

* ~~APPENDIX B3~~
~~HAT CREEK BOPEHOLE~~
HAT CREEK BOPEHOLE INDEX
74 - 23 75 - 57
74 - 37A 75 - 61
74 - 11 75 - 62
HAT CREEK 75 - 73 (copy 2)
74(3)D

Specimens made of ... with N. Creek
(Boreholes 37A, 57, 61, 62, 73)

HC-NAT CREEK ~~74-23~~

NAT CREEK BOREHOLE 74 - 23

74(3)D

00126¹/₈

Specimens

- 246 pale grey clay with plants
268 pale grey clay with plants
279 black irregular carbonaceous shale, (? coal) some resin
- 326 poor coal
337 pale grey clay with plants
- 341 specimen of plant
344'5 could be part of plant or volcanic ash, pale brown silty
- 352 pale brown silty clay (hard) with plants (? ash)
- 363 hard pale brown, with plants (silty clay ? with siltstone perhaps)
- 374'5 clay, disintegrates (? bentonite) pale brown
- 380 clay, pale brown, listric surfaces
383'5 pale brown coherent clay, banded, with plant fragments (? ash)
- 395 probably poor variety of Hat Creek coal
- 405 pale brown clay with plants
415 'poor' coal
418 pale brown silty clay (hard) interbanded irregularly with planty material
- 420 pale grey-brown clay with plant fragments
450 peculiar clay, dark, planty
455 carbonaceous, dark planty shale, almost coal ?
- 475 pale clay parting with plants (? ash)
479 probably 'poor' coal
497 pale brown silty, white fragments (? ash)
497'5 ? plant fragment
498 ? plant fragment
- 500 coal
518 coal
524 coal (resin)
- 541 brown clay, listric surfaces, plants (? seatearth)
546 pale grey-brown clay, plants, probably ash
550 coal with resin
565 dark clayey parting with lots of small bright plant fragments
- 576 pale grey-brown silty clay with white spots interbedded with coal (? ash)
- 588 pale brown silty clay banded in coal (? ash) ($\frac{1}{2}$ ")
- 607 very distinctive pale brown banded silty with white spots (? ash) also ? plant fragments
- 609 pale brown silty clay with white spots (? ash)
- 615 coal with resin
615'6 'poor coal' or clayey parting
- 638 ? plant fragments
639 plant fragments
- 669'6 dark clay with resin fragments
- 718 ground-up clay
723 plant fragments ?, (? 733')
727 coal (? broken-up)
- 740 ? plant fragments plus coal specimen
743 pale brown clay banded with white spots (? ash)

HAY CREEK BOREHOLE 74 - 23 continued...

757 coal, banding irregular
771 pale grey clay parting with plants; (? ash)
773 coal
783 ? seatearth, dark brown listric surfaces, plants

795'6 pale grey clay with plants, (? seatearth, ? bentonit ?)
797 'grit' plants ?
797'2 silty clay (? bentonitic)
809'6 'sandstone' (?)
810 sandstone
813 could be seatearth or slickensided
818 pale grey disintegrated clay
835 conglomerate (pebbles up to ½ inch)
856 conglomerate (pebbles up to 1" or 1 1/2")
911 pale grey seatearth
977 structureless buff claystone, rare plant
1282 broken up buff claystone
1242 ? seatearth

HAT CREEK BOREHOLE 74 - 37A continued....

- 1736 breccia, cemented together
- 1765 fossilized plant
- 1766'3 pale grey finely banded silty clay and clay and very fine carbonized plants sometimes cutting bedding (? seatearth)
- 1771 ? brecciated silty pale brown claystone with plant fragments and calcite veining
- 1777 silty grey clay with plants
- 1790 'pelletal' looking pale grey clay with plant material
- 1791 cf. 1790 ?, also fossilized plant fragments
- 1796 interbanded pale grey (pelletal) and dark grey clay with plant material
- 1801 pale brown-grey silty clay with lots of fine plant fragments and some larger (vertical) ? seatearth
- 1819 dark grey silty mudstone with fragments of pale grey-brown clay and plant debris, looks like breccia (? contemporaneous)
- 1821'6 ? plant fragments or 'pelletal' rock
- 1838'6 ? breccia
- 1851 brown claystone
- 1868 interbedded pale brown clay with coal material (this might be thin ashy material)
- 1876 pale brown claystone (white spots) (? ash)
N.B. contact
- 1891 brown clayey material with carbonaceous shale, fairly heavy (? FeCO_3)
- 1927 brown clayey material interbedded with coaly material mixture, lots of fine plant debris also perhaps fossilized large plant
- 1968 brown clay parting in coal (? ash)
- 2007 pale brown clay parting with white spots (? ash)
- 2061 fossilized plant (but test for ash !)
- 2087 coal with resin
- 2166'8 brown-grey clay banded in dark shale
- 2167'6 decomposing sandstone with grains in clay
- 2175 decomposing pale brown clay

Specimens

392'6	disintegrated pale brown claystone
352'4	yellowish claystone
353'4	pale buff claystone
542	buff claystone with plants
612	dark grey mudstone with ? spores
621	pale brown clay plants, white spots (? ash)
623'5	brown claystone, fine planty material in core (? ash)
689'6	probably fossilized plant
690'3	coal with resin
692'6	probably fossilized plant
718'6	grit with coalified plants
834	darkish grey seatearth
957'9	buff clay with plant fossils
962	coal with dark grey clay containing coalified plants
1035	coarse grit (up to 1/8") grey and white speckled
1089	pale brown clay with white specks (? ash)
1159'5	grey clay (broken up) with plant fragments
1160'3	grey sandstone with plant fragments
1161	broken up buff clayey grit
1172	conglomerate on top of 'sandstone', most pebbles 1/8th, 1/4th, or 1/2"
1207	pale grey clay 3/4" in middle of dark grey seatearth (? ash)
1212	banded pale grey and dark grey clay but with fine coalified plant fragments, slickensided
1378'6	pale brown clay (yellowish stain) (? ash)
1404	dark grey seatearth
1476'5	clayey grit on top of silty clay (pale grey) with plants (N.B. soft clay between them)
1510	conglomerate average 1/4 - 1/2", some 3/4", clayey matrix, some pink pebbles
1524'6	buff, irregularly banded clay with plants, compact
1617	grey pellety clay with lots of plants (broken up)
1617'5	brecciated and pellety, grey to darker clay with plants and white specks (? ash)
1527	pellety buff clay with plants in coal
1631	? some sort of sandstone or siltstone, pale grey clay at one end, white specks and fine veining
1636'5	pale grey clay with lots of small plant fragments
1642'3	hard brown (?) silty material with plant fragments (heavy ? FeCO ₃)
1699	pale irregularly bedded clay with fine plants, looks 'ashy'
1734	pale grey-buff clay, slightly silty, looks 'ashy'
1754	graded bedding in silty pale grey and grey clay with slight faulting, plant fragments
1784	peculiarly bedded pale grey clay and silt with plants

HAT CREEK BOREHOLE 74 - 44 continued....

- 1788'5 irregularly bedded pale grey and silty clay with plants
(? bioturbation)
- 1807 grey mudstone with white pellets, plant fragments
- 1876 grey silty mudstone with plants
- 1916'6 pale claystone with white pellets (? ash)
- 1925 black oolitic looking material, brown on outside
(? sphaerosiderite)
- 2046 darkish grey mudstone with white specks (? ash)
- 2052 top layer grey with white specks (? ash)
most of specimen is brown with plant fragments
? canneloid coal or shale
- 2064'1 brown 'mudstone' with coal fragments and resin
- 2065 buff clay with plants and white specks (? ash)
- 2216 conglomerate
pebbles up to 3", pale clay matrix

Specimens

- 446 pale grey claystone with some carbonaceous laminations
- 670 pale grey claystone, sometimes laminated
- 672
- 728 laminated grey claystone
- 751'7 pale brown claystone (? ash)
- 762 laminated grey claystone (? varves)
- 816 ? worm burrows (sandstone in clay below)
- 955 pale brown claystone in coal (? ash)
- 994 as above (? ash)
- 1064 pale brown silty claystone (? ash)
- 1091 coarse speckled silty claystone (? ash)
- 1150'5 type of seatearth
- 1337 coal with bedding parallel to core axis
- 1428 coarse grit eroding into carbonaceous mudstone and pale grey claystone (irregularly interbedded)
it appears erosive surface and bedding are parallel to core axis

HAT CREEK BOREHOLE 75 - 61

Specimens

- 542'8 black mudstone with (? fish)
- 544 black mudstone with (? fossils)
- 544'5 black mudstone with (? fish)
- 545 brownish-black mudstone with (? fossils)
- 546 brownish-black mudstone with (? fish)
- 547 brownish-black mudstone with (? fish)
- 547'3 brownish-black mudstone with (? fish) or ? small bivalve

- 552'6 pale buff claystone (? volcanic ash)

- 594'8 grey-brown mudstone with (? fish)

- 612 buff claystone (? volcanic ash)

- 1057 pale grey mudstone with plant fragments interbedded irregularly with silty material (? bioturbation)

- 1235 ? poor coal with clay partings

- 1278 pale brown claystone (? ash)

HAT CREEK BOREHOLE 74 - 48

Specimens

- 497 (? fish fragments in brown claystone)

Specimens

- 607'6 pale grey clay with plants
- 994'6 pale grey clay with coalified fragments (? type of seatearth)
- 1012 ? type of seatearth
- 1018'3 ? volcanic ash (pale grey claystone) 2" band, plant fragments numerous
- 1019'3 ? volcanic ash (more plant fragments)
- 1041'9 speckled white claystone (? volcanic ash)
- 1418 ? volcanic ash and plant fragments (speckled)
- 1548 grey-buff claystone (? volcanic ash) plant fragments
- 1615 brown speckled claystone in coal (? ash)
- 1626
- 1620'6 speckled claystone bands in coal (? ash)

HC - Hat Creek 74(3)D.

00 126 ^{E1} 2/8

DRILL Hole Logs. 74-01²⁵ 74-42

(Book-3-1)

Ormage Campbell and associates ltd. 1975

126

Draft copies

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

2/6

Coordinates	: 7000' N	Length	: 960'	Hole No.	: RH 74 - 01
	: 5500' E	Azimuth	: —	Date	: DECEMBER 1974
Reference Elev.	: 3470'	Dip	: -90°	Logged by	: J. Rotzien
Ground Elev.	: 3470'	Core Size	: —	Sheet	: 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
0		Datum																		
			<u>OVERBURDEN</u> Sandy gravel with some silt, cobbles and boulders			NOTE: Reverse Circulation Rotary Hole. Only chips samples obtained. Limited structural and stratigraphical data.														
20			Brown sand																	
			Sand and gravel																	
40			Silt, sand and gravel																	
60			<u>WEATHERED BASALT</u> Red finely crystalline and vesicular, with glassy zeolites.																	
80																				
100			<u>FRESH BASALT</u> Dark grey, slight to non- vesicular.																	
120																				
							Quartz (minor)													
140			<u>CRYSTAL TUFF</u> Slightly weathered, with upto 5% biotite and a trace of garnet																	
							Coarser crystals, pale blue gray.													
160																				
180			<u>CALC. SANDSTONE</u>				With chips of granite, basalt, sst and shale													

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<i>Grey and white, fine to medium</i>											
200			<u>SILTY SANDSTONE</u> <i>Light to dark grey, with minor congl. and silty zones</i>											
220					<i>Calcite and coal fragments</i>									
					<i>Calc.</i>									
					<i>Calc. congl.</i>									
					<i>Congl.; coal fragments</i>									
					<i>Slst</i>									
240														
260														
280														
300														
320			<u>SILTSTONE</u> <i>Dark to light grey with minor sst.</i>											
340														
360														
380														
400														

DRAFT COPY




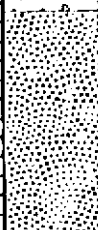
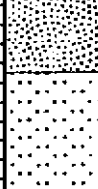
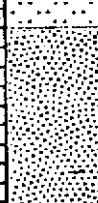
ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400																			
420																			
440			<u>PEBBLE CONGLOMERATE</u> Well rounded pebbles, about 20% volcanic. Generally light grey																
460																			
480																			
500																			
520																			
540			<u>INTERBEDDED DETRITAL ROCKS</u> Grey brown <u>PEBBLE CONGL.</u> With 35-40% sand sized particles and 20-30% volcanics																
560																			
580			<u>SANDY SILTSTONE</u> Grey brown																
600			<u>CONGL. SILTSTONE</u> Grading to a sst at base																
620			<u>SANDY SILTSTONE</u> , with little congl. <u>SILTY CONGLOMERATE</u>																

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION			0	20	40	60	80							
620			Dark grey, some clay, 20% volcanic chips																
640			<u>SANDY SILTSTONE</u> , Grey brown																
			<u>SILTY CONGLOMERATE</u> Grey brown, calc.																
660					Grey green														
680			<u>SILTY SANDSTONE</u>		Trace of carb. material														
			<u>INTERBEDDED PEBBLE CONGL. AND CONGL. SANDSTONE</u>		Grey green slightly calc.														
700			<u>SANDY SILTSTONE</u> , Grey green																
			<u>PEBBLE CONGLOMERATE</u> Blue grey to grey brown, slightly calc.																
720																			
740																			
760			<u>SILTY CONGL. SANDSTONE</u> Rust brown, slightly calc.		With 10% clay														
780																			
			<u>SILTY SANDSTONE</u> Grey brown, clayey, slightly calc.		Grey brown														
800			<u>CONGL. SANDSTONE</u> Grey brown, calc.																
			<u>SANDSTONE</u> Grey brown, calc.																
820			<u>CONGLOMERATE</u> Grey green																
840			<u>CONGL. SANDSTONE</u> , Grey green																

DRAFT COPY

DRILL HOLE : ..RH. 74-01...
SHEET No. : 4. OF 5....

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840			<u>CONGLOMERATE</u> <i>Dark grey, pebbles mostly volcanic</i>															
860			<u>SILTY SANDSTONE</u> <i>Grey green, slightly calc.</i>															
880			<u>CONGLOMERATE</u> <i>Dark grey with silt</i>															
900			<u>SILTY SANDSTONE</u> <i>Grey green</i>															
920			<u>SANDY SILTSTONE</u> <i>Blue grey</i>															
940			<u>SILTY SANDSTONE</u> <i>Blue grey to grey green</i>															
960			<u>END OF HOLE</u> <i>AT 960 feet</i>															

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 4000' N Length : 1060' Hole No. : RH 74-2
 5000' E Azimuth : - Date : DEC. 1974
 Reference Elev. : 3587' Dip : 90° Logged by : J. Rotzlen
 Ground Elev. : 3587 Core Size : No Core Sheet : 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
0			Datum																	
			<u>OVERBURDEN</u> Mixed sand and silt		<i>Note:</i> Reverse Circulation Rotary Hole. Only chip samples obtained. Limited structural and stratigraphical information.															
			Gravel																	
20			Clayey silt																	
40			Sandy gravel with sandy layers, and minor silt and clay																	
60			Sand, medium grained																	
80			Sand with silt and clay																	
100			Silty sand.																	
			<u>SILTY SANDSTONE</u> Grey brown, slightly calc. and slightly congl.																	
120					Trace of clay															
140																				
160					Blue grey															
					Light grey, 20% congl.															
180					Light grey, 20% congl. trace of carb. fragments.															

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180			<u>SILTSTONE</u> Grey green, interbedded with minor sst and clst. Generally sandy																
200					Slightly calc.														
220					Mixed slst and sst, trace of clay calc.														
					Slightly clayey														
			<u>CONGL. SANDSTONE</u> Grey green, calc.																
240			<u>CLAYSTONE</u> Grey green, sandy, silty																
			<u>SANDY SILTSTONE</u> Grey green, general sandy		Slightly calc.														
260					45-50% sandy														
					Slightly calc.														
280					Slightly congl.														
300			<u>SANDSTONE</u> Grey green, slightly congl. slightly calc.		Sandy slst														
					Sandy congl.														
320			<u>SILTSTONE</u> Grey brown, with trace of fine sand																
340					Calc.														
360			<u>SANDSTONE</u> Grey brown; calc.		Slightly congl., grey														
					Calc., grey brown														
380					Silty														
					Congl., slightly calc.														
400					Silty														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400					<i>Congl., slightly calc. gray</i>									
			<u>SILTSTONE</u> <i>Grey brown, calc. with some clay</i>		<i>Trace of coal</i>									
420					<i>Slightly congl. calc.</i>									
					<i>clayey, non-calc.</i>									
440					<i>Silty, slightly calc and congl. grey green</i>									
460					<i>Sandy, calc., grey brown</i>									
					<i>Green sand 5%, buff</i>									
480					<i>Buff, sst, trace of coal</i>									
					<i>Buff</i>									
500														
520														
540														
560														
					<i>Silty sst</i>									
580														
600														
620														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620																			
640			<u>SANDSTONE</u> Gray green, silty calc. slightly congl.																
660																			
680			<u>SILTSTONE</u> Light grey, calc. and slightly sandy and clayey and with coal fragments.																
700																			
720																			
740																			
760																			
780																			
800			<u>SANDSTONE</u> Grey brown, silty, calc.																
820			<u>CHERTY SHALE</u> Dark grey, with quartz veinlets and trace of magnetite and pyrrhotite along fractures																
840																			

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840																			
860																			
880																			
900																			
920																			
940																			
960																			
980																			
1000																			
1020																			
1040																			
1060																			

DRAFT COPY

END OF HOLE
AT 1060 feet

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY HAT CREEK PROJECT — DRILL RECORD

Coordinates	: <u>8000' N</u>	Length	: <u>1168'</u>	Hole No.	: <u>RH 75 -03</u>
	: <u>11,900' E</u>	Azimuth	: <u>—</u>	Date	: <u>JANUARY 1975</u>
Reference Elev.	: <u>2895'</u>	Dip	: <u>-90°</u>	Logged by	: <u>J. Rotzien</u>
Ground Elev.	: <u>2895'</u>	Core Size	: <u>—</u>	Sheet	: <u>1 of 6</u>

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0			Datum															
			<u>OVERBURDEN</u> Gravel: 30% sand 60% rockchips 10% fines Grey green		<i>NOTE: Reverse Circulation Rotary Hole. Only rockchips obtained. Limited stratigraphical and structural data</i>													
20																		
40			Sand and Gravel: 50% sand 45% rockchips 5% fines Grey green															
60			<u>SILTY SAND</u> Dark grey with some rock chips															
80																		
100			<u>SAND GRAVEL</u> , Grey green 30% sand, 70% rockchips															
100			<u>SILTY CLAYSTONE</u> Grey brown, with little sand; weakly indurated.		Trace of coal fragments													
120																		
140			<u>COAL ?</u> Sample missing															
140			<u>SILTY CLAYSTONE</u> Grey brown, weakly indurated with trace of sand.		Trace of coal with resin beads													
160																		
160					5% white silty clst 5% buff clayey slst													
180					10% white clst													

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<i>continued</i>											
200					<i>Traces of coal</i>									
220					<i>White clst with grey brown silty clst</i>									
240														
260					<i>Carbonaceous</i>									
280					<i>With trace of calcite and magnetite</i>									
300														
320														
340														
360					<i>10% white clst</i>									
380														
400														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			<i>continued</i>											
420					<i>Slightly carb.</i>									
440														
460														
480														
500														
520														
540														
560					<i>40% gray brown clst, 50% buff slst, 10% light gray slst</i>									
580					<i>Trace of calcite.</i>									
600			<u>SILTSTONE</u> <i>Grey brown clayey</i>		<i>Gray brown to purplish clst with traces of calcite and magnetite</i>									
620					<i>10% buff to rust brown slst</i>									

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
620																				
640																				
660																				
680																				
700																				
720																				
740																				
760																				
780																				
800																				
820																				
840																				

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE							
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80			
840		[Dotted pattern]													
860															
880						10% rust brown fine sst									
900						Trace of coal fragments									
920						Trace of coal and pyrrhotite									
940						10-20% buff to rust brown sst									
960															
980															
1000															
1020															
1040															
1060															

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE													
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80									
1060		[Dotted pattern]																			
1080							Traces of buff slst. varicoloured sst and pyrrhotite?														
1100																					
1120							Traces of buff slst and coal														
1140							10-15% sand, 10% buff slst and trace of pyrrhotite?														
1160							10-15% sand, 10% buff slst 20% buff slst														
1168			END OF HOLE AT 1168 feet																		
1180																					

DRAFT COPY

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates : 10,000' N Length : 1460'
 10,880 E Azimuth : — Hole No. : ~~75-R4~~ RH-7504
 Reference Elev. : 2865' Dip : 90° Date : JAN. 1975
 Ground Elev. : 2865' Core Size : No Core Logged by : J. Rotzien
 Sheet : 1 of 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0		Datum												
			<u>OVERBURDEN</u> Gravelly sand with silt & some cobbles coarser fraction well rounded to angular. Well graded, gray brown saturated (SW-SG) Very fine to coarse subrounded to angular sand with trace fine subrounded gravel. Well graded, gray green, saturated (SW) Sandy gravel >50% <1/8 chips. Well graded, gray brown, saturated (GS) >50% <1/8 chips fine gravel with sand and some silt, well graded gray brown saturated (GW)		<i>Note: Standard circulation rotary drill hole. Only limited stratigraphic information available from rock chips.</i>									
			<u>PEBBLE CONGLOMERATE WITH INTERBEDDED COAL</u> Mixed cherty shale and basalt fragments with about 10% - 20% coal particles. Maximum size 3/4"											
			<u>COAL</u> Largely coal, with silt fragments (From 20-30%)				1							
							2							
							3							

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<i>continued</i>				3							
200														
220							4							
240														
260							5							
280														
300							6							
320														
340							7							
360							8							
380							9							
400														

DRILL HOLE : 75 - R4
SHEET N^o. : . 2 . OF . 7 . . .

