

Sp. Princeton 71(1) A-1

~~CONFIDENTIAL~~  
~~SUMMARY REPORT~~

R. L. ANDERSON

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**00 191 (1)**

**CONFIDENTIAL**  
**OPEN FILE**

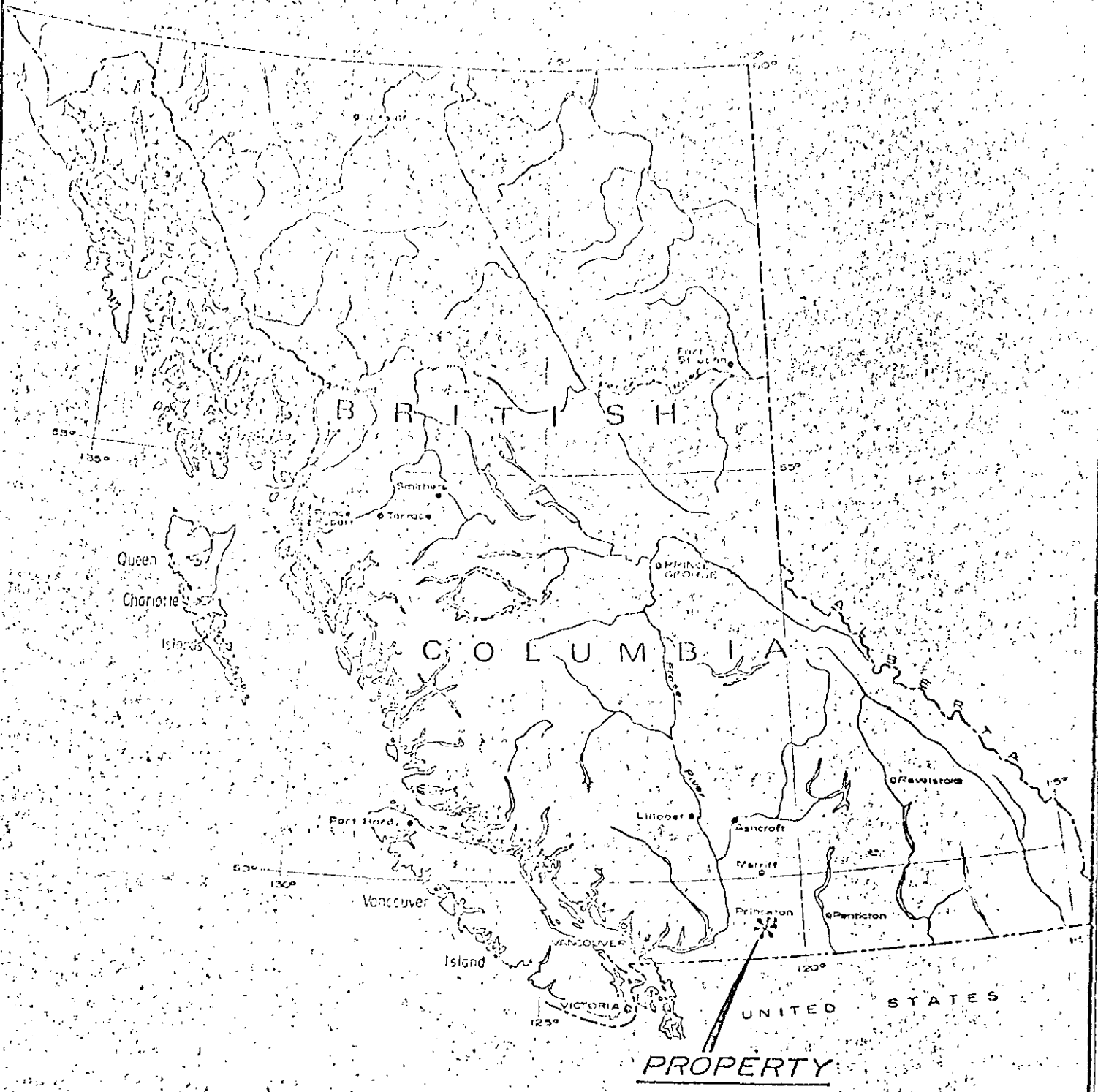
SUMMARY REPORT  
PRINCETON COAL  
SIMILKAMEEN MINING DIVISION  
BRITISH COLUMBIA

by

R. I. ANDERSON, P. ENG.

APRIL 4, 1972





BETHLEHEM COPPER CORPORATION LTD.  
 PRINCETON COAL PROJECT  
 LOCATION PLAN

TABLE OF CONTENTS

	Page
GENERAL . . . . .	1
HISTORY . . . . .	1
PHYSIOGRAPHY . . . . .	2
GEOLOGY . . . . .	2
COAL GEOLOGY . . . . .	3
CONCLUSIONS . . . . .	4

ENCLOSURES

Schedule of Coal Licences

Sheet M-11, N-11 and O-11	Princeton Coal Drill Hole Plan	Scale 1" - 200'
Sheet D-11	Coal Licences	Scale 1" - 2000'
DDH 71-1	Coal Analysis & Detail Log	
" 71-4	" " " "	
" 71-5	" " " "	
" 71-6	" " " "	
" 71-7	" " " "	
" 71-9	" " " "	
" 71-11	" " " "	
" 71-12	" " " "	
" 71-2	Lithologic Description	Scale 1" - 50'
" 71-3	" "	" "
" 71-8	" "	" "
" 71-10	" "	" "
Section 15,600E		Scale 1" - 200'
" 16,000E		" "
" 16,400E		" "
" 16,700E		" "
" 16,900E		" "
" 17,600E		" "
" 17,800E		" "

GENERAL

Bethlehem Copper Corporation Ltd. is the holder of 34 coal licences located in the Similkameen Mining Division in south central British Columbia. The property straddles the Similkameen River and is located approximately five miles south of the town of Princeton, B. C. Access from this point is provided by the Hope-Princeton Highway which crosses the property in a north-south direction. Numerous logging roads provide access to the more remote sections of the licence block.

During the period March to July 1971, Bethlehem drilled 12 surface boreholes totalling 9852 feet within a concentrated area in the southwestern portion of the Princeton coal field (shaded area Map D 11). Drilling equipment was provided under contract agreement by Tonto Explorations Ltd. of Vancouver, B. C. Hole depths ranged from 258 to 1218 feet, with overburden depths varying from 67 to 177 feet. NQ wireline core was recovered through the bedrock sections and coal intersections were forwarded to Commercial Testing Laboratories Ltd. in Vancouver, B. C. for detailed analysis. Analytical results, as reported for individual holes, are noted on the accompanying plats.

HISTORY

Since the early 1900's, several small tonnage operations have been conducted on a number of seams occurring within the Princeton field, principally in supplying the local market. At the Blue Flame Mine located to the south of the Bethlehem ground, coal was produced from a seam 31 feet thick. Mining was confined to a zone averaging 8½ feet from a section located slightly below the middle of the seam. The mine produced a recorded 145,105 tons during the period 1927 through 1937 (Map M-11).

PHYSIOGRAPHY

The coal bearing rocks constituting the Princeton field underlie an elongate, northerly trending rectangular area covering approximately 45 square miles. The area centers on the town of Princeton at the confluence of the Tulameen and Similkameen Rivers. The Bethlehem licences are located in the southern portion of the field (Map D 11), in general covering the broad shallow valley of the Similkameen River.

The valley is largely co-extensive with the surface distribution of the coal bearing strata. The major streams occupy deep channels several hundred feet below the general level of the valley floor and remnants of gravel terraces are found bordering the stream channels at intervals up to an elevation of 3000 feet. Low rounded hills, sparsely covered with grass, scrub brush and occasional stands of timber characterize the main valley floor.

GEOLOGY

Strata of the Princeton coal field are believed to be of Oligocene or early Miocene age. These rocks lie unconformably on all older rocks. The rock units of the Princeton coal field are assigned to the Princeton Group, which has been subdivided into the Lower Volcanic, the Allenby and the Upper Volcanic formations (G.S.C. Paper 52-12).

The coal seams occur exclusively within the Allenby formation which consists predominantly of massive cross bedded granule and pebble conglomerate, sandstone and massive and thinly bedded shale with intercalated beds of coal, carbonaceous shale, siltstone and bentonite.

With the area explored by drilling, sedimentary rocks overlying the coal seam consisted primarily of light to dark grey shales, mudstones,

and siltstones. Detailed lithological descriptions of each of the coal intersections have been noted on the accompanying logs.

COAL GEOLOGY

Exploratory drilling investigations have partially defined the strike and dip extensions of a coal seam averaging 33 feet in thickness. The seam, which strikes northeasterly at approximately 45 degrees and dips to the northwest at 20 - 25 degrees, was intersected in 8 of the 12 boreholes drilled (Map N-11; O-11). Analytical results indicate the quality of the coal deteriorates from the base to the top of the seam and from south to north over the area drilled. The coal is classified as sub-bituminous "A", in accordance with A.S.T.M. standards.

Based on reported analysis, the following table shows the average ash and B.T.U. content of the coal from the base of the seam over an optimum underground mining height of 12 feet.

Depth	Atom	Coal	Thick	Drill No.	Elev	T.D.	Incl.	Coal Interval	Ash Content	BTU Content
				1		1093	- 60°	12.0	13.5%	10,385
100	2924	6	2	2930	812		90°	No Coal		
127	2822	2±	3	2951	258		90°	No Coal		
813	2258	30	4	3101	863		90°	10.3		
225	2936	4	5	3166	1124		90°	12.0	18.5%	10,010
353	2963	33								
58	2192	30	6	3100	917		90°	12.0	14.9%	10,375
707	2267	30	7	3094	767		90°	12.0	15.7%	10,185
267	2743	2	8	3012	787		90°	No Coal		
	2566	31	9	3015	495		90°	5.4	21.0%	10,210
			10	2982	805		90°	No Coal		
573	2410	23	11	3106	712		90°	12.0	24.5%	8,550
373	3410	22	12	3225	1218		90°	12.0	30.2%	8,220

# BETHLEHEM DRILL HOLES.

HOLE #	T.D.	INCL	BCA	O/B	B. Lin	Collin	F. H. L.
71-1	1093	-60° <sup>33'20"</sup>	~33°	177' 153'	1°	3101.1	200-210
71-2	812	-90°	~25° (+ 23' 11" + 20' 1")	150'	65' (20' 100)	2924.8	
71-3	253	-90°	~19°	98'	71°	2950.7	
71-4	863	-90°	~56°	173'	34°	3101.1	
71-5	1124	-90°	~50°	133' 123'	40°	3166.2	
71-6	917	-90°	~69°	133	21°	3100.0	
71-7	767	-90°	~63	79'	27°	3003.7	
71-8	787	-90°	~62	67	28°	3011.8	196-197, 203-204
71-9	495	-90°	~62°	101	28°	3014.9	
71-10	605	-90°	~67°	153	23°	2982.1	
71-11	713	-87° <sup>swd</sup>	~63°	148'	27°	3106.0'	193-221, 566-571, 587
71-12	1218	-90°	~63°	99'	27°	3025.2'	231-234, 313-323



P/C

CONCLUSIONS

Proposed future investigations will include:

1. Exploratory drilling within the present area of interest to determine the extent and tonnage potential of the coal seam.
2. Exploratory drilling to evaluate untested sections of the licence block.
3. Preliminary studies to determine potential markets.

*R. E. Anderson*

R. E. Anderson, P.Eng.

SCHEDULE OF COAL LICENCES

Situate in the Yale and Similkameen Division of the  
Yale Land District and in the Similkameen Mining  
Division.

COAL LICENCE NOS.

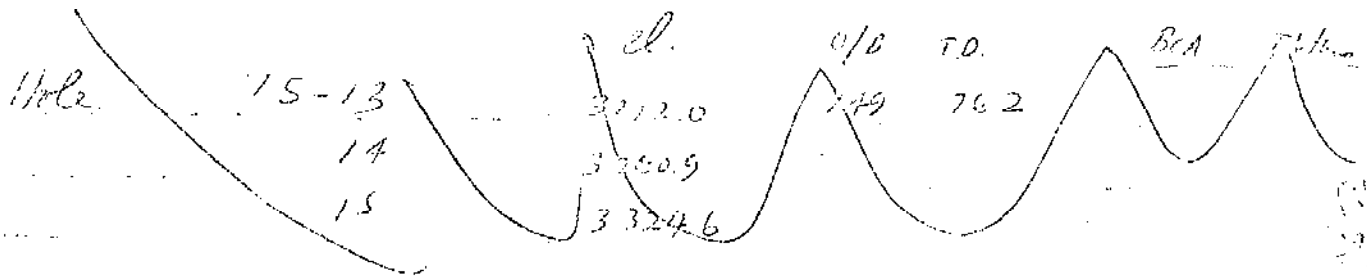
ANNIVERSARY DATE

2019 - 2042

March 22

2222 - 2231

June 11



Hole #	el.	O/D	T.O.	BCA (mm/min)	Traxton intensity ratio - mm	el. P. B.
75-13	3291.0	149	762	15-35'	197 437 2530	2520 310 163
75-14	3280.9	160	963	25-65'	407 873 2218	2310 117
75-15	3324.6	152	800	82-90'	792 800	

14: top 3281  
 160  
 3121  
 1980  
 1241  
 677.5  
 567.8  
 base 309.7

13: base el. 2520  
 900  
 1630  
 635.9  
 259.1  
 948.0

1241  
 638.9  
 552.1  
 base 13

55  
 55  
 60  
 55  
 55  
 55  
 60  
 55

25  
 23  
 33  
 45  
 40  
 35  
 45  
 60  
 20  
 20

#1

P.C. zone 900' west

str elev. 3230'

400' - Golden Glow 1,200'

350 - Brandy Hill

1850 - Jackson (?)

