86.8	91.3	4.5	R	
91.3	91.6	0.3	DC	CA
91.6	94.3	2.7	C	CA
94.3	94.5	0.2	FAULT	PROBABLE
94.5	97.65	3.15	C	CA
97.65	97.8	0.15	DC	CA
97.8	98.15	0.35	CBSH	
98.15	98.3	0.15	R	
98.3	98.55	0.25	CBSH	
98.55	98.85	0.3	R	
98.85	99.2	0.35	CBSH	
99.2	99.75	0.55	CR	
99.75	100	0.25	FAULT	POSSIBLE
100	100.1	0.1	CBSH	
100.1	100.6	0.5	CR	
100.6	103.05	2.45	C	MD
103.05	103.15	0.1	CR	
103.15	103.4	0.25	CBSH	
103.4	103.8	0.4	CR	
103.8	103.95	0.15	FAULT	ESTABLISHED
103.95	104.25	0.3	DC	MD
104.25	104.4	0.15	CR	MD
104.4	104.85	0.45	C	MD
104.85	105	0.15	DC	MD
105	105.1	0.1	FAULT	PROBABLE
105.1	105.7	0.6	CR	

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
105.7	106.5	0.8	C	MD
106.5	107.1	0.6	CR	
107.1	107.25	0.15	CBSH	
107.25	108.25	1	CR	
108.25	108.5	0.25	R	
108.5	108.65	0.15	IRST	IRONSTONE
108.65	110.4	1.75	R	
110.4	110.5	0.1	CBSH	
110.5	110.8	0.3	CR	
110.8	111	0.2	CBSH	
111	112.2	1.2	R	
112.2	112.7	0.5	CBSH	
112.7	116.3	3.6	R	
116.3	116.65	0.35	DC	DL
116.65	126.05	9.4	R	
126.05	126.15	0.1	R	MCD
126.15	126.4	0.25	CBSH	MCD
126.4	126.8	0.4	IRST	MCD
126.8	127.3	0.5	R	MCD
127.3	127.6	0.3	IRST	MCD
127.6	133.05	5.45	R	MCD
133.05	133.8	0.75	CR	MCD
133.8	137.2	3.4	R	MCD
137.2	138.1	0.9	CBSH	MCD
138.1	138.2	0.1	R	MCD
138.2	146.05	7.85	R	
146.05	146.4	0.35	CBSH	
146.4	148.5	2.1	R	
148.5	148.8	0.3	CBSH	
148.8	150.2	1.4	R	
150.2	150.45	0.25	CBSH	
150.45	154.8	4.35	R	
154.8	155.2	0.4	CBSH	
155.2	157.2	2	R	
157.2	157.6	0.4	CBSH	
157.6	158.6	1	R	
158.6	158.7	0.1	FAULT	POSSIBLE
158.7	162.05	3.35	R	
162.05	162.3	0.25	CBSH	
162.3	162.55	0.25	DC	

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
162.55	163.25	0.7	R	
163.25	163.4	0.15	CBSH	
163.4	164	0.6	C	MC
164	164.85	0.85	DC	MC
164.85	165.3	0.45	R	
165.3	165.55	0.25	CBSH	
165.55	165.95	0.4	R	
165.95	166.4	0.45	CBSH	
166.4	171.7	5.3	R	
171.7	172.05	0.35	DC	
172.05	172.4	0.35	R	
172.4	172.7	0.3	CBSH	
172.7	180.9	8.2	R	
180.9	181.25	0.35	CBSH	
181.25	190.2	8.95	R	
190.2	190.4	0.2	CBSH	
190.4	191.2	0.8	C	CBA
191.2	191.25	0.05	DC	CBA
191.25	191.65	0.4	CBSH	
191.65	191.75	0.1	DC	CBB
191.75	192.65	0.9	C	CBB
192.65	192.85	0.2	CBSH	
192.85	201.6	8.75	R	
201.6	201.8	0.2	CBSH	
201.8	202.1	0.3	DC	CCA
202.1	202.65	0.55	C	CCA
202.65	204.9	2.25	C	CCB
204.9	205	0.1	CBSH	
205	205.5	0.5	R	
205.5	205.7	0.2	CBSH	MB
205.7	205.95	0.25	DC	MB
205.95	206.05	0.1	CBSH	MB
206.05	210.58	4.53	R	
210.58	214.88	4.3	ND	NO DATA
BR10-19				
0	5	5	DRIFT	DRIFT
5	9.25	4.25	R	
9.25	9.4	0.15	CBSH	MKA
9.4	9.8	0.4	C	MKA