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE							
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80			
400			<i>continued</i>				10								
420															
440							11								
460			<u>SILTSTONE WITH SANDY AND CONGLOMERITIC ZONES</u> <i>Dark grey, sometimes coaly to carb. (due to contamination from above) Sometimes calc.</i>												
480															
500															
520															
540															
560															
580															
600															
620															

DRILL HOLE :
SHEET N^o. : 3. OF 7....

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			<i>continued</i>											
640														
660					<i>Congl.</i>									
680														
700														
720														
740														
760			<u>MIXED DETRITAL ROCKS</u> <i>Mixed sequence of thinly bedded sst, slst, and congl.</i>											
780														
800					<i>Calc. and carb.</i>									
820														
840														

DRILL HOLE : ...75-R4...
SHEET No. : 4. OF 7....

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840			<i>continued</i>											
860														
880														
900														
920														
940														
960														
980														
1000														
1020														
1040														
1060														

DRILL HOLE : 75-R4
SHEET No. : 5. OF 7.

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1060			<i>continued</i>																
1080																			
1100																			
1120																			
1140																			
1160																			
1180																			
1200																			
1220																			
1240																			
1260																			
1280																			

DRILL HOLE : ... 75-R4 ...
SHEET No. : . 6 . OF . 7 .

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280			<i>continued</i>											
1300														
1320														
1340														
1360														
1380														
1400														
1420														
1440														
1460			<i>END OF HOLE 1460 feet</i>											

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 9130' N Length : 1355' Hole No. : 74-23
 : 8275' E Azimuth : — Date : AUG. 1974
 Reference Elev. : 3202' Dip : 90° Logged by : P.J. Street
 Ground Elev. : 3200' Core Size : NQ Sheet : 1 of 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u> <i>Relatively uniform mixture of boulders, pebbles and sand consistent with a thick blanket of glacial till.</i>											
20														
40														
60														
80														
100														
120														
140														
160														
180														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE №.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
200																			
220																			
231																			
240			<u>SILTSTONE</u> With minor shale and coal, medium to light buff, generally cohesive and blocky with few fine sandy laminae. Below 240' laminae predominantly carb. Leaf and stem impressions common. Soft fissile to hard and cohesive. Occasionally shaly.		2 (0.03) coal														
250					Coal fragments														
260					(1.0) finely banded coal														
280																			
290																			
300			<u>COAL</u> Black, finely banded, clean; dull to moderately bright, fossils parallel to banding. Blocky		Few silty interbeds, 1/2" - 2" thick		1												
320					(1.0) hard slst carb. (2.0) carb. slst soft (1.0) clay slst, carb.		2												
332			<u>SILTSTONE</u> Pale buff grey, soft with minor black carb. to coaly layers. Laminated to massive, very variable. Unindurated		Coal														
340					(1.0) coal														
354																			
360			COAL (50-70%) with slst		(1.0) coal														
380			<u>MIXED COAL AND SILTSTONE</u> Black, with silty laminations. Blocky		(0.3) hard buff slst		3												
400					(0.2) soft slst Coaly slst														

DRAFT COPY

DRILL HOLE : ... 74-23 ...
SHEET №. : ... 2 OF 7 ...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400					(2.0) slst		4							
420			<u>SILTSTONE</u> Grey, massive, with minor carb. lam.											
440			<u>INTERBEDDED COAL AND SILTSTONE</u>		2(1.0) coal Contorted bedding		5							
460			<u>SILTY COAL</u>				6							
480			<u>COAL WITH MINOR SLST</u> Black, finely banded black, silty <u>CARB. COALY SLST, Black</u> <u>SILTY COAL</u>				7							
500			<u>SST, soft, buff, coaly</u>		Tuffaceous? calc.		8							
520			<u>COAL</u> Black, finely banded, fossile and clean cohesive. Massive, with very minor siltstone		(0.3) carb. slst		9							
540					(0.3) hard light brown slst		11							
560					(2.0) pale buff calc. coaly slst		12							
580							13							
600					(1.0) quartz sst, carb., slightly calc (0.1) sandy slst		14							

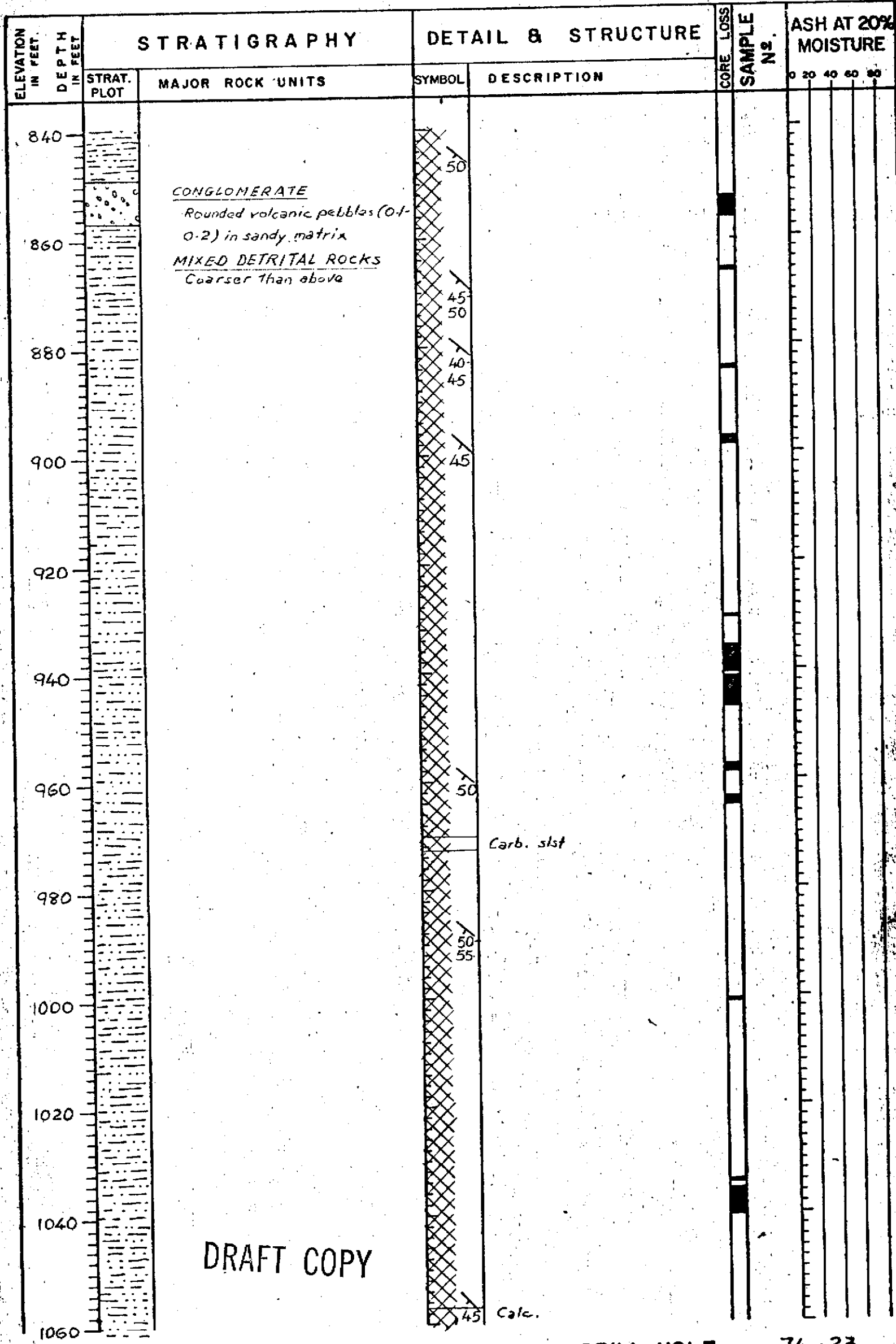
DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620							15												
640							16												
660							17												
680						55	18												
700							19												
720							20												
740						65 70	21												
760						60	22												
780							23												
800			<u>MIXED DETRITAL ROCKS</u> Pale buff grey, but ranging from white to dark grey, cyclic and graded thinly, interbedded rocks, ranging from slst to congl. Blocky to rubbly, poorly to moderately indurated			50													
820						50 60													
840																			

DRAFT COPY

DRILL HOLE : 74-23

SHEET No. 4 OF 7



DRAFT COPY

126

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates : 7000N Length : 386' Hole No. : 74 - 24
10,970' E. Azimuth : 070° Date : SEPT. 1974
 Reference Elev. : 3082' Dip : 60° Logged by : Meide Quadros
 Ground Elev. : 3080' Core Size : NQ Sheet : 1 of 2

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
0			Datum																
			<u>OVERBURDEN</u> <i>Mixed gravel, boulders and clay</i>																
20																			
40																			
60																			
80																			
100																			
120																			
140																			
160																			
180																			

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
200																			
220			<u>SILTSTONE</u> Grey, unindurated rubble to pulverised grey rock, uncemented with minor clst layers. When wet, muddy and pliable. When dry, pulverised and powdery. Fractures generally 30° to C.A.		1-0 brownish white clst														
240																			
260																			
280																			
300																			
320																			
340																			
360																			
380																			
400			END OF HOLE AT 386 feet																

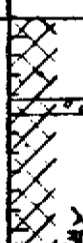
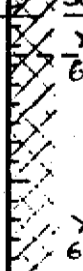
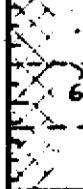

DRAFT COPY

DRAFT COPY

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 8000' N Length : 2072' Hole No. : 74-25
 10,000 E Azimuth : 090° Date : OCTOBER, 1974
 Reference Elev. : 3131' Dip : 60° Logged by : M. de Quadros / J. Rotzien
 Ground Elev. : 3130' Core Size : NQ Sheet : 1 of 10

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0			<u>OVERBURDEN</u> Thinly bedded alternating clay, sand, gravel and boulders															
100			<u>SANDSTONE</u> Grey carbonaceous soft, rubby to pulverised		(1-5) congl. Increasingly carb. downsection													
120			<u>COAL AND SILTY COAL</u> Black banded lustrous and brittle. Blocky, silty in parts.		(0-5) carb.													
160					(0-5) white Sst (0-5) white Sst													
180					Coaly silt soft Heavily fractured													

DRAFT COPY
 Duplicate Copy

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
			<u>SANDSTONE</u> <i>Grey, blocky well consolidated 2 cycles of graded bedding?</i>		Coaly silt (0.2) coal. (2.0) calc. Calc. Coaly														
200																			
220			<u>COAL</u> <i>Black lustrous blocky and clean Brown scratch</i>			60													
			<u>COALY SANDSTONE AND SILTY COAL</u> <i>Soft mixed sequence</i>			60													
240																			
			<u>COAL</u> <i>Block, blocky lustrous, finely banded with curved fractures Brown when scratched, resin beads. Unhomogenous. Well developed parting parallel to bedding.</i>		(1.0) Coaly silt (0.5) clay (1.5) clay	60 56 60													
260																			
280																			
300																			
320																			
			<u>COALY SAND</u> <i>Soft unconsolidated with coal fragments</i>		(1.0) reddish brown silt (4.0) soft black sand	60 65 65													
340																			
			<u>COALY SAND</u> <i>Soft unconsolidated with coal fragments</i>		(1.0) silt (2.0) coal (1.0) silt (1.0) coal	60													
360																			
			<u>COALY SILTSTONE</u> <i>Coarse dark grey blocky but soft, with resin beads.</i>		Very coaly grading to silty coal (0.2) coaly sand.														
380																			
400																			

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
400			<u>COAL</u> <i>Black blocky, finely banded Cores well, brown when scratched Clean partings parallel to ... bedding.</i>	60														
420				60	(1-0) coaly clay													
440				58	(0-3) silty													
460				60	(0-3) silty, (2-0) carb. clay													
480			<u>SILTSTONE</u> <i>Dark grey carbonaceous and blocky. Coaly in parts</i>	62	Coaly (1-0) f													
500			<u>COAL</u> <i>Black, blocky to rubble. Bedding parallel to parting</i>	60	(1-0) f f													
520			<u>SILTSTONE</u> <i>Dark grey blocky carb. coal fragments Grades down to a sandstone</i>	60	(2-0) carb. clay													
540			<u>COAL</u> <i>Black compact blocky. Good partings parallel to bedding, 60° to C.A. Resin beads</i>		Very silty													
560					Coaly silt													
580																		
600			<u>SILTSTONE</u> <i>Grey blocky carb. rock, gradational boundaries above and below</i>															
620			<u>COAL</u> <i>Black blocky competent and homogeneous. Finely banded with parallel parting 60° to C.A.</i>															

DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE				
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80
20		<i>continued</i> <i>Lustrous fresh surfaces, brownish when scratched.</i>		<i>Silty</i>							
40		<i>Cu 4.1%</i> <i>Pb 21.0 ppm</i> <i>Zn 330 ppm</i>		<i>Silty calc-silt</i> <i>Contorted bedding</i> <i>(1.0) calc.</i>							
60		<i>Cu 4.8%</i> <i>Pb 20 ppm</i> <i>Zn 300 ppm</i>	60	<i>(0.5) calc streaks (1/10)</i> <i>Pulverised coaly silt</i> <i>(1.0) calc. & silty</i> <i>(0.5) white clay streaks</i>							
80				<i>Coaly silt</i> <i>(2.0) calc. silt</i>							
100			62	<i>Streaky calc. coal. Contorted bedding</i>							
120				<i>Coaly silt</i>							
140			60								
160		SILTSTONE <i>Grey carb. blocky and compact</i>	60								
180		COAL <i>Black, blocky compact. Finely banded with parallel parting 60° to C.A. Fresh parting lustrous, flat. Brownish when scratched Silty interbeds. Bedding variable from 40°-60° to C.A.</i>	45								
200			60	<i>Grey coaly shale</i>							
220			60	<i>(4-5) Finely banded with white clay layers. Contorted.</i>							
240			60	<i>(0.5) Finely interbedded white clst layers (1/10") thick contorted</i>							
260			60	<i>(0.2) Finely interbedded with clst.</i>							

DRILL HOLE : ...74-25.....
SHEET No. : ...4 OF 10.....

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840			<i>continued</i>															
860																		
880																		
900																		
920																		
940			<u>COAL, SHALY COAL AND CLAYSTONE</u> A very mixed sequence of well-bedded blocky compact rocks, with good parting, 55°-60° to C.A.															
960																		
980			<u>COAL</u> Black, blocky homogenous coal, with fine bands. Partings shiny, parallel to banding. Minor silt interbedded.															
1000																		
1020			1024' down is massive, compact and coarsely banded. Very homogenous and clean. Interbeds have sharp contacts.															
1040																		
1060																		

DRILL HOLE : 74-25

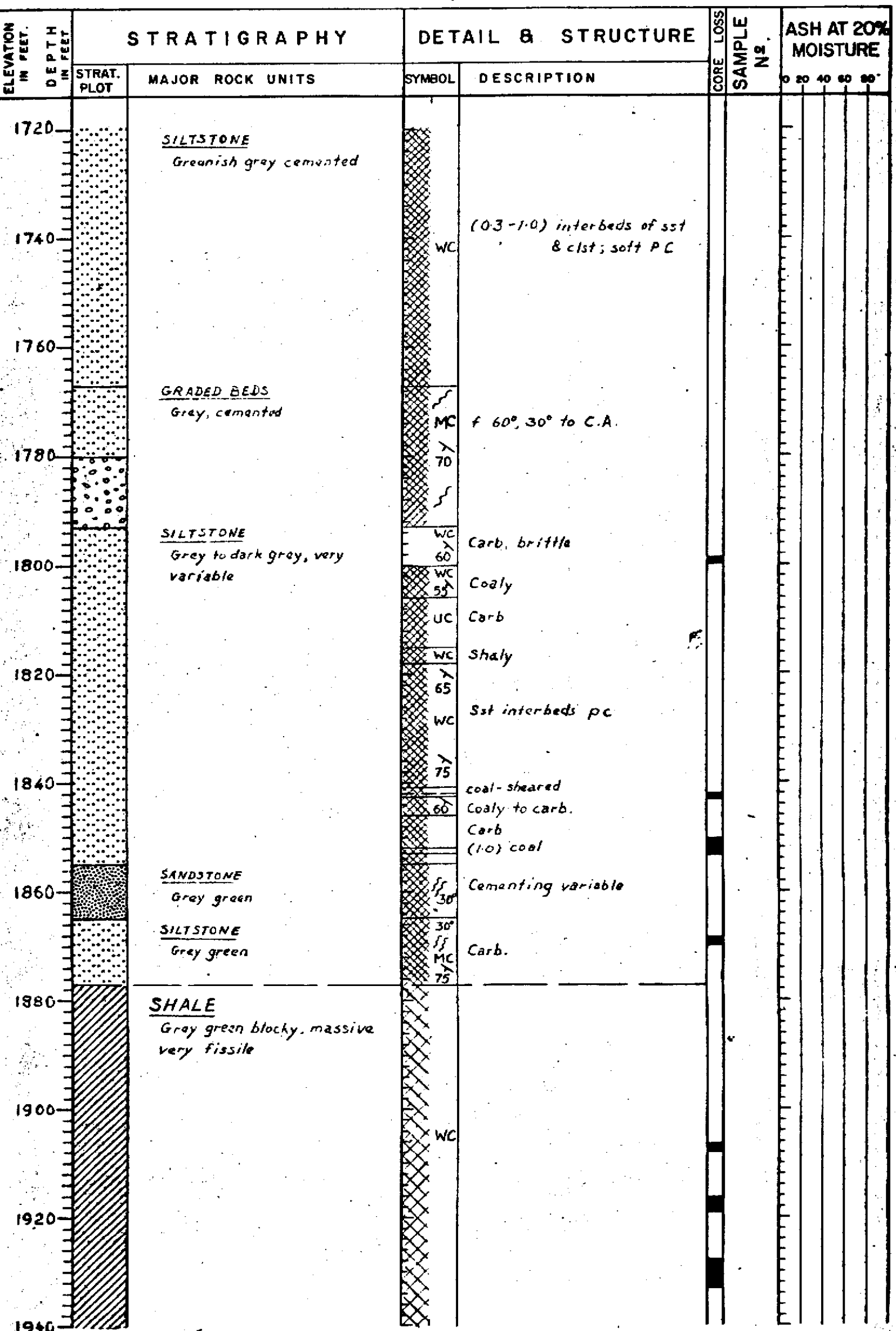
SHEET No. : 5 OF 10

DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
1060		<i>continued</i>																	
1080			60	(1-2) Thin interbeds (1/10 - 2/10) white calc. slst.															
1100				(1-6) Stripey interbedded white calc. slst and coal. Very contorted bedding.															
1120			57	(0-5) coarse white slst															
1140																			
1160			55	0-5 thin (1/10") white slst layers															
1180																			
1200				(1-0) calc silty coal, with 2-5" white slst in middle															
1220			55	(0-6) amber bead layer															
1240																			
1260				Stripey silty calc. coal. Very contorted															
1280																			

