PR-BULLMOOSE 71(4)D

NOTE: COAL ANALYSIS DATA WAS TAKEN FROM THE OPEN FILE PR-BULLMOOSE 71(1)D

EXPLORATION REPORT
TECK CORPORATION LIMITED

BULLMOOSE PROJECT
SUKUNKA BLOCKS 'B' AND 'E'

PEACE RIVER AREA
BRITISH COLUMBIA

CONFIDENTIAL

February, 1972

R. E. Hindson

Sample Analyses

Seam Identification	Interval Sampled	% Moisture	% Ash	% Volatile	% Fixed Carbon	% Sulphur	F.S.I.
Outcrop (Trench)							
SK	0-0.5'	3.31	32.00	18.69	49.31	0.50	0
SK	0.5-1.5'	3.28	6.68	22.85	70.47	0.35	½
SK	1.5-2.5'	3.11	5.64	23.30	71.06	0.56	½
SK	2.5-3.5'	(No sample material) combined with sample above or below					
SK	3.5-4.5'	4.35	20.24	20.40	59.36	0.41	½
SK	4.5-5.5'	3.64	6.47	24.57	68.96	0.57	½
SK	5.5-5.8'	3.57	5.15	24.24	70.61	0.55	½
Bottom of Seam							
D.D.H. T-1							
BD	869.2-876.0	0.46	15.97	23.52	69.93	3.98	9.0
CH	982.6-987.0	0.69	9.72	21.16	73.02	0.25	6.5
CH	987.0-995.6	0.71	8.30	22.86	71.08	0.51	7.5
D.D.H. T-2							
SK	110.0-113.6	0.74	4.80	22.33	73.59	1.43	8.5
D.D.H. T-3							
BD	1445.1-1452.2	0.51	10.87	22.84	68.67	2.44	8.0
D.D.H. T-4							
UBD	197.6-203.8	0.36	7.53	22.82	71.58	2.60	8.5
CH	334.8-339.4	0.77	11.62	20.98	72.86	0.36	7.0
CH	339.4-349.0	0.73	7.69	20.84	73.16	0.32	7.0
D.D.H. T-11							
LG2	210.1-214.0	0.89	20.46	26.97	65.96	0.33	6.0
LG2	214.0-218.8	0.91	5.35	28.15	66.90	0.38	6.0

PR-BULL MOOSE-72(1)B
Attached
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EXPLORATION REPORT
TECK CORPORATION LIMITED

BULLMOOSE PROJECT
SUKUNKA BLOCKS 'B' AND 'E'

PEACE RIVER AREA
BRITISH COLUMBIA

GEOLOGICAL BRANCH
ASSESSMENT REPORT

R. E. Hindson

February, 1972

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DIAMOND DRILL LOGS Under separate cover.

INTRODUCTION

In August, 1969, Brameda Resources Limited located, through diamond drilling, a coal seam of outstanding metallurgical quality in the Lower Cretaceous sediments in the Peace River Area of British Columbia.

Diamond drilling to September 1970 indicated that the seam, named the Chamberlain, was consistent in thickness and composition over a large area.

The drill indicated coal reserve estimate for the Chamberlain seam at that time was 66 million long tons in place.

In November, 1970 Teck Corporation Limited entered into an agreement with Brameda Resources Limited whereby Teck was granted the right to earn a 50 per cent undivided working interest in two blocks of coal licences adjoining Brameda's main coal reserve area.

The two blocks of coal licences are known as the 'North' Block and the 'South' Block. The 'South' Block was further divided into Blocks B, E and F in early 1971 for the purpose of assigning potential Chamberlain seam coal reserve estimates to areas of different structure and depth of cover.

This report describes the exploration work that was carried out on Block B and the northern part of Block E during 1971.

SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

The properties described in this report are located in the Rocky Mountain Foothills Region of the Peace River Area of British Columbia some 37 air miles south of the town of Chetwynd.

Locally the area is underlain by Lower Cretaceous sediments, from the Cadomin Formation in the Bullhead Group to the Hasler Formation in the Fort St. John Group, which have been exposed as a result of regional folding and thrust faulting.

On Brameda's property, to the north of Blocks B and E, three coal seams, the Chamberlain, Skeeter and Bird, were located in the upper Gething Formation in exploration programmes conducted in 1969 and 1970. The Chamberlain seam was found to be of extremely high metallurgical quality and remarkably consistent in thickness and composition while the Skeeter and Bird seams were highly variable.

The Teck exploration programme carried out on the Sukunka Blocks B and E properties in 1971 was designed to assess the potential of the Chamberlain coal seam. The program included detailed geological mapping, stripping and over 14,600 feet of diamond drilling.

Diamond drilling confirmed the presence of the Chamberlain, Skeeter and Bird seams and indicated a major facies change in the upper Gething Formation towards the southwest.

The Chamberlain seam reaches its maximum thickness of clean coal, 14.1 feet, in the north central section of the

Sukunka Block B property close to the northern border. To the west the seam appears to become shaly and to the south it rapidly decreases in thickness to return an average of less than 1.1 feet. The total number of long tons in place (not mineable coal) is estimated to be approximately 30.7 million.

The Skeeter seam horizon appears to contain up to 3 seams towards the southwest. However, they are generally very thin.

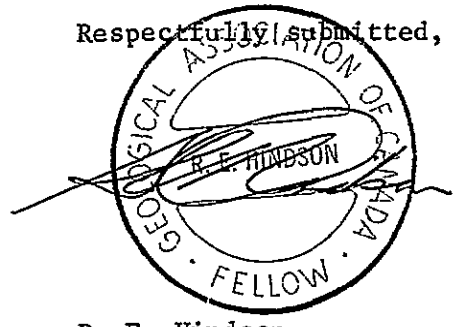
The Bird seam, although appearing to be the most consistent in grade and thickness may be of limited potential owing to a high indicated contained sulphur content. The average results of the analyses of three separate drill intersections from the northern section of Block B returned an F.S.I. of 8.5, an ash content of 11.64 per cent and a sulphur content of 3.01 per cent. The total number of long tons in place on the Sukunka Block B property is estimated to be 34.9 million.

It is recommended that sample analyses be conducted on all of the untested intersections to determine whether or not total sulphur content is a factor of location. Petrographic analyses should also be conducted on selected samples to further determine the seam's properties as a coking coal. Consideration should be given to the possibility of reducing the pyritic sulphur content of the seam to a low level through gravity separation techniques and then blending the coal with coals of extremely low sulphur content to produce a saleable product.

A total of 11 correlatable coal seams were intersected by diamond drilling in the Gates Members of the Commotion Formation. They are considered to be of limited potential owing to their

highly variable thicknesses and grade. Nevertheless, the results are sufficiently encouraging to recommend that the possible coal resources of the Commotion Formation on the remaining properties be investigated before any thought is given to releasing ground.

Respectfully submitted,



R. E. Hindson
Project Manager

PROPERTY

On November 12, 1970 Teck Corporation Limited entered into an agreement with Brameda Resources Limited whereby Teck was granted the right to earn a 50% interest in certain coal licences owned by Brameda Resources Limited.

Under the terms of the agreement Teck was given, for the purpose of exploration, the exclusive possession of two blocks of Brameda coal licences for a period of 5 years.

In order to keep the agreement in good standing, Teck must expend a total of $50,000 per year on exploration in each calendar year for the duration of the 5 year period.

If Teck spends a total of $1,000,000 within the exploration period, it will earn a 50% undivided working interest in the coal licences. On the other hand, if Teck fails to expend the full amount required for a 50% interest, its interest in the coal licences will be reduced proportionally to 5% on the expenditure of no less than $100,000 during the option period.

The two blocks of coal licences under option to Teck are referred to in the agreement as the 'North' Block and the 'South' Block. Both blocks are contiguous with Brameda's main licenced area which is presently under option to Coalition Mining Limited.

The 'North' Block which consists of 11 coal licences is situated west of the Sukunka River in the vicinity of Rocky Creek. The 'South' Block, comprising a total of 50 coal licences, strikes northwest-southeast from the southern flank of Bullmoose Mountain to the northern flank of Mount Reesor.

The 'South' Block was sub-divided into Blocks B, E and F

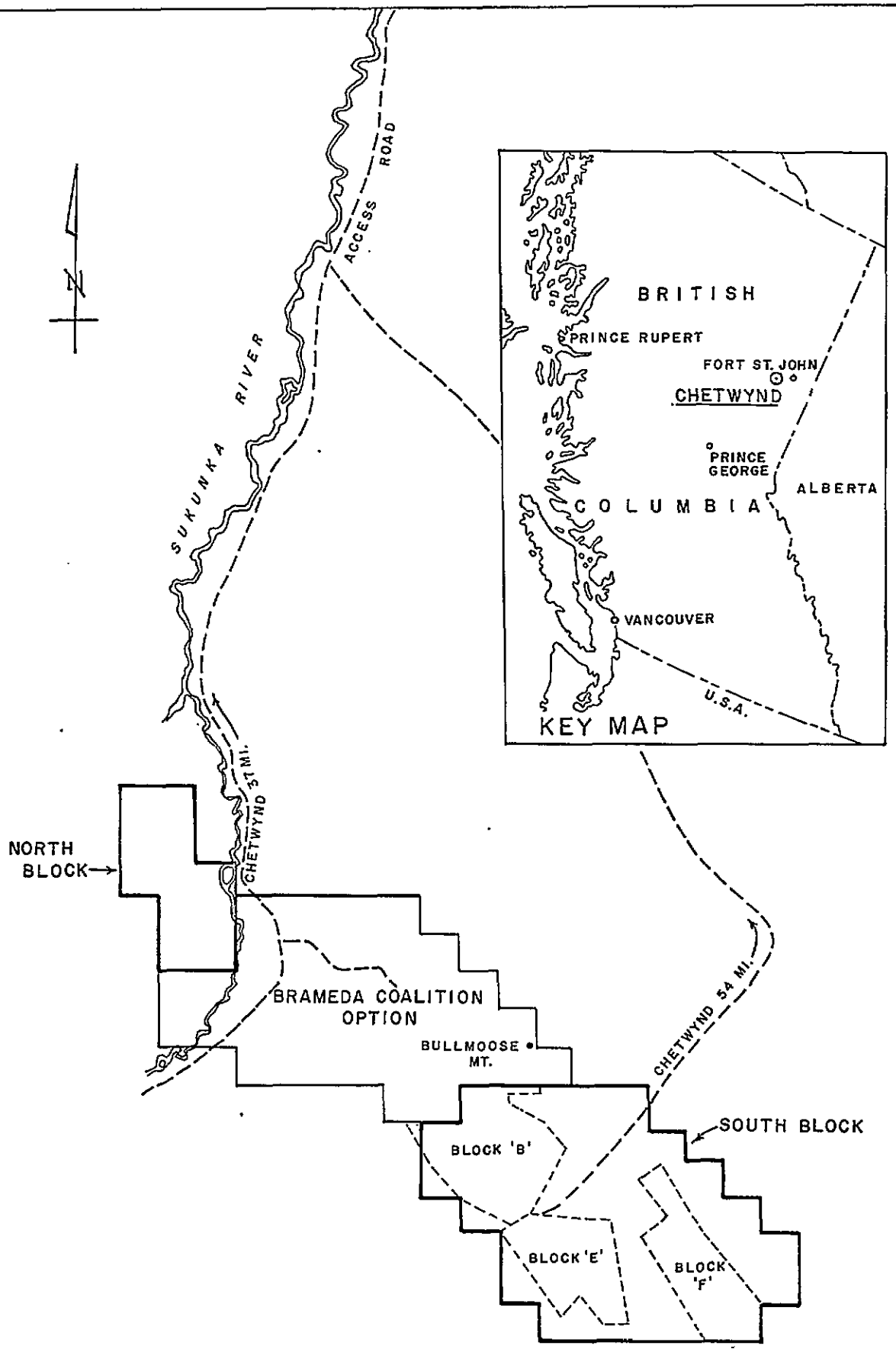
in early 1971 in order to assign potential Chamberlain seam coal reserve estimates to areas of different structure and depth of cover. At that time the area was not mapped in detail and was untested by diamond drilling.

During the 1971 field season the 'North' Block and Blocks E and F were mapped by independent consultants. Consequently, those areas, save the northern portion of Block E are not referred to in this report.

Coal Licences

	Tag Numbers	Licence Numbers	Total
'North' Block	1 - 9	1053 - 1061	9
	15 - 16	1067 - 1068	2
'South' Block	51 - 90	1103 - 1142	40
(Blocks B, E	92 - 96	1143 - 1147	5
and F)	99 - 103	1148 - 1152	5
			61

The exploration work conducted by Teck and Coalition in 1971 on the Brameda coal licences has been filed for assessment purposes. If all of the work filed is accepted, all licences will be in good standing at least until their date of renewal on September 21, 1973.



• MT. REESOR

TECK CORPORATION LTD.

BULLMOOSE PROJECT

PROPERTY LOCATION MAP

Scale: 1 in. = 4 mi.

LOCATION AND ACCESS

The properties described in this report are located in the Rocky Mountain Foothills Region of the Peace River area of British Columbia, some 37 air miles south of the town of Chetwynd.

Chetwynd is connected by paved highway to most of the major centres in British Columbia and Alberta and is linked by rail to the Pacific ports of Prince Rupert and Vancouver.

Access to the property from Chetwynd can be gained via 48 miles of gravel and dirt road. The first 37 miles is all weather gravel road which follows the east bank of the Sukunka River. The remaining 11 miles is a winding dry weather dirt road which runs east from the Sukunka Valley. The dirt road, constructed for exploration purposes, is often very steep and requires constant maintenance and repair. It is usually only negotiable by four-wheel drive vehicles.

A second access road to the property swings southeast from the Sukunka Valley road at mile 16 to Gwillim Lake and from there due south to Bullmoose Mountain. The road from mile 16 on is a dry weather logging road and is usually only open for short periods during the year.

GEOLOGY

Geological Mapping

Geological mapping was confined largely to the properties' higher elevations since most of the outcrop exposures were limited to areas of steep topography.

Very few traverses were run below the thick succession of sandstones that form the floor of the Chamberlain coal seam.

Several stratigraphic sections were measured for familiarization purposes and more importantly to guide the positioning of drill holes during the early phases of the exploration programme.

Sedimentary members and formations were easily identified. However, ascertaining the position of certain outcrops within a particular member or formation was at times difficult due to overburden cover.

Coal outcroppings on the property were rare and the greater majority of these were either found in the vicinity of steep escarpments or were exposed during the process of stripping or road building.

Only one surface fault was located during the course of mapping and it is situated close to the southern border of Block B in the lower Gething Formation.

Folding, with the exception of a few steep monoclines, was generally related to rather broad structural features.

Geological Setting

The Sukunka Valley - Bullmoose Mountain areas of the Foothills Region of the Peace River district are underlain by Lower Cretaceous

rocks that have been exposed along the northeast limb of a large northwest striking anticlinorium. The anticlinorium, which lies west of a broad shallow synclinorium, includes complex northwesterly trending folds that are cut by southwest dipping strike-thrust faults.

The properties described in this report are located in a large thrust block that is bounded by two major northwest striking thrust faults. One of the faults is located west of Mount Chamberlain and the other just east of Bullmoose Mountain.

Over 4,650 feet of the Lower Cretaceous sediments, from the Cadomin Formation in the Bullhead Group to the Hasler Formation in the Fort St. John Group, are exposed along cliff faces that parallel the east and southern borders of the Sukunka Block B property. Only the Commotion and Moosebar Formations are exposed in the northern section of Block E.

The axis of a fairly broad synclinal basin strikes northwest through the centre of the Block B property. The steepest dips recorded on the property during the mapping programme lie along the western limb of the syncline in the vicinity of Mount Chamberlain. Dips in this area are up to 86 degrees. The average dip of the sediments on the property is estimated to be between 7 and 11 degrees with the more gentle ones being situated along the eastern limb of the syncline. The only other steep dips recorded are located along the precipitous southeast face where the upper Gething Formation descends into the synclinal basin with the aid of a series of steep monoclines.

Faulting, as revealed by geological mapping and diamond drilling, appears to be of a limited nature. However, drilling was carried out at centres that were too widely spaced to outline the existence of any structural complexities.

A total of 10 coal seams in the Commotion Formation of the

Fort St. John Group and more than 4 in the Upper Gething Formation of the Bullhead Group were intersected by diamond drilling. A special section in this report is devoted to coal seams.

A major facies change in the upper Gething Formation was also indicated by diamond drilling and is more fully described in this report under the heading "Stratigraphy".

See 'Geological Plan' Map A103 for surface geology and 'Diamond Drill Sections' Maps E115A and E115B for geological sections.

TABLE OF FORMATIONS

Series	Group	Formation	Member	Sub-Member or Seam	Formations and Members Local Average Thickness (ft.)	Lithology
Lower Cretaceous	Fort St.John	Hasler			860	Silty, dark grey marine shales with interbedded siltstone; minor sandstone and pebble conglomerate.
		Commotion	Boulder Creek		520	Fine grained well sorted sandstones; massive conglomerate; carbonaceous sandstones, siltstones and mudstones with a few coal beds.
			Hulcross		315	Dark grey to black, blocky, silty marine shales.
			Upper Gates	Upper Gates Seams UG1 to UG8 incl.	380	Sandstone, siltstone and mudstone of mainly non-marine origin; contains a number of coal beds.
			Lower Gates	Lower Gates Seams LG1 and LG2	300	Massive conglomerates and sandstones; sandstones are medium to fine grained and often pebbly; minor coal
			Sukunka		440	Sandstone, siltstone, shale and mudstone of marine and non-marine origin.
		Moosebar			280	Dark grey to black marine mudstones; uniform and commonly pyritic; contains sideritic concretions and concretionary layers, thin bentonite beds and a thin basal glauconitic sandstone.
	Bullhead	Gething		Bird Seam(s) Skeeter Seam(s) Mid Seam Chamberlain Seam	1,000	Alternating units of carbonaceous sandstone siltstone and shale; several thick coal seams close to upper contact.
		Cadomin			300	Massive conglomerate beds overlying medium to coarse grained, cross bedded pebbly sandstone.

Stratigraphy

Bullhead and Fort St. John Groups

Cadomin Formation

The Cadomin Formation, although relatively thin in the vicinities of the Wolverine River to the south (45 feet) and the Pine River to the north, measures over 300 feet in the area of Bullmoose Mountain.

Locally, the uppermost beds which comprise over 60 per cent of the section, consist of massive conglomerates with well rounded cherty pebbles up to 2½ inches in diameter. The pebbles commonly have a diameter between ¼ and 3/8 inches. The matrix between the pebbles usually consists of coarse to fine grained sandstone.

The conglomerate beds are often interbedded with lensy sandstone layers up to 10 feet thick and 50 feet long. The sandstones are medium to coarse grained and contain pebbles up to ½ inch across. A lensy, thin, black, carbonaceous siltstone-shale bed was also noted in the middle of the conglomerate unit.

The predominantly conglomeratic section is underlain by a thick succession of medium to coarse grained, cross bedded, pebbly sandstone. The sandstones are carbonaceous and often contain thin coal seams up to ¼ inch wide. Black, shiny carbonaceous fossils are also common as are thin conglomerate lenses.

The Cadomin Formation, due to its highly resistant nature, forms an excellent marker horizon where exposed, especially at the upper contact.

Gething Formation

A measured section of the Gething Formation in the vicinity of the southeast face of the Sukunka Block B property gave a total thickness of 1,009 feet.

Regionally the thickness of the Formation varies considerably. This is believed to be due to negative movements along the Peace River Arch which began late in the Paleozoic era and continued to subside during the Mesozoic.

The Peace River Arch was a pronounced structural feature of positive expression during pre-Mississipian time. The relationship of the Cadomin and Gething sediments to the structural feature indicates that their deposition was being influenced by the continued movement of the faults associated with it.

The Bullmoose Mountain area lies within the boundaries of the Peace River Arch and the major facies change observed in the upper Gething Formation on the Sukunka Block B and E properties may have been a result of such a relationship.

The lower contact of the Formation is drawn on the property at the top of the uppermost massive conglomerate bed of the Cadomin Formation. At this point the overlying sediments consist of light brown, fine grained, thin to medium bedded sandstones.

The Gething Formation is comprised of alternating units of sandstone, siltstone and carbonaceous shale or mudstone with some coal and conglomerate.

Locally, the sandstone units, which are up to 83 feet in thickness, form prominant outcrop ridges that are commonly separated from one another by large recessive sections of less resistant siltstone and shale.

The sandstones are characteristically light grey to brown, fine to medium grained, thin to medium bedded and often flaggy. On rare occasions they are cross bedded and ripple marked. The siltstones are grey brown, laminated and in some instances exhibit cross bedding. The shales and mudstones are blocky and usually carbonaceous. On most of the traverses conducted in the Gething Formation the shales and mudstones were overburden covered.

The major coal bearing horizons in the Gething Formation in the Sukunka Valley Area occur in the top 300 feet of the section.

Three separate seams known as the Chamberlain, Skeeter and Bird were located and identified by Brameda Resources Limited in a drill programme carried out in the area in 1969.

In Brameda's main block of ground to the north, the Chamberlain seam, which varies between 160 and 190 feet below the Moosebar Gething contact, was found to be an extremely high quality coking coal of remarkably consistent thickness and composition. The Skeeter seam located some 20 to 30 feet above the Chamberlain, is similar to the Chamberlain in most characteristics but is higher in ash and less consistent in thickness. The Bird seam, which occurs at the top of the Gething Formation is highly variable in both thickness and quality.

Upper Gething Formation

The upper Gething Formation referred to in this report comprises that portion of sediments which lie between the basal sandstone of the Chamberlain seam and the Moosebar-Gething contact.

Diamond drilling on the Sukunka Block B and E properties indicated that a major facies change towards the southwest occurs in the upper Gething Formation.

Structural disturbances that were contemporaneous with the deposition of the upper Gething sediments (possibly related to the Peace River Arch) have been responsible for the facies change.

A relative negative movement in the south and southwest resulted in an increased amount of sedimentation in that area as evidenced by the Chamberlain seam which is only 125 feet below the Moosebar Gething contact in the north and some 270 feet in the south. (See 'Isopach Map' No. M106 of upper Gething Formation).

The recorded movement is largely post Chamberlain and pre Skeeter as evidenced by the drastic thickening to the south and southwest of the predominantly shale sequence that separates the two seams. However, the movement did continue to the end of the Gething depositional interval as illustrated by the influx of an increasing amount of coarser detritus to the southwest (siltstone, sandstone and conglomerate) and the splitting of the Bird seam.

The Chamberlain seam reaches its maximum thickness of clean coal, 14.1 feet, in the north central section of the Sukunka Block B property close to the northern border.

To the west the seam appears to become shaly and to the south it rapidly decreases in thickness to return an average of less than 1.1 feet.

The Skeeter seam horizon appears to contain up to three seams in the southwest which are generally thin and of variable thickness.

The Bird seam, although appearing to be the most consistent in grade and thickness may be of limited potential owing to a high contained sulphur content. The Bird seam has an average thickness of 6.2 feet over a large portion of the area tested by diamond drilling.

A detailed description of the coal seams in the Gething Formation and their related sedimentary environment is described in a later section of this report entitled "Coal Seams".

Reconstructed fence diagrams of the upper Gething Formation are illustrated on Maps A104B and A104C.

Moosebar Formation*

The Moosebar Formation is comprised of a very uniform argillaceous mudstone sequence that, in the area tested by drilling, averages some 278 feet in thickness.

The mudstones for the most part are dark grey to black and can usually be identified in outcrop form by their characteristically crumbly nature.

The Moosebar commonly contains ironstone concretions and sideritic concretionary layers that weather to a bright rusty orange when exposed to the elements. The sideritic layers are usually between 0.2 and 0.3 feet thick and are most often found anywhere between 50 and 80 feet above the base of the Formation.

White bentonite layers, having a similar thickness to the sideritic ones, are commonly found up to 60 feet above the base of the unit. Not more than five bentonite layers were ever observed in any one drill intersection.

The Moosebar Formation also contains varying amounts of disseminated pyrite in the bottom 100 feet, which generally increases up to an estimated high of 1 per cent near its lower contact.

A 4 foot section of mudstone containing a mixture of carbonaceous debris, calcareous fossils and mud was intersected in D.D.H. T-15. The material was probably washed into the Moosebar sea during a period of flooding.

The lower contact of the Moosebar Formation is marked by the base of a bed of glauconitic, pyritic, dark grey to dark green, medium grained sandstone. The sandstone bed varies between 1 and 7 feet in thickness and averages slightly less than 4 feet. Although pebbles in this unit are extremely rare on the property

*Includes Sukunka Member in Government Reports.

they are common in most other areas.

A total of 550 feet of Moosebar Formation was intersected in D.D.H. T-12. Core angles of 55 degrees in the section demonstrate steep folding but it alone is not enough to account for such a thick section. Frequent shearing within the horizon suggests that thrust faulting has caused a repeat of the Formation in part.

A 350 foot intersection in D.D.H. T-14 is believed to be due mainly to folding although faulting may be somewhat responsible.

With the exception of the Moosebar intersections in D.D.H.s T-12 and T-14, which are obviously anomalous, the thickness of the Formation in a total of seven other drill holes averaged between 244 and 300 feet.

The highly variable thickness of the Moosebar Formation is believed to be due mainly to folding and faulting caused by minor basement stresses that, because of the incompetent nature of the Formation, are seldom transmitted to overlying strata.

Regionally, the Moosebar Formation and the overlying Sukunka Member of the Commotion Formation decrease in thickness southward from the Peace River towards the upper Smoky River in Alberta.

Commotion Formation

Sukunka Member*

The Sukunka Member consists of a thick succession of

*Referred to in Government Reports as the upper part of the Moosebar Formation.

marine to non-marine sandstone, siltstone, shale and mudstone which on the property averages some 438 feet in thickness. In a total of seven drill holes the width of the member varied between 425 and 451 feet for a range of only 26 feet.

The Sukunka Member characteristically contains a decreasing amount of sandstone and siltstone with depth, giving way to shale and mudstone.

The sandstones, which are mainly confined to the upper section of the Member, are fine grained, poorly sorted, silty and laminated to thinly bedded, with common worm borings and extremely rare carbonaceous fossils and partings. Sandstone beds up to 2 feet thick are common near the upper contact. However, these rapidly thin out and become interbedded with siltstones and shales of narrow widths that are relatively uniform and continuous creating a banded appearance.

A single fine grained sandstone bed up to 60 feet thick is commonly present some 175 feet above the base of the Member.

The siltstones are muddy, laminated, often cross-bedded and on occasion contain worm borings.

The shales and mudstones which are predominant in the lower half of the Member are commonly slightly to highly reworked and frequently contain randomly oriented clay galls. Groove casts, load casts and ripple marks are also common.

Interbedded siltstone layers thin out with depth to an average of about ¼ inch and are anywhere from 6 inches to 2 feet apart near the lower contact where the rock is comprised almost entirely of mudstone.

The lower contact of the Sukunka Member is selected at that point where the last of the thin siltstone layers disappear.

The upper contact is drawn at the base of the first thick succession of sandstone.

Gates Member

The Gates Member in the Peace River region is considered as a formation whereas further south in the vicinity of Bullmoose Mountain it is included as a member of the Commotion Formation.

Locally the Gates Member has been subdivided into the Upper and Lower Members since they are both distinct correlatable units.

Lower Gates Member

Massive conglomerates and sandstones make up more than 94 per cent of the Lower Gates Member.

The conglomerate beds, which vary between 7 and 69 feet in thickness are usually confined to the upper two thirds of the section. The beds are lensy in nature which is well demonstrated by the fact that they do not usually correlate from one diamond drill intersection to the next.

The conglomerates are comprised of mainly cherty, elongated to well rounded pebbles that are moderately to poorly sorted. The pebbles which are up to ½ inch in diameter are contained in a matrix of much finer material of like composition.

The sandstones that are interbedded with the conglomerates are usually light grey, thick to medium bedded, medium to coarse grained, conglomeratic to pebbly and poorly to moderately sorted.

Below the conglomerate beds the sandstones become moderately to well sorted, medium to fine grained, medium bedded to laminated and their pebbly nature disappears.

Siltstone, shale and mudstone beds are largely confined to the coal bearing horizons of the sedimentary sequence. The mudstones and shales commonly contain thin coal partings.

Two coal seams were located by diamond drilling in the Lower Gates Member. One of the seams lies between 120 and 130 feet below the upper contact while the second, which was only intersected on one occasion, is situated some 20 feet above the first. The coal seams, as in the case of the Gething Formation, are fully described in a separate section of this report.

The total thickness of the Lower Gates Member varies drastically on the property from the north to the south and southwest. The member is over 320 feet thick in the north and less than 230 feet thick in the south.

Since the distance between the lower coal seam and the upper contact of the Member is constant the thickening and thinning of the sediments had to take place prior to the deposition of the coal. The mechanism suggested is a relative uplift to the southwest which subsided prior to the deposition of the first coal seam.

Upper Gates Member

The Upper Gates Member which averaged some 378 feet in thickness in 2 drill intersections is comprised of sandstone, siltstone, shale and mudstone of mainly non-marine origin.

Sandstone makes up 40 per cent of the Member, the greater portion of which occupies a horizon that lies between 100 and 235 feet below the upper contact.

Shales and mudstones are invariably associated with coal bearing sections and siltstone is usually found in transitional intervals between shale and sandstone.

A total of 8 coal seams in two distinct horizons were identified during the course of geological mapping and diamond drilling. The nature of the seams is fully described in a later section of this report.

The sandstones for the most part are light grey, medium grained, well sorted, thin to medium bedded, and commonly cross bedded. They often exhibit ripple marks and occasionally load and groove casts. Worm borings were noted in the thicker sections.

The sandstone beds that are associated with the siltstones and shales are usually fine grained and laminated to thinly bedded.

The siltstones are light to medium grey, slightly to moderately reworked and occasionally contain carbon fossils or coaly whisps. They are most often laminated and on occasion cross bedded.

The beds of shale and mudstone are commonly dark grey to black, blocky and carbonaceous with carbon fossils and/or coal partings.

The base of the lowest coal seam in the sedimentary sequence, which characteristically rests on a thick conglomerate bed, represents the lower contact of the Upper Gates Member.

Hulcross Member

The Hulcross Member consists of dark grey to black, blocky to rubbly, silty marine shales. The shales are also often stained with limonite due to the presence of sideritic concretions and concretionary beds.

Locally the Hulcross Member measures 315 feet in total thickness.

The lower contact is distinct and is commonly marked by a layer of well rounded chert pebbles up to ½ inch in diameter which are usually imbedded in a matrix of coarse-grained sandstone. In two diamond drill intersections the pebbly bed averaged 0.7 feet in thickness.

The basal portion of the Member reportedly contains little or no silt. However, interbedded siltstone comprising up to 50 per cent of the lower beds was noted in the bottom 100 feet of the Member during the course of geological mapping and was later confirmed by diamond drilling.

The silty basal section is overlain by a predominantly shale sequence that gradually becomes increasingly silty higher in the unit..

The upper beds are transitional into the sandstones of the overlying Boulder Creek Member.

The Hulcross Member where exposed is rapidly cut by stream channels. Randomly oriented collapsed and slipped blocks make strike and dip calculations in some areas virtually impossible. One of the slipped blocks on the property measures over 1,000 feet in length.

Boulder Creek Member

The Boulder Creek Member measured some 520 feet in thickness in the vicinity of Mount Chamberlain.

Locally the Member consists of three main facies. The basal facies consists of massive bedded, fine grained, well sorted sandstones. Close to the overlying conglomerate the sandstones are finer grained, thinly bedded, cross bedded, ferruginous and at times slightly carbonaceous. Thin interbedded siltstone and

mudstone beds with common mud cracks were also noted. Channeling is common.

The overlying massive conglomerate beds form dip slopes in the northern section of the Sukunka Block B property that extend into a broad synclinal basin. The conglomerates are lenticular and poorly sorted. They contain highly angular fragments that range from 1 - 10 mm. across and are imbedded in a matrix of sandstone The fragments have a more pebbly nature in the eastern section of the property. The steeply dipping conglomerates near Mount Chamberlain commonly exhibit slickensides near their base. The sandstone beds that often separate the conglomerate ones are medium to coarse grained, highly lenticular and ripple marked.

The upper facies of the Boulder Creek Member is composed of carbonaceous sandstones, siltstones and mudstones with a few thin coal beds. In most locations the upper facies, because of its less resistant nature, has been completely eroded. One such outcrop was recorded as being a light brown, medium to coarse grained sandstone; thinly bedded and highly cross bedded.

The upper contact of the Member is drawn at the abrupt change from the sandy carbonaceous beds to the dark grey, silty, basal shales of the Hasler Formation.

Hasler Formation

The Hasler is the youngest formation of the Lower Cretaceous sediments that outcrop in the area of Bullmoose Mountain.

A remnant section of limited areal extent is located on a prominent ridge in the southwestern area of the Sukunka Block B property some 6,000 feet southeast of Mount Chamberlain.

The section is best exposed along a steep northeast facing slope.

The Hasler Formation on the property consists of thinly interbedded marine shales and siltstones. Regionally, minor sandstone and a few pebble-conglomerates are also included. The shales are less silty in the upper beds and due to their more crumbly nature appear to be somewhat similar to the Moosebar Formation.

The exposed section was not measured for thickness, since a great deal of the upper part of the Formation has been eroded.

Type sections reportedly measure over 800 feet in total thickness.

Measured Sections

The following selected measured sections were taken during the course of geological mapping and their location is shown on the geological plan, map no. A103.

UNIT	LITHOLOGY	THICKNESS IN FEET	HEIGHT ABOVE BASE (FEET)
Measured Section Through Stripped Area			
GETHING FORMATION			
15	sandstone, medium grained, light grey, cross-bedded; thick bedded in the first 10', remainder is medium bedded.....	58	114.5
14	siltstone, dark grey, contains thin shale partings, crumbly, lensy	0.8	56.5
13	sandstone, light grey fine grained, very lensy	0.7	55.7
12	(1) coal, dull to shiny, weathered, appears clean, some limonite staining	5.8	55.0
11	shale, dark grey, sideritic, carbonaceous..	1.8	49.2
10	coal and mudstone mixed, dull, heavy	3.6	47.4
9	siltstone, light grey with dark grey bands, iron stained	1.2	43.8
8	coal and mudstone interbedded; coal is dirty and dull	2.6	42.6
7	sandstone, fine to medium grained, light grey, medium bedded, competent unit	4.9	40.0
6	shale and siltstone, carbonaceous with coal partings	6.0	35.1
5	covered - road	4.0	29.1
4	mudstone and siltstone interbedded, dark grey, crumbly	14.1	25.1
3	coal, very dirty, silty lenses.....	1.9	11.0
2	sandstone, medium grained, light grey, thick bedded	6.1	9.1
1	(2) coal, bright, very clean, black, shiny; rests on a very thick sandstone sequence ..	3.0	3.0
END OF MEASURED SECTION			

(1) Skeeter Seam

(2) Chamberlain Seam

UNIT	LITHOLOGY	THICKNESS IN FEET	HEIGHT ABOVE BASE (FEET)
Measured Section a-b			
COMMOTION FORMATION SUKUNKA MEMBER			
a 11	siltstone and mudstone interbedded, medium grey to light brown; platy; several beds of iron stone concretions	12	182
10	sandstone, fine grained, grey, laminated, cross bedded	2	170
9	siltstone and mudstone interbedded, medium grey to light brown; platy	10	168
8	sandstone, fine grained, grey to light brown, cross bedded, laminated	2	158
7	siltstone and mudstone interbedded medium grey to light brown; platy	14	156
6	sandstone, fine grained, grey to light brown, cross bedded, laminated to thinly bedded	2	142
5	mudstone, shale and siltstone interbedded, dark brown to dark grey, blocky, crumbly; siltstone laminae are thin and from 1 to 3 inches apart	57	140
4	sandstone, fine grained, medium grey, cross bedded	3	83
3	mudstone, shale and siltstone interbedded, blocky, crumbly; as described in unit 7	5	80
2	sandstone, fine grained, medium grey, cross-bedded; interbedded with thin layers of mudstone	2	75

UNIT		LITHOLOGY	THICKNESS IN FEET	HEIGHT ABOVE BASE (FEET)
Commotion Formation Sukunka Member (cont.)				
	1	mudstone, shale and siltstone interbedded, dark brown to dark grey, very blocky and crumbly; siltstone laminae are very fine and decrease with depth; outcrop becomes limited in lower part of section	73	73
MOOSEBAR FORMATION (contact approx.)				
	1	covered	268	268
GETHING FORMATION (contact approx.)				
	7	covered	5	99
		(1) coal, black, shiny, clean	2	94
	6	covered	3	92
	5	sandstone, medium grained, light grey, cross-bedded; thick bedded in the first 10', remainder is medium bedded	57	89
	4	mudstone, blocky, black, carbonaceous, with coal partings; 0.5 to 1.0' thick	1	32
	3	sandstone, fine grained, light grey very lensy; up to 1.0' thick	1	31
	2	(2) coal, bright, black, shiny, clean	5	30
b	1	covered	25	25

END OF MEASURED SECTION

(1) Bird Seam

(2) Skeeter Seam

UNIT		LITHOLOGY	THICKNESS IN FEET	HEIGHT ABOVE BASE (FEET)
Measured Section c - d				
COMMOTION FORMATION LOWER GATES MEMBER				
c	4	conglomerate, light grey, fine pebble, cherty, pebbles average 4 mm. across, siliceous matrix	22	235
	3	sandstone, medium grained, light grey-brown, medium bedded; some pebbles at top of unit	69	213
	2	conglomerate, light to medium grey, cherty; average size of pebbles ½", pebbles are well rounded to egg-shaped..	79	144
	1	sandstone, fine grained, grey to rusty brown (weathered), cross-bedded, thinly bedded with beds from ½ to 1"....	65	65
COMMOTION FORMATION SUKUNKA MEMBER				
	4	sandstone, siltstone, shale and mudstone interbedded, light grey-brown, flaggy; shale content is dominant; sandstone decreases with depth; beds are thinly bedded to laminated; limited exposure	90	258
	3	sandstone and siltstone interbedded, light grey to medium brown, thinly bedded to laminated, cross-bedded, slightly to moderately reworked; the sandstone beds are fine grained; limited exposure	39	169
	2	shale, siltstone and sandstone interbedded, medium grey to brown, laminated, shale is the major constituent, est. better than 60%; limited exposure	78	125
d	1	sandstone and shale interbedded, light grey to light brown, laminated; sandstone is fine grained, cross-bedded; overlies a more shaly sequence; limited exposure	51	51

END OF MEASURED SECTION.

NOTE: 'd' is at same stratigraphic horizon as 'a' in section a-b.