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
9.8	14.4	4.6	R	
14.4	14.5	0.1	CBSH	MKB
14.5	14.8	0.3	DC	MKB
14.8	59.7	44.9	R	
59.7	59.85	0.15	CBSH	MG
59.85	60.5	0.65	CR	MG
60.5	60.8	0.3	R	MG
60.8	61.15	0.35	CBSH	MG
61.15	63.75	2.6	R	
63.75	64.1	0.35	CBSH	
64.1	68.3	4.2	R	
68.3	68.35	0.05	CBSH	MF
68.35	79.3	10.95	R	
79.3	79.75	0.45	C	MEA
79.75	79.85	0.1	DC	MEA
79.85	80.25	0.4	R	
80.25	80.5	0.25	CR	MEB
80.5	80.9	0.4	DC	MEB
80.9	98.83	17.93	R	
98.83	101.62	2.79	C	CA
101.62	101.75	0.13	DC	CA
101.75	102.02	0.27	CR	
102.02	102.55	0.53	CBSH	
102.55	102.85	0.3	CR	
102.85	103.1	0.25	DC	MD
103.1	103.2	0.1	CR	MD
103.2	103.3	0.1	DC	MD
103.3	103.4	0.1	CR	MD
103.4	103.5	0.1	DC	MD
103.5	104.4	0.9	C	MD
104.4	104.6	0.2	DC	MD
104.6	105.5	0.9	R	
105.5	105.8	0.3	CBSH	
105.8	106.15	0.35	CR	
106.15	106.35	0.2	R	
106.35	106.75	0.4	IRST	IRONSTONE
106.75	107.25	0.5	CBSH	
107.25	109.3	2.05	R	
109.3	109.7	0.4	CBSH	
109.7	110.25	0.55	R	

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
110.25	110.6	0.35	DC	
110.6	111.3	0.7	R	
111.3	111.65	0.35	CBSH	
111.65	113.95	2.3	R	
113.95	114.2	0.25	DC	DL
114.2	114.5	0.3	CR	DL
114.5	116.45	1.95	R	
116.45	116.6	0.15	FAULT	POSSIBLE
116.6	116.9	0.3	CR	DL
116.9	117.1	0.2	DC	DL
117.1	117.35	0.25	CR	DL
117.35	118.55	1.2	R	
118.55	118.7	0.15	CBSH	
118.7	119.05	0.35	DC	
119.05	119.6	0.55	R	
119.6	119.7	0.1	FAULT	ESTABLISHED
119.7	120.25	0.55	CBSH	
120.25	121.3	1.05	C	MD
121.3	121.4	0.1	DC	MD
121.4	122.05	0.65	R	
122.05	122.4	0.35	CBSH	
122.4	122.75	0.35	CR	
122.75	123.4	0.65	R	
123.4	123.7	0.3	CR	
123.7	124.65	0.95	R	
124.65	125	0.35	CBSH	
125	128.05	3.05	R	
128.05	128.45	0.4	DC	DL
128.45	130.3	1.85	R	
130.3	130.7	0.4	CR	
130.7	134.8	4.1	R	
134.8	135.9	1.1	CBSH	
135.9	142	6.1	R	
142	145.3	3.3	R	MCD
145.3	146	0.7	CBSH	MCD
146	147	1	R	MCD
147	170.2	23.2	R	
170.2	170.5	0.3	CR	
170.5	170.8	0.3	R	
170.8	171.35	0.55	C	MC

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
171.35	171.45	0.1	DC	MC
171.45	171.7	0.25	CBSH	
171.7	172.7	1	R	
172.7	172.8	0.1	ASH	ASH BAND
172.8	173.3	0.5	R	
173.3	173.65	0.35	CBSH	
173.65	178.5	4.85	R	
178.5	178.85	0.35	CR	
178.85	179.3	0.45	R	
179.3	179.65	0.35	CBSH	
179.65	186.65	7	R	
186.65	187	0.35	CBSH	
187	188.4	1.4	R	
188.4	188.9	0.5	CBSH	
188.9	196.1	7.2	R	
196.1	196.25	0.15	CBSH	
196.25	197.15	0.9	C	CBA
197.15	197.55	0.4	CR	
197.55	198.4	0.85	C	CBB
198.4	198.85	0.45	CBSH	
198.85	208	9.15	R	
208	208.15	0.15	CBSH	
208.15	209.3	1.15	C	CCA
209.3	210.7	1.4	C	CCB
210.7	211.45	0.75	R	
211.45	211.8	0.35	CR	MB
211.8	216.93	5.13	R	
216.93	220.98	4.05	ND	NO DATA
BR10-23				
0	4.6	4.6	DRIFT	DRIFT
4.6	10.6	6	R	
10.6	10.8	0.2	CR	MG
10.8	10.9	0.1	C	MG
10.9	11	0.1	FAULT	PROBABLE
11	12.7	1.7	R	
12.7	12.9	0.2	CBSH	
12.9	13.3	0.4	ASH	ASH BAND
13.3	13.75	0.45	CBSH	MG
13.75	14.25	0.5	DC	MG

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
14.25	14.45	0.2	CR	MG
14.45	14.85	0.4	CBSH	MG
14.85	15.35	0.5	R	
15.35	15.7	0.35	CBSH	
15.7	19.8	4.1	R	
19.8	19.95	0.15	ASH	ASH BAND
19.95	20.25	0.3	CR	MF
20.25	20.4	0.15	CBSH	MF
20.4	27.75	7.35	R	
27.75	28.2	0.45	CR	MEA
28.2	28.3	0.1	ASH	ASH BAND
28.3	28.4	0.1	R	
28.4	28.65	0.25	IRST	IRONSTONE
28.65	28.75	0.1	R	
28.75	29.2	0.45	CR	MEB
29.2	31.9	2.7	R	
31.9	32.1	0.2	FAULT	POSSIBLE
32.1	32.3	0.2	CR	
32.3	44.6	12.3	R	
44.6	45	0.4	DC	CA
45	45.85	0.85	C	CA
45.85	46	0.15	DC	CA
46	47	1	C	CA
47	47.25	0.25	DC	CA
47.25	48.3	1.05	R	
48.3	48.7	0.4	DC	MD
48.7	49.6	0.9	C	MD
49.6	49.7	0.1	CR	
49.7	52.85	3.15	R	
52.85	53.1	0.25	CR	
53.1	53.5	0.4	R	
53.5	53.75	0.25	CBSH	
53.75	55.7	1.95	R	
55.7	56	0.3	CR	DL
56	61.05	5.05	R	
61.05	61.7	0.65	R	MCD
61.7	62	0.3	CBSH	MCD
62	69.75	7.75	R	MCD
69.75	70.1	0.35	CBSH	MCD
70.1	70.45	0.35	R	MCD