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280			<i>continued</i>											
1300														
1320														
1340														
1360														
1380														
1400					(1-5) calc. coal									
1420														
1440				MC	Coaly									
1460			COALY CLAYSTONE Dark grey to black, moderately to poorly cemented, with coal fragments	PC	(1-0) coal									
1480			MIXED SANDSTONES AND MUDSTONE Grey blocky well indurated rocks, representing cyclical deposition -> gradual beds. With minor coaly and carb. layers	c f	Coal fragments									
1500			SILTSTONE Grey, pulverised		(1-0) coarse, hard									

DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1500		<i>continued</i>																
		<u>SANDSTONE</u> Grey, porous soft		Carb.														
1520			PC															
		<u>SILTSTONE</u> Gray hard																
1540			WC															
		<u>FINE PEBBLE CONGLOMERATE</u> Grey, crumbly rock with pebbles smooth, rounded less than 1" across.	40															
1560			PC															
		<u>SILTSTONE</u> Grey to dark grey, carb.																
1580			PC	Carb. thin (2/16") layers of coal Coarse														
		Grey	PC															
1600		<u>SANDSTONE</u> Grey																
		<u>SILTSTONE</u> Grey																
		<u>BRECCIA</u>	WC	Calc. flat angular pebbles														
		<u>SILTSTONE</u> Grey	PC	Soft pliable														
1620				(1-0) clayey lmst														
		<u>SANDSTONE</u> Grey	PC	Coarser downward														
		<u>CONGLOMERATE</u> Grey, small pebbles																
1640		<u>MIXED DETRITAL, ROCKS</u> Grey thinly bedded ranging from coarse sst to clst																
			PC															
1660																		
				(0.5) Lmst														
1680				(1-3) Lmst, clayey														
			55															
1700																		
1720			80	Coaly, resin beads														

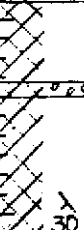
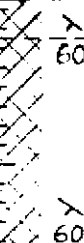
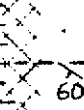
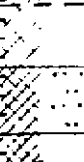
1578



IN FEET DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE					
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80	
1960	[Hatched pattern]	<i>continued</i>	[Cross-hatched pattern]	(0.1) <i>sst. calc</i>								
				60								
1960				(0.5) <i>sst</i>								
				55								
				(1.0) <i>calc. sst</i>								
				60								
				(0.4) <i>calc. sst ; slicken sides</i>								
				55								
1980				<i>f 70° to C.A.</i>								
2000												
2020				20° <i>calc. recemented fracture</i>								
2040				20° <i>calc. recemented fracture</i>								
2060				(0.5) <i>py.</i>								
2072	END OF HOLE 2072 feet											
2080												

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 8000' N Length : 2072' Hole No. : 74-25
10,000 E Azimuth : 090° Date : OCTOBER, 1974
 Reference Elev. : 3131' Dip : 60° Logged by : M. de Quadros/J. Rotzler
 Ground Elev. : 3130' Core Size : NQ Sheet : 1 of 10

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			<u>Datum</u>											
0	100		<u>OVERBURDEN</u> <i>Thinly bedded alternating clay, sand, gravel and boulders</i>											
100	120		<u>SANDSTONE</u> <i>Grey carbonaceous soft, rubbly to pulverised</i>		(1-5) congl. <i>Increasingly carb. downsection</i>									
120	140		<u>COAL AND SILTY COAL</u> <i>Black banded lustrous and brittle. Blocky, silty in parts.</i>		(0-5) carb.									
140	160				(0-5) white Sst									
160	180				(0-5) white Sst Coaly silt soft <i>Heavily fractured</i>									

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180					Coaly silt (0.2) coal									
			<u>SANDSTONE</u> Grey, blocky well consolidated 2 cycles of graded bedding?		(2.0) calc.									
200					Calc. Coaly									
220			<u>COAL</u> Black lustrous blocky and clean Brown scratch											
			<u>COALY SANDSTONE AND SILTY COAL</u> Soft mixed sequence											
240					(1.0) Coaly silt									
			<u>COAL</u> Block, blocky lustrous, finely banded with curved fractures Brown when scratched, Resin beads. Unhomogenous. Well developed parting parallel to bedding.		(0.5) clay (1.5) clay									
260														
280					(1.0) (0.1) reddish brown silt									
300														
					(4.0) soft black sand									
320														
			<u>COALY SAND</u> Soft unconsolidated with coal fragments		(1.0) silt (2.0) coal (1.0) silt (1.0) coal									
340														
			<u>COALY SILTSTONE</u> Coarse dark grey blocky but soft, with resin beads.		Very coaly grading to silty coal (0.2) coaly sand.									
380														
400														

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			<i>continued</i> <i>Lustrous fresh surfaces, brownish when scratched.</i>		Silty									
640					Silty coal-silt Contorted bedding (1-0) calc. (0.5) calc. streaks (1/10") Pulverised coaly silt (1-0) calc. & silty (0.5) white clay streaks									
660					Coaly silt (2-0) calc. silt									
680					Streaky calc. coal. Contorted bedding									
700					Coaly silt									
720			SILTSTONE <i>Grey carb. blocky and compact</i>											
740			COAL <i>Black, blocky compact. Finely banded with parallel parting 60° to C.A. Fresh parting lustrous, flat. Brownish when scratched. Silty interbeds. Bedding variable from 40°-60° to C.A.</i>		Grey coaly shale (4-5) Finely banded with white clay layers. Contorted.									
760					(0.5) Finely interbedded white clst layers (1/10") thick contorted (0.2) Finely interbedded with clst.									
780														
800														
820														
840														

DRILL HOLE : ..74-25.....
SHEET No. : ..4 OF 10.....

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840			<i>continued</i>															
860																		
880																		
900																		
920																		
940			COAL, SHALY COAL AND CLAYSTONE A very mixed sequence of well-bedded blocky compact rocks, with good parting. 55°-60° to C.A.															
960																		
980			COAL Black, blocky homogenous coal, with fine bands. Partings shiny, parallel to banding. Minor silt interbedded.															
1000																		
1020			1024' down is massive, compact and coarsely banded. Very homogenous and clean. Interbeds have sharp contacts.															
1040																		
1060																		

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1060			<i>continued</i>															
1080				60	(1-2) Thin interbeds (1/16 - 3/16") white calc. slst.													
1100					(1-6) Strippy interbedded white calc. slst and coal Very contorted bedding.													
1120				57	(0-5) coarse white slst													
1140																		
1160				55	0-5 thin (1/16") white slst layers													
1180																		
1200					(1-0) calc silty coal, with 2-5" white slst in middle													
1220				55	(0-6) amber bead layer													
1240																		
1260					Strippy silty calc. coal. Very contorted													
1280																		

DRILL HOLE : ...74-25...
 SHEET No. : .6. OF 10....


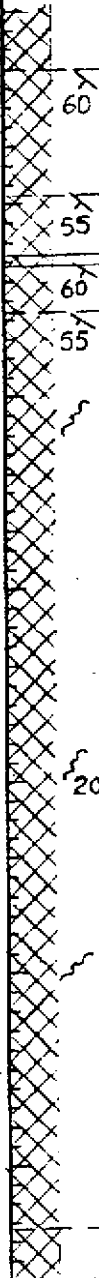
ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280			<i>continued</i>											
1300														
1320														
1340														
1360														
1380														
1400														
1420														
1440														
1460			<u>COALY CLAYSTONE</u> <i>Dark grey to black, moderately to poorly cemented, with coal fragments</i>	MC	Coaly									
1480			<u>MIXED SANDSTONES AND MUDSTONE</u> <i>Grey blocky well indurated rocks, representing cyclical deposition of gradist beds with thin coaly and carb. layers</i>	PC	(1-0) coal									
1500			<u>SILTSTONE</u> <i>Grey, pulverised</i>	c	Coal fragments									
				f										
					(1-0) coarse, hard									

DRILL HOLE : ..74-25...
SHEET No. : ..7 OF 10...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20 MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1500			<i>continued</i>											
			<u>SANDSTONE</u> Grey, porous soft		Carb.									
1520				PC										
			<u>SILTSTONE</u> Gray hard	WC										
1540				40										
			<u>FINE PEBBLE CONGLOMERATE</u> Grey, crumbly rock with pebbles smooth, rounded less than 1" across.	PC										
1560														
			<u>SILTSTONE</u> Grey to dark grey, carb.		Carb. thin ($\frac{3}{16}$ ") layers of coal									
1580				PC	Coarse									
			Grey											
				PC										
1600			<u>SANDSTONE</u> Grey											
			<u>SILTSTONE</u> Grey											
			<u>BRECCIA</u>	WC	Calc. flat angular pebbles									
			<u>SILTSTONE</u>	PC	Soft pliable									
1620			Grey											
			<u>SANDSTONE</u> Grey	PC	(10) clayey lmst									
			<u>CONGLOMERATE</u> Grey, small pebbles		Coarser downward									
			<u>MIXED DETRITAL, ROCKS</u>											
1640			Grey thinly bedded ranging from coarse sst to clst											
				PC										
1660														
					(0.5) Lmst									
					(1.3) Lmst, clayey									
1700				55										
					Coaly, resin beads									
1720				80°										

DRILL HOLE : 74 - 25
SHEET No. : 8 OF 10

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20 MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1720			<u>SILTSTONE</u> Greenish gray cemented															
1740					(0.3-1.0) interbeds of sst & clst; soft PC	WC												
1760																		
1780			<u>GRADED BEDS</u> Gray, cemented		f 60°, 30° to C.A.	MC												
1800			<u>SILTSTONE</u> Grey to dark gray, very variable		Carb. brittle	WC 60												
1820					Coaly	WC 55												
1840					Carb	UC												
1860			<u>SANDSTONE</u> Grey green		Shaly	WC												
1880			<u>SILTSTONE</u> Grey green		Sst interbeds pc	WC 65												
1900					coal-sheared Coaly to carb.	WC 75												
1920					Carb (1.0) coal	WC 60												
1940			<u>SHALE</u> Gray green blocky, massive very fissile		Cementing variable	WC 30												
					Carb.	WC 30 MC 75												

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE									
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80					
1940			<i>continued</i>		(0.1) sst. calc												
					60												
								(0.5) sst									
1960								(1.0) calc. sst									
								(0.4) calc. sst ; slicken sides									
								f 70° to C.A.									
1980																	
2000																	
2020								20°, calc. recemented fracture									
								20°, calc. recemented fracture									
2040																	
2060					(0.5) py.												
			END OF HOLE 2072 feet														
2080																	

DRILL HOLE : ...74-25...
SHEET No. : 10 OF 10...

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
1060			<i>continued</i>		Calc.															
1080					45-50															
1100																				
1120					45-50															
1140																				
1160																				
1180																				
1200																				
1220																				
1240																				
1260						(1-0) carb.														
1280																				

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280			<i>continued</i>											
1300														
1320														
1340			<u>MIXED COAL AND SLST</u> <i>Black, fissils, thinly banded inter-gradational</i>											
			<i>Very fine SST to SLST</i>											
1360			END OF HOLE AT 1355 feet											

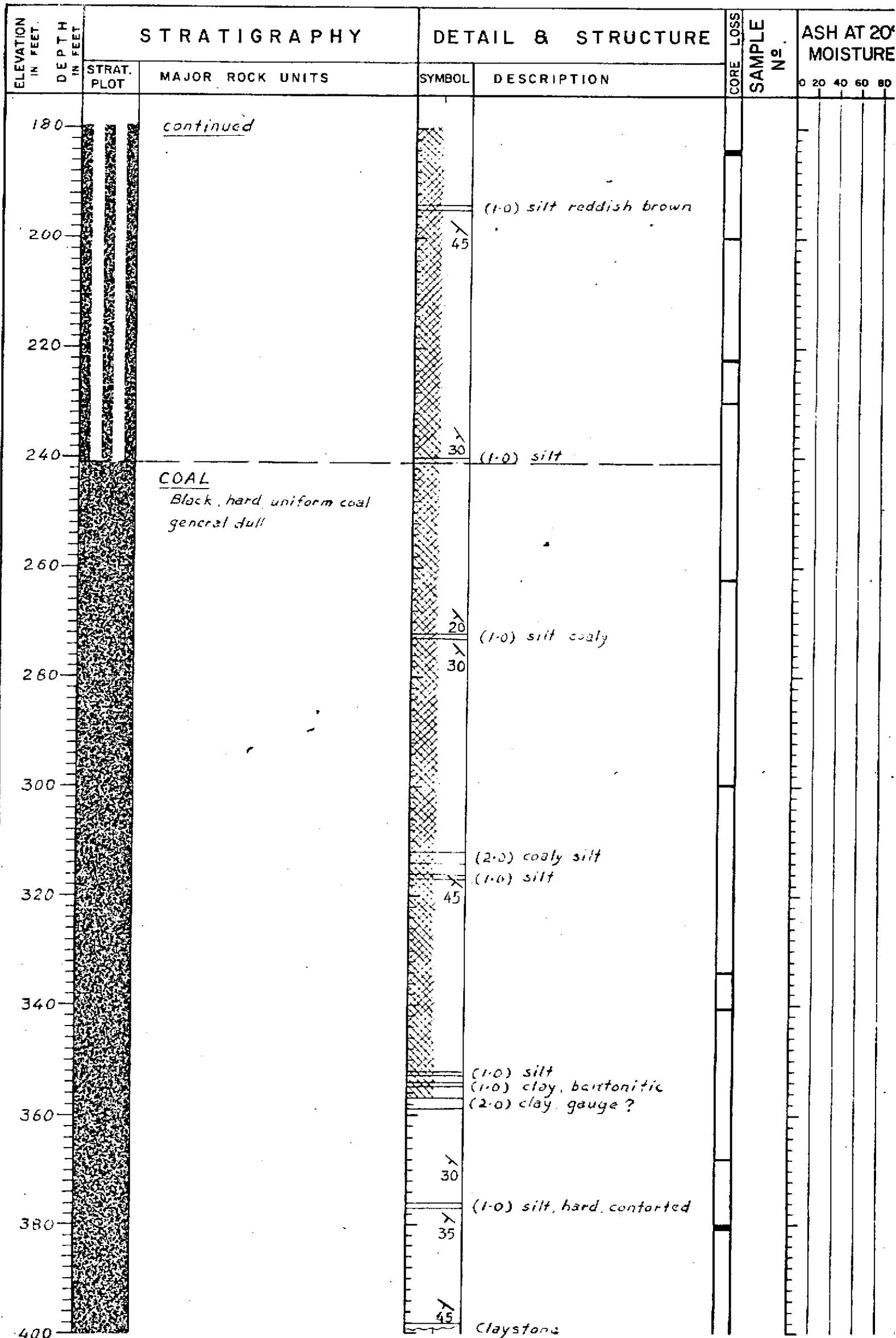
DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates	: 9180 N.	Length	: 1522'	Hole No.	: 74-26
	: 11,650 E.	Azimuth	: 090	Date	: JULY 1974
Reference Elev.	: 2878	Dip	: 55°	Logged by	: P. J. Street
Ground Elev.	: 2875	Core Size	: NQ	Sheet	: 1 of 8

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20 MOISTUR						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60			
0			Datum											
			<u>OVERBURDEN</u> <i>Mixed sand clay and boulders.</i>											
20			<i>Mixed sand silt and clay</i>											
40														
60			<u>COAL AND CLAYEY COAL</u> <i>App. 2/3 coal, dull, brittle with close desiccation cracks Up to 1ft. layers of clean coal App 1/3 shaly coal.</i>		(0.5) Shale									
80					(0.5) Shale									
100			<u>SILTSTONE</u> <i>Greenish grey, soft</i>											
120			<u>COAL AND CLAYEY COAL</u> <i>App. 2/3 coal, 1/3 clayey coal Bedding not seen.</i>											
140					UC									
160					45									
180														

DRAFT COPY

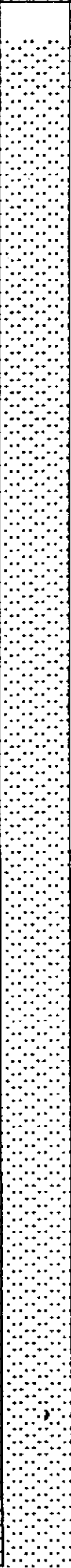


DRILL HOLE : 74-26 ✓
SHEET No. : 2 OF 8

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			<u>continued</u>		clst									
420				λ										
440				λ										
460			<u>COAL AND CLAYEY COAL</u> Mixed rubbly rocks.	λ										
480			coal	λ										
500			<u>COAL</u> Black, cohesive & uniform, clean	λ										
520				λ	(0.5) silt (0.3) silt									
540			<u>TUFF</u> Light grey, soft, with upto 10% rock fragments	λ										
560			<u>COAL</u> Black finely banded, cohesive with conchoidal fractures, lustrous	λ										
580				λ										
600				λ										
620				λ										

DRILL HOLE : ... 74-26 ...
SHEET No. : 3 OF 8

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			<i>continued</i>											
				35	variable 0°-45°									
640				UC	(2-0) gouge									
				UC	Gouge									
660				35										
				35										
680				35										
				50	Clear, blocky									
700				30										
				25										
720				45										
				35										
740			<u>SILTSTONE</u>		carb.									
			Light grey brown, uniform non-fossiliferous, soft. Bedding generally not detectable.											
760					(0.5) coal									
780					Mixed silt & calc. silt									
				35										
800					(0.5) pale brown silt									
820					Darker grey									
840														

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20' MOISTURE													
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80									
840			<i>continued</i>																		
860																					
880																					
900																					
920																					
940																					
960																					
980																					
1000																					
1020																					
1040																					
1060																					

DRILL HOLE : ...74-26...
 SHEET No. : ...5 OF 8...

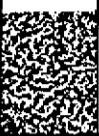
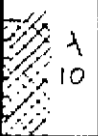


ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20° MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1060			<i>continued</i>															
1080																		
1100																		
1120																		
1140																		
1160																		
1180																		
1200																		
1220																		
1240																		
1260																		
1280																		

DRILL HOLE : ... 74-26 ...
 SHEET No. : . 6 OF 8

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1280			<i>continued</i>																
1300																			
1320																			
1340																			
1360																			
1380																			
1400																			
1420			<u>COAL</u> <i>Black massive hard brittle with conchoidal fractures, surfaces dull to moderately bright Finely banded Very clean</i>																
1440			<u>SILTSTONE</u> <i>Medium brown, carb.</i>																
1460																			
1480																			
1500																			

(1-2) gauge

0-30
30
10
0-30
25
20
0-45

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1500			<i>continued</i>											
1520			<u>SILTSTONE</u> <i>Medium brown, carb.</i>											
			END OF HOLE 1522 feet											
1540														

DRILL HOLE :74-26.....
SHEET No. : .8. OF 8.....

