PR-NOMAN CREEK 69(1)C

REPORT ON COAL-MINING POTENTIAL
NOMAN CREEK PROSPECT, PINE
RIVER AREA, B.C., CANADA

PAUL WEIR CO. JAN. 1970

PR-NOMAN CREEK 69(1)B

4

OPEN FILE

February 12, 1970

Mr. M. Menzies,
Brameda Resources Limited,
7th Floor, Board of Trade Building,
1177 West Hastings Street,
Vancouver 1, B. C.

Dear Mr. Menzies:

Thank you for your letter of February 11 and the two reports on the Pine Pass coal project. I neglected to ask whether they were presented to us on a confidential basis or whether we may feel free to use them as we see fit, including possibly, mention of the work and results in the Annual Report.

Your advice will be appreciated.

Yours very truly,

Deputy Minister.

KBB:DB

Letter from Douglas Feb 13
Report OK to use internally
otherwise held till fourth work
from Pine Pass Coal Co

BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Building
1177 West Hastings Street, Vancouver 1, B.C. Phone: 681-1392

4

February 11, 1970.

Mr. K. Blaikey,
Department of Mines,
Victoria, B.C.

Dear Mr. Blaikey:

I am enclosing herewith one copy of Noman Creek - Pine Pass Coal Project report by Foundation of Canada Engineering and a report by Paul Weir Company.

Also a plan and section of the Sukunka River Project.

Yours very truly,

BRAMEDA RESOURCES LIMITED,

M. Menzies.

lfh

REPORT ON COAL-MINING POTENTIAL
NOMAN CREEK PROSPECT, PINE RIVER AREA
BRITISH COLUMBIA, CANADA

Paul Weir Company
Chicago, Illinois

January, 1970
Job No. 1615

Table of Contents

Table

Exhibits

REPORT ON COAL-MINING POTENTIAL
NOMAN CREEK PROSPECT, PINE RIVER AREA
BRITISH COLUMBIA, CANADA

INTRODUCTION

The purpose of this report is to present and analyze the results of a drilling and sampling program conducted in late 1969 by Brameda Resources Limited in the Noman Creek portion of the Pine River area in eastern British Columbia. Brameda obtained the rights to explore and develop the coal deposits within the Pine River area by means of an agreement negotiated with the Pine Pass Coal Company Limited on June 6, 1969. Since the Noman Creek prospect appeared to have some potential extent and the most accessible location among the several coal prospects within the Pine Pass Coal Company holdings, it was selected for Brameda's initial exploration.

The Noman Creek prospect is located on the north bank of the Pine River valley approximately 150 miles north of Prince George and 100 miles west of Dawson Creek (see "Location Map" in pocket, rear cover). The nearest town, towards the east, is Chetwynd, with a population of about 1,400. Transportation facilities are excellent, with both the Pacific Great Eastern Railroad and the John Hart Highway traversing the Pine River valley which forms the southern boundary of the Noman Creek prospect.

PREVIOUS AVAILABLE INFORMATION

Although mentioned in earlier geological reports, the Noman Creek area was not mapped or described in detail until 1955 when the results of preceding field examinations, including a drilling and sampling program, were published by the British Columbia Department of Mines as their Bulletin No. 36, entitled "Coal Reserves of the Hasler Creek-Pine River Area," by N. D. McKechnie. As based on geological mapping, drill-hole data, and analyses of the coal cores, Mr. McKechnie concluded that the Noman Creek area contained 9 million tons of recoverable coal in seams of 4.0 feet or more in thickness. The published analyses indicated that coal from the several seams encountered in the drill holes was generally of acceptable commercial quality.

The Pine Pass Coal Company apparently did no mining on their properties prior to June 6, 1969, but had authorized study and preparation of various feasibility and marketing reports by consultants. In October, 1968, as apparently one consequence of such studies, an exploratory adit was driven 120 feet along the strike length of a 16-foot coal seam outcropping at the southern limits of the Noman Creek area at a location convenient to the John Hart Highway. Several coal samples were taken along the length and at the face of the adit for analyses by a Vancouver laboratory. A bulk sample filling 16 steel-drum containers was also taken at the face for shipment to Japan for coking tests.

The analyses made in Vancouver indicated that coal from the adit, while somewhat high in ash (around 18.0 percent), was otherwise suitable for coking, with a volatile-matter content of 19.3 percent and a free-swelling index of 7. The results of the tests on the bulk sample shipped to Japan were not made available to Brameda until November, 1969, but indicated "excellent washability" although ash in the raw coal was high (around 35 percent) and recovery of clean coal with about 6.3 percent ash was correspondingly low (around 52 percent at 1.50 specific gravity). No other tests usually made on potential coking coals were reported.

The marketing studies made for Pine Pass Coal Company prior to June 6, 1969, cited the immediate demand for low- to medium-volatile coking coal by the Japanese iron and steel industry in quantities of from 500,000 to 2,000,000 tons per year at the then-applicable selling price of from $13.50 to $14.00 per ton f.o.b. cargo vessels. This demand continues, and selling prices are trending upwards.

In discussing transportation charges for delivering Pine Pass coal into cargo ships at or near Vancouver, a total expense of $5.57 per long ton was projected, this total including loading of coal into railroad cars at the mine, unloading into ships, railroad freight rate, costs of railroad-car ownership by the coal-producing company, and insurance. The freight rate used in compiling the total charge of $5.57 was $3.50 per ton, an estimate which now seems low in view of the fact that an existing unit-train rate of $3.50 per ton has been established for shipments of coal from southeastern British

Columbia to a Vancouver port, a distance of about 400 miles, while the distance from Noman Creek to North Vancouver via the Pacific Great Eastern Railway is a little over 600 miles.

Despite its relatively remote location, however, the available information on potential production of coal in the Pine River area as of June 6, 1969, was reasonably promising, and warranted further investigation. Brameda immediately entered into a program of topographic and geological mapping, core-drilling, and analyses of the coal cores encountered in the drilling. The remainder of this report deals with the Brameda program and interpretations of the results therefrom.

EXPLORATION BY BRAMEDA

As shown on the "Drilling Plan" (in pocket, rear cover), Brameda's area of interest at Noman Creek extends northwesterly from the Hart Highway along the surface outcrop location of two parallel coal horizons designated as Coal Seams No. 78 and No. 76 for a distance of approximately 9,000 feet. This linear area is located on the steep eastern and southeastern slopes of Mt. Bickford which rises to an elevation of 6,226 feet a little west of the map area. The two coal seams as shown on the "Drilling Plan" represent the western limb of a folded and faulted syncline within which the coal-bearing strata extend approximately 2,500 feet across the synclinal axis to the eastern boundary of this particular structure as mapped in Bulletin No. 36, previously mentioned.

In addition to the topography as determined from aerial photographs, the "Drilling Plan" shows the road system and prospect trenches cut by Brameda, and the locations of drill holes all of which, however, are shown in greater detail on Sheets 1 and 2 of the map designated as "Geology and Location Plan" (in pocket, rear cover). These latter "Sheets" do not repeat the topography shown on the "Drilling Plan," but show the directions of strike and dip, and the degrees of dip, of the outcrops of bedrock strata encountered along the roads and prospect trenches. The drill holes designated by the letter "B" are those drilled by Brameda, while those designated by the prefix "PR" were those drilled by the British Columbia Department of Mines prior to publication of their Bulletin No. 36 on this and other nearby areas.

As shown on both the "Drilling Plan" and the two "Geology and Location Plans," the Brameda drill holes are located along cross-section lines drawn at right angles to the prevailing strike of the coal seams at northwest-southeast intervals of from 1,480 to 2,050 feet along the length of the structure. These section lines are designated in numerical order from southeast towards the northwest, with the inclination and direction of each drill hole from the surface and graphic logs of the strata penetrated by each drill hole being shown for each of the six sections on which drill holes were located (in pocket, rear cover).

Brameda's drilling program consisted of 23 drill holes (one of which was not completed) ranging from 495 to 957 feet in depth and

totalling 15,701 linear feet. Core recovery ranged from "poor" to "good," but was generally disappointing, probably reflecting to some degree the broken and fractured character of the subsurface strata in a steeply-folded and faulted underground structure. To the best extent possible, detailed descriptions of the recovered core were made by company geologists, and most of the cores of coal seams over 4 feet in thickness were sent to the Warnock Hersey laboratory in Vancouver for analysis.