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
70.45	88.4	17.95	R	
88.4	88.95	0.55	CBSH	
88.95	89.4	0.45	C	MC
89.4	89.7	0.3	DC	MC
89.7	93.95	4.25	R	
93.95	94.25	0.3	CR	
94.25	107.75	13.5	R	
107.75	108	0.25	CBSH	
108	114.4	6.4	R	
114.4	115.45	1.05	C	CBA
115.45	115.85	0.4	CBSH	
115.85	116.8	0.95	C	CBB
116.8	117	0.2	DC	CBB
117	129	12	R	
129	129.2	0.2	CBSH	
129.2	129.4	0.2	DC	CCA
129.4	130.35	0.95	C	CCA
130.35	130.5	0.15	DC	CCA
130.5	131.1	0.6	C	CCA
131.1	131.3	0.2	DC	CCB
131.3	133.4	2.1	C	CCB
133.4	133.6	0.2	DC	CCB
133.6	136.6	3	C	CCB
136.6	136.8	0.2	DC	CCB
136.8	137.65	0.85	R	
137.65	138.1	0.45	CBSH	MB
138.1	138.4	0.3	DC	MB
138.4	138.92	0.52	R	
138.92	143.26	4.34	ND	NO DATA
BR10-45				
0	2.1	2.1	DRIFT	DRIFT
2.1	6.15	4.05	R	
6.15	6.55	0.4	CBSH	
6.55	7	0.45	R	
7	7.4	0.4	CBSH	
7.4	40.9	33.5	R	
40.9	41.15	0.25	CBSH	MG
41.15	42	0.85	CR	MG
42	42.85	0.85	CBSH	MG

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
42.85	46.95	4.1	R	
46.95	47.1	0.15	ASH	ASH BAND
47.1	47.6	0.5	CR	MF
47.6	47.8	0.2	CBSH	MF
47.8	58.85	11.05	R	
58.85	59.2	0.35	DC	MEA
59.2	59.4	0.2	CBSH	MEA
59.4	59.65	0.25	R	
59.65	59.75	0.1	CBSH	MEB
59.75	60.05	0.3	DC	MEB
60.05	60.2	0.15	CBSH	MEB
60.2	64.5	4.3	R	
64.5	64.9	0.4	CBSH	
64.9	69.9	5	R	
69.9	70.1	0.2	CBSH	
70.1	70.35	0.25	DC	CA
70.35	73.2	2.85	C	CA
73.2	74.2	1	R	
74.2	74.65	0.45	CBSH	
74.65	74.8	0.15	CR	
74.8	75.9	1.1	C	MD
75.9	76.1	0.2	DC	MD
76.1	76.2	0.1	CBSH	
76.2	77.3	1.1	R	
77.3	77.6	0.3	CBSH	
77.6	78.1	0.5	R	
78.1	78.2	0.1	FAULT	ESTABLISHED
78.2	79.2	1	C	MD
79.2	79.35	0.15	CBSH	
79.35	83.8	4.45	R	
83.8	84.15	0.35	CBSH	
84.15	84.55	0.4	R	
84.55	84.9	0.35	DC	
84.9	85.65	0.75	R	
85.65	86.1	0.45	CBSH	
86.1	86.25	0.15	R	
86.25	86.45	0.2	IRST	IRONSTONE
86.45	87	0.55	R	
87	87.3	0.3	CR	
87.3	87.75	0.45	R	

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
87.75	88.15	0.4	DC	
88.15	88.75	0.6	R	
88.75	89.05	0.3	CBSH	
89.05	90.65	1.6	R	
90.65	91	0.35	DC	
91	98.7	7.7	R	
98.7	99.2	0.5	ASH	ASH BAND
99.2	99.45	0.25	R	
99.45	99.8	0.35	IRST	IRONSTONE
99.8	102.85	3.05	R	
102.85	103	0.15	R	MCD
103	103.45	0.45	CR	MCD
103.45	103.65	0.2	CBSH	MCD
103.65	104.25	0.6	R	MCD
104.25	105	0.75	CBSH	MCD
105	106.85	1.85	R	MCD
106.85	107.15	0.3	IRST	IRONSTONE
107.15	111.15	4	R	
111.15	111.6	0.45	CBSH	
111.6	113	1.4	R	
113	113.3	0.3	IRST	IRONSTONE
113.3	116.55	3.25	R	
116.55	116.85	0.3	CBSH	
116.85	118.1	1.25	R	
118.1	118.4	0.3	CBSH	
118.4	126.15	7.75	R	
126.15	126.45	0.3	CBSH	
126.45	126.8	0.35	R	
126.8	127.55	0.75	C	MC
127.55	127.65	0.1	CBSH	
127.65	129.3	1.65	R	
129.3	130.1	0.8	CBSH	
130.1	131.85	1.75	R	
131.85	132.2	0.35	CBSH	
132.2	132.7	0.5	R	
132.7	133.1	0.4	CBSH	
133.1	140.9	7.8	R	
140.9	141.3	0.4	CBSH	
141.3	149	7.7	R	
149	149.15	0.15	CBSH	