UNIT	LITHOLOGY	THICKNESS IN FEET	HEIGHT ABOVE BASE (FEET)
Measured Section e - f			
COMMOTION FORMATION LOWER GATES MEMBER			
e 12	conglomerate, cherty, siliceous, medium grey; pebbles range from 5 - 10 mm. across, pebbles are well rounded	22	138
11	sandstone, fine grained, reddish brown, beds vary between 1 and 3' in thickness to 15' of bottom of unit, then become thin averaging between 1 and 2"; rare cross-bedding	44	116
10	conglomerate, cherty; pebbles to ½", average ¼"; contained in matrix of coarse grained sandstone; average grain size of the sandstone is 1 mm	7	72
9	sandstone, fine grained, medium brown, carbonaceous, thinly bedded	2	65
8	shale, black, carbonaceous; coal partings; 0.5 to 1.0' thick	1	63
7	sandstone, fine grained, light grey brown, thinly bedded, carbonaceous with rare thin coal partings	20	62
6	shale, black, carbonaceous, fissile	1	42
5	sandstone, fine grained, light brown thinly bedded, rare thin coal partings close to upper and lower contacts with shale partings	10	41
4	shale, black, carbonaceous; contains coal partings	2	31
3	sandstone, fine grained, light brown, thinly bedded, rare carbonaceous partings	14	29
2	shale, black carbonaceous	2	15

UNIT	LITHOLOGY	THICKNESS IN FEET	HEIGHT ABOVE BASE (FEET)
	Commotion Formation Lower Gates Member (Cont'd)		
1	sandstone, fine grained, light brown, thinly bedded to laminated	13	13
	COMMOTION FORMATION SUKUNKA MEMBER		
3	sandstone, siltstone, shale and mudstone, interbedded, medium grey to brown, flaggy; thin to medium bedded with beds averaging between 0.5 and 2.0' thick.....	114	235
2	mudstone with very thin widely spaced siltstone bands; very rare sandstone beds up to 1.0'; black and crumbly	24	121
f 1	siltstone with minor sandstone and very minor shale and mudstone as interbeds; medium grey to brown, thinly bedded	97	97
	covered		
	END OF MEASURED SECTION		

UNIT		LITHOLOGY	THICKNESS IN FEET	HEIGHT ABOVE BASE (FEET)
Measured Section g - h				
GETHING FORMATION				
g	29	sandstone, medium grained, light grey, thick to medium bedded at top grading to thinly bedded at bottom, slightly carbonaceous in first 6'	83	1,009
	28	sandstone and siltstone interbedded; sandstone is fine grained, light grey brown, cross-bedded, ripple marked; sandstone comprises 60% of unit; beds are laminated	14	926
	27	covered	83	912
	26	sandstone, fine grained, light grey; siltstone interbeds comprise 30% of unit; thinly bedded to laminated	30	829
	25	covered	40	799
	24	sandstone and siltstone interbedded; sandstones are medium to fine grained; the unit is light grey to light grey-brown, flaggy, thinly bedded to laminated; siltstone content increases with depth; grades into siltstone and shale at base	48	759
	23	covered	143	711
	22	sandstone, medium grained, light grey weathered, medium bedded	39	568
	21	covered	42	529
	20	sandstone, fine grained, light brown ...	5	487
	19	covered.....	35	482
	18	sandstone, medium grained, light grey, medium bedded, rare cross bedding	27	447

UNIT	LITHOLOGY	THICKNESS IN FEET	HEIGHT ABOVE BASE (FEET)
Gething Formation (Cont'd)			
17	mostly covered with occasional sandstone beds outcropping	33	420
16	sandstone and siltstone interbedded, limited exposure	25	387
15	sandstone, medium to fine grained, light grey brown, medium bedded	60	362
	fault		
14	sandstone, medium to fine grained, light grey brown, medium bedded	27	302
13	covered	15	275
12	coal; upper contact not exposed	3	260
11	covered	26	251
10	siltstone, dark grey, laminated; limited exposure	24	231
9	covered	16	207
8	siltstone, grey brown, laminated; limited exposure; possible folding	43	191
7	covered	28	148
6	shale, dark grey to black, carbonaceous; some silty layers exhibit cross-bedding	26	120
5	covered	25	94
4	sandstone, fine grained, grey	5	69
3	covered	40	64
2	sandstone, fine grained, light brown, ferruginous concretions, cross-bedded, thin to medium bedded	6	24
h 1	covered	18	18
	END OF MEASURED SECTION		

CADOMIN FORMATION

COAL SEAMS

Bullhead Group - Gething Formation

Three principal coal seams, the Chamberlain, Skeeter and Bird were located in the upper Gething Formation. These seams were identified by Brameda Resources Limited in an earlier drill programme carried out on the adjoining property to the north. A fourth seam which was named the Mid was also located. However it is highly limited in thickness and in areal extent.

Additional coal seams to those noted above were revealed in the lower Gething Formation during the course of geological mapping but they are insignificant and are not described herein. Since the Chamberlain seam was the primary target of the exploration programme, no drilling was carried out much below its base.

Chamberlain Seam

The Chamberlain seam characteristically lies on a thick succession of sandstone that, in the drilled area, is situated between 125 feet and 270 feet below the Moosebar-Gething contact. The vast difference in the aforementioned footages is primarily due to the varying thickness of a predominantly shale sequence that overlies the Chamberlain seam.

The best Chamberlain seam intersections were encountered in diamond drill holes T-1 and T-4 which returned 13.0 feet and 14.1 feet of clean coal respectively. Both of these holes are located close to the northern border of Block B.

Drill hole T-3 intersected 18.2 feet of Chamberlain seam

that was extremely dirty, being mixed with more than seven shale partings. It is possible that this condition is unique to a very small area.

The Chamberlain seam horizon in D.D.H. T-8 was highly crumbly and consequently the core recovery was poor. The core that was returned indicates the presence of several shale partings. However, if the 4.5 feet of core lost at the top of the section represents coal and is an integral part of the 1.8 feet of coal recovered in the first 6.3 feet then a mineable seam thickness is present. Since drilling in this area was difficult, a borehole log of the Chamberlain section would be the best method of confirming the presence of an acceptable seam.

The Chamberlain seam in all other areas tested was less than 4.2 feet wide with an average width of 1.1 feet. The seam rapidly thins out to the south and the southwest and literally disappears in D.D.H. T-12.

The analyses of samples from the intersections of the Chamberlain seam in D.D.H.s T-1 and T-4 returned an average F.S.I. of 7.0, an ash content of 8.88 per cent and a sulphur content of 0.37 per cent.

Mid Seam

The Mid seam is located from 145 to 180 feet below the Moosebar-Gething contact.

The thickness of the shale sediments that separate the Skeeter seam from the Chamberlain seam increase rapidly to the south and it is in the thicker sections that the Mid Seam appears.

The seam was intersected in a total of seven drill holes, all of which are situated in the southern half of the drilled area. The seam, averaging little more than 2.5 feet in width is considered of little importance.

Skeeter Seam

The Skeeter seam or seams, whichever may be the case, are located some 80 to 120 feet below the Moosebar Gething contact at the base of a thick succession of sandstone that averages between 60 and 90 feet in total thickness.

In the south and southwestern sections of the area tested by diamond drilling there are two distinct Skeeter seams and in the vicinity of drill hole T-7 a total of three are indicated. These seams have been assigned the prefix upper, middle or lower to identify their position in the sedimentary sequence.

The Skeeter seams are not believed to be splits but separate seams that have in some localities been spared from erosional processes. This theory is enhanced by the fact that where there are two or more Skeeter seams their sum is always greater than the total thickness of any singularly existent seam. In addition, the sandstones which directly overlie a lone Skeeter seam often contain carbonaceous debris.

The Skeeter seams, although often clean, generally never exceed a thickness much in excess of 4.0 feet. The seam thins drastically to the west returning an intersection of 1.0 feet in D.D.H. T-8 and is entirely absent in D.D.H. T-10.

Bird Seam

The Bird Seam usually lies in contact with or in close proximity

to the Moosebar-Gething contact. In the northern sections of the property the seam is most often situated directly below the basal glauconitic sandstone member of the Moosebar Formation. To the south and southwest the seam is commonly covered by increasingly thick mudstone and shale sediments which gradually give way to the addition of siltstone, sandstone and in some cases conglomerate.

Also, to the south and southwest the seam splits into two and eventually three separate seams. These seams have been treated in a similar fashion to the Skeeter and have been assigned prefixes according to the position that they occupy in the sedimentary sequence.

The Bird seams characteristically are bright, black, shiny and fairly clean with their only noticeable contaminant being an accumulation of disseminated and nodular pyrite which is commonly found in the upper 2 feet.

An average of the results of the analyses of three separate drill intersections gave an F.S.I. of 8.5, an ash content of 11.64 per cent and a sulphur content of 3.01 per cent.

Further tests conducted on a sample of the seam from D.D.H. T-1, with a sulphur content of 3.98 per cent, indicated that 2.79 per cent was pyritic, 0.05 per cent was sulphate and 1.14 per cent was organic.

The high sulphur content of the Bird seam is believed to be due to the influence that marine waters have had on the seam during the depositional period, the principal source of sulphur being the sulphate ion.

In areas where the transition from non-marine to marine conditions was less rapid and the coal was covered by muds and other detritus, the continued infiltration of sulphate ions might

have been prohibited preventing the further addition of iron sulphides. With this in mind, the analyses of samples of the Bird seam from holes located in the southern part of the drilled area, where the seam is overlain by mudstone and shale and coarser sediments, might reveal lower contained iron sulphide values.

The Bird seam exhibits an average thickness of some 6.2 feet over a considerable portion of the ground that was tested by diamond drilling.

To the west and southwest the seam has undergone varying degrees of erosion as noted by its thinning in D.D.H. T-11, the disappearance of the upper and middle seams in D.D.H. T-13 and its complete absence in D.D.H. T-12. A repetition of the seam in hole T-1 is a result of faulting.

If it were not for the high sulphur content, the Bird seam appears to have the properties of an excellent coking coal. It is recommended that sample analyses be conducted on all of the untested intersections to determine whether or not total sulphur content is a factor of location. Petrographic analyses should also be conducted on selected samples to further determine the seam's properties as a coking coal.

It has been suggested that the sulphur contained in the coal as organic sulphur might be released during coke formation. However, tests conducted by the U.S. Bureau of Mines - American Gas Association revealed that nearly the same proportions of organic and pyritic sulphur are found in the coke and the gaseous products formed as a result of pyrolysis. They found that in the case of pyritic sulphur, 66 per cent entered the coke and 23 per

cent the gas. The corresponding figures for the organic sulphur were 73 per cent and 26 per cent. The remainder of the sulphur goes into the tar.

Basically, if all of the pyritic sulphur was removed, the seam would still contain in the organic form a sulphur content in excess of 1.0 per cent (as per analyses of D.D.H.s T-1, T-3 and T-4).

Consideration should be given to the possibility of reducing the pyritic sulphur content of the seam to a low level through gravity separation techniques and then blending the coal with coals of extremely low sulphur content to produce a saleable product.

The character of the coal seams in the upper Gething Formation is clearly illustrated in the Reconstructed Fence Diagrams, Maps A014B and A104C. The detailed geology of the upper Gething Formation is shown on Map A104D entitled "Reconstructed Drill Intersections".

SELECTED BIRD SEAMS

D.D.H. No.	Footage		Width	Recovery	Pyrite	FSI	% Ash	% S	Comments
	From	To							
T-1	860.0	864.5	4.5	4.5	Concentrated in upper 0.2'.				bright, shiny clean. fault at base of seam.
T-1 repeat	869.2	876.5	7.3	7.3	Pyrite from 875.2 - 876.0	9.0	15.97	3.98	bright, shiny, clean.
T-3	1444.4	1452.2	7.8	6.4	Diss. PY from 1448.5 - 1452.2	8.0	10.87	2.44	bright, shiny, clean
T-4	197.6	203.8	6.2	6.2	Pyrite at 199.0	8.5	7.53	2.60	appears relatively clean
T-6	1150.3	1156.7	6.4	6.4	Diss. PY noted				silty for 0.05' @ 1154.7, black, shiny.
T-7	90.1	99.3	9.2	2.5	Trace PY				clean, black, shiny
T-8	1624,7	1631.2	6.5	6.5	Diss. PY noted				bright, black, shiny
T-9	89.0	95.8	6.8	5.8					fairly clean
T-10	1399.0	1404.8	5.8	5.8	PY nodules in upper 2.0' common				black, clean, shiny, bright.
T-14	927.7	932.5	4.8	4.8	Trace PY				bright, black, shiny appears clean.
T-15	236.5	241.8	5.3	5.3	PY nodules				clean, deep brown
	246.3	250.3	4.0	4.0					fairly clean, dk. brown, fairly bright.
	253.7	263.4	9.7	9.7	PY nodules				dull black.

Fort St. John Group - Commotion Formation

Lower Gates Member

The coal seams in the Gates Member of the Commotion Formation have been assigned identity numbers for correlation and reference purposes.

Only one correlatable coal seam was intersected by diamond drilling in the Lower Gates Member of the Commotion Formation. The seam, designated LG1, occupies a horizon in the Lower Gates sediments that is between 120 feet and 130 feet below the upper contact.

L.G 1. 4.5'

Diamond drilling indicated a maximum seam thickness of 7.2 feet in hole T-10 and a minimum thickness of 2.5 feet in T-3. In D.D.H. T-11 the seam is 4.8 feet wide but is split by a 0.5 foot shale parting. The average thickness of the seam calculated over five intersections is 4.5 feet.

A second coal seam, LG2, which is believed to be a remnant preserved from contemporaneous erosion, was only intersected in drill hole T-11. The stratigraphic horizon at which this seam is situated is in all other locations tested, occupied by coarse conglomeritic sandstones. Considering the active environment in which the Lower Gates sediments were laid down the dissipation of the seam is not surprising.

L.G.2 8.7'
One intersection only.

The LG2 coal seam was one of the better ones intersected in the Gates Members having an ash content of 12.13 per cent, an F.S.I. of 6.0 and a width of 8.7 feet.

Upper Gates Member

A total of eight correlatable coal seams were intersected by

diamond drilling in the Upper Gates Member of the Commotion Formation. They are numbered UG1 - UG8 inclusive. In addition to the aforementioned, two seams intersected in diamond drill hole T-3 and two in hole T-8 could not be assigned identity numbers since they did not appear at similar horizons in any of the other drill holes. However, this is not surprising since their average thickness is less than 0.3 feet.

The base of coal seam UG1 marks the contact between the Upper Gates and Lower Gates Members of the Commotion Formation. It is commonly very thin with an indicated thickness between 0.1 and 1.1 feet. It characteristically overlies the uppermost conglomerate unit of the Lower Gates Member.

Coal seams UG2 - UG5 inclusive are located in the bottom third of the Upper Gates Member with the No. 5 seam never being more than 140 feet above its base. The coal seams vary between 0.6 feet and 9.0 feet in thickness with an average of some 3.4 feet. Only one of these seams, UG2, has a thickness in excess of 4.0 feet in more than one intersection. However, it is a dirty seam and it is not thick enough to be considered of any importance.

UG2 4.0' dirty

Coal seams UG6 - UG8 inclusive lie within 50 feet of the top of the Upper Gates Member. Their maximum thickness in the drilled sections does not exceed 2.8 feet.

Geological mapping of the Block B property revealed at least one surface exposure of each coal seam in the Upper Gates Member. The location of these outcrops is clearly marked on the Geological Plan, Map A103.

It should be noted that the basic description of the coal seams in the Upper Gates Member is based on the findings of relatively few but widely spaced drill holes.

Upper and Lower Gates Members

The coal seams in the Gates Members of the Commotion Formation on the Block B property are considered to be of limited potential owing to their highly variable thicknesses and grade. Nevertheless, the results are sufficiently encouraging to recommend that the possible coal resources of the Commotion Formation of the remaining properties be investigated before any thought is given to releasing ground.

The position of the various coal seams in the Gates Members is illustrated in the Reconstructed Fence Diagram of the Fort St. John and Bullhead Group, Map A104A.

SELECTED GATES SEAMS

D.D.H. No.	Seam Identity	From	To	Width	Recovery	Analyses			Comments
						FSI	% Ash	% S	
T-3	UG4	338.7	347.7	9.0	9.0				bright, shiny, dirty. ash est. 30%
	UG2	385.2	390.3	5.1	5.1				bright, shiny sections. 20% ash.
T-6	LG1	202.7	206.6	3.9	3.9				clean, bright, shiny.
T-8	UG5	476.6	479.8	3.2	3.2				dull. 20% ash. dirty.
	UG4	511.2	514.4	3.2	3.2				20% ash
	LG1	732.0	736.0	4.0	4.0				bright, shiny, clean.
T-10	UG4	303.0	307.0	4.0	4.0				dull, dirty.
	UG2	348.8	354.5	5.7	5.7				dirty. 15% ash.
	LG1	528.0	535.2	7.1	7.1				bright, shiny, clean.
T-11	UG2	58.0	67.0	9.0	2.6				bright, shiny, black, clean
	LG1	250.0	255.3	4.8	4.8				one 0.5' shale section, rest is clean.
	LG2	210.1	218.8	8.7	8.7	6.0	12.13	0.35	clean, bright, black, shiny.

SUMMARY OF
DRILL INTERSECTED
COAL SEAMS

Diamond Drill Hole No.	Seam Identification Symbol	Depth from Collar to Bottom of Interval Described	Width of Seam
T-1	BD	864.5	4.5
Fault repeat	BD	876.5	7.3
	SK	965.5	3.5
	CH	995.6	13.0 — 28.3
T-2	BD	Surface	6.0 ?
	SK	113.6	3.6
	CH	154.5	2.5 — 12.1
T-3	UG8	65.8	1.2
	UG7	81.5	0.5
	UG6	101.5	2.8
	UG5	318.0	1.0
	UG4	347.7	9.0
	UG3	351.0	1.8
	UG2	390.3	5.1
	UG1	427.0	0.4
	LG1	558.5	2.5
	BD	1452.2	7.8
	SK	1550.4	3.2
	CH	1556.0	0.6
		1566.4	0.2
		1570.8	3.3
		1577.0	4.5
		1583.6	5.0 — 48.9
T-4	UBD	204.8	7.2
	LBD	205.8	0.4
	UNID	287.5	0.1
	UNID	289.6	0.2
	SK	297.3	4.0
	CH	339.3	4.5
		349.0	9.6 — < 26.

Diamond Drill Hole No.	Seam Identification Symbol	Depth from Collar to Bottom of Interval Described	Width of Seam
T-5	UBD	402.7	1.6
	LBD	407.0	3.0
	USK	487.0	2.7
	MSK	489.3	1.3
	LSK	491.9	0.5
	CH	513.3	2.7
			11.8
T-6	UG1	81.1	1.1
	LG1	206.6	3.9
	BD	1156.7	6.4
	USK	1224.4	3.4
	LSK	1238.3	5.9
	CH	1289.0	4.2
			24.9
T-7	BD	99.3	8.3
	USK	169.0	4.2
	MSK	181.3	2.1
		185.2	2.1
	LSK	197.8	1.8
	MS	221.0	2.8
	CH	302.9	3.7
			25
T-8	UG8	247.0	2.7
	UG7	262.7	2.7
	UG6	276.0	2.3
	UNID	279.5	0.5
	UNID	282.5	0.2
	UG5	479.8	3.2
	UG4	514.4	3.2
	UG3	516.7	0.6
	UG2	531.9	1.9
	UG1	609.1	0.5
	LG1	736.0	4.0
	BD	1631.2	6.5
	SK	1700.0	1.0
	CH	1767.0	3.0
		1774.0	1.7
			34
T-9	UBD	95.8	6.8
	LBD	97.7	0.8
	USK	169.0	0.8
	MSK	172.8	1.8

Diamond Drill Hole No.	Seam Identification Symbol	Depth from Collar to Bottom of Interval Described	Width of Seam
T-9 (cont.)	LSK	174.6	1.6
	CH	206.3	3.2 / 15
T-10	UG5	249.0	1.3
	UNID	299.2	0.3
	UNID	301.9	0.7
	UG4	307.0	4.0
	UG3	310.9	1.0
	UG2	354.5	5.7
	UG1	396.2	0.2
	LG1	535.2	7.2
	BD	1404.8	5.8
	MS	1567.0	2.2
	CH	1588.9	1.3 / 29.7
T-11	UG2	67.0	9.0
	UG1	132.0	0.1
	LG2	218.8	8.7
	LG1	252.4	1.9
	LG1	255.3	2.4
	BD	1069.2	2.5
	USK	1137.0	4.0
	MSK	1154.2	0.4
	LSK	1157.2	2.6
	CH	1204.1	0.5 / 32.1
T-12	USK	1155.7	1.2
	LSK	1173.4	2.9
	MS	1255.5	1.1 / 5.2
T-13	LBD	755.0	4.0
	USK	787.7	1.4
	MSK	798.1	0.3
	LSK	802.9	4.5
	MS	837.4	0.3
		842.5	2.9
		845.7	1.5
	UNID	851.9	0.3
	CH	912.2	2.0 / 17.2

Diamond Drill Hole No.	Seam Identification Symbol	Depth from Collar to Bottom of Interval Described	Width of Seam
T-14	UBD	901.7	1.8
	MBD	909.0	3.5
	UNID	924.2	0.7
	LBD	932.5	4.8
	USK	980.8	0.9
	MSK	985.2	1.4
	LSK	995.2	4.4
	MS	1030.5	2.2
	UNID	1088.3	0.8
	CH	1099.0	1.1
			21.6.
T-15	UBD	241.8	5.3
	MBD	250.3	4.0
	LBD	263.4	9.7
	USK	359.8	3.8
	LSK	370.3	4.6
	CH	510.5	0.6
			28.

SYMBOL CODE

SEAMS	SYMBOLS
UPPER GATES SEAMS 1 - 8 INCL.	UG1 - UG8 incl.
LOWER GATES SEAMS 1 & 2	LG1 & LG2
GETHING SEAMS	
BIRD SEAM	BD
UPPER	UBD
MIDDLE	MBD
LOWER	LBD
SKEETER SEAM	SK
UPPER	USK
MIDDLE	MSK
LOWER	LSK
MID SEAMS	MS
CHAMBERLAIN SEAM	CH
UNIDENTIFIED	UNID

NOTES:

1. Reference should be made to the diamond drill logs for detailed descriptions of the coal seams.

2. When lost core is involved and the portion recovered for the interval is a mixture of coal and shale, only the recovered coal is included in the width of the seam column. If no shale is mixed in with the coal the entire interval is used to calculate the width of the seam.

COAL RESERVES

Estimates of the indicated coal reserves for the Chamberlain and Bird Seams on the Sukunka Block B property are based on widely spaced drill holes (4,000') and a basic knowledge of the character of the seams to the north.

The areal extent of the Bird seam in the calculated reserves covers most of the property while that for the Chamberlain is restricted to the northern section.

The area used in the calculation for the Chamberlain seam reserves was further divided into three separate units owing to drastic changes in seam thickness and quality.

The tonnages quoted refer to total long tons in place, not mineable coal.

Based on a S.G. of 1.32 the tonnage factor used in the calculations is 27 cubic feet per long ton.

Seam	Location	Area	Area x 10^6 in sq. ft.	Average seam thickness	Total no. of tons in place x 10^6	
Chamberlain	Northern section Block B	A	30.0	13.0	14.4	
		B	34.0	8.0	10.1	
		C	24.0	6.0	6.2	
				TOTAL	30.7	34.4 s.tons
Bird	Major section Block B		15.2	6.2	34.9	39.0 M s tons
						73.4

For location of areas used in coal reserve calculations see map M107.

DRILLING

A contract to carry out 15,000 feet of NQ diamond drilling on the Sukunka Blocks B and E properties was let to Connors Drilling Limited of Vancouver, B.C., on July 14, 1971.

The first drill (No. 1), a Longyear 44, arrived at the property on August 5th and drilling began on August 10th. A second drill (No. 2), a Longyear 38, was operational by August 21st.

At the termination of the programme on October 25, 1971, a total of 14,657 feet of drilling had been completed in 15 holes. The first 12 drill holes, Nos. T-1 to T-12 inclusive, were drilled in Block B and the remainder, T-13 to T-15 inclusive, in Block E.

The No. 1 drill averaged 117 feet per day (moves included) throughout the programme, while the No. 2 drill averaged only 86 feet. The poorer performance record of the second drill was not due to inferior equipment but to less proficient personnel. With the aid of several crew changes, its daily advance of 77 feet per day in early September was increased to 105 feet per day for the last 25 days of the programme.

Drilling on the property proved to be routine with the exception of drill holes T-8 and T-10 which encountered artesian conditions at depth. Both holes are located just east of the axis of a large synclinal basin. The water flowing from DDH T-8 at times was estimated to be in excess of 100 gallons per minute. Over 115 bags of cement were required to retard the flow of water to an acceptable level so that drilling could be continued.

Diamond drill core was placed in wooden core boxes and stored either at the site at which it was drilled or at camp sites No. 1 or No. 2. The location of the core from each hole is marked on map No. M106.

A representative suite of core samples was also collected from each diamond drill hole for geological analysis and is presently in storage in Vancouver.

The total direct cost* of the drilling programme was $125,430.00 for an average of $8.55 per foot.

Drill Data

Hole No.	Site No.	Date Commenced	Date Completed	Total Depth of Hole	Drill No.
T-1	A-1	Aug. 10	Aug. 17	1,147	1
T-2	A-4	Aug. 21	Aug. 22	195	2
T-3	B-2	Aug. 20	Aug. 30	1,605	1
T-4	A-2	Aug. 24	Aug. 28	357	2
T-5	A-3	Aug. 30	Sept. 4	535	2
T-6	B-3	Sept. 1	Sept. 7	1,327	1
T-7	C-5	Sept. 6	Sept. 8	317	2
T-8	C-2	Sept. 9	Oct. 1	1,977	1
T-9	B-4	Sept. 10	Sept. 12	288	2
T-10	C-3	Sept. 14	Oct. 3	1,648	2
T-11	C-4	Oct. 4	Oct. 9	1,247	1
T-12	D-4	Oct. 6	Oct. 17	1,327	2
T-13	E-4	Oct. 13	Oct. 18	957	1
T-14	D1-5	Oct. 19	Oct. 25	1,147	2
T-15	D-5	Oct. 21	Oct. 24	583	1

Core Recovery

Core recovery for all rock units, coal excepted, was almost always 100 percent. In coaly or coal bearing sections, recovery varied between 10 and 100 per cent with the average recovery

*Paid to the contractor.

estimated to be in the order of 80 per cent. The rock type assigned to an interval in which recovery was less than 100 per cent was usually based on the character of that portion of core which was recovered. In most cases lost core was assumed to be coal since the coal is soft, often crumbly, and is easily ground.

Borehole logging techniques would definitely be an aid in analysing the coal sections. However, this procedure was not carried out as an integral part of the exploration programme and in retrospect, considering the results, was not essential. However, in one hole in particular (T-8) additional data on the Chamberlain seam intersection could provide useful information to aid in the calculation of coal reserve estimates. Drill casing has been left in all of the deep holes on the property and should in-situ analyses of the coal seams in these holes be desired, they can be conducted at a later date. Since the coal bearing sections below the Moosebar-Gething contact were cemented before the holes were abandoned, they would have to be drilled out before logging could be conducted.

Diamond Drill Hole No.	Lost Core Total in Feet	Total Depth of Hole
T-1	0.8	1,147
T-2	10.3	195
T-3	3.4	1,605
T-4	nil	357
T-5	2.2	535
T-6	2.3	1,327
T-7	12.1	317
T-8	10.5	1,977
T-9	1.6	288
T-10	9.8	1,648
T-11	6.4	1,247
T-12	7.0	1,327
T-13	nil	957
T-14	2.8	1,147
T-15	1.8	583

Tropari Tests

D.D.H. No.	Footage	Degress to Core Axis	Bearing
T-1	500'	85°	N 27° E
	1000'	79°	N 39° E
T-2	-	-	-
T-3	500'	88°	N 27° E
	1000'	81°	N 12° W
	1500'	84°	N 6°30' W
T-4	-	-	-
T-5	-	-	-
T-6	600'	DID NOT LOCK	
	1300'	83°	N 10° W
T-7	-	-	-
T-8	500'	85°	S 76° W
	1000'	84°	N 10° E
	1500'	90°	-
	1940'	85°	N 36° E
T-9	-	-	-
T-10	500'	89°	N 17°30' E
	1000'	84°	N 3° W
	1500'	87°	S 79° W
T-11	500'	88°	N 57°30' E
	1000'	85°	N 27° E
	1240'	82°	N 30° E
T-12	600'	89°	S 8° W
	1200'	82°	N 30° E
T-13	500'	90°	-
	950'	88°	S 46° W
T-14	1000'	87°	N 55°30' E
T-15	-	-	-

Surveying

Diamond drill holes T-1 to T-5 inclusive were surveyed in by Underhill and Underhill of Vancouver, B.C. No other drill sites were surveyed since additional triangulation points had to be established and the added costs were not justifiable at the time.

SAMPLING

The first sampling conducted on the property was carried out in a trench that was dug by hand to expose one of the coal outcrops located during the early course of geological mapping. The coal seam sampled, which was identified as the Skeeter, was more fully exposed through stripping at a later date.

The Chamberlain, Skeeter and Bird seams of the Gething Formation that appeared to be of high quality and acceptable thickness were sampled in DDH's T-1 to T-4 inclusive.

The only other intersection sampled was an 8.7 foot thick seam (LG2) located in DDH T-11 in the Lower Gates Member of the Commotion Formation.

All coal analyses were conducted by Commercial Testing and Engineering Co. of North Vancouver, B.C.

FOR SAMPLED ANALYSIS — page 52

REFER TO : PR - BULLMOOSE 7104D
CONFIDENTIAL ANALYSIS FILE

STRIPPING

A one-half mile interval was stripped along the southeast face of Block 'B' to expose coal outcrops that were located during the course of geological mapping (for location see Geological Plan). In some locations up to 53 feet of section was laid bare with the minimum exposure being between 10 and 15 feet.

The area was a difficult one in which to work owing to the attitude of the terrain which in many places dipped between 75 and 90 degrees. Sandstone blocks weighing up to 20 tons often spalled off at the working face as the Cats were stripping creating hazardous conditions. Blasting sometimes had to be carried out to move some of the larger talus blocks.

The lithology of a measured section, through the stripped area is described under "Geology" in this report.

A total of 448.5 Cat hours was required to carry out the stripping at a cost of $12,400.00.

CAT WORK

During the course of the exploration programme a total of 2,152 cat hours were spent on the property at a cost of $61,296.00. Forty per cent of the cat hours were devoted to construction, 20 per cent each on maintenance-repair and stripping, 16 per cent on hauling and the remainder on snow ploughing and standby.

A total of 18.9 miles of new road, 15 drill sites and two camp sites were constructed during the programme.

Owing to poor weather conditions throughout most of the exploration period the amount of cat time required for the project was exceptionally high.

The heavy precipitation received in the form of rain and snow in late September and early October caused numerous floods and washouts and 3 cats had to be kept operational, at times on a 24 hour basis, to allow exploration to continue.

A breakdown of the cat work is listed in the following table.

Construction	Maintenance-Repair	Stripping	Hauling	Snow Ploughing	Standby
Roads, drill sites, camp sites.	Roads, bridges, drainage.	Coal seams	Fuels, trailers, drills, trucks		
July-August					
270.5 hrs.	190.5 hrs.	448.5 hrs.	150.5 hrs.	-	-
September					
205.0 hrs.	108.0 hrs.	-	13.0 hrs.	31.0 hrs.	-
October					
355.0 hrs.	168.0 hrs.	-	183.5 hrs.	11.5 hrs.	17.0 hrs.

Contractor: Peter and Paul Demeulemeester Ltd., Chetwynd, B.C.

CAMP

Up until the beginning of August, the camp consisted of one 14' x 16' tent with wooden frame and floor. In order to facilitate the crews for the drilling programme, the camp was expanded to include the following:

1 - 10 x 52 kitchen-diner-storeroom trailer
1 - 10 x 36 washroom-office trailer
2 - 10 x 52 8-man sleeper trailers.

The trailers were leased (with option to purchase) from Crown Catering Limited of Edmonton, Alberta. The rental rate was $75.00 per day with no minimum rental period. Seventy per cent of all rent paid was applicable at any time to the purchase price.

All four trailers were propane fired and were served by two 500 gallon propane tanks. Power for the camp was provided by a rented 11 KVA Lister generator. A 1,000 gallon septic tank was installed at each campsite to comply with sewage disposal regulations.

The trailers, which were in storage in Grande Prairie, were trucked to the Brameda Base Camp in the Sukunka Valley, and from there they were moved some 11 miles by Cat to Teck's No. 1 Base Camp site.

The No. 1 site is located in the north central sector of the Sukunka Block 'B' property at an elevation of 5,550 feet.

On October 8 the camp was moved by cat to the No. 2 Base Camp site which is situated on the northern border of the Sukunka Block 'E' property. The No. 2 site lies in the valley of Bullmoose Creek at an elevation of 3,580 feet. The camp move took less than 14 hours to complete and no drilling time was lost.

The trailers were returned to Grande Prairie on October 28 at the completion of the drill programme.

CATERING

Catering services were introduced at the beginning of the drill programme and were provided by Arctic Services Limited of Vancouver, B.C. The catering firm supplied bedding and meals

at a cost of $7.60 per man day with a 10 man minimum. Casual meals and lodgings were charged out at a rate of $2.50 each.

TRANSPORTATION

Two Hodaka motorcycles were the sole means of transportation on the property until the 6th of August when a truck was rented for a one week period to help move men and supplies for the commencement of the drill programme. A Teck Land Rover, on loan from the Beaverdell Mine, was then used as a supply vehicle until early September when it was replaced by a 4 WD GMC Wagon on rental from Redhawk of Vancouver, B.C.

Poor road conditions necessitated pressing a second truck into service in the last week of September in order to keep at least one vehicle operational for the duration of the exploration programme.

FORESTRY

In accordance with Section 118 of the Forest Act, all trees that were toppled during the course of road construction were de-limbed and bucked into 5 foot lengths. Three slashers were employed for the task which was completed in 5 days. In addition to the slashing of felled timber a bridge had to be constructed across Bullmoose Creek to prevent silting by supply vehicles.

A one mile stretch of road constructed to by-pass a flooded section along the existing Bullmoose Creek-Chetwynd road, is located in a Canfor tree reserve. Teck has been instructed by the Department of Forestry to drag all merchantable timber knocked down during the construction of the road to one of the Canfor loading sites. Arrangements were made with Lionel Johnson,

a local contractor working in the area, to harvest the timber. However, to this date we have not received any word that the work has been completed.

PERSONNEL

	June-July	August	September	October
Supervisor-Geologist	1	1	1	1
Geologist			1	1
Geological Assistant	1	1		
Field Assistant		1	0 - 1	
Camp Labourers		1	0 - 1	0 - 1
Drill Foreman		1	1	1
Drillers		8	8	8
Cook		1	1	1
Cat Operators	2 - 4	1 - 2	1 - 3	1 - 3
Slashers				0 - 3
TOTAL	4 - 6	15 - 16	13 - 17	13 - 19

APPENDIX A

GEOLOG

"Geolog" was first introduced in 1970 by Messrs. C. I. Godwin and P. H. Blanchet as a means of systematizing logging practices on porphyry copper deposits so that meaningful information could be deduced from the interrelationships of mineral, rock and alteration assemblages either manually or with the aid of computer programming.

In standard logging techniques a great deal of geological information is usually unformatted and unquantified making interpretation and correlation difficult for the geologist who logged the core and virtually impossible for the unfamiliar. Should a new geologist be assigned to a drilling project subsequent to its inception or should computer storage of data or programming be desired, re-logging would be essential.

"Geolog" permits a systematic and thorough approach to the logging of core and allows geologists both familiar and unfamiliar with a project to interpret the information presented utilizing either manual or computer methods.

The "Coal Environment Version" of "Geolog" was designed by Messrs. R. E. Hindson, C. I. Godwin and P. H. Blanchet in 1971 for use on Teck Corporation Limited's Bullmoose Project. The diamond drill logs, recorded and presented as such, are set up for computer programming. Programmes can be designed to trace isopac maps of bed and coal seam thicknesses; search horizons for diagnostic features, faults, structures and print out roof and floor conditions, seam thicknesses etc.

"Geolog" is not recommended for programmes that are of a limited nature.

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY | PROPERTY | LOGGED BY | DATE | PAGE OF

Column group	Fields	Card columns
PRIMARY		1
CONTROL		2–3
DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	4–7, 8
RECOVERY	UNITS; TENTHS	9–11, 12
ROCK 1 CHARACTERISTICS	ROCK % OF INTERVAL	13
	TYPE MODIFIER	14
	ROCK NAME	15–18
	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME; AMT.	19–20, 21
	MINOR QUALIFYING MINERAL OR MATERIAL: NAME; AMT.	22–23, 24
	BEDDING MODE THICKNESS	25
	DEGREE OF SORTING	26
	GRAIN SIZE	27
	SPHERICITY	28
	ROUNDNESS	29
	TEXTURE: MAJOR ——→ MINOR	30–33
	COLOUR: MUNSELL SYSTEM	34–37
ROCK 2 INTERBEDS	ROCK % OF INTERVAL	38
	TYPE MODIFIER	39
	ROCK NAME	40–43
	QUALIFYING MINERAL OR MATERIAL: NAME; AMT.	44–45, 46
STRUCTURE WITHIN INTERVAL	REPEATED SEQUENCES	47
	FRACTURING: TOTAL INTENSITY	48
	FRACTURING: RELATIVE INTENSITY (GP 1, GP 2, GP 3); ANGLE TO CORE AXIS (< 30°, 30°–60°, > 60°)	49–51
	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	52
	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH; PLUNGE OR DIP ANGLE. FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS (TYPE, PLUNGE); ANGLE TO CORE AXIS	53–57
	FOLD OR FAULT INTENSITY	58
	DIRECTION OF TOPS OR OF YOUNGING	59–61
LITHOLOGIC UNITS	GP GROUP	62–63
	FM FORMATION	64–65
	MM MEMBER	66–67
	SM SUBMEMBER OR SEAM	68–69
ACCESSORY MINERALS OR MINERALIZATION	NAME; %; MODE	70–71, 72, 73
	NAME; %; MODE	74–75, 76, 77
UNRELIABILITY FACTOR		78
FORMAT CONTROL	FOR COMMENT CARD NO. OF LAST COLUMN USED	79–80

Card	1–3	4–8	9–12	13–18	19–24	25–29	30–37	38–46	47–51	52–61	62–69	70–77
	TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT	COMMENT	LEG LENGTH	AZ./BEARING	+VERT. ANGLE	SYST; N/S NORTHING	E/W EASTING	SYST; ELEVATION
A N L		DISTANCE	SUB I.D.	IDENTITY	INTERVAL	F.S.I.	% MOISTURE	% ASH; % VOLATILES		% FIXED CARBON		
S C L												

Row
1
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38

Columns 1 - 3 — Primary Control

Principal Zones, Contacts, Faults etc.

3 - letter code :

CPT	control point
CNT	contact
OVB	overburden
CCC	comment
NNN	notes
FLT	fault
DYK	dyke
VEN	vein
END	end of hole or traverse
SPT	survey point or station point
ANL	analyses

Dykes, veins, faults, or contacts may be labelled for correlation.

F/1, F/2 ----------F10, F11
D/1, D/2 ----------D10, D11
V/1, V/2 ----------V10, V11
C/1, C/2 ----------C10, C11

For repetition use wavey (~~~) line

Columns 4 - 8 — Depth to bottom of inverval described

Column 4 is for thousands digit
" 5 " " hundreds "
" 6 " " ten's "
" 7 " " units "
" 8 " " tenths "

No decimal point is required between column 7 & 8

Columns 9 - 12 — Recovery in Feet or core lost

Column 9 is for hundreds digit
" 10 " " ten's "
" 11 " " units "
" 12 " " tenths "

Column 13 — Rock 1 Fraction

If fraction = blank = 100% then the programme expects only one description of this interval.

If fraction = <10% then programme expects one or more additional descriptions.