2350 - Blue Coal zone  
(P.C. zone)

→ increase to 1500'

240  
135  
1250

#2

is proposed  
get some info on 11/12

→ near the extension of 147 (Assumed)  
could be drilled better hole by a 1350'  
deep hole at cor to 14150E, 35000N  
str elev 3360'

expect lower coal @ ~ 3050' ± 200  
str @ 360' ± 100

(str elev 12 = 13025'  
elev approx same as 2610  
elev P.C. zone = 1390') } 2610 + 310 = 3100

& lower coal @ 250 - 300 1150' ± 100

#3

- lies in structure with #1.  
- get more info if more. 500' west & 2000' north  
str elev. 3280' elev P.C. zone ~ 1300' ± 200  
expect to hit P.C. zone @ ~ 1350' ± 200'  
(also PV-section but not E.V.)  
(a little E - 60' N 35°W)  
to get approx stratigraphic then

Lower is ~ 3060  
2500

560 above Upper Program

Upper is ~ 560  
740 ← 560 - 740  
1300 ± above Upper Program

3050  
1320

1300  
2500  
3800

2902

el. 3830  
2100  
- 900

3800  
2070

2500

3800  
2610  
11

3000  
2566  
- 1234

3300  
2829

971

3800  
2192  
1608

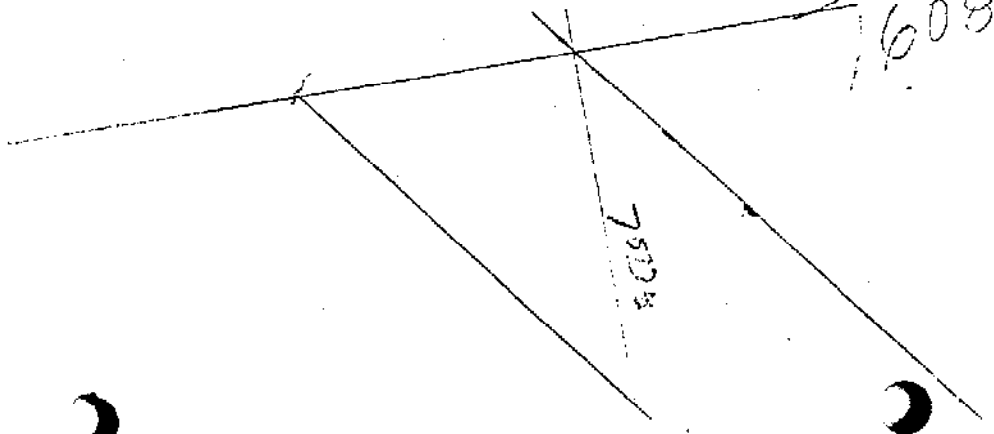
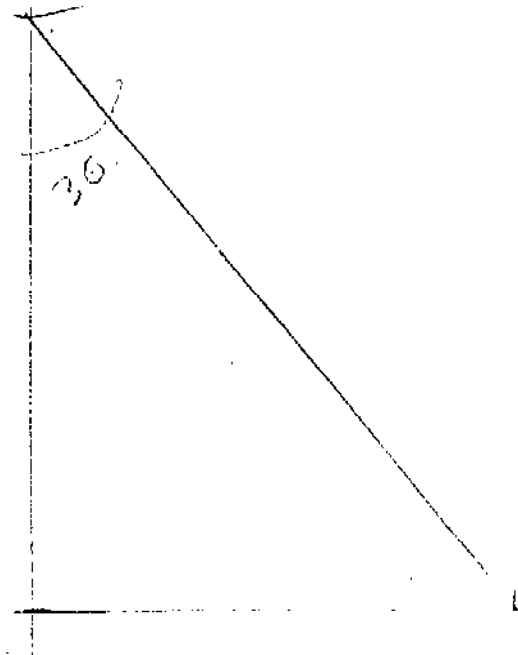
3100  
450  
2650

3000  
740  
3280

3100  
750

250

302  
1315



# Comments on Proposed Bethlehem Drilling

The locations of holes 1, 3 and 4 are satisfactory as little or no information is available at the surface. Hole 1 should give approximately the same information as Shaw's hole F, but the depth should be increased to 1400 or 1500' from the proposed 1000' (Using Shaw's structural contour map as a guide, it is expected that coal will be intersected at  $3270' - 2230' \sim 1050' \pm$  but some allowance should be made for shift in true position of contours).

The proposed depths of holes 3 and 4 are satisfactory and should give a good idea of ~~the~~ coal close enough to the surface to be worthwhile.

The proposed location of hole 2 may or may not give the desired information. It would appear that the coal seam(s) traced in the 1971 drilling probably dip deeper than the proposed hole depth (possibly as much as ~~3150 - 650 =~~  $\sim 2500'$  below surface using Shaw's map & other structural information).

The nearer surface extension of the 1971 reserve could probably be better tested by a 1500' deep hole at coordinates  $\sim 14100 E, 28900 N$  (Sh Elev.  $3430 \pm$ ) (road access is equally as good).

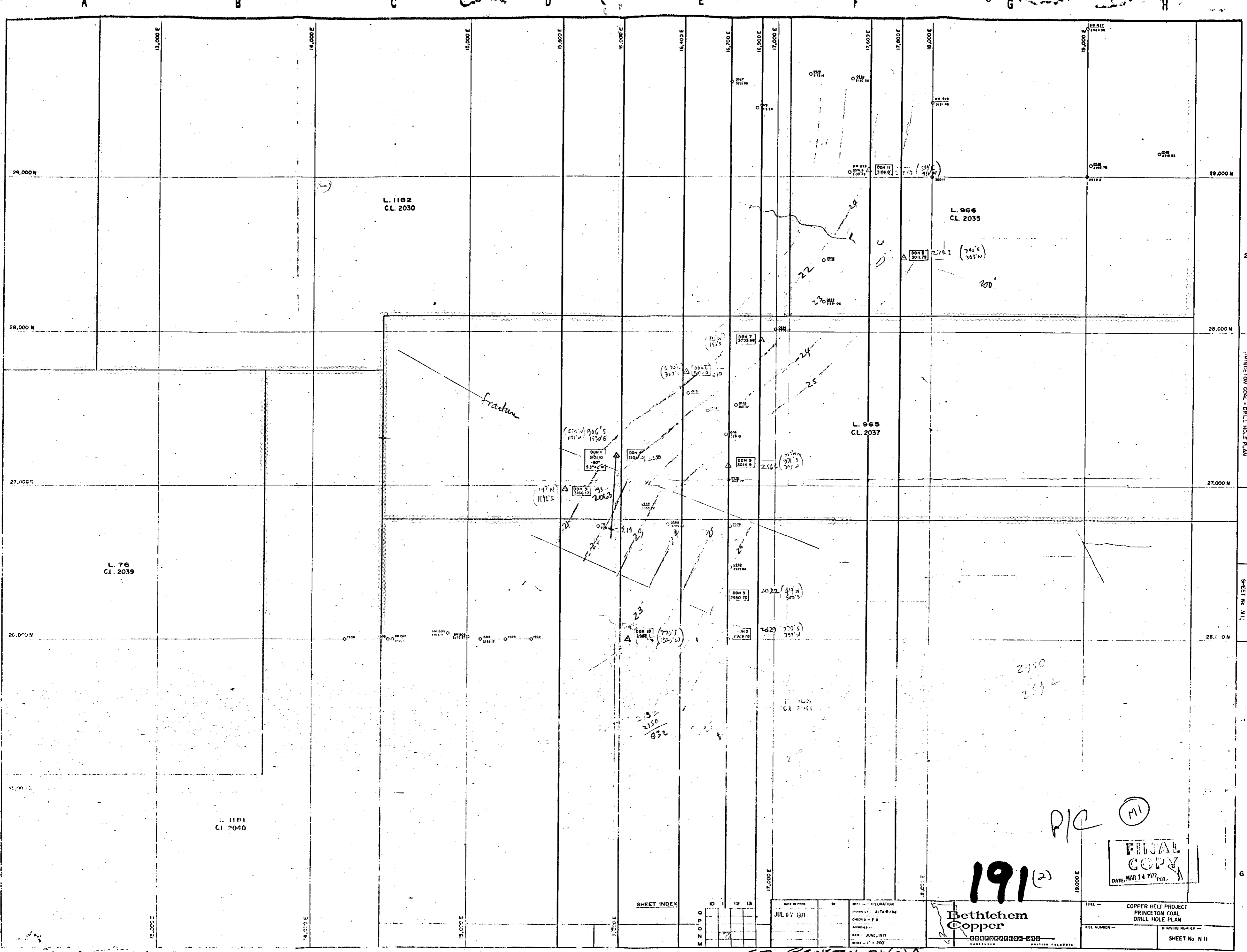
Holes 5 to 8 should probably adequately test ~~the~~ the hypothesized upward bulge of the Princeton-Black coal zone in the area of the "Allenby Anticline". Hole 5 is equivalent to Shaw's hole C but the depth should be increased to at least 800' (Sh Elev 2510, Elev P-B Coal zone 2080  $\rightarrow$  depth 530).

Hole 5 should be drilled first, followed by a 1200-1400' hole at B to test the no outcrop zones between BM 334 and 336 along the Similkameen (some coal  $\leq 1m$  thick was found in outcrop at this vicinity).

Holes 6 and 7 are located within an old landslide but the landslide debris ~~is~~ is probably less than 200' thick so that holes would be likely to intersect o/c at reasonable depths. Holes 6 and 7 could be drilled if and only if good results are obtained at 5 and 8; depths should be increased to 700' and 800' respectively.

Sgt. Princeton 71 (2) A-1  
**CONFIDENTIAL**  
Hess Commercial Corp. Ltd.  
Maps M.11 - Q.11. - 4. PAPS -

191 (2)



SHEET No. N 11

6

SHEET INDEX

10	11	12	13

DATE	BY	APP. / INFORMATION
JUL 02 1971		ALTAIR / W
		CHERRY - F A
		APPROVED
		DATE - JUNE, 1971
		SCALE - 1" = 200'

**Bethlehem Copper**

PRINCETON COAL PROJECT

DRILL HOLE PLAN

TITLE	COPPER DELT PROJECT PRINCETON COAL DRILL HOLE PLAN
FILE NUMBER	
DRAWING NUMBER	
SHEET No. N 11	

**FINAL COPY**  
DATE: MAR 14 1977

191(2)

R/C M1

SM - PRINCETON 71(2)A



A

B

C

D

E

F

G

H

13,000 E

14,000 E

15,000 E

16,000 E

17,000 E

18,000 E

19,000 E

34,000 N

34,000 N

L 969  
CL 2029

L 968  
CL 2032

PC-70  
PC-80  
PC-90  
PC-100

PC-90

33,000 N

L 389  
CL 2034

32,000 N

L 1182  
CL 2030

31,000 N

31,000 N

31,000 N

15,600 E

16,000 E

16,400 E

16,700 E

16,900 E

17,600 E

17,800 E

2610  
2843

L 966  
CL 2035

191

72

FILED COPY  
DATE MAR 14 1972

SHEET INDEX

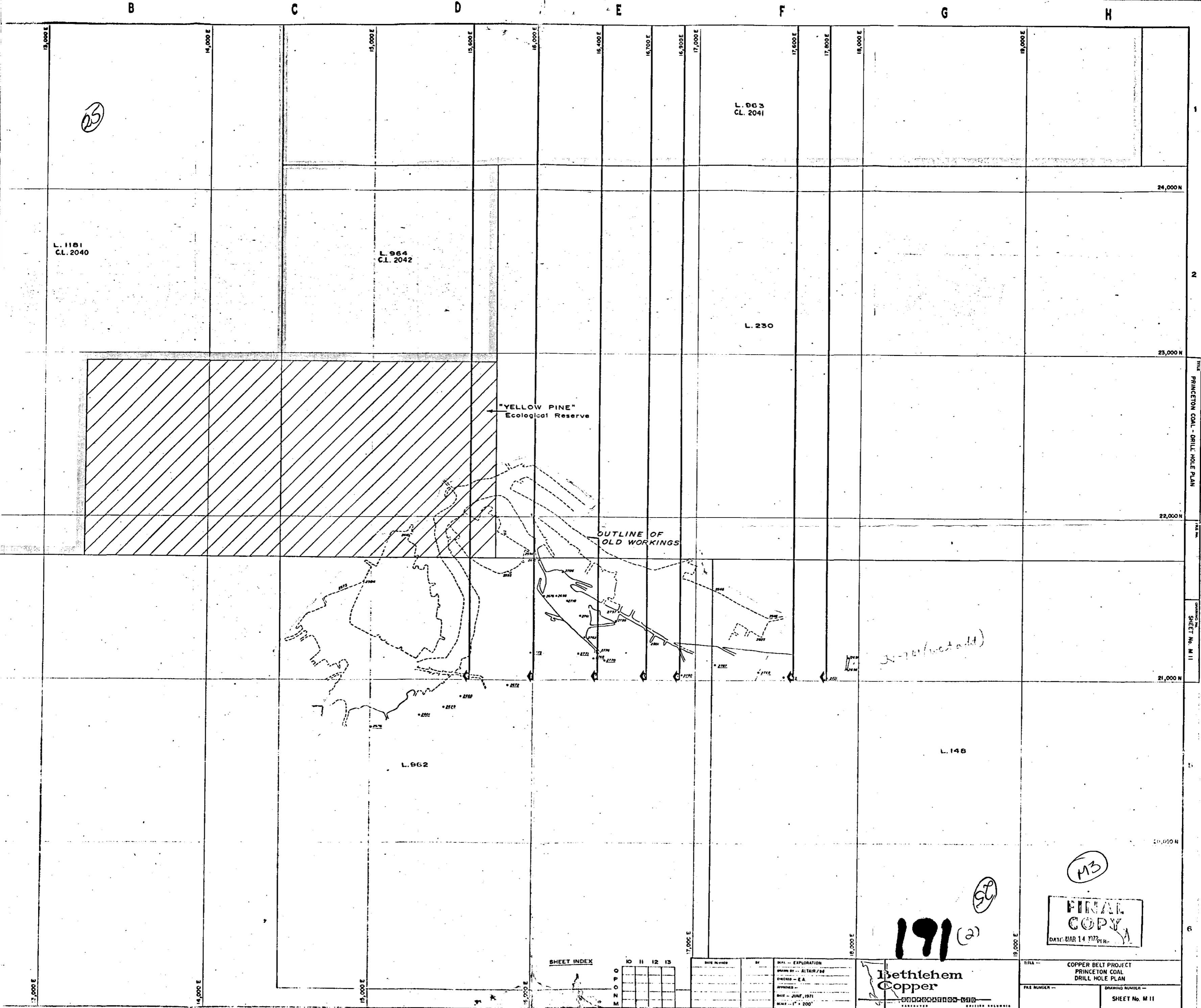
CO  
E  
L  
N  
M

DATE REVISION  
APR 01 1971  
BY  
C  
E  
L  
N  
M

Bethlehem Copper  
CORPORATION  
PHILADELPHIA, PENNSYLVANIA

COPPER BELT PROJECT  
PRINCETON COAL  
DRILL HOLE PLAN  
DRAWING NUMBER  
SHEET No 0 II

SM-PRINSTON 71 (2) A.