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
149.15	149.95	0.8	C	CBA
149.95	150.65	0.7	R	
150.65	150.85	0.2	CBSH	
150.85	151.7	0.85	C	CBB
151.7	151.8	0.1	CBSH	
151.8	167.2	15.4	R	
167.2	167.5	0.3	CBSH	MM
167.5	168	0.5	R	
168	175.7	7.7	C	CC
175.7	175.9	0.2	DC	CC
175.9	176.95	1.05	R	
176.95	177.15	0.2	CBSH	MB
177.15	177.45	0.3	CR	MB
177.45	177.8	0.35	C	MB
177.8	183.16	5.36	R	
183.16	184.4	1.24	ND	NO DATA
BR10-55				
0	14.85	14.85	DRIFT	DRIFT
14.85	15.55	0.7	CBSH	MF
15.55	23.85	8.3	R	
23.85	24.25	0.4	C	MEA
24.25	24.95	0.7	R	
24.95	25.3	0.35	DC	MEB
25.3	26.2	0.9	CBSH	
26.2	35	8.8	R	
35	35.3	0.3	C	CA
35.3	35.4	0.1	FAULT	POSSIBLE
35.4	40	4.6	C	CA
40	40.6	0.6	CBSH	
40.6	40.9	0.3	CR	
40.9	41.3	0.4	CBSH	
41.3	42.4	1.1	C	MD
42.4	42.6	0.2	CBSH	
42.6	42.8	0.2	R	
42.8	43.1	0.3	CBSH	
43.1	43.5	0.4	R	
43.5	44	0.5	CBSH	
44	44.1	0.1	CR	
44.1	44.35	0.25	CBSH	

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (continued)

From	*To*	*Apparent*	*Lithology*	*Name*
44.35	45.4	1.05	R	
45.4	45.85	0.45	DC	
45.85	46.3	0.45	R	
46.3	46.7	0.4	CBSH	
46.7	48.45	1.75	R	
48.45	48.85	0.4	CBSH	
48.85	50.15	1.3	R	
50.15	50.3	0.15	CR	DL?
50.3	50.5	0.2	DC	DL?
50.5	50.7	0.2	CR	DL?
50.7	52.05	1.35	R	
52.05	52.5	0.45	CR	
52.5	53.1	0.6	R	
53.1	53.25	0.15	CBSH	
53.25	53.5	0.25	CR	
53.5	53.6	0.1	CBSH	
53.6	55.9	2.3	R	
55.9	57.15	1.25	CBSH	
57.15	59	1.85	R	
59	59.1	0.1	FAULT	PROBABLE
59.1	59.3	0.2	CBSH	
59.3	70	10.7	R	
70	70.4	0.4	DC	DL
70.4	71.3	0.9	R	
71.3	71.7	0.4	CBSH	
71.7	72.7	1	R	
72.7	72.9	0.2	CBSH	
72.9	73.05	0.15	CR	
73.05	74.9	1.85	R	
74.9	75.25	0.35	CBSH	
75.25	80.35	5.1	R	
80.35	80.65	0.3	CBSH	
80.65	92.15	11.5	R	
92.15	92.25	0.1	R	MCD
92.25	92.65	0.4	CBSH	MCD
92.65	95.3	2.65	R	MCD
95.3	100.4	5.1	R	
100.4	100.65	0.25	IRST	IRONSTONE
100.65	107.55	6.9	R	
107.55	108.2	0.65	CR	

Table B-2: Interpretation (metres) of geophysics from pre-2018 Dillon boreholes (concluded)

From	*To*	*Apparent*	*Lithology*	*Name*
108.2	108.9	0.7	C	MC
108.9	109.3	0.4	DC	MC
109.3	110	0.7	R	
110	110.25	0.25	ASH	ASH
110.25	111.4	1.15	R	
111.4	111.85	0.45	CBSH	
111.85	117.5	5.65	R	
117.5	117.9	0.4	CR	
117.9	118.8	0.9	R	
118.8	119.1	0.3	CBSH	
119.1	139.7	20.6	R	
139.7	141.8	2.1	C	CBA
141.8	141.95	0.15	DC	CBB
141.95	142.4	0.45	C	CBB
142.4	142.5	0.1	FAULT	PROBABLE
142.5	142.65	0.15	DC	CBB
142.65	143	0.35	CBSH	
143	159.1	16.1	R	
159.1	166.6	7.5	C	CC
166.6	167.2	0.6	R	
167.2	167.4	0.2	FAULT	PROBABLE
167.4	167.5	0.1	CR	
167.5	168.15	0.65	R	
168.15	168.35	0.2	CR	MB
168.35	168.65	0.3	CBSH	MB
168.65	169	0.35	DC	MB
169	178.7	9.7	R	
178.7	179.95	1.25	CBSH	
179.95	182.03	2.08	R	

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Sampling and analysis of raw (unwashed) coal cores: **Appendix C**

A limited amount of analytical work was done in the late winter of 2019, as a component of the in-pit exploration programme within the Dillon Lease. This work was done essentially on an opportunity basis, as cores had been cut (but not yet sampled) during prior geotechnial and hydrological investigations.