126

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 9020' N Length : 1501' Hole No. : 74-27
 : 12,425' E Azimuth : 090° Date : AUG. 1974
 Reference Elev. : 3052' Dip : 45° Logged by : P. J. Street
 Ground Elev. : 3050' Core Size : NQ Sheet : 1 of 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
0		Datum																	
			<u>OVERBURDEN</u> Sand with dispersed pebbles and boulders 390' - 420' lots of boulders																
20																			
40																			
60																			
80																			
100																			
120																			
140																			
160																			
180																			

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<i>continued</i>											
200														
220														
240														
260														
280														
300														
320														
340														
360														
380														
400														

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
400																		
420			<u>SILTSTONE</u>															
			Medium to light grey whendry darker grey when wet. Soft easily cut, unindurated; homogenous and massive, generally unbedded; fractures variable, may be flat, conchoidal or irregular, generally rubbly															
440					Finely brecciated													
					(1/4") arkosic sst													
460																		
					(0.5) muddy													
480					Finely brecciated													
					(0.5) muddy													
500																		
					(0.05) sst													
520																		
					(0.1) arkosic sst													
560																		
					shale, pale buff													
580																		
					(0.5) muddy													
					(0.5) muddy													
600																		
					(1.0) sedimentary brecciate cemented with calcite													
					(1/4") fine sst													
					(0.05) argillaceous sst													
620					(0.5) carb. fossil seed pod													

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
620			<i>continued</i>															
640					(1.0) soft													
				25	(0.1) pale buff grey													
				30	(1/4") pale buff argillaceous													
660				25	(0.3)													
680																		
				25	Fine interbeds (0.01-0.02) of sst.													
700																		
					(1/8") black carb.													
720																		
				30	'Rugose' structure													
				30	Very pale grey-buff (0.3)													
760																		
780																		
				25	Fine dark grey laminae Brecciated													
				25	Thin sandy interbeds (0.2)													
				25														
820																		
840																		

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840			<i>Continued</i>											
860														
880				30	(0.3) pale buff grey argillaceous									
900														
920														
940				25	(0.2) fine sandy and argillaceous laminae									
940					(0.2) pale grey									
940				30	(0.2) pale grey									
960														
980														
1000				30	Thin carb. laminae									
1000				25	Coarse silt or fine sand lam. about 40 to one inch.									
1020														
1040														
1060														

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1060			<i>continued</i>															
					Argillaceous laminae													
1080					(0.6) light brown fine sst 'rugose'													
1200					(0.05) fine sst													
1120					(0.4) light grey sandy													
1140					Very soft white to pale grey, buff grey or greenish grey sst? with upto 1% hornblende? One 20° fracture has slickensides at 70° to C.A.													
1160																		
1180																		
1200																		
1220																		
1240					Laminae													
1260																		
1280					(0.2) light brown soft sst													

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280			<i>continued</i>		(0.5) buff argillaceous with 'rugose' surface									
1300				25	(1.0) sedimentary breccia with calc. sandy matrix.									
1320														
1340				30	Occasionally fracture surface 'cemented' by thin layers of dark grey or black shale.									
1360														
1380				25 30 35	(0.5) Sandy with 'rugosa' surface Slickensides on parting surfaces.									
1400				45	(0.3) soft sandy with 'rugosa' surface Very shatted - slickensides - shear? argillaceous?									
1420				40	Pale buff, dark grey laminated slst and clay									
1440				40	(0.03) sandy									
1460														
1480														
1500					Pale buff to white slst laminae very contorted.									

DRAFT COPY

END OF HOLE
AT 1501 feet

DRILL HOLE : ...74.-27....
SHEET No. : ...7 OF 7....

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

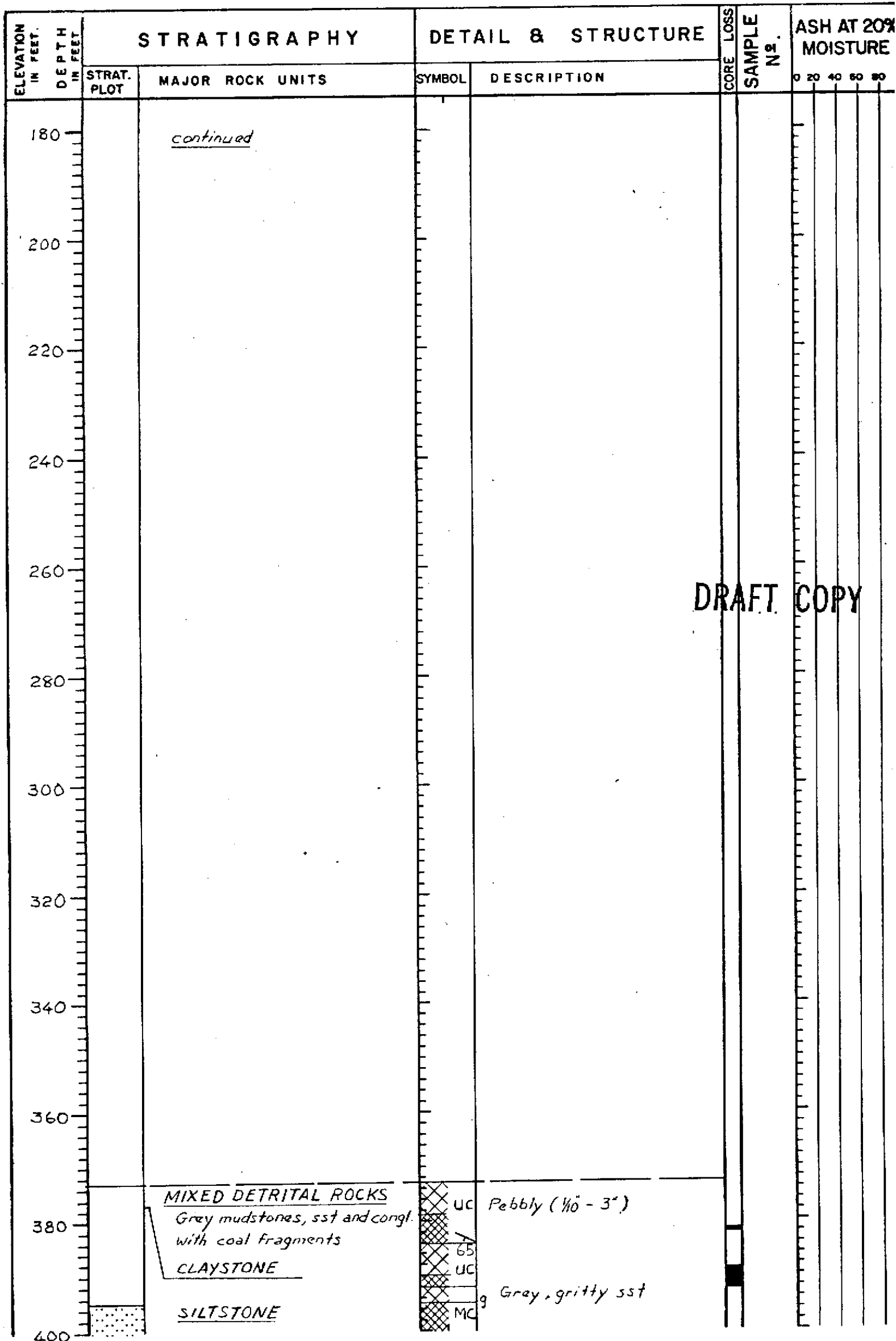
HAT CREEK PROJECT — DRILL RECORD

DRAFT COPY

Coordinates : 9020' N Length : 1469' Hole No. : 74-28
 : 13,930' E Azimuth : 090° Date : SEPT. 1974
 Reference Elev. : 3177' Dip : 70° Logged by : Mel de Quadros
 Ground Elev. : 3175' Core Size : NQ Sheet : 1 of 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
0			Datum																
			<u>OVERBURDEN</u> <i>Thick succession of mixed sand clay and unsorted boulders with minor river laid gravels.</i>																
20																			
40																			
60																			
80																			
100																			
120																			
140																			
160																			
180																			

DRAFT COPY



DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400			<i>Light grey, soft homogenous</i>																
420				60															
440				60															
460				60															
480				60															
500				60															
520				60															
540				60															
560				60															
580				60															
600				60															
620				60															

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			<i>continued</i>											
640				60 WC	(0.5) white clst									
660														
680				WC										
700														
720														
740			<i>carb. nodules also some chert in zone</i>	60	(1.5) white clst									
760				WC	White sst with fine carb. layers									
780					(0.5) white sandy									
800					(0.8) white sandy									
820					(0.5) white sandy									
840				65										

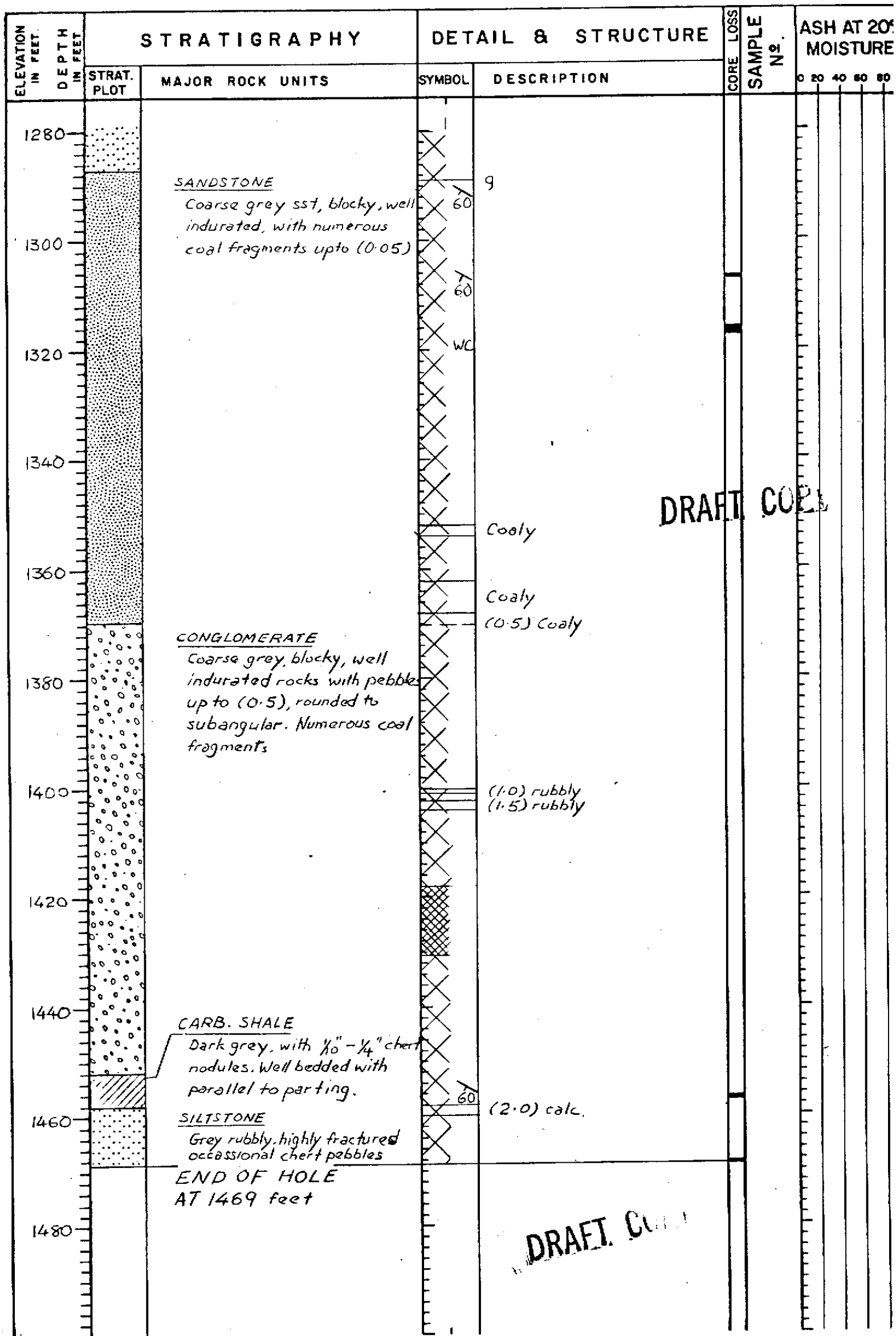
DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840				MC										
860			<u>SILTSTONE WITH SST</u> Blocky well banded slst with up to (0.2'-0.4') sst	60 MC 70										
880				65										
900			<u>SILTSTONE</u> Grey, blocky and massive hard competent	60 MC	(1.0) rubbly									
920				60	(2.0) rubbly									
940				60	(0.2) sst with (0.05) carb sst									
960				WC										
980					(1.0) congl. sst									
1000				MC										
1020														
1040														
1060				MC										

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1060																			
			<u>MIXED SST, SLST & CONGL</u> Grey hard well indurated rocks																
1080			<u>CONGLOMERATIC SANDSTONE</u> Grey, coarse	45															
			<u>SANDSTONE</u> Grey blocky, unhomogenous	WC															
1100																			
1120																			
			<u>SILTY SANDSTONE</u> Grey fine silty rock, with (0.2-0.3) layers	60	(0.2) coarse layers g (2.0) grey coarse sst														
1140			<u>CONGLOMERATE</u> Grey compact blocky with some congl. sst; Pebbles 1/10" - 4" subrounded to subangular in a sandy matrix. With coal fragments and rare carb. layers.	60	Very coarse														
1160				60	Very coarse														
1180			<i>solid down to 1180'</i>	57	(0.1) black lustrous coal														
				60	Very coarse														
1200				g															
1220			<u>SILTSTONE</u> Dark grey blocky, with thin sandy layers. Well bedded, good fracture parallel to bedding.	60															
				59															
1240				63															
				60															
1260				62															
1280																			

DRAFT COPY



DRAFT CORE

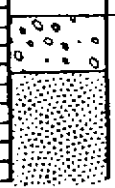
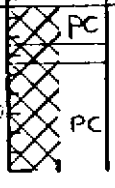
DRAFT CORE

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 13,450' N Length : 1359' Hole No. : 74-29
 : 10,600' E Azimuth : 090° Date : SEPT. 1974
 Reference Elev. : 2972' Dip : 70° Logged by : Mel de Quadros
 Ground Elev. : 2970' Core Size : NQ Sheet : 1 of 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u> <i>Mixed boulders, gravel, sand and clay.</i>											
20														
40														
60														
80														
100														
120														
140														
160														
180														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
180																				
200																				
220																				
240																				
260																				
280																				
300																				
320																				
340																				
360																				
380																				
400			<u>MIXED CYCLIC DETRITAL ROCKS.</u> <i>Gray, greyish white and greyish green clst, slst, sst and congl.</i>		PC Congl. PC															

DRILL HOLE : 74-29
SHEET N^o. : .. 2 OF ... 7 ...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400			Often graded with gradational boundaries.																
			<u>SANDSTONE</u> Light grayish green; fractures 75° to 90° to C.A. partings 40° to 50° to C.A. (= bedding?)	PC	Silty														
420				?	(15) congl.														
				50															
440				PC															
			<u>PEBBLE CONGLOMERATE</u> Greenish grey, calc., friable pebbles 0.01 to 0.05	g															
460				PC	Sst. greenish grey														
					Sst														
480				PC															
			<u>SANDSTONE</u> Light green, gradational. Rough fractures 90° to C.A. good partings (= bedding?) 45°-50° to C.A.	?															
500				45															
				PC															
					Brown														
520					Brown														
				PC															
540			<u>PEBBLE CONGLOMERATE</u> Grayish white calc. pebbles (0.01 - 0.05)	g															
				PC	Greenish grey														
			<u>SANDSTONE</u> Grey, poorly indurated, grading to a congl.		White, calc. content variable														
560																			
			<u>SILTSTONE</u> Gray, ranging from clst to sst at base	g	Congl														
580																			
			<u>COALY CLAYSTONE</u> Black to dark grey, with coal layers	UC															
			<u>SILTY CLAYSTONE</u> Grayish white, very soft, unconsolidated	UC	(1-7) sst														
600				UC															
620				UC															

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE								
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80				
620																
			<u>COALY CLAYSTONE</u> <i>Black, with thin beds of coal</i>		9											
			<u>MIXED DETRITAL ROCKS</u> <i>Grey soft, unindurated</i>		9											
640			<u>PEBBLE CONGLOMERATE</u> <i>Greyish white</i>		(10) sst											
				MC												
660			<u>SILTSTONE</u> <i>Grey homogenous, moderately indurated with thin carb. streaks</i>		7											
				45		Very calc.										
680				MC												
					45		Carb.									
					9		(10) sst									
					9		(0.5) Congl.									
700			<u>MIXED COAL AND COALY CLAYSTONE</u> <i>Dark grey to black, thinly bedded sequence. Coal when clean hard and blocky but overall dull and rubbly to pulverised</i>		9		silty									
					40		(1.0) coal, clean, lustrous									
720																
					45											
				MC												
740																
				PC												
760			<u>MIXED DETRITAL ROCKS</u> <i>Grey, unindurated to moderately indurated, blocky to rubbly Uneven fractures 90° to C. A. and good parting (= bedding?) 45°. Cyclic graded beds.</i>		9		silt									
					45		White calc. congl.									
							Grey slst									
							Congl. sst									
780				MC			Grey slst									
					9		(1.0) sst									
							Carb slst									
							(1.6) slst grey									
					9		Grey sst									
							Calc. congl. white									
800																
				MC			Sandy									
820							Gritty, grey									
			<u>MIXED MUDSTONES AND COAL</u> <i>Grey to black, thinly bedded, rubbly</i>		9		Coaly clst									
				PC			Silty, rubbly									
840																
							Coaly clst, rubbly									

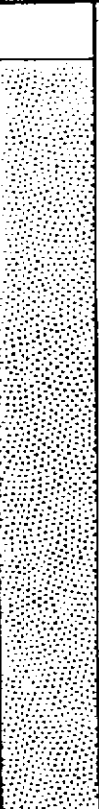

DRILL HOLE : ...74.-29....
SHEET N^o. : ..4. OF .7....

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840			<u>COAL</u>	40 UC	Clean lustrous Silty Clean									
860			<u>SILTY SANDSTONE</u> Gray to black, unindurated	30 UC	(1.5) congl.									
880			<u>CLAYSTONE</u> Carb. black, soft	30 UC										
900														
920			<u>MIXED DETRITAL ROCKS</u> Grayish white and grey well indurated and blocky (except congl.) representing several cycles of graded deposition. Coarser units, often calc. Rough fractures 90° to C.A. Poorly bedded.		Grey green sandy Cfst. rubble Fine sst									
940					Soft									
960					Calc.									
980					Calc.									
1000			<u>SILTSTONE TO CONGLOMERATE</u> Graded											
1020														
1040					Calc.									
1060			<u>CALC. SANDSTONE</u> Grey, blocky											

DRILL HOLE: ...74-29...
SHEET No.: .5 OF .7...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1060					(1.5) brownish silty									
			<u>CONGLOMERATE</u> White calc.											
			<u>SANDSTONE</u> Grey, variable, calc. in coarser layers											
1080														
					Slst									
1100					Congl.									
1120														
1140					(0.5) congl. calc. (0.5) congl. calc.									
1160														
1180														
			<u>PEBBLE CONGLOMERATE</u> Well indurated, blocky calc.											
1200														
					45									
			<u>SILTSTONE</u> Grey, blocky well indurated		Very calc.									
1220														
1240			<u>GRITTY SANDSTONE</u>											
					45									
1260			<u>SANDSTONE CALC.</u>		9 Calc. congl.									
1280			<u>CALC. CONGLOMERATE</u>		(0.1) slst									
					40									

DRAFT COPY

ELEVATION IN FEET. DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE				
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80
1280		<i>SANDSTONE</i> <i>Variable</i>		<i>Fine</i>							
1300				<i>Coarse Inst streaks</i>							
				<i>Coarse</i>							
1320				<i>Fine to medium</i>							
1340				<i>9 Congl.</i> <i>Medium to coarse</i>							
1360		<i>END OF HOLE AT 1359 feet</i>									

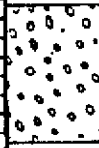


DRILL HOLE : ... 74-29 ...
SHEET No. : .. 7 OF 7 ..