INTERPRETATION OF RESULTS OF DRILLING

The graphic depictions of the coal seams and intervening strata encountered in each drill hole along each cross-section line (Sections 1 through 6) clearly portray the generally steep dips and interior folding within the Noman Creek syncline. They also indicate the irregularities in coal-seam thickness and occurrence from one drill hole to another along a single section line and from one section line to another, especially towards the northwest.

The anticipated presence of two relatively major coal seams within the area (No. 78 and No. 76) was generally confirmed by the drilling, with the stratigraphically lower seam (No. 76) being thicker and more persistent in occurrence than the upper seam (No. 78). Neither seam, however, was reasonably "normal," in terms of potential mining, and correlations become uncertain towards the northwest. A variety of "other" seams were encountered both stratigraphically above and below seams No. 78 and No. 76, but were notably less persistent in

continuity, probably having been laid down as lenses of widely-varying thickness and extent during the original phases of coal formation. All seams contained occasional "partings" of shaly coal or coaly shale of varying thickness and extent within the total thickness of each coal seam proper. Geological descriptions of the strata immediately overlying the coal seams which would constitute the "roof" during underground mining operations generally indicated not only a lack of uniformity but also the frequent occurrence of carbonaceous material or fractures which would cause varying degrees of difficulty and cost in their support during mining operations.

Table 1, in three parts, shows the depths (footages), thicknesses of coal seams, included partings and core recovery, and separate analyses for Seam No. 78, Seam No. 76, and for the "Other" seams as encountered in each drill hole. These data are grouped separately according to their locations on Sections 1 through 6, and thus indicate changes or lack of changes in order of such groups of drill holes from southeast to northwest. It is evident that the several items of analysis, like the items of coal-seam thickness, extent and irregularities of included partings, are highly variable from one drill hole to another along a single section line and from one section line to another.

CONCLUSIONS

Probably the most significant interpretation of the results of the Brameda drilling and sampling program is that of manifest

variability in coal seam thickness, occurrence, physical characteristics, and quality. The combined effect of such variability and of the generally-prevailing steepnesses, or rapid changes, in degrees of dip would be to cause substantial difficulties in planning orderly mine lay-outs, whether for stripping or underground mining operations.

The steepness of dip of the more persistent coal seams at their outcrops along the western flank of the Noman Creek syncline serves to reduce the areas of coal recoverable by stripping to relatively narrow "ribbons" paralleling such outcrops, in the direction of dip, beyond which the coal would be too deep for stripping with conventional equipment and methods. The difficulties of underground mining caused by varying conditions of coal occurrence and geological structure as described above would be increased by the indicated necessity of providing additional "roof" control where roof characteristics become inferior. The coal-seam material, as mined, appears to be so variable and frequently inferior in quality that a mechanical beneficiation plant would be required, probably with high costs because of the high percentage of reject material in the raw coal.

The Noman Creek portion of the Pine River area, as originally mapped by the British Columbia Department of Mines in 1955, and now substantially more clarified and better delineated by the Brameda drilling and sampling program, is essentially a small coal-bearing unit. The coal deposits, as originally laid down, were relatively irregular in occurrence, thickness, and quality, and subsequently

became highly deformed by geological folding and faulting. While detailed estimates of recoverable reserves and producing costs have not been prepared, it is our opinion that the mining and sale of coal in any significant volume under the adverse conditions described above would be highly difficult and costly, at best. We do not believe that the Noman Creek area warrants any further consideration by Brameda Resources Limited.

Respectfully submitted,

PAUL WEIR COMPANY

By: Clayton G. Ball

Clayton G. Ball

PR - NORTON CR. 70(i)A

TABLE 1. CORE-DRILL DATA AND ANALYSES, PRINCIPAL AND OTHER COAL SEAMS

DRILL HOLE Designation	Section Location	Footage	THICKNESS AS DRILLED (in ft.) Total Bed	Shale or Shaly Parting(s)	Core Recovery (in ft.)	As Received Moisture	AIR-DRY BASIS Moisture	Ash	Volatile Matter	Fixed Carbon	Btu	Sulfur	Free Swelling Index
COAL SEAM NO. 78													
B-1	1	155.7-167.9	12.2	1.0	6.5	2.78	1.05	47.37	17.91	33.67	7,485	0.38	1 1/2
B-4	2	337.5-348.0	10.5	-	7.1	3.84	1.02	17.06	22.72	59.20	12,849	0.45	6
B-8	3	190.0-201.5	11.5	2.0	4.8	1.97	1.05	59.06	14.35	25.54	5,514	0.19	1 1/2
B-21	4	526.0-533.3	7.3	-	(a)	4.31	0.74	17.40	18.44	63.42	13,997	0.64	4
		536.5-547.0	10.5	2.0	(a)	2.92	0.94	46.45	17.19	35.42	7,909	0.29	5
B-23	3	357.0-367.5	10.5	4.0	8.0	NO ANALYSES MADE							
B-9	4	475.2-488.0	12.8	-	8.9	6.47	0.71	33.71	18.11	47.47	10,080	0.78	3
B-16	4	570.3-579.0	8.7	-	7.2	2.37	0.78	11.83	26.99	60.40	13,648	0.45	6 1/2
B-12	5	316.0-322.7	6.7	-	3.7	4.07	0.70	14.49	22.48	62.33	13,248	0.63	6 1/2
B-14	5	488.5-499.0	10.5	-	7.3	6.42	0.82	21.15	18.98	59.05	13,223	0.49	1 1/2
B-15	5	569.5-577.0	7.5	-	7.0	3.25	0.82	20.45	20.96	57.77	14,446	0.43	1 1/2
B-13	6	Correlation uncertain; see "Other Coal Seams"											
B-17	6	Correlation uncertain; see "Other Coal Seams"											
B-19	6	Correlation uncertain; see "Other Coal Seams"											
B-22	6	Correlation uncertain; see "Other Coal Seams"											

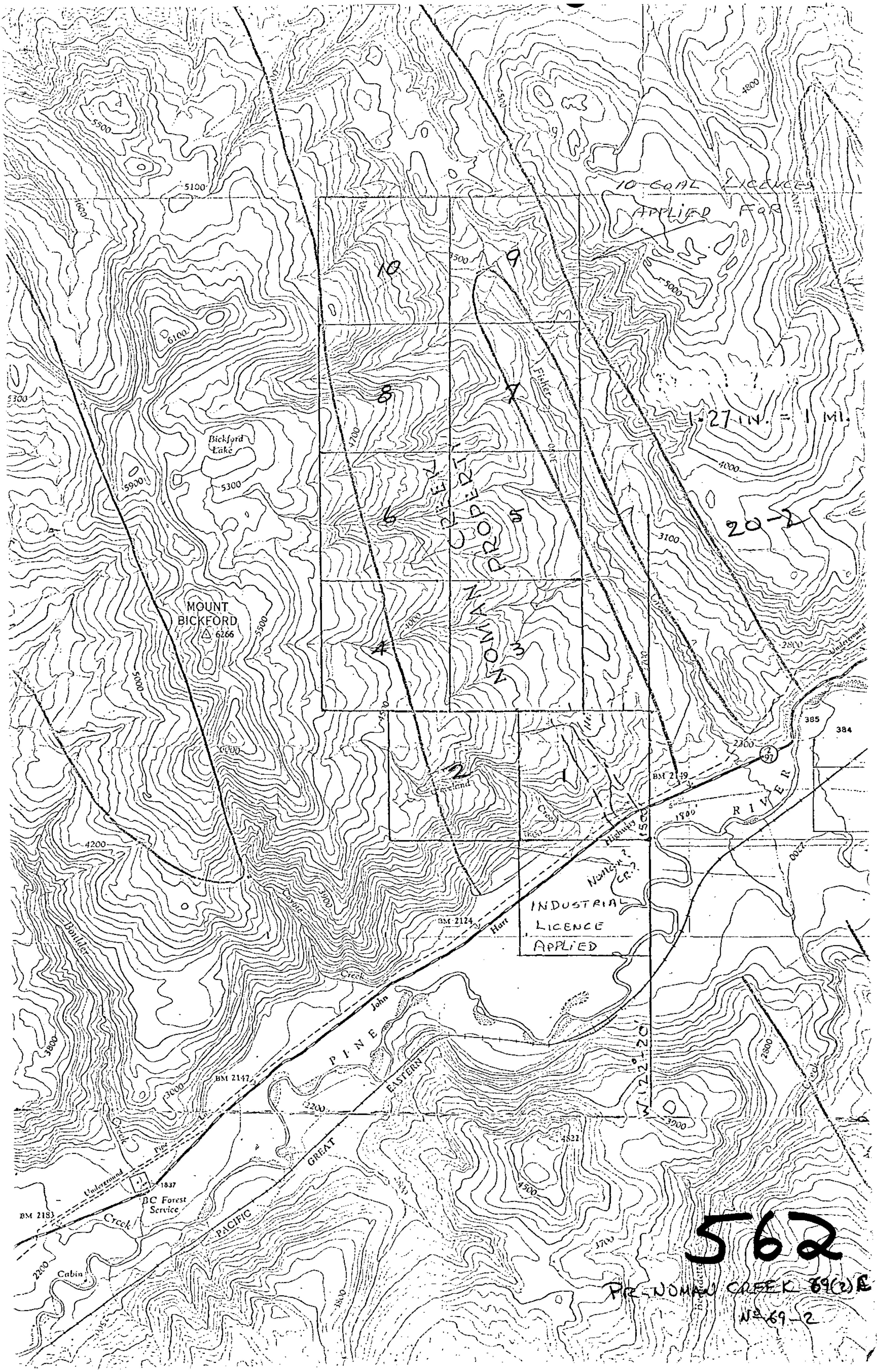
Note: (a) Not reported.