R Scale : Scale of Relative Abundance

Symbol Either	Symbol Or	Value for averaging	Meaning and Equivalent Meanings	
9	X	93	93% ± 7	Extremely well to completely --ed; extremely high degree.
8	>	80	80 ± 5	Very high, greater than high.
7	H	70	70 ± 5	High degree.
6	A	60	60 ± 5	Above medium.
5	M	50	50 ± 5	Medium, moderate, mid, central.
4	B	40	40 ± 5	Below medium.
3	L	30	30 ± 5	Low degree.
2	<	20	20 ± 5	Very low, less than low.
1	E	8	8 ± 7	Extremely low.
0	N	0	0	Nil, absent
T	T	.1		Trace
Ø	Ø	.5		Observed, but no estimate possible
blank				No comment.

Notes: The alternative symbols, numeric or alphabetic, may be used interchangeably. They may be used discriminantly to distinguish between mutually exclusive factors. Alternating side-by-side column descriptions with numbers and letters would aid readability.

Column 14 — Rock Type Modifier

The type modifier is used to distinguish between one comglomerate and another, i.e. conglomerate bed A, B etc. If modifiers for all rock types unique, single letter rock type printouts define all rock units.

Column 15 - 18	Rock Name or Type
4 letter code*	
AGLM	agglomerate
ANTH	anthracite
ARGL	argillite
ARKS	arkose
BITM	bituminous coal
BONE	bone coal
BENT	bentonite
BRXX	breccia (general)
CYSH	clayshale
CYSN	claystone
COAL	coal
CGXX	conglomerate (general)
COQN	coquina
CASI	calc-silicate rock
CHER	chert
DIAT	diatomite
DOLM	dolomite
EVAP	evaporite
GREY	greywacke
HORN	hornfels
IRSN	ironstone
IGNM	ignimbrite
JASP	jasper
JSPD	jasperoid
LISN	limestone
LIGN	lignite
MRSN	marlstone
MARB	marble
MDSN	mudstone
MYLN	mylonite
PEAT	peat
PHOS	phosphorite
QUAR	quartzite
SASN	sandstone
SHAL	shale
SLSN	siltstone

LOST = Lost Core

SLAT	slate
SUBT	subituminous

*4 letter code - first 4 letters of a rock name is the preferred code, with the fourth letter, if a vowel, being replaced with the next consonant. One letter of a double consonant group, occurring with the first 4 letters is usually excluded. Agglomerate becomes AGLM.

Note: SN = stone.

Column 19 & 20 — Major Qualifying mineral(s) or material(s)

For qualifying minerals or materials see two letter code.

Basis for Qualification of Material

Chiefly Quartz	Adjective
> 90% QUARTZ	QUARTZ OR QUARTZOSE
> 25% FELDSPAR	ARKOSE
10 - 25% FELDSPAR	FELDSPATHIC
> 10% ROCK CHIPS	LITHIC
QUARTZ-FELDSPAR ROCK CHIPS - PELITIC MATRIX - ANGULAR GRAINS TUFF	GREYWACKE

< 10% MINOR FRACTION	Adjective
CLAY MINERALS OR CLAY SIZE MATERIALS	ARGILLACEOUS
QUARTZ : CRYSTALLINE OR OPALINE	SILICEOUS
CHALCEDIC QUARTZ	CHERTY ORTHOQUARTZITE
CALCITE, predominant	CALCITIC
CALCITE & DOLOMITE	CALCAREOUS
DOLOMITE, predominant	DOLOMITIC
IRON MINERALS	LIMONITIC HEMATITIC SIDERITIC
CARBON, sedimentary	CARBONACEOUS
CARBON (HYDRO), sedimentary	BITUMINOUS
CARBON, hydrothermal	GRAPHITIC
PHOSPHATE (COLLOPHANE)	PHOSPHATIC

TABLE OF QUALIFYING MATERIALS

TWO LETTER CODE

Argillaceous (pelitic)	A1
Arkosic	A2
Bentonitic	B1
Bituminous	B2
Calcareous	C1
Carbonaceous	C2
Cherty	C3
Clayey	C4
Cobbly	C5
Coaly or Coal rash	C6
Concretionary	C7
Calcitic	C8
Dolomitic	D1
Evaporitic	E1
Feldspathic	F1
Ferruginous	F2
Fossiliferous (calcareous)	F3
Graphitic	G1
Gritty	G2
Gypsiferous	G3
Hematitic, general	H1
Hematitic, earthy	H2
Hematitic, metallic	H3
Kaolinitic	K1
Limey	L1
Limonitic	L2
Lithic	L3
Listric surfaces	L4
Muddy	M1
Micaceous	M2
Oolitic	Ø1
Opalized	Ø2
Orthoquartzitic	Ø3
Pebbly	P1
Phosphatic	P2
Pyritic	P3
Parting	P4
Quartzitic-quartzose	Q1
Silty	S1
Sandy	S2
Sideritic	S3
Siliceous, silicified	S4
Sparry	S5

Column 21 Amount

Scale R (page 2)

Column 22 - 23 Minor Qualifying Mineral(s) or Material(s)

Two letter code (page 5)

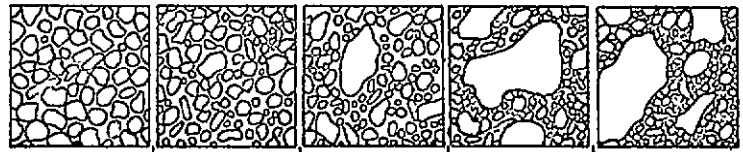
Column 24 Amount

Scale R (page 2)

Column 25 Bedding Mode Thickness

	Range		Symbol	Assigned Value
Laminated or varved	1	cm.(.4")	K	.3
Thin bedded	1-10	cm.(4")	Q	3
Med. bedded	10-100	cm.(40")	W	30
Thick bedded	100-1,000	cm.(3.3')	<	300
Massive bedded	1000-10,000	cm.(33')	#	3,000
Massive	10,000	cm.(33')	>	15,000

Column 26 Degree of Sorting (Diagram)



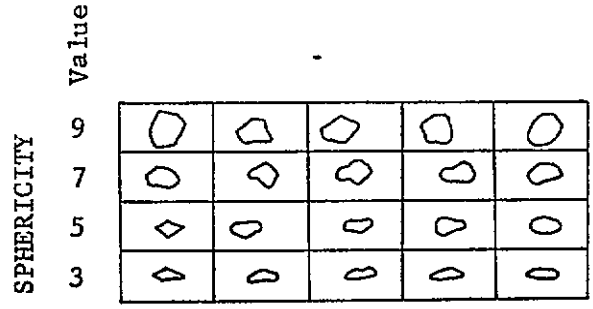
ASSIGNED VALUE 8 7 5 3 2

Column 27 Mode Grain Size

See Grain Size Chart Table I

I Inequigranular
II Equigranular

Columns 28 & 29 Degree of Sphericity and Roundness



Columns 30 to 33 Sedimentary Textures

major	minor		
A	animal tracks	Y	slaty
§	animal borings	S	stylolytes
B	bioclastic	U	uniform
⌋	blocky	X	other (describe in comments)
⌊	casts, crystal		
E	casts, flute		
G	casts, groove		
L	casts, load		
M	casts, mud		
T	clay galls		
N	coal partings and/or whisps		
C	concretions		
Z	cross-bedding		
/	fissile		
F	fossiliferous (carbonaceous)		
:	graded bedding		
;	heterogeneous		
✲	mud cracks		
Ø	oolitic, pisolitic		
P	penecontemporaneous slumps		
•	pelletoidal		
H	phyllitic		
7	rain prints		
D	reworked highly		
J	reworked moderately		
K	reworked slightly		
R	ripple marks, general		
W	ripple marks, symmetrical		
#	ripper marks, assymetrical		

Columns 34 - 37 Colour Code

Munsell Colour Chart

Columns 38 - 46

Same as Columns 13 to 21 only Rock 2 Interbeds

Column 47 Repeated Sequences

C	Cyclic
R	Rhythmic
X	Complex

Column 48 Fracturing - Total Intensity

Scale R (page 2)

Columns 49 - 51 Fracturing - Angle to Core Axis

In Groups GP1 (<30)
GP2 (30 - 60) SCALE R (Page 2)
GP3 (>60)

Columns 52 - 58 Description of Fold Axes, Bedding Attitudes, Dike Contacts, Fault Attitudes, Unconformities

52 : Identification

B	bedding attitude
K	dike contact
F	fault
G	plunge of fold axis
U	unconformity, general
N	nonconformity
A	angular unconformity
D	disconformity
P	paraconformity

53 : Fault type or fold style

Faults:

N	normal
V	reverse
L	left hand, horizontal
R	right hand, horizontal

Folds (small scale):

Ø observed, general
W symmetrical
assymetrical

54 - 55 : Plunge of slickensides or fold axis

56 - 57 : Angle to core axis of identification (column 52)

58 : Fold or fault intensity

Scale R (page 2)

Columns 59 - 61 Direction of Tops or Younging

Tops up = blank UP

Tops down = DWN

Asim. of younging direction = 0 - 360

Columns 62 & 63 Lithilogic Units

Group
FT = Ft. St. John
BL = Bullhead

Formation 64 & 65

HS = Hasler
CM = Commotion
MS = Moosebar
GT = Gething
CD = Cadomin

Member 66 & 67

BC = Boulder Creek
HL = Hulcross
GU = Upper Gates
GL = Lower Gates
SK = Sukunka

Sub-Member or Seam 68 & 69

Upper Gates Seams
1 - 8 Incl. UG 1 - UG 8 Incl. = U1 - U8 incl.

Lower Gates Seams 1 & 2	LG 1 & LG 2	= L1 & L2
Bird Seam	BD	
Upper	UBD	= UB
Middle	MBD	= MB
Lower	LBD	= LB
Skeeter Seam	SK	
Upper	USK	= US
Middle	MSK	= MK
Lower	LSK	= LS
Mid Seams	MS	
Chamberlain Seam	CH	

Columns 70 - 77 Accessory Minerals or Mineralization

Columns 70 - 71 Name of Accessory Min. or Mineralization

See 2 letter mineral code Table II

Column 72 Per cent

Scale R (page 2)

Column 73 Mode of Occurrence

See Table III

Columns 74 - 77 Same as 70 - 73

Column 78 Unreliability Factor

Scale R

Columns 79 & 80 Format Control

TABLE I

GRAIN SIZE CHARTS

1. INEQUIGRANULAR

COARSE FRACTION \ FINE FRACTION	CLAY 1/256	SILT 1/256 - 1/16	SAND 1/16 - 2	GRANULE 2 - 4	PEBBLE 4 - 64
4 - 64	U	V	W	X	Y
2 - 4	T	S	R	Q	P
1/16 - 2	K	L	M	N	Ø
1/16 - 1/256	J	I	H	G	F
1/256	A	B	C	D	E

2. EQUIGRANULAR

Nomenclature	clay	silt	sand: v. fine	sand: fine	sand: med.	sand: crs.	sand: v. crs.	granule	pebble: small	pebble: large	cobble	boulders
Grain Size mm.	1/256	1/16		1/4		1	2	4	16		64	256 mm.
Symbolic Code	0	1	2		3		4	5	6	7	8	9

TABLE II

TWO-LETTER MINERAL CODE

The first two letters of the mineral name is its preferred code. Note particularly the two-mineral combinations.

AC	actinolite
AD	adularia
AL	alunite
AB	albite
AA	andalusite
AG	anglesite (68% Pb)
AH	anhydrite
AK	ankerite
AN	anorthite
AP	apatite
AR	aragonite
AS	arsenopyrite (45% As)
AØ	asbestos
AU	augite
AZ	azurite (58% Cu) See also MX = malachite/azurite combination
BA	barite
BE	beryl
BI	biotite
BX	biotite/hornblende
	mineral combination
BX	proportions unspecified
BI	biotite alone
B>	biotite > hornblende
B#	" = "
B<	" < "
HØ	hornblende alone
BS	bismuthanite (70% Bi)
BØ	bornite (63% Cu)
BR	brochantite (56% Cu)
CA	calcite See also DX = dolomite/calcite combination
CB	carbonate(s)
CE	cerussite (77% Pb)
CH	chalcanthite (25% Cu)
CC	chalcocite (80% Cu)
C!	chalcocite on gangne
C$	chalcocite alone or on economic mineral(s) e.g., CC on CP
CP	chalcopyrite
CL	chlorite
CD	chloritoid
CR	chromite (46% Cr)
CS	chrysotile
ØL	chrysolite - See olivine
CK	chrysocolla (K as in Coke) (36% Cu)
CN	cinnabar
CY	clay - See also CS - clay/muscovite combination
CX	clay/muscovite
	mineral combination
CX	proportions unspecified
C>	clay > muscovite
C#	clay = "
C<	clay < "
MU	muscovite alone
CZ	clinozoisite
CU	copper
CØ	cordiorite
CV	covellite (66% Cu)
CI	cuprite (89% Cu)
DC	dickite
DG	digenite
DI	diopside
DØ	dolomite
DX	dolomite/calcite
	mineral combination
DX	proportion unspecified
DØ	dolomite alone
D>	dolomite > calcite
D#	" = "
D<	" < "
CA	calcite alone
EN	enargite (47% Cu)
EP	epidote
ES	enstatite

ER	erythrite (30% Co)
FA	famatinite (43% Cu)
FL	feldspars
FR	ferberite (61% W)
FM	ferrimolybdite (40% Mo)
FU	fluorite
FD	feldspathoids
GL	galena (86% Pb)
GX	galena/sphalerite
	mineral combination
GX	proportion unspecified
GL	galena alone
G>	galena > sphalerite
G#	galena = "
G<	galena < "
SL	sphalerite alone
GA	garnet
GS	glass(es)
GC	glaucophane
GN	glauconite
GØ	goethite
GR	graphite
GK	greenockite (78% Cd)
GY	gypsum
GD	gold
HE	hematite (70% Fe)
HX	hematite/magnetite
	mineral combination
HX	proportion unspecified
HE	hematite alone
H	" magnetite
H#	" "
H	" "
MG	magnetite alone
HS	hematite, specularite
HØ	hornblende - See also BX
HU	huebnerite (61% W)
HM	hydromica
HY	hypersthene
IL	illite
IM	ilmenite (32% Ti)
JA	jarosite
KA	kaolin
KY	kyanite
KF	K-spar, orthoclase
KX	K-spar/plagioclase
	mineral combination
KX	proportion unspecified
KF	K-spar alone
K>	K-spar > plagioclase
K#	K-spar = "
K<	K-spar < "
PF	plagioclase alone
LU	leucite
LI	limonite(s)
MA	magnesite
MG	magnetite - See also MX = HE/MG combination
MC	malachite (58% Cu)
MX	malachite/azurite
	mineral combination
MX	proportion unspecified
MC	malachite alone
M	" azurite
M#	" = "
M	" "
AZ	azurite alone
MN	manganite
MZ	monazite
MT	marcasite
MR	mariposite
MI	micas, general
MM	montomorillonite
MU	muscovite
MØ	molybdenite (60% Mo)
M*	molybdenite rosettes
M:	molybdenite disseminated
M/	molybdenite vein(lets)
NP	nepheline
NI	nicolite (44% Ni)
ØL	olivine, chrysolite
ØP	opal
KF	orthoclase, K-spar See also KX = KF/PF combination
ØX	oxide, general
ØQ	opaques, general

PF plagioclase
See also KX = KF/PF combination
PH phlogopite
PY pyrite
PL pyrolusite
PX pyroxene
PR pyrrhotite
PP pyro phyllite
PØ powellite (58% Mo and W)
PT platinum

QZ quartz
QA quartz, agate
QC " , chert
QV " , vein, massive
QX " , crystal(s)
QR " , rutilated

RN rhodonite
RC rhodochrosite
RU rutile

SA sanadine
SC scapolite
SH scheelite (64% W)
MS sericite, muscovite
SE serpentine
SD siderite
SI sillimanite
SV silver
SØ sodalite
HS specularite, hematite
SL sphalerite
SP sphene
ST staurolite
SB stibnite (72% Sb)
SX sulphides, general

TA talc
TL tellurides, general
TN tennantite (50% Cu, 26% Sb and As)
TE tenorite (80% Cu)
TT tetrahedrite (50% Cu, 26% Sb and As)
TZ topaz
TØ tourmaline
TR tremolite

UR uraninite (92% U)

VA vanadinite, (73% Pb, 11% V)
VE vesuvianite

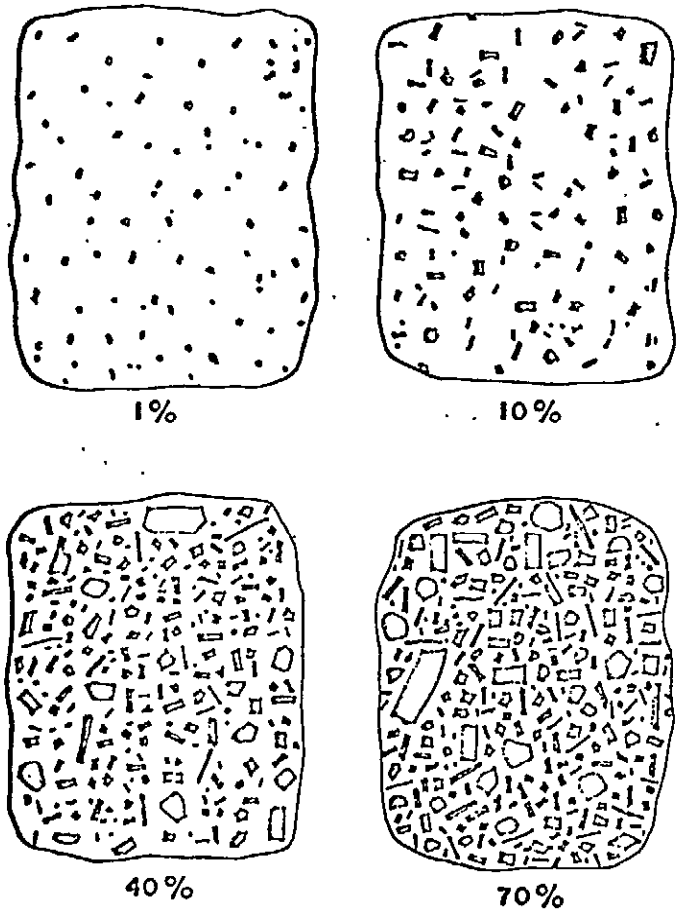
WF wolframite (62% W)
WN wulfenite (56% Pb, 26% Mo)
WD wad
WØ wollastonite

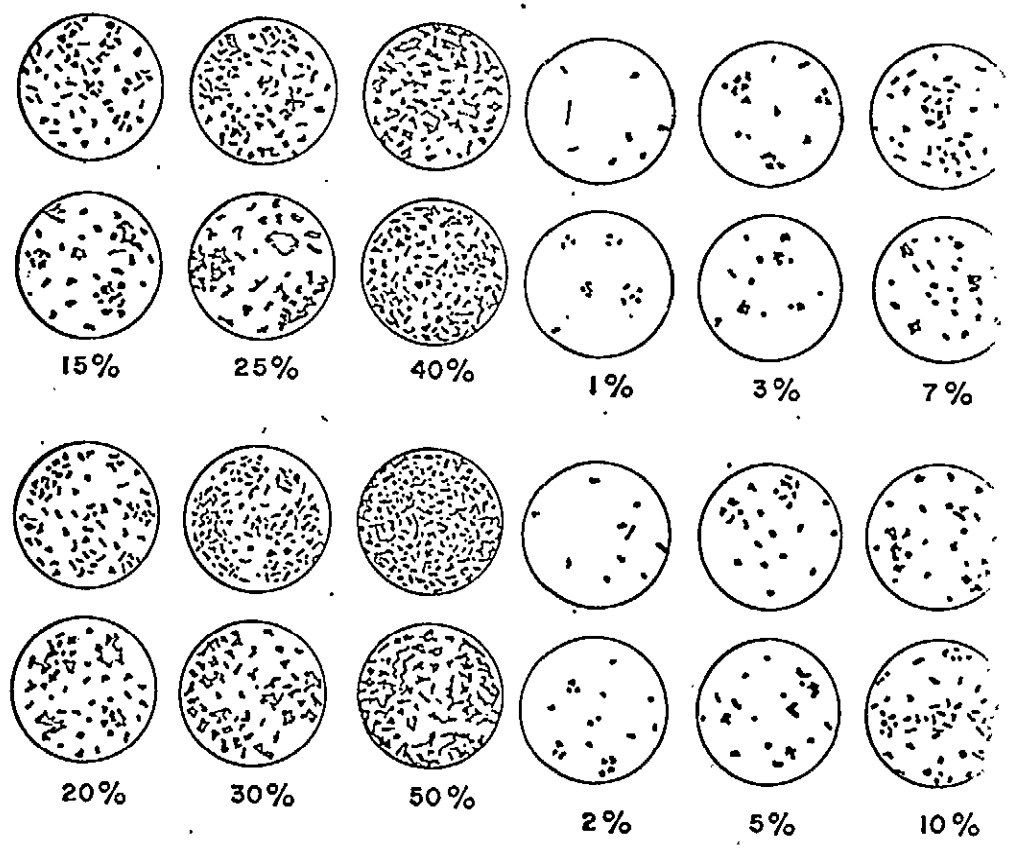
ZE zeolite(s)
ZI zircon
ZØ zoisite
ZZ any mineral

TABLE III

Mode of Occurrence Mineralization			Degree of dispersion	Mode of Occurrence Alteration Assemblages			
Veins and macro-veins including in stockwork & gouge	(V = vein) (D = dissem.) V	V	1	(E=envelopes) V	or		veins
Veins, veinlets, fracture fillings & minor disseminations	$\frac{1}{8}$D + $\frac{7}{8}$ V	D<<< V	2	E < V or P<<V	$\frac{2}{8}$E + $\frac{6}{8}$V	$\frac{1}{8}$P + $\frac{7}{8}$V	veins and moderate envelopes or minor pervasive
Veinlets and some disseminations	$\frac{2}{8}$D + $\frac{6}{8}$ V	D < V	3	E = V or P<V	$\frac{4}{8}$E + $\frac{4}{8}$V	$\frac{2}{8}$P + $\frac{6}{8}$V	envelopes and veins equal or veins and moderate pervasive
Veinlets with moderate disseminations	$\frac{3}{8}$D + $\frac{5}{8}$ V	D ≤ V	4	E V or P≤V	$\frac{6}{8}$E + $\frac{2}{8}$V	$\frac{3}{8}$P + $\frac{5}{8}$V	envelopes with some veins or pervasive with moderate veins
Veinlets and disseminations more or less equal	$\frac{4}{8}$D + $\frac{4}{8}$ V	D ≐ V	5	E or P= V	$\frac{8}{8}$E	$\frac{4}{8}$P + $\frac{4}{8}$V	envelopes or pervasive equal to veins
Disseminations and moderate veinlets	$\frac{5}{8}$D + $\frac{3}{8}$ V	D ≥ V	6	P E or P≥V	$\frac{2}{8}$P +$\frac{6}{8}$E	$\frac{5}{8}$P + $\frac{3}{8}$V	pervasive with some envelopes or moderate veins
Disseminations with some veinlets	$\frac{6}{8}$D + $\frac{2}{8}$ V	D > V	7	P = E or P>V	$\frac{4}{8}$P + $\frac{4}{8}$E	$\frac{6}{8}$P + $\frac{2}{8}$V	pervasive and envelopes or with some veins
Mostly dissemination with minor veinlets or micro-veinlets	$\frac{7}{8}$D + $\frac{1}{8}$ V	D >>V	8	P. E or P>>V	$\frac{6}{8}$P + $\frac{2}{8}$E	$\frac{7}{8}$P + $\frac{1}{8}$V	pervasive with some envelopes or minor veins
Disseminations	D	D	9	P	P		pervasive

PERCENTAGE CHART





APPENDIX B

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T-1
T-4
T-5
T-3
T-2
T-8
T-6
T-9
T-10
T-11
T-7
T-12
T-15
T-14
T-13

72(2)B

474

..... UPPER SECTION GETHING FORMATION (MAP A104B)

— — — — " " " " (" A104C)

——— FORT ST. JOHN AND BULLHEAD GROUPS (" A104A)

OT-3 DIAMOND DRILL HOLE

TECK CORPORATION LTD.

BULLMOOSE PROJECT

LOCATION PLAN
FENCE DIAGRAMS

1000 500 0 1000 2000 3000 4000

Scale - Feet

DRAWN: R.E.H./ O.C. DATE: FEB. 72	REVISED:	DATE:	MAP NO: M105

RC

PR-BUL 72(2)B

3

FIG

474

A

B

C

T-1
T-2
T-3
T-4
T-5
T-6
T-7
T-8
T-9
T-10
T-11
T-12
T-13
T-14
T-15

— — — CHAMBERLAIN SEAM

AREA A - 14.4 MILLION LONG TONS IN PLACE
AREA B - 10.1 " " " "
AREA C - 6.2 " " " "
TOTAL - 30.7 " " " "

——— BIRD SEAM - 34.9 " " " "

○ T-3 - DIAMOND DRILL HOLE

TECK CORPORATION LTD.
BULLMOOSE PROJECT

COAL RESERVES

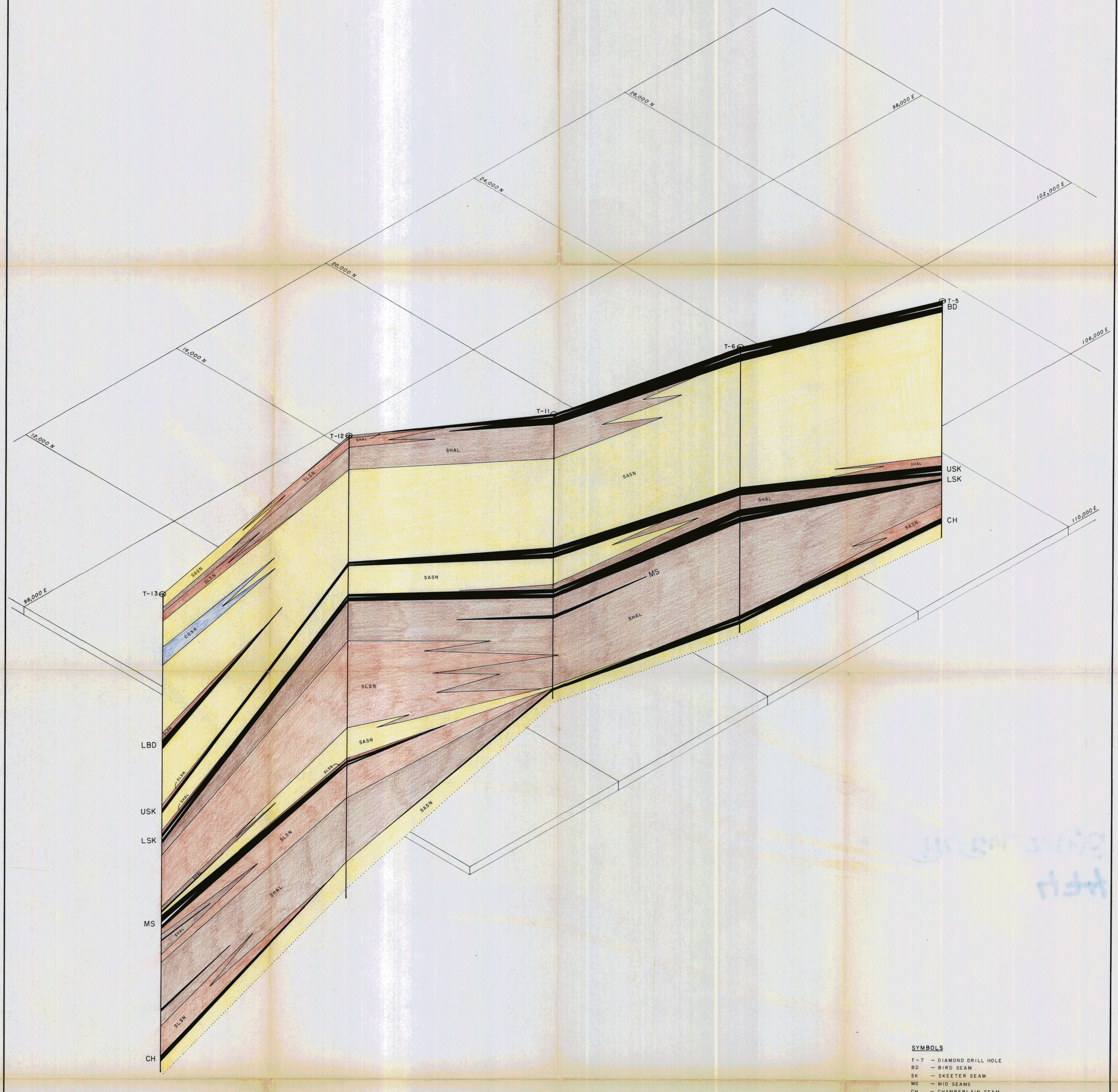
1000 500 0 1000 2000 3000 4000
Scale - Feet

DRAWN: R.E.H. & O.C. | DATE: FEB. 72 | REVISED: | DATE: | MAP NO: M 107

94(2)B

2

TR 1301 - 72 (C) B



SYMBOLS

T-7 — DIAMOND DRILL HOLE
BD — BIRD SEAM
SK — SKEETER SEAM
MS — MID SEAMS
CH — CHAMBERLAIN SEAM

PREFIX
U — UPPER
M — MIDDLE
L — LOWER

CGXX — CONGLOMERATE
SASN — SANDSTONE
SLSN — SILTSTONE
SHAL — SHALE, MUDSTONE

T-3
DIAMOND DRILL HOLE

PIERCE POINT — MOOSEBAR-GETHING CONTACT

474
PR-BOL 72(2)B

TECK CORPORATION LTD.

BULLMOOSE PROJECT

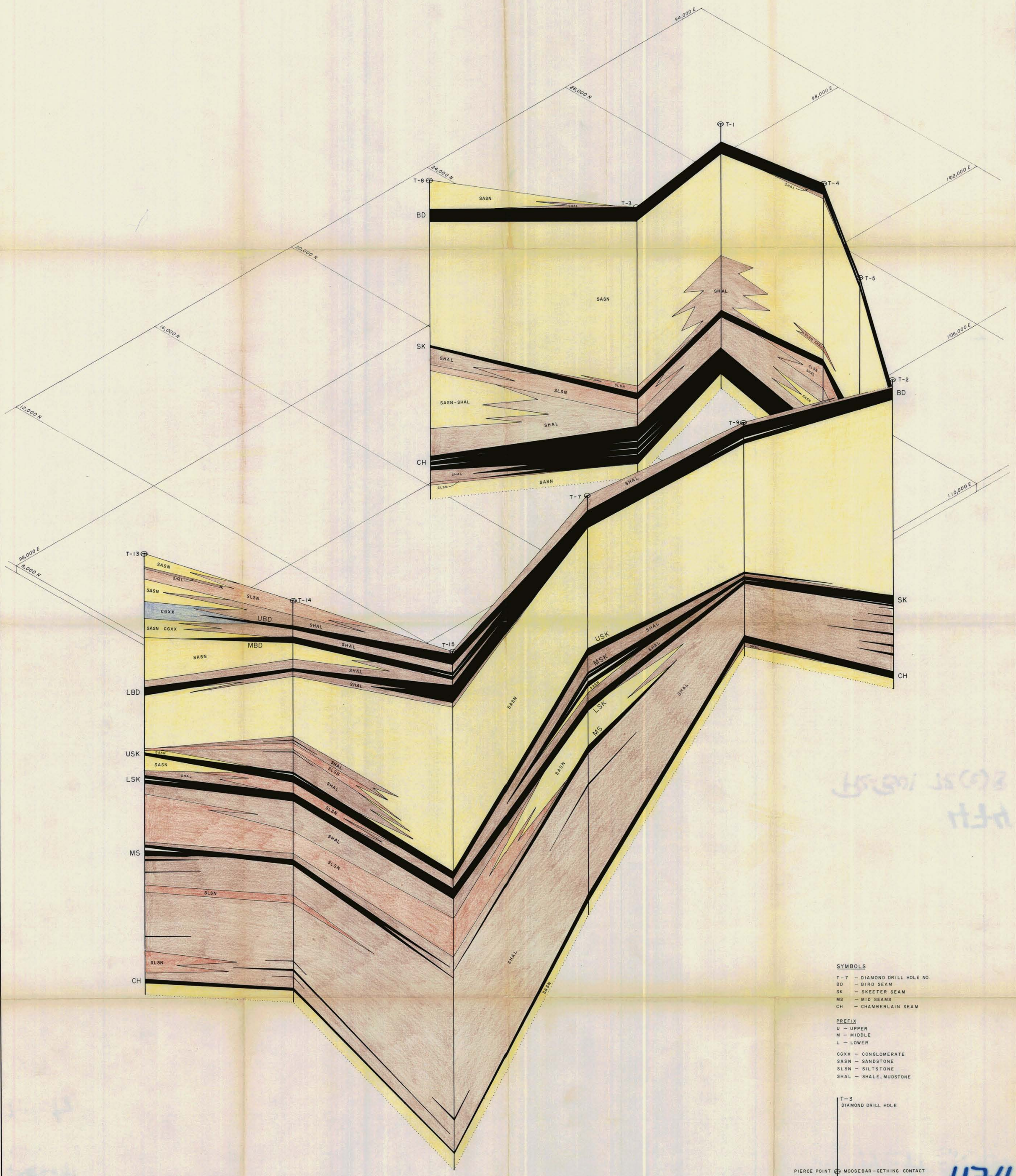
72(2)B

RECONSTRUCTED FENCE DIAGRAM

UPPER SECTION - GETHING FORMATION

VERTICAL SCALE: 1 in. = 20 ft.

DRAWN: R.E.H./O.C. DATE: FEB. 1972	REVISED: DATE:	MAP No: A104 B N.T.S. 93 P



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T-3
DIAMOND DRILL HOLE

PIERCE POINT — MOOSEBAR-GETHING CONTACT

474
PR-BUL 72(2)B

TECK CORPORATION LTD.

72(2)B

BULLMOOSE PROJECT

RECONSTRUCTED FENCE DIAGRAM

UPPER SECTION - GETHING FORMATION

VERTICAL SCALE: 1 in. = 20 ft.

DRAWN: R.E.H./O.C. DATE: FEB. 1972	REVISED: DATE:	MAP No: A104C N.T.S. 93 P

TECK CORPORATION LIMITED

474

STRATIGRAPHIC LOG
OF
DDH T-6

VERTICAL SCALE 1" = 50'

PR - BULLMOOSE 71 (3) C.

PROJECT Bullmoose
HOLE Nº T-6 CORE SIZE HQ
CO-ORDINATES 237000.0 N 101400 E
COLLAR ELEVATION 5580
HOLE ANGLE -90° TOTAL DEPTH 1327

LOCATION Sukunka River
DATUM Solar
DATE STARTED Sept 1, 1971
DATE FINISHED Sept 7, 1971
LOGGED BY R.E. Hudson

SERIES	FORMATION	MEMBER	DISTANCE FROM DATUM	COLUMNAR SECTION	LITHOLOGIC DESCRIPTION
LOWER CRETACEOUS	GETHING	UPPER GETHING	0		OVERBURDEN
					SHALE-SANDSTONE, INTERBEDDED
					COALY SEAM, 50% SHALE
					SANDSTONE - SHALE, INTERBEDDED
			100		COAL 80-81.1 SHALY
					CONGLOMERATE
					SANDSTONE
			200		
			202.7		COAL
			206.6		SILTSTONE - SHALE INTERBEDDED
					COALY SEAM, 60% SHALE
					CONGLOMERATE
					SANDSTONE, PEBBLY
					CONGLOMERATE
			300		SANDSTONE, PEBBLY NEAR TOP
			381		
			400		SHALE MUDSTONE, SANDSTONE, INTERBEDDED
			500		SANDSTONE, SILTSTONE, INTERBEDDED
					SHALE - SILTSTONE, INTERBEDDED, SOME SANDSTONE
					FAULT AT 542'
			600		
					SANDSTONE - SHALE, INTERBEDDED
			700		
					SHALE - SILTSTONE, INTERBEDDED, THIN BEDDED
			800		
			900		
			1000		MUDSTONE - CLAYSTONE
			1100		
			1148.8		MUDSTONE, SANDY, GLAUCONITIC, PEBBLY
			1156.7		COAL, BIRD SEAM, 8" MUDSTONE AT ROOF
					SANDSTONE, MEDIUM - COARSE, BEDDED WITH CARBONACEOUS PARTINGS IN LOWER HALF
					MOTTLED (WORM TRACTS) 1160-1165 AND CASTS ? (1175 - 1180
			1200		
			1221		COAL
			1224		CARBONACEOUS SHALE
			1232.4		COAL
			1238.3		SANDSTONE - SHALE, LAMINATED.
					MUDSTONE DARK GREY TO BLACK, CARBONACEOUS
					CARBONACEOUS SILTSTONE - SHALE
			1275		SILTSTONE - SHALE (INTERBEDDED) WITH COALY PARTINGS
			1278		SHALE - SANDSTONE, INTERBEDDED
			1284.8		COAL
			1289		
			1300		SANDSTONE, SHEARED WITH SLICKENSIDES
			1327		END OF HOLE
	MOOSEBAR	LOWER GETHING			

TROPARI TEST 1300' 83° (N 10 W)

TECK CORPORATION LIMITED

474

STRATIGRAPHIC LOG
OF
DDH T-12

VERTICAL SCALE 1" = 50'

PR - BULLMOOSE 71 (3) R.

PROJECT Bullmoose
HOLE Nº T-12 CORE SIZE NQ
CO-ORDINATES 16250.0 N 9825.0 E
COLLAR ELEVATION 4200'
HOLE ANGLE -90° TOTAL DEPTH 1327

LOCATION Sukunka River
DATUM Collar
DATE STARTED Oct 6, 1971
DATE FINISHED Oct 17, 1971
LOGGED BY R.E. Hindson

SERIES	FORMATION	MEMBER	DISTANCE FROM DATUM	COLUMNAR SECTION	LITHOLOGIC DESCRIPTION
					OVERBURDEN
LOWER CRETACEOUS	COMMOTION	GATES	100		SANDSTONE, FINE TO MEDIUM TO COARSE, MEDIUM TO THICK BEDDED, MINOR SHALE.
		SUKUNKA	200		
			300		SHALE - SILTSTONE - SANDSTONE, INTERBEDDED, INCREASING INTERVALS OF SANDSTONE UPWARDS.
			400		
			500		
			600		
			700		FAULT ?
	MOOSEBAR		800		MUDSTONE - CLAYSTONE, ENTONITIC LAYERS BLOCKY AND SHEARED THROUGH MOST OF SECTION
			900		FAULT
			1000		FAULT
					SANDSTONE, PYRITIC AND GLAUCONITIC
		GETHING UPPER	1100	LOST	SHALE - SILTSTONE, INTERBEDDED, CARBONACEOUS, WITH COAL PARTINGS FROM 1096' - 1100'
					SANDSTONE, MEDIUM TO COARSE, CARBONACEOUS, WORM CASTS, COALY PARTINGS AND WISPS.
			1154.5 1156.7		COAL, 60% SHALY
					SANDSTONE - SHALE - SILTSTONE, INTERBEDDED
			1173.5 1173.4		COAL, SHALY
			1200		SILTSTONE - SHALE - SANDSTONE, INTERBEDDED, SOME COAL PARTINGS. FAULT ? AT 1232.5'
			1254.4 1255.6		SANDSTONE, MEDIUM TO COARSE GRAINED, GRADING TO SHALE AND SILTSTONE AT BASE
					COAL
		GETHING LOWER			SHALE - SILTSTONE INTERBEDDED
			1300		SANDSTONE, MEDIUM TO COARSE GRAINED, GRADING DOWNWARDS TO THIN BEDDED SILTSTONE.
			1327		END OF HOLE
			1400		

TROPARI TEST 600' - 89° (S-8°W)
1200' - 82° (N-30°W)

474

TECK CORPORATION LIMI

STRATIGRAPHIC LOG
OF
DDH T-8

VERTICAL SCALE: 1" = 50'

PR - BULLMOOSE 71(3)C.