25

L. 1181  
CL. 2040

L. 964  
CL. 2042

L. 963  
CL. 2041

L. 230

"YELLOW PINE"  
Ecological Reserve

OUTLINE OF  
OLD WORKINGS

L. 962

L. 148

3-7-74 (wet add)

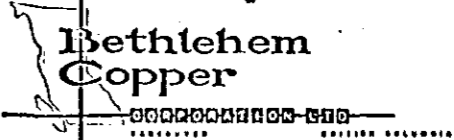
191 (2)

FINAL  
COPY  
DATE: MAR 14 1974 P.M.

SHEET INDEX

10	11	12	13

DATE REVISED	BY	REVISION
EXP. - EXPLORATION	DRWN BY - ALTAIR / JN	CHECKED - E.A.
DATE - JUN, 1971	SCALE - 1" = 200'	



TITLE -	COPPER BELT PROJECT PRINCETON COAL DRILL HOLE PLAN
FILE NUMBER -	DRAWING NUMBER -
	SHEET No. M 11

SA-PRINCETON 71 (2)A

25

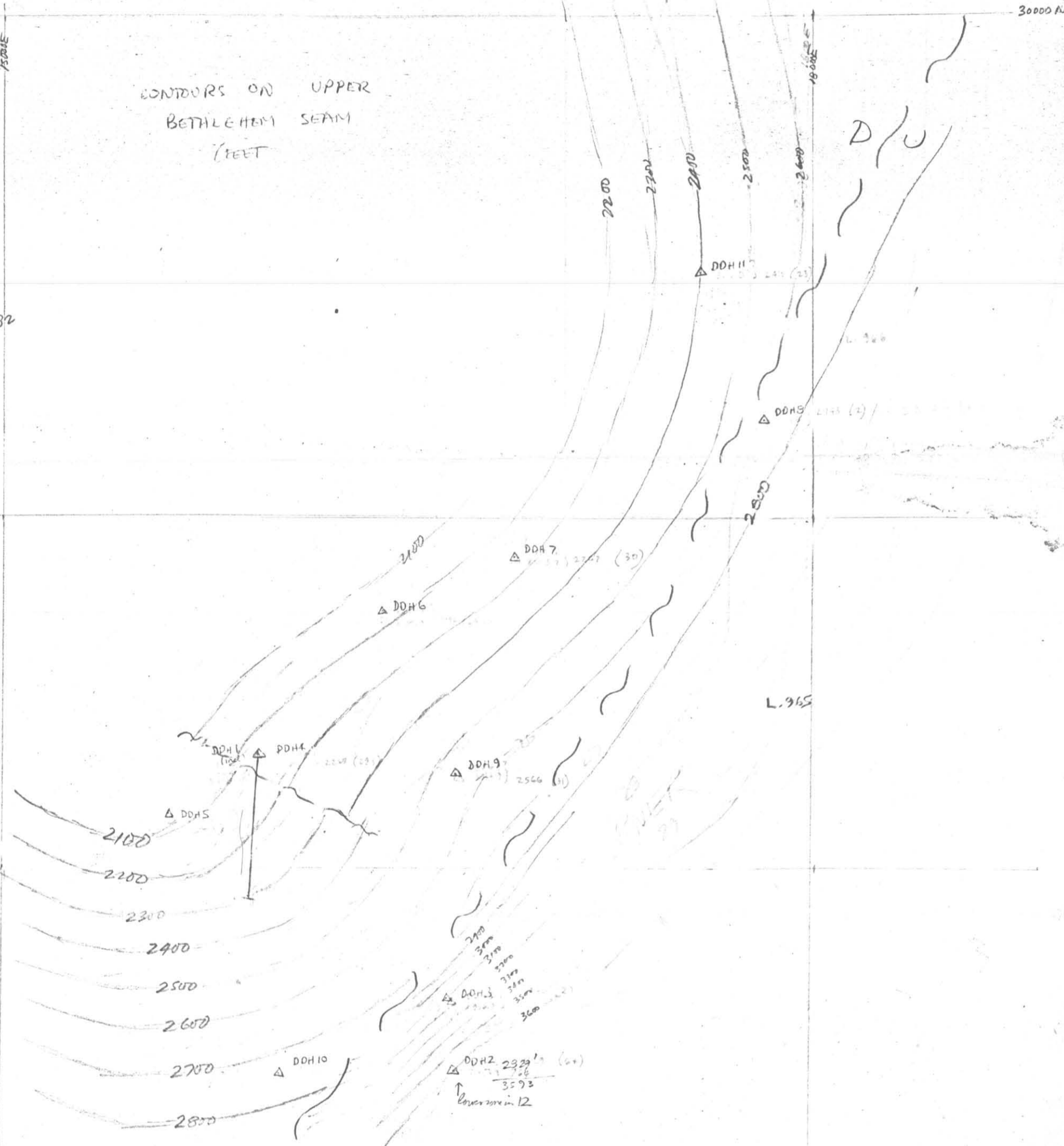
2610 (22' cont)  
1860 (25' cont)  
760

△ DDH12 2610  
(Upper 200)  
Some 200  
Others.

CONTOURS ON UPPER  
BETHLEHEM SEAM  
(FEET)

L. 1182

30000 N



191 (2)

M4

PIC

Sp - Princeton 71 (3) A-1

APPROX. DATE  
**OPEN FILE**

D.H. 7101 - 7112

191 (3)

## DRILL HOLE LOG

## BETHLEHEM COPPER CORPORATION LTD.

SHEET No. 3 of 3

Property Princeton Coal

Hole No. D.D.H. #1

Logged by R. J. Nethery

Date March, 1971

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz Au.	Oz Ag.	% RECOV.
Sandstone and grit.				770	773						
Massive black clay - high carbon content				773	775						
Greenish grey clay with minor sandstone and grit				775	790						
Black clay and shale, minor coal stringers (average 1" to 2")				790	811						
Coal with interbedded shale (70% coal, 30% shale)				811	813						
Black massive clay with minor coal				813	823						
Greyish clay				823	845						
Black clay and shale, minor carbon beds, 45° to core axis				845	872						
Grey clay with intermittent black coal shale				872	907						
Alternating thin layers of coal and shale, 45° to 35°				907	909						
Massive grey clay				909	950						
Grey clay				950	968						
Coal - bedding cuts core axis at 35° (fairly clean)				968	990.5						



DRILL HOLE LOG

BETHLEHEM COPPER CORPORATION LTD.

SHEET No. 2

Property	Princeton Coal	Hole No.	D.D.H. #2	Bearing	Elevation	2,929.78	Logged by	R. J. Sethery	
District	Princeton	Length	812 ft.	Dip	Vertical	Overburden	100 ft.	Date	March, 1971
Commenced	March 5, 1971	Latitude	26012.7	Hor. Comp.	Recovery				
Completed	March 11, 1971	Departure	16697.9	Vert. Comp.	Purpose				

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz Au.	Oz Ag.	RE
Overburden				0	100						
Coal and coaly shale				100	106						
Mostly massive sandy clay, rude bedding 10° to 15° to core axis (heavily carbon plant stems)				106	115						
Massive sandstone and claystone				115	118						
Strongly carboniferous claystone				118	122						
Massive sandstone				122	129						
Claystone interbedded with carbon shale				129	132						
Massive interbedded sandstone, grit and clay				132	150						
Carbon shale bedding 5° to 15° to core axis				150	153						
Mostly greenish and dark brown mudstone with some sandstone				153	187						
Coarse sandstone - massive (quartz, feldspar particles common)				187	248						
Fine grained sandstone (with 1 cm. carbon stringers, 20° to 30° to core axis)				248	263						







## DRILL HOLE LOG

## BETHLEHEM COPPER CORPORATION LTD.

SHEET No. 1 of 4

Property	Princeton Coal	Hole No.	D.D.H. #3	Bearing	Elevation	2,950.7	Logged by	J. Neshery	
District	Princeton	Length	258 ft.	Dip	Vertical	Overburden	98 ft.	Date	March, 1971
Commenced	March 15, 1971	Latitude	26285.0	Hor. Comp.	Recovery				
Completed	March 18, 1971	Departure	16671.7	Vert. Comp.	Purpose				

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz. Au.	Oz. Ag.	% RECOV.
Overburden				0	98						
Cl (quartz and feldspar particles common)				98	103						
Massive grey sandy claystone				103	126.8						
Coal				126.8	127.5						
Grey clay - massive				127.5	128						
Coal				128	129.4						
Massive sandy clay				129.4	141						
Massive medium grained sandstone				141	155						
Coarse sandstone, mostly massive (minor carbon stringers, 1 cm. thick, 20°)				155	173						
Mudstone				173	185						
Massive coarse sandstone with some grit				185	247						
Fine grained sandstone - bedded 15° to 20°				247	253						

DRILL HOLE LOG

BETHLEHEM COPPER CORPORATION LTD.

Property Princeton Coal

Hole No. D.D.H. #3

Logged by R. J. Nethery

Date March, 1971

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz Au.	Oz Ag.	% RECOV.
Coarse sandstone - massive				253	258						

25

Locality	Princeton Coal	Hole No.	DDH # 4	Bearing	Elevation	3101.1	Sheet No.	1 of 2
Strata	Similkameen	Length	863'	Dip.	Overburden	173'	Logged by	R. S. Nethery
Completed	May 10, 1971	Latitude	27,202.0	Hor. Comp.	Recovery	98%	Date	May, 1971
Updated	May 15, 1971	Departure	15,967.0	Vert. Comp.	Purpose			

DESCRIPTION	SULPHIDES	OXIDES	OTHER	FROM	TO	SAMPLE NO.	% CU.	% MO.	OZ. AU.	OZ. AG.		%
<i>RDM</i> Volcanic sandstone and grit Massive mudstone with alternating layers of				173	221							98%
mudstone with rude bedding 55° to core axis				221	222							"
Massive mudstone - some layering 50-60° to axis				222	228							"
Mudstone with high carbon content				228	228.4							"
(Some bedding 55°) Volcanic sandstone and grit Mostly massive mudstone grading in and out of				228.4	260							"
massive interbedded mudstone, siltstone, sandstone and grit 60° to core axis (greenish generally) (sst & grit particles soft)				260	396							"
Shale - well bedded - heavy carbon content				396	412							"
Massive interbedded mudstone, siltstone, sandstone & grit				412	616							"
↓ Now some rude bedding 55° to core axis				616	620							"
↓ Now minor conglomerate and some quartz stringers - minor coal seams				620	640							"
Black carbon shale - wide variance in carbon content				640	660							"
Decrease in carbon content Shale or mudstone - now only minor heavy carbon zones.				660	715							"

















DRILL HOLE LOG

BETHLEHEM COPPER CORPORATION LTD.

SHEET No. 1 of 1

Property	Princeton Coal	Hole No.	D.D.H. #8	Bearing	Elevation	3011.79	Logged by	R. J. Nethery	
District		Length		Dip	Vertical	Overburden	67'	Date	June, 1971
Commenced	14-6-71	Latitude	28482.6	Hor. Comp.	Recovery				
Completed	17-6-71	Departure	17821.1	Vert. Comp.	Purpose				

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz Au.	Oz Ag.	REC.
Massive mudstone, siltstone, and sandstone				67	154						
Carbonized area, minor coal Seams 40° to core axis				154	166						
				166	190						
Fault				190	197						
Massive mudstone, siltstone and sandstone				197	203						
Fault				203	207						
				207	267						
Coaly shale - bedding 50° to core axis				267	269						
Sandstone, generally coarse with quartz and feldspar fragments				269	283						
Mudstone, siltstone and sandstone, coaly shale 6" to 2' with frequent carbon areas 55 to 60° to core axis				283	312						
Coarse sandstone with carbon stringers				312	320						
Carbon mudstone and shale				320	327						





DRILL HOLE LOG

BETHLEHEM COPPER CORPORATION LTD.