TABLE 1. CORE-DRILL DATA AND ANALYSES, PRINCIPAL AND OTHER COAL SEAMS

DRILL HOLE Designation	Section Location	Footage	THICKNESS AS DRILLED (in ft.) Total Bed	Shale or Shaly Parting(s)	Core Recovery (in ft.)	As Received Moisture	AIR-DRY BASIS Moisture	Ash	Volatile Matter	Fixed Carbon	Btu	Sulfur	Free Swelling Index
COAL SEAM NO. 76													
B-1	1	209.5-221.0	11.5	3.6	6.0	2.56	1.13	37.54	15.08	46.25	9,406	0.49	1 1/2
B-2	1	313.0-328.5	15.5	-	13.9	3.18	1.20	7.80	20.57	70.43	14,271	0.38	1 1/2
B-3	1	387.0-398.0	11.0	-	6.0	3.76	1.07	7.57	24.69	66.67	14,296	0.32	1
B-5	1	419.0-430.5	11.5	2.7	3.5	1.44	0.85	48.62	13.38	37.15	7,485	0.27	1
B-4	2	517.0-535.0	18.0	-	11.0	4.59	1.17	2.96	23.53	72.34	15,294	0.41	2
B-6	3	375.0-387.0	12.0	-	5.0	5.41	0.90	10.77	21.02	67.31	13,747	0.44	2 1/2
B-8	3	325.0-346.5	21.5	1.5	18.0	2.93	0.88	15.10	21.16	62.86	13,199	0.41	3 1/2
B-21	3	677.0-698.0	21.0	-	18.5	7.26	0.92	5.50	22.02	71.56	14,745	0.44	3
B-23	3	456.8-474.0	17.2	0.5	10.0	NO ANALYSES MADE							
B-9	4	624.6-638.0	13.4	2.0	4.0	1.62	0.78	29.52	18.45	51.25	10,878	0.59	5
B-16	4	700.8-719.5	18.7	3.2	15.0	2.89	0.60	8.70	24.12	66.58	14,197	0.54	2 1/2
B-18	4	548.0-568.0	20.0	0.5	12.0	2.71	0.72	18.70	28.25	52.33	12,226	1.36	7 1/2
B-12	5	370.0-379.0	9.0	1.3	6.0	4.02	1.05	15.34	17.93	65.68	13,049	0.46	1 1/2
B-14	5	549.3-561.2	11.9	-	9.0	3.75	1.08	22.40	16.79	59.73	12,176	0.57	1 1/2
B-15	5	726.0-737.0	11.0	-	7.5	3.55	0.77	15.30	18.60	65.33	13,099	0.45	1 1/2
B-13	6	Correlation uncertain; see "Other Coal Seams"											
B-17	6	Correlation uncertain; see "Other Coal Seams"											
B-19	6	Correlation uncertain; see "Other Coal Seams"											
B-22	6	Correlation uncertain; see "Other Coal Seams"											

TABLE 1. CORE-DRILL DATA AND ANALYSES, PRINCIPAL AND OTHER COAL SEAMS

DRILL HOLE Designation	Section Location	Footage	THICKNESS AS DRILLED (in ft.) Total Bed	Shale or Shaly Parting(s)	Core Recovery (in ft.)	As Received Moisture	AIR-DRY BASIS Moisture	Ash	Volatile Matter	Fixed Carbon	Btu	Sulfur	Free Swelling Index
OTHER COAL SEAMS													
B-1	1	325.1-331.0	5.9	1.3	3.5	4.00	0.98	45.52	14.91	38.59	8,209	0.49	1 1/2
		484.5-492.0	7.5	1.0	4.0	3.17	1.10	6.13	16.82	75.95	14,671	0.65	1 1/2
B-5	1	193.0-204.0	11.0	-	7.0	3.92	1.15	5.82	21.30	71.73	14,845	0.45	2
		725.5-733.8	8.3	-	4.0	6.65	0.84	10.40	17.52	71.24	13,922	0.69	1 1/2
B-6	3	647.0-652.0	5.0	-	2.0	2.04	0.80	33.41	16.02	49.77	10,105	0.58	1 1/2
B-21	3	629.0-633.0	4.0	-	2.5	4.09	0.82	5.85	24.88	68.45	14,646	0.85	8
B-7	4	21.5- 29.0	7.5	-	5.0	1.93	0.79	18.31	26.80	54.10	12,076	0.43	1 1/2
B-9	4	60.5- 78.0	17.5	0.5	14.0	3.21	1.23	16.22	23.26	59.29	12,774	0.49	4 1/2
		107.0-117.0	10.0	-	9.0	3.39	1.42	11.09	22.24	65.25	13,772	0.63	4
		550.0-560.0	10.0	2.5	10.0	1.81	1.12	22.56	20.31	56.01	12,000	0.74	5 1/2
		679.0-694.5	15.5	2.5	12.0	2.03	0.90	14.97	17.80	66.33	13,149	0.52	1 1/2
B-11	4	165.0-179.0	14.0	-	12.5	4.56	1.00	11.43	27.33	60.24	13,548	0.55	7
B-18	4	377.0-392.0	15.0	0.8	9.0	4.49	0.82	2.70	27.44	69.04	15,344	0.78	7 1/2
B-20	4	36.0- 41.5	5.5	-	4.0	3.83	0.90	11.18	24.02	63.90	13,847	0.66	5
B-12	5	214.3-220.1	5.8	2.8	5.8	3.20	1.20	8.96	23.36	66.48	14,197	0.82	6
B-14	5	672.5-683.2	10.7	3.3	8.7	3.33	0.95	20.60	20.02	58.43	14,222	0.73	6 1/2
B-15	5	344.0-349.5	5.5	-	3.5	2.60	0.87	36.65	17.83	44.65	9,581	0.41	3 1/2
		569.5-577.0	7.5	-	7.0	1.44	0.60	39.70	16.57	43.13	8,907	0.49	2 1/2
B-13	6	50.5- 74.8	24.3	-	8.5	5.15	1.20	10.73	18.78	69.29	13,797	0.49	1 1/2
		157.0-163.0	6.0	-	1.5	4.65	0.68	7.38	20.60	71.34	14,371	0.81	2
		237.5-245.0	7.5	-	5.0	3.75	0.71	52.43	13.31	33.55	6,761	0.34	1
		305.5-313.8	8.3	-	7.0	4.74	0.77	6.05	24.58	68.60	14,745	0.96	8
		416.0-421.5	5.5	-	5.0	4.84	1.08	10.15	17.60	71.17	14,072	0.65	2
B-17	6	38.0- 54.0	16.0	3.0	5.5	NO ANALYSES MADE							
		191.7-198.0	6.3	1.2	2.9	NO ANALYSES MADE							
		299.2-306.0	6.8	-	1.0	NO ANALYSES MADE							
B-19	6	258.0-269.0	11.0	0.5	4.0	8.78	0.85	14.75	18.01	66.39	13,423	0.52	1 1/2
		356.0-364.0	8.0	-	3.5	5.49	0.62	26.05	18.56	54.77	11,452	0.74	2 1/2
		431.0-441.7	10.7	-	7.0	5.14	0.77	4.20	19.85	75.18	14,895	0.63	1 1/2
		561.5-567.0	5.5	0.3	4.0	3.90	0.87	11.55	17.58	70.00	13,922	0.74	1 1/2
B-22	6	41.0-55.5	14.5	-	11.0	NO ANALYSES MADE							
		256.1-270.0	13.9	-	4.0	NO ANALYSES MADE							
		403.5-411.5	8.0	1.6	5.0	NO ANALYSES MADE							
		476.5-483.5	7.0	3.0	5.0	NO ANALYSES MADE							
		541.0-550.0	9.0	2.5	5.5	NO ANALYSES MADE							