PROJECT: Bullmoose
HOLE No: T-8 CORE SIZE: NQ
CO-ORDINATES 23700.0 N 94300.0 E
COLLAR ELEVATION: 5100
HOLE ANGLE: -90° TOTAL DEPTH 1977

LOCATION: Sukunka River
DATUM: Collar
DATE STARTED: Sept. 9, 1971
DATE FINISHED: Oct. 1, 1971
LOGGED BY: R. S. Verzosa

SERIES	FORMATION	MEMBER	DISTANCE FROM DATUM	LITHOLOGIC DESCRIPTION
LOWER CRETACEOUS	COMMOTION	HULLCROSS		OVERBURDEN
			100	
				SHALE, DARK BROWN, THIN BEDDED
			200	
		GATES		PEBBLE CONGLOMERATE
				SHALE-MUDSTONE, INTERBEDDED, VERY CARBONACEOUS
				COAL 244.3 - 247; SHALEY AT BASE
				SHALE - SILTSTONE, INTERBEDDED, COAL PARTINGS, VERY CARBONACEOUS
				COAL, 260 - 262.7
				SHALE, VERY CARBONACEOUS
			273.7 / 276	COAL, DULL AND SHALY
				COAL, 279 - 279.6
			300	SHALE, SANDSTONE, SILTSTONE INTERBEDDED
				SANDSTONE, MEDIUM TO COARSE GRAINED
				SHALE
				SANDSTONE, MEDIUM TO COARSE GRAINED, MEDIUM BEDDED
			400	
				SHALE, SANDSTONE, SILTSTONE, INTERBEDDED
				MUDSTONE, VERY CARBONACEOUS
			476.6 / 478.6	COAL, SHALY
				MUDSTONE, VERY CARBONACEOUS
			500	MUDSTONE, COALY AND CARBONACEOUS
			511.2 / 514.4 / 516.7	COAL, 1.7' INTERBEDDED SHALE
				SANDSTONE, CARBONACEOUS
			529 / 537	COAL, 530 - 531.9, VERY CARBONACEOUS
				SHALE - SANDSTONE, MUDSTONE, INTERBEDDED, VERY CARBONACEOUS AT BASE
			565 / 575	COAL SEAM, 50% BONE COAL
				SHALE, SANDSTONE, MUDSTONE, INTERBEDDED, IN PARTS VERY CARBONACEOUS
			600	COAL, 608.6 - 609.2
				CONGLOMERATE, CHERT PEBBLES IN VERY COARSE SANDSTONE MATRIX
				SANDSTONE, VERY COARSE, IN PARTS GRANULAR AND PEBBLY NEAR BASE
			700	CONGLOMERATE, CHERT PEBBLES
			732 / 736	COAL, HARD AND BRIGHT
				CARBONACEOUS SANDSTONE WITH COAL AND CARBONACEOUS WISPS
				SHALE - SANDSTONE, INTERBEDDED
			752 / 758	CARBONACEOUS SHALE-MUDSTONE, WITH 6" COALY SEAM NEAR BASE
				CONGLOMERATE, CHERT PEBBLES
			795 / 800	1" COAL AND COAL WISPS AND PARTINGS
				SANDSTONE, MEDIUM TO COARSE GRAINED, IN PARTS CARBONACEOUS, COAL PARTINGS AT BASE
		SUKUNKA	900	
			1000	SHALE, SILTSTONE, SANDSTONE, INTERBEDDED, INCREASING INTERVALS OF SANDSTONE TOWARDS TOP
			1100	4" PEBBLE BAND
				SANDSTONE WITH INTERBEDDED SHALE
			1200	SHALE, SILTSTONE, SANDSTONE, INTERBEDDED
			1300	
	MOOSEBAR		1400	
				MUDSTONE - CLAYSTONE
			1500	
				BENTONITIC
				BENTONITIC
				FAULT ? CALCITE IN FRACTURES
	GETHING	UPPER GETHING	1600	SANDSTONE, GLAUCONITIC, IN PARTS GRANULAR, VERY COARSE
				SANDSTONE, VERY COARSE, CARBONACEOUS WITH COALY WISPS AND PARTINGS AT BASE
			1624.7 / 1631.2	COAL
				WORM TRACTS
				SANDSTONE, CARBONACEOUS AT TOP AND BOTTOM
			1700	COAL, 1699 - 1700
				MUDSTONE AND SHALE, VERY CARBONACEOUS, BONE COAL TOWARDS TOP
				SANDSTONE, FINE TO MEDIUM GRAINED, INTERBEDDED
				LAMINATED SHALE-MUDSTONE, VERY CARBONACEOUS AT BASE
			1758 / 1767	COAL, WITH INTERBEDDED SHALE, POOR RECOVERY
		LOWER GETHING	1774	COAL, 1770.5 - 1772.2
			1800	2" PEBBLE BAND SANDSTONE, MEDIUM TO COARSE CARBONACEOUS
				SANDSTONE, SHALE, INTERBEDDED, WORM CASTS
			1900	CLAY PEBBLES AND VERY FINE COAL WISPS
				SANDSTONE WITH INTERBEDDED SHALE
			1977	END OF HOLE

1130

TECK CORPORATION LIMITED

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STRATIGRAPHIC LOG
OF
DDH T-1

VERTICAL SCALE 1" = 50'

PR - BULLMOOSE 71 (3) ©

PROJECT [illegible] LOCATION Sukunka River

HOLE Nº T-1 CORE SIZE N.Q. DATUM [illegible]

CO-ORDINATES 30971.4 N 97337.5 E DATE STARTED Aug 12, 1971

COLLAR ELEVATION 5348' DATE FINISHED Aug 17, 1971

HOLE ANGLE -90° TOTAL DEPTH 1147 LOGGED BY R. E. Hanson

SERIES	FORMATION	MEMBER	DISTANCE FROM DATUM	COLUMNAR SECTION	LITHOLOGIC DESCRIPTION
LOWER CRETACEOUS	COMMOTION	GATES	0		OVERBURDEN
					SANDSTONE
					CONGLOMERATE
					SANDSTONE, PEBBLY NEAR TOP
			100		SHALE WITH INTERBEDDED SILTSTONE AND MINOR SANDSTONE.
					CONGLOMERATE
					SANDSTONE, MEDIUM-COARSE, CARBONACEOUS
					SANDSTONE, MEDIUM TO COARSE, CARBONACEOUS WITH INTERBEDDED MUDSTONE
			200		
			300		
		SUKUNKA			
			400		SILTSTONE, SHALE, MUDSTONE, SANDSTONE INTERBEDDED
			500		
			600		
			700		MUDSTONE - CLAYSTONE, BENTONITIC LAYERS TOWARDS BOTTOM.
			800		
		MOOSEBAR	860		SANDSTONE GLAUCONITIC
			864.5		COAL, PYRITE DISSEMINATIONS
					CLAYSTONE
			869.2		SANDSTONE, GLAUCONITIC
			876.5		COAL, PYRITE DISSEMINATIONS
			900		SANDSTONE
					SHALE - SILTSTONE, INTERBEDDED, SHELL FOSSILS
					COAL
					SHALE - SILTSTONE, INTERBEDDED
			982.6		
			986		COAL, SHALE PARTING FROM 986.8 - 986.9
			995.6		
			1000		SANDSTONE
					SHALE - SILTSTONE, INTERBEDDED
					SANDSTONE WITH INTERBEDDED SHALE.
			1100		
					SILTSTONE - SANDSTONE
			1147		END OF HOLE

UPPER GETHING

MOOSEBAR

GETHING

UPPER GETHING

LOWER GETHING

TROPARI TEST 500' 85° (N 27° E), 1000' 79° (N 39° E)

TECK CORPORATION LIMITED

474

STRATIGRAPHIC LOG
OF
DDH T-5

VERTICAL SCALE 1" = 50'

PR-BULLMOOSE 7 (3) R

PROJECT Bullmoose
HOLE Nº T-5 CORE SIZE NQ
CO-ORDINATES 270752 N 103093.2E
COLLAR ELEVATION 5445
HOLE ANGLE -90° TOTAL DEPTH 535

LOCATION Sukunka River
DATUM Collar
DATE STARTED Aug. 30, 1971
DATE FINISHED Sept. 4, 1971
LOGGED BY R. E. Hindson

SERIES	FORMATION	MEMBER	DISTANCE FROM DATUM	COLUMNAR SECTION	LITHOLOGIC DESCRIPTION
LOWER CRETACEOUS	COMMOTION		0		OVERBURDEN
					P
					P
					P
		SUKUNKA	100		SHALE - SILTSTONE - SANDSTONE, INTERBEDDED
			200		MUDSTONE - CLAYSTONE, SIDERITIC CONCRETIONS, BENTONITE LAYER A 358'
			300		
			400		MUDSTONE, SANDY, GLAUCONITIC, PYRITIC.
			404.5		COAL, BIRD SEAM, CARBONACEOUS SHALE (402.6 - 404)
			407		
					SANDSTONE, MEDIUM TO COARSE, MASSIVE - THICK BEDDED, WORM TRACKS (412-417)
					WORM CASTS AT 432, COAL WISPS PARTING AND BANDS UP TO 1" AT 480-482
			484.3		COAL, HARD, BRIGHT - DULL.
			487		
			500		SHALE, CARBONACEOUS WITH COAL PARTINGS
			510.6		SANDSTONE - SILTSTONE, CARBONACEOUS AT 505-507; SHALE, CARBONACEOUS AT
			513.3		COAL, HARD - BRIGHT — 507-510.6; 4" COAL AT 509.6
					SANDSTONE, CARBONACEOUS
			535.4		END OF HOLE
	GETHING	UPPER GETHING			
		LOWER GETHING			

TECK CORPORATION LIMITED

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STRATIGRAPHIC LOG

OF

DDH T-11

VERTICAL SCALE 1" = 50'

PR - BULLMOOSE 71 (3) G.

PROJECT Bullmoose
HOLE Nº T-11 CORE SIZE NQ
CO-ORDINATES 19600.0 N 10050.0E
COLLAR ELEVATION 4700'
HOLE ANGLE -90° TOTAL DEPTH 1247'

LOCATION Sukunka River
DATUM Collar
DATE STARTED Oct. 4, 1971
DATE FINISHED Oct. 9, 1971
LOGGED BY R.E. Hindson

SERIES	FORMATION	MEMBER	DISTANCE FROM DATUM	LITHOLOGIC DESCRIPTION
				OVERBURDEN
				SHALE, SILTSTONE, SANDSTONE INTERBEDDED.
			58	
			64.4	LOST
			67	COAL
				SILTSTONE - MUDSTONE - SANDSTONE, INTERBEDDED
			100	
				MUDSTONE, THIN BEDDED, VERY CARBONACEOUS, THIN COAL SEAM AT BOTTOM.
				CONGLOMERATE
				SANDSTONE, VERY COARSE, AND PEBBLY
			200	CONGLOMERATE WITH INTERBEDDED VERY COARSE SANDSTONE
			210.1	
			218.8	COAL
				SANDSTONE, MEDIUM TO COARSE, CARBONACEOUS, THIN BEDDED
			250.5	MUDSTONE, VERY CARBONACEOUS
			255.3	COAL, INTERBEDDED, 5' SHALE BAND AT 252.9
			300	SANDSTONE, FINE TO MEDIUM TO COARSE GRAINED, IN PARTS PEBBLY SOME THIN SHALE LAYERS
			400	
			500	
				SHALE - SILTSTONE - SANDSTONE, INTERBEDDED. THIN BEDDED, INCREASING INTERVALS OF FINE TO MEDIUM GRAINED SANDSTONE UPWARDS.
			600	
			700	
			800	
			900	MUDSTONE - CLAYSTONE, BENTONITIC LAYERS AND PYRITE DISSEMINATIONS
			1000	
			1064.8	SANDSTONE, PYRITE, GLAUCONITE
			1066.2	COAL, INTERBEDDED 1.5' CARBONACEOUS SHALE, PYRITE NODULES
			1069.6	
				SHALE WITH INTERBEDDED SILTSTONE, IN PARTS CARBONACEOUS
			1100	
				SANDSTONE, MEDIUM TO COARSE GRAINED, THIN BEDDED SHALY WITH COAL PARTINGS AT BASE
			1133	
			1137	COAL
				SANDSTONE, FINE GRAINED, CARBONACEOUS, SHALE AT BASE.
			1153.8	
			1157.2	COAL, 4" CARBONACEOUS SHALE AT 1154.6
				SHALE, THIN BEDDED, CARBONACEOUS, COALY AT TOP
			1200	
				SANDSTONE, MEDIUM TO COARSE GRAINED, CARBONACEOUS
				COAL 1203.6 - 1204.1
				SANDSTONE, MEDIUM TO COARSE GRAINED AT TOP.
			1247	END OF HOLE
			1300	

TROPARI TEST 500' 88° (N 57°-30' E)
1000' 85° (N 27° E)
1240' 82° (N 30° E)

GATES
COMMOTION
SUKUNKA
LOWER CRETACEOUS
MOOSEBAR
GETHING
UPPER GETHING
LOWER GETHING

CONFIDENTIAL

DIAMOND DRILL LOGS

TECK CORPORATION LIMITED

BULLMOOSE PROJECT
SUKUNKA BLOCKS 'B' AND 'E'

PEACE RIVER AREA
BRITISH COLUMBIA

To accompany
report by R. E. Hindson
dated February, 1972.

Note: See Appendix 'A'
of report for Geology
Users Manual.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 474

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINDSON DATE 27/8/71 PAGE 1 OF 8

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS													ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL								LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION							UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	IDENTIFICATION	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE				
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51				52	53	54	55	56	57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77			
TYPE 8011	DISTANCE 1,147.0	SUB I.D. A1	IDENTITY T1			PROJECT 1000		COMMENT						LEG LENGTH	AZ/BEARING						+VERT. ANGLE -9.5										SYST	N/S NORTHING 30.9.7.1.4				E/W EASTING 9.7.3.3.1.5			SYST SR	ELEVATION 5348.0					
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL		F.S.I.						% MOISTURE	%ASH				%VOLATILES											%FIXED CARBON																
S C L																																													
C	FRAPARI		TESTS					@ 500'					-64° (N27°E),		@ 1000'						-70° (N30°E)																								
CPT	00																																												
ϕ B	100																																												
	226	126		SASN	S4H			<8475					0050																									ETCMCL								
	354	126		CGXX	S4H	C3H		<2W77					0050																																
	44 4	1309		SASN	S4H			W0373					0060	i	CGXX	S4H																													
	906	502		SASN	S4H	CI		<8251					0070																																
	1103	1235		SHAL	AI			K 0		D			0030	2	SASN																													
			3	SASN	S4H	CI		<K8251					EL 0050																		B		80												
	1124	154		SHAL	AIH	C2K		K C					(2		SASH																													

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R. HINDSON DATE 27/8/71 PAGE 2 OF 8

TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT	COMMENT	LEG LENGTH	AZ/BEARING	+VERT. ANGLE	SYST	N/S NORTHING	E/W EASTING	SYST	ELEVATION
DDH	11470	A1	T1	1000									

A N L	DISTANCE	SUB I.D.	IDENTITY	INTERVAL	F.S.I.	% MOISTURE	% ASH	% VOLATILES	% FIXED CARBON
S C L									

Line	Primary (1)	Control (2)	(3)	Depth from collar or distance from control point to end of interval described (4–7)	Tenths (8)	Recovery units (9–11)	Tenths (12)	Rock % of interval (13)	Type modifier (14)	Rock name (15–18)	Major qualifying mineral or material: name (19–20)	Amt. (21)	Minor qualifying mineral or material: name (22–23)	Amt. (24)	Bedding mode thickness (25)	Degree of sorting (26)	Grain size (27)	Sphericity (28)	Roundness (29)	Texture major → minor (30–33)	Colour Munsell system (34–37)	Rock 2 interbeds (38–46)	Repeated sequences (47)	Fracturing (48–51)	Identification (52)	Type (53)	Plunge or dip azimuth / plunge (54–55)	Angle to core axis (56–57)	Fold or fault intensity (58)	Direction of tops or of younging (59–61)	Lithologic units GP / FM / MM / SM (62–69)	Accessory minerals or mineralization (70–77)	Unreliability factor (78)	Format control (79–80)
1																																		
2																																		
3																																		
4				112	4	15	4			SASN	S4	M	C1	L	Q	7	C	9	7		0070										FTCMCL			
8				~~~~		~~~~		1		SASN	S4	H	C1	L	K	8	2	5	1	D;	0070										~~~~			
12				114	8	2	4			CGXX	S4	M	C1	L	W	5	R	5	7		0050										~~~~			
15			C							AS	W				112.4																			
16				115	8	1	0																								~~~~			
20				117	0	1	2			CGXX	S4	M	C1	L	W	5	W	5	7	N	0050										~~~~			
24				134	4	17	4			SASN	C1	M	S4	L	K	8	3	5	1	R	0065				B			80			~~~~			
28				135	4	10	6			SASN	C1	M	S4	L	K	8	3	5	1	ZG	0060		C								~~~~			
32				~~~~		~~~~		2		SLSN					K		1				0040										~~~~			
36				~~~~		~~~~		2		MDSN	A1				K		C			J	0030										~~~~			

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY: TECK CORP PROPERTY: SUKUNKA BLOCK 'B' LOGGED BY: R. HINDSON DATE: 27/8/71 PAGE 3 OF 8

TYPE: DDH DISTANCE: 1147.0 SUB I.D.: A1 IDENTITY: T1 PROJECT: 1000

Line	Depth (4-7)	Tenths (8)	Recovery (9-11)	Tenths (12)	Rock % of interval (13)	Rock name (14-18)	Major qualifying mineral name (19-20)	Amt. (21)	Minor qualifying mineral name (22-23)	Amt. (24)	Bedding (25)	Sorting (26)	Grain size (27)	Sphericity (28)	Roundness (29)	Texture (30-33)	Colour Munsell (34-37)	Rock 2 % of interval (38)	Rock 2 name (40-43)	Rock 2 qualifying mineral (44-45)	Structure identification (52)	Angle to core axis (56-57)	Lithologic units (62-69)
4	141	0	5	6	9	SASN	C1	m	S4	L	9	8	2	5	5	JZT	0060	T	MDSN				FTCMCL
8	144	5	3	5	2	MOSN	A1		C1		K		0			KI	0040						〃
12	〃		〃		4	SLSN	S4		C1		K		1			K	0040						〃
16	〃		〃		4	SASN	S4		C1		K	8	3	5	5	K	0040						〃
20	146	0	1	5		SASN	C1	m	S4	m	9	8	2	5	1	U	0060						〃
24	151	2	5	2	7	SLSN	S4		C1		K		1			OZL	0030				B	85	〃
28	〃		〃		2	SASN	S4	m	C1	m	9	8	2	5	1	D	0065	i	MDSN	A1			〃
32	159	0	7	8	9	SASN	S4	M	C1	m	W	8	3	7	5	Z	0065	i	MDSN	A1			〃
36	160	5	1	9	4	SASN	S4		C1		K		2			J	CC55						〃

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY: TECK CORP PROPERTY: SUKUNKA BLOCK 'B' LOGGED BY: R. HINDSON DATE: 27/8/71 PAGE 4 OF 8

TYPE: DDH DISTANCE: 1147.0 SUB I.D.: A1 IDENTITY: T1 PROJECT: 1080

Row	Primary / Control (1-3)	Depth (4-7)	Tenths (8)	Recovery (9-11)	Rock % of Interval (13)	Rock 1 Name (15-18)	Major Qualifying (19-21)	Minor Qualifying (22-24)	Bedding (25)	Sorting (26)	Grain Size (27)	Sphericity (28)	Roundness (29)	Texture (30-33)	Colour Munsell (34-37)	Rock 2 % (38)	Rock 2 Name (40-43)	Rock 2 Qualifying (44-46)	Structure Identification (52)	Plunge / Angle (54-57)	Lithologic Units (62-69)	Accessory Minerals (70-77)
4		160	8	18	4	SLSN	A1	C1	K		1			J	0040	2	SHAL	A1			FTCMGK	
8	CNT	167	4	66		SASN	S4M	C1M	K	8	3	5	7	Z	0065						~~~~	
12		249	3	819	6	SLSN	A1	C1L	K		1			JLT	0065	1	SASN	S4			FTCMSK	
16		~~~~			2	SHAL	A1		K		0			RJL	0040	1	MDSN	A1			~~~~	
20		273	3	240	9	MDSN	A1		K		0			TJJ	0035	T	SLSN	A1			~~~~	
24		447	5	1742	8	SLSN	A1	S4	K		1			BJFT	0050				B	85	~~~~	
28		~~~~			1	SHAL	A1		K		0			UZ	0045	1	SASN	C1M			~~~~	
32	CNT	596	1	1486	9	SHAL	A1	C1	K		0			KJZ	0045	1	SLSN				~~~~	
34	C	NARROW SECTIONS NEAR BASE OF MDSN UNIT ARE BRXX AND SHEARED																				
35	C	NARROW BENT LAYERS NEAR BASE OF UNIT																				
36		856	0	261	9	MDSN	A1	S3L	K		0			JU	0025						FTMS	PYT9

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY: TECK CORP — PROPERTY: SUKUNKA BLOCK 'B' — LOGGED BY: R. HINOSON — DATE: 27/8/71 — PAGE 5 OF 8

TYPE: DDH — DISTANCE: 11470 — SUB I.D.: A1 — IDENTITY: T1 — PROJECT: 1000

Line	Primary / Control (1–3)	Depth from collar, end of interval (4–8)	Recovery units / tenths (9–12)	Rock % of interval (13)	Rock name (15–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding / sorting etc. (25–29)	Texture (30–33)	Colour Munsell (34–37)	Rock 2 % (38)	Rock 2 name (39–43)	Group / Formation (62–65)	Member / Submember (66–69)	Accessory minerals (70–77)
2	C	PY INCREASES TOWARDS BASE													
4	CNT	8600	20		SASN			W7357	K	0030			FTMS		PY19 GN19
8		8602	2		COAL					0010			BLCT	BO	PY49
12	CNT	8645	43		COAL				BSC	0010			~	BO	
16	FLT	8647	2	5	MDSN	A1	S3	K O	J	0060	5	BRXX	FTMS		CA21
20		8672	25		MDSN	A1		K O	J	0030			~		PY19
24	CNT	8692	20		SASN			W7357	K	0030			~		PY19 GN19
28	ANL	8752	60		COAL				BS	0010			BLCT	BO	
32	ANL	8760	8		COAL				BS	0010			~	BO	PY19
34	C	CLEAN CNT WITH SASN FLOOR													
36		8765	5		COAL				BSC	0010			~	BO	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R. HINDSON DATE 27/8/71 PAGE 6 OF 8

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS																ROCK 2 INTERBEDS								STRUCTURE WITHIN INTERVAL														LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION								UNRELIABILITY FACTOR	FORMAT CONTROL	
				ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°-60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GROUP	FORMATION	MEMBER	SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1 2 3	4 5 6 7 8		9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51				52	53	54	55	56 57	58	59 60 61	62	63 64 65	66	68 69	70 71	72 73 74	75	76 77	78	79 80	
TYPE BOH	DISTANCE 1420		SUB I.D. A1	IDENTITY		T1	PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE								SYST	N/S NORTHING						E/W EASTING				SYST	ELEVATION							
A N L	DISTANCE		SUB I.D.	IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES									%FIXED CARBON																			
S C L																																																			
	9320		5557		SASN		SAM		CIMW		8	3	5	1		U	0055																						BLET											
	~~		3		SASN		S4		C2L		Q	8	3	5	1		0045																						~~~~											
	9323		3		MASN		A1				K		0			J	0030																						~~~~											
	9600		2778		SHAL		A1		C2		K		0			JL	0035	2		SLSN																			~~~~											
C									CLAM				SHELLS																																							
	9605		68		SHAL		F3m		C1L		Q		0			FJ	0050	2		SLSN																			~~~~											
	9620		15		SHAL		A1				K		0			JL	0035	2		SLSN																			B		80	~~~~										
	9655		8		COAL																																															
	~~		27		COAL											BSC	0010																						~~~~									SIL				
	9813		1589		SHAL				A1		K		0			JJ	0045	1		SLSN																			~~~~											

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COAL ENVIRONMENT VERSION

COMPANY *TECK CORP* PROPERTY *SUKUNKA BLOCK 'B'* LOGGED BY *R. HINDSON* DATE *27/8/71* PAGE *7* OF *8*

Survey card: TYPE DDH | DISTANCE 11470 | SUB I.D. A1 | IDENTITY T1 | PROJECT | COMMENT | LEG LENGTH | AZ./BEARING | +VERT. ANGLE | SYST | N/S NORTHING | E/W EASTING | SYST | ELEVATION

Analysis card (A N L): DISTANCE | SUB I.D. | IDENTITY | INTERVAL | F.S.I. | % MOISTURE | % ASH | % VOLATILES | % FIXED CARBON

Line	Primary / Control (1–3)	Depth from collar or distance from control point to end of interval described (4–8)	Recovery, units / tenths (9–12)	Rock 1: Rock % of interval (13)	Rock 1: Type modifier / Rock name (14–18)	Major qualifying mineral or material (19–21)	Minor qualifying mineral or material (22–24)	Bedding mode thickness / Degree of sorting / Grain size / Sphericity / Roundness (25–29)	Texture major → minor (30–33)	Colour, Munsell system (34–37)	Rock 2: Rock % of interval (38)	Rock 2: Type modifier / Rock name (39–43)	Rock 2: Qualifying mineral or material (44–46)	Repeated sequences / Fracturing (47–51)	Structure identification / type (52–53)	Plunge or dip azimuth; angle to core axis (54–57)	Fold or fault intensity / Direction of tops (58–61)	Lithologic units: GP / FM / MM / SM (62–69)	Accessory minerals or mineralization (70–77)	Unreliability factor / Format control (78–80)
1																				
2																				
3																				
4		9826	13	7	SHAL			K 0		0020	3	COAL						3LGT		
5																				
6	C	SHAL PARTING 986.8 to 986.9																		
7																				
8		9956	130		COAL				BSC	0010								~~~~ CH		
9																				
10																				
11																				
12		9960	4	7	SHAL			K 0		0020	3	COAL						~~~~		
13																				
14	C	CCC CALCITE VEINLETS AT 45° (PARALLEL)																		
15																				
16		10080	120		SASN	C2L	M2	W7353		0035				1 9				~~~~	CATI	
17																				
18																				
19																				
20		10380	300		SASN	C1		W7353		0055								~~~~		
21																				
22																				
23																				
24		1046	84	4	SHAL	A1		K 0	G	0045	2	SLSN	C1 H		B	80		~~~~		
25																				
26																				
27																				
28		~~~~~~	2		MDSN	A1		K 0		0030	2	SASN	C1 H		B	80		~~~~		
29																				
30	C	PARALLEL CALCITE VEINLETS AT 45°																		
31																				
32		10893	429		SASN	C1	MSAM	K8353		0055				1 9				~~~~	CATI	
33																				
34																				
35																				
36		11150	255	6	SASN	C1M		K8251	ZGR	0045	4	SHAL			B	74		~~~~		
37																				
38																				

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COAL ENVIRONMENT VERSION

COMPANY *TECK CORP* PROPERTY *SUKUNKA BLOCK B* LOGGED BY *R. HINDSON* DATE *27/8/71* PAGE *8* OF *8*

TYPE (1-3)	DISTANCE (4-8)	SUB I.D. (9-12)	IDENTITY (13-18)	PROJECT (19-24)	COMMENT (25-29)	LEG LENGTH (30-37)	AZ./BEARING (38-46)	+VERT. ANGLE (47-51)	SYST	N/S NORTHING	E/W EASTING	SYST	ELEVATION
DDH	11470	A1	T1	1000									

ANL (1-3)	DISTANCE	SUB I.D.	IDENTITY	INTERVAL	F.S.I.	% MOISTURE	% ASH	% VOLATILES	% FIXED CARBON	% S

Line	Primary/Control (1-3)	Depth (4-8)	Recovery (9-12)	Rock % of Interval (13)	Rock Name (15-18)	Major Qualifying Mineral (19-21)	Minor Qualifying Mineral (22-24)	Bedding Mode Thickness (25)	Degree of Sorting (26)	Texture (30-33)	Colour Munsell System (34-37)	Rock 2 % of Interval (38)	Rock 2 Name (40-43)	Lithologic Units (62-65)
4	END	11470	312	4	SLSN	C1H	A1	K	1	ZG	0060	1	SASN	BLGT
8		~~~~	~~~~	4	SHAL	A1		K	O	J	T0035	1	MOSN	~~

Line	Type	Distance	Sub I.D.	F.S.I.	% Moisture	% Ash	% Volatiles	% Fixed Carbon	% S
16	CPT	8692							
20	ANL	9760	68	90	0.46	1597	23.52	69.93	398
24	CPT	9826							
28	ANL	9878	44	65	0.69	9.72	21.16	73.02	025
32	ANL	9956	86	75	0.71	8.30	22.86	71.08	051

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R. HINDSON DATE 29/8/71 PAGE 1 OF 5

TYPE (1–3)	DISTANCE (4–8)	SUB I.D. (9–12)	IDENTITY (13–18)	PROJECT (19–24)	COMMENT (25–29)	LEG LENGTH (30–37)	AZ./BEARING (38–46)	+VERT. ANGLE (47–51)	SYST (52–53)	N/S NORTHING (54–61)	E/W EASTING (62–69)	SYST (70–71)	ELEVATION (72–77)
DDH	1950	A4	T2	1000				-90	SR	254375	1063254	SR	5376.0

Primary / Control (1–3)	Depth from collar to end of interval described (4–8)	Recovery (9–12)	Rock name (13–18)	Major qualifying mineral or material (19–21)	Minor qualifying mineral or material (22–24)	Bedding / sorting / grain size / sphericity / roundness (25–29)	Texture (30–33)	Colour, Munsell system (34–37)	Comment	Lithologic units (62–69)
C									NO TRAARI TESTS	
CPT	00									
C									COAL OUTCROP AT SURFACE	BLGT BD
ØVB	.30									
C									OCC. RUSTY SEAMS - WEATHERED	
	163	133	SASN	S4M	C1M	W8351	U	0055		BLGT
C									FREQUENT RUSTY SEAMS	
	194	31	~~~	~~~	~~~	~~~	1U	~~~		~~~
	571	377	SASN	C1M		W8351	U	0060		~~~
	695	124	SASN	C2L	C1L	K8351	Z	0050		~~~
C									CARBONACEOUS FOSSILS IN LAST 0.5	
	1100	405	SASN	C1M	C2L	W8351	UF	0050		~~~
ANL	1106	3	LOST							~~~
~~	~~~	3	COAL					0020		~~~ SR

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 2 OF 5

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY UNITS	RECOVERY TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	MINOR QUALIFYING MINERAL OR MATERIAL: AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	QUALIFYING MINERAL OR MATERIAL: AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY GP 1	RELATIVE INTENSITY GP 2	RELATIVE INTENSITY GP 3	ANGLE TO CORE AXIS: < 30°	30°–60°	> 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: TYPE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: PLUNGE	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GP GROUP	FM FORMATION	MM EMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE	CONTROL	DISTANCE	SUB I.D.		IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ./BEARING							+VERT. ANGLE					SYST	N/S NORTHING								E/W EASTING			SYST	ELEVATION				
ANL		DISTANCE	SUB I.D.		IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH				%VOLATILES									%FIXED CARBON																	
SCL																																																		
A	N	L	1 1 2 0			5		LOST																																											
			~~			9		COAL									BS		0 0 1 0																															
A	N	L	1 1 3 6			1 6		COAL									BSC		0 0 1 0																															
			1 1 6 0			1 9		LOST																																										
			~~			5		SHAL	C	2 M		K		0			N		0 0 3 0																															
			1 1 8 0			5		LOST																																										
			~~			1 5		SHAL	C	2 M		K		0			N		0 0 3 0																															
			1 2 0 0			2 0 8		SHAL	C	2 M	C	1 K		0			N		0 0 3 C	2		-52 SW	C	2				B			8 5																			
			1 2 3 0			1 4		LOST																																										

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R. HINASON DATE 29/8/71 PAGE 3 OF 5

TYPE DDH | DISTANCE 1950 | SUB I.D. AA | IDENTITY T2 | PROJECT LOOO | COMMENT | LEG LENGTH | AZ./BEARING | +VERT. ANGLE | SYST | N/S NORTHING | E/W EASTING | SYST | ELEVATION

A N L | DISTANCE | SUB I.D. | IDENTITY | INTERVAL | F.S.I. | % MOISTURE | % ASH | % VOLATILES | % FIXED CARBON

S C L

Control (3)	Depth from collar to end of interval described (4–8)	Recovery (9–12)	Rock 1 name (15–18)	Major qualifying mineral or material (19–21)	Minor qualifying mineral or material (22–24)	Bedding mode thickness (25)	Degree of sorting (26)	Texture major → minor (30–33)	Colour Munsell system (34–37)	Structure identification (52)	Angle to core axis (56–57)	Group (62–63)
	1230	16	SHAL	C2M		K	O	N	0030			BCET
	1274	4	LOST									~~~
C				0.4' OF COAL AT 124.2								
	~~	40	SHAL	C2H	L4	K	O	N	0020			~~~
	1344	12	LOST									~~~
C				HIGHLY CARBONACEOUS FOR THE FIRST FOOT								
	~~	58	SHAL	C2M		K	O	N	0020			~~~
	1412	25	LOST									~~~
	~~	43	SHAL	C2M		K	O		0020	B	84	~~~
	1430	5	LOST	C2M								~~~
	~~	13	SHAL	C2M		K	O		0020			~~~

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R HINDSON DATE 29/8/72 PAGE 4 OF 5

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°-60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS Tr/Pc	FOR DRILL CORE PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM EMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1 2 3		4 5 6 7 8		9 10 11	12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54 55 56 57		58	59 60 61	62 63 64 65	66	67	68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE SDH		DISTANCE 1950		SUB I.D. A4		IDENTITY T2			PROJECT INTERVAL 100.0				COMMENT F.S.I.					LEG LENGTH % MOISTURE		AZ./BEARING % ASH			% VOLATILES		+VERT. ANGLE						SYST	N/S NORTHING % FIXED CARBON			E/W EASTING				SYST	ELEVATION			
A N L		DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					% MOISTURE		% ASH			% VOLATILES									% FIXED CARBON												
S C L																																													
	C								BECOMING				SANDY					TONALOS					BASE		OF					UNIT															
		1475		459		SHAL			C2	MA	I		K		O			NK	0020	/		SLSN		C2m												BLGT								
	C								SHALY				AT		BASE			OF				UNIT.																						
		1520		459		SASN			C1	H	C2	L	W8271					FJ	0050	/		SHAL		C2L																				
		1530		6		LOST																																							
				10		COAL												BS	0010																							CH			
		1545		4		LOST																																							
				5		COAL												BS	0010																							CH			
		1646		6		LOST																																							
				95		SASN			SH	H	C2		Q7373					NZ	0045																											
	C								SLICKENSIDED				AT		75°			RUSTY																													
		1728		82		SASN			C2		C1		Q83		3			HZN	0050																											

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/72 PAGE 5 OF 5

Header card:

TYPE (1–3)	DISTANCE (4–8)	SUB I.D. (9–12)	IDENTITY (13–18)	PROJECT (19–24)	COMMENT (25–29)	LEG LENGTH (30–37)	AZ./BEARING (38–46)	+VERT. ANGLE (47–51)	SYST / N/S NORTHING (52–61)	E/W EASTING (62–69)	SYST / ELEVATION (70–77)
DDH	1950	AA	T2	1000							

A N L	DISTANCE	SUB I.D.	IDENTITY	INTERVAL	F.S.I.	% MOISTURE	% ASH	% VOLATILES	% FIXED CARBON		
									4.5		

Log entries (S C L):

Line	Primary / Control (1–3)	Depth (4–8)	Recovery (9–12)	Rock name (13–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding / sorting / grain size / sphericity / roundness (25–29)	Texture (30–33)	Colour (34–37)	% Ash (38–43)	% Volatiles (44–51)	% Fixed carbon (52–61)	Lithologic units (62–69)
4		1950	222	SASN	C1	C2L	W8251	ILF	0060				BLGT
12	CDT	1100											
16	ANL	1136	36				8.5		0.74	4.80	22.33	73.59	1.43

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP. PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 1 OF 17

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS															ROCK 2 INTERBEDS							STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS								ACCESSORY MINERALS OR MINERALIZATION									
				ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE IDENTIFICATION	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP ANGLE	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL FOR COMMENT CARD NO. OF LAST COLUMN USED
		TENTHS	UNITS				NAME	AMT.	NAME	AMT.						MAJOR → MINOR								< 30°	30°–60°	> 60°		PLUNGE OF SLICKENSIDE OR FOLD AXIS Type PLUNGE	ANGLE TO CORE AXIS																										
1 2 3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 16	19 20 21	22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63 64 65	66 67 68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE DDH	DISTANCE 260.5		SUB I.D. A2		IDENTITY T3		PROJECT 1006				COMMENT					LEG LENGTH		AZ./BEARING					+VERT ANGLE -90					SYST. SK	N/S NORTHING 258153							E/W EASTING 979375		SYST. SK	ELEVATION 56930				
A N L	DISTANCE		SUB I.D.		IDENTITY		INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES							%FIXED CARBON																				
S C L																																																				
1 C	TECSAC TESTS @ 500' -89° (N 27°E), @ 1610' -81° (N 12°W), @ 1560'																																																				
2 C	— 84° (NG 30'W)																																																				
3																																																					
4 CPT	00																																																				
5																																																					
6																																																					
7																																																					
8 Ø V B	70																																																				
9																																																					
10																																																					
11																																																					
12	51 1	44	9	SLSN	SAH		K	1					RZL	0045	4	SHAL	A1											B	80					FTCMHL																		
13																																																					
14																																																					
15																																																					
16	2			SASN	SAH		K	8253					2L	0045																																								
17																																																					
18 C					SASN		BECOMES INCREASINGLY COARSE TOWARDS BASE OF UNIT																																																	
19																																																					
20	51.5	45		SHAL	SAH		K	0						0045	5	SASN																																						
21																																																					
22 C					PEBBLES VA TO 2.5 CM ACROSS																																																	
23																																																					
24 CNT	52 0	5		CGSX	SAH	CIL	Q	2	X	59				0045																																								
25																																																					
26																																																					
27																																																					
28	54 3	23 5		SLSN	CIM		K	1						0050																																							
29																																																					
30 C					SHAL		D		TOWARDS BASE																																													
31																																																					
32	5			SHAL	AIK		K	0						0030																																							
33																																																					
34 C					THIN COAL PARTINGS													FCM		54.3	1/6		55.5	—	A/SO	AT		60.0																								
35																																																					
36	64.6	10 3		MDSN	CIL	AI	K	0					TEN	0020																																							
37																																																					
38																																																					