126

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

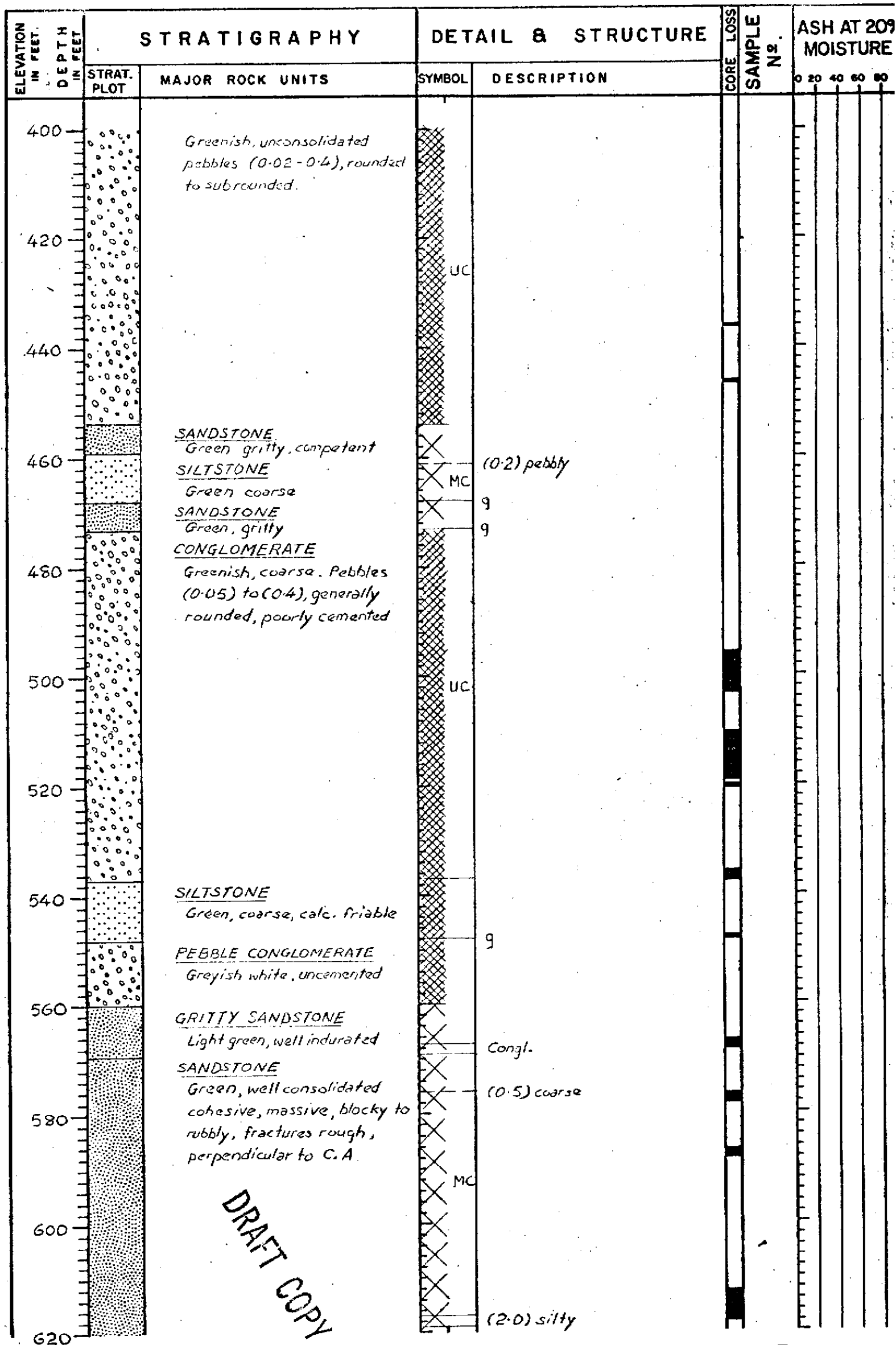
Coordinates : 13,415' N Length : 1099' Hole No. : 74-30
 : 9135' E Azimuth : 090° Date : SEPT. 1974
 Reference Elev. : 2801.5' Dip : 55° Logged by : Mel de Quadros
 Ground Elev. : 2800' Core Size : NQ Sheet : 1 of 6

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
0-150			<u>OVERBURDEN</u> <i>Mixed boulders and gravel</i>											
150-165			<u>INTERBEDDED DETRITAL ROCKS</u> <i>Generally, grayish green, poorly consolidated, cyclic with gradation at boundaries. Poorly bedded.</i>		Congl. calc.									
165-180			<u>MUDSTONE</u> <i>Grayish green, slightly sandy. Partings 65° to C.A. calc.</i>		(0.1) calc.									

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180			<u>SILTSTONE</u> Greyish green																
			<u>SANDSTONE</u> Greyish white, unbedded, calc Fractures perpendicular to C.A.		g (0.1) pebbly														
200			<u>SILTSTONE</u>		(0.1) gritty														
			<u>SANDSTONE</u> Greyish white																
220			<u>CONGLOMERATE</u> Coarse friable, pebbles up to (0.1) calc. coal fragments	PC															
			<u>SANDSTONE</u>																
240			<u>CALC. CONGLOMERATE</u> Greyish white	45	g (1.0) gritty														
			<u>SANDSTONE</u> Greenish, gritty, partings 45° to C.A.		(0.6) slst														
260																			
280			<u>SILTY LIMESTONE</u> <u>CONGLOMERATE</u> Greenish, coarse poorly cemented. Pebbles (0.05) to (0.2)																
300				PC															
320			<u>GRITTY SANDSTONE</u> Greenish grey to greenish white. Unsorted, minor calcite																
340																			
360			<u>CONGLOMERATE</u> Greyish white, rubbly. Pebbles rounded to subrounded calc.		g (1.4) coarse														
380			<u>SANDSTONE</u> Green, gritty unbedded, pebbly.																
400			<u>CONGLOMERATE</u>		g														

DRAFT COPY



DRAFT COPY

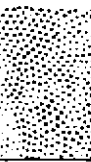

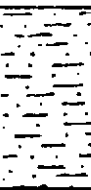
ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620																			
640																			
660				MC	Porous, gritty														
680					Pebbly														
700					Pebbly (1-2)														
720																			
740					<u>FINE CONGLOMERATE</u> Greenish, cohesive well cemented. Variable, pebbles less than (0.05) Fractures 90° to C.A.	9	Coarse												
760					<u>COARSE SANDSTONE</u> Green, massive, cohesive. Fractures clean 90° to C.A. and also 45° to C.A.	MC													
780																			
800																			
820					<u>COARSE CONGLOMERATE</u> Greenish, massive, cohesive. Pebbles basaltic, rounded	9													
					<u>COARSE SANDSTONE</u> Green, pebbly	9													
					<u>COARSE CONGLOMERATE</u> Poorly indurated. Pebbles (0.1) to (0.05), subrounded.	9													
840						LC													

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840			<u>SANDSTONE</u> Green, massive, cohesive well cemented. Generally blocky. Medium to coarse grained	PC														
860																		
880																		
900			<u>CONGLOMERATE</u> Pebbly, rubbly		Green slit													
920			<u>GRITTY SANDSTONE</u> Green, medium, soft. Rough fracture 45° to C.A.	g														
			<u>PEBBLE CONGLOMERATE</u> Medium grained. Pebbles small, rounded.		Silty													
940			<u>SANDSTONE</u> Dark green, generally rubbly, variable		Coarse													
960				PC														
980																		
1000			<u>MUDSTONE</u> Green, pulverised, soft	UC														
1020			<u>SANDSTONE</u> Greyish green, incompetent uncemented, pulverised. Fractures 90° and 45° to C.A.	g														
					Pebbly													
1040			<u>MUDSTONE</u> Green, pulverised, soft	UC														
1060			<u>SANDSTONE</u> Greyish green, slighty, pebbly in parts, pulverised.															

DRAFT COPY

DRILL HOLE : ... 74 - 30 ...
SHEET No. : ... 5 OF 6 ...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1060			<u>MUDSTONE</u> <i>Green, incompetent</i> <u>MIXED SANDSTONE & CONGL.</u> <i>Greenish, very incompetent</i>		UC									
1080														
1100			END OF HOLE AT 1099 feet											

DRAFT COPY

126

OK

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

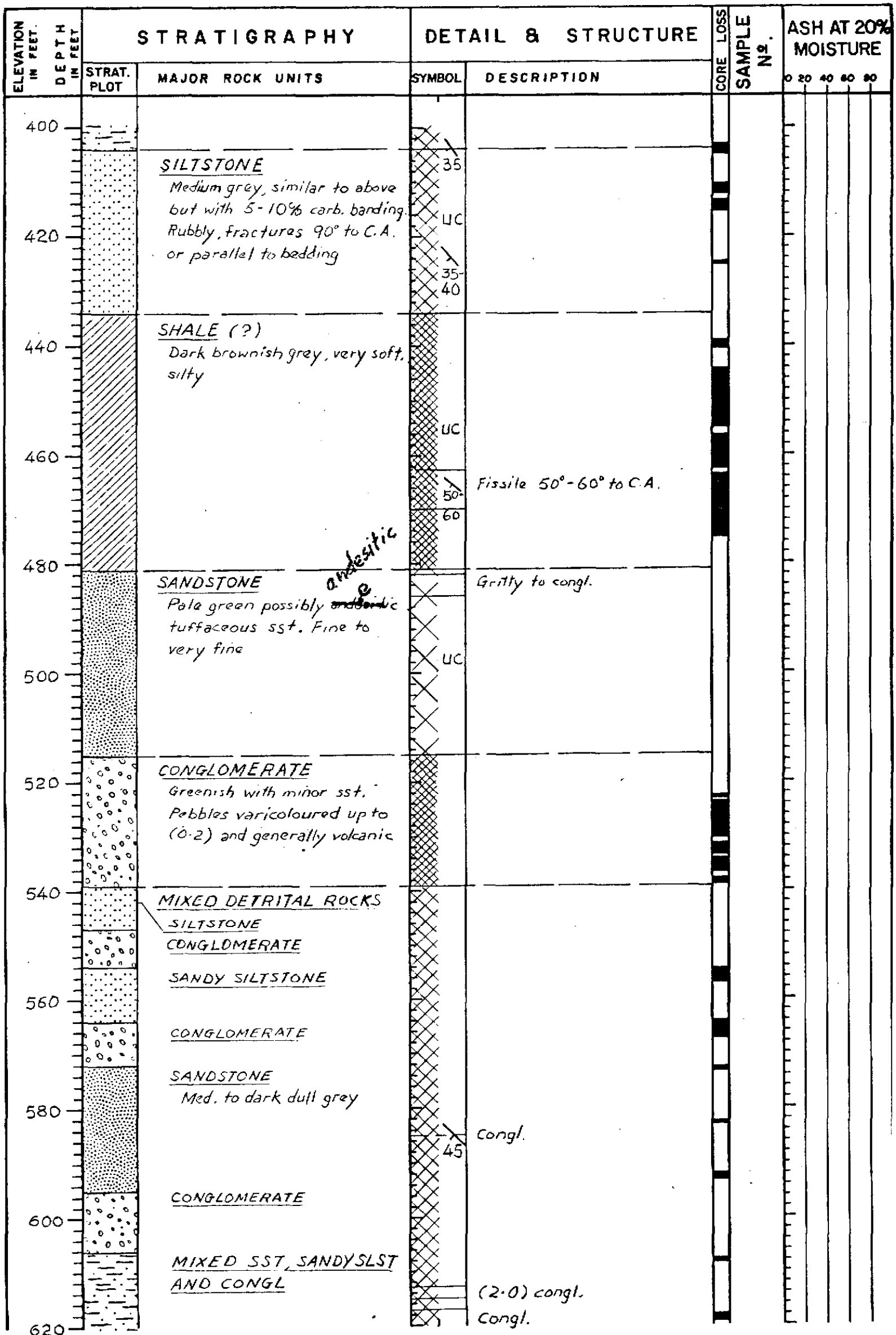
Coordinates : 13,685' N Length : 664' Hole No. : 74-31
 : 7900' E Azimuth : 090° Date : AUG. 1974
 Reference Elev. : 2792' Dip : 55° Logged by : P. J. Street
 Ground Elev. : 2790' Core Size : NQ Sheet : 1 of 4

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u> <i>Mixed boulders, gravel and sand with some clay</i>											
20														
40														
60														
80														
100														
120														
140														
160														
180														

DRILL HOLE : ... 74-31 ...
 SHEET No. : 1 OF 4 ...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
200																			
220																			
240			<u>MIXED SANDSTONE AND SILTSTONE</u> <i>Medium grey to faintly greenish, thinly interbedded and intergradational. Interbeds (0.1) to 3' thick. Generally rubbly to pulverised, possibly of volcanic provenance. (?) Fractures in poorly bedded rock 45° or 90° but in bedded slst parallel to bedding. Occasionally carb. Uncemented</i>		<i>Slightly conglomeratic</i>														
260				UC															
280					<i>Muddy gouge</i>														
300					<i>Muddy gouge</i>														
320					<i>Muddy gouge</i>														
340				UC															
360					<i>Congl.</i>														
380				45															
				30															
				40															
				35															
				UC															
				35															
				UC															
400					<i>Carb.</i>														

DRILL HOLE : ... 74 - 31 ...
SHEET No. : ... 2 OF 4 ...



DRILL HOLE : ... 74-31 ...
SHEET No. : . 3 . OF . 4 .

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620				UC	Arkasic grit Congl.														
640					Congl.														
660			<u>CONGLOMERATE</u> END OF HOLE AT 664 feet																
680																			

DRILL HOLE : ...74-31.....
SHEET N^o. : .4. OF 4....

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 11,200' N Length : 1750' Hole No. : 74-32
 : 6400 E Azimuth : 090° Date : JULY 1974
 Reference Elev. : 3212' Dip : -60° Logged by : P.J. Street
 Ground Elev. : 3210' Core Size : NQ Sheet : 1 of 9

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u>											
			<i>Clay and boulders</i>											
20														
			<i>Clay</i>											
40														
60														
80														
			<i>Clay and boulders (slow penetration)</i>											
100														
120														
140														
160														
180														

DRAFT COPY

DRILL HOLE : ...74-32...
 SHEET No : 1 OF 9...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180			Clay																
200			Clay with occasional boulders																
220																			
240																			
260																			
280																			
300			Clay and boulders																
320			<u>SILTSTONE</u> Pale grey-buff, silty to sandy, rubbly		Traces of coal														
340			<u>MIXED COAL AND SHALE</u> Black shaly coal and coaly to carb. shale, fissile, rubbly.	45															
360																			
380			<u>MIXED DETRITAL ROCKS</u> Pale grey buff, cyclic, graded. Trace of calc. cement occasional.		Leaf impressions														
400				50	(0.05) calc. grit														

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400																			
			<u>COALY TO CARB. SHALE</u> <i>Black interbedded with coal. Fissile, rubbly</i>																
420			<u>MIXED DETRITAL ROCKS</u> <i>Pale grey buff, thinly interbedded and graded rocks. Rubbly to blocky, fractures 45°-90° to C.A.</i>																
440																			
460																			
480																			
500			<u>CONGLOMERATE</u> <i>Pebbles up to 4", 30% are 1"-2", most smaller; all volcanic, from altered diorite basalt to rhyolite. Matrix slst to grit calc., unbedded. Rubbly. Minor sst.</i>																
520																			
540																			
560			<u>MIXED SST AND SLST</u> <i>Interbedded and inter- gradational, pale grey buff.</i>																
580			<u>CONGLOMERATE</u> <i>Pebble up to 4", generally less than 2" volcanic from basalt to rhyolite. Occasional boulder up to 9". Unbedded. Calc.</i>																
600																			
620																			

DRAFT COPY

DRILL HOLE : ...74.-32...
SHEET No. : .3. OF .9....



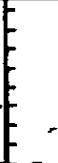


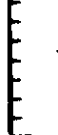
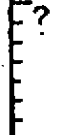


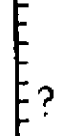
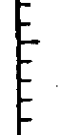

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE															
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80											
620																							
640																							
660																							
680																							
700																							
720																							
740																							
760			SANDSTONE <i>Interbedded greenish grey coarse and fine sst with minor calc. congl. Material an altered andestic tuffaceous sst? Poorly bedded, blocky to rubble. Fractures up to 2" apart 45°-80° to C.A.</i>																				
780																							
800																							
820																							
840																							

DRAFT COPY

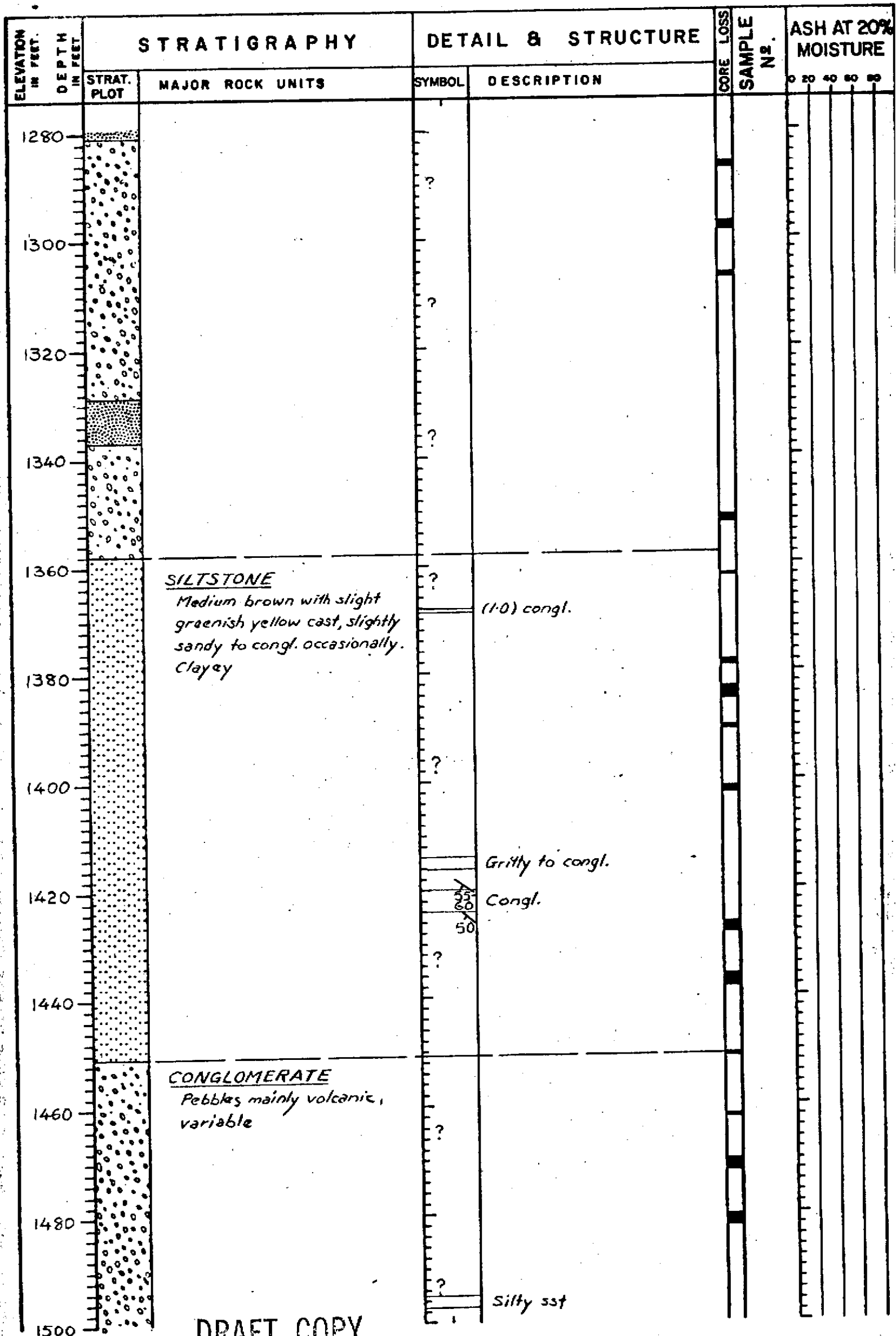
ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840																			
860																			
880			<u>CONGLOMERATE</u> Coarse calc.																
			<u>SILTSTONE</u> Tuffaceous andesitic; medium greenish grey with fine sst																
900																			
			<u>CONGLOMERATE</u> Pebbles volcanic, matrix gritty. Calc., unbedded																
920																			
940																			
960																			
980			<u>MIXED DETRITAL ROCKS</u> Unbedded grey green interbedded with minor congl. zones. Unbedded, graded.																
1000																			
1020																			
1040																			
			<u>CONGLOMERATE</u> Grey green, pebbles volcanic,																
1060																			

DRAFT COPY

DRILL HOLE : ... 74 - 32 ...
SHEET No. : 5. OF 9.

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1060			matrix gritty. Unbedded calc.		Sst gritty														
1080			<u>SANDSTONE</u> Tuffaceous fine to coarse well indurated																
1100			<u>INTERBEDDED DETRITAL ROCKS</u> Predominantly sst and congl. with minor slst. Grey green, calc. gradational? and cyclic, unbedded Materials predominantly volcanic, multicoloured (andesitic?)																
1120						<u>NOTE</u> Fracturing for rest of core not observed due to disintegration of core by sudden down pour of rain													
1140																			
1160																			
1180																			
1200																			
1220																			
1240																			
1260																			
1280																			

DRAFT COPY



DRAFT COPY

DRILL HOLE : ...74..32.....
SHEET N^o. : ..7 OF ..9....