10 COAL LICENCES APPLIED FOR
1.27 IN. = 1 MI.
20-2
NOMAN PROPERTY
10
9
8
7
6
5
4
3
2
1
MOUNT BICKFORD
6266
Bickford Lake
INDUSTRIAL LICENCE APPLIED
Noman Cr.?
W. 122° 20'
RIVER
PINE
John Hart Highway
PACIFIC GREAT EASTERN
BC Forest Service
Cabin
Creek
Boulder Creek
Coyote Creek
Fisher Creek
BM 2124
BM 2147
BM 2183
BM 2149
1837
385
384
97
Underground
562
PR-NOMAN CREEK 89(2)E
No 69-2

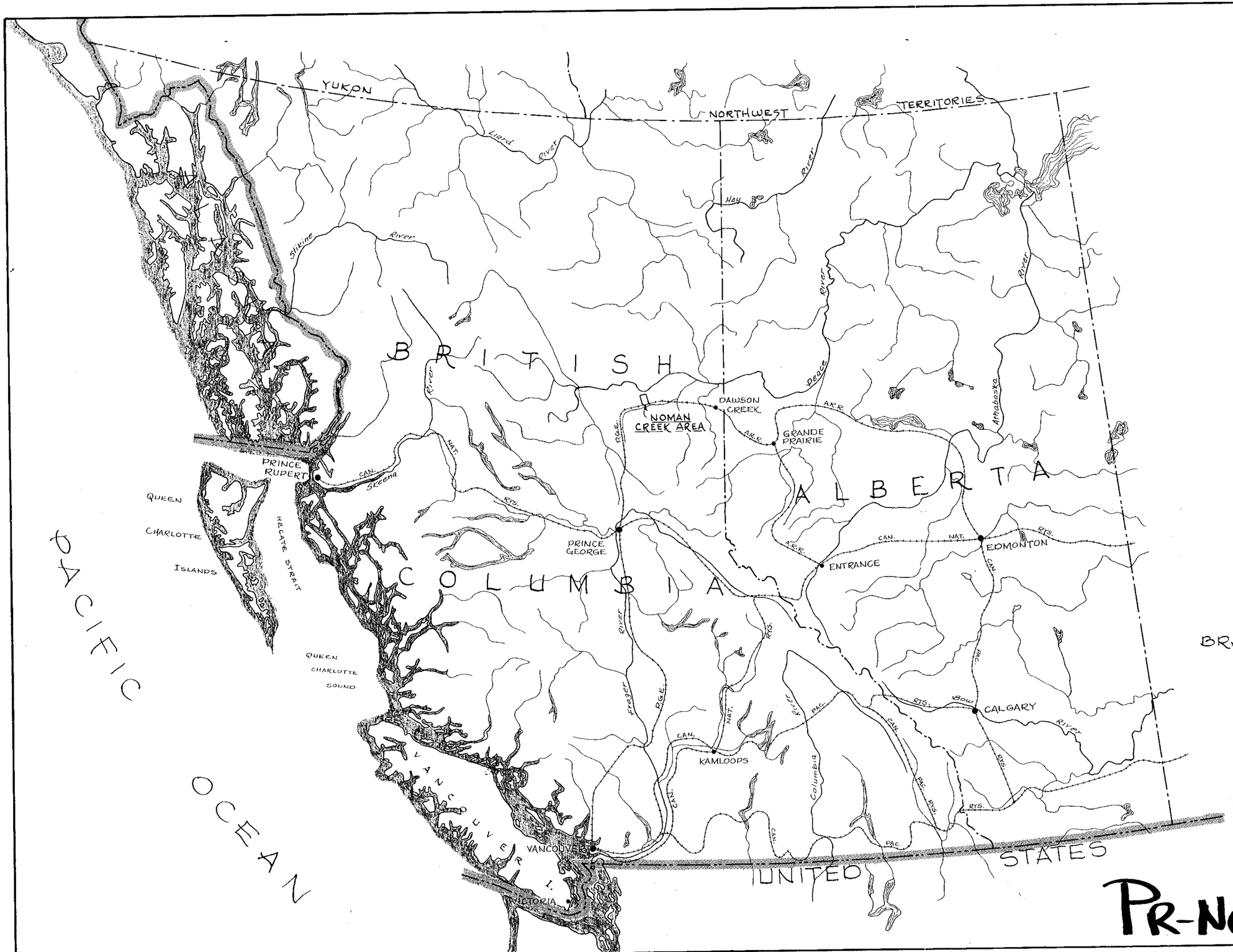
PR-NOMAN CREEK 69(2)-C

PINE PASS COAL PROJECT

NOMAN CREEK AREA

MAPS

JAN 1970



BRAMEDA RESOURCES LTD.

LOCATION MAP

PINE PASS COAL PROJECT
NOMAN CREEK AREA

FIG. 1

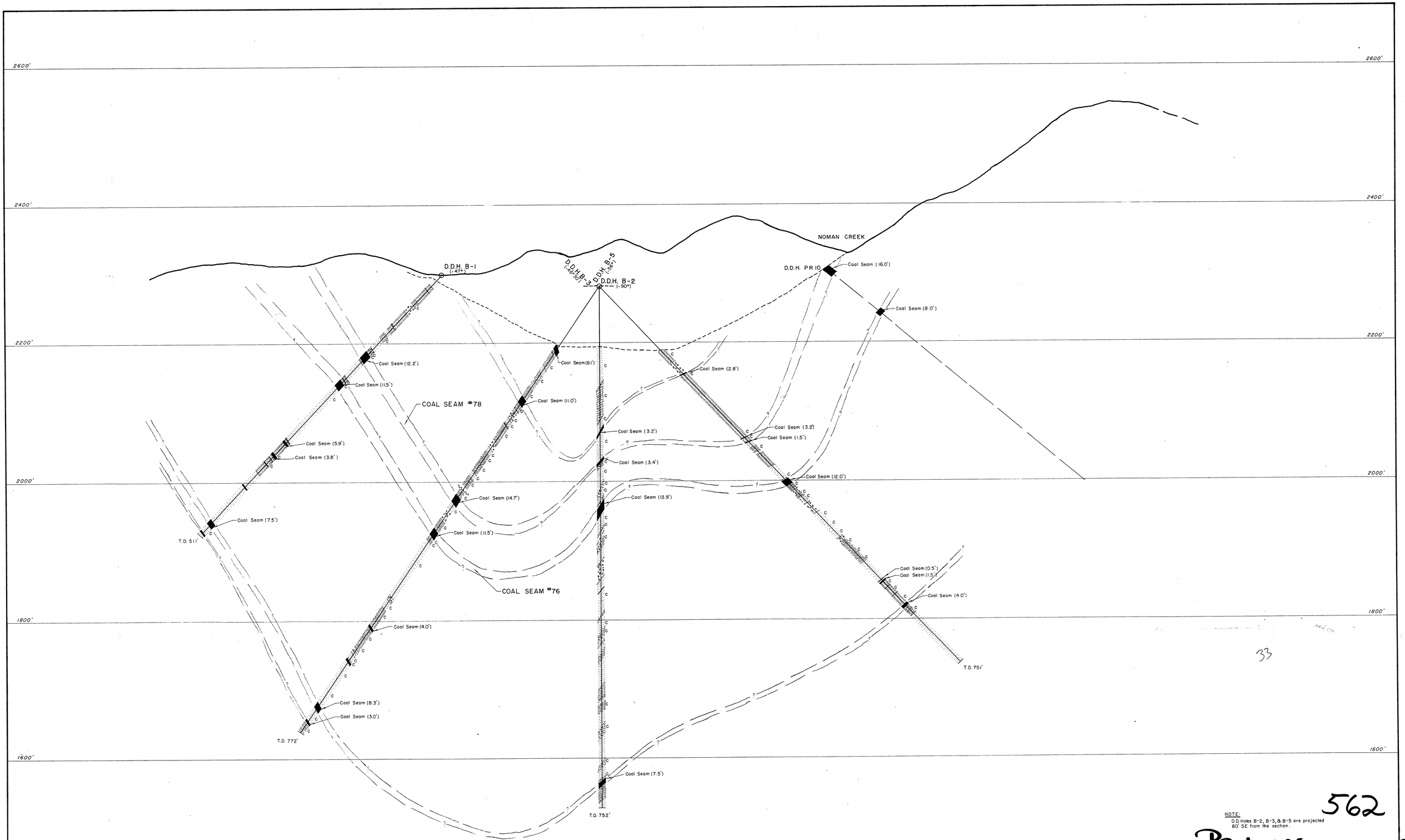
scale?