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 2 OF 17

TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT
DDH	16050	B2	T3	1000

Line	Control (3)	Depth (4–8)	Recovery (9–12)	Rock 1 Name (15–18)	Major Qualifying (19–21)	Minor Qualifying (22–24)	25–29	Texture (30–33)	Colour (34–37)	Rock 2 % (38)	Rock 2 Name (40–43)	Structure Ident. (52)	Angle to Core (56–57)	Lithologic Units (62–69)	Accessory Minerals (70–73)
4		658	12	COAL				CO	0030					FTCMGUU8	
8		663	5	MDSN	C2L	A1	K 0	NJ	0020					~~~	
10	C	BEDDING ANGLE MAY BE UNRELIABLE													
12		770	107	SASN	C2	C1M	K7351	ZJ	0060			B	75	~~~	
14	C	INCREASINGLY CARBONACEOUS WITH DEPTH													
16		810	409	SHAL	C2L	A1	K 0	N1	0020	1	MDSN	B	80	~~~	PYT9
20		815	5	COAL				BC	0010					~~~ U7	
24		820	57	MDSN	C2L	A1	K 0		0020	3	COAL			~~~	
28		873	53	SLSN	C2L		K 1	NF	0045					~~~	
30	C	COARSER WITH DEPTH													
32		977	104	SASN	C1M		K8353	ZL	0060					~~~	
36		987	108	SHAL	C2L		K 0	N	0015	2	COAL			~~~	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 3 OF 17

TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT	COMMENT	LEG LENGTH	AZ./BEARING	+VERT. ANGLE	SYST	N/S NORTHING	E/W EASTING	SYST	ELEVATION
DDH	16050	BQ	T3	1000									

A N L	DISTANCE	SUB I.D.	IDENTITY	INTERVAL	F.S.I.	%MOISTURE	%ASH	%VOLATILES	%FIXED CARBON
S C L									

Line	Primary (1)	Control (2–3)	Depth from collar or distance from control point to end of interval described (4–8)	Recovery (9–12)	Rock % of interval (13)	Rock 1 name (14–18)	Major qualifying mineral or material (19–21)	Minor qualifying mineral or material (22–24)	Bedding mode thickness (25)	Degree of sorting (26)	Grain size (27)	Sphericity (28)	Roundness (29)	Texture (30–33)	Colour Munsell system (34–37)	Rock 2 % of interval (38)	Rock 2 name (39–43)	Rock 2 qualifying mineral or material (44–46)	Structure identification (52)	Structure angle to core axis (56–57)	Lithologic units (62–69)
4			1015	288		COAL								B	0012	2	SLSN				FTCMGUU6
8			1062	475		SLSN	C2M		K	1				FJN	0035	5	MDSN	C2M			~
12			1103	41		SASN	C1	C2<	9	6	5	5	1	ZN	0070						~
16			1117	14		SLSN	C2<	A1	K	1				FJ	0020						~
20			1164	47		SLSN	C1<	C2<	K	1				KF	0070						~
24			1185	21		MDSN	A1		K	0				UJ	0030				B	80	~
28			1200	156		SLSN	C1<	C2<	K	1				ZK	0045	4	SHAL				~
32			1212	12		SASN	C1H		W	8	2	5	3		0060						~
34		C					CARBONACEOUS AT DEPTH														
36			1385	1735		MDSN	A1	C2M	K	0				JN	0030	5	SHAL	A1			~

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 4 OF 17

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS																		ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL												LITHOLOGIC UNITS							ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT						LEG LENGTH												SYST		N/S NORTHING				E/W EASTING				SYST		ELEVATION			
A	N	L							INTERVAL				F.S.I.						% MOISTURE																													
S	C	L																																															
	C	DISTANCE 0.50		SUB I.D. 32		IDENTITY T3			PROJECT 1000				COMMENT						LEG LENGTH				AZ./BEARING								SYST		N/S NORTHING				E/W EASTING				SYST		ELEVATION			
													F.S.I.						% MOISTURE				%ASH		%VOLATILES																							
	C								SLSN				GRADES TO						SASN				WITH		DEPTH																							
		1552		16	7.9		SLSN		F3				K	0					RKL	0040	T		SASN								B			80					FROM U								
	C								RARELY				CARBONACEOUS																																			
		1790		23	8		SASN		C1 ∠ C2 ∠				W	8	3	5	3		KF	0070																												
		1794			4		SASN		C1 ∠ C2 ∠				Q	7	4	7	5		F	0050																												
		1855		6	8		SLSN		SA		C2 ∠		K	1					UN	0050	2		SASN								B			82												
		2370		51	5.9		SASN		SA		HC2 ∠		W	7	3	5	5		UN	0070	T		SASN								B			79												
		~~				T	SHAL		A1																																							
		2638		26	5.6		SLSN		SA	m			K	1					UR	0050											B			85												
		~~				2	SHAL		SA				K	C					U	0030																												
		~~				3	SASN		SA	m			K	2					U	0070																												

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R. HINDSON DATE 29/8/71 PAGE 5 OF 17

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS													ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL												LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
				ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP –	GP 2	GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	30°–60°	> 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION NAME	%	MODE	NAME	%	MODE		
		DISTANCE TENTHS	UNITS				NAME	AMT.	NAME	AMT.																																	
1	2	3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21	22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75 76 77	78	79 80
TYPE		DISTANCE	SUB I.D.	IDENTITY			PROJECT		COMMENT							LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION			
A	N	L	DISTANCE	SUB I.D.	IDENTITY		INTERVAL		F.S.I.							%MOISTURE		%ASH			%VOLATILES								%FIXED CARBON													
S	C	L																																								
			2720	82		SLSN	A1		K	1				JJT	0035																												
			2822	102		SASN	C1	L	Q	8373				U	0065													B		82													
			2882	606		SASN	S4M		K	E2				G	0055	A	MASN	A1									B		80													
	C						SHEARING		OBSERVED																																			
			2890	8		CGXX	S4H	C1	L	N3	79				0050																												
			2896	6		SASN	S4M		K	B2				G	0055	A	MASN	A1																									
			2899	3		CGXX	S4H	C1	L	Q2X	79				0050																												
			3143	2449		MASN	A1		C2	LK	O			JKN	0035	1	SLSN	C15																									
			3170	27		MASN	C2	L	A1		K	C		NJ	0020																												
			3190	10		COAL								BSC	0010																												

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COAL ENVIRONMENT VERSION

COMPANY: TECK CORP PROPERTY: SUKUNKA BLOCK B LOGGED BY: R. HINDSON DATE: 29/8/71

TYPE: DDH DISTANCE: 1605.5 SUB I.D.: B2 IDENTITY: T3 PROJECT: 1000

Line	Control	Depth (end of interval)	Tenths	Recovery	Tenths	Rock 1 Name	Major Qualifying Mineral	Minor Qualifying Mineral	Bedding Mode Thickness	Degree of Sorting	Texture	Colour (Munsell)	Rock 2 % of Interval	Rock 2 Name	Lithologic Units	SM
4		319	6	1	6	MASN	C2L	A1	K	0	JNF	0020			ETCMGIL	
8		320	8	1	2	SLSN	C2L		K	1	FNJ	0030			—	
12		323	3	2	5	MASN	C2L		K	1	JNF	0020			—	
16		325	0	17	8	SASN	C2	S4	K	3	JF	0050	2	SLSN	—	
18	C	COAL PARTINGS AVG 1 MM														
20		338	7	13	7	SHAL	C2L		K	0	NF	0020			—	
22	C	SEAMS UP TO 3.5 CM														
24		347	7	90	7	COAL			K			0020	3	SHAL	—	U4
26	C	COAL PARTINGS AVG 1 MM														
28		349	2	1	5	SHAL	C2L		K	1	N	0020			—	
32		351	0	1	8	COAL			K		BS	0020			—	U3
34	C	COAL PARTINGS UP TO 1 MM														
36		352	6	16	8	SHAL	C2L		K	1	N	0020	2	COAL	—	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP　PROPERTY SUKUNKA BLOCK B　LOGGED BY R HINASON　DATE 29/8/71　

Type	Distance	Sub I.D.	Identity	Project
DDH	26.050	82	T3	1000

Line	Control	Depth (4-8)	Recovery (9-12)	Rock name (15-18)	Major qualifying mineral (19-21)	Minor qualifying mineral (22-24)	Bedding / sorting / grain size / sphericity / roundness (25-29)	Texture (30-33)	Colour (34-37)	Rock 2 % (38)	Rock 2 name (40-43)	Lithologic units (62-69)
4		3698	172	SASN	C1L		K82	RBZJ	0055	4	SLSN	FTCMCU
8		3770	72	SHAL	C2L		K 0	NFJ	0025	1	MOSN	~~~
12		3800	30	SASN	C1L	C2L	K8355	ZFJT	0060			~~~
16		3852	52	MOSN	C1K		K 0	FJ	0030			~~~
20		3903	518	COAL				BS	0022	2	SHAL	~~~ U2
24		3944	41	SASN	S4H	C2L	W8351	F	0050			~~~
26	C	SLICKENSIDES @ 50° - COAL PARTINGS TO 1 CM										
28		3980	36	SHAL	C2L		K 0	N	0035	2	COAL	~~~
30	C	COAL PARTINGS UP TO 1 CM.										
32		4004	245	SLSN	C2M	S4	K 1		0040	5	SHAL	~~~
34	C	COAL PARTINGS UP TO 0.5 CM.										
36		4033	298	MASN	C2M		K 0	NJ	0030	2	COAL	~~~

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 8 OF 17

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY UNITS	RECOVERY TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY: OP —	OP 2	OP 3	ANGLE TO CORE AXIS: < 30°	30°–60°	> 60°	FOLD AXES; BEDDING; DYKE CONTACT & FAULT ATTITUDES UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: TYPE	PLUNGE OF SLICKENSIDE OR FOLD AXIS	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GROUP	FORMATION	MEMBER	SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32	33 34 35 36	37	38	39 40 41 42 43		44 45 46	47	48	49	50	51	52	53 54	55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75	76 77	78	79 80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT			COMMENT							LEG LENGTH			AZ./BEARING				+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION				
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					%MOISTURE			%ASH			%VOLATILES						%FIXED CARBON															
S	C	L																																												
			4094		61	6		SASN	C2L		C1L		K	2				RN	0050			A	SASN																									
			4266		172			MASN	C2		AIM		K	0				FJ	0030													B		80													
	C								DEBRIS				AVG						3-5			MM																									
CWT			4270			45		COAL											0020	5	CGXX																									W1
			4477		207			CGXX	S4H		C1L		K	75	79			N	0050																											
			4666		189			CGXX	S4H		C3M		K	5X	59				0050																											
			4966		306			CGXX	S4H		C2L		K	3W	79			NF	0050																											
	C								SASN	+	CGXX		MIXED									TO		4977	6																							
			4994		285			SASN	S4H		C1L		Q	73	57				0075	5	CGXX																											
			5020		26			SASN	S4H		C2L		Q	73	53			JEK	0070																											
			5350		330			SASN	S4H		C2L		N	83	53				0070													B		75													

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 9 OF 17

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY UNITS	RECOVERY TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING THICKNESS MODE	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	TOTAL FRACTURING INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	GP 2	GP 3	ANGLE TO CORE AXIS < 30°	30°-60°	> 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1	2	3	4 5 6 7 8		9 10 11 12	13	14	15 16 17 18	19 20	21	22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE EDH		DISTANCE 1820.50		SUB I.D. A2		IDENTITY T3			PROJECT 1006				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION			
A	N	L	DISTANCE		SUB I.D.		IDENTITY		INTERVAL				F.S.I.					% MOISTURE		% ASH			% VOLATILES										% FIXED CARBON											
S	C	L																																											
			5362		12			SHAL	A1				K	0				1	0024																			FTCMGL								
			5560		198			SASN	S4	H			<8	3	5	3		U	0070																										
			5585		258			COAL										BS	0010	2		SHAL																							L1		
	C								CARBON		FOSSILS		HAVE					RANDOM		ORIENTATION																									
			5595		10			SLSN	C2				K	1				FNJ	0030																										
			5690		855			SASN	S4	M	C2	M	K	3				N	0055	5		SLSN																								
			5746		66			SHAL	C2	A1			K	0				NJ	0020																										
			5904		158			CGXX	S4	H	C3	H	<7	X	59				0050																										
			6082		178			CGXX	S4	H	C3	H	<2	W	79				0050																										
			6137		55			CGXX	S4	H	C3	H	W	55	57				0050																										

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY: TECK CORP. PROPERTY: SUKUNKA BLOCK B LOGGED BY: R HINDSON DATE: 29/8/71 PAGE 10 OF 17

TYPE: DDH DISTANCE: 76050 SUB I.D.: B2 IDENTITY: T3 PROJECT: 1000

Line	Control (3)	Depth to end of interval (4–8)	Recovery (9–12)	Rock % of interval (13)	Rock 1 name (15–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding / sorting / grain size / sphericity / roundness (25–29)	Texture (30–33)	Colour, Munsell (34–37)	Rock 2 % (38)	Rock 2 name (39–43)	Lithologic units (62–69)
2	C					SASN BEGINS AT 610.5							
4		6137	.55	5	SASN	S4 H		W7457		0055			FTCMGL
8		6475	338	9	SASN	S4 H		L8353	U	0070			~~~
12		~~~	~~~	7	SASN	S4 H		Q74 51	U	0055			~~~
16		6477	2	5	SLSN			K 1		0035	5	SHAL	~~~
20		6482	5		SASN	S4 H	C1 L	Q74 73	U	0045			~~~
24		6530	48		SASN	S4 M	C2 L	W83 51	U	0070			~~~
28		6532	2	9	SASN	S4 H		Q83 53	U	0070			~~~
32		~~~	~~~	7	SASN	~~~		K74 51	U	0055			~~~
36		6579	42	9	CGXX	S4 H	C3 H	LSW 57		0050	1	SASN	~~~

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 11 OF 17

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL									LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	MINOR QUALIFYING MINERAL OR MATERIAL: AMT.	BEDDING THICKNESS MODE	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	QUALIFYING MINERAL OR MATERIAL: AMT.	REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY GP 1	FRACTURING: RELATIVE INTENSITY GP 2	FRACTURING: RELATIVE INTENSITY GP 3	FRACTURING: ANGLE TO CORE AXIS < 30°	FRACTURING: ANGLE TO CORE AXIS 30°-60°	FRACTURING: ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM EMBER	SM UBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51		52	53 54 55 56 57			58	59 60 61	62 63 64 65	66 67	68 69	70 71	72 73 74	75	76 77	78	79 80
TYPE BDH	DISTANCE 1,605.0	SUB I.D. 23.2	IDENTITY T3			PROJECT 1006				COMMENT					LEG LENGTH		AZ./BEARING				+VERT. ANGLE								SYST	N/S NORTHING				E/W EASTING			SYST	ELEVATION				
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES									%FIXED CARBON												
S C L																																									
	6680	10.9		SASN	SAH					9	8	3	7	9	W	0070	i	C	XX															FTCMGL							
CNT	7366	68.6		SASN	C1M	M2				K	8	3	5	1	WZ	0065													B		85											
	7420	54.7		SASN	C1S					K	8	2	5	1	KL	0065																			FTCMSK							
	~~	2		SHAL	A1					K		0			KL	0020	i	SLSN																								
	7460	49.5		SASN	C1S					K	8	2	5	1	KL	0065																										
	~~	3		SHAL	A1					K		0			KL	0020	2	SLSN																								
	8180	72.0	3	SASN	C1L					K	7	2	5	1	RTL	0060																										
	~~	3		SLSN						K		1			TJL	0040																										
	~~	3		SHAL	C2M					K		1			TL	0030																										

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 12 OF 17

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS													ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL									LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL		MINOR QUALIFYING MINERAL OR MATERIAL		BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL		REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY GP 1 / GP 2 / GP 3	FRACTURING: ANGLE TO CORE AXIS < 30° / 30°–60° / > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP	FM	MM	SM OR SEAM	NAME	%	MODE	NAME	%	MODE		
	DISTANCE TENTHS	UNITS				NAME	AMT.	NAME	AMT.						MAJOR → MINOR					NAME	AMT.																		
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63	64 65	66	67 68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE DDH	DISTANCE 1600.50	SUB I.D. B2	IDENTITY T-3			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING							E/W EASTING				SYST	ELEVATION				
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES							%FIXED CARBON																
S C L																																											
	8420	240		SHAL		A1		C2L		K	0				KTN	0040																			FTCMSS									
C															FL																													
	9492	1072	5	SASN		C1	L	C2L		K	8.2	51			Z#ND	0065																													
C															L																													
	~~		5	SLSN		A1		C2		Q	1				#JFD	0060																													
	9698	20	3	SASN		C2L				K	8.2	51			Z#	0065	2	SHAL		A1																									
CNT	1648	1950	9	SHAL		A1				K	0				KT	0050	1	SLSN																											
C						SIDERITIC BANDS (N 1356, 1368, 1371, 1391 (0.2' WIDE) – COMMONLY FRACTURED																																							
	1443	1279	3	MDSN		A1		S3L		K	0				J	0020																			FTMS					PY19				
C						RY INCREASES TOWARDS BASE OF UNIT																																							
CNT	1444	13		SASN		S4H				N	73				J	0030																									PY19	GN19			
	1444	4		COAL											BSC	1010																			BLGT		BD							
	1445	35		COAL											D	0025	5	SHAL																										

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 13 OF 17

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS																		ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL											LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	MINOR QUALIFYING MINERAL OR MATERIAL: AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	QUALIFYING MINERAL OR MATERIAL: AMT.	REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY GP 1	FRACTURING: RELATIVE INTENSITY GP 2	FRACTURING: RELATIVE INTENSITY GP 3	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE		
	TENTHS	UNITS / TENTHS																																													
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE	DISTANCE	SUB I.D.	IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION			
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES								%FIXED CARBON														
S C L																																													
ANL	14485	14			COST																														BLGT										
		20			COAL										BSC	0010																									BO					
ANL	14522	37			COAL										BS	0010																										RY19					
	14532	10			SASN	C2				K	1				F	0022	2	SASN																													
	14720	18			SASN	S4M				W	73				U	0045																															
	14870	15			SASN	C1M	C2			Q	83				Z#	0050																															
	15040	17			SASN	C1L				K	8355				U																															
	15045	55			BRXX	C1K						51					5	SASN					3333																		CA31					
	15410	365			SASN	C1L				K	8355				U	0060																															

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. WINDSOR DATE 29/8/71 PAGE 14 OF 17

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS																ROCK 2 INTERBEDS							STRUCTURE WITHIN INTERVAL											LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY QP 1	FRACTURING RELATIVE INTENSITY QP 2	FRACTURING RELATIVE INTENSITY QP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°-60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM EMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION NAME	%	MODE	NAME	%	MODE		
	TENTHS	UNITS	TENTHS																																												
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51				52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80	
TYPE COH	DISTANCE 160.50	SUB I.D. B2	IDENTITY T3			PROJECT 1000		COMMENT						LEG LENGTH	AZ./BEARING						+VERT. ANGLE								SYST	H/S NORTHING				E/W EASTING			SYST	ELEVATION					
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL		F.S.I.						%MOISTURE	%ASH				%VOLATILES											%FIXED CARBON														
S C L																																														
	154.35	2.56	SASN	C1K	C2L	98351								0055	4	SHAL	A1												B	90			BLGT										
C				COAL	PARTINGS									HAVE		RANDOM		ORIENTATION																										
	154.72	3.7		SLSN	C2L			K	1					N		0090																															
	155.04	3.2		COAL										BSC		0010																												SIK			
	155.85	8.1		SLSN				K	1					KZ		0060																															
C					HIGHLY		CARB		IN		LAST		0.2																																		
	156.54	6.9		SHAL	C2			K	0					UR		0035																															
	156.60	6		COAL										BSC		0010																												CIH			
	156.62	2.7		SHAL	C2L			K	0					N		0026	3	COAL																													
	156.64	2		COAL										BSC		0010																												CIH			
	156.75	1.1.7		SHAL	C2L			K	0					N		0026	3	COAL																													

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY: TECK CORP — PROPERTY: SUKUNKA BLOCK 'B' — LOGGED BY: R. HINDSON — DATE: 29/8/71 — PAGE 15 OF 17

TYPE: DDH — DISTANCE: 10.050 — SUB I.D.: B2 — IDENTITY: T3 — PROJECT: 1000

Line	Depth from collar (4–8)	Recovery units (9–11)	Tenths (12)	Rock name (15–18)	Major qualifying mineral	Bedding (25)	Sorting (26)	Texture (30)	Colour Munsell (34–37)	Rock 2 % (38)	Rock 2 name	Group (62–63)	Submember/Seam (68–69)
4	15708		1	LOST								BLGT	
8	~~	3	2	COAL				C	0010			~~	CH
12	15770		7	LOST								~~	
16	~~		6	COAL				C	0010			~~	CH
20	~~		37	MDSH		K	O	J	0020	3	COAL	~~	
24	~~	1	0	COAL				C	0010			~~	CH
28	~~	1	2	SHAL	C2	K	O	F	0020			~~	
32	~~	2	2	COAL				C	0010			~~	CH
36	~~	2	8	SHAL					0020	2	COAL		

1585

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 16 OF 17

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS												ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL															LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL		MINOR QUALIFYING MINERAL OR MATERIAL		BEDDING THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL		REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY GP 1	FRACTURING: RELATIVE INTENSITY GP 2	FRACTURING: RELATIVE INTENSITY GP 3	FRACTURING: ANGLE TO CORE AXIS < 30°	FRACTURING: ANGLE TO CORE AXIS 30°-60°	FRACTURING: ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
		TENTHS / UNITS / TENTHS				NAME	AMT.	NAME	AMT.											NAME	AMT.																									
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE BOH	DISTANCE 160.50	SUB I.D. 13.2	IDENTITY T3			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING						E/W EASTING				SYST	ELEVATION				
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES								%FIXED CARBON																
S C L																																												
	15836	12			LOST																														LOST									
	~~	259			COAL											C010	1		SHAL																				CH						
	~~	168			SHAL					K	C				N	C020	2		COAL																										
	~~	139			COAL											C010	1		SHAL																				CH						
	15851	155			MASN	A1				K	C				JNF	C020	5		COAL																										
	15950	99			SASN	SH	M	CL	L	9	8	3	51		UF	C045																												
	16014	64			SASN	CL	L	CL	L	K	8	3	51		~~	C045																												
END	16050	36			SASN	CL	3			W	8	3	51		U	C060																												

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORA PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 29/8/71 PAGE 17 OF 17

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY UNITS	TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	BEDDING THICKNESS MODE	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY GP 1	GP 2	GP 3	ANGLE TO CORE AXIS: < 30°	30°–60°	> 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: TYPE OF SLICKENSIDE OR FOLD AXIS	PLUNGE	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1 2 3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53	54 55	56 57	58	59 60	61	62 63	64 65	66 67	68	69	70 71	72 73	74 75	76	77	78	79	80
TYPE DDH	DISTANCE 1,660.50		SUB I.D. B2		IDENTITY T3			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING					E/W EASTING					SYST	ELEVATION						
A N L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					% MOISTURE		%ASH			%VOLATILES									%FIXED CARBON			% S															
S C L																																																
1																																																
2																																																
3																																																
4 CDF	1445 1																																															
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6																																																
7																																																
8 ANL	1452 2		71											80				0251		1087					2284						6867							244										
9																																																
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GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY REH/AIB DATE 1/9/71 PAGE 1 OF 5

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS															ROCK 2 INTERBEDS					STRUCTURE WITHIN INTERVAL									LITHOLOGIC UNITS						ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			UNITS / TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE TYPE	FOR DRILL CORE PLUNGE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION NAME	%	MODE	NAME	%	MODE		
1 2 3	4 5 6 7	8	9 10 11	12	13	14 15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38 39 40 41 42 43			44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75 76 77		78	79 80
TYPE BDH	DISTANCE 3523		SUB I.D. A2		IDENTITY T4		PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE -90					SYST SR		N/S NORTHING 29079.6		E/W EASTING 10024.01			SYST SR		ELEVATION 4879.0									
A N L	DISTANCE		SUB I.D.		IDENTITY		INTERVAL				F.S.I.					% MOISTURE		%ASH			%VOLATILES							% FIXED CARBON																			
S C L																																														
C							NO TRAPAZI TESTS																																									
CNT	00																																													
ANB	680																																													
C							0.3' BOX SECTIONS @ 129.0, 138.8, + 144.9. - MSN FRAGMENTS WITH CA CEMENT																																										
	1517	837		MSN	A1	SBK	0		J		0020													3333																CA11						
	1525	8		LSN	C1H						0075																																				
C					0.3' BENT LAYERS AT 194.9, 195.3, 196.4 - ALSO THIN SIDERITIC BANDS																																										
	1964	489		MSN	A1	SBK	0		J		0020																														PY19						
C					PY INCREASES TOWARDS BASE - CLEAN CNT WITH COAL AT BASE																																										
CNT	1975	12		SASN	S4H		W73				0040																														PY19	CN19					
ANL	1980	4		COAL					C		0010																														ALGT	UB	PY19				
C					PY @ 199.0																																										
ANL	1995	15		COAL					C		0010																															UB	PY19					
ANL	2059	40		COAL					C		0010																															UB						

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY REH/AIB DATE 1/9/71 PAGE 2 OF 5

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS													ROCK 2 INTERBEDS					STRUCTURE WITHIN INTERVAL											LITHOLOGIC UNITS						ACCESSORY MINERALS OR MINERALIZATION							UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	MINOR QUALIFYING MINERAL OR MATERIAL: AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	QUALIFYING MINERAL OR MATERIAL: AMT.	REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY GP 1	FRACTURING: RELATIVE INTENSITY GP 2	FRACTURING: RELATIVE INTENSITY GP 3	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE		
	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED: TENTHS	RECOVERY: UNITS	RECOVERY: TENTHS																			ANGLE TO CORE AXIS: < 30°	ANGLE TO CORE AXIS: 30°–60°	ANGLE TO CORE AXIS: > 60°																												
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE DOH	DISTANCE 3573	SUB I.D. A2	IDENTITY T4			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION			
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					% MOISTURE		%ASH			%VOLATILES								%FIXED CARBON														
S C L																																												
1																																												
2																																												
3																																												
4	2095	7	3		COAL											C026	2	SHAL															BLCT		UB								
5																																												
6																																												
7																																												
8			5		SHAL	C2	H			K	0				N	C025																												
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10																																												
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12	2048	3			COAL										C	C010																				UB								
13																																												
14																																												
15																																												
16	2054	6	8		SHAL	C2	M			K	0				N	C030	2	SLSN																												
17																																												
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20	2058	4			COAL										C	C010																				LB	PYTG							
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24	2425	307			SASN	C2	L			Q	7	3	51		U	C050																												
25																																												
26																																												
27																																												
28	2874	449			SASN	C1	L	C2	L	Q	8	3	55		U	C050																												
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32	2875	1			COAL											C010																												
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34																																												
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36	2896	11			SLSN	C2	A1			W	1				N	C030																												
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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY REH/AIB DATE 1/9/71 PAGE 3 OF 5

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS					ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY QP 1	FRACTURING RELATIVE INTENSITY QP 2	FRACTURING RELATIVE INTENSITY QP 3	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63 64	65	66	67	68	69	70 71	72 73	74	75	76	77	78	79	80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST		N/S NORTHING					E/W EASTING						SYST	ELEVATION						
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL			F.S.I.					%MOISTURE		%ASH			%VOLATILES							%FIXED CARBON																			
S	C	L																																																
			4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63 64	65	66	67	68	69	70 71	72 73	74	75	76	77	78	79	80
	C									MUD				SEAM																																					
		2881			1														0070																				BLCT												
		2894			7			MDSN	A1		C2		W	0				J	0025																												PY19						
		2896			2			COAL										C	0010																																		
		2933		37				SASN					K	3				U	0040																																		
		2973		40				COAL										BSC	0010																												SK						
		3090		117	6			SLSN	S2	C1			K	S1				L	0045	A		SHAL																														
		3170		80				SHAL					K	0				I	0040													B		85																	
	C								CA		VEINLETS							Q	20°																																				
		3270		106	9			SASN	C1				K	2				Z	0055	1		SHAL				L9																						CA11						
		3346		70				SHAL	A1				K	0					0035													B		82																	

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COAL ENVIRONMENT VERSION

COMPANY: TECK CORP PROPERTY: SUKUNKA BLOCK B LOGGED BY: REH / AIB DATE: 1/9/71 PAGE 4 OF 5

TYPE: DDH DISTANCE: 3573 SUB I.D.: A2 IDENTITY: TA PROJECT: 1000

Line	Primary / Control (1-3)	Depth from collar to end of interval (4-8)	Recovery (9-12)	Rock name (15-18)	Major qualifying mineral (19-21)	Bedding / Sorting / Grain size (25-29)	Texture (30-33)	Colour Munsell (34-37)	Lithologic units GP/FM (62-65)	SM (68-69)
4		3348	2	SHAL	C2	K 0		0020	BLGT	
8	ANL	3393	45	COAL			BSC	0010	~~~	CH
12	ANL	3394	1	SHAL	C2M	K 0		0020	~~~	
16	ANL	3490	96	COAL			C	0010	~~~	CH
20		3506	16	SASN	C2K	Q53		0035	~~~	
24	END	3573	67	SASN	C2K	W5355	U	0040	~~~	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY REH / AIB DATE 1/9/71 PAGE 5 OF 5

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS					STRUCTURE WITHIN INTERVAL																		LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION NAME	%	MODE	NAME	%	MODE		
	TENTHS	UNITS TENTHS																				ANGLE TO CORE AXIS < 30°	ANGLE TO CORE AXIS 30°–60°	ANGLE TO CORE AXIS > 60°																													
1 2 3	4 5 6 7 8	9 10 11 12	13 14 15 16 17 18			19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38 39 40 41 42 43			44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61													70 71	72 73 74 75	76 77	78	79 80
TYPE 1324	DISTANCE 3573	SUB I.D. A2	IDENTITY T4			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE																							SYST	ELEVATION				
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					% MOISTURE		% ASH			% VOLATILES									% FIXED CARBON																								
S G L																																																		
1																																																		
2																																																		
3																																																		
4 CAT	1976																																																	
5																																																		
6																																																		
7																																																		
8 ANL	2038	62											82			036			753				2284							7158														260						
9																																																		
10																																																		
11																																																		
12 CAT	3348																																																	
13																																																		
14																																																		
15																																																		
16 ANL	3394	46											70			077			1162				2098							7286														036						
17																																																		
18																																																		
19																																																		
20 ANL	3490	96											70			073			769				2084							7316														032						
21																																																		
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COAL ENVIRONMENT VERSION

COMPANY TECK. CORP PROPERTY SUKUNKA BLOCK B LOGGED BY A. BETMANIS DATE 8/9/71 PAGE 1 OF 4

Header card: TYPE CDH; DISTANCE 5354; SUB I.D. A3; IDENTITY TS; PROJECT 1070; COMMENT; LEG LENGTH; AZ./BEARING; +VERT. ANGLE -90; SYST SR; N/S NORTHING 270752; E/W EASTING 103.0932; SYST SR; ELEVATION 5445.0

Second header card (A N L / S C L): DISTANCE; SUB I.D.; IDENTITY; INTERVAL; F.S.I.; % MOISTURE; % ASH; % VOLATILES; % FIXED CARBON

Line	Primary / Control (1–3)	Depth from collar or distance from control point to end of interval described (4–8)	Recovery, units / tenths (9–12)	Rock % of interval (13) / Type modifier (14)	Rock name (15–18)	Major qualifying mineral or material (19–21)	Minor qualifying mineral or material (22–24)	Bedding mode thickness (25)	Degree of sorting (26)	Texture major → minor (30–33)	Colour Munsell system (34–37)	Rock 2 % of interval (38)	Rock 2 name (39–43)	Fracturing (47–51)	Identification (52–53)	Angle to core axis (54–58)	Lithologic units (62–69)	Accessory minerals or mineralization (70–77)	78–80
1	C	NO TRIBARL TESTS TAKEN																	
4	CPT	00																	
8	CUB (struck)	200																	
10	C	CLAM SHELLS @ 32.5, 43.0, 59.4																	
12		594	3949		SHAL	F3	Ci	K	0	RTFK	0045	1	SLSN		B	85	FTCMSK		
16		597	3		SHAL	F2	Ci	K	0		0060						~~~~		
18	C	FINE CALCITE VEINLETS @ 45-80° @ 88.4																	
20		897	309		SHAL	Si	Ci	K	0		0045	1	SLSN	< 55			~~~~	CA11	
24		899	2		SHAL	F2	Ci	K	0		0060						~~~~		
28		1214	315		SHAL	Si	Ci	K	0		0045						~~~~		
32		1222	8		SASN			K	83		0065			∠ 9			~~~~	CAT1	
36	CWT	1570	3489		SHAL	Si	Ci	K	0		0045	1	SLSN				~~~~		

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY A. BETMANIS DATE 8/9/71 PAGE 2 OF 4

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS															ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL											LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
				ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	MINOR QUALIFYING MINERAL OR MATERIAL: AMT.	BEDDING THICKNESS MODE	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	QUALIFYING MINERAL OR MATERIAL: AMT.	REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY: GP 1	GP 2	GP 3	FRACTURING: ANGLE TO CORE AXIS: < 30°	30°–60°	> 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS (TYPE)	PLUNGE	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7 8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63 64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79	80
TYPE		DISTANCE 53.54	SUB I.D. A3	IDENTITY T5			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING						E/W EASTING			SYST	ELEVATION							
A	N	L	DISTANCE	SUB I.D.		IDENTITY			INTERVAL		F.S.I.					% MOISTURE		%ASH			%VOLATILES							%FIXED CARBON																			
S	C	L																																														
	C						FREQUENT NARROW LIGHTER COLOURED SECTIONS																																											
	C						SILT																																										
			3579	2009			MASN	A1	CLAY		K	C				JW	0020																															
			3581		2		BENT					0					0080															B		95													
	C						LIGHTER COLOURED SECTIONS WITH FINE CA VEINLETS @																																										
			3980	3999			MASN	A1			K	0				J	0020																															
	C						CLEAN CONTACT WITH COAL BELOW																																										
CNT			4011	31			SASN				W53					W	0040																															
			4027		7		LOST																																									
				169			COAL									C	0010	T	SHAL																													
			4040		4		LOST																																									
				9			MASN	C2			K	C				JW	0020																															
			4070		11		LOST																																									

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY A. BETMANIS DATE 8/9/71 PAGE 3 OF 4

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS					STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
				ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL		MINOR QUALIFYING MINERAL OR MATERIAL		BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL		REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FOLD AXES; BEDDING; DYKE, CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP	FM	MM	SM	ACCESSORY MINERALS OR MINERALIZATION NAME	%	MODE	NAME	%	MODE		
			UNITS				NAME	AMT.	NAME	AMT.						MAJOR → MINOR					NAME	AMT.			< 30°	30°–60°	> 60°		TYPE	PLUNGE														
1	2	3	4 5 6 7 8	9 10 11	12	13	14 15 16 17 18		19 20 21		22 23 24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56 57	58	59 60 61	62	63 64 65	66 67	68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE		DISTANCE	SUB I.D.	IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING						E/W EASTING			SYST	ELEVATION			
A	N	L	DISTANCE	SUB I.D.		IDENTITY	INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES							%FIXED CARBON															
S	C	L																																									
	C						SHARP						LOWER			CONTACT																												
			4070		198		COAL									0010		2	SHAL																			BLGT		LB					
			4085		15		SASN		C2			Q	83			VC	0045																												
			4279		194		SASN		SH			K	73				0050																												
			4283		3		SASN		C2L		CLK		2			N	0030																												
	C								SH		FROM		4318			TO	4322																												
			4799		517		SASN		C1L			K	3			VS	0050																												
			4893		44		SHAL		C25			K	0			N	0025																												
			4870		27		COAL									CS	0010																										US		
			4880		10		SHAL		C2			K	0				0020																												
			4893		138		COAL										0010		2	SHAL																						MK		

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY A. BETMANIS DATE 8/9/71 PAGE 4 OF 4

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS							STRUCTURE WITHIN INTERVAL												LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14 15 16 17 18	19 20 21	22 23 24			25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56 57	58	59 60 61	62 63 64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80		
TYPE	COM	DISTANCE		SUB I.D.		IDENTITY			PROJECT INTERVAL				COMMENT F.S.I.					LEG LENGTH % MOISTURE		AZ/BEARING % ASH			% VOLATILES		+VERT. ANGLE					SYST	N/S NORTHING % FIXED CARBON					E/W EASTING			SYST	ELEVATION						
A	N	DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					% MOISTURE		% ASH			% VOLATILES								% FIXED CARBON																
S	C	L																																																
			5354		3			TS		1050																																									
		1																																																
		2																																																
		3																																																
		4	491	4		21		SHAL	C2				K	C				N	0020																						BLGT									
		5																																																
		6																																																
		7																																																
		8	491	9		5		COAL										CS	0010																									LS							
		9																																																
	C	10							C2	DECREASES			WITH		DEPTH			—	—	493.2	+	4570			IRREG.														CA		VEINLETS.									
		11																																																
		12	497	0		51		SHAL	C2M				Q	0				N	0030																									CAII									
		13																																																
		14																																																
		15																																																
		16	503	6		66		SHAL	C2	A1			K	0					0035																																
		17																																																
		18																																																
		19																																																
		20	510	6		707		SASW	C2				K	73				N	0040	3	SHAL	C2L																													
	C	21																																																
		22							SHARP				LONGER					CONTACT																																	
		23																																																
		24	513	3		27		COAL										CS	0010																									CH								
	C	25																																																
		26							#	532	S	-	533.3																																							
		27																																																
END		28	535	4		221		SASW	C1L				K	83				#	0050																																
		29																																																
		30																																																
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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY REH/AIB DATE 22/9/71 PAGE 1 OF 6

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS													ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL									LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION							UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	MINOR QUALIFYING MINERAL OR MATERIAL: AMT.	BEDDING THICKNESS MODE	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	QUALIFYING MINERAL OR MATERIAL: AMT.	REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY GP 1	FRACTURING: RELATIVE INTENSITY GP 2	FRACTURING: RELATIVE INTENSITY GP 3	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: TYPE	FOR DRILL CORE: PLUNGE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE						
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE DDH	DISTANCE 1327.0	SUB I.D. B3	IDENTITY T-6			PROJECT 1000		COMMENT							LEG LENGTH		AZ./BEARING					+VERT. ANGLE -90					SYST NP	N/S NORTHING 13700.0			E/W EASTING 20400.0			SYST AZ	ELEVATION 5580.0				
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL		F.S.I.							%MOISTURE		%ASH			%VOLATILES							%FIXED CARBON													
S C L																																								
C						TRIAXIAL TESTS @ 600' + DO NOT LOCK @ 1300' 53° (N 10° W)																																					
CPT	00																																							
DVB	110																																							
	136	26		SASN	C2K	SAMK		72	57		FK		0045																	FTCMEU										
	263	1279		SHAL		AI		K	0		I		0035		1		SASN																							
	293	1309		SASN	C2K	C1		MK	73	57	F2		0050		T		CEXX																							
	415	1223		MASN	AI			K	0		J		0020																												
	435	20		SHAL				K	0				0020		5		CARB																							
	530	1416		SASN	SIK	C1		Q	73	71	F		0050																												
	568	1454		SHAL		C2K		K	0		RNF		0025																												