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE №	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1500																			
				? 55	Congl. sst														
1520			<u>MIXED DETRITAL ROCKS</u> <i>Intergradational thinly bedded cyclic rocks</i>																
			<u>CONGLOMERATE</u>																
1540				?															
			<u>SILTSTONE</u> <i>Slightly argillaceous and sandy</i>																
1560																			
			<u>CONGLOMERATE</u> <i>Varied pebbles including sst and slst</i>																
1580				? 45 50	(0.9) sandy sst														
			<u>SILTSTONE</u> <i>Medium brown</i>																
1600																			
			<u>CONGLOMERATE</u>																
1620			<u>SILTSTONE</u> <i>Fissile, variable in colour and texture</i>																
1640				?															
1660				?															
1680																			
1700																			
1720				f?	Drill crew says "fault zone"														

DRAFT COPY

DRILL HOLE : ...74.-32...
SHEET № : ...8 OF 9...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE NO.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1720		[Dotted pattern]		f?	Bedding high angle 65° - 90° ?														
1740																			
			END OF HOLE AT 1750 feet																
1760																			

DRAFT COPY

DRILL HOLE : ...74-32.....
SHEET NO. : ..9 OF ..9...

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 4350' N Length : 1386' Hole No. : 74-33
 : 10,870' E Azimuth : 090° Date : JULY 1974
 Reference Elev. : 3200' Dip : 55° Logged by : P.J. Street
 Ground Elev. : 3200' Core Size : NQ Sheet : 1 of 7













ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0		Datum												
			<u>OVERBURDEN</u> <i>Mixed gravl, boulders and sand</i>											
20														
40														
60														
80														
100														
120														
140														
160														
180														

DRAFT COPY

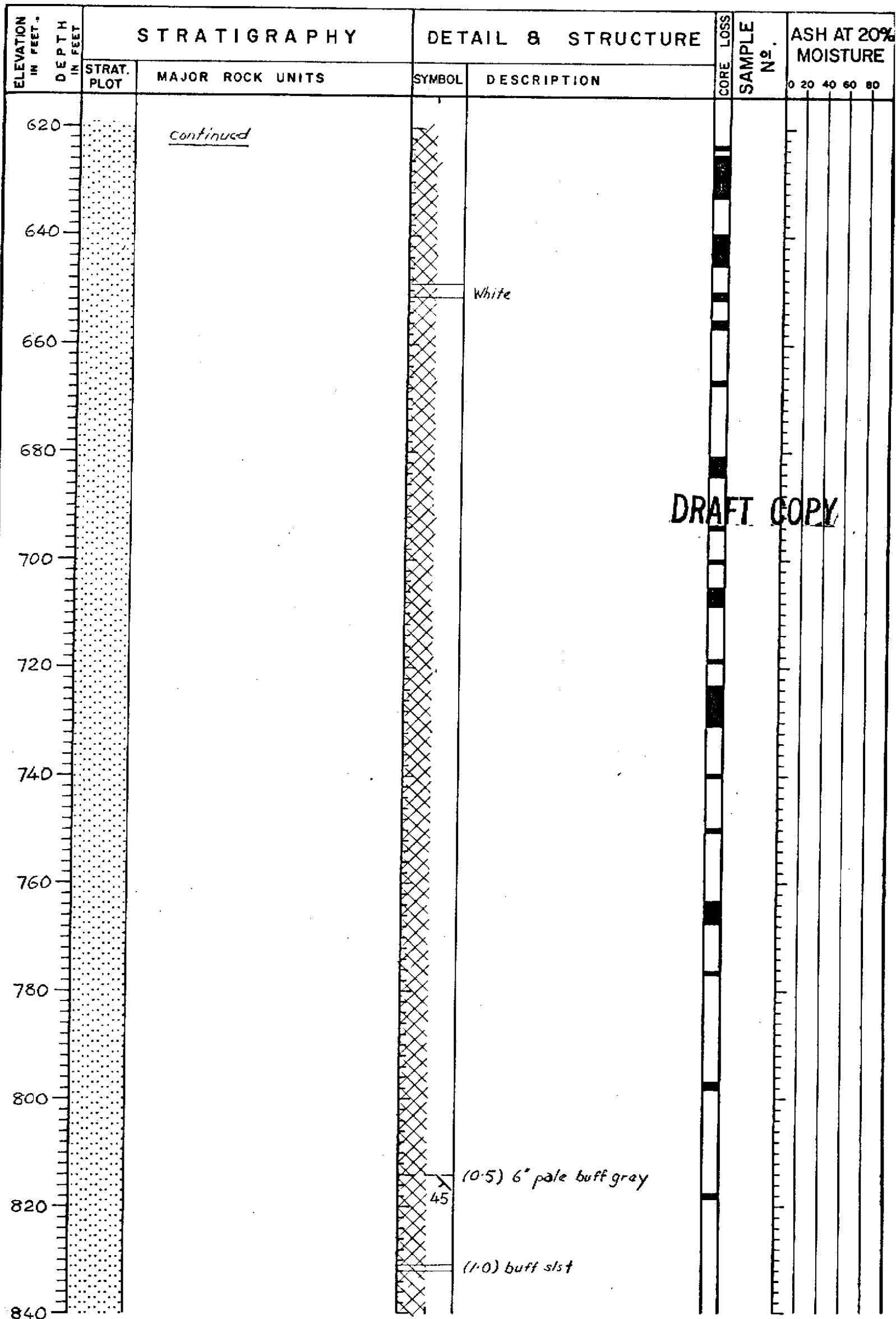
DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
180																		
200																		
220			<u>SILTSTONE</u> Medium to light grey, ultra-fine grained though occasionally granular. Massive, poorly bedded. Wet core blocky but dry core rubble to pulverised. Unindurated. Fractures 40°-50° to C.A., parallel to bedding, and also random, ranging from parallel to perpendicular to C. A.															
240																		
260			Note: Core from 440'-1386' soaked by a rain storm and almost totally disintegrated															
280																		
300																		
320																		
340																		
360																		
380																		
400																		

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			<i>continued</i>		(1-0) soft muddy									
420														
440														
460														
480														
500														
520														
540														
560														
580														
600														
620														

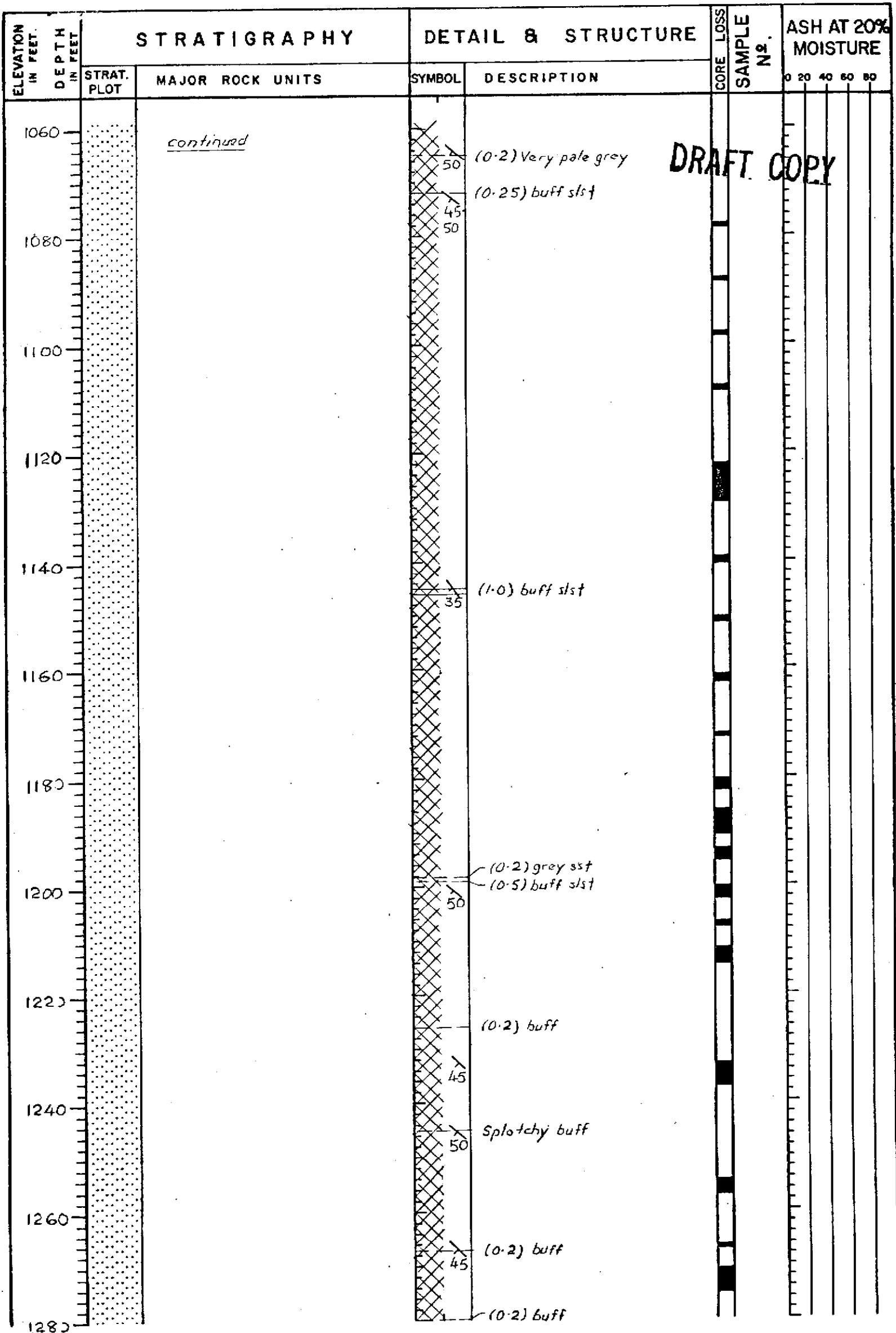
DRAFT COPY



DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840			<i>continued</i>															
860																		
880																		
900																		
920																		
940																		
960																		
980																		
1000																		
1020																		
1040																		
1060																		

DRAFT COPY



DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280			<i>continued</i>											
					(0.2) buff									
1300					(0.2) light grey, with dark grey flecks (unidentified)									
				45	2 (0.2) buff									
					(0.2) buff									
1320														
				45	(0.2) very pale grey									
1340														
					(0.5) pale grey									
1360														
1380														
			END OF HOLE AT 1386 feet											
1400														

DRAFT COPY

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates : 6425' N Length : 998' Hole No. : 74-34
12,250' E Azimuth : 070° Date : SEPT. 1974
 Reference Elev. : 2942' Dip : 55° Logged by : M. de Quadros
 Ground Elev. : 2940' Core Size : N.Q. Sheet : 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			<u>Datum</u>											
0			<u>OVERBURDEN</u> <i>Gravel with boulders</i>											
120			<u>SILTSTONE AND CLAYSTONE</u> <i>Grey, well indurated slst with minor coal fragments grading into fine soft unindurated & clst. Boundaries gradational.</i>											
160														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
180			<i>Continued</i>																	
200																				
220																				
240																				
260																				
280																				
300																				
320																				
340																				
360																				
380																				
400																				

DRILL HOLE : 74-34
 SHEET No. : 2 OF 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
400			<i>continued</i>															
420																		
440			<u>CLAYSTONE</u> <i>Soft, unconsolidated dark grey clst with partings at 60° to CA.</i>	60	<i>(0-1) white gritty sst</i>													
460				60														
480																		
500			<u>SILTSTONE</u> <i>Fine light grey slst occasionally grading into clst</i>	50	<i>Very soft porous grey clst</i>													
520																		
540																		
560																		
580																		
600																		
620																		

DRILL HOLE : ...74-34...
 SHEET No. : ..3 OF 5...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
620			<i>continued</i>															
640																		
660			<u>CLAYSTONE</u> Soft unconsolidated, dark grey, with minor layers of slightly more competent	30	white sandy													
680			<u>SILTSTONE</u> Dark grey to light grey, fine, with layers of soft incompetent.	65	Clst (0.5) } Whitish (0.3) } Clst													
700				80	Clst Clst Clst													
720																		
740			<u>CLAYSTONE</u> Dark grey, friable and unindurated.															
760					(0.5) soft (0.5) soft Soft													
780				90	} Coarse, whitish grey sst													
800					soft													
820			<u>SILTSTONE</u> Fine grey relatively competent, fairly homogenous	80 70	(0.03) sandy Fracture													
840			<u>CLAYSTONE</u> Grayish white, soft		White, with shiny, streaky partings 80° to C.A. Greenish black with good 60° fract.													
			<u>SILTSTONE</u>															

DRILL HOLE : ...74-34...
SHEET No. : .4 OF 5.

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840			Gray, well indurated partings 50° - 60° conchoidal fracture	X														
860			<u>CLAYSTONE</u> Gray, soft, homogenous, incompetent, very friable	X	(0.5) whitish gray slst													
880			<u>SILTSTONE</u> Gray, soft, homogenous, unindurated with conchoidal fract. & good parting 60°	X														
900			<u>CLAYSTONE</u> Gray very soft, pliable	X														
920			<u>SILTSTONE</u> Gray, relatively incompetent with blocky fracture, often grading into minor clst lenses	X														
940			<u>CLAYSTONE</u> Gray, soft unindurated	X	(0.4) competent slst incompetent gray													
960				X	60 } Gray, well indurated, gritty with angular fragments													
980			<u>INTERBEDDED SILTSTONE AND CLAYSTONE</u> Gray, alternating graded bands of gray slst, clst incompetent & soft	X	Competent													
1000			END OF HOLE 998 feet															

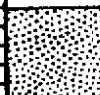

DRAFT COPY

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates :	<u>13,450' N</u>	Length :	<u>932'</u>	Hole No. :	<u>74-35</u>
	<u>11,800' E</u>	Azimuth :	<u>90° 090°</u>	Date :	<u>SEPT. 1975</u>
Reference Elev. :	<u>3126'</u>	Dip :	<u>70°</u>	Logged by :	<u>Mal de Quadros</u>
Ground Elev. :	<u>3125'</u>	Core Size :	<u>N : 0'-566'</u>	Sheet :	<u>1 of 5</u>
			<u>B : 566'-932'</u>		

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE							
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80			
0			<u>Datum</u>												
			<u>OVERBURDEN</u> <i>Mixed boulders, gravels, sand and clay</i>												
20															
40															
60															
80															
100															
120															
140															
160															
180															

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE №.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<i>continued</i>											
200														
220														
240														
260														
280														
300														
320														
340														
360														
380														
400			<u>COARSE CALCAREOUS SANDSTONE</u>											

DRILL HOLE : ... 74-35 ...
SHEET №. : . 2 OF 5 .

ELEVATION IN FEET. DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE			
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60
400 420 440 460		Dark grey peppery, soft, totally unindurated, crumbly sand, grades into slst. numerous coal fragments up to 0.2 across but generally much less than 0.1								
480 500 520		<u>SOFT, GREY CLAY</u> Grey to grey brown, totally unindurated, very pliable when wet, very calc.								
540 560		<u>COARSE SAND</u> Dark grey, soft similar 394-479 but grades into congl. soft unconsolidated, crumbly calc.								
560 580 600		<u>CONGLOMERATE</u> Brownish gray <u>MIXED MUDSTONES, SST AND CONGL.</u> Green, rather variable in texture and cohesiveness; generally unindurated	 	PC Greenish 30 30	Pebbles 0.01-0.4 across, unconsolidated, crumbly. Soft greenish Greenish, conglomeratic Cores well Greenish					
600 620		<u>SANDSTONE</u> Soft, green, poorly indurated, crumbly, generally fine			Conglomeratic (0.3) calc.					

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620					Conglomeratic									
					Parting									
640					Indefinite (0.7) calc									
660			<u>CLAY</u> Green, soft		Unindurated, pliable when wet Crumbly, totally unconsolidated									
680			<u>SANDSTONE</u> Greenish to greenish grey, soft, unconsolidated and pliable when wet; coherent when dry		Conglomeratic									
700														
720														
740					Silty (0.5) congl. with occasional carb. fragments									
760			<u>CARB. CLAYSTONE</u> Dark grey, soft, unhomogeneous with carb. layers											
780			<u>SANDSTONE</u> Green, soft, unindurated, fractured - ranges from sst top to coarse sst on bottom											
800			<u>CARB. SILTSTONE</u> Black soft, unconsolidated, darker downwards											
820			<u>SANDSTONE</u> Grey to grey green, soft, medium to fine grained, parting at 90° to C.A. clayey, pliable when wet; hard when dry. Bedding indefinite due to gradational boundaries		Carb.									
					Carb. } Calc									
					Carb.									
840					Carb.									

DRILL HOLE : ...74-35...
SHEET NO. : .4. OF .5...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
840					Carb															
						Carb														
860						Carb														
						Calc														
880						Fracture														
900						Carb														
920					Carb															
			END OF HOLE AT 932 feet																	
940																				

DRILL HOLE : 74-35
 SHEET N^o. : .. 5 OF 5

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT — DRILL RECORD

DRAFT COPY

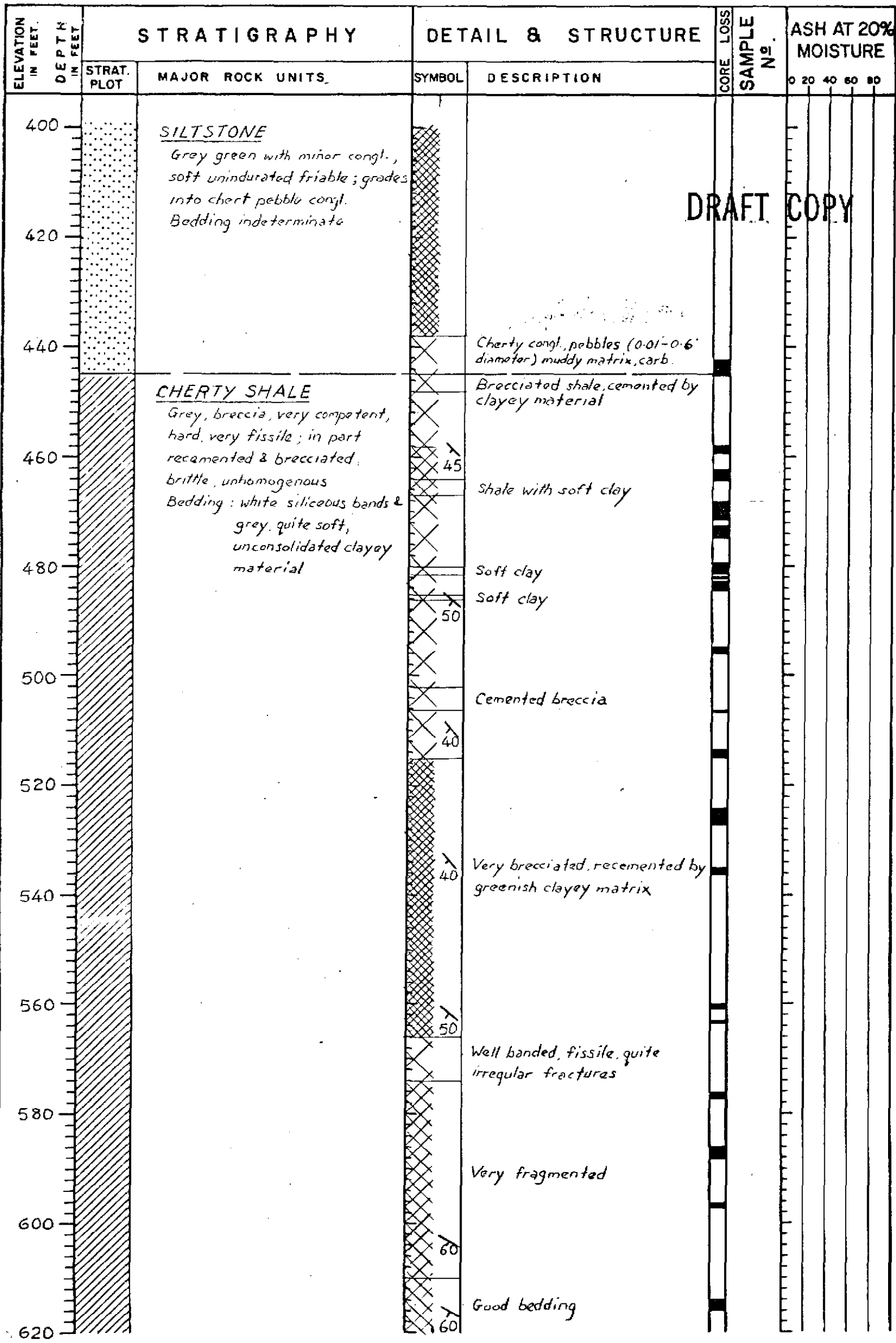
Coordinates : 9020' N Length : 967' Hole No. : 74-36
 : 14,950' E Azimuth : 090° Date : OCT. 1975
 Reference Elev. : 3277' Dip : 70° Logged by : Mel de Quadros
 Ground Elev. : 3275' Core Size : N Q Sheet : 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u>											
			2'-52' sand with some silt layers											
20			52'-140' boulders, pebbles, sand and hard clay											
40			140'-302' alternating layers of soft and hard gravel, sand and clays											
60														
80														
100														
120														
140														
160														
180														