SHEET No. 1 of 5

Property	Princeton Coal	Hole No.	DDH #10	Bearing	Elevation	2982.1	Logged by	R. J. Nethery	
District	Similkameen	Length		Dip	Vertical	Overburden	153'	Date	June, 1971
Commenced	22-6-71	Latitude	26003.0	Hor. Comp.	Recovery	98%			
Completed	26-6-71	Departure	16054.4	Vert. Comp.	Purpose				

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz. Au.	Oz. Ag.	% RECOV.
Massive mudstone, siltstone and sandstone with minor grit				153	425						
Mostly carbon mudstone with minor carbon shale. Bedding average 65° to axis.				425	482						
Massive mudstone				482	492						
Mudstone, siltstone and sandstone with minor carbon stringers 60° to 65° to core axis				492	516						
Sandstone mostly massive, minor carbon stringers 60° to axis				516	539						
Massive carbon mudstone				539	559						
Sandstone, medium grained, fragments generally consist of quartz and feldspar				559	568						
Mudstone, siltstone, heavy carbonized area bedding 75° to axis				568	624						
Shale, well bedded 70° to axis				624	660						
Sandstone, fine grained, minor carbon stringers				660	679						
Brown and grey banded shale, bedding excellent 65 to 70° to axis				679	805						

## DRILL HOLE LOG

## BETHLEHEM COPPER CORPORATION LTD.

SHEET No. 1 of

Property	Princeton Coal	Hole No.	D.D.H. #11	Bearing	South	Elevation	3106.0	Logged by	R. J. Sechery
District	Similkameen	Length	713'	Dip	87°	Overburden	148'	Date	June, July 1971
Commenced	June, 1971	27-6-71	Latitude	29048.3	Hor. Comp.	Recovery	98°		
Completed	July, 1971	6-7-71	Departure	17589.6	Vert. Comp.	Purpose			

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz. Au.	Oz. Ag.	% RECOV.
Massive mudstone, siltstone and sandstone				148	193						
Massive mudstone, siltstone and sandstone (fault)				193	201						
Mudstone - carbon, rich				201	207						
Massive mudstone, siltstone and sandstone				207	242						
Carbon mudstone				242	245						
Massive mudstone, siltstone and sandstone				245	268						
Brown shale - bedding 65° to axis				268	276						
Massive mudstone, siltstone and sandstone				276	405						
Massive mudstone, siltstone and sandstone, now with minor carbon zones				405	425						
Massive mudstone, siltstone and sandstone				425	457						
Massive mudstone, siltstone and sandstone, 8" of carbon mudstone				457	458						
Massive mudstone, siltstone and sandstone				458	538						





## DRILL HOLE LOG

## BETHLEHEM COPPER CORPORATION LTD.

SHEET No. 1

Property	Princeton Coal	Hole No.	DDH #12	Bearing	Elevation	3025.2'	Logged by	R. Nethery
District	Similkameen	Length		Dip	Overburden	99'	Date	July, 1971
Commenced	7-7-71	Latitude	30273.9	Hor. Comp.	Recovery			
Completed	21-7-71	Departure	17600.8	Vert. Comp.	Purpose			

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz. Au.	Oz. Ag.	% RECO.
Massive mudstone, siltstone and fine grained sandstone				99	231						
Massive mudstone, siltstone and fine grained sandstone, fault, shattered zone				231	234						
Massive mudstone, siltstone and fine grained sandstone				234	313						
Massive mudstone, siltstone and fine grained sandstone, shattered zone				313	323						
Massive mudstone, siltstone and fine grained sandstone, now with minor carbon areas				323	381						
Mostly mudstone and clay - moderately high carbon content				381	394						
Coal and coaly shale				394	403						65%
Core tube locked, core loss				403	408						15%
Coal and shaly coal, bedding 60° to 65° to axis				408	416						
Mudstone, siltstone and sandstone, highly carbonized 55° to core axis, minor coal seams				416	428						
Carbon mudstone, clay, coal and coaly shale, 65° to axis				428	436						
Mudstone, siltstone and sandstone, with intermittent carbon areas				436	494						

## DRILL HOLE LOG

## BETHLEHEM COPPER CORPORATION LTD.

SHEET No. 2

Property Princeton

Hole No. DDH #12

Logged by R. Nethery

Date July 1971

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz. Au.	Oz. Ag.	% RECOVER.
Coal and coaly shale, bedding 65° to axis				494	498.5						
Massive mudstone, siltstone and sandstone. 60° to core axis with intermittent carbon zones - 3' to 6' spacing				498.5	521						
Massive light green mudstone, siltstone and sandstone				521	578						
Mudstone, siltstone and sandstone, with intermittent carbon layers, 580' to 585', 587' to 593', core loss				578	610						
Mudstone, siltstone and sandstone				610	634						
Carbon mudstone.				634	638						
Massive mudstone, siltstone and sandstone				638	649						
Shale-grey, well bedded 60° to axis				649	664						
Massive mudstone, siltstone and sandstone				664	722						
Carbon mudstone				722	724						
Massive mudstone, siltstone, and sandstone				724	750						
Massive mudstone, siltstone and sandstone, now with carbon, fragments, twigs etc.				750	810						
Massive mudstone, siltstone and sandstone, now intermittent carbon areas, 1' to 3' apart, bedding 60° to 65°.				810	863						



DRILL HOLE LOG

BETHLEHEM COPPER CORPORATION LTD.

SHEET No. 1 of 1

Property	Princeton Coal	Hole No.	D.D.H. #1	Bearing	53° 42'W	Elevation	3,101.1	Logged by	R. J. Nethery
District	Princeton	Length	1,093 ft.	Dip	60°	Overburden	177 Ft.	Date	March, 1971
Commenced	Feb. 22, 1971	Latitude	27202.0	Hor. Comp.		Recovery			
Completed	March 4, 1971	Departure	15967.0	Vert. Comp.		Purpose			

DESCRIPTION	SULPHIDES	OXIDES	OTHERS	FROM	TO	SAMPLE No.	% Cu.	% Mo.	Oz. Au.	Oz. Ag.	REMARKS
Overburden				0	177						
Greyish black varied clay (90° to core axis)				177	200						
Clay highly broken (faulted zone)				200	220						
Clay turning greyish green				220	236						
Greyish green clay - massive				236	300						
Mostly massive clay with intermittent layers of grit and sand sized sediments				300	417						
Layered black clay - quite soft (strata 25° to core axis)				417	426						
Again greyish green massive clays, sandstone and grit. Some conglomerate with fragments of grey, green and reddish-brown clays - mostly massive clays, but a definite increase in coarser sand sized material. Bedding in minor sections - varies between 15° and 30° to core axis				426	600						
650 - 6" of moderately strong carbon 675 - 5" of interbedded carbon and clay 689 - 10" of interbedded carbon and clay				600	650						
Main sediment still massive, greenish grey clays with sand sized sediments and grit.				650	700						
Black clay with minor coal seams, 20° to core axis. (761-765 - Alternating clay and coal seams, 45° to core axis)				700	750						
				750	770						

DRILL HOLE LOG

191

SECTION OF COAL SEAM

CORE RECOVERY

SCALE: 1" = 50'

ELEVATION

DEPTH

SECTION

DESCRIPTION

THELEHEM COPPER CORPORATION LT  
COAL LOG

PROPERTY..... PRINCETON COAL

HOLE NO..... DDH-7

CO-ORDINATES..... 27949.6 N  
16904.5 E

ELEVATION..... 3003.68

DIP..... 90°

BEARING.....

TOTAL LENGTH..... 767'

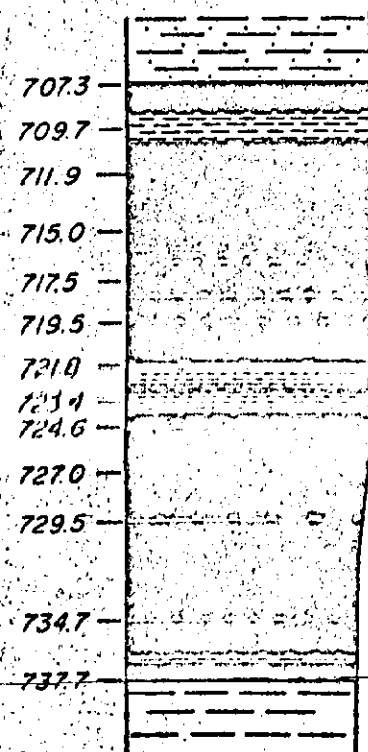
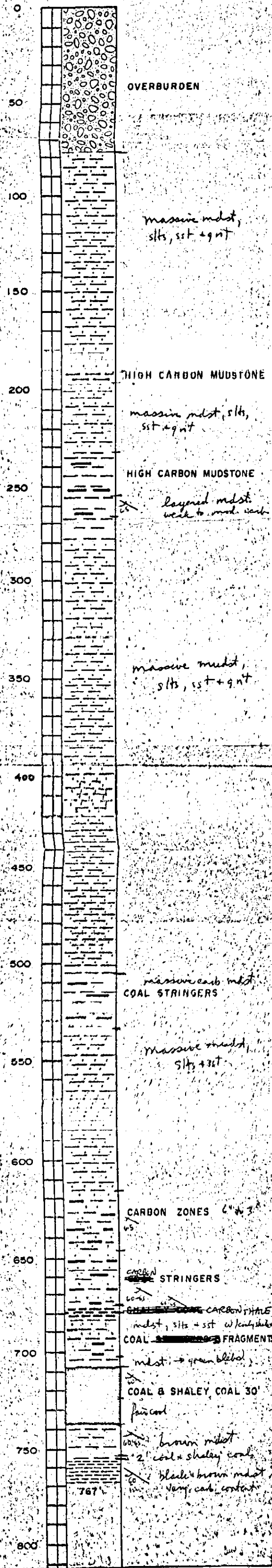
DRILL TYPE..... NQ

REMARKS.....

LEGEND

- SHALE
- SANDSTONE
- MUDSTONE, SILTSTONE & SANDSTONE
- MUDSTONE, SILTSTONE, SANDSTONE WITH INTERMITTENT CARBON AREAS
- MUDSTONE & CLAY

DESCRIPTION



- 707.3 - 708.8 Hard Shaley COAL
- 708.8 - 709.7 Shale, Vertical Streaks of Bright COAL
- 709.7 - 710.1 Shale
- 710.1 - 710.8 Shaley Coal, Vertical Thin Streaks of Gypsum
- 710.8 - 711.8 Bright COAL
- 711.8 - 711.9 COAL & Shale Bands
- 711.9 - 713.2 COAL Bright, Checked
- 713.2 - 715.0 Hard Shaley COAL
- 715.0 - 715.7 Hard COAL
- 715.7 - 715.8 Shale
- 715.8 - 716.3 Shaley COAL
- 716.3 - 716.5 Hard, Sandy Shale
- 716.5 - 717.5 Hard Shaley COAL, Checked
- 717.5 - 718.0 COAL
- 718.0 - 718.1 Sandy Shale
- 718.1 - 719.3 Hard COAL
- 719.3 - 719.5 Hard Shale
- 719.5 - 720.3 COAL
- 720.3 - 721.4 Shaley COAL
- 721.4 - 721.8 Soft CLAY
- 721.8 - 722.7 Shale
- 722.7 - 723.0 COAL
- 723.0 - 723.4 Shale
- 723.4 - 724.2 Shale Mixed With Bright COAL
- 724.2 - 724.5 COAL
- 724.5 - 724.6 Soft Shaley Clay
- 724.6 - 727.0 COAL
- 727.0 - 729.3 COAL Occasional Thin Shale Streaks
- 729.3 - 729.5 Carbon Shale
- 729.5 - 734.5 COAL
- 734.5 - 734.7 Hard Shale
- 734.7 - 736.4 COAL
- 736.4 - 736.7 Shale
- 736.7 - 737.7 COAL

SAMPLING DATA

SAMPLED BY:	DATE:
LOGGED BY: R.J. Nethery	DATE: J
F/S ANALYSIS BY:	DATE:
COAL ANALYSIS BY: Commercial Testing & Eng. Co.	DATE: J

B

ML

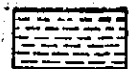

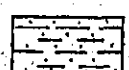
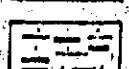
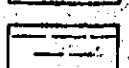
191

M2

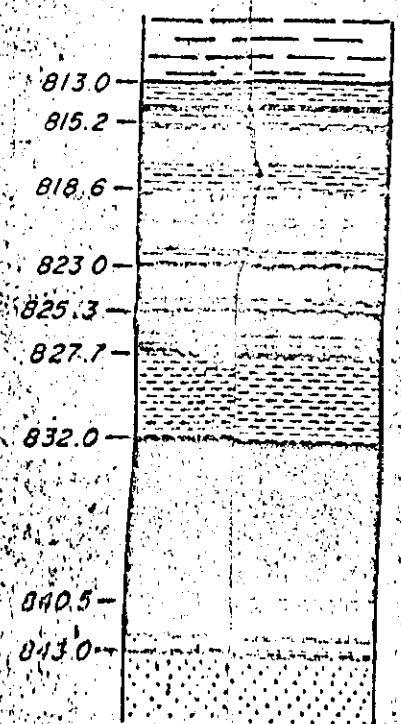
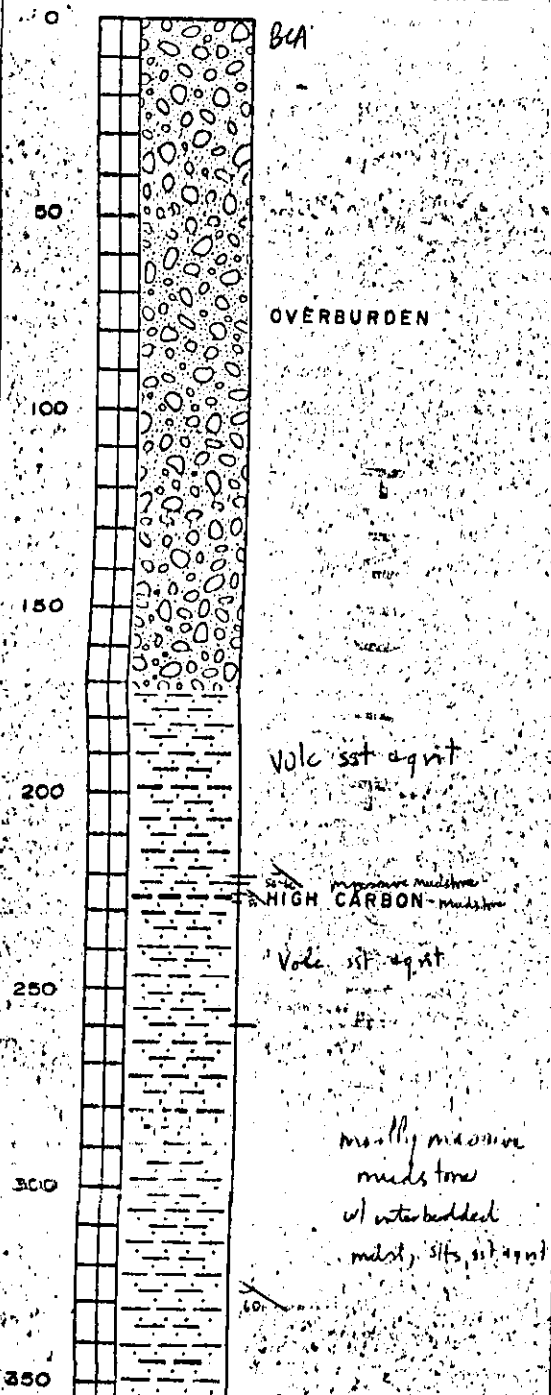
COAL LOG