Table C-1 presents a sample inventory of coal samples and associated rock samples taken from two historic geotechnical boreholes (BR 13-01C and BR13-02C), and one groundwater well (BM18-03W), drilled within the Dillon Lease.

The two geotechnical boreholes were drilled under the direction of Norwest Corporation in 2013, as part of their geotechnical investigation of Brule Mine's northeastern pit slopes. Summary data concerning these two holes are presented within Coal Assessment Report No.957 (Cathyl-Huhn *et al.*, 2014), albeit lacking coal-quality information as the coal cores had not yet been sampled.

The groundwater well was drilled under the direction of Brenna Fossum, former Environmental Manager at Brule Mine. Cores were taken at intervals down this large-diameter well, in the interest of obtaining additional coal core samples from within the Dillon Lease.

Table C-1, as noted above, presents sampling details from all three boreholes, along with raw (unwashed) air-dried proximate analyses, total sulphur content, light transmittance (oxidation) test results, and specific gravities of the coal and rock samples. Analytical work was performrned by Birtley Coal and Minerals Testing (Birtley), a division of Gwil Industries Inc, at their laboratory in Calgary, Alberta, Given the initial results on raw (unwashed) samples, no washing tests were done.

In the digital version of this report, the analytical report from Birtley is presented as an Excel spreadsheet. In the hardcopy version, the analytical report is presented in printed form as **Annex C-1**.

Similarly, a scanned copy of the core description of groundwater well BM18-03W is presented within the digital version of this report, whilst a photocopy is enclosed as **Annex C-2** in the hardcopy version, following the analytical report.

Sample inventory and raw (unwashed) analytical results **Table C-1**

Borehole	Sample details				Depth, drilled thickness, and recovery					Apparent dip (deg.)	Proximate analysis					Additional analyses				
	Birtley Lab No.	Sample tag	Lithology	Bed name	From	To	Thick -ness	Recov- ered	% re- covery		M_{ar}	M_{ad}	A_{ad}	VM_{ad}	FC_{ad}	S_{ad}	FSI_{ad}	LT %	specific gravity	Comments
BR-13-01C	191192	5261	coal	CA	83.91	85.76	1.85	1.53	82.7	13	1.52	0.61	10.41	17.64	71.34	0.40	1.5	98.8	1.37	
BR-13-01C	191193	5262	mdst	CA	85.76	85.83	0.07	0.07	100	13	1.68	0.38	40.87	14.28	44.47	0.27	1	99.7	1.70	
BR-13-01C	191194	5263	coal	CA	85.83	90.05	4.22	3.24	76.8	13	1.84	1.05	4.52	17.97	76.46	0.44	1.5	98.3	1.33	
BR-13-01C	191195	5264	coal	MD	90.80	91.66	0.86	0.79	91.9	17	2.14	0.77	15.91	15.30	68.02	0.34	1.5	98.3	1.42	
BR-13-01C	191196	5265	cal	MC	134.19	134.75	0.56	0.56	100	17	2.51	0.50	51.77	12.15	35.58	0.62	1.5	99.7	1.80	
BR-13-01C	191197	5266	coal	CC	164.18	169.48	5.30	3.32	62.6	14	1.06	0.87	2.89	14.67	81.57	0.43	0	99.4	1.32	
BR-13-01C	191198	5267	mudstone/ coal/mud- stone	MB	169.95	170.70	0.75	0.53	70.7	17	0.73	0.50	54.13	9.78	35.59	0.32	0	98.8	1.82	
BR-13-01C	191199	5268	coal	MA	246.27	248.50	2.23	1.11	49.8	22	0.73	0.56	13.39	13.40	72.65	0.37	0.5	99.1	1.43	
BR-13-01C	191200	5269	coal	n/a	256.80	257.32	0.52	0.29	55.8	20	0.81	0.42	20.92	13.19	65.47	0.70	1.5	98	1.49	
BR-13-01C	191201	5270	coal	n/a	262.90	263.46	0.56	0.28	50.0	21	3.42	0.75	34.43	12.56	52.26	0.85	0.5	98.8	1.60	
BR-13-02C	191186	5255	coal/mud- stone/coal	MC	13.80	14.13	0.33	0.21	63.6	10	3.07	0.47	17.92	15.41	66.20	0.88	1	98.8	1.43	
BR-13-02C	191187	5256	coal	CBA?	32.30	33.28	0.98	0.83	84.7	17	4.03	0.84	12.58	13.02	73.56	0.53	0.5	99.4	1.40	
BR-13-02C	191188	5257	mudstone	parting	33.28	34.08	0.80	0.80	100	13	2.57	0.92	82.35	10.92	5.81	0.11	--	--	2.35	FSI and LT not determined owing to high ash
BR-13-02C	191189	5258	coal	CBB?	34.08	35.27	1.19	1.19	100	15	1.89	0.77	27.46	12.13	59.64	0.45	0.5	99.7	1.53	
BR-13-02C	191190	5259	coal	CC	40.48	45.40	4.92	2.85	57.9	13	1.83	1.20	3.06	14.01	81.73	0.38	0	99.7	1.34	
BR-13-02C	191191	5260	coal	CC basal	45.40	46.10	0.70	0.50	71.4	12	1.95	0.54	15.67	13.57	70.22	0.36	0	98.3	1.41	
BM18-03W	191202	5271	coal/coaly mudstone	CA	67.50	70.90	3.40	2.32	68.2	17	1.79	0.95	16.69	16.19	66.17	0.44	1.5	99.7	1.40	No upper shoulder present. Sample contains lower coaly mudstone
BM18-03W	191203	5272	carbonace ous mud- stone	parting	70.90	71.80	0.90	0.25	27.8	17	2.22	1.43	84.68	5.36	8.53	0.07	--	--	2.35	FSI and LT not determined owing to high ash
BM18-03W	191204	5273	coal/coaly mudstone	MD	71.80	73.10	1.30	1.30	100	17	2.73	1.13	25.67	14.51	58.69	0.34	1.5	99.7	1.50	Sample contains both upper and lower coaly mudstone