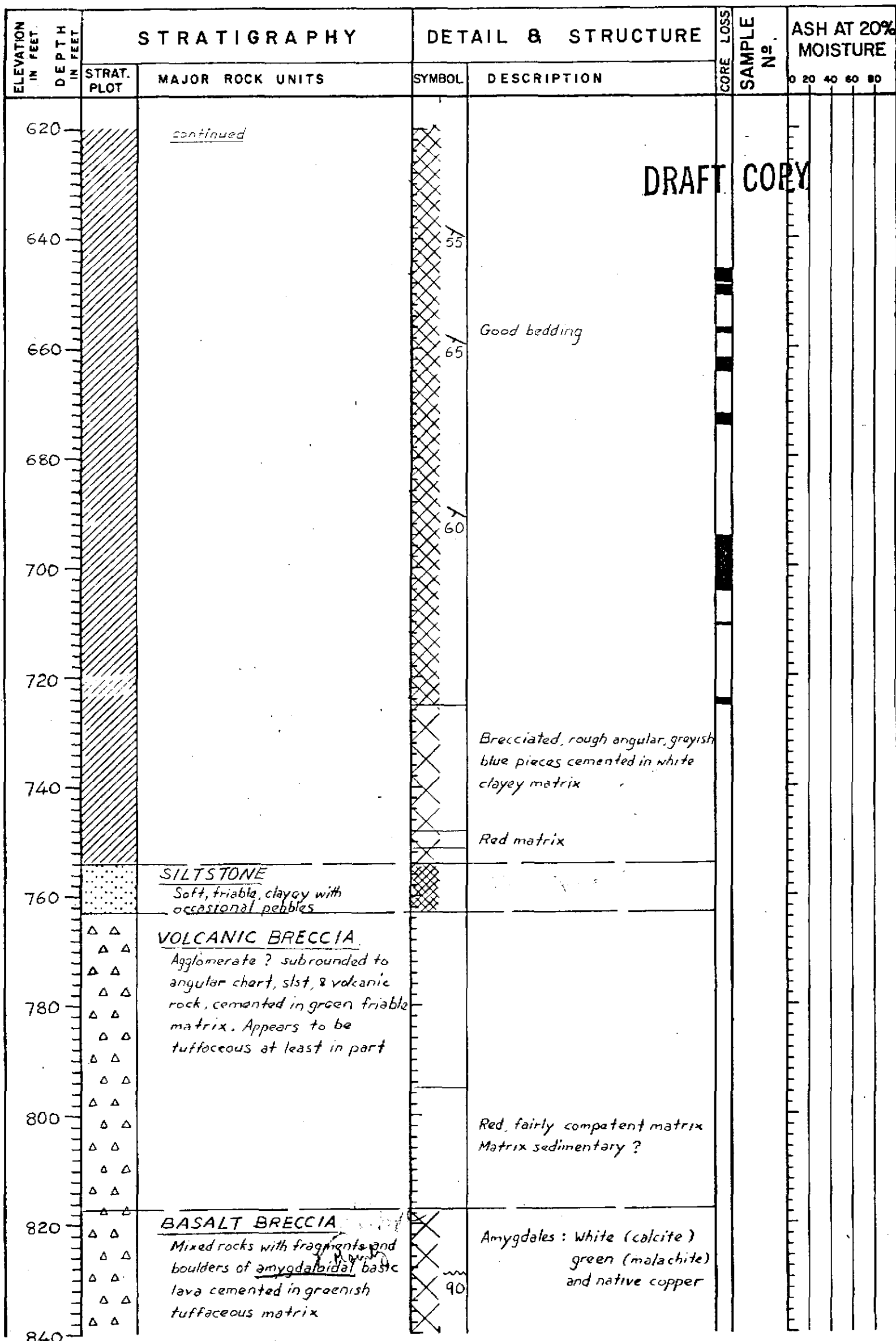
DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180														
200														
220														
240														
260														
280														
300														
320			<u>COARSE CONGLOMERATE</u> Gray, well indurated, very competent but porous, rounded to subangular pebbles ≤ 0.3 ' in diameter; cemented in coarse sandy matrix speckled with coal fragments < 0.05 ' in diameter	X	> 4"									
340				X										
360				X	Grades into very coarse sst									
380			<u>PEBBLE CONGLOMERATE</u> Flat rounded chert pebbles clayey matrix, very friable	X	Grades into very coarse sst									
400				X	fract zone									

DRAFT COPY



DRAFT COPY



DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840		△ △	<i>Tends to break in discs (0.05-0.1') very crumbly matrix</i>	X		90								
		△ △												
		△ △												
		△ △												
		△ △												
860		△ △												
		△ △												
		△ △												
		△ △												
880		△ △												
		△ △												
		△ △												
		△ △												
900		△ △												
		△ △												
		△ △												
		△ △												
920		▲ ▲	<u>BASALT</u>	X		55								
		▲ ▲	<i>Amygdaloidal, fine grained aphanitic rock ; possibly middle of flow ; parting 55°.</i>											
		▲ ▲	<i>Numerous hairline fractures infilled with quartz in part brecciated inclusions of friable black carb. material & native copper amygdolites.</i>											
940		▲ ▲												
		▲ ▲												
960		△ △	<u>BASALT BRECCIA</u>	X										
		△ △	<i>Amygdaloidal basalt fragments in green matrix</i>											
			<i>END OF HOLE AT 967 feet</i>											
980														

DRAFT COPY

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates	: 7000 N.	Length	: 2186'	Hole No.	: 74-37A
	: 9400 E.	Azimuth	: 090	Date	: OCTOBER 1974
Reference Elev.	: 3206 ±	Dip	: -60°	Logged by	: M. de Quadros
Ground Elev.	: 3205 ±	Core Size	: NQ	Sheet	: 1 of 11

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0			<u>Overburden</u> <i>Predominantly glacial drift with large cobbles of basalt, granite and sandstone, minor clay layers, bentonitic.</i>															
170			<u>SILTY CLAYSTONE</u> <i>Grey to dark grey-brown soft plastic rock, massive homogenous, rarely fissile.</i>	X	<i>Fractures 45-60° 20° minor</i>													

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<i>continued</i>											
200														
220						30								
240														
260														
280						50								
300						50								
320														
340														
360						60								
380						50								
400														

DRILL HOLE : ... 74 - 37A ...
SHEET N^o. : 2. OF 11 ...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 209 MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400			<i>continued</i>																
420				X		50													
440				X															
460				X															
480				X		50													
500				X		60													
				X			(1.0) White												
520				X															
540				X		60													
				X		60													
560				X															
				X		60													
580				X															
				X		WC													
600				X		60													
				X			(0.5) White												
620				X															

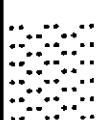













ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20 MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			<i>continued</i>											
					(0.4) White									
640				55										
				WC										
660					Light grey									
680				55										
				WC										
700														
720				62										
730														
			COAL		(3.0)									
			Black, blocky compact well-bedded, hard.											
740			Good partings, shiny smooth but uneven. Slickensides rare.											
			Minor clay interbeds.											
			Fractures parallel and at right angle to bedding.											
760				60										
				WC	(15.0) Banded - thin (1/16") white clst. contorted.									
780				60										
				WC										
800					Gray, mc. coaly									
				WC										
				60	(0.5) white clst. contorted, coaly layers (1/16")									
820				WC										
				PC	Gray clst coaly									
				WC										
840			Claystone - grey, soft bentonite.											

DRILL HOLE : ... 74-37A ...
SHEET No. : 4 OF 11 ...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840			<i>Continued</i>																
860																			
880																			
900																			
920																			
940																			
960																			
980																			
1000			<u>SILTSTONE</u> Grey, coaly																
1011			<u>COAL</u> Black, clean																
1020			<u>SILTSTONE</u> Grey carbonaceous																
			<u>GRADED BEDS</u> Dark grey to black coaly																
1040			<u>COAL</u> Clean black coal with lustrous fractures. Finely banded																
1060																			

DRILL HOLE : ...74-37A...
SHEET No. : .5 OF .11...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20 MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1060			<i>continued</i>															
1080																		
1092			<u>SANDSTONE</u> , Grey, soft	55	f, grey <i>clay</i>													
1100			<u>COAL</u> Clean, black, with lustrous fractures, finely banded															
1120																		
1140																		
1160																		
1174			<u>GRADED BEDS</u> Grey, blocky, ranging from c/sst to sst. Thinly bedded.															
1180					Sandy													
1192			<u>COAL</u> Black, blocky clean coal, lustrous fractures thinly banded.															
1200																		
1220																		
1230			<u>SILTSTONE</u> dark, gray		coaly													
1240			<u>COAL</u> Black, blocky clean coal, lustrous fractures, thinly banded															
1260																		
1280																		

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1500			<u>continued</u>																
1520			<u>COAL</u> Black clean blocky uniform coal		(1.5) silty														
1540			<i>out of core</i>		(1.0) contorted														
1560					(1.0) silty														
1580																			
1600																			
1620					(1.5) silty														
1640					Grey clst														
1660																			
1680																			
1700																			
1720																			

out of core

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE NO.	ASH AT 20% MOISTURE									
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80					
1280			<u>SILTSTONE</u> Gray, coaly	X WC	Coaly												
1293			<u>COAL</u> Black, clean	X WC													
1300			<u>SILTSTONE</u> Dark grey, coaly	X	Coaly												
1320			<u>COAL</u> Black, silty at top, becoming clean downward.	X 65	Silt												
1340			Very clean, compact, well bedded	X WC	Silt												
1360				X WC													
1380				X 65													
1400				X 70													
1420				X 65													
1440			<u>SILTSTONE</u> Grey to dark grey blocky. Carbonaceous at top and bottom becoming light grey in middle. Boundaries with coal gradational.	X 65													
1460			<u>COAL</u> Black, silt coal. Thinly banded	X	Coaly slst.												
1480			<u>SILTSTONE</u> Grey to dark grey, coaly blocky. Boundaries gradational.	X 60	Coaly												
1500																	

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1720			<u>Continued</u>																
				X	Silty														
1740				X	(+0) silty														
				X															
1760				X															
			<u>MIXED COAL AND SILTSTONE</u>	X															
			<i>Black thinly interbedded mixed sequence.</i>	X															
1780				X															
				X															
1800				X															
				X															
1820				X															
				X															
1840			<u>COAL</u>	X															
			<i>Black blocky clean coal with lustrous fractures</i>	X															
1860				X															
			<u>MIXED COAL AND SLST</u>	X															
			<i>Black thinly interbedded</i>	X															
1880			<u>COAL</u>	X															
			<i>Black blocky clean.</i>	X															
1900			<u>SILTSTONE</u>	X															
			<i>Grey to dark grey carbonaceous</i>	X															
			<u>COAL</u>	X															
			<i>Massive, homogenous hard coal, with lustrous curved fractures. Well banded, good fractures parallel to banding. Large resin beads. Bedding variable, changing by 10°-15° in a foot.</i>	X															
1920				X															
				X															
1940				X															



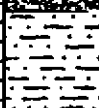





ELEVATION IN FEET DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE			
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60
1940		<i>continued</i>								
1960										
1980										
2000										
2020										
2040										
2060										
2080										
2100										
2120										
2140										
2160										



(1.0) stripey white slt.
contorted.

(0.9) white calc. clst (1/10") layers
contorted fractures calc.

White calc. clst layers contorted

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20° MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
2160			<i>continued</i>															
			<u>MIXED SANDSTONE AND SILTSTONE</u> <i>Grey blocky</i>	  	<i>Pebbly</i>													
2180			<i>END OF HOLE</i> <i>2186 feet</i>															
2200																		

DRAFT COPY

126

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates : 10,000' N. Length : 2095' Hole No. : 74-38
 9375' E. Azimuth : 090° Date : OCTOBER 1974
 Reference Elev. : 2862' 3040.3 Dip : 60° Logged by : M. de Quadros
 Ground Elev. : 2860' 3040.0 Core Size : N.Q. Sheet : 1 of 10

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0		Datum	OVERBURDEN, Sand & silt											
			<u>TUFF</u> Soft, buff, red, white poorly indurated and friable Fracture 45° to C.A.											
20				MC	Pinkish, very soft									
40				MC										
60				MC	White hard									
80				PC	Fractured, with calcite									
100				WC	Sst. banded coarse Buff to beige, pebbly Orange red tuff.									
120				WC	Buff (1-0) silt									
140				WC	Buff, beige white, banded									
160			<u>SANDSTONE</u> Black and grey, blocky poorly indurated. Fractures 40° to C.A.	PC	(0.5) Coal gradational Carb.									
180				PC	Blocky friable									

DRAFT COPY

DRILL HOLE : 74-38

SHEET No. : 1 OF 10

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20%						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			LOSS	MOISTURE	0	20	40	60	80
180			<u>Continued</u>	pc										
				40	Coaly Mixed silt & Coal Coaly									
200			<u>MIXED COAL AND CLAYSTONE</u> Black finely banded rubbly to blocky coal. Good dull fracture 30° to C.A. Banding variable.	40										
					Silty									
220			<u>COAL</u> Black clean blocky. Fractures flat, lustrous, 40°-50° to C.A. (Usually perpendicular to bedding)											
240				50	(0.5) Silt									
					(0.5) Silt									
260				55										
280					(1.5) Silt, contorted									
300														
320				60	(1.5) Silt									
340			<u>SANDSTONE (GREYWACKE)</u> Carb. Calc. well-cemented hard with large pieces of coal (up to 1") Grade down to a silt and then to coal.											
360			<u>COAL</u> Black blocky coal, with uneven dull fracture. Bedding not clear, appr. 50° to C.A. not parallel to fracture.	60	Gradational (1.0) Silt Silty									
380					Silty									
400														

DRILL HOLE : ..74-38..

SHEET No. : ..2 OF 10..

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			<i>continued</i>		9 9 Carb.									
420					Silty									
440					(0.5) Resin beads									
440			<u>SANDSTONE</u> Grey to dark grey, greywacke blocky	WC UC										
460			<u>COAL</u> Black blocky to rubbly coal. Fractures 50° to C.A. Fractures dull, flat, parallel to bedding.	60										
480					(2.0) Carb. silt									
500					Silty									
520			<u>SILTSTONE</u> Grey to dark grey carb. soft friable	9 45										
540			<u>COAL</u> Black blocky finely banded Partings parallel to banding. Homogenous.	9 45 45										
560					9 40 9	Coaly silt, soft								
580					40									
600														
620					(0.5) brown silt, contorted									

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
620			<i>continued</i>															
640																		
660					(1.0) Coaly sand													
680																		
700																		
720																		
740																		
760																		
780																		
800					(50.0) silty													
820					Coaly silt soft													
840					(2.0) Calc. silt layer - banded													

DRILL HOLE : ...74-38...
 SHEET No. : 4 OF 10...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840			<i>continued</i>											
860														
880														
900														
920														
940														
960														
980														
1000														
1020														
1040														
1060														

continued

(2.0) Mixed coal and silt

Calc. carb. silt

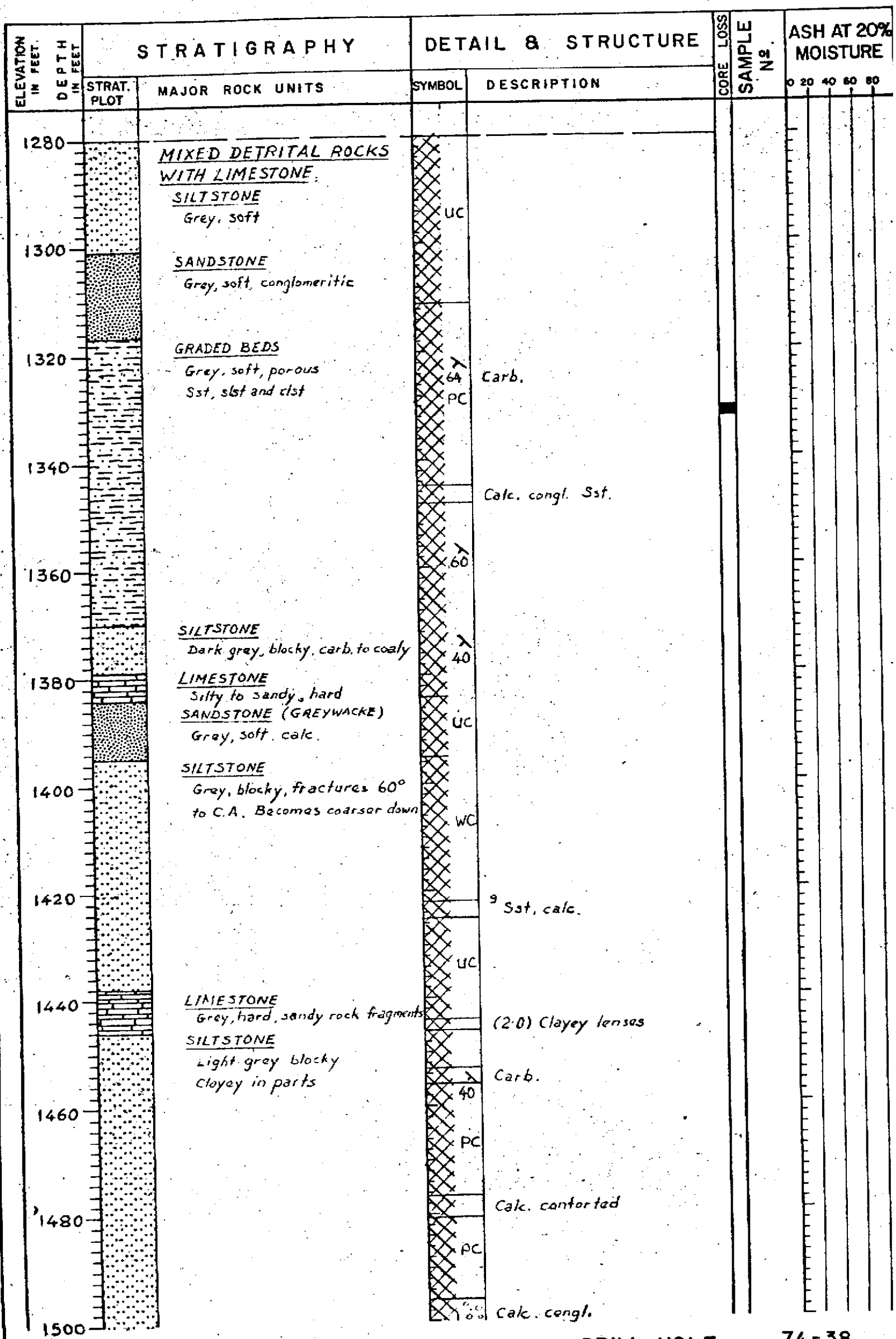
Coaly silt

(1.0) calc. silt

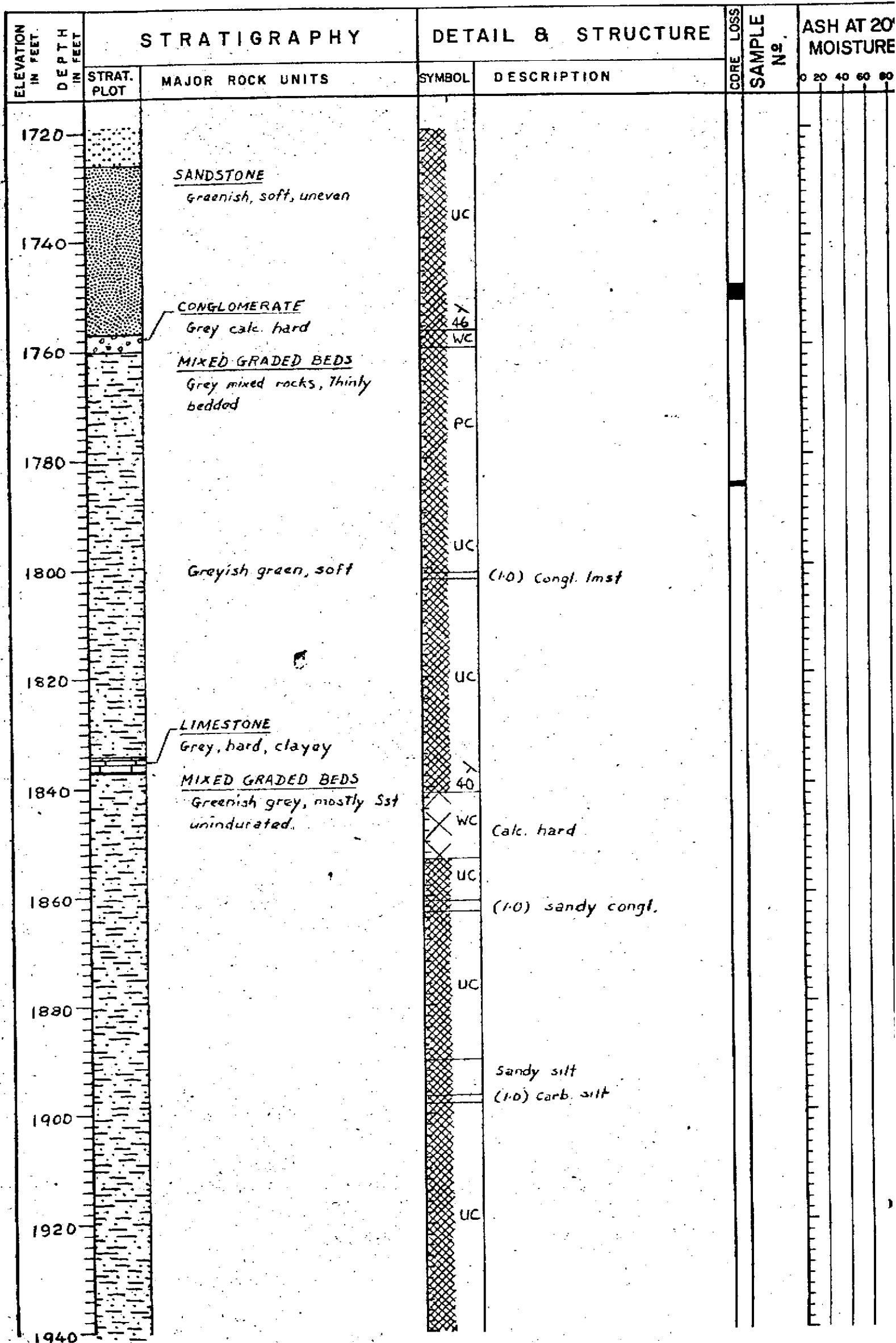
Good clean homogenous blocky coal. Banded with a parallel parting flat and lustrous. Brownish when scratched, layer of soft resin beads and very thin slst. (> 1/16") display bedding.