PROPERTY PRINCETON COAL  
 HOLE NO DDH-4  
 CO-ORDINATES 27202.0 N  
 ELEVATION 15967.0 E  
 3101.1  
 DIP 90°  
 BEARING  
 TOTAL LENGTH 863'  
 DRILL TYPE NQ  
 REMARKS

LEGEND

-  SHALE
-  SANDSTONE
-  MUDSTONE, SILTSTONE
-  MUDSTONE, SILTSTONE, INTERMITTENT CARBON
-  MUDSTONE & CLAY

DESCRIPTION



- 813.0 - 814.3 Shale & Stone
- 814.3 - 814.6 Hard COAL, Shaley
- 814.6 - 815.2 Medium Hard Shale
- 815.2 - 817.4 Hard COAL
- 817.4 - 818.6 Shale Thin bands of bright COAL
- 818.6 - 820.2 Hard COAL
- 820.2 - 820.8 Shale
- 820.8 - 822.0 COAL
- 822.0 - 823.0 Medium Soft Shale Thin COAL Streaks
- 823.0 - 824.8 COAL
- 824.8 - 825.3 Carbon Shale, Sandy Shale
- 825.3 - 826.8 COAL
- 826.8 - 827.0 Sandy Shale
- 827.0 - 827.7 COAL
- 827.7 - 832.0 Shale, Some Shaley COAL
- 832.0 - 839.3 COAL Shaley in Places
- 839.3 - 840.1 COAL & Gypsum
- 840.1 - 840.5 Soft Shale

SCALE: 1" = 50'

ELEVATION DEPTH SECTION DESCRIPTION

LEGEND

- SHALE
- SANDSTONE
- MUDSTONE, SILTSTONE & SANDSTONE
- MUDSTONE, SILTSTONE, SANDSTONE WITH INTERMITTENT CARBON AREAS
- MUDSTONE & CLAY

THEHEM COPPER CORPORATION LT  
COAL LOG

PROPERTY: PRINCETON COAL

HOLE NO: DDH-1

CO-ORDINATES: 27202.0 N  
15967.0 E

ELEVATION: 3101.1'

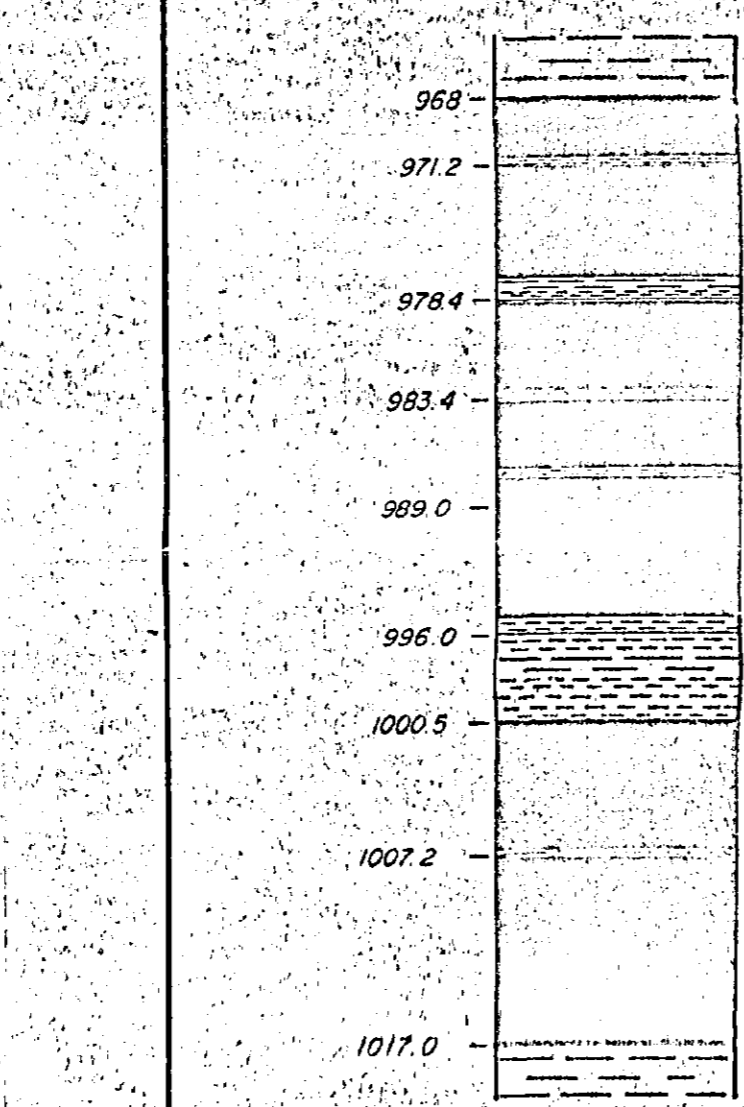
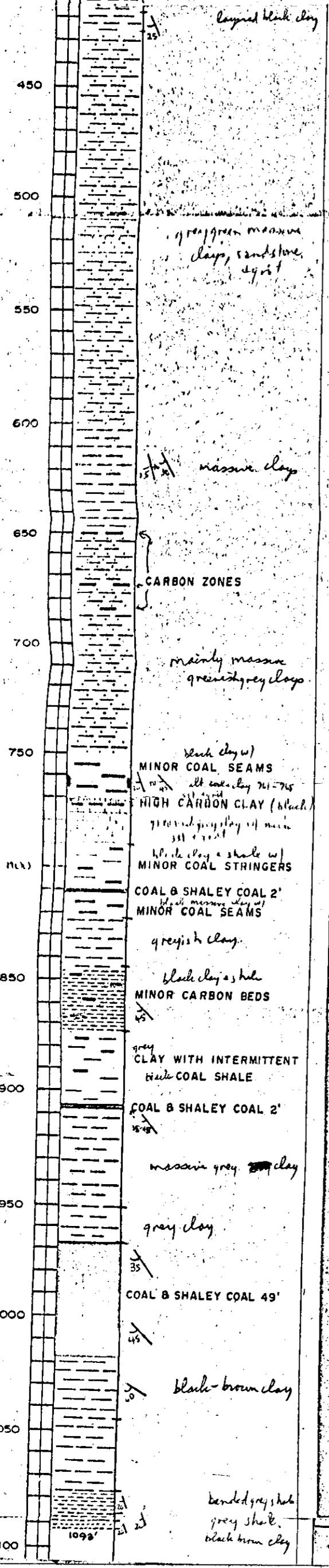
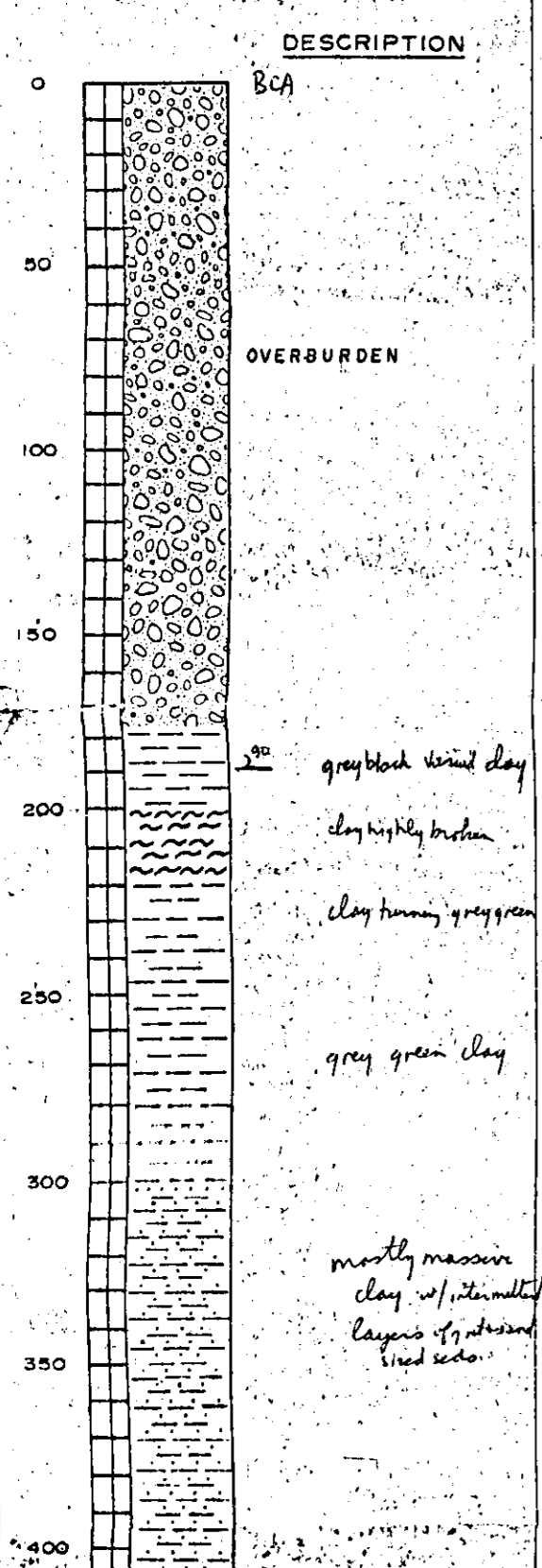
DIP: -60°

BEARING: S 3°42' W

TOTAL LENGTH: 1093

DRILL TYPE: NQ

REMARKS:



968.0-971.0	COAL
971.0-971.2	Carbon Shale
971.2-977.2	COAL
977.2-978.4	Clay & Carbon Shale
978.4-980.3	COAL & Shaley COAL
980.3-983.0	COAL
983.0-983.4	Carbon Shale
983.4-986.5	COAL
986.5-987.0	COAL Thin Clay Bands
987.0-987.2	Clay
987.2-989.0	COAL
989.0-992.6	Soft Friable COAL
992.6-995.0	COAL
995.0-996.0	Shaley COAL
996.0-1000.5	Shale & COAL Thin Clay Bands
1000.5-1007.0	COAL
1007.0-1007.2	Grey Clay
1007.2-1016.0	COAL
1016.0-1017.0	COAL & Shale

SAMPLING DATA	
SAMPLED BY:	DATE:
LOGGED BY: R.J. Nethery	DATE: March, 1971
F/S ANALYSIS BY:	DATE:
COAL ANALYSIS BY: Commercial Testing & Eng. Co.	DATE: March, 1971

B

M3



840.5-842.3

COAL

842.3-843.0

Shale & COAL

400  
450  
500  
550  
600  
650  
700  
750  
800  
850  
900

CARBON SHALE

*massive, tabbed  
mudstone, siltstone*

COAL STRINGERS  
*4 main congs*

CARBON SHALE - black

*shale in matrix  
+ some carbon*

*sst + med*

CARBON SHALE + clay  
SHALEY COAL

CARBON STRINGERS in  
SHALEY COAL  
bedded sst + silt w/ coal &  
COAL FRAGMENTS  
*massive sst, silt + med*

*ben tonite*

COAL & SHALEY COAL 29.5'

*sst, quartz congl w/*  
CARBON STRINGERS

863'

SAMPLING DATA

DRILLING DATA

LAND DATA

SAMPLED BY:	DATE:	DATE COMMENCED: 10-5-71	MINING DIVISION: Simitkameen	CATIT
LOGGED BY: R. J. Nethery	DATE: May, 1971	DATE FINISHED: 15-5-71	LAND DISTRICT: Yale	DEPAR
F/S ANALYSIS BY:	DATE:	CORE DIAMETER: N.O. - 1 7/8"	COAL LICENSE NO: 8037	COLLA
COAL ANALYSIS BY: Commercial Testing & Eng. Co.	DATE: June, 1971	DEPTH OF OVERBURDEN: 173'	DISTRICT LOT NO: 965	DIR
		TOTAL DEPTH: 863'	GEOGRAPHIC Co.ords: 49° 23' 30" N 120° 35' W	BLARI

B

C

M4

DRILL HOLE LOG

191 (19)