Appendix C_190817c.doc

Core runs / total recovered length	Samples / facies / environment	Facies Code	Visual estimate of pyrite content	Core description: lithology – grain-size, colour, modifiers, minor constituents, sedimentology, palaeontology, tectonic features, physical condition, basal contact (e.g. abrupt./gradational/polished/erosional/ground out).	RQD	Recovery (metres), core boxes and DD (marker blocks)	Thickness (metres) as interpreted from geophysics	Depth to base (metres)	Apparent bedding dip (BCN angle)
Core Run #1				Core begins at 100' at top of Run #1					
0.69/0.76m			0.5%	Slst: grey colour, weakly laminated, locally muddy. Some roots	0.69/100%	0.69			
91%				present cutting across the core, weak carbonate near					
				coal spars.					
						DD 102.5'	(31.24m)		
Core Run #2				Slst to Muddy slst: grey, weakly laminated to almost massive with	0.63/78%	0.81			
2.66/3.51			1%	subconcoidal fracture, Pyrite content increases while grain size					
76%				decreases downhole. Some coal spars are present with					
				carbonate, less roots present					
						Box 1/2	– 105.5'	(32.16m)	
			2%	Slst: grey, weakly laminated to locally bedded (?) higher	0.68/54%	1.25			17°?
				content of pyrite mostly associated with coalified roots					
				and thin coal seams with carbonate. Fractured core					
						Box 2/3	– 110'	(33.53m)	
			TR	(Slst / carb. Mdst): grey to dark grey, locally laminated, strongly	0	0.60			
				fractured and sheared, blocky interval of mixed pieces					
				of slst and carb mdst					
						DD 114'	(34.75m)		
						Box 3/4	– 114'	(34.75m)	
Core Run #3		Marker 6		Carb Mdst: black, very fine grain laminated, strongly fractured	0	0.85			
2.32/3.20				and sheared into cm scale pieces. Some fragments					
73%				still show roots. Fault (?)					
				Muddy Slst: grey, fine grain, laminated, high content of mm scale	0	0.25			

Binding Margin

Core logged by: AA

Date: 6 feb 2019

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Core runs / total recovered length	Samples / facies / environment	Field Code	Visual estimate of pyrite content	Core description: lithology – grain-size, colour, modifiers, minor constituents, sedimentology, palaeontology, tectonic features, physical condition, basal contact (e.g. abrupt./gradational/polished/erosional/ground out).	RQD	Recovery (metres), core boxes and DD (marker blocks	Thickness (metres) as interpreted from geophysics	Depth to base (metres)	Apparent bedding dip (BCN angle)
				Coal seams with carbonate, some oxidation present on fractures					
				" " coal content decreases downhole as mud content decreases as well	0.76/62%	Box 4/5 1.22	- 119.5'	(36.42m)	17°
						DD 124.5'			
Core Run #4 3.05/3.05 100%				Muddy slst: light grey, very fine to fine grain, mostly massive but locally laminated, low content of coalified roots with carbonate	0.95/59%	Box 5/6 1.60	- 124.5'	(37.95m)	17°
				Slst: grey, fine grain, laminated, strongly fractured, low coal content but higher fracture carbonate, few coal spars	0	Box 6/7 1.45	- 129.5'	(39.47m)	
						DD 134.5'	(41.00m)		
				- Missing core (?)		Box 7/8	- 134.5'	(41.00m)	
		Marker F				DD 163'	(49.68m)		
Core Run #5 2.75/2.74 100%				Sdst: light grey, very fine to fine sand, laminated/bedded, local coal concentration with carbonate. Local shearing with carbonate along shearing planes (23°)	1.18/79%	1.50			20°
						Box 8/9	- 168'	(51.21m)	
				Silty Sdst to slst: light grey to grey, very fine grain, laminated to massive, trace coal spars, decreasing grain size downhole	0.67/54%	1.25			
						DD 172'	(52.43m)		