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY REH/AIB DATE 22/9/71 PAGE 2 OF 6

TYPE DDH · DISTANCE 13270 · SUB I.D. 83 · IDENTITY T6 · PROJECT 1000

Line	Primary / Control (1–3)	Depth (4–8)	Recovery (9–12)	Rock % of interval (13)	Rock name (15–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding / sorting / grain size / sphericity / roundness (25–29)	Texture (30–33)	Colour (34–37)	Rock 2 % (38)	Rock 2 name (40–43)	Lithologic units (62–69)	Accessory minerals (70–77)
4		640	72		SASN	C2	01<	K8353	NZ	0050			FTCMCU	
6	C					MOSN INCREASES WITH DEPTH								
8		800	160	5	SHAL			K 0	JN	0030	5	MOSN	~~~	
12	CNT	811	11	8	COAL				O	0020	2	SHAL	~~~ U1	
16		1259	448		CGXX	S4H	C3H	L3X59		0050			FTCMCL	
20		2027	768		SASN	S4H	C2	φ7353		0055			~~~	
24		2066	39		COAL				BSC	0010			~~~ L1	
28		2075	9		MOSN	A1		K 0		0020			~~~	
32		2171	96		SLSN	C2<		K 1	ZN	0040			~~~	PYT9
36		2226	556		SHAL	C2<		K 0	N	0020	4	COAL	~~~	

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COAL ENVIRONMENT VERSION

COMPANY: TECK CORP PROPERTY: SUKUNKA BLOCK B LOGGED BY: REH / AIB DATE: 22/9/71 PAGE 3 OF 6

TYPE: DDH DISTANCE: 1,3270 SUB I.D.: 33 IDENTITY: T6 PROJECT: 1000

Line	Primary / Control (1–3)	Depth from collar or distance from control point to end of interval described (4–8)	Recovery (9–12)	Rock 1: Rock % of interval / Type modifier (13–14)	Rock 1: Rock name (15–18)	Major qualifying mineral or material (19–21)	Minor qualifying mineral or material (22–24)	Bedding mode thickness / Degree of sorting / Grain size / Sphericity / Roundness (25–29)	Texture (30–33)	Colour (Munsell system) (34–37)	Rock 2 interbeds: Rock % / Type modifier (38–39)	Rock 2: Rock name (40–43)	Rock 2: Qualifying mineral or material (44–46)	Structure: Identification (52)	Structure: Angle to core axis (56–57)	Lithologic units (62–69)
4		2439	213		CGXX	S4 H	C3 H	<3X73		0050						FTCMGL
8		2640	20i9		SASN	S4 M		W8M77		0050	1	CGXX				~~~
12		2823	1838		CGXX	S4 H	C3 4	φ5X99		0050	2	SASN				~~~
16		3045	2228		SASN	S4 H		φ8353		0050	2	CGXX	C3H	B	85	~~~
20		3917	772		SASN	C1 L		K8271	U	0050				B	80	~~~
24	CNT	4050	2337		SASN	C1 L		φ82	KU	0055	3	SHAL				~~~
28		4980	9304		SHAL			K 0	JL		2	MOSN		B	85	FTCMSK
32		~~~	~~~	2	SASN			K 3	Z		2	SLSN		~	~~	~~~
36		5304	4145		SASN	C1 K		K 2	LZJT	0050	5	SLSN		B	85	~~~

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY REH / AIB DATE 22 / 9 / 71 PAGE 4 OF 6

TYPE COH DISTANCE 13270 SUB 83 IDENTITY TG PROJECT 1000

Row	Primary / Control (1–3)	Depth (4–8)	Recovery (9–12)	Rock % of Interval (13)	Rock 1 Name (15–18)	Major Qualifying Mineral (19–21)	Minor Qualifying Mineral (22–24)	Bedding / Sorting / Grain Size (25–29)	Texture (30–33)	Colour (34–37)	Rock 2 % (38)	Rock 2 Name (39–43)	Fracturing (47–51)	Structure Identification (52)	Angle to Core Axis (56–57)	Lithologic Units (62–69)	Accessory Minerals (70–77)
2	C					MINOR SHEARING WITH CA VEINLETS @ 592.0 FOR 2.0'											
4		6188	794	6	SHAL			K 0	TJ	0040	2	SLSN	L 9	B	80	FTCMSK	CATI
8		~~~~~	~~~~~	2	SASN	C1K		K 2	K	0055						~~~~~	
12		6820	632	6	SASN	C1K		K82	UTK	0050	4	SHAL		B	85	~~~~~	
14	C					SLSN Z WITH CLAY FRAGS.											
16	CNT	8560	1740	9	SHAL			K 0	TKLZ	0045	1	SLSN		B	85	~~~~~	
18	C					PY FROM 995.0; — 0.5' BENT @ 1045.7 — CA FRACTURE FILLINGS											
20		11478	2918		MDSN	A1	S3L	K 0	UJ	0020			L 9			FTMS	PYT9CATI
24	CNT	11498	20	9	SASN			W7393	U	0031	T	CGXX				~~~~~	PY19CN19
28		11503	5	9	SHAL	C2M		K 0		0020	1	COAL				BLCT	
30	C					00.5' SILT @ 1154.7											
32		11567	64	9	COAL				BS	0010						~~~~~ BO	PYT9
34	C					CARBON FOSSILS FOR FIRST 0.5'											
36		11760	193		SASN	C2L		W8353	F	0045			Z 9				CATI

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY REH/AIB DATE 22/9/71 PAGE 5 OF 6

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL									LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
		UNITS	TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°-60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION TYPE	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GROUP	FORMATION	MEMBER	SUBMEMBER	ACCESSORY MINERALS OR MINERALIZATION SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1 2 3		4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE EOH		DISTANCE 13270		SUB I.D. B3		IDENTITY T6			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION				
A N L		DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					% MOISTURE		% ASH			% VOLATILES							% FIXED CARBON														
S C L																																												
1																																												
2																																												
3																																												
4		1221	C	450			SASN		C2L				9	5	3	5	1	N2	0045						2	9	8			8	0			BLCT				CATI					
5																																												
6																																												
7																																												
8		1224	4		4		LOST																																					
9																																												
10																																												
11																																												
12		~~~~		30			COAL				22L							BSC	0010																				US					
13																																												
14																																												
15																																												
16		1233	4	80			SHAL		C2L				K	0				FJ	0035																									
17																																												
18																																												
19																																												
20		1238	3	12			LOST																																					
21																																												
22																																												
23																																												
24		~~~~		478			COAL												00102	SHAL																				LS					
25																																												
26																																												
27																																												
28		1284	8	465			SHAL		C2L				K	0				NKJ	0036																									
29																																												
30																																												
31																																												
32		1289	0		7		LOST																																					
33																																												
34																																												
35																																												
36		~~~~		358			COAL												0010 2	SHAL																				CH					
37																																												
38																																												

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY REH / AIB DATE 22/9/71 PAGE 6 OF 6

TYPE: DDH | DISTANCE: 13270 | SUB I.D.: B3 | IDENTITY: T6 | PROJECT: 1000

Line	Primary (1)	Control (2–3)	Depth (4–7)	Tenths (8)	Recovery Units (9–11)	Tenths (12)	Rock % of Interval (13)	Type Modifier (14)	Rock 1 Name (15–18)	Major Qualifying Mineral (19–21)	Minor Qualifying Mineral (22–24)	Bedding / Sorting / Grain Size / Sphericity / Roundness (25–29)	Texture (30–33)	Colour Munsell (34–37)	Rock 2 % of Interval (38)	Rock 2 Type Modifier (39)	Rock 2 Name (40–43)	Qualifying Mineral (44–46)	Repeated Sequences (47)	Fracturing (48–51)	Identification (52)	Fold Axes, Bedding etc. (53–57)	Fold or Fault Intensity (58)	Direction of Tops (59–61)	Lithologic Units (62–69)	Accessory Minerals (70–77)	78–80
4			1297	8	8	8			SASN	C2L		W8353	U	0040						L 19					BLGT	CATI	
6		C	SHEARED W SLICKENSIDES																								
8			1298	4		6	5		SLSN	CI		K 1		0046	5		BRXX			L333					~~~	CATI	
10		C	SHEARED W SLICKENSIDES																								
12			1299	8	1	4			SLSN			K 1		0040											~~~		
14		C	CARBONACEOUS PARTINGS AT 1310.4 FOR 1.7'																								
16	END		1327	0	27	2			SASN	C2L	CI	08373	UN	0050						L 9	B	75			~~~	CATI	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORA PROPERTY SUKUNKA BLOCK B LOGGED BY A. BETMANIS DATE 18/9/71 PAGE 1 OF 4

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS																ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS						ACCESSORY MINERALS OR MINERALIZATION							UNRELIABILITY FACTOR	FORMAT CONTROL
				ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING THICKNESS MODE	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	RELATIVE INTENSITY OP 1	RELATIVE INTENSITY OP 2	RELATIVE INTENSITY OP 3	ANGLE TO CORE AXIS < 30°	ANGLE TO CORE AXIS 30°-60°	ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE / PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION NAME	%	MODE	NAME	%	MODE			
		DISTANCE TENTHS	UNITS TENTHS																																													
1 2 3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53 54 55	56 57	58	59 60 61	62	63 64 65	66 67	68 69	70 71	72	73	74	75	76	77	78	79 80
TYPE BDH	DISTANCE 3172		SUB I.D. CS		IDENTITY T7		PROJECT 1400			COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE -50					SYST MA	N/S NORTHING 1400.0			E/W EASTING 267.550.0			SYST MA	ELEVATION 4100.0											
A N L	DISTANCE		SUB I.D.		IDENTITY		INTERVAL			F.S.I.					%MOISTURE		%ASH				%VOLATILES							%FIXED CARBON																				
S C L																																															
1 C							NO TEST PIT TESTS										TAKEN																																
2																																															
3																																															
4 CPT		80																																													
5																																															
6																																															
7																																															
8 CVB		310																																													
9																																															
10 C							CA VEINLETS									@ 45°	@ 0.6.8 - 67.5																															
11																																															
12		791	481			MASN	A1		S3K	K	0					K	0020								29												FTMS				CA T1							
13																																															
14																																															
15																																															
16 CNT		910	19			SASN				N	3						0040																															
17																																															
18																																															
19																																															
20		901	91			SHAL	A1		C2K	K	0						0025												B	75																	
21																																															
22																																															
23																																															
24		910	9			LOST																																									
25																																															
26																																															
27																																															
28		993	58			LOST																																									
29																																															
30 C							BARELY BROKEN																																									
31																																															
32		~~~	25			COAL										CS	0010												B	85							BD	PY	T9							
33																																															
34																																															
35																																															
36		101 C	17			SASN	C2L			K	3						0045																															
37																																															
38																																															

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY A. BETMANIS DATE 18/9/71 PAGE 2 OF 4

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY UNITS	RECOVERY TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	BEDDING THICKNESS MODE	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM
1 2 3		4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37
TYPE 100H		DISTANCE 3172		SUB I.D. 05		IDENTITY T7			PROJECT 1000				COMMENT					LEG LENGTH	
A N L		DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					%MOISTURE	
S C L																		%ASH	%VOLATILES
		1648		638			SASN		CIL				K	3				NZ	0050
		1690		42			COAL											CS	0010
		1792		102			SHAL						K	0				R	0035
		1813		219			COAL											D	
		1931		118			SHAL		S2		C2K		K	0				U	0040
		1852		15			COST												
		~~		6			COAL											BSC	0010
		1988		36			SASN		S1				K	63				K	0040
		1895		7			SHAL		S2				K	8C					C040

ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY GP 1	GP 2	GP 3	ANGLE TO CORE AXIS: < 30°	30°-60°	> 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS (TYPE)	PLUNGE	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM
38	39	40 41 42 43	44 45 46		47	48	49	50	51				52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
AZ./BEARING					+VERT. ANGLE								SYST	N/S NORTHING									E/W EASTING							
%ASH			%VOLATILES										%FIXED CARBON																	
																							B	G	T					
																													U	S
													B			8	0												
																													M	K
																													M	K

ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
70 71	72	73 74 75		76	77	78	79 80
SYST	ELEVATION						

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY A BETMANIS DATE 18/9/71 PAGE 3 OF 4

TYPE DDH DISTANCE 3172 SUB I.D. C5 IDENTITY T7 PROJECT 1000

Line	Primary	Control	Depth from collar to end of interval (cols 4–8)	Recovery (cols 9–12)	Rock 1 name	Major qualifying mineral	Minor qualifying mineral	Bedding / sorting	Texture	Colour (Munsell)	Rock 2 % of interval	Rock 2 name	Fracturing	GP	FM	MM	SM	Accessory minerals
1																		
2																		
3																		
4			1923	28	SHAL	C1L	A1	K 0		0035				BLGT				
5																		
6																		
7																		
8			19365	13	SHAL	A1	C1L	K 0		0030	5	BRXX	L333		~~~			CAT1
9																		
10																		
11																		
12			1970	34	LOST										~~~			
13																		
14																		
15																		
16			1988	189	COAL				D	0010	1	SHAL			~~~		LS	
17																		
18																		
19																		
20			2183	194	SASN	C1L		K83	U	0055			L 9		~~~			CAT1
21																		
22																		
23																		
24			2210	28	COAL				BSC	0010					~~~		MS	
25																		
26		C	C2+N 225.5 – 226.0, 230.4 – 239.0 — SANDY 226.6 – 226.2, 237.4 – 239.4															
27																		
28			2536	326	SHAL	C2L	S2	K 0	JNF	0025					~~~			
29																		
30																		
31																		
32			2641	105	MDSN	C21		K 0	JN	0025					~~~			
33																		
34		C	CALCAREOUS BANDS.															
35																		
36			2747	106	SHAL	C1L	S2	K 0	JU	0025					~~~			
37																		
38																		

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY A BETMANIS DATE 18/9/71 PAGE 4 OF 4

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY UNITS	TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY GP 1	GP 2	GP 3	ANGLE TO CORE AXIS < 30°	30°–60°	> 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	TYPE	PLUNGE	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1	2	3	4 5 6 7 8	9 10 11	12	13	14	15 16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74 75	76 77	78	79 80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ/BEARING					+VERT. ANGLE						SYST	N/S NORTHING			E/W EASTING				SYST	ELEVATION			
A	N	L	DISTANCE						INTERVAL				F.S.I.					%MOISTURE		%ASH					%VOLATILES						%FIXED CARBON												
S	C	L																																										
	C								COAL		PARTING								278.6	278.7																										
			278 7		40		MDSN	A1			K	0						NOR	0020																				BLET							
			299 2		205		SLSN	S2		C1	K	1						KE	0040																										
	C							SHARP		LOWER		CONTACT		WITH		COAL		INTO		SANDSTONE																										
			302 9		37		COAL											BSC	0010																									GH			
			302 9		59		SASN	S4	M			9	93					U	0050																										
			312 2		34		SASN	C2L	S4	MK	7	3						N	0045																										
	END		317 2		50		SASN	S4	M			83						U	0050																										

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R. HINDSON DATE 5/10/71 PAGE 1 OF 15

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS													ROCK 2 INTERBEDS								STRUCTURE WITHIN INTERVAL											LITHOLOGIC UNITS								ACCESSORY MINERALS OR MINERALIZATION								UNRELIABILITY FACTOR	FORMAT CONTROL
				ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM EMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS NAME	ACCESSORY MINERALS %	ACCESSORY MINERALS MODE	ACCESSORY MINERALS NAME	ACCESSORY MINERALS %	ACCESSORY MINERALS MODE		
		TENTHS	UNITS / TENTHS																																														
1 2 3		4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51		52	53	54	55	56	57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE		DISTANCE 19770	SUB I.D. C2	IDENTITY TB			PROJECT 1000				COMMENT					LEG LENGTH		AZ/BEARING					+VERT. ANGLE 90							SYST MP	N/S NORTHING 33,700.0						E/W EASTING 94,300.0				SYST AL	ELEVATION 5100.0				
A N L		DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					% MOISTURE		%ASH			%VOLATILES								%FIXED CARBON																			
S C L																																																	
1 C							TRIAXIAL TESTS									(W 500'		8.5°		(LS 76°W)												(W 1000'				84° (N10°E)											
2																(W 1550'		9.0°														(W 1946'				89° (N36°E)											
3																																																
4 CPT		00																																														
5																																																
6																																																
7																																																
8 DVB		1615																																														
9																																																
10																																																
11																																																
12		2274	659 5		SHAL	A1					K	0				UR	0045	5	SLSW												B		79						FTCMHZ											
13																																																
14																																																
15																																																
16		2280	6		SASN						Q	3				E	0050																																
17																																																
18																																																
19																																																
20 CNT		2289	9		CGXX	C3HCI					Q	2	W	99			0050																																
21																																																
22																																																
23																																																
24		2370	81		MASN	A1	C2	L	K	C						NJ	0036																																
25																																																
26																																																
27																																																
28		2399	29		MAN	A1	C2	L	K	0						JE	0040																																
29																																																
30																																																
31																																																
32		2420	21		MASN	A1			K	0						JU	0040																																
33																																																
34 C							HIGHLY		CARB.		IN		LAST		0.3'																																		
35																																																
36		2443	23		SLSN	C2	L		K	1						LTE	0030																																
37																																																
38																																																

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINDSON DATE 5/10/71 PAGE 2 OF 15

TYPE DDH DISTANCE 1972C SUB I.D. C2 IDENTITY T8 PROJECT 1020

Control (2–3)	Depth to end of interval (4–8)	Recovery (9–12)	Rock % of interval (13)	Rock 1 name (15–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding (25)	Degree of sorting (26)	Texture (30–33)	Colour Munsell (34–37)	Rock 2 interbeds: % / name (38–43)	Structure identification (52)	Angle to core axis (56–57)	Lithologic units (62–69)
	2470	16		LOST										FTCMGWW8
C	60% SHAL IN LAST 0.2' RECOVERED													
	~~	11	9	COAL					BS	0010	7 SHAL			~~~ W8
	2584	114	6	SLSN	C2L		K	1	LJN	0060	3 SHAL			~~~
	~~		1	SASN			Q	3	L	0060				~~~
	2600	16		MASN	C2L	A1	K	0	NJF	0045		B	75	~~~
	2627	7		LOST										~~~
C	CLEAN IN CENTRE — 20% SHAL AT TOP & BOTTOM													
	~~	20	8	COAL						0010	2 SHAL			~~~ U7
	2737	110		MASN	C2L	A1	K	C	NJ	0030				~~~
	2760	23		COAL					BSC	0010				~~~ W6

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COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINMSON DATE 5/10/71 PAGE 3 OF 15

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS													ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS								ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL	
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY OP 1	FRACTURING RELATIVE INTENSITY OP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS Type	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER	OR SEAM	NAME	%	MODE	NAME	%	MODE			
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46	47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80	
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT		COMMENT						LEG LENGTH		AZ./BEARING				+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION					
A	N	L	DISTANCE		SUB I.D.		IDENTITY		INTERVAL		F.S.I.						%MOISTURE		%ASH			%VOLATILES						%FIXED CARBON																
S	C	L																																													
	C								SILTY		AT						DEATH																													
			2770		10			MASN	C2L	A1	K	0					F1	0030																												
			2780		10			SLSN	C2L		K	1					REL	0055											B		70														
	C								HIGHLY		CARB		AT		DEATH																															
			2790		10			SHAL	C2L		K	0					FN	0030											B		75														
			2795		5			COAL									BSC	0010																												
			2823		20			SLSN	C2L		K	1					DZ	0045																												
			2825		2			COAL									BSC	0010																												
			2850		25			SLSN	C2L		K	1					DZ	0045																												
	C								0.2	BRXX	WITH		CA	@	2940	—																					CLAM	SHELLS											
			2952		102			MASN	C2L	F3L	K	0					JF	0030																												
			2955		46.9			SLSN	C2L		K	1					KLM	0056	1	SLSN																											

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COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HANSON DATE 5/10/71 PAGE 4 OF 15

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS															ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL												LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	IDENTIFICATION	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP ANGLE	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74	75	76 77	78	79 80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT		COMMENT						LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING						E/W EASTING				SYST	ELEVATION					
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL		F.S.I.					%MOISTURE		%ASH			%VOLATILES							%FIXED CARBON																	
S	C	L																																												
		BDH	2970		C2		TS		1000																																						
	C								SHEARING			OBSERVED					11	TO	BEARING																												
		3021		23			SASN		C1	M	C2	L	W	8	3	3	U		0070										A		75					FTCMCN										
		3090		77			MASN		C2	L	A1		K		0		JN		0020																												
		3230		13	2	6	SASN		C2	L			K		3		RJL		0050	2	SLSN																											
						2	SHAL		C2	L	A1		K		0				0030																												
		3270		40	8		SHAL		A1				K		0		K		0050	2	SLSN										B		80														
	C								CLAM		SHELLS																																				
		3300		30			SHAL		C2	L	F3	T	K		0		FN		0020																											
		3920		6209			SASN		SA	M			W	8	3	3	AU		0070	T	SHAL										B		80														
		3070		50	4		SASN		SA	M			E		2		R		0055	3	SLSN																										
						3	SHAL		C2	L	A1		K		0				0030										B		75																

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 5/10/71 PAGE 5 OF 15

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL												LITHOLOGIC UNITS								ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE, CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS T_{P_c}	FOR DRILL CORE PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS NAME	ACCESSORY MINERALS %	ACCESSORY MINERALS MODE							
1	2	3	4 5 6 7	8	9 10 11	12	13	14 15	16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62	63	64	65	66	67	68	69	70	71	72	73	74 75	76 77	78	79	80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT						LEG LENGTH																					SYST		N/S NORTHING									ELEVATION				
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					% MOISTURE																					E/W EASTING															
S	C	L																																																					
			4110		140			SASN	CLY				K	8	3			M	0065																					FTRMCM															
			4272		1629			SASN	SAM				W	8	3	57		LT	0065	1		SHAL																																			
			4387		1159			SHAL	A1				K	0				JK	0040	1		SLSN																																			
			4480		939			SLSN					K	1				JET	0055	T		SHAL																																			
	C								SHAL					15				ARGITIC																																						
			4660		1809			SASN	SAM				K	3				M	0070	1		SHAL																																PYT	9			
			4766		1066			MASN	CLY	A1			K	0				JEN	0020																																					
			4775		9			COAL										BSC	0010																																	US	AYT	9		
			4779		36			COAL											0020	4		SHAL																															US				
			4798		2028			COAL										D	0020	2		SHAL																															US				

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP   PROPERTY SUKUNKA BLOCK B   LOGGED BY R HINDSON   DATE 5/10/71   PAGE 6 OF 15

TYPE: DDH   DISTANCE: 19770   SUB I.D.: C2   IDENTITY: T8   PROJECT: 1000   COMMENT: LEG LENGTH: AZ./BEARING: +VERT. ANGLE: SYST: N/S NORTHING: E/W EASTING: SYST: ELEVATION:

A N L: DISTANCE   SUB I.D.   IDENTITY   INTERVAL   F.S.I.   % MOISTURE   % ASH   % VOLATILES   % FIXED CARBON

Line	Control	Depth from collar to end of interval described	Recovery	Rock % of interval	Rock 1 name	Major qualifying mineral	Minor qualifying mineral	Bedding mode thickness	Degree of sorting	Texture	Colour (Munsell system)	Rock 2 % of interval	Rock 2 name	Lithologic units	Submember or seam
4		4843	45		SLSN	C2L		K	1	JL	0040			FTCMGIL	
6	C	SHEARING OBSERVED - RANDOM ORIENTATION													
8		4870	27		SHAL	C2L		K	0	INF	0020			~~~~	
12		4930	606		SHAL	C2L	A1	K	0	#RLD	0055	2	SLSN	~~~~	
16		~~~~		2	SASN									~~~~	
20		5025	95		SHAL	C2L	A1	K	0	FU	0035			~~~~	
22	C	COAL INTERBEDS CONTAIN 10-25% ASH													
24		5112	877		SHAL	C2L	A1	K	0		0020	3	COAL	~~~~	
28		5144	327		COAL					D	0020	3	SHAL	~~~~	U4
32		5161	17		SHAL	C2L		K	0		0020			~~~~	
36		5167	6		COAL						0010			~~~~	U3

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 5/10/71 PAGE 7 OF 15

TYPE DDH DISTANCE 19770 SUB I.D. C2 IDENTITY T8 PROJECT 1000

Control (3)	Depth from collar or distance from control point to end of interval described (4–8)	Recovery (9–12)	Rock % of interval (13)	Rock name (15–18)	Major qualifying mineral or material (19–21)	Minor qualifying mineral or material (22–24)	Bedding mode thickness (25)	Degree of sorting (26)	Texture (30–33)	Colour Munsell system (34–37)	Rock 2 % of interval (38)	Rock 2 name (40–43)	Lithologic units (62–69)
C	COAL PARTINGS + FOSSILS IN LAST 0.4'												
	5292	1255	5	SASN	C2L		K	2	FJZ	0040	5	SLSN	ETCMGU
	5300	8		MDSN	C2L	A1	K	0	JN	0030			~~
	5319	6		LOST									~~
	~~	139		COAL					BS	0010	1	SHAL	~~ 02
	5365	46		SHAL	C2L		K	0	N	0030			~~
C	SLSN DECREASES TO 20% IN LOWER PART OF UNIT												
	5650	2856		SHAL	C2L		K	0	FNJ	0030	4	SLSN	~~
C	COAL PARTICLES UP TO 0.8'												
	5734	84		MDSN	C2A		K	0	JN	0020			~~
C	CLAM SHELLS												
	5870	1365		SASN	C2L	F3	P	83	FJ	0060	5	SHAL	~~
C	SLSN FOR 1.0' @ 601.5'												
	6086	216		MDSN	A1		K	0	JN	0030			~~

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 5/10/71 PAGE 3 OF 15

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS													ROCK 2 INTERBEDS					STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION							UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL		MINOR QUALIFYING MINERAL OR MATERIAL		BEDDING MODE THICKNESS	GRAIN SIZE DEGREE OF SORTING	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL		REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY GP 1	FRACTURING: RELATIVE INTENSITY GP 2	FRACTURING: RELATIVE INTENSITY GP 3	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
					NAME	NAME	AMT.	NAME	AMT.	MODE THICKNESS	DEGREE OF SORTING			MAJOR → MINOR				NAME	NAME	AMT.		TOTAL INTENSITY	GP 1	GP 2	GP 3	IDENTIFICATION	TYPE PLUNGE	PLUNGE	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY														
																						ANGLE TO CORE AXIS: < 30°	30°–60°	> 60°																				
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE: CON	DISTANCE: 7970	SUB I.D.: C2	IDENTITY: TB			PROJECT: 1000				COMMENT				LEG LENGTH								+VERT. ANGLE				SYST	N/S NORTHING						E/W EASTING				SYST	ELEVATION				
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.				%MOISTURE				%ASH		%VOLATILES											%FIXED CARBON										
S C L																																											
1																																											
2																																											
3																																											
4	CNT	6091	5		CGAL									BSC	0010																			ATCMGWL1									
5																																											
6																																											
7																																											
8		6265	174		CGXX	C3	H	S4	H	<	75	59			0050																			ATCMGWL									
9																																											
10																																											
11																																											
12		6550	285		CGXX	C3	H	S4	H	<	2X	59			0050																													
13																																											
14	C					PEBBLY		AT		TOP		OF		UNIT																														
15																																											
16		6635	859		SASW	S4	H			<	54	57			0050	T		CGXX																									
17																																											
18	C										74																																
19																																											
20		6955	320		SASW	S4	H			<	83	51		U	0065																													
21																																											
22																																											
23																																											
24		7261	3066		CGXX	C3	H	S4	H	<	3W	77			0050																													
25																																											
26	C										74																																
27																																											
28				A	SASW	S4	H			<	83				0070																													
29																																											
30																																											
31																																											
32		7277	165		CGXX	C3	H			Q	83	59			0060	2		SASW																									
33																																											
34																																											
35																																											
36		7316	39		SASW	C2	K			W	3			K	0065																													
37																																											
38																																											

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINDSON DATE 5/10/71 PAGE 9 OF 15

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS							ACCESSORY MINERALS OR MINERALIZATION							UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
	DISTANCE	UNITS	TENTHS																																									
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51				52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE 1811	DISTANCE 19770	SUB I.D. C2		IDENTITY T8		PROJECT 1000			COMMENT					LEG LENGTH			AZ./BEARING				+VERT. ANGLE								SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION				
A N L	DISTANCE	SUB I.D.		IDENTITY		INTERVAL			F.S.I.					%MOISTURE			%ASH			%VOLATILES									%FIXED CARBON														
S C L																																											
	7320	4		CGXX	C3H			Q	2W	97			0050																				FTCMGL									
	7360	40		COAL									BS	0010																														
	7400	40		SASN	C2L			Q	83				F	0045																														
C					1.0'	01=		CGXL	Q	755.6							.20-40 %			SHAL																								
	7578	178	9	SHAL	C2L			K	0				NFJ	0030	i	SLSN																									PYT9				
	7581	3		SASN	C2L			Q	3				K	0065																														
	7598	17		SASN	S4M			W	74	57			M	0050																														
C					PEBBLY		AT		DEPTH																																				
	7945	347		CGXX	C3H	S4H		K	3X	59				0050																														
	8009	124		SASN	C1H			K	SN	75				0050																														
	8140	71		SASN	S4H			K	83	73				004C																														

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COAL ENVIRONMENT VERSION

COMPANY TECK CORA PROPERTY SUKUNKA BLOCK 'B' LOGGED BY K HINDSON DATE 5/10/71 PAGE 10 OF 15

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL									LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL	
		DISTANCE	TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE			
1 2 3		4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79	80
TYPE		DISTANCE		SUB I.D.		IDENTITY			INTERVAL				COMMENT					LEG LENGTH		AZ./BEARING					+VERT ANGLE					SYST	N/S NORTHING				E/W EASTING			SYST	ELEVATION				
A	N	L											F.S.I.					%MOISTURE		%ASH											%FIXED CARBON												
S	C	L																																												
CN	T	899	0	30				JUST																																ETCMSL									
	C								COARSE GR. SASN; FG. SASN + SHAL																	INTERBEDDED									831.6 – 833.0									
	C								814.0 – 3' OF CORE GROUND																																						
		900		920				SASN	C	H			L	83				U	0070																												
		919	0	20	5			SASN	C	L			K	83					0065	2		SESN													B		85			FTCMSK									
						3		SHAL					K	0				KLT	0035																												
		990	0	71	03			SHAL					K	1				J	0040	1		SLSN																								
						1		SASN					K	3					0065																												
		1007	0	17	0			SHAL	A	I			K	0				TWO	0040																												
		1155	6	109	05			SHAL					K	0				TK	0040	3		SLSN																								
	C								RARE		SASN							SECTIONS			UP	TO		1.5"			THICK																		
						2		SASN					K	3																																		

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 5/10/71 PAGE 11 OF 15

TYPE DD4 · DISTANCE 1977.0 · SUB I.D. C2 · IDENTITY T8 · PROJECT 1000

Line	Primary / Control (1–3)	Depth from collar to end of interval (4–8)	Recovery (9–12)	Rock % of interval	Rock name (15–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding / sorting / grain size (25–29)	Texture (30–33)	Colour Munsell (34–37)	Rock 2 %	Rock 2 name	Rock 2 qualifying mineral	Lithologic units	Accessory minerals
4		1116 4	8		CGXX	C3H	CIL	@2W 57		0050				FTCMSK	
6	C	0.1' PI @ 1128.0													
8		1156 0	39 6	7	SASN	CIM		<83	T	0065	3	SHAL		~~~	PYT9
12		1180 0	24 0	6	SHAL	AI		K 0	KT	0045		SASN		~~~	
16		1279 0	99 0	9	SHAL	AI		K 0	RG	0045	1	SLSN		~~~	PYT9
20	CNT	1323 9	44 9	9	SHAL			K 0	RG	0040	T	SLSN		~~~	
24		1541 3	217	4	MDSN	AI	S3<	K 0	JA	0022				FTMS	PYT9
26	C	0.2' BENTONITE LAYERS @ 1541.5 & 1555.0													
28		1574 6	33	3	MDSN	AI	S3<	K 0	JU	0020				~~~	PY19
32		1576 0	1 4	5	BCXX						5	MDSN	AI	~~~	CA21PY19
36		1601	250		MDSN	AI	S3<	K	K7	0020				~~~	PY19

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 5/10/71 PAGE 12 OF 15

TYPE DDH | DISTANCE 1977 0 | SUB I.D. C2 | IDENTITY T8 | PROJECT 1000 | COMMENT | LEG LENGTH | AZ./BEARING | +VERT. ANGLE | SYST | N/S NORTHING | E/W EASTING | SYST | ELEVATION

A N L | DISTANCE | SUB I.D. | IDENTITY | INTERVAL | F.S.I. | % MOISTURE | % ASH | % VOLATILES | % FIXED CARBON

S C L

Line	Primary/Control (1–3)	Depth from collar to end of interval (4–7)	Tenths (8)	Recovery units (9–11)	Tenths (12)	Rock % of interval (13)	Type modifier (14)	Rock 1 name (15–18)	Major qualifying mineral/material (19–21)	Minor qualifying mineral/material (22–24)	Bedding / sorting / grain size / sphericity / roundness (25–29)	Texture major → minor (30–33)	Colour Munsell system (34–37)	Rock 2 % of interval (38)	Rock 2 name (40–43)	Lithologic units GP/FM/MM (62–67)	SM (68–69)	Accessory minerals (70–77)
1																		
2																		
3																		
4	CNT	1607	8	6	8			SASN	C2L		W73	K	0040			FTMS		CN19
5																		
6																		
7																		
8		1624	5	16	7			SASN	C2L		<83	U	0055			BICT		
9																		
10																		
11																		
12		1024	7		2			SHAL	C2L		K 0	NF	0020			(wavy line)		
13																		
14																		
15																		
16		1631	2	6	5			COAL				BS	0010			(wavy line)	BO	PYT9
17																		
18																		
19																		
20		1646	0	14	8			SASN	C2L	S4H	<8357		0045			(wavy line)		
21																		
22																		
23																		
24		1662	0	16	0			SASN	C1L	S4H	<83	Z8	0050			(wavy line)		
25																		
26																		
27																		
28		1697	1	35	1			SASN	C1L		<83	U1	0066			(wavy line)		
29																		
30																		
31																		
32		1699	0	1	9			SASN	C2L		Q8 2	KN	0050			(wavy line)		
33																		
34																		
35																		
36		1700	0	10	8			COAL				BS	0010	2	SHAL	(wavy line)	SK	PYT9
37																		
38																		

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R MINDSON DATE 5/10/71 PAGE 13 OF 15

TYPE DDH | DISTANCE 19770 | SUB I.D. C2 | IDENTITY T8 | PROJECT 1000 | COMMENT | LEG LENGTH | AZ/BEARING | +VERT. ANGLE | SYST | N/S NORTHING | E/W EASTING | SYST | ELEVATION

A N L | DISTANCE | SUB I.D. | IDENTITY | INTERVAL | F.S.I. | % MOISTURE | % ASH | % VOLATILES | % FIXED CARBON

S C L

Line	Primary / Control	Depth from collar or distance from control point to end of interval described (4–8)	Recovery (9–12)	Rock % of interval (13)	Rock 1 name (15–18)	Major qualifying mineral or material (19–21)	Minor qualifying mineral or material (22–24)	Bedding mode thickness / degree of sorting (25–26)	Texture (30–33)	Colour Munsell system (34–37)	Rock 2 % of interval (38)	Rock 2 name (40–43)	Structure identification (52)	Angle to core axis (56–57)	Lithologic units (62–69)	Accessory minerals or mineralization (70–77)
2	C	COAL PARTINGS IN TOP 0.5'														
4		17090	90		SHAL	C2L		K 0	N	0030					BLGT	PYT9
8		17120	30		SLSN	C2L		K 1	F	0040					~	
10	C	SHEARING OBSERVED // TO BEDDING PLANE														
12		17440	320	8	SASN	C2L	SAM	K 83	ZK	0065	2	SHAL	B	70	~	
16		17530	90		SHAL	A1		K 0	IN	0040			B	65	~	
18	C	BRXX WITH CA @ 1753.5 — SLSN BAND @ 1756.0														
20		17588	58		MDSN	A1	C2L	K 0	JN	0020					~	CAT1
24		17670	45		LOST										~	
26	C	CRUMBLY														
28		~	18		COAL				BSC	0010					~ CH	
32		~	3		SHAL	C2L		K 0	N	0020					~	
34	C	CRUMBLY														
36		~	1.2		COAL				BSC	0010					~ CH	

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R HINOSCN DATE 5/10/71 PAGE 14 OF 15

TYPE DDH | DISTANCE 19770 | SUB I.D. C2 | IDENTITY T8 | PROJECT 1000 | COMMENT | LEG LENGTH | AZ/BEARING | +VERT ANGLE | SYST | N/S NORTHING | E/W EASTING | SYST | ELEVATION

A N L | DISTANCE | SUB I.D. | IDENTITY | INTERVAL | F.S.I. | % MOISTURE | % ASH | % VOLATILES | % FIXED CARBON

S C L

Line	Primary / Control (1–3)	Depth from collar or distance from control point to end of interval described (4–8)	Recovery (9–12)	Rock 1 name (15–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding mode thickness (25)	Degree of sorting (26)	Grain size (27)	Texture major → minor (30–33)	Colour Munsell system (34–37)	Rock 2 % of interval (38)	Rock 2 name (40–43)	Fracturing	Lithologic units	Accessory minerals
4		17670	4	SHAL	C2L		K	0		N	0020				BLGT	
8		17740	11	LOST											~~~	
12		~~~	20	SHAL	C2L		K	0		RN	0020				~~~	
14	C				COAL PARTINGS TO 0.1'											
16		~~~	176	COAL							0010	2	SHAL		~~~ CH	
20		~~~	22	SHAL	C2L		K	0		N	0020				~~~	
24		17748	85	SASN			K	1		R	0030	5	SHAL		~~~	
28		17860	112	SASN	C2L	S4M	K	8	3	%ZN	0045				~~~	
30	C				FISSILE FROM 1794.0 TO END OF UNIT											
32		18850	990	SASN			ϕ	8	3	7U	0055			< 9	~~~	CATI
34	C				CLAY GALLS IN SHAL											
36		19047	1979	SASN			K	8	3	ZT	0065	1	SHAL		~~~	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA ROCK B LOGGED BY R. HINDSON DATE 5/10/71 PAGE 1 OF

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY UNITS	TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY OP 1	OP 2	OP 3	ANGLE TO CORE AXIS: < 30°	30°–60°	> 60°	FOLD AXES, BEDDING, DYKE, CONTACT & FAULT ATTITUDES, UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	TYPE	PLUNGE	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER	ACCESSORY MINERALS OR MINERALIZATION OR SEAM: NAME	%	MODE	NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1 2 3		4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING						E/W EASTING				SYST	ELEVATION				
A N L		DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					% MOISTURE		%ASH			%VOLATILES							%FIXED CARBON																
S C L																																														
DDH		1.6770		C2		T8			1000																																						
END		19770		7237		SHAL							K	O				TG	0250	3	SLSH																BLBT									

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY A BETMANIS DATE 15/9/71 PAGE 1 OF 4