562

PR-NOMAN CREEK [redacted]

69(2)C

LEGEND
COAL SEAM CONTACT
DIAMOND DRILL HOLE - 1969
DIAMOND DRILL HOLE - 1948
SURVEY CONTROL POINT
ROAD OR TRENCH
STREAM
STRIKE AND DIP OF FORMATION
COAL SEAM - Observed in trench or road cut. Both contacts seen except where noted.
BOUNDARY LINE
98,000 N
97,000 N
96,000 N
95,000 N
94,000 N
93,000 N
98,000 E
99,000 E
100,000 E
101,000 E
102,000 E
103,000 E
104,000 E
105,000 E
106,000 E
NORTH BOUNDARY OF LICENCE Nº 2
SOUTH BOUNDARY OF LICENCE Nº 3
NORTH BOUNDARY OF LICENCE Nº 1
"SECTION 4"
"SECTION 3"
"SECTION 2"
"SECTION 1"
To Section 5
2,050'
625.25 m
1,950'
594.75 m
1,480'
451.40 m
1,600'
488.00 m
0+5,030'
0+3,080'
0+1,600'
Seam not seen too much overburden.
Coal Seam 5.3'
Coal Seam 12.5'
Coal Seam 11.0'
Coal Seam 21.5'
Coal Seam 14.11'
Coal seam lost in overburden all good coal.
Coal Seam 17.6'
LIGHT OVERBURDEN TO THE WEST OF ACCESS ROAD
DEEP OVERBURDEN ON THIS SLOPE INTO NOMAN CREEK 100'-120' AT LEAST.
COAL SEAM #78
COAL SEAM #76
NOMAN CREEK
TREE LINE
Coal Seam 9.0'
Coal Seam 14.4'
Coal Seam 10.4'
Coal Seam 12.0'
Coal Seam 14.5'
Coal Seam 16.0'
Coal Seam 7.0'
Coal Seam 9.4'
Coal Seam 11.2'
Coal Seam 5.4'
Coal Seam 10.0'
Coal Seam 12.8'
Coal Seam 6.0'
APPROX. 500' TO THE HART HIGHWAY.
PR-NOMAN CREEK
69(2)C
B | Added boundary lines of coal licences, etc. | 11/26/69 | L.B.
A | Added Holes B-20 & B-21 | 11/13/69 | L.B.
Rev. Nº | Revison | Date | By
SHT. Nº1
562
BRAMEDA RESOURCES LTD.
GEOLOGY & LOCATION PLAN
PINE PASS COAL PROJECT
NOMAN CREEK AREA
LIARD MINING DIV., B.C.
DATE SEPT., 1969
SCALE 1" = 200'
N.T.S. 93 O/9
DRAWN BY L.B.
MAPPED BY H.M.J.
JOB Nº
DRAW'G Nº /K-110



33

562

NOTE:
D.D. Holes B-2, B-3, & B-5 are projected 80' SE from the section.

PR-NOMAN CREEK ~~76-63-4~~ 69(2)E

SECTION LOOKING N 40° W

LEGEND

- COAL SEAM
- CLAYSTONE
- SANDSTONE
- SHALE
- SILTSTONE
- c – Carbonaceous Rocks

BRAMEDA RESOURCES LTD.

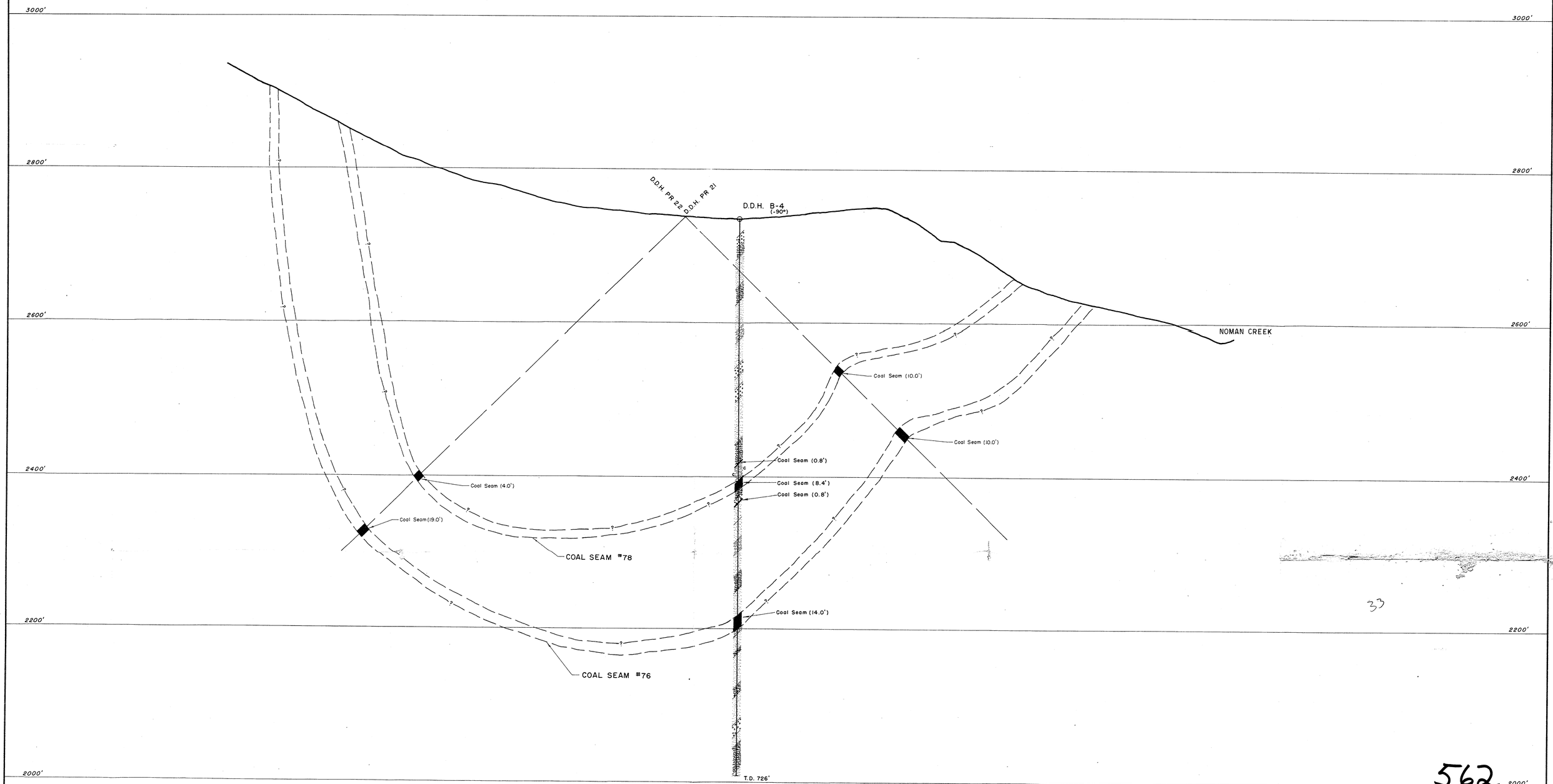
— SECTION Nº 1 —

PINE PASS COAL PROJECT

NOMAN CREEK AREA

LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
OCT., 1969	1" = 50'	93 O/9
DRAWN BY: L.B. & O.C.	MAPPED BY: H.M.J.	JOB Nº / DRW'G Nº /E-103



LEGEND

- COAL SEAM
- CLAYSTONE
- SANDSTONE
- SHALE
- SILTSTONE
- c — Carbonaceous Rocks

562

PR-NOMAN CREEK ~~7562-A~~

SECTION LOOKING N 30° W 69(2)C

BRAMEDA RESOURCES LTD.