Binding Margin

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Core runs / total recovered length	Samples / facies / environment	Facies Code	Visual estimate of pyrite content	Core description: lithology – grain size, colour, modifiers, minor constituents, sedimentology, palaeontology, tectonic features, physical condition, basal contact (e.g. abrupt/gradational/polished/erosional/ground out).	RQD	Recovery (metres), core boxes and DD marker blocks	Thickness (metres) as interpreted from geophysics	Depth to base (metres)	Apparent bedding dip (BCN angle)
						Box 9/10	- 172'	(52.43m)	
Core Run #6 2.03 / 3.05 67%			TR	Muddy slst: grey to dark grey, weakly laminated, strongly fractured and sheared, presence of carbonate irregular veins; coal content increases downhole.	0	0.85			
		Marker	E	Carb. Mdst: dark grey to black, laminated high coal content, strongly fractured weak evidence of shearing, very low carbonate content, some oxidation on facture surfaces	0	0.30			
						Box 10/11	- 177'	(53.95m)	
				" " stronger oxidation	0.23 / 64%	0.36			
				Coaly mdst: black, laminated, strongly fractured, very high coal content with cleating (?)	0	0.15			
				Carb mdst to silty mdst: dark grey to grey, laminated, fine grain; coal content decreases downhole, some carbonate on fractures.	0.32/86%	0.37			
						DD 182'	(55.47m)		
						Box 11/12	- 182'	(55.47m)	
Core Run #7 3.00 / 3.05 98%				Silty mdst: light grey to grey, very fine grain, weakly laminated and locally bedded; locally sandy with ripples, few mm scale coal seams and coal spots with carbonate are present. Weak evidence of shearing. Some evidence of bioturbation in sandy spots.	0.80/55%	1.45			24°
						Box 12/13	- 187'	(57.00m)	

Binding Margin

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Core runs / total recovered length	Samples / facies / environment	Facia Code	Visual estimate of pyrite content	Core description: lithology – grain-size, colour, modifiers, minor constituents, sedimentology, palaeontology, tectonic features, physical condition, basal contact (e.g. abrupt./gradational/polished/erosional/ground out).	RQD	Recovery (metres), core boxes and DD (marker blocks	Thickness (metres) as interpreted from geophysics	Depth to base (metres)	Apparent bedding dip (BCN angle)
				" " Grain size increases overall downhole, higher	1.20 / 77%	1.55			17°
				coal with carbonate content mostly following bedding. Local shearing					
						DD 192'	(58.52m)		
Cor[illegible]						Box 13/14	192'	(58.52m)	
Core Run #8				Slst: grey, fine grain, laminated, locally sandy and with	1.39 / 100%	1.39			
2.69 / 3.05				stronger evidence of bioturbation, evidence of shearing,					
88%				coal spars and coalified roots are present with carbonate					
						Box 14/15	197'	(60.05m)	
				Silty Sdst: very fine sand, light grey, bedded. Evidence of	0.70 / 63%	1.12			
				shearing and bioturbation, low coal content, very few					
				coalified roots present					
				Carb Mdst / Coaly mdst ?: dark grey to black, laminated, very	0	0.18			
				fine grain. Strongly fractured with some evidence of shearing					
				high coal content.					
						DD 202'	(61.57m)		
				Note: From Core Run #8 jumps to core run #10 (202' to 204')					
				to maintain consistency with core boxes, next run is core Run #10					
						Box 15/16	202'	(61.57m)	
						DD 204'	(62.18m)		
Core Run #10				Sdst: light grey, fine sand, bedded, some carbonate along	0.13 / 25%	0.52			22°
2.39 / 2.44				fractures grain size decreases downhole					
98%									
				Slst: grey to dark grey, fine grain, laminated, presence of	0.52 / 61%	0.85			

Binding Margin

Core logged by: AA

Date: 6 feb 2019

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Core runs / total recovered length	Samples / facies / environment	Facies Code	Visual estimate of pyrite content	Core description: lithology – grain-size, colour, modifiers, minor constituents, sedimentology, palaeontology, tectonic features, physical condition, basal contact (e.g. abrupt./gradational/polished/erosional/ground out).	RQD	Recovery (metres), core boxes and DD (marker blocks)	Thickness (metres) as interpreted from geophysics	Depth to base (metres)	Apparent bedding dip (BCN angle)
				bright coal spars, coalified roots as well, and some orange carbonate veinlets. Evidence of shearing with higher coal content					
						Box 16/17 -	209'	(63.70m)	
				// " a bit more fractured, grain size increases downhole	0.77/75%	1.02			
						DD 212'	(64.62m)		
Core Run #11 296/3.05 97%				Sdst: grey, very fine sand, laminated, very low coal content with carbonate rims. Grain size decreases downhole. No clear contact	0.29/60%	0.48			
						Box 17/18 -	214'	(65.23m)	
				Slst: grey, very fine grain with fine sand laminated, very low coal content, locally sandy rock, weak evidence of bioturbation	0.75/54%	1.38			
						Box 18/19 -	219'	(66.75m)	
				// " more competent interval	0.88/80%	1.10			
						DD 222'	(67.67m)		
Core Run #12 2.28/3.05				// " ground out lower contact	0.35/81%	0.43			17°
						Box 19/20 -	224'	(68.28m)	
75%	5271	Coronado A		Coal: Dull, very few bright bands, crushed/ground	0	0.25	3.4m	70.9m	
				Coal: Dull, broken stick, bigger fragments	0	0.55			
				Coal: Dull, (<5% bright bands) stick, with fractures oriented at 50°	0	0.45			
						Box 20/21 -	229'	(69.80m)	
				Coal: Dull, <5% bright bands, dirty?, broken stick	0.41/23%	0.60			
						DD 232'	(70.71m)		