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL												LITHOLOGIC UNITS						ACCESSORY MINERALS OR MINERALIZATION								UNRELIABILITY FACTOR	FORMAT CONTROL
		UNITS	TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING THICKNESS MODE	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19	20	21	22	23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72	73 74 75	76	77	78	79	80
TYPE		DISTANCE 4880		SUB I.D. C5		IDENTITY T9			PROJECT 1000				COMMENT						LEG LENGTH			AZ/BEARING			+VERT. ANGLE -90				SYST MP					N/S NORTHING 22100 0						E/W EASTING 105,000.0				SYST MP		ELEVATION 5200.0					
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					% MOISTURE			% ASH			% VOLATILES									% FIXED CARBON																			
S	C	L																																																				
1		C							NO TRACKI TESTS TAKEN																																																
2																																																						
3																																																						
4	CAT		00																																																		
5																																																						
6																																																						
7																																																						
8	QVB		100																																																		
9																																																						
10		C							BENTONITIC BAND WITH MASN FRAGMENTS 31.0 - 31.2																																																	
11																																																						
12			370		270			MASN	A1		S3	K	K	0			J		0020																													FTMS											
13																																																					
14																																																						
15																																																						
16			375		5			RXX	C1	M										0050							L	3	3	3																	CA	I	I								
17																																																					
18		C							0.2' BENT BANDS @ 84.6 + 85.6																																																
19																																																						
20			856		481			MASN	A1		S3	K	K	0			J		0020																													PPTG										
21																																																					
22		C							SL. CARB AT BASE																																															
23																																																					
24	CWT		870		14			SASN			C2	L	W	03			R		0045																													PY	196	W	19							
25																																																					
26																																																						
27																																																					
28			890		6			LOST																																															
29																																																					
30																																																					
31																																																					
32			~~~		14			SHAL	C2	M			K	0			N		0020																													BLDR										
33																																																				
34																																																					
35																																																					
36			952		10			LOST																																															
37																																																					
38																																																					

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY A BETMANIS DATE 15/9/71 PAGE 2 OF 4

TYPE DDH | DISTANCE 1980 | SUB I.D. C5 | IDENTITY T9 | PROJECT 1000

Line	Cont (3)	Depth (4–8)	Recovery (9–12)	Rock % of interval (13)	Rock name (15–18)	Major qualifying (19–21)	Minor qualifying (22–24)	Bedding (25)	Sorting / Grain size (26–27)	Texture (30–33)	Colour Munsell (34–37)	Rock 2 % (38)	Rock 2 name (40–43)	Rock 2 qualifying (44–46)	Identification (52)	Angle to core (55–57)	Group (62–63)	Submember/Seam (68–69)
4		958	58	9	COAL						0010	T	SHAL				BLGT	OB
8		969	11		MDSN	C2L		K	0	I	0015						~	LB
12		977	8	9	COAL					D	C010	T	SHAL				~	
16		984	7		SASN	C2L		K	3		0040						~	
20		1144	160		SASN			K	73	U	0045						~	
22	C					8	124.7 –		125.2									
24		1278	134		SASN	C1L		K	73	28	0045						~	
28		1574	296		SASN	C1L		G	83		0050						~	
32		1611	376		SASN	C1L		K	83		0045	4	SHAL	A1	B	87	~	
36		1638	27		SASN	C2L	C1L	K	83	NF	0040						~	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY A. BETMANIS DATE 15/9/71 PAGE 3 OF 4

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS													ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL									LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
				ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL		MINOR QUALIFYING MINERAL OR MATERIAL		BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL		REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°-60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES, BEDDING, DYKE, CONTACT & FAULT ATTITUDES, UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE TYPE	FOR DRILL CORE PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1 2 3		4 5 6 7 8 TENTHS	9 10 11 UNITS 12 TENTHS	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51				52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75 77		78	79 80
TYPE BDH		DISTANCE 2220	SUB I.D. C5	IDENTITY T9			PROJECT 1008				COMMENT					LEG LENGTH		AZ./BEARING												+VERT. ANGLE			SYST	N/S NORTHING		E/W EASTING		SYST	ELEVATION				
A N L		DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES										%FIXED CARBON											
S C L																																											
	C						5' CARB.									BARTINGS				167.4 - 168.2																								
		1682	44		SASN	C1L					K 73					ILN	0050																						BLOT						
		1690	86		COAL												0104		SHAL	C2L																					VS					
		1710	20		MDSN						K 0					J	0020																													
		1728	189		COAL											BS	0010	T	SHAL																							MK					
		1730	2		SHAL	C2L			K 0								0020																													
	C					SL.	SHALY									NEAR	BASE																													
		1746	169		COAL											C	0010	T	SHAL																							LS					
		1764	18		SLSN	M1	C2		K 1							N	0030																													
		1913	49		SHAL	C2L			K 0							N	0020																													
	C					COAL	PARTING									1956 - 1960																													
		2031	218		SHAL	C2L			K 0							N	0020																													

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY A. BETMANIS DATE 15/9/71 PAGE 4 OF 4

TYPE DDH DISTANCE 2880 SUB I.D. 55 IDENTITY T9 PROJECT 1000

Line	Primary (1–2)	Control (3)	Depth to end of interval (4–8)	Recovery (9–12)	Rock 1 name (15–18)	Major / minor qualifying mineral (19–24)	Bedding, sorting, grain size etc. (25–29)	Texture (30–33)	Colour Munsell (34–37)	Rock 2 interbeds (38–46)	Lithologic units (62–69)	Accessory minerals (70–77)
4			2163	32	COAL			BSC	0010		BLGT CH	
6		C				CARBONACEOUS NEAR TOP						
8			2095	328	SHAL	C2LAI	K 0		0035	2 SASN	~~~	PYT9
12			2120	25	SASN		K83	U	0050		~~~	
14		C				OCC. STRINGERS OF CARBONATE						
16			217.3	537	SASN		K83	N	0040	3 SHAL	~~~	
18		C				CONGLOMERATE BEDS WITH TR. PY – 218.2 - 216.5 —— 219.4 - 219.7						
20	END		2880	707	SASN	C1L	K83		0040		~~~	

G.L.01.06

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R HINDSON DATE 6/10/71 PAGE 1

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY UNITS	RECOVERY TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY GP 1	GP 2	GP 3	ANGLE TO CORE AXIS < 30°	30°-60°	> 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	PLUNGE	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GP GROUP	FM FORMATION	MM EMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALIZATION: NAME	%	MODE	NAME
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ/BEARING					+VERT ANGLE					SYST	N/S NORTHING																							
		DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					% MOISTURE		% ASH			% VOLATILES																															
A	N	L																																																	
S	C	L																																																	
	C								TRIPARI TESTS											@ 500'		@ 9°			(N 17°30' E)																1020'		24° (N	
	C																			@ 1500'		@ 12°			(S 25° W)																								
CAT		00																																																
NB		1290																																																
		1355		65			SASN		C2K	C1K			K	7.3	7.5			N	0050																B		82						ETCMGW								
	C								0.8' SHAL @ 140.6																																													
		1561		2e69			SASN		C1K				W	5.3	7.7				0060		T	SHAL																															
	C								CRUMBLY																																											
		1613		52			MDSN						K		0			W.J	0020																																
		1618		5			SASN						Q		3				0060																																
		1676		589			MDSN		A1				K		0			J	0030		T	SASN																														
		1807		1315			SHAL						K		0			KT	0045		S	SASN														B		75												
		1870		639			SASN		C1K				K	8.2	7.3			JR	0050		T	SHAL														B		75												

GEOLOG
COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINNSON DATE 6/10/71 PAGE 2 OF 11

TYPE DDH | DISTANCE 16480 | SUB I.D. C3 | IDENTITY T10 | PROJECT 1000 | COMMENT | LEG LENGTH | AZ/BEARING | +VERT. ANGLE | SYST | N/S NORTHING | E/W EASTING | SYST | ELEVATION

A N L: DISTANCE | SUB I.D. | IDENTITY | INTERVAL | F.S.I. | % MOISTURE | % ASH | % VOLATILES | % FIXED CARBON

S C L

Line	Control (2-3)	Depth from collar or distance from control point to end of interval described (4-8)	Recovery (9-12)	Rock 1 name (15-18)	Major qualifying mineral or material (19-21)	Minor qualifying mineral or material (22-24)	Bedding / sorting / grain size / sphericity / roundness (25-29)	Texture (30-33)	Colour Munsell system (34-37)	Rock 2 % of interval / type modifier (38-39)	Rock 2 name (40-43)	Structure within interval (47-61)	Lithologic units (62-69)	Accessory minerals or mineralization (70-77)
4		2055	1859	SHAL			K 1		0035	T	SLSN		FTCMGU	
6	C				SLICKENSIDES // TO BEDDING NOTED									
8		2290	2359	SASN	S4 H		K82	RW//	0050	1	SHAL		~~~	
10	C				COARSE SASN IN C14 MATRIX - SHEARING OBSERVED.									
12		2298	8	SASN	C1 H		Q8479	U	0045				~~~	
16		2302	4	SHAL			K 0	U	0030				~~~	
20		2303	1	CEXX	C3H	S4 H	K3W		0040				~~~	
24		2340	37	SHAL	A1		K 0	U	0040				~~~	PY T9
28		2366	26	SHAL			K 0	NR	0030			B 75	~~~	
32		2378	12	MASW			K 0	JU	0030					
36		2416	389	SLSN			K 2	KR	0040	1	SHAL			

GEOLOG
COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINASON DATE 6/10/71 PAGE 3 OF 11

TYPE DDH DISTANCE 76480 SUB I.D. C3 IDENTITY T10 PROJECT 1000

Line	Control	Depth to end of interval	Recovery	Rock % of interval	Rock name (Rock 1)	Major qualifying mineral	Minor qualifying mineral	Bedding mode thickness	Degree of sorting	Texture	Colour (Munsell)	Rock 2 % of interval	Rock 2 name	Lithologic units
4		2477	61		MDSN	C2L		K	O	JF	0030			ETCMGU
8		2490	139		COAL					BS	0010	i	SHAL	~~~ US
12		2494	4		MDSN	C2L	A1	K	O	JF	0030			~~~
14	C	SHAL INTERBEDS ARE THIN - CARB ONLY AT THE TOP												
16		2780	286		SLSN	C2L	C1L	K	1	D	0055	i	SHAL	~~~
20		2982	202		SHAL	C21		K	O	F	0040	T	SLSN	~~~
22	C	COAL PARTINGS UP TO 0.1' WIDE												
24		2983	78		MDSN	C2M	A1	K	O	JN	0020	2	COAL	
28		2992	3		COAL					BSC	0070			~~~
32		3012	20		SHAL	C2L		K	O	FN	0030			~~~
36		3019	27		COAL					D	0020	3	SHAL	~~~

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA ROCK B LOGGED BY R. HARRISON DATE 6/10/71 PAGE 4 OF 11

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS																ROCK 2 INTERBEDS					STRUCTURE WITHIN INTERVAL												LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°-60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES, BEDDING, DYKE, CONTACT & FAULT ATTITUDES, UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1 2 3		4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE						SYST		H/S NORTHING								E/W EASTING								SYST		ELEVATION							
A	N	L		DISTANCE					INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES							%FIXED CARBON																											
S	C	L																																																										
		3030	0	11			SHAL		C2L				K	0				FN	0030																									FTCMGN															
		3040	0	10			COAL											DC	0010																													WA									
		3070	0	307			COAL											D	0020	3		SHAL																									WA									
		3099		29			SHAL		C2L				K	0				FN	0040																																							
		3109		108			COAL												0010	2		SHAL																									WB									
		3135		26			MDSN		C2L				K	0				FNJ	0040																																							
		3488		3536			SHAL		C2L				K	0				EKRN	0040	4		SLSN																																			
	C								NARROW SECTIONS ARE SHALY																																																		
		3520		3296			COAL											BS	0010	T		SHAL																									WB									
		3545		5			LOST																																																			

GEOLOG
COAL ENVIRONMENT VERSION

COMPANY: TECK CORP PROPERTY: SUKUNKA BLOCK B LOGGED BY: R HINDSON DATE: 6/10/71 PAGE 5 OF 11

TYPE: DDH DISTANCE: 16480 SUB I.D.: C3 IDENTITY: T10 PROJECT: 1000

Line	Primary / Control (1–3)	Depth from collar (4–8)	Recovery (9–12)	Rock 1 name (13–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding / Sorting / Grain size / Sphericity / Roundness (25–29)	Texture (30–33)	Colour (34–37)	Rock 2 interbeds (38–46)	Structure: Identification (52)	Angle to core axis (56–57)	Lithologic units (62–69)
4		3545	205	COAL				D	0020	5 SHAL			FTCMGWU2
8		3599	54	SLSN	C2L	C1L	K 1	Z	0070		B	73	~~~~
12		3676	77	SHAL	C2L	A1	K 0	NJF	0030				~~~~
16		3735	59	SASN		C1L	K82	ZR	0070	5 SLSN	B	75	~~~~
20		3960	225	MDSN	A1		K 0	JN	0030		B	78	~~~~
24	CNT	3962	25	COAL					0020	5 CGXX C3H			~~~~ W1
28		4151	199	CGXX	C3M	S4H	K7579	U	0050				FTCMGL
32		4370	219	CGXX	C3H	S4H	K7729	U	0050				~~~~
34	C				EXTREMELY COARSE PEBBLES UP TO 35MM ACROSS								
36		4378	8	CGXX	C3M	S4H	W3 N59	U	0050				~~~~

GEOLOG
COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINCSON DATE 6/10/71 PAGE 6 OF 11

TYPE DDH | DISTANCE 1648.0 | SUB I.D. C3 | IDENTITY T10 | PROJECT 1000

Line	Control	Depth from collar (end of interval)	Recovery	Rock 1 name	Major / minor qualifying mineral	Bedding, sorting, grain size, sphericity, roundness (25–29)	Texture	Colour (Munsell)	Rock 2 %	Rock 2 name	Structure	Lithologic units
4		4400	22	CGXX	C3H S4H	W7779	U	0050				FTCMGL
8		4462	629	SASN	C3M S4H	W3473		0050	1	CGXX		~
10	C	PEBBLY										
12		4526	64	SASN	S4H	K5457		0050				~
14	C	MINOR COARSE SASN AT TOP OF UNIT										
16		4726	200	SASN	S4H	W8453		0070			B 76	~
18	C	F. GR. SASN CONTAINING BANDS OF CRSE GR. SASN + PEBBLES										
20		4830	1049	SASN	S47	Q5373		0070	1	CGXX		~
22	C	PEBBLY, ESPECIALLY AT TOP										
24		5037	207	SASN	S4H C3M	W5459		0050				~
28		5060	23	SASN	S4H	K8371		0070			B 75	~
32		5280	2206	SASN	S4H C3M	K7457		0050	4	CGXX		~
36		5352	72	COAL			BSC	0010				~ 21

GEOLOG

COAL ENVIRONRIGHT VERSION

COMPANY TREK COAL PROPERTY SUKUNKA ROCK B LOGGED BY C. HINDSON DATE 6/10/81 PAGE 7 OF 11

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS															ROCK 2 INTERBEDS							STRUCTURE WITHIN INTERVAL														LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY OP 1	FRACTURING RELATIVE INTENSITY OP 2	FRACTURING RELATIVE INTENSITY OP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING, DYKE, CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP ROUP	FM ORMATION	MM EMBER	SM UBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79	80
TYPE BDH		DISTANCE 1648.0		SUB I.D. C3		IDENTITY T10			PROJECT 1080				COMMENT						LEG LENGTH		AZ./BEARING					+VERT ANGLE						SYST	N/S NORTHING					E/W EASTING			SYST	ELEVATION						
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL			F.S.I.						%MOISTURE		%ASH			%VOLATILES								%FIXED CARBON																
S	C	L																																																	
			562	0	2683	5	SLSN					K	1				K	0045	5	SHAL																					ETCMSL										
CNT		6575		955			SASN		CLK			Q	83				R	0070																																	
	C											Q																																								
		6771		1968			SASN		CLK			K	83	55			RGT	0070	2	SHAL																															
		730	0	5295			SLSN		SAM	CLK		K	1				DT	0050	1	SASN																															
		~~		~~~		4	SHAL																																											
		7720		4208			SHAL					K	1				RT	0040	2	SLSN																															
	C								SANDIER WITH DEPTH																																												
		8278		10585			SHAL					K	1				JGT	0050	5	SLSN																															
		8799		321			SASN		CLH			Q	82				JH	0070																															
	C											K																																						
		9272		4739			SASN		CLH			Q	82				R	0050	1	SHAL																															

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINDSON DATE 6/10/71 PAGE 8 OF 11

TYPE: DDH DISTANCE: 1648.0 SUB I.D.: C3 IDENTITY: T10 PROJECT: 1000

Line	Primary	Control	Depth to end of interval	Recovery	Rock %	Rock name	Major qualifying mineral	Minor qualifying mineral	Bedding / sorting / grain size	Texture	Colour (Munsell)	Rock 2 %	Rock 2 name	Rock 2 qualifying	Structure	Lithologic units	Accessory minerals
4			958.6	31.4	5	SLSN			K 2	JCT	0050	5	SHAL	A1		FTCMSK	
8	CNT		1097.9	139.2	9	SHAL			K 0	U	0040	1	SLSN		B 82	~~~	
10		C	0.2' BENT LAYERS AT 1330.5, 1344.7 + 1367.0 — PY AT DEPTH														
12			1393.5	295.7		MASN	A1	S3L	K 0	IU	0030					FTMS	PY19
16	CNT		1397.0	1.0		LOST										~~~	
20			~~~	2.5		SASN			N83		0030					~~~	PY19 GNI9
22		C	SHEARING OBSERVED														
24			1399.0	2.2		SHAL	C2L		K 1	N	0020					BLCT	PY19
26		C	PY NODULES IN UPPER 2.0' COMMON														
28			1404.8	5.8		COAL				BSC	0010					~~~ BO	PY19
30		C	K CARBONACEOUS IN UPPER 3/4														
32			1495.6	9.8		SASN	C2L	C1L	6 8 2 5 3	NIL	0065				B 80	~~~	
36			1502.6	7.4		SHAL	C3L		K 1	NF	0040	2	SLSN			~~~	

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINDSON DATE 6/10/71 PAGE 9 OF 11

TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT	COMMENT	LEG LENGTH	AZ/BEARING	+VERT. ANGLE	SYST	N/S NORTHING	E/W EASTING	SYST	ELEVATION
DDH	16480	C3	T10	1000									

Line	Primary (1-2)	Control (3)	Depth to end of interval (4-8)	Recovery units/tenths (9-12)	Rock % of interval (13)	Rock 1 name (15-18)	Major qualifying mineral (19-21)	Minor qualifying mineral (22-24)	Bedding (25)	Sorting (26)	Grain size (27)	Sphericity (28)	Roundness (29)	Texture (30-33)	Colour (34-37)	Rock 2 % (38)	Rock 2 name (40-43)	Structure identification (52)	Angle (55-57)	GP/FM (62-65)	SM (68-69)
4			15073	47		SLSN	C2L		K	1				RNKF	0040					BLGT	
6		C	SHAL CONTENT INCREASES WITH DEPTH																		
8			15370	2975		SLSN			K	1				UK	0040	5	SHAL			~~~	
12			15430	606		SHAL	C21		K	0				FKGT	0040	2	SASN			~~~	
16			~~~	~~~	2	SLSN														~~~	
20			15506	76		SASN	C1K	C2L	G	8	3	5	1	UK	0055					~~~	
24			15570	64		SHAL	C21		K	0					0020			B	87	~~~	
28			15670	65		LOST.														~~~	
32			~~~	9		COAL								CD	0010					~~~	MS
36			~~~	26		COAL						3	5		0010	3	SHAL			~~~	MS

GLOLOG

COAL EXPLORATORY VERSION

COMPANY TTOC CORP PROPERTY SUCCUNIEA BLOCK B LOGGED BY R HINGSON DATE 6/10/71 PAGE 10 OF 11

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS																		ROCK 2 INTERBEDS								STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION							UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER	OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51		52	53	54	55	56 57	58	59 60 61	62 63	64 65	66 67	68 69		70 71	72 73	74 75	76 77		78	79 80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE							SYST	N/S NORTHING					E/W EASTING					SYST	ELEVATION					
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.				%MOISTURE			%ASH			%VOLATILES								%FIXED CARBON																	
S	C	L																																															
			15730		18			ADST																																											
			~~		42			MDSN	C2L	AI			K	0				JRN	0020																						BL	GT										
	C								SHEARING @									158.4 FSR		1.0'																																
			15950		120			MDSN	C2L	AI			K	0				JRN	0020																						~~~										
			15976		26			SHAL	AI				K	0				A	0040																B		BS														
			15989		13			COAL										BSC	0010																						~~~				C14						
	C								CARB	AT			UPPER					CONTACT																																
			15998		9			SHAL	AI				K	0				A	0040																						~~~										
			15994		96			SAN	C2L	CI			Q	83				KF	0050																						~~~										
			16058		64			MDSN	C2L				K	0				JUN	0030																						~~~										
	C								CARBON	RIBBONS																																												
			16120		32			SAN	C2M				Q	83				F	0040																						~~~										

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R.HINDSON DATE 6/10/71 PAGE 11 OF 11

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY UNITS	RECOVERY TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	GP 2	GP 3	FOLD AXES, BEDDING, DYKE, CONTACT & FAULT ATTITUDES UNCONFORMITIES FOR TRAVERSE IDENTIFICATION	PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GROUP	FORMATION	MEMBER	SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE DDH		DISTANCE 16480		SUB I.D. C3		IDENTITY		T.I.O	PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION			
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL			F.S.I.					%MOISTURE		%ASH			%VOLATILES									%FIXED CARBON													
S	C	L																																										
			16352	272			SASW	C1	C2L		Q	8351	BR2	0000																								BLGT								
			16354		2		C6xx	C3H	C1L		Q	5U59		0050																								~~~								
END		16480	126				SASW	C1			K	8351	UR	0055																				B		95		~~~								

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY RHINSON DATE 24/10/79 PAGE 1 OF 8

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS												ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL								LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION							UNRELIABILITY FACTOR	FORMAT CONTROL
				ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	MINOR QUALIFYING MINERAL OR MATERIAL: AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	QUALIFYING MINERAL OR MATERIAL: AMT.	REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY GP 1	FRACTURING: RELATIVE INTENSITY GP 2	FRACTURING: RELATIVE INTENSITY GP 3	FRACTURING: ANGLE TO CORE AXIS <30°	FRACTURING: ANGLE TO CORE AXIS 30°–60°	FRACTURING: ANGLE TO CORE AXIS >60°	FOLD AXES; BEDDING; DYKE, CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM EMBER	SM UBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3 4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51		52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE BDH		DISTANCE 247.6	SUB I.D. C4	IDENTITY T11			PROJECT 1000		COMMENT						LEG LENGTH	AZ/BEARING				%ASH		+VERT. ANGLE -50						SYST. MD	N/S NORTHING 13600.0				E/W EASTING 12500.0			SYST. AZ	ELEVATION 4700.0				
A S	C N	L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL		F.S.I.					%MOISTURE					%VOLATILES								%FIXED CARBON												
		C				TECHNICAL TESTS										@ 500' 88° (N 57.30° E), @ 1000' 85° (N 27° E)																									
		C														@ 1240' 82° (N 36° E)																									
	CAT		0 0																																					
	US	3 3 0																																					
		4 6 0	1 3 0		SHAL					K	0				M	0040																			FTCMCN								
	C									Q					INCREASINGLY SILTY WITH DEPTH																										
		4 9 3	3 3 5		SLSW					K	1				SK	0045	5		SHAL									B	6 5												
		5 3 3	4 0		MDSN	A1				K	0				JM	0030																								
		5 6 0	2 7 5		SHAL					K	0				J	0050	5		SLSW																						
	C									Q																														
		5 8 0	2 0		SASN	C2L	CLAY			K	0373				FK	0070																								
		6 7 0	6 4		LSST																																			
		~~	2 6		COAL										BSC	0010																								

ASH PYTS

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R HINOSW DATE 24/10/71 PAGE 2 OF 8

TYPE DDH | DISTANCE 12470 | SUB I.D. C4 | IDENTITY T11 | PROJECT 1000 | COMMENT | LEG LENGTH | AZ/BEARING | +VERT. ANGLE | SYST | N/S NORTHING | E/W EASTING | SYST | ELEVATION

A N L | DISTANCE | SUB I.D. | IDENTITY | INTERVAL | F.S.I. | % MOISTURE | % ASH | % VOLATILES | % FIXED CARBON

S C L

Line	Primary / Control (1-3)	Depth from collar or distance from control point to end of interval described (4-8)	Recovery (9-12)	Rock % of interval (13)	Rock 1 name (15-18)	Major qualifying mineral or material (19-21)	Minor qualifying mineral or material (22-24)	Bedding mode thickness (25)	Degree of sorting / Grain size / Sphericity / Roundness (26-29)	Texture (30-33)	Colour Munsell system (34-37)	Rock 2 interbeds: Rock % of interval (38)	Rock 2 name (40-43)	Structure: Identification (52)	Angle to core axis (56-57)	Lithologic units (62-69)
4		837	167	8	SLSN	S4M		K	1	IL	0055	1	SASN	B	85	FTCMGL
8		~~~~~~		1	SHAL											
9																~~~~
12		916	79		MOSN	AI		K	0	JIL	0040					~~~~
16		943	27		SASN	C2L	C1K	K	8353	NIF	0060					~~~~
20		961	186		SLSN	C2L		K	1	KIF	0055	4	SHAL	B	82	~~~~
24	CNT	1320	359	9	MOSN	C1L		K	0	JFN	0040	1	COAL			~~~~ W1
28		1340	2		CGXX	C2L	C3H	W	7559		0050					FTCMGL
32		1342	.2		SHAL	C2L	AI	K	0	JFN	0040					~~~~
36		1360	18		CGXX	C3H	S4H	W	2V59		0050					~~~~

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINDSON DATE 24/10/71

TYPE DDH | DISTANCE 12470 | SUB I.D. C4 | IDENTITY T 11 | PROJECT 1000

Line	Primary (1-2)	Control (3)	Depth from collar / end of interval (4-8)	Recovery (9-12)	Rock 1 name (13-18)	Major qualifying mineral (19-21)	Minor qualifying mineral (22-24)	Bedding / sorting / grain size / sphericity / roundness (25-29)	Texture (30-33)	Colour Munsell (34-37)	Rock 2 / Structure (38-61)	Lithologic units (62-69)	Accessory minerals (70-77)
4			1508	148	CGXX	C3H	S4H	<5X77		0055		ETCMGL	
8			1530	22	SASN	S4H		<8453		0040		~~~~	
10		C	INTERBEDDED F. + CG. SASN										
12			1590	60	SASN	S4H		<8459		0050		~~~~	
14		C	AS ABOVE ONLY A GREATER % AGE OF FG. SASN										
16			1708	118	SASN	S4H		Q8379		0060	B 75	~~~~	
20			1777	69	CGXX	C3H	S4H	<2X59		0050		~~~~	
22		C	CONTAINS MINOR PEBBLES.										
24			1845	68	SASN	S4H		<7471		0045		~~~~	
28			2101	256	CGXX	S4H	C3H	<7659		0050		~~~~	
32	SNL		2195	97	COAL				BSC	0010		~~~~ 22	
34		C	CARB. AT TOP - 7 SASN TOWARDS BASE										
36			2226	337	SASN	C2L		< 7 1	LR	00503	[illegible]	~~~~	PYT9

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINDSON DATE 24/10/71 PAGE 4 OF 8

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL									LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY OP 1	FRACTURING RELATIVE INTENSITY OP 2	FRACTURING RELATIVE INTENSITY OP 3	FRACTURING ANGLE TO CORE AXIS <30°	FRACTURING ANGLE TO CORE AXIS 30°-60°	FRACTURING ANGLE TO CORE AXIS >60°	FOLD AXES; BEDDING; DYKE, CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73	74 75 76 77	78	79 80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE						SYST	N/S NORTHING			E/W EASTING				SYST	ELEVATION			
DDH		2470		C4		TII			1000																																		
A	N	L	DISTANCE			SUB I.D.	IDENTITY			INTERVAL			F.S.I.					%MOISTURE		%ASH			%VOLATILES								%FIXED CARBON													
S	C	L																																									
		C											@																															
			2420		200			SASN	C2L	C1L			K8333					F	0065																										
			2505		85			MASN	C2L	A1			K 0					JFN	0045																										
			2524		19			COAL										RSC	8010																										
			2529		5			SHAL	C2L				K 0					N	0030																										
			2553		24			COAL										RSC																										
		C								ROOT			FOSSILS																															
			2561		8			SASN	C2L				W83					F	0040																										
		C								PEBBLY IN LAST 0.5' — EXTREMELY RARE THIN SHAL BANDS																																					
			2817		2569			SASN	S4H				W8353					U	0055	T		SHAL																						
CWT			3407		550			SASN	C1L				K82					ZW	0070														B		82										
	C								RARE				LACE					CLAY		CALLS																									
			5576		1719			SASN	C1L				K82					T	0065			SHAL												B		72										

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R HINDSON DATE 24/10/71 PAGE 5 OF 6

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS															ROCK 2 INTERBEDS				STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GROUP	FORMATION	MEMBER	SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1 2 3		4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51				52	53	54	55	56 57	58	59 60 61	62 63 64 65	66 67	68 69	70 71	72 73	74 75	76 77	78	79 80
TYPE BDH		DISTANCE 2470		SUB I.D. C4		IDENTITY T11			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE								SYST	N/S NORTHING						E/W EASTING			SYST	ELEVATION				
A N L		DISTANCE		SUB I.D.		IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES								%FIXED CARBON																
S C L																																														
		391 2		33 45		SASN			C26				K93					KG	0050	4	SHAL																			FTCMSK									
		~~				1		SLSN																																							
		435 2		44 08		SHAL							K		0			DGT	0045	2	SLSN																											
		441 6		6 40		SHAL							K		0			TOR	0040	T	SLSN																											
		503 0		61 46		SLSN							Q		1			KHT	0070	4	SHAL																											
		554 0		510		SHAL							K		1			OT	0045																													
	C								HONORA OF										TO		564.0																											
		604 8		50 89		SLSN							K		2			ALKG	0060	1	SHAL																											
CNT		782 0		1772	9	SHAL							K		0			RG	0040	T	SLSN																											
	C								BENT							0.1	@	995	5,	0.2	@	1111.0																											
		1061 8		2793		MASN			A1		SBK		K		0			JR	0040																							FTMS				PYT9				

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP. PROPERTY SUKUNKA BLOCK 'B' LOGGED BY R. HINDSON DATE 2-4/10/71 PAGE 6 OF 9

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS					STRUCTURE WITHIN INTERVAL											LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°–60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS TYPE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS PLUNGE	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51				52	53	54	55	56	57	58	59 60 61	62 63 64	65	66	67	68	69	70 71	72	73	74	75	76	77	78	79 80
TYPE BDH	DISTANCE 1470	SUB I.D. CA	IDENTITY T11			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE								SYST	N/S NORTHING							E/W EASTING						SYST	ELEVATION							
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					% MOISTURE		%ASH			%VOLATILES										%FIXED CARBON																				
S C L																																																
1																																																
2																																																
3																																																
4 CWT	10648	30			SASN					N83						0040																						FTMS						AYTS	CWIS					
5																																																
6																																																
7																																																
8	10652	4			COAL										BSC	0010																						BLCT												
9																																																
10 C						LISTRIC		SURFACES																																										
11																																																
12	10667	156			SHAL	C2M				K	0				JNF	0030	4	COAL																																
13																																																
14																																																
15																																																
16	10670	38			COAL										D	0010	2	SHAL																												BO						
17																																																
18 C						PY		NODULES																																									
19																																																
20	10692	22			COAL										BSC	0010																														BO	PYIS					
21																																																
22																																																
23																																																
24	10696	46			SHAL	C2M				K	0				NF	0025	4	COAL																																
25																																																
26																																																
27																																																
28	10870	174	9		SHAL	C2L				K	0				FNK	0040	T	SLSN																														AYTS						
29																																																
30 C										K					CARB - HORIZON IN 1ST 20.0'																																		
31																																																
32	11327	457			SASN	C2L	C/L			K	8357				NZ	0055																						B	80											
33																																																
34																																																
35																																																
36	11336	3			SHAL	C2M				K	0				NF	0024																																		
37																																																
38																																																

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY RHINOSON DATE 24/10/71 PAGE 7 OF 8

TYPE: DDH | DISTANCE: 12470 | SUB I.D.: C4 | IDENTITY: T11 | PROJECT: 1000

Line	Primary	Control	Depth from collar or distance from control point to end of interval described (4–8)	Recovery (9–12)	Rock % of interval (13)	Rock 1 name (15–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding mode thickness (25)	Degree of sorting (26)	Grain size (27)	Sphericity (28)	Roundness (29)	Texture (30–33)	Colour Munsell system (34–37)	Rock 2 % of interval (38)	Rock 2 name (40–43)	Identification (52)	Angle to core axis (56–57)	Group (62–63)	Submember or seam (68–69)
1																					
2																					
3																					
4			11370	40		COAL								BSC	0010					BLGT	US
5																					
6		C					51				CARBONACEOUS HORIZONS										
7																					
8			11507	137	9	SASN	C2L	Cim	8	2				F	0055	1	SHAL	B	87	~	
9																					
10																					
11																					
12			11538	31	9	SHAL			K	0				IL	0050	T	SASN	B	83	~	
13																					
14																					
15																					
16			11542	4		COAL								BSC	0010					~	MK
17																					
18																					
19																					
20			11546	4		SHAL	C2L		K	0				NJF	0030					~	
21																					
22																					
23																					
24			11572	26		COAL								BSC	0010					~	LS
25																					
26																					
27																					
28			11694	122	6	SHAL	C2M		K	0				JNF	0020	4	COAL			~	MS
29																					
30																					
31																					
32			12020	326	9	SHAL	C2L		K	1				JNF	0040	T	SASN			~	
33																					
34																					
35																					
36			12036	16		SASN	C2L		Ø	8	3	5	7	FK	0055					~	
37																					
38																					

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 24/10/71 PAGE 8 OF 8

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS							STRUCTURE WITHIN INTERVAL												LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	MINOR QUALIFYING MINERAL OR MATERIAL: AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	QUALIFYING MINERAL OR MATERIAL: AMT.	REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY GP 1	FRACTURING: RELATIVE INTENSITY GP 2	FRACTURING: RELATIVE INTENSITY GP 3	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE		
	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED: TENTHS	RECOVERY: UNITS																							ANGLE TO CORE AXIS: < 30°	ANGLE TO CORE AXIS: 30°-60°	ANGLE TO CORE AXIS: > 60°																																	
	RECOVERY: TENTHS																																																	
			1 2 3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46	47	48	49	50	51	52	53 54 55 56	57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75 76 77	78	79 80
	TYPE EDIT	DISTANCE 12470				SUB I.D. C-4		IDENTITY T 11			PROJECT 1000		COMMENT				LEG LENGTH		AZ/BEARING				+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION						
	A N L	DISTANCE				SUB I.D.		IDENTITY			INTERVAL		F.S.I.				% MOISTURE		%ASH			%VOLATILES						%FIXED CARBON																		
	S C L																																																	
1																																																	
2																																																	
3																																																	
4		12041			5			COAL									SC	0010																				SLGT		24								
5																																																	
6	C										CARB		AT		UPPER		CONTACT																																
7																																																	
8	ENP	12417			429			SASH			CLST		HW		8357		N	0050																															
9																																																	
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16	CONT	2101																																															
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19																																																	
20	ANL	2140			39											60		089			2046			2697					6596									033								
21																																																	
22																																																	
23																																																	
24	ANL	2183			42											60		091			535			2815					6690									038								
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GEOLOG

COAL ENVIRONMENT VERSION

COMPANY: TECK CORP — PROPERTY: SUKUNKA BLOCK B — LOGGED BY: R. HINDSON — DATE: 23/10/71 — PAGE 1 OF 6

TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT	COMMENT	LEG LENGTH	AZ./BEARING	+VERT. ANGLE	SYST	N/S NORTHING	E/W EASTING	SYST	ELEVATION
DDH	1327.0	.04	T12	1000				-90	MP	62250.0	98250.0	MP	4200.0

Line	Primary / Control (1–3)	Depth / end of interval (4–8)	Recovery (9–12)	Rock % of interval (13)	Rock 1 name (15–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding / sorting / grain size / sphericity / roundness (25–29)	Texture (30–33)	Colour, Munsell (34–37)	Rock 2 % (38)	Rock 2 name (39–43)	Structure within interval (47–61)	Lithologic units (62–69)
1	C	TROPARI TESTS @ 600' 85°(S8°W), @ 1200' 82° N30°E												
4	CPT	0.0												
8	OVB	21.0												
10	C	0.5' SHAL @ 37.0 & 44.5												
12		46.6	25.6		SASN	S4H	C2L	W8377	Z	0060				FTCMGL
14	C	MINOR SHAL CLOSE TO UPPER CNT.												
16		83.6	37.0	9	SASN	S4M	C1L	W8253	U	0060	T	SHAL		~~~
20	CNT	104.6	21.0		SASN	C1L		K82	ZU	0065			B 86	~~~
24		117.5	129.6		SASN	C1K		K82	KRT	0050	3	SHAL		FTCMSK
28		~~~	~~~	1	SLSN									~~~
32		181.7	64.2	6	SHAL			K 0	TKG	0040	2	SASN		~~~
36		~~~	~~~	2	SLSN	C2K		K 1	KF	0070				~~~

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 23/10/71 PAGE 2 OF 6

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS							STRUCTURE WITHIN INTERVAL										LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
						ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL		MINOR QUALIFYING MINERAL OR MATERIAL		BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL		REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	FRACTURING: RELATIVE INTENSITY OP 1	FRACTURING: RELATIVE INTENSITY OP 2	FRACTURING: RELATIVE INTENSITY OP 3	FOLD AXES; BEDDING; DYKE; CONTACTS & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	FOR TRAVERSE: PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE: ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GROUP	FORMATION	MEMBER	SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
			TENTHS	UNITS	TENTHS				NAME	AMT.	NAME	AMT.											NAME	AMT.			ANGLE TO CORE AXIS < 30°	30°–60°	> 60°		TV_FT	PLUNGE																		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21		22 23 24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62	63	64	65	66	67	68	69	70 71	72 73 74	75 76 77	78	79	80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING								SYST	ELEVATION				
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL			F.S.I.					%MOISTURE		%ASH			%VOLATILES							%FIXED CARBON																			
S	C	L																																														
			2053		23	69		SHAL					K	0				TO	0045	T		SASN														FTCMSK												
			2508		45	55		SASN	CIL				K	82				MOL	0070	4		SLSN																											
							T	SHAL																																									
	C								SILTY AT TOP				)					SASN		MIXED WITH SHAL INCREASES WITH DEPTH																															
			3030		52	26		SHAL					K	0				DT	0045	4		SASN																											
			3073		43			SASN	CIL				K	82				M	0060																														
			3120		47			SASN	CIL				Q	83				MK	0060																														
			3225		105			SASN	CIM				Q	83	55			MT	0060													B	75																
			3520		29	59		SLSN					K	2				TKRN	0060	1		SHAL																											
			3[illegible]	C	3[illegible]	04		SHAL					K	0				RKR	0065	3		SLSN																FTCMSK												

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R HINDSON DATE 23/10/77 PAGE 3 OF 6