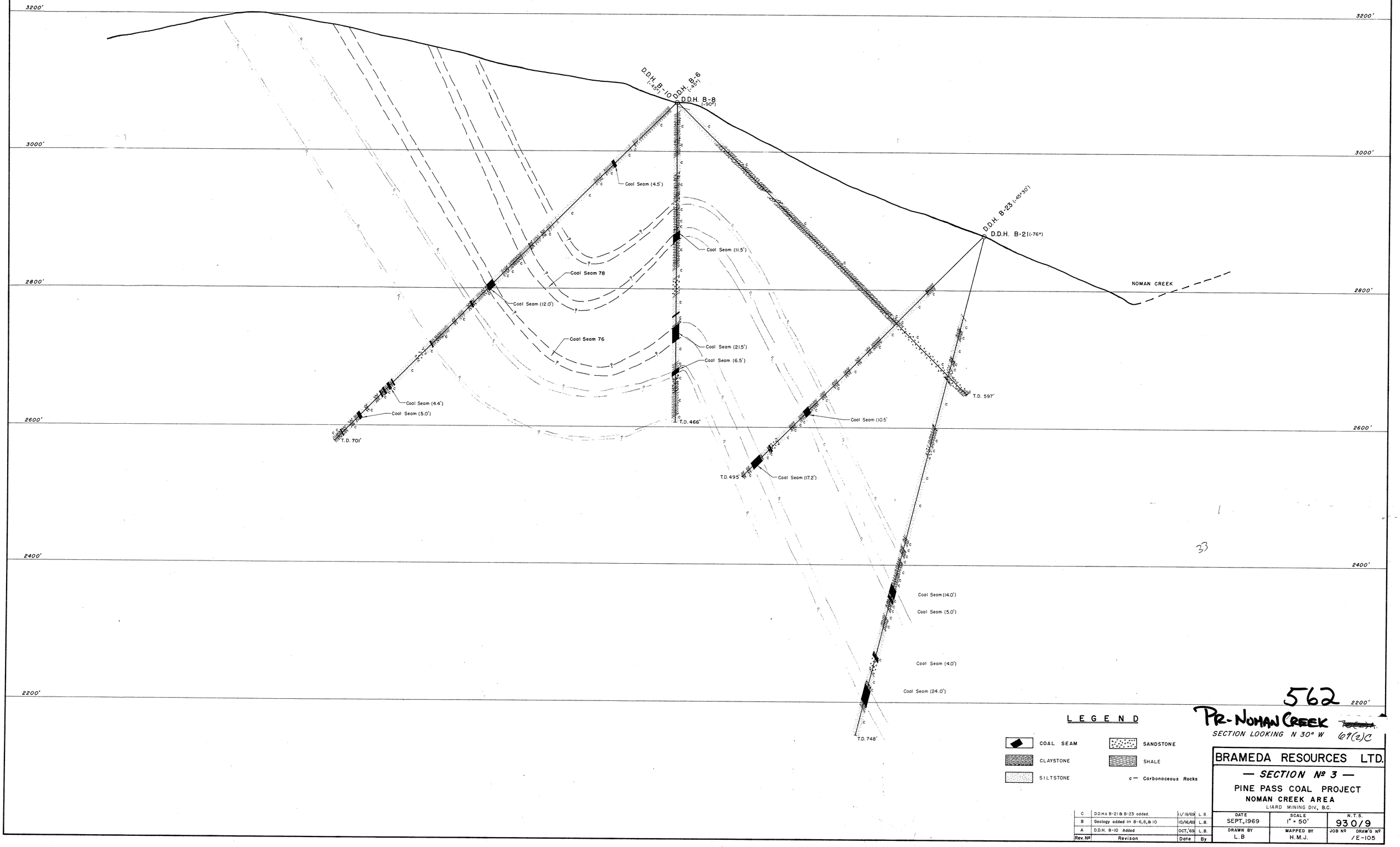
— SECTION Nº 2 —

PINE PASS COAL PROJECT

NOMAN CREEK AREA

LIARD MINING DIV, B.C.

DATE	SCALE	N.T.S.
SEPT., 1969	1" = 50'	93 O/9
DRAWN BY	MAPPED BY	JOB Nº / DRAW'G Nº
L.B.	H.M.J.	/E-104



33

562

PR-NOMAN CREEK ~~TOCA~~

SECTION LOOKING N 30° W 69(2)C

LEGEND

- COAL SEAM
- SANDSTONE
- CLAYSTONE
- SHALE
- SILTSTONE
- c — Carbonaceous Rocks

Rev. Nº	Revison	Date	By
C	D.D.H.s B-21 & B-23 added.	11/19/69	L.B.
B	Geology added on B-6, 8, & 10	10/16/69	L.B.
A	D.D.H. B-10 Added	OCT., '69	L.B.

BRAMEDA RESOURCES LTD.

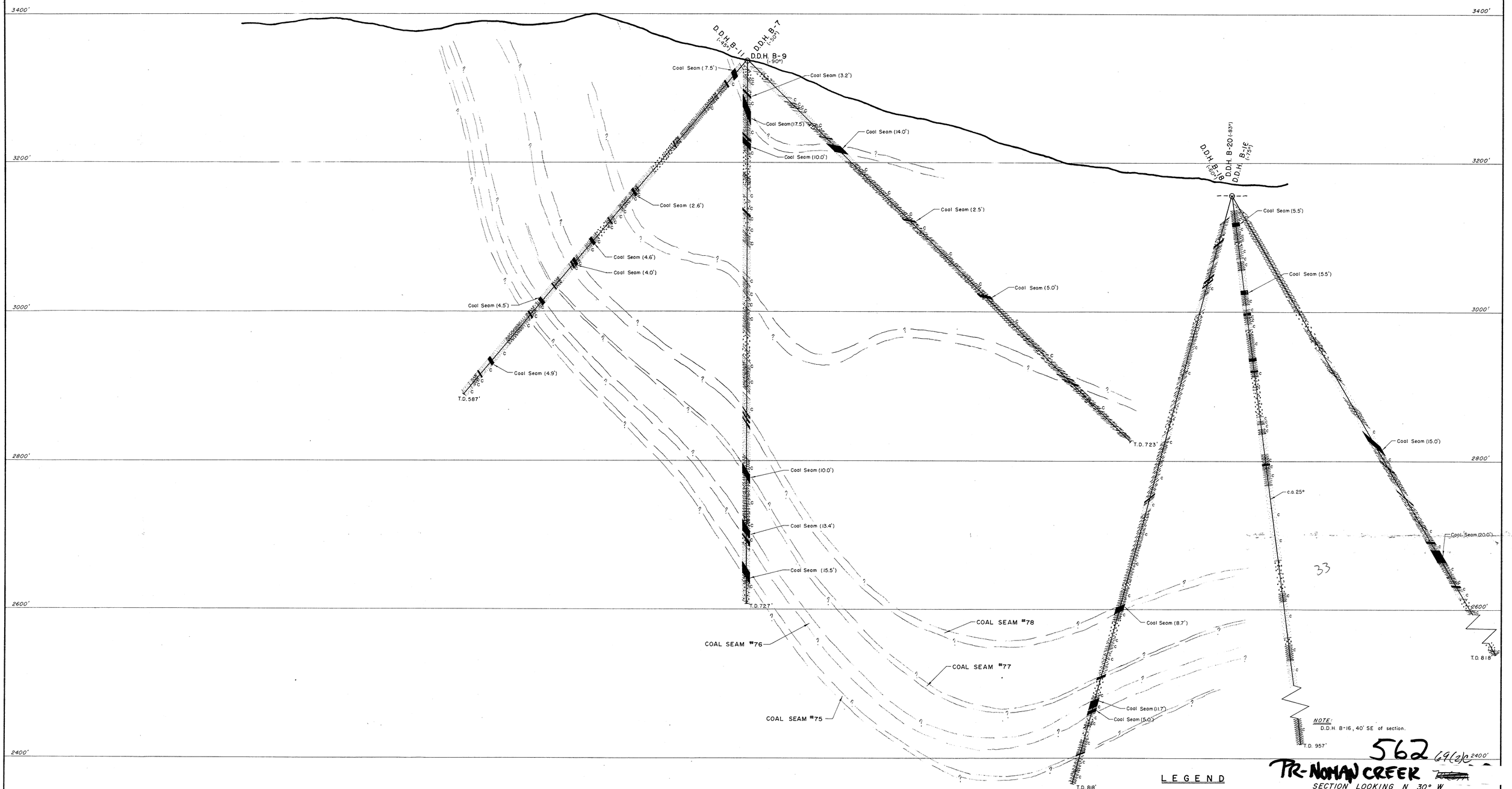
— SECTION Nº 3 —

PINE PASS COAL PROJECT

NOMAN CREEK AREA

LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
SEPT., 1969	1" = 50'	93O/9
DRAWN BY	MAPPED BY	JOB Nº / DRAW'G Nº
L.B	H.M.J.	/E-105



Rev. No	Revison	Date	By
C	Geology shown on D.D.H.s B-16, 18 & B-20.	11/21/69	L.B.
B	D.D.H. B-18 Added.	10/21/69	L.B.
A	D.D.H. B-16 Added.	10/16/69	L.B.