SECTION OF COAL SEAM

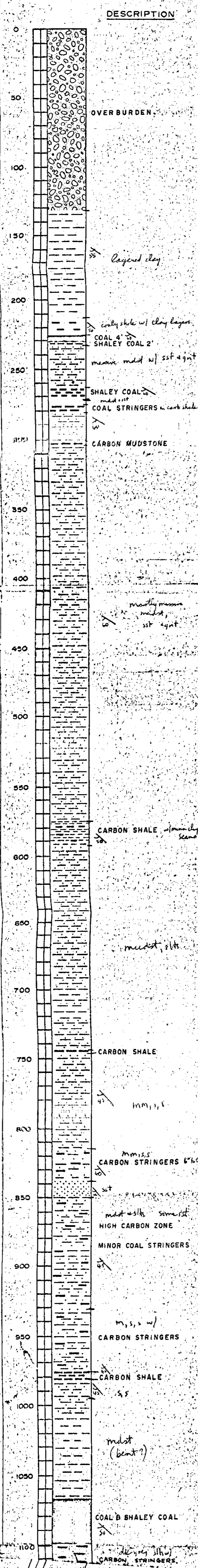
SCALE: 1" = 50'

ELEVATION DEPTH SECTION DESCRIPTION

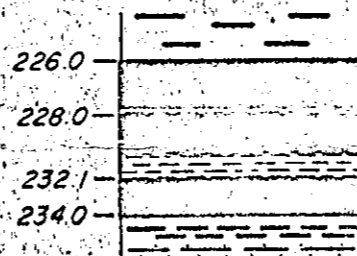
PRINCETON COAL  
 HOLE NO. DDH-5  
 CO-ORDINATES 26978.1 N  
 15629.8 E  
 ELEVATION 3166.17  
 DIP 90°  
 BEARING  
 TOTAL LENGTH 1124'  
 DRILL TYPE NQ  
 REMARKS

LEGEND

- SHALE
- SANDSTONE
- MUDSTONE, SILTSTONE & SANDSTONE
- MUDSTONE, SILTSTONE, SANDSTONE WITH INTERMITTENT CARBON AREAS
- MUDSTONE & CLAY

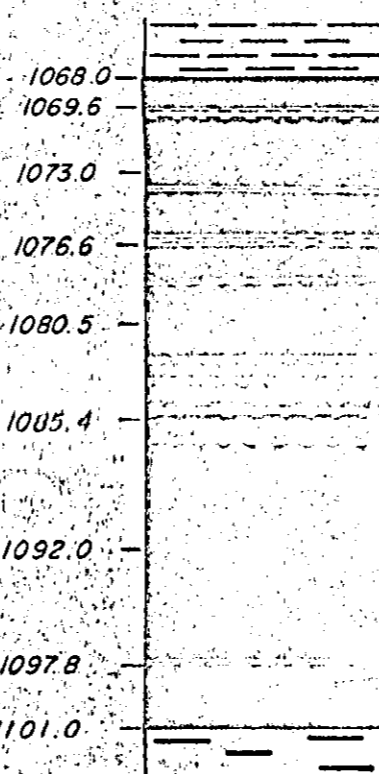


UPPER SEAM



226.0-227.0	Shaley COAL
227.7-228.7	COAL
228.7-228.8	Dark Shale
228.8-231.0	COAL, Shaley Streaks
231.0-232.1	Dark Shale
232.1-234.0	COAL, Shaley Streaks, Thin Pyrite Band

LOWER SEAM



1068.0-1069.6	COAL, Vertical Calcite Intrusions
1069.6-1070.3	Shale
1070.3-1070.6	Shaley COAL
1070.6-1073.0	COAL
1073.0-1073.8	COAL
1073.8-1073.9	Shale
1073.9-1075.5	COAL Sand Streak at 1075.3
1075.5-1076.1	COAL
1076.1-1076.2	Shaley COAL
1076.2-1076.6	Shale
1076.6-1078.3	COAL
1078.3-1078.5	Sandy Shale
1078.5-1080.3	COAL
1080.3-1080.5	COAL Mixed with Sand
1080.5-1082.1	COAL
1082.1-1082.3	Sand
1082.3-1082.5	Shaley COAL
1082.5-1083.0	COAL
1083.0-1083.3	COAL
1083.3-1083.8	Soft, Clayey Shale
1083.8-1084.1	COAL
1084.1-1084.3	COAL, Shaley
1084.3-1084.8	COAL
1084.8-1085.4	Shale
1085.4-1086.5	COAL
1086.5-1086.7	Carbon Shale

1086.7-1092.5	
1092.5-1093.5	
1093.5-1097.6	
1097.6-1097.8	
1097.8-1101.0	

SAMPLING DATA

SAMPLED BY:	DATE:
LOGGED BY: R.J. Nethery	DATE:
F/S ANALYSIS BY:	DATE:
COAL ANALYSIS BY: Commercial Testing & Eng. Co.	DATE:

B

(MS)

DRILL HOLE LOG

191

SECTION OF COAL SEAM

SCALE: 1" = 50'

ELEVATION

DEPTH

SECTION

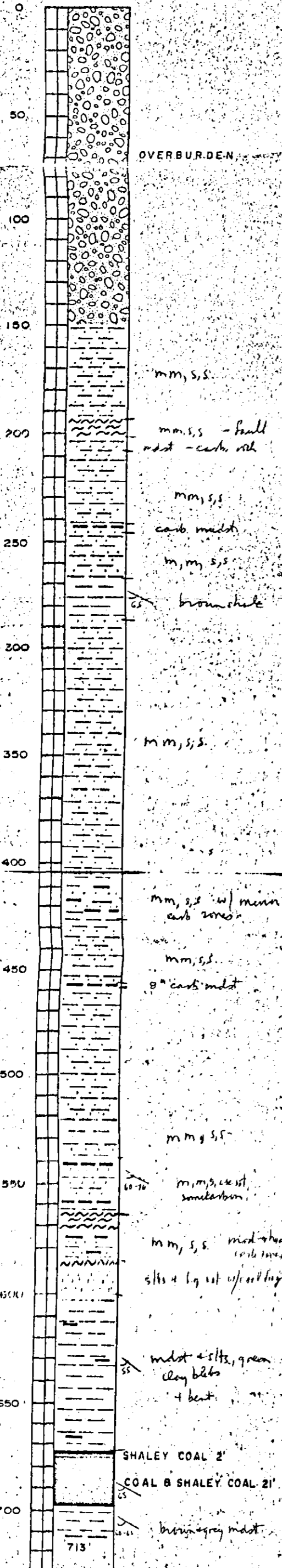
DESCRIPTION

THLEHEM COPPER CORPORATION L  
COAL LOG

PROPERTY: PRINCETON COAL  
HOLE NO.: DDH-11  
CO-ORDINATES: 29048.3 N  
17589.6 E  
ELEVATION: 3106.0  
DIP: 90° 0'  
BEARING: south  
TOTAL LENGTH: 713'  
DRILL TYPE: NO.

REMARKS

DESCRIPTION



LEGEND

- SHALE
- SANDSTONE
- MUDSTONE, SILTSTONE & SANDSTONE
- MUDSTONE, SILTSTONE, SANDSTONE WITH INTERMITTENT CARBON AREAS
- MUDSTONE & CLAY

675.8  
680.5  
682.5  
684.4  
687.5  
689.6  
691.3  
692.9  
696.0

675.8-676.3 Shaley COAL  
676.3-680.5 COAL  
680.5-680.9 Shaley COAL  
680.9-681.2 COAL impregnated with sand  
681.2-681.4 COAL  
682.0-682.5 Shaley COAL  
682.5-682.8 COAL  
682.8-682.9 Carbon Shale  
682.9-683.2 COAL  
683.2-683.4 Sandy Shale  
683.4-683.8 COAL & Hard Shale  
683.8-683.9 Sandy Shale  
683.9-684.4 Shaley COAL  
684.4-687.3 COAL  
687.3-687.5 Pyrite Band Mixed with COAL  
687.5-689.4 COAL  
689.4-689.6 Carbon Shale  
690.5-691.0 COAL  
691.0-691.3 Shaley COAL  
691.3-692.0 COAL  
692.0-692.8 COAL  
692.8-692.9 Grey Sandy Shale  
692.9-696.0 COAL Shale Wedge at 695.0

SAMPLED BY:  
LOGGED BY:  
F/S ANALYSIS  
COAL ANALYSIS  
Testing & E

17

SCALE: 1" = 50'

ELEVATION

DEPTH

SECTION

DESCRIPTION

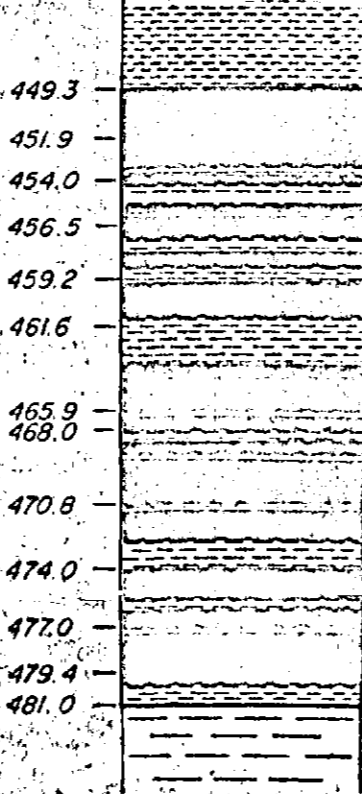
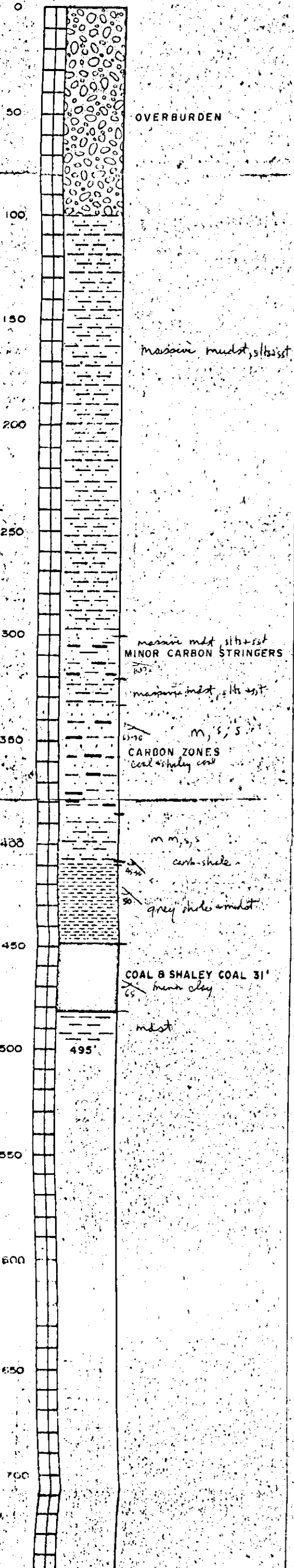
THLEHEM COPPER CORPORATION LTD  
COAL LOG

PROPERTY: PRINCETON COAL  
HOLE NO: DDH-9  
CO-ORDINATES: 27136.7 N  
16695.5 E  
ELEVATION: 3014.9  
DIP: 90°  
BEARING:  
TOTAL LENGTH: 495'  
DRILL TYPE: NQ  
REMARKS:

LEGEND

- SHALE
- SANDSTONE
- MUDSTONE, SILTSTONE & SANDSTONE
- MUDSTONE, SILTSTONE, SANDSTONE WITH INTERMITTENT CARBON AREAS
- MUDSTONE & CLAY

DESCRIPTION



449.3-450.3 COAL Thin Shaly COAL Bands at 449.4  
450.3-451.5 COAL  
451.1-451.9 Shaley COAL  
451.9-453.0 Shaley COAL "Brown Colour"  
453.0-453.2 COAL  
453.2-453.3 Hard Shale  
453.3-453.6 Soft Grey Clayey Shale  
453.6-454.0 Shaley COAL  
454.0-454.3 COAL & Gypsum  
454.3-454.7 COAL  
454.7-455.1 Shale - Medium Hard  
455.1-455.3 COAL  
455.3-455.5 Shale  
455.5-455.9 COAL  
455.9-456.5 Shale  
456.5-457.1 COAL  
457.1-457.8 Shale  
457.8-458.7 Shaley COAL  
458.7-459.2 Soft Grey Sandy Shale  
459.2-461.1 COAL With Numerous Thin Shale Bands  
461.1-461.6 Shale Calcite Intrusions and Thin Band Checked COAL at 461.4  
461.6-463.7 Shale and Shaley COAL  
463.7-463.9 COAL Broken  
463.9-464.0 Grey Shale  
464.0-464.1 COAL, Slightly Shaley  
464.1-464.5 COAL  
464.5-464.9 Shaley COAL  
464.9-465.9 COAL  
465.9-466.0 Shale  
466.0-466.3 Shaley COAL  
466.3-466.9 COAL  
466.9-467.5 Shaley COAL  
467.5-468.0 Shaley COAL  
468.0-468.2 Carbon Shale  
468.2-469.3 COAL  
469.3-469.8 Shale  
469.8-470.8 COAL  
470.8-471.0 Carbon Shale  
471.0-472.5 COAL  
472.5-474.0 Shale  
474.0-474.6 Hard Stone  
474.6-475.6 COAL  
475.6-476.1 Shale  
476.1-477.0 COAL Thin Sandy Shale Band at 476.8  
477.0-477.1

EXCL

SAMPLING DATA

SAMPLED BY:	DATE:
LOGGED BY: R. J. Nethery	DATE: June, 1971
F/S ANALYSIS BY:	DATE:
COAL ANALYSIS BY: Commercial	DATE: July, 1971
Testing & Eng. Co.	