Binding Margin

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Binding Margin

Core runs / total recovered length	Sample / facies / environment	Facies Code	Visual estimate of pyrite content	Core description: lithology – grain-size, colour, modifiers, minor constituents, sedimentology, palaeontology, tectonic features, physical condition, basal contact (e.g. abrupt/gradational/polished/erosional/ground out).	RQD	Recovery (metres), core boxes and DD (marker blocks)	Thickness (metres) as interpreted from geophysics	Depth to base (metres)	Apparent bedding dip (BCN angle)
Core Run #13				Coal: Stick, Db coal, laminated.	0.18/90%	0.20			
2.02 / 3.05				Coal: Ground, Dull?	0	0.10			
66%				Coaly Mdst: black, very fine grain, laminated, evidence of shearing, strongly fractured ground core, very high coal content	0	0.15			
	5271	Coronna A		" "		Box 21/22 - 235' (71.63m)			
	5272				0	0.02	3.4m	70.9m	
				Carb mdst: dark grey/black, very fine grain, laminated, evidence of shearing, coal content increases downhole	0.13/0.52	0.25	0.90m	71.8m	
	5273	Marker D		Coaly mdst/coal: Crushed interval of mixed dull coal and coaly mdst with evidence of shearing, pulverized.	0	0.20	1.3 m	73.1 m	
				Coal: Dull(?), broken stick, laminated	0	0.70			
						Box 22/23 - 240' (73.15m)			
				Coal: Dull (?), stick, laminated, dirty (?)	0	0.25			
	5273	Marker D		Dirty coal/Coaly Mdst: Black, very fine grain, laminated, very high coal content in this crushed interval, weak evidence of shearing	0	0.15	1.3 m	73.1 m	
						DD 242' (73.76m)			
Core Run #14 3.07/3.05 101%				Slst: dark grey, fine grain, laminated, evidence of shearing and increasing coal content downhole, gradational lower contact.	0	0.40			
				Carb Mdst: dark grey to black, fine grain, laminated, evidence of shearing, blocky interval	0	0.90			
						Box 23/24 - 246' (74.93m)			

Core logged by: AA

Date: 6 feb 2019

Core runs / total recovered length	Samples / facies / environment	Facies Code	Visual estimate of pyrite content	Core description: lithology – grain-size, colour, modifiers, minor constituents, sedimentology, palaeontology, tectonic features, physical condition, basal contact (e.g. abrupt./gradational/polished/erosional/ground out).	RQD	Recovery (metres): core boxes and DD (marker blocks)	Thickness (metres) as interpreted from geophysics	Depth to base (metres)	Apparent bedding dip (BCN angle)
				" " more competent rock from 0.48 to 1.10 weak evidence of shearing with carbonate	0.40/36%	1.10			23°
				Coaly mdst |: black, very fine grain, laminated, crushed interval	0	0.15			
				Carb Mdst |: black, very fine grain, laminated, highly fractured	0	0.19			
						Box 24/25	-251'	(76.51m)	
				" " Evidence of shearing, coal content decreases downhole	0	0.33			
						DD 252'	(76.81m)		
Core Run #15 2.48/3.05 81%				Slst |: grey, fine grain, bedded with strong bioturbation presence of mm scale coal seams with carbonate and coalified wood increasing downhole	0.87/89%	1.00			22°
						Box 25/26	- 257'	(78.33m)	
				Carb. Mdst |: dark grey, fine grain (slst), bedded, high coal content, few coal seams at mm scale with carbonate	0.92/62%	1.48			24°
						DD 262'	(79.86m)		
						Box 26/27	- 262'	(79.86m)	
Core Run #16 1.18/1.52 78%				Core Run #16 starts at 477'					
				Silty sdst |: grey, very fine sand, weakly laminated, trace mm scale coalified wood, very little carbonate in fractures gradational lower contact	0.93/100%	0.93			
				Slst |: dark grey, very fine grain, laminated, blocky interval with evidence of shearing with carbonate	0	0.25'			

Binding Margin

Core logged by: AA

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Core runs / total recovered length	Samples / facies / environment	Tech Code	Visual estimate of pyrite content	Core description: lithology – grain-size, colour, modifiers, minor constituents, sedimentology, palaeontology, tectonic features, physical condition, basal contact (e.g. abrupt./gradational/polished/erosional/ground out).	RQD	Recovery (metres), core boxes and DD (marker blocks)	Thickness (metres) as interpreted from geophysics	Depth to base (metres)	Apparent bedding dip (BCN angle)
						DD 482'	(146.91m)		
Core Run # 17				" "		Box 27/28	-482'	(146.91m)	
0.60 / 0.91 → 66%				higher carbonate content	0	0.60			
Core Run # 18						DD 485'	(147.83m)		
2.49 / 2.44 102%				Sdst: light grey, very fine to fine grain, bedded, strong calcite veining oriented at 41° and seems to be perpendicular to bedding(?)	0.40/100%	0.40			39°(?)
				" "		Box 28/29	- 487'	(148.44m)	
				Evidence of bioturbation, rippled bedding	1.20 / 97%	1.24			49°
				" "		Box 29/30	- 491'	(149.66m)	
				Presence of carbonate in fractures	0.94/75%	1.25			49°
						DD 495'	(150.88m)		
Core Run # 19				" "		Box 30/31	- 495'	(150.88m)	
				ground out lower contact (?)	0.36/64%	0.56			
1.92 / 2.29 84%		TR		Sandy sltst: dark grey, very fine grain, weakly laminated, presence of coalified wood and mm scale coal seams with carbonate, evidence of shearing.	0.42/57%	0.74			
		TR		" "		Box 31/32	- 500'	(152.40m)	
				higher carbonate in fractures less coal	0.34/55%	0.62			55°
						Box 32/33	- 502.5'	(153.16m)	

Binding Margin

Core logged by: AA

Date: 6 feb 2019

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