BRAMEDA RESOURCES LTD.

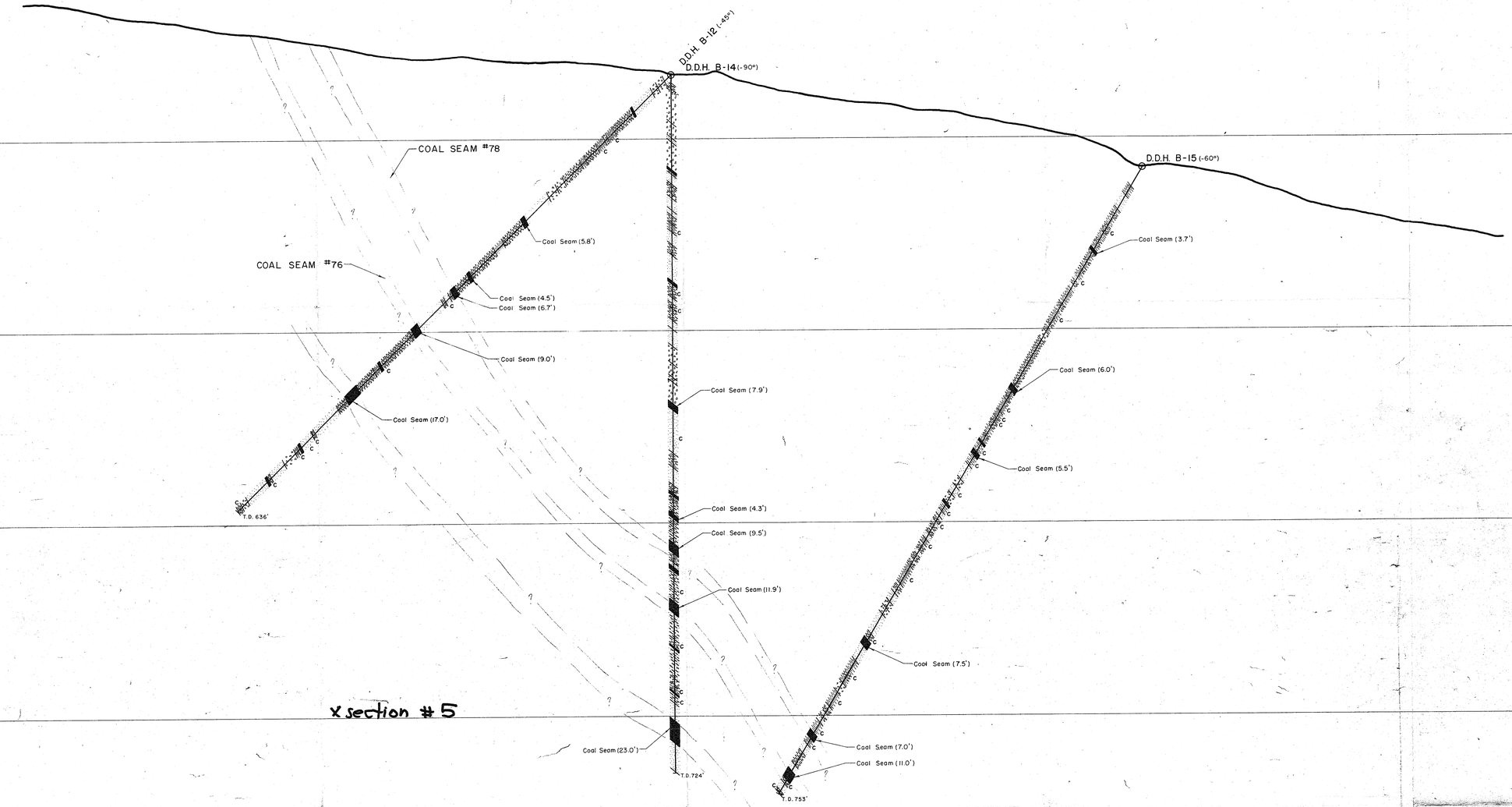
— SECTION Nº 4 —

PINE PASS COAL PROJECT

NOMAN CREEK AREA

LIARD MINING DIV, B.C.

DATE	SCALE	N.T.S.
OCT., 1969	1" = 50'	93 O/9
DRAWN BY	MAPPED BY	JOB Nº / DRAW'G Nº
L.B.	H.M.J.	/ E-106



LEGEND

COAL SEAM
SHALE
CLAYSTONE
SILTSTONE
SANDSTONE
c Carbonaceous Rocks

SECTION LOOKING N 30° W

BRAMEDA RESOURCES LTD.

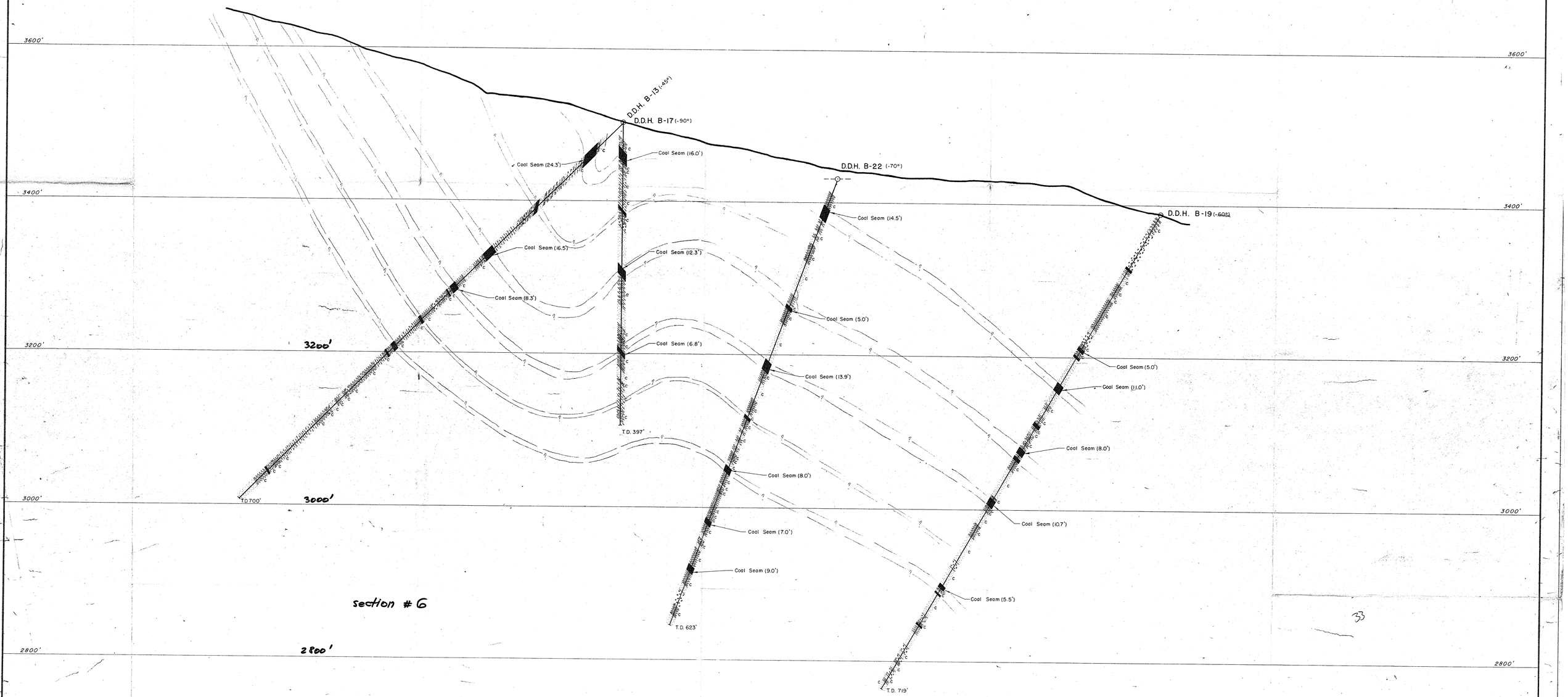
— SECTION Nº 5 —

PINE PASS COAL PROJECT

NOMAN CREEK AREA

LIARD MINING DIV, B.C.