191

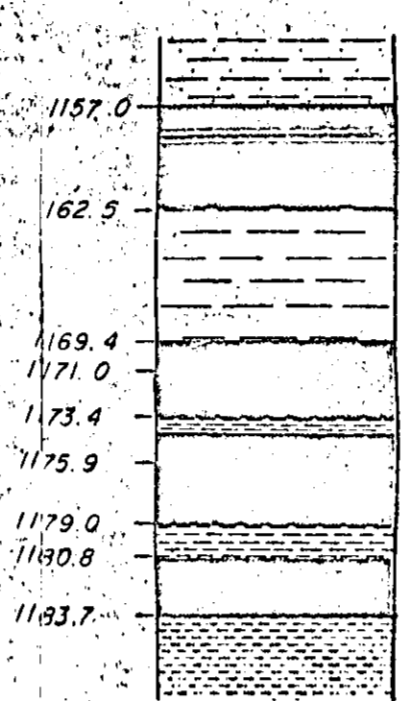
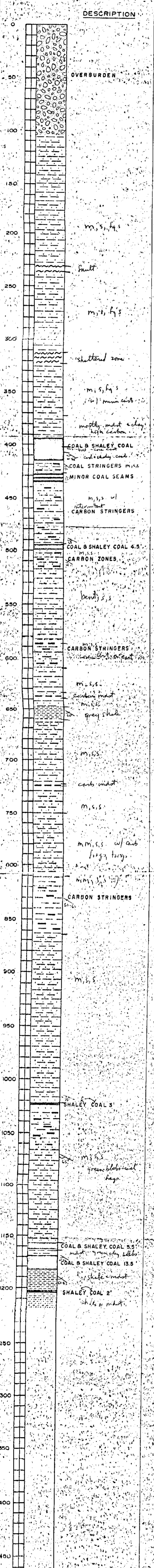
SECTION OF COAL SEAM

DEPTH	SECTION	DESCRIPTION
-------	---------	-------------

THLEHEM COPPER CORPORATION L.  
COAL LOG

PROPERTY: PRINCETON COAL  
HOLE NO.: DDH-12  
CO-ORDINATES: 30273.9 N  
17600.8 E  
ELEVATION: 3025.2  
DIP: 90°  
BEARING:  
TOTAL LENGTH: 1218'  
DRILL TYPE: NQ  
REMARKS:

- LEGEND**
- SHALE
  - SANDSTONE
  - MUDSTONE, SILTSTONE & SANDSTONE
  - MUDSTONE, SILTSTONE, SANDSTONE WITH INTERMITTENT CARBON AREAS
  - MUDSTONE & CLAY



- 1157.0-1158.0 Bright, Checked COAL Mixed With Dull Shaley COAL
- 1158.0-1158.2 COAL
- 1158.2-1158.3 Shale
- 1158.3-1158.6 COAL
- 1158.6-1158.7 Shale
- 1158.7-1161.5 COAL Shaley at 1160.4-1160.7
- 1161.5-1162.5 COAL
- 1169.4-1171.0 COAL
- 1171.0-1173.4 COAL Broken
- 1173.4-1174.0 Shale
- 1174.0-1174.3 COAL Broken
- 1174.3-1174.6 Shaley COAL
- 1174.6-1175.9 COAL Broken
- 1175.9-1177.4 Shaley COAL
- 1177.4-1179.0 COAL Broken
- 1179.0-1180.8 Shale & Shaley COAL.. Thick Bands of Light Grey Sandy Shale
- 1180.8-1183.7 COAL Broken. Cannot Measure Accurately

**SAMPLING DATA**

SAMPLED BY:	DATE:
LOGGED BY: R. J. Nethery	DATE:
F/S ANALYSIS BY:	DATE:
COAL ANALYSIS BY: Commercial Testing & Eng. Co.	DATE:

B

MP

191

SCALE: 1" = 50'

ELEVATION DEPTH SECTION DESCRIPTION

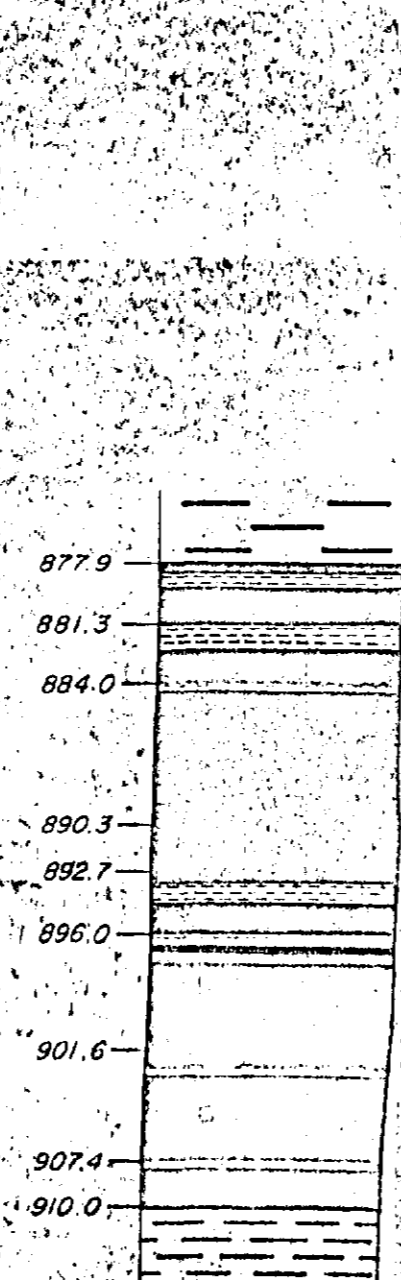
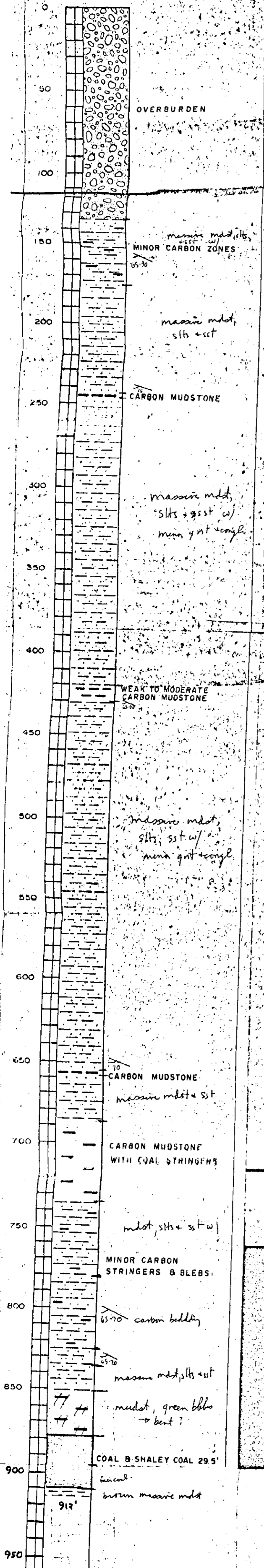
THELEHEM COPPER CORPORATION LI  
COAL LOG

PROPERTY: PRINCETON COAL  
HOLE NO.: DDH-6  
CO-ORDINATES: 27742.8 N, 16425.4 E  
ELEVATION: 3100'  
DIP: 90°  
BEARING:  
TOTAL LENGTH: 917'  
DRILL TYPE: NO  
REMARKS:

LEGEND

- SHALE
- SANDSTONE
- MUDSTONE, SILTSTONE & SANDSTONE
- MUDSTONE, SILTSTONE & SANDSTONE WITH INTERMITTENT CARBON AREAS
- MUDSTONE & CLAY

DESCRIPTION



877.9-878.6	COAL
878.6-879.2	Hard Shale, Thin vertical COAL, checked
879.2-881.3	COAL, Slightly Shaley
881.3-881.8	Hard Shale
881.8-881.9	Soft, Shaley Clay
881.9-882.2	Hard Shale
882.2-883.3	COAL
883.3-884.0	COAL, Occasional thin Shale Bands
884.0-884.2	Hard Shale
884.2-885.9	COAL, Slightly Shaley
885.9-886.6	Shaley COAL
886.6-888.0	COAL
888.0-889.0	COAL, Slightly Shaley
889.0-890.3	COAL
890.3-890.5	COAL, Thick, vertical Calcite Inclusions
890.5-891.5	COAL
891.5-892.0	Shaley COAL
892.0-892.7	COAL
892.7-893.4	Shaley COAL
893.4-894.3	Soft Shale
894.3-896.0	Shaley COAL
896.0-896.4	Sandy Shale
896.4-896.8	Shaley COAL
896.8-897.0	Sandy Shale
897.0-901.6	COAL
901.6-902.0	Shaley COAL
902.0-902.5	COAL

902.5-902.6	COAL
902.6-907.4	COAL
907.4-907.5	COAL
907.5-910.0	COAL

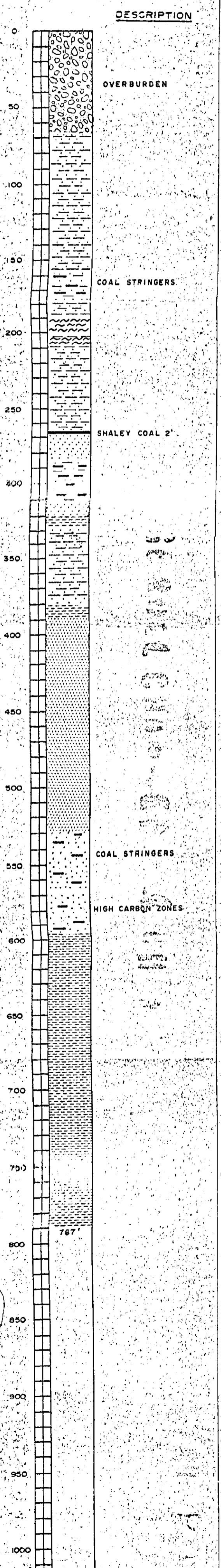
SAMPLING DATA

SAMPLED BY:	DATE:
LOGGED BY: R J. Nethery	DATE: June, 1971
F/S ANALYSIS BY:	DATE:
COAL ANALYSIS BY: Commercial Testing & Eng. Co.	DATE: June, 1971

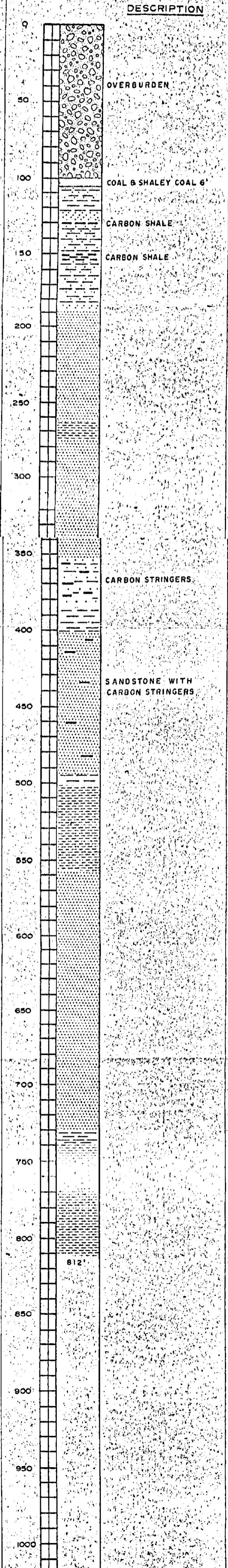
B

191 M10

THLEHEM COPPER CORPORATION LT  
**COAL LOG**  
 PROPERTY ..... PRINCETON COAL  
 HOLE NO ..... DDH - 8  
 CO-ORDINATES ..... 28482.6 N  
 ..... 17821.1 E  
 ELEVATION ..... 3011.79  
 DIP ..... 90°  
 BEARING .....  
 TOTAL LENGTH ..... 787'  
 DRILL TYPE ..... NQ  
 REMARKS .....