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL									LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°-60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT; FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOR TRAVERSE TYPE	FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOR TRAVERSE PLUNGE OR DIP ANGLE	FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOR DRILL CORE ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53 54	55	56 57	58	59 60 61	62 63	64 65	66	67 68	69	70 71	72 73	74 75	76 77	78	79 80
TYPE		DISTANCE		SUB I.D.		IDENTITY			PROJECT					COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING				E/W EASTING				SYST	ELEVATION					
	DDH	13270		D4		T12			1000																																					
A	N	L	DISTANCE				IDENTITY			INTERVAL					F.S.I.					%MOISTURE		%ASH			%VOLATILES								%FIXED CARBON														
S	C	L																																												
			3820		300	3		SASN																														FTCMSK									
CNT		5310		1490	8		SHAL						K	0				GJJT	0050	1		SCSN																									
						T		SASN																																							
									MUD SEAM @ 537.5 — SLICKENSIDES RARE TO OCC FROM 669.0 - 1066.0																																								
	C								BLOCKY AND SHEARED @ 714.8																																								
	C								BLOCKY @ 716.0 FOR 1.0'																																								
	C								BENT FOR 0.3' @ 893.0 + 913.7																																								
	C								BLOCKY WITH SLICKENSIDES @ 920.5																																								
	C								BENT @ 930.5 FOR 0.1'																																								
	C								BLOCKY @ 975.0 + 979.0 — POSSIBLE FAULTS																																								
		10860	555				MDSN		A1	532			K	0				JU	0040													B		55			FTMS				PY19							
CNT		10903		43			SASN		C2L				W	83				F	0030													B		55							PY19	CN19					
	C								SHEARED?																																							
		10912			9		SHAL		C2L				K	0				NF	0030																			BLCT				PY19							
		10960		48			SLSN		C2L				K	1				RF	0050													B		60							PY19							

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 23/10/71 PAGE 4 OF 6

TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT
CDH	13270	D4.	T12	1000

Line	Control	Depth (end of interval)	Recovery (units)	Tenths	Rock name	Major qualifying mineral	Minor qualifying mineral	Bedding mode thickness	Degree of sorting	Grain size	Sphericity	Roundness	Texture	Colour (Munsell)	Rock 2 %	Rock 2 name	Structure identification	Angle to core axis	Group	Sub member or seam
4		1100	1	2	LOST														BLGT	
6	C				SHEARED															
8		~~~~	3	2	SHAL	C2L		K	0				NL	0030					~~~~	
12		1102	5 1	6	LOST														~~~~	
14	C				SHEARING // TO BEDDING PLANES															
16		~~~~		7	SHAL			K	0					0030			B	59	~~~~	
20		1107	3	6	LOST														~~~~	
22	C				VERY CRUMBLY															
24		~~~~		9	SHAL			K	0					0030					~~~~	
26	C							K												
28		1154	5 47	5	SASN	C2L	C1K	Q	8	3	5	3	N/Z	00(0)					~~~~	
32		1155	7 12	5	COAL								D	0020	5	SHAL			~~~~	U5
34	C				SHEARING // TO BEDDING — ALSO AT 70°															
36		1157	0 13	6	SHAL			K	0				R	0035	1.5	SASN	B	85	~~~~	

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COAL & ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 23/10/71 PAGE 5 OF 6

TYPE DDH DISTANCE 13270 SUB I.D. 04 IDENTITY T12 PROJECT 1000

Line	Control	Depth (4-8)	Recovery (9-12)	Rock % / Type (13-14)	Rock Name (15-18)	Major Qual. Mineral (19-21)	Minor Qual. Mineral (22-24)	Bedding / Sorting / Grain (25-29)	Texture (30-33)	Colour (34-37)	Rock 2 % (38)	Rock 2 Name (39-43)	Structure (52-58)	Lithologic Units (62-69)	Accessory Minerals (70-77)
2	C							Q	CONTAINS VERY NARROW SHALY COAL BANDS						
4		11703	1359		SASN	C2L	C1L	K83	N	0045	7	SHAL	B 55	BLGT	
8		11725	8		LOST									~~~	
12		~~~	12		COAL				D	0020	2	SHAL		~~~ LS	
16		11734	98		COAL				D	0020	2	SHAL		~~~ LS	
18	C					RARE COAL PARTINGS									
20		11932	1985		SLSN	C2L		K 2	NF	0040	5	SHAL	B 58	~~~	PY 19
22	C					CRUSHED SHEARED ZONE AT 1232.5 FOR 1.0' — POSSIBLE FAULT									
24		12375	4436		SLSN	C2L		K 1	NKFZ	0040	4	SASN		~~~	
28		12533	158		SASN	C1M		W8353	U	0055				~~~	
32		12544	115		SLSN	C2L		K 1	FJ	0040	5	SHAL		~~~	PY 15
36		12555	117		COAL				D	0020	3	SHAL		~~~ MS	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK B LOGGED BY R. HINDSON DATE 23/12/71 PAGE 6 OF 6

PRIMARY CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	RECOVERY	ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS						STRUCTURE WITHIN INTERVAL								LITHOLOGIC UNITS				ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING THICKNESS MODE	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1	FRACTURING RELATIVE INTENSITY GP 2	FRACTURING RELATIVE INTENSITY GP 3	FRACTURING ANGLE TO CORE AXIS < 30°	FRACTURING ANGLE TO CORE AXIS 30°-60°	FRACTURING ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACTS & FAULT ATTITUDES; UNCONFORMITIES IDENTIFICATION	FOLD AXES; BEDDING; DYKE; CONTACTS & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOLD AXES; BEDDING; DYKE; CONTACTS & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP ANGLE	FOLD AXES; BEDDING; DYKE; CONTACTS & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE FOLD OR FAULT INTENSITY	FOLD AXES; BEDDING; DYKE; CONTACTS & FAULT ATTITUDES; UNCONFORMITIES FOR DRILL CORE PLUNGE OF SLICKENSIDE OR FOLD AXIS	FOLD AXES; BEDDING; DYKE; CONTACTS & FAULT ATTITUDES; UNCONFORMITIES FOR DRILL CORE ANGLE TO CORE AXIS	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM EMBER	SM UBMEMBER OR SEAM	NAME	% MODE	NAME	% MODE		
1 2 3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63 64 65	66 67 68	68 69	70 71	72 73 74 75	76 77	78	79 80
TYPE SDH	DISTANCE 13270	SUB I.D. 04	IDENTITY T12			PROJECT 1000				COMMENT					LEG LENGTH		AZ./BEARING					+VERT. ANGLE								SYST	N/S NORTHING			E/W EASTING			SYST	ELEVATION			
A N L	DISTANCE	SUB I.D.	IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES									%FIXED CARBON											
S C L																																									
1																																									
2																																									
3																																									
4	12730	1755	5	SLSW		C2L				K	1				FJ	0040	5	SHAL																	BLCT							
5																																									
6																																									
7																																									
8	13050	3209	5	SHAL		C2L				K	0				JUF	0030	1	SLSN																								
9																																									
10																																									
11																																									
12	13188	138		SASW		C1L				W	83	51																		B		75										
13																																									
14	C					SHEARING				@	60°		TO		CORE		AXIS																								
15																																									
16	END 13270	82		SLSW						K	2				JL	0050														B		80										
17																																									
18																																									
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GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R HINDSON DATE 25/10/71 PAGE 1 OF 6

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED (UNITS / TENTHS)	RECOVERY (UNITS / TENTHS)	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL (NAME / AMT.)	MINOR QUALIFYING MINERAL OR MATERIAL (NAME / AMT.)	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE (MAJOR → MINOR)	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL (NAME / AMT.)	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY GP 1 / GP 2 / GP 3	ANGLE TO CORE AXIS < 30° / 30°-60° / > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION / TYPE	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH / PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS / ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GROUP	FORMATION	MEMBER	SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME / % / MODE	NAME / % / MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1	2	3	4 5 6 7 8	9 10 11 12	13	14	15 16 17 18	19 20 21	22 23 24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46	47	48	49	50	51	52	53	54 55	56 57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75 76 77	78	79 80
TYPE DH		DISTANCE 3520	SUB I.D. E4	IDENTITY T13			PROJECT 1000		COMMENT					LEG LENGTH	AZ./BEARING						+VERT. ANGLE -90					SYST MP	N/S NORTHING 28400		.0	E/W EASTING 39450.0		SYST MP	ELEVATION 4420.0								
A	N	L	DISTANCE	SUB I.D.	IDENTITY		INTERVAL		F.S.I.					%MOISTURE	%ASH				%VOLATILES							%FIXED CARBON														
S	C	L																																						
	C						TREMAI TESTS							@ 50°					90°				@		350°		90° (S 46° W)													
CPT		00																																						
DNB		100																																						
		723	623	5	SHAL	SH			K	C				FG	0050	5	SASD															FTCMSK								
		1236	5137		SASN	SH	HCL		K	2					0065	1	SASN									B		78													
		~~	~~~~	2	SHAL				K	0					0030																										
		1678	4429		SHAL				K	0				FD	0065	1	SASN																									
C							SLICKENSIDES							OBSERVED																													
		1690	12		SASN	SH	MCL		K	9	7	4	5		0050																										
C									B																																
		2427	7379		SASN	CI	H		K	8	3	5	3	K	0070	1	SHAL																									
		2970	5436		SHAL				K	0				RKT	0045	9	SASN																									

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R HINDSON DATE 25/10/71 PAGE 2 OF 6

TYPE: DDH | DISTANCE: 9570 | SUB I.D.: E4 | IDENTITY: T13 | PROJECT: 1000

Line	Primary / Control (1-3)	Depth from Collar – End of Interval (4-8)	Recovery (9-12)	Rock % of Interval (13)	Rock 1 Name (14-18)	Major Qualifying Mineral (19-21)	Minor Qualifying Mineral (22-24)	Bedding / Sorting / Grain Size / Sphericity / Roundness (25-29)	Texture (30-33)	Colour Munsell (34-37)	Rock 2 Interbeds (38-43)	Lithologic Units (62-69)	Accessory Minerals (70-77)
4		3320	350	9	SHAL		A1	K O	RJU	0090	T SLSN	FTCMSK	
8		3340	20		SASN	C1L	C2L	K O	ZF	0065		~~~	
12	CNT	3999	659	9	SHAL	A1		K O	K	0045	T SLSN	~~~	
14	C	0.4' BENT @ 632.3, 673.2, 671.4.											
16		6753	9754		MDSN	A1	S3L	K O	J	0040		FTMS	
18	C	MUDDY - RARE PEBBLES NOTED											
20	CNT	6775	229		SASN			W83		0045	T CGXX	~~~	GN 1 9
22	C	PEBBLY @ 681.0 — SLICKENSIDES NOTED @ 65°											
24		6842	679		SASN	S4M	C1L	Q8351	U T	0055	T CGXX	BLGT	
26	C	SHEARING NOTED											
28		6858	76		SHAL	C2L		K O	F	0030		~~~	PY 19
32		6910	52		SLSN			K O	U	0040		~~~	
34	C							Q					
36		7033	125		SASN	C1L		K8351	UZ	0050		~~~	

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R. HINDSON DATE 25/10/71 PAGE 3 OF 6

TYPE DDH | DISTANCE 9370 | SUB I.D. E4 | IDENTITY T13 | PROJECT 1000

Control (2–3)	Depth from collar to end of interval described (4–8)	Recovery (9–12)	Rock 1 name (13–18)	Major qualifying mineral or material (19–21)	Minor qualifying mineral or material (22–24)	Bedding / sorting / grain size / sphericity / roundness (25–29)	Texture (30–33)	Colour Munsell system (34–37)	Rock 2 interbeds (38–46)	Structure within interval (47–61)	Lithologic units (62–69)	Accessory minerals or mineralization (70–77)
	7125	90	CGXX	C3H	S94	W3W59		0050			BLGT	
C				CGXX INTERBEDDED NEAR BASE								
	7229	1046	SASN	C2L	C1L	Q8355	N	0055	4 CGXX C3H	B 70	~~~	
	7467	238	SASN	C2L	C1L	G8371	N	0095			~~~	
				> CARB WITH DEPTH								
	7510	43	MDSN	C2L	A1	K 0	JU	0040		B 75	~~~	PY 19
C				PY NODULES								
	7550	40	COAL				BSC				~~~ LB	PY 19
	7841	291	SASN	C2L	C1L	K83	RN	0050			~~~	
C				LAST 0.2' IS ≈ 50% COAL AS PARTINGS								
	7850	9	SLSN	C2L		K 1	NF	0035			~~~	
	7863	13	SASN	C2L		K83	RN	0050			~~~	
	7877	14	COAL				BSC	0010			~~~ US	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R HINDSON DATE 25/10/71 PAGE 4 OF 6

TYPE DDH | DISTANCE 9570 | SUB I.D. E4 | IDENTITY T13 | PROJECT 1000 | COMMENT | LEG LENGTH | AZ./BEARING | +VERT. ANGLE | SYST | N/S NORTHING | E/W EASTING | SYST | ELEVATION

A N L | DISTANCE | SUB I.D. | IDENTITY | INTERVAL | F.S.I. | % MOISTURE | % ASH | % VOLATILES | % FIXED CARBON

Line	Primary (1-2)	Control (3)	Depth from collar or distance from control point to end of interval described (4-7)	Tenths (8)	Recovery units (9-11)	Tenths (12)	Rock 1 name (15-18)	Major qualifying mineral name/amt (19-21)	Minor qualifying mineral name/amt (22-24)	Bedding mode thickness (25)	Degree of sorting (26)	Grain size (27)	Sphericity (28)	Roundness (29)	Texture major → minor (30-33)	Colour Munsell system (34-37)	Rock 2 % of interval (38)	Rock 2 name (40-43)	Structure within interval (47-61)	Group (62-63)	Formation (64-65)	Member (66-67)	Submember (68-69)	Accessory minerals or mineralization (70-77)
2		C	SLICKENSIDES OBSERVED @ 22° — CARB NEAR TOP — SLUMPED?																					
4			796	4	8	7	SASN	C2L	C1L	9	8	3	5	3	#N	0050			L333'	BLGT				CA11
8			797	8	1	4	SHAL	C2L		K	0				F	0040				~~				
12			798	1		3	COAL								BS	0010				~~			MK	
16			798	4		3	SHAL	C2M		K	0				N	0030				~~				
20			802	9	45	8	COAL								BS	0010	2	SHAL		~~			LS	
22		C	SLICKENSIDES @ 90° — CARB AT UPPER CONTACT																					
24			808	9	6	0	MDSN	A1		K	0				JN	0020				~~				
26		C	> SHAL WITH DEPTH																					
28			835	0	261	6	SLSN			K	0				LK	0050	4	SHAL	B 77	~~				
32			837	1	2	1	SHAL	C2L		K	0				N	0030				~~				
36			837	4		3	COAL								BSC	0010				~~			MS	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R. HINNASON DATE 25/10/71 PAGE 5 OF 6

TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT
DDH	3570	E4	T13	1000

Line	Control	Depth (cols 4–8)	Recovery (cols 9–12)	Rock 1 Name	Major Qualifying Mineral	Minor Qualifying Mineral	Bedding	Sorting	Grain Size	Texture	Colour (Munsell)	Rock 2 %	Rock 2 Name	Structure Identification	Angle to Core Axis	GP	SM / Seam
4		8396	22	SASN	C2<	S4H	K	8	2	F	0040					BLGT	
8		8425	29	COAL						CS	0010					~~~	MS
12		8442	17	SHAL	C2<		K	0		F	0035					~~~	
16		8457	158	COAL						S	0020	2	SHAL			~~~	MS
20		8482	255	SHAL	C2<		K	0		NF	0040	5	SHAL			~~~	
24		8516	346	SHAL	C2<		K	0		N	0020	4	COAL			~~~	
28		8519	39	COAL						S	0010	T	SHAL			~~~	
30	C	10-15% COAL 855.0 - 855.5 + 856.2 - 856.7 - SILTY AT BASE															
32		8591	729	MDSN	C2<	A1	K	0		FNJ	0036	T	COAL			~~~	
34	C	SASN 861.0 - 861.9															
36		8625	319	SLSN	C2<		K	1		KRF	C0AC	1	SASN	B	78	~~~	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R. HINDSON DATE 25/10/71 PAGE 6 OF 6

TYPE DDH DISTANCE 9570 SUB I.D. E1 IDENTITY T13 PROJECT 1000

Primary / Control	Depth (end of interval)	Recovery	Rock 1 name	Major qualifying	Minor qualifying	Bedding	Sorting	Grain size / Sphericity / Roundness	Texture	Colour (Munsell)	Rock 2 %	Rock 2 name	GP	SM
	8859	234	MDSN	A1		K	0		JU	0030			BLGT	
	8879	205	SHAL	C2M		K	0		N	0020	5	COAL	~~~	
	8946	67	MDSN	C2L	A1	K	0		JN	0030			~~~	
	9066	120	SLSN	C2L		K	1		FNRK	0050			~~~	
	9102	368	SHAL	C2L		K	0		F	0025	2	SLSN	~~~	
	9122	20	COAL						BSC	0010			~~~	CH
C	CARB AT UPPER CONTACT													
	9350	228	SASN	C2L	C1	K	9	8377		0065			~~~	
	9382	326	SHAL			K	0		R	0040	4	SLSN	~~~	
C	8' IN LAST 15.0'													
END	9570	788	SASN	C1M				WE355	4K	0050			~~~	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R HINDSON DATE 25/10/71 PAGE 1 OF 7

Line	Primary (1)	Control (2-3)	Depth from collar (4-8)	Recovery (9-12)	Rock 1 name (13-18)	Major qualifying (19-21)	Minor qualifying (22-24)	Bedding / Sorting / Grain size (25-29)	Texture (30-33)	Colour, Munsell (34-37)	Rock 2 % / type (38-39)	Rock 2 name (40-43)	Structure (47-61)	Lithologic units (62-69)
Header	TYPE DDH		DISTANCE 1147.0	SUB I.D. DI-5	IDENTITY T14	PROJECT 1000		COMMENT	LEG LENGTH		AZ./BEARING		+ VERT. ANGLE - 90; SYST MP; N/S NORTHING 15,100.0	E/W EASTING 102,850.0; SYST MP; ELEVATION 4480.0
A N L			DISTANCE	SUB I.D.	IDENTITY	INTERVAL		F.S.I.	% MOISTURE		% ASH	% VOLATILES	% FIXED CARBON	
S C L														
1		C				TROPARI TESTS @ 1000' 87° (N 55° 30' E)								
4	CAT		00											
8	ØVB		120											
12			605	4855	SHAL			K O	TJG	OO66	5	SLSN		ETCMSK
16			895	2909	SHAL		C2L	K O	TD	OO45	T	SLSN		~~~~
18		C				MUD SEAM @ 129.0 (POSSIBLE FAULT) - CORE BADLY BROKEN								
19		C				COMMON BLOCKY + RUSTY SECTIONS BETWEEN 120.0 + 166.5								
20			1410	5157	SLSN	S4M		K 1	JT	OO66	1	SASN		~~~~
24			~~~~~~	~~~~	2 SHAL									~~~~
28			1965	5559	SHAL		C2L	K O	TD	OO55	7	SLSN		~~~~
32			2297	332	SASN	S4M	C1L	K8351	UZ	OO66			B 87	~~~~
36			2566	2099	SASN			K83	GRK	OO55	1	SHAL		~~~~

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R HINASON DATE 25/10/71 PAGE 2 OF 7

TYPE DDH | DISTANCE 11470 | SUB I.D. DI-5 | IDENTITY T14 | PROJECT 1000

Line	Primary / Control (1–3)	Depth from collar to end of interval (4–8)	Recovery (9–12)	Rock 1 Name (15–18)	Major qualifying mineral (19–21)	Minor qualifying mineral (22–24)	Bedding (25)	Sorting (26)	Texture (30–33)	Colour Munsell (34–37)	Rock 2 % (38)	Rock 2 Name (40–43)	Fracturing (47–51)	Structure (52–58)	Lithologic units (62–69)	Accessory minerals (70–77)
4		477 7	219 19	SHAL			K	0	G	0045	1	SLSN			FTCMSK	
8		479 5	1 8	SASN	O1 M	S4 M	W	3	U	0060					~~~	
10	C	SLICKENSIDES OBSERVED														
12	CNT	536 0	56 59	SHAL			K	0	U	0040	T	SLSN			~~~	
14	C	BENT FOR 0.3' @ 810.4, 0.1' @ 845.9 — 0.3' BRX @ 911.0 - NO DISPL.														
16		881 5	34 55	MDSN	A1	S3 L	K	0	JU	0040			<333		FTMS	PY19CA11
20	CNT	886 0	4 5	SASN			W	3		0040					~~~	CN19PY19
24		894 0	8 0	SLSN			K	1	R	0055					BLGT	
26	C	PY ALONG BEDDING PLANES														
28		895 6	1 6	SHAL	C2 L		K	0	N	0030				B 55	~~~	PY11
32		896 5	9 6	SHAL	C2 M		K	0	N	0026	4	COAL			~~~	
36		899 9	3 4	SHAL	C2 L		K	0	NF	0030					~~~	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R. HINDSON DATE 25/10/71 PAGE 3 OF 7

TYPE DDH | DISTANCE 11470 | SUB I.D. DI-5 | IDENTITY T14 | PROJECT 1000

Line	Control	Depth from collar to end of interval described	Recovery	Rock 1 name	Major qualifying mineral	Bedding mode thickness	Degree of sorting	Texture	Colour (Munsell system)	Rock 2 %	Rock 2 name	Fracturing	Identification	Angle	Lithologic units (GP)	Lithologic units (SM)	Accessory minerals
4		9017	18	COAL				BSC	0010						BLGT	UB	PY 19
8		9019	2	SHAL	C2	K	0		0030						~~~		
12		9044	25	SLSN	C2L	K	1	DF	0040						~~~		
16		9055	117	SHAL	C2L	K	0	N	0030	3	COAL				~~~		
18	C	CRUMBLY — ONE 0.1' SHAL BAND NOTED															
20		9090	35	COAL				BSC	0010						~~~	MB	PY 19
22	C	MICRO FOLDS NOTED															
24		9182	92	SASN	C2L	K	2	U	0050			L334	B	65	~~~		CA 11
28		9235	53	SHAL	C2L	K	0	N	0030				B	75	~~~		PYT9
32		9242	7	COAL				BSC	0010						~~~		
36		9277	35	SHAL	C2K	K	0	F	0040						~~~		

3.5' C
905.5-909.0

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R.HINDSON DATE 25/10/71 PAGE 4 OF 7

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED		RECOVERY		ROCK 1 CHARACTERISTICS														ROCK 2 INTERBEDS							STRUCTURE WITHIN INTERVAL												LITHOLOGIC UNITS						ACCESSORY MINERALS OR MINERALIZATION						UNRELIABILITY FACTOR	FORMAT CONTROL
			TENTHS	UNITS	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL NAME	MAJOR QUALIFYING MINERAL OR MATERIAL AMT.	MINOR QUALIFYING MINERAL OR MATERIAL NAME	MINOR QUALIFYING MINERAL OR MATERIAL AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL NAME	QUALIFYING MINERAL OR MATERIAL AMT.	REPEATED SEQUENCES	FRACTURING TOTAL INTENSITY	FRACTURING RELATIVE INTENSITY GP 1 ANGLE TO CORE AXIS < 30°	FRACTURING RELATIVE INTENSITY GP 2 ANGLE TO CORE AXIS 30°-60°	FRACTURING RELATIVE INTENSITY GP 3 ANGLE TO CORE AXIS > 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP AZIMUTH	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES FOR TRAVERSE PLUNGE OR DIP ANGLE	FOLD OR FAULT INTENSITY	IDENTIFICATION FOR DRILL CORE TYPE OF SLICKENSIDE OR FOLD AXIS	IDENTIFICATION FOR DRILL CORE PLUNGE	IDENTIFICATION FOR DRILL CORE ANGLE TO CORE AXIS	DIRECTION OF TOPS OR OF YOUNGING	GP GROUP	FM FORMATION	MM MEMBER	SM SUBMEMBER OR SEAM	NAME	%	MODE	NAME	%	MODE		
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21	22 23 24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51	52	53	54	55	56 57	58	59 60 61	62	63	64	65	66	67	68	69	70 71	72 73	74	75	76	77	78	79 80
TYPE		DISTANCE 11420		SUB I.D. 21-5		IDENTITY T14			PROJECT 1000		COMMENT						LEG LENGTH		AZ./BEARING					+VERT. ANGLE					SYST	N/S NORTHING					E/W EASTING								SYST	ELEVATION						
A	N	L	DISTANCE		SUB I.D.		IDENTITY			INTERVAL		F.S.I.					%MOISTURE		%ASH			%VOLATILES							%FIXED CARBON																							
S	C	L																																																	
			9325		46			COAL									RSC	0010																																			
			9341		16			SASN	C2L	S4M			Q	E3			F	0030																																		
			9669		268			SASN	C1L	C2L			Q	E3	S1		CR	0055																																		
	C								LISTRIC SURFACES OBSERVED																																													
			9639		306			SHAL	C2M				K	O			N	0020	4	COAL																B		75														
			9662		23			SLSN	C2L				K	O			KF	0040																																		
			9676		146			SHAL	C2M				K	O			N	0020	4	COAL																																
			9799		123			SHAL	C2L				K	O			NF	0030																																		
			9906		93			COAL										0010	2	SHAL																																
			9835		76			LOST																																												

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R. HINDSON DATE 25/10/71 PAGE 5 OF 7

TYPE DDH · DISTANCE 1470 · SUB I.D. D15 · IDENTITY T1A · PROJECT 1000 · COMMENT · LEG LENGTH · AZ./BEARING · +VERT. ANGLE · SYST · N/S NORTHING · E/W EASTING · SYST · ELEVATION

A N L · DISTANCE · SUB I.D. · IDENTITY · INTERVAL · F.S.I. · % MOISTURE · % ASH · % VOLATILES · % FIXED CARBON

S C L

Control	Depth from collar or distance from control point to end of interval described	Recovery	Rock 1 name	Major qualifying mineral or material	Minor qualifying mineral or material	Bedding mode thickness	Degree of sorting	Texture	Colour (Munsell system)	Rock 2 % of interval	Rock 2 name	Group	Member	Submember or seam
	9835	9	SHAL	C2M		K	0	N	0020	4	COAL	BLGT		US
	9838	3	SHAL	C2		K	0	F	0030			~~		
C													OR MK?	
	9852	14	COAL					ASC	0010			~~		US
C				CARB	IN		LAST		0.7'					
	9906	56	SLSN	C2L		K	2	KCF	0060			~~		
	9952	499	COAL						0010	1	SHAL	~~		LS
	10125	173	SHAL	C2L		K	0	NF	0010			~~		
	10244	119	SLSN	C1M	C2L	K	0	F	0055			~~		
	10283	39	SHAL	C2L		K	0	NF	0030			~~		
	10305	22	COAL					BSC	0010			~~		MS

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COAL ENVIRONMENT VERSION

COMPANY TEX CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R. HINDSON DATE 25/10/71 PAGE 6 OF 7

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY UNITS	RECOVERY TENTHS	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTERBEDS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY GP 1	GP 2	GP 3	ANGLE TO CORE AXIS: < 30°	30°-60°	> 60°	FOLD AXES; BEDDING; DYKE; CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: PLUNGE OF SLICKENSIDE OR FOLD AXIS	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GROUP	FORMATION	MEMBER	SUBMEMBER OR SEAM	ACCESSORY MINERALS OR MINERALIZATION: NAME	%	MODE	NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20	21	22 23	24	25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47	48	49	50	51	52	53	54	55	56	57	58	59 60 61	62 63	64 65	66	67 68	69	70 71	72 73	74	75 76	77	78	79 80
TYPE DDH		DISTANCE 11470		SUB I.D. D2-5		IDENTITY T14			PROJECT 1000					COMMENT					LEG LENGTH		AZ./BEARING						+VERT. ANGLE					SYST	N/S NORTHING						E/W EASTING					SYST	ELEVATION					
A	N	L	DISTANCE				SUB I.D.			INTERVAL				F.S.I.					% MOISTURE		% ASH			% VOLATILES							% FIXED CARBON																		
S	C	L																																															
	C								PY AT BASE OF UNIT.																																												
		10466		161				SHAL	C2L					K	0			N	0025																						RLGT				PY19						
		10513		47				SLSN	SAM		C2L			K	1			F	0050																																
		10825		3129				SHAL			C2L			K	0			F	0040	T	SASN													B		75														
		10834		9	7			SHAL	C2L					K	0			N	0030	3	COAL																														
	C								SHEARING OBSERVED																																												
		10838		4				SHAL	C2L					K	0			F	0030																																
		10875		10				LOST																																											
		~~		27				SHAL	C2L					K	0			N	0030	2	COAL																														
		10893		96				COAL											0020	4	SHAL																														
		10900		17				SHAL	C2L					K	0			F	0030	3	COAL																														

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COAL ENVIRONMENT VERSION

COMPANY: TECK CORP — PROPERTY: SUKUNKA BLOCK E — LOGGED BY: R HINDSON — DATE: 25/10/71 — PAGE 7 OF 7

TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT	COMMENT	LEG LENGTH	AZ./BEARING	+VERT. ANGLE	SYST	N/S NORTHING	E/W EASTING	SYST	ELEVATION
DDH	11470	DI-5	T14	1000									

A N L / S C L	DISTANCE	SUB I.D.	IDENTITY	INTERVAL	F.S.I.	% MOISTURE	% ASH	% VOLATILES	% FIXED CARBON

Line	Primary (1)	Control (2-3)	Depth from collar to end of interval (4-8)	Recovery units/tenths (9-12)	Rock 1 name (15-18)	Major qualifying mineral (19-21)	Bedding mode thickness (25)	Degree of sorting / grain size / sphericity / roundness (26-29)	Texture (30-33)	Colour Munsell system (34-37)	Rock 2 % of interval (38)	Rock 2 name (40-43)	Structure identification (52)	Angle to core axis (56-57)	Group (62-63)	Submember or seam (68-69)	Accessory minerals name / % (70-77)
4			10923	237	SHAL	C23	K	0		0030	3	COAL			BLGT		
6		C	ONE 0.2' COAL PARTING NOTED														
8			10979	56	SHAL		K	0	N				B	70	~~~		
12			10990	11	COAL				BSC	0010					~~~	CH	
16			11045	55	SASN	SAH	Q	8351	W	0045					~~~		
18		C	PY @ 1129.0														
20			11343	2988	SASN	C1K	Q	83	W	0050	2	SHAL	B	84	~~~		PY 11
24	END		11470	127	SASN	C1K	K	8351	W	0060					~~~		

GEOLOG

COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R. HINDSON DATE 25/10/71 PAGE 1 OF 4

TYPE	DISTANCE	SUB I.D.	IDENTITY	PROJECT	+VERT. ANGLE	SYST	N/S NORTHING	E/W EASTING	SYST	ELEVATION
DDH	5230	05	T15	1000	-90	MP	13,100.0	106,550.0	MP	3000.0

Primary / Control	Depth (end of interval)	Recovery	Rock 1 Name	Major Qualifying Mineral	Bedding / Sorting	Texture	Colour (Munsell)	Rock 2 Interbeds	Structure	Lithologic Units	Accessory Minerals
C	NO TRIPARI TESTS TAKEN										
CPT	00										
ØVB	405										
C	BENT - 0.5' @ 152.8, 1.4' @ 169.4, 1.8' @ 232.8 — 0.2' MUD @ 153.0										
	CA MUD + CA FOSSILS IN MDSN MATRIX AT CARBON FOSSILS - BRKX? 176.6-180.2										
	BLOCKY - MUDDY - POSS FRACTURED 202.6 - 235.2 - PY ↗ TOWARDS BASE										
	2318	1913	MDSN	A1 S3L	K 0	JU	0030			FTMS	PY 19
C	RARE PEBBLES										
CNT	2349	31	SASN		N 3		0030			~~~	PYT 9 GN 19
	2365	169	SHAL		K 0		0040	T SLSN		BLGT	
C	PY NODULES										
	2418	53	COAL			C	0020			~~~ UB	PY 19
C	COAL AS WIDE PARTINGS										
	2463	457	SHAL	C2M	K 0	N		3 COAL	B 80	~~~	
	2503	409	COAL			BC	0010	1 SHAL		~~~ MB	
	2537	347	SHAL		K 0	N		3 COAL		~~~ /	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R. HINDSON DATE 25/10/71 PAGE 2 OF 4

Header card: TYPE DDH | DISTANCE 58.30 | SUB I.D. D5 | IDENTITY T15 | PROJECT 1000

Line	Control (3)	Depth (4–8)	Recovery (9–12)	Rock name (15–18)	Rock 1 characteristics: qualifying minerals, bedding, texture, colour (19–37)	Rock 2 interbeds (38–46)	Structure within interval (47–61)	Lithologic units (62–69)	Accessory minerals (70–77)	(78–80)
2	C				PY NODULES					
4		2634	97	COAL	D 0010			BLGT	LBPY19	
6	C				LISTRIC SURFACES ON COAL PARTINGS					
8		2652	18	SHAL	CRL K O N		B 80	~~~~		
9	C				CARB. PARTINGS IN 1ST 3-4' - MINOR THROUGHOUT - > CARB IN LAST 5.0'					
10	C				¥ C322.0 7 342.0 347.0					
11	C				IRREG. CA FRACTURE FILLINGS BEGIN @ 277.5 - FREQ. FROM 295.0 - 307.4.					
12		3560	908	SASN	SAM CRLK8371 8/N 0055		L 9 B 82	~~~~	CA11	
16		3598	18	LOST				~~~~		
20		~~~~	20	COAL	BSC 0010			~~~~ US		
22	C				SLICKENSIDES OBSERVED — HIGHLY CARB AT TOP + BOTTOM OF SECTION					
24		3657	59	SHAL	CRL K O FN 0040			~~~~		
28		3703	46	COAL	BSC 0010			~~~~ LS		
30	C				7 SI AT DEPTH — HIGHLY CARB FOR 1.0' @ 376.0 W LISTRIC SURFACES					
32		3813	1109	SHAL	K O NF 0036	T SLSN		~~~~		
36		4028	2159	SLSN	CIL CRLK 1 CFK 0045	1 SASN CI	L333	~~~~	CA71	

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R. HINDSON DATE 25/10/71 PAGE 3 OF 4

PRIMARY	CONTROL	DEPTH FROM COLLAR OR DISTANCE FROM CONTROL POINT TO END OF INTERVAL DESCRIBED (UNITS)	(TENTHS)	RECOVERY (UNITS)	(TENTHS)	ROCK 1 CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	MINOR QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	BEDDING MODE THICKNESS	DEGREE OF SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK 2 INTENDED: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MINERAL OR MATERIAL: NAME	AMT.	STRUCTURE WITHIN INTERVAL: REPEATED SEQUENCES	FRACTURING: TOTAL INTENSITY	RELATIVE INTENSITY GP 1	GP 2	GP 3	ANGLE TO CORE AXIS < 30°	30°-60°	> 60°	FOLD AXES, BEDDING, DYKE, CONTACT & FAULT ATTITUDES; UNCONFORMITIES: IDENTIFICATION	FOR TRAVERSE: PLUNGE OR DIP AZIMUTH	PLUNGE OR DIP ANGLE	FOR DRILL CORE: TYPE	PLUNGE OF SLICKENSIDE OR FOLD AXIS	ANGLE TO CORE AXIS	FOLD OR FAULT INTENSITY	DIRECTION OF TOPS OR OF YOUNGING	LITHOLOGIC UNITS: GROUP	FORMATION	MEMBER	SUBMEMBER	ACCESSORY MINERALS OR MINERALIZATION OR SEAM: NAME	%	MODE	NAME	%	MODE	UNRELIABILITY FACTOR	FORMAT CONTROL: FOR COMMENT CARD NO. OF LAST COLUMN USED
1	2	3	4 5 6 7	8	9 10 11	12	13	14	15 16 17 18	19 20 21		22 23 24		25	26	27	28	29	30 31 32 33	34 35 36 37	38	39	40 41 42 43	44 45 46		47	48	49	50	51				52	53	54	55	56	57	58	59 60 61	62 63	64 65	66 67	68 69	70 71	72 73 74	75	76 77	78	79 80
TYPE		DISTANCE 5830		SUB I.D. 25		IDENTITY T15			PROJECT 1000				COMMENT						LEG LENGTH		AZ./BEARING					+VERT. ANGLE								SYST	N/S NORTHING							E/W EASTING		SYST	ELEVATION				
A	N	L	DISTANCE				IDENTITY			INTERVAL				F.S.I.					%MOISTURE		%ASH			%VOLATILES											%FIXED CARBON															
S	C	L																																																	
			4050		22			SHAL					K	0				K	0045																								BLCT								
	C								MINOR					SHEARING																																						
			4109		598			SHAL	C2L				K	0				N	0035	2	COAL																															
			4111		2			SHAL	C2L				K	0				E	0035																															
			4138		278			SHAL	C2L				K	0				N	0035	2	COAL																															
	C								SLICKENSIDES				OBSVD. - ALSO BRKX -																					OCC. SANDY -																			
			4185	2	714			SHAL	C2L	SI			K	1				E	0040																															
			4188	2	30			SLSN	C2L	S2			K	2				KEN	0035																															
			4190	2	26			SHAL	C2L				K	0				N	0035																															
			4198		169			SHAL	C2L	A1			K	0				N	0035	1	COAL																															
			4962		94			SHAL	C2L				K	0				NE	0035																															

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COAL ENVIRONMENT VERSION

COMPANY TECK CORP PROPERTY SUKUNKA BLOCK E LOGGED BY R HINASON DATE 25/10/71 PAGE 4 OF 4

TYPE DDH | DISTANCE 5830 | SUB I.D. 05 | IDENTITY T15 | PROJECT 1000 | COMMENT | LEG LENGTH | AZ./BEARING | +VERT. ANGLE | SYST | N/S NORTHING | E/W EASTING | SYST | ELEVATION

A N L | DISTANCE | SUB I.D. | IDENTITY | INTERVAL | F.S.I. | % MOISTURE | % ASH | % VOLATILES | % FIXED CARBON

S C L

Line	Primary (1-2)	Control (3)	Depth from collar or distance from control point to end of interval described (4-8)	Recovery (9-12)	Rock % of interval (13)	Rock 1 name (14-18)	Major qualifying mineral or material (19-21)	Minor qualifying mineral or material (22-24)	Bedding / sorting / grain size / sphericity / roundness (25-29)	Texture (30-33)	Colour, Munsell system (34-37)	Rock 2 % of interval (38)	Rock 2 name (40-43)	Rock 2 qualifying mineral or material (44-46)	Fracturing: total intensity (48)	Fracturing: relative intensity (49-51)	Identification (52)	Angle to core axis (56-57)	Lithologic units: Group / Formation (62-65)	Submember or seam (68-69)	Accessory minerals or mineralization (70-77)
4			5013	51	9	SHAL	C2L		K 0	N	0035	1	COAL						BLGT		
8			5099	86	8	SLSN	C2T		K 2	F	0095	2	SHAL				B	72	~~~		
12			5105		6	COAL				BSC	0010								~~~	CH	
14		C					CARB		AT	UPPER	CONTACT										
16			5360	255		SASN	C1H		K8351	UL	0065				L	9	B	68	~~~		CATI
20	END		5830	470	9	SASN	C1H		K8351	UH	0066	1	SHAL	C2L	L	9	B	70	~~~		CATI