DATE	SCALE	N.T.S.
OCT, 1969	1" = 50'	93 O/
DRAWN BY	MAPPED BY	JOB Nº / DRAW'G Nº
L.B.	H.M.J., & B.T.	/E-107



section # 6

SECTION LOOKING N 30° W

LEGEND

COAL SEAM	SILTSTONE
CLAYSTONE	SHALE
SANDSTONE	c Carbonaceous Rocks

562

PR-NOMAN CREEK

69(2)C

Rev. N°	Revision	Date	By
C	Added D.D.H. B-22	11/26/69	L.B.
B	Geology shown on D.D.H. B-19.	11/24/69	L.B.
A	Geology shown on D.D.H.s B-13 & B-17	11/2/69	L.B.

BRAMEDA RESOURCES LTD.

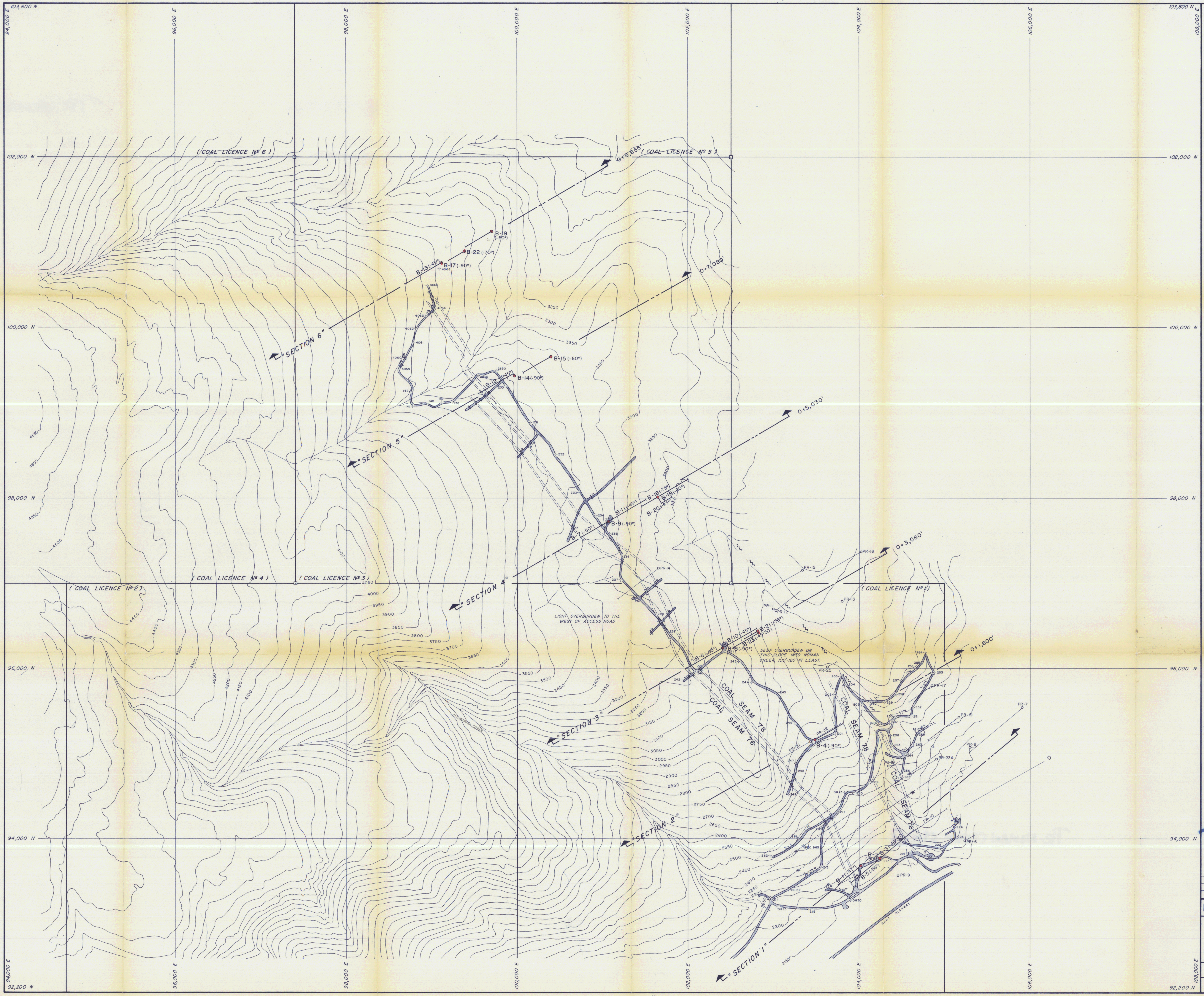
— SECTION Nº 6 —

PINE PASS COAL PROJECT

NOMAN CREEK AREA

LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
OCT., 1969	1" = 50'	93 O/9
DRAWN BY	MAPPED BY	JOB Nº / DRAWG Nº
L.B.	H.M.J.	/ E-108



LEGEND

- COAL SEAM
- DIAMOND DRILL HOLE - 1969
- DIAMOND DRILL HOLE - 1948
- ROAD OR TRENCH
- SURVEY CONTROL POINT
- STREAM
- TREE LINE
- BOUNDARY LINE

PR - NOMAN CREEK ~~70(2)A~~ 69(2)C

562

REV.	DETAILS OF REVISION	DATE	BY
A	Added D.D.H.s B-22 & 23, new location of coal seam, etc.	NOV. 27 /69	L.B.

BRAMEDA RESOURCES LTD.

— DRILLING PLAN —

PINE PASS COAL PROJECT

NOMAN CREEK AREA

LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
NOV., 1969	1" = 400'	93 O / 9
DRAWN BY: L.B.	MAPPED BY: H.M.J.	JOB Nº / DRWG. Nº: / K-112

96,000 E | 97,000 E | 98,000 E | 99,000 E | 100,000 E | 101,000 E | 102,000 E | 103,000 E | 104,000 E

103,000 N

102,000 N

101,000 N

100,000 N

99,000 N

98,000 N

SOUTH BOUNDARY OF LICENCE Nº 6
NORTH BOUNDARY OF LICENCE Nº 4

SOUTH BOUNDARY OF LICENCE Nº 5
NORTH BOUNDARY OF LICENCE Nº 3

Coal Seam 14.6'
Coal Seam 16.5'
Coal Seam 18.0'
Coal Seam 11.0'
Coal Seam 5.5'
Coal Seam 10.2'
Coal Seam 12.0'
Coal Seam 9.0'
Coal Seam 21.2'
Coal Seam 11.2'
Contact not exposed
Coal Seam 9.0'
Coal Seam 6.5'
Coal Seam 11.5'
Coal Seam 15.0'
Coal Seam

CREEK

COAL SEAM #18

COAL SEAM #16

0 + 10,415' " SECTION 7 "

" SECTION 6 "

" SECTION 5 "

" SECTION 4 "

B-19 (-60°)
B-22 (-70°)
B-13 (-45°)
B-17 (-90°)
B-14 (-90°)
B-12 (-45°)
B-15 (-60°)
B-16 (-70°)
B-18 (-60°)
B-20 (-65°)
B-11 (-45°)

1760' 536.80m

1157.5' 480.37m

0 + 7,080'

2,050' To Section 4
625.25m

33

PR-NOMAN CREEK 69(2)K

Rev#	Revison	Date	By
B	Added bdry. lines of coal licences, notes etc.	1/26/69	L.B.
A	Added SECT."7" & Holes B-19 and B-20	1/12/69	L.B.

SHT. Nº 2

562

BRAMEDA RESOURCES LTD.

GEOLOGY & LOCATION PLAN

PINE PASS COAL PROJECT

NOMAN CREEK AREA

LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
OCT., 1969	1" = 200'	93 O/9
DRAWN BY	MAPPED BY	JOB Nº / DRAW'G Nº
L.B	H.M.J.	/ K-111