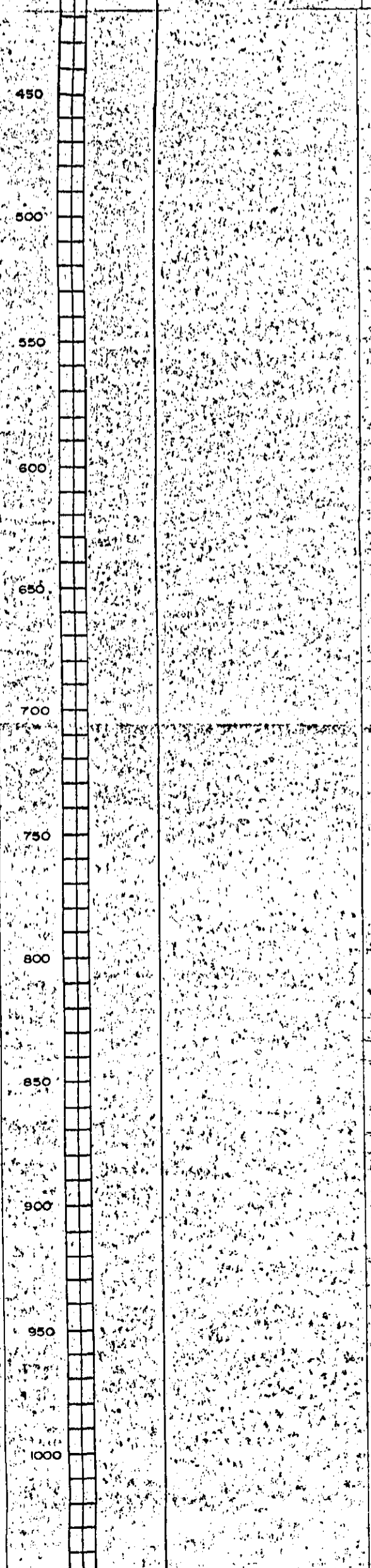
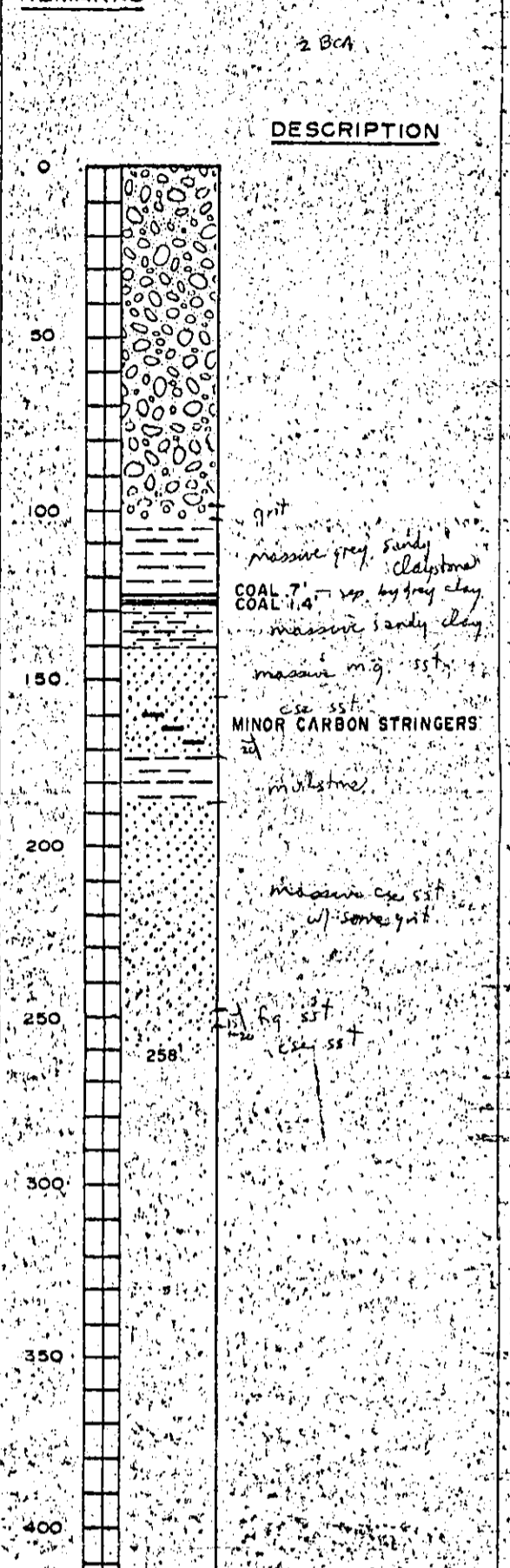


THLEHEM COPPER CORPORATION LT  
**COAL LOG**  
 PROPERTY ..... PRINCETON COAL  
 HOLE NO ..... DDH - 2  
 CO-ORDINATES ..... 26012.7 N  
 ..... 16697.9 E  
 ELEVATION ..... 2929.78  
 DIP ..... 90°  
 BEARING .....  
 TOTAL LENGTH ..... 812'  
 DRILL TYPE ..... NQ  
 REMARKS .....



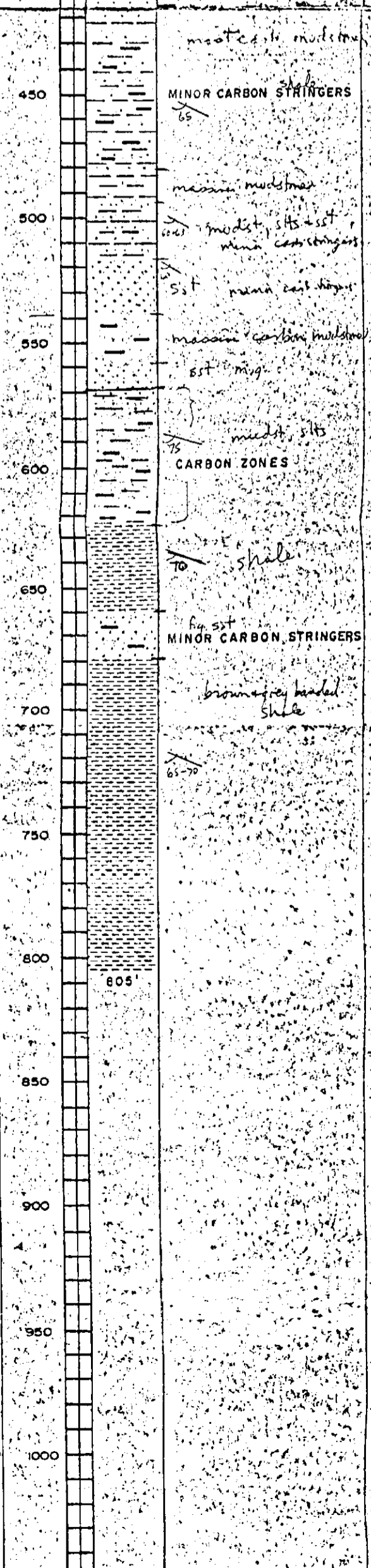
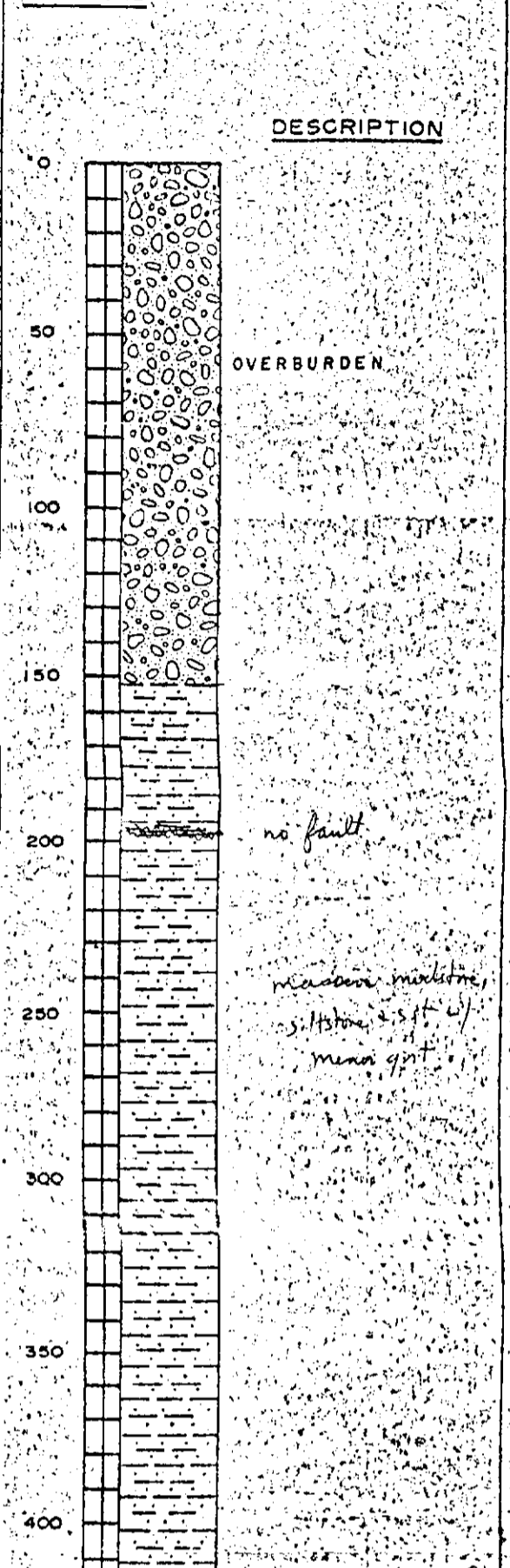
THLEHEM COPPER CORPORATION L  
COAL LOG

PROPERTY ..... PRINCETON COAL  
 HOLE NO ..... DDH-3  
 CO-ORDINATES ..... 26285.0 N  
 ..... 16671.7 E  
 ELEVATION ..... 2950.7  
 DIP ..... 90°  
 BEARING .....  
 TOTAL LENGTH ..... 258  
 DRILL TYPE ..... NQ  
 REMARKS .....  
 2 BcA



THLEHEM COPPER CORPORATION L  
COAL LOG

PROPERTY ..... PRINCETON COAL  
 HOLE NO ..... DDH-10  
 CO-ORDINATES ..... 26003.0 N  
 ..... 16054.4 E  
 ELEVATION ..... 2982.1  
 DIP ..... 90°  
 BEARING .....  
 TOTAL LENGTH ..... 805  
 DRILL TYPE ..... NQ  
 REMARKS .....  
 2 BcA





DDH-1

M12

## AS RECEIVED

## DRY BASIS

WEIGHT/Gms.	MOISTURE %	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %	WEIGHT / Gms.	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %
1875	10.75	19.52	29.77	39.96	9448	0.46	1673	21.87	33.36	44.77	10586	0.51
32	15.81	69.82					111	82.93				
1775	9.77	36.94	25.07	28.22	7042	0.42	4580	40.94	27.78	31.28	7805	0.47
856	14.03	35.89					736	41.75				
775	12.51	33.92	24.16	29.41	7178	0.38	678	36.77	27.62	33.61	8204	0.44
2171	11.08	23.23	29.12	36.57	8850	0.43	1948	26.12	32.75	41.13	9953	0.48
271	15.95	40.94					228	48.71				
2252	11.22	21.39	29.57	37.82	9105	0.35	1999	24.09	33.31	42.60	10256	0.39
350	13.02	38.59	23.58	24.81	6346	0.85	304	44.37	27.11	28.52	7296	0.98
180	Not Tested											
937	13.95	30.32	24.14	31.59	7412	0.33	806	35.24	28.05	36.71	8614	0.36
138	23.21	29.13	21.50	20.16	6197	0.26	1181	37.93	28.00	34.07	8070	0.34
1752	14.10	16.72	30.74	38.44	9342	0.34	1505	19.46	35.78	44.76	10875	0.39
529	21.45	37.09					416	47.22				
1633	19.38	48.91					2929	60.67				
3392	11.41	15.13	32.08	41.38	9954	0.36	3005	17.08	36.21	46.71	11236	0.41
124	Not Tested											
5287	10.28	11.15	34.36	44.21	10731	0.37	4743	12.43	38.30	49.27	11961	0.41
863	7.98	13.79	34.66	43.57	10259	0.50	794	14.98	37.67	47.35	11149	0.54

M13

DDH-11

AS RECEIVED

DRY BASIS

WEIGHT/Gms.	MOISTURE %	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %	WEIGHT/Gms.	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %
	9.08	23.66	32.98	34.28	9060	0.85		26.02	36.27	37.71	9955	0.94
	11.39	24.47	28.57	35.57	8554	0.51		27.62	32.24	40.14	9653	0.57

FILE NO.

DRAWING NO.

314

DDH-9

AS RECEIVED

DRY BASIS

WEIGHT / Gms.	MOISTURE %	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %	WEIGHT / Gms.	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %
	10.87	36.44	24.76	27.93	6885	0.78		40.88	27.78	31.34	7725	0.88
	10.00	28.83	28.26	32.91	9203	0.76		32.03	31.40	36.57	8883	0.84

FILE No.

DRAWING No.

MIS

DDH-12

AS RECEIVED

DRY BASIS

WEIGHT/Gms	MOISTURE%	ASH%	VOLATILE%	FC%	B.T.U.	SULPHUR%	WEIGHT/Gms.	ASH%	VOLATILE%	FC%	B.T.U.	SULPHUR%
	8.94	25.60	28.14	37.32	8866	0.96		28.11	30.90	40.99	9739	1.05
	9.59	27.67	27.39	35.35	8488	0.85		30.60	30.30	39.10	9388	0.94
	9.24	23.34	29.51	37.91	9039	0.69		25.72	32.51	41.77	9959	0.76

FILE NO. DRAWING NO.

MB

DDH-7

AS RECEIVED

DRY BASIS

WEIGHT/Gms.	MOISTURE %	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %	WEIGHT/Gms.	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %
	10.55	15.73	32.13	41.59	10185	0.44		17.59	35.92	46.49	11386	0.49

FILE NO

ANALYSIS NO.

M17

DD H-6

AS RECEIVED

DRY BASIS

WEIGHT/Gms.	MOISTURE %	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR%
	10.12	14.92	32.27	42.69	10375	0.41

WEIGHT/Gms.	ASH %	VOLATILE %	F.C. %
	16.60	35.90	47.50

FINA  
COP  
DATE MAR 15 1972

M18

DDH-5

AS RECEIVED

DRY BASIS

WEIGHT /Gms.	MOISTURE %	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR%
990						
733	12.63					
110						
1601						
893						
1198						

WEIGHT %	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR%
	45.03				
	23.87	34.19	41.94	9320	2.44
	72.18				
	45.79				
	77.17				
	70.48				

TITLE

FILE NO.

DDH-4

MA

## AS RECEIVED

## DRY BASIS

WEIGHT /Gms.	MOISTURE %	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %
Not Tested						
291						
449						
1243	7.84					
947						
1058	7.72					
1057						
722	8.08					
692						
945	7.46					
292						
1002	8.30					
158						
472	8.00					
3703						
5033	8.57					
430						
308						
1198	8.65					
Not Tested						

WEIGHT /Gms.	ASH %	VOLATILE %	F.C. %	B.T.U.	SULPHUR %
	20.92				
	70.48				
	10.23	39.87	49.90	12287	0.43
	57.52				
	18.13	35.89	45.98	11098	0.48
	26.41				
	12.98	38.86	48.16	11700	0.49
	42.33				
	16.01	36.68	47.31	11489	0.41
	46.81				
	13.53	38.50	47.97	11819	0.44
	49.26				
	11.37	40.80	47.83	12168	0.54
	51.68				
	16.39	37.79	45.82	11259	0.38
	37.86				
	50.89				
	13.54	37.10	49.36	11601	0.43