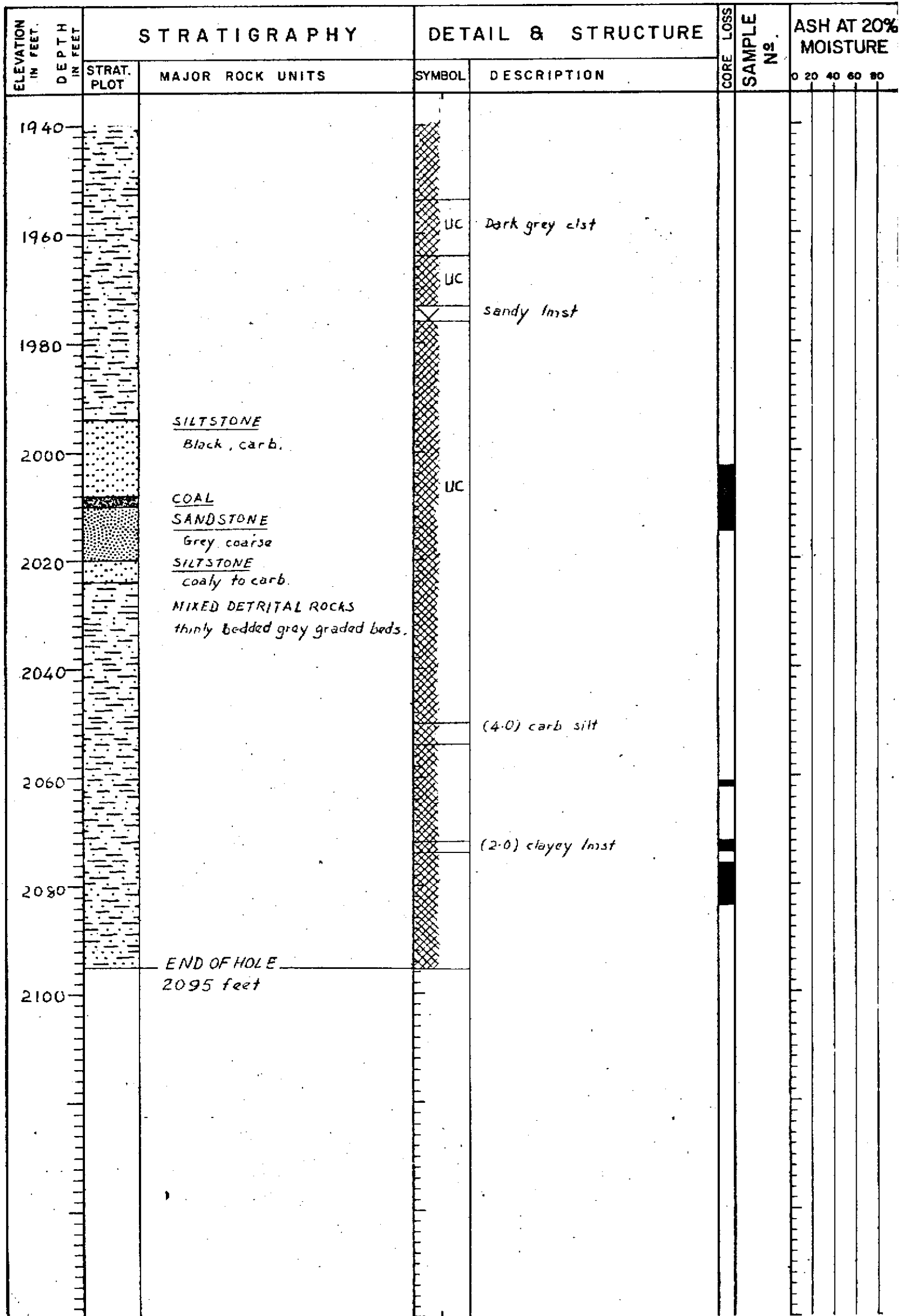
ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1060			<i>continued</i>	X															
1080				X															
1100				X															
1120				X															
1140				X															
1160				X															
1180				X															
1200				X															
1220				X															
1240				X															
1260			<u>SILTSTONE</u> <i>Black to gray soft carb. rock with thin layer of coaly slst and coaly.</i>	X															
1280				X															

DRILL HOLE : ... 74 - 38 ...
 SHEET No. : .. 6 OF 10 ..



ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1500				PC										
1520			<u>LIMESTONE</u> white with clst fragments. Blocky compact	WC										
			<u>SILTSTONE</u> Grayish-green, with thin bands of lmst (1/16") Fractures with calcite soft.	40 45 UC										
1540														
			<u>SANDSTONE</u> Gray green, soft	g 40 UC										
1560														
			<u>SILTSTONE</u> Gray green, soft	g UC										
1580														
			<u>SANDSTONE</u> Gray coarse, soft	g UC										
			<u>CLAYSTONE</u> Gray soft	40	Calc.									
1600			<u>SILTSTONE</u> Gray soft	UC										
			<u>SANDSTONE</u> Gray soft	45	(1-0) fractures, calc									
1620			<u>CLAYSTONE</u> Bluish gray, variable	45 MC										
					(1/16") calc. Tr. congl fractured, calc.									
1640														
			<u>SANDSTONE</u> Greenish, soft, grades from silty at top to gritty at base	UC	Carb									
1660			<u>CONGL. SANDSTONE</u> Pebbly											
			<u>SILTSTONE</u> Greenish soft friable	45	Carb.									
1680														
			<u>SANDSTONE</u> Gray soft congl.	UC										
1700														
			<u>SILTSTONE</u> Greenish soft											
1720														





OK

126

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates : ~~11500' N~~ ~~9300' E~~ Length : 1441.5' Hole No. : 74-39
 Reference Elev. : ~~4000~~ 2862 Azimuth : 090° Date : OCT 1974
 Ground Elev. : 2860 Dip : 60° Logged by : M. de Quadros
 Core Size : NQ Sheet : 1 of 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0			Datum															
			<u>OVERBURDEN</u> <i>Uniform clayey lake silts</i>															
40			<u>COALY SILTSTONES AND SILTY COAL</u> <i>Black, very mixed sequence uncemented</i>	UC	(2.0) Coaly silt, very clayey													
80				UC	Silty, clayey coal													
140			<u>COAL</u> <i>Black, finely lenticled coal, with good partings parallel to bedding</i>	UC														
180				40	(1.5) White silt													

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<i>continued</i>											
200					(1-0) Coaly silt									
220				40	(1-9) white calc. silt contorted									
240				40	silty									
260				UC										
280				45										
300				UC	silty									
320				UC										
340				45										
360														
380					(5-0)									
400														

DRILL HOLE : 74-39
 SHEET No. : 2 OF 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400			<i>continued</i>																
420																			
440			<u>COALY CLAYSTONES WITH COAL</u>																
			<i>Grey banded pliable silty</i>																
			<i>Black silty</i>																
460																			
480			<u>CLAYSTONE</u>																
			<i>Gray-green, soft, pliable tuffaceous?</i>																
500																			
520			<u>CALC. SANDSTONE</u>																
			<i>Coarse, porous (Calcarenite)</i>																
540			<u>SANDSTONE</u>																
			<i>Gray to greenish gray, soft Clayey massive</i>																
560																			
580			<u>COAL</u>																
			<i>Black pulverised, silty</i>																
600			<u>SANDSTONE</u>																
			<i>Grey and greenish gray friable rock, variable intexture and colour</i>																
620																			

DRILL HOLE : 74-39

SHEET No. : 3 OF 7

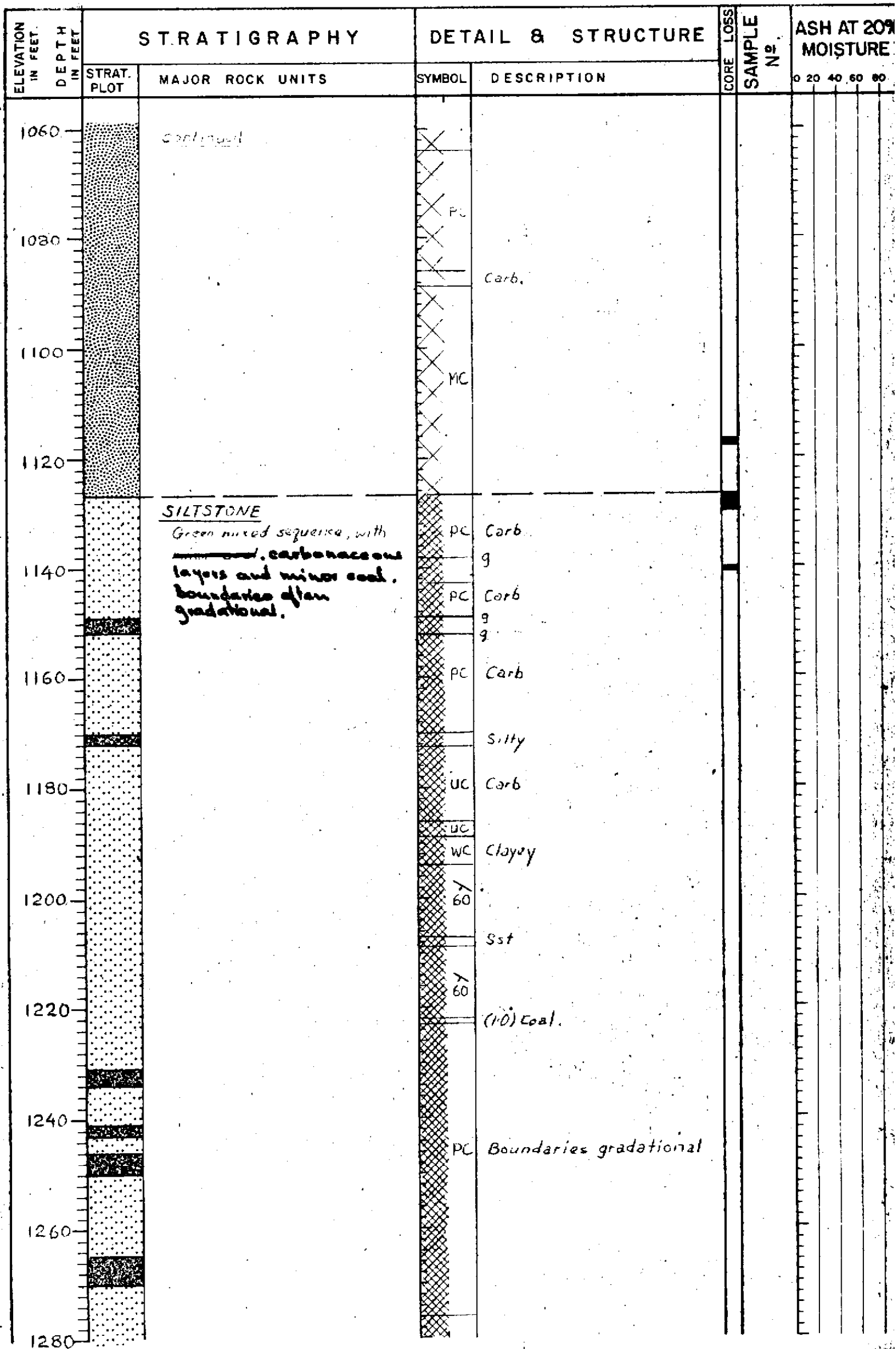
ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			<i>continued</i>											
640				WC	Calc. cgl.									
				PC	(2.0)									
660				PC	Carb.									
					Calc.									
680					Clayey breccia?									
				MC										
700					Carb. Breccia?									
				MC										
720					(1.0) P.C.									
				MC										
740					Carb.									
				MC										
760					(2.0) Calc.									
					(1.0) Calc.									
780														
				MC										
800														
820														
840														

DRILL HOLE : 74-39
SHEET N^o : 4 OF 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840			<i>continued</i>		Clayey									
860				UC	Bentonitic									
				UC	calc									
880				MC										
				MC	calc									
900				MC	Greywacke									
				40	(20) calc.									
920				PC										
					(0.5) calc. clst.									
940				35	952'-1129'									
				MC	Coarse, gritty, sst. (Greywacke)									
960														
				WC	Calc									
980														
				MC										
1000														
				WC	Calc.									
1020														
				MC										
1040														
1060														

DRILL HOLE : ... 74-39

SHEET No. : 5 OF 7



ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1290			<i>Continued</i>	PC	Sandy														
				MR	calc														
1300				PC															
				WC	Sandy														
				PC	Heavy														
1320				MR	Silty														
				PC															
1340					(10) calc														
				PC															
1360			MIXED SANDSTONE AND SILTSTONE Gravelly cyclic beds of gray silt, silt, thinly bedded	PC	Silt														
1380				PC															
1400				PC	carb														
1420				WC															
1440			END OF HOLE 1441.5 feet	WC	calc.														

DRAFT COPY

OK

126



DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT — DRILL RECORD

DRAFT COPY

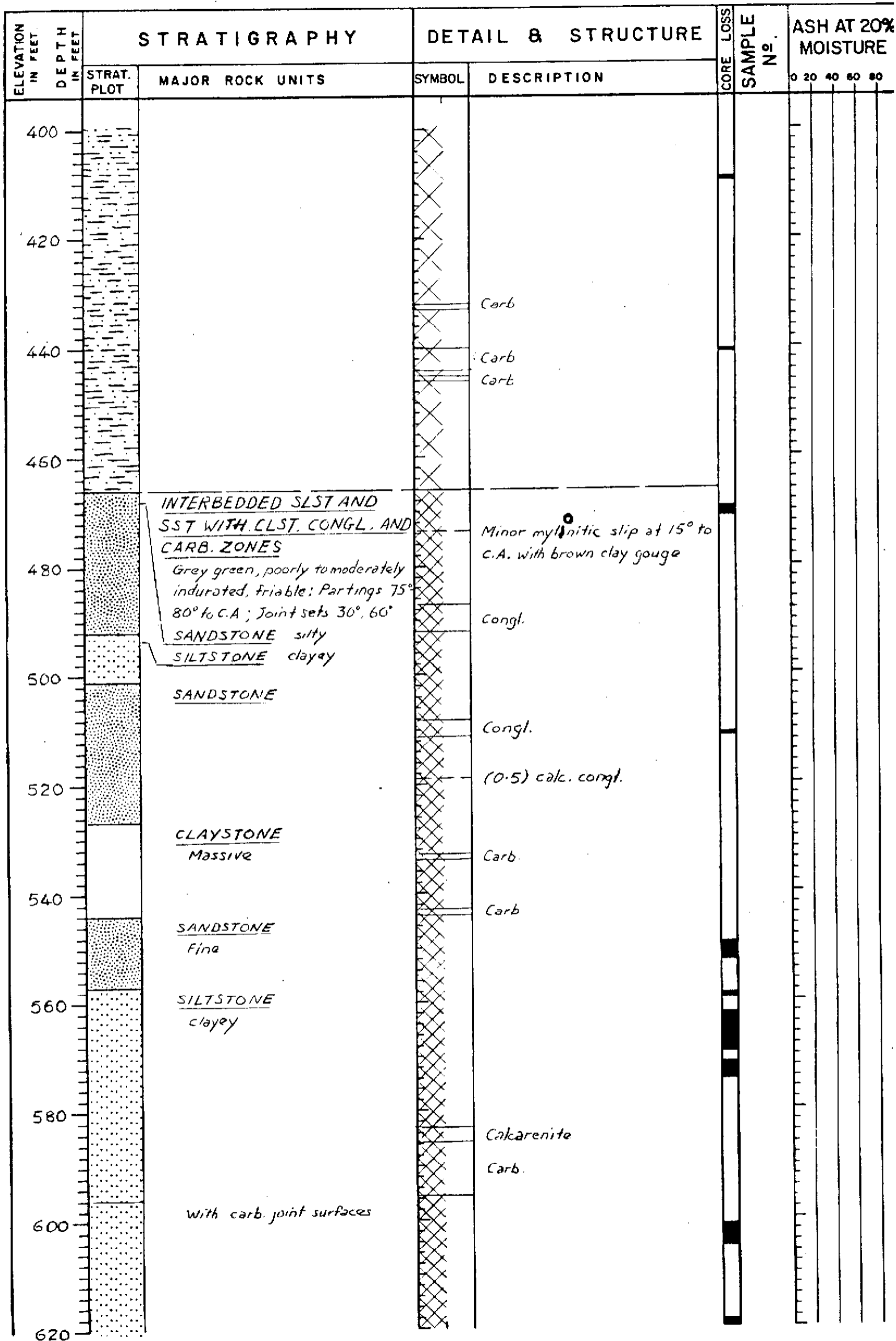
Coordinates	: <u>11,500' N</u>	Length	: <u>1318.5'</u>	Hole No.	: <u>74-40</u>
	: <u>10,050' E</u>	Azimuth	: <u>090°</u>	Date	: <u>OCT. 1975</u>
Reference Elev.	: <u>2850'</u>	Dip	: <u>60°</u>	Logged by	: <u>J. Rotzien</u>
Ground Elev.	: <u>2847.5'</u>	Core Size	: <u>NQ</u>	Sheet	: <u>1 of 7</u>

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
0		Datum																	
			<u>OVERBURDEN</u> <i>Mixed sand, gravel with some boulders</i>																
100			<u>SILTY CLAYSTONE</u> <i>Light gray to gray green, med. to well indurated. Partings 80° to C.A. Joint sets 30° 60° to C.A.</i>																
120					(0.5) lms.														
140			<u>GRADED BEDS CLST → SLST → SST</u> <i>Gray green, indurated, massive; Bedding highly variable and often indistinct and gradational. Partings 80° to C.A. Joint sets 30° 60° to C.A.</i>																
180					Carb.														

DRILL HOLE : ...74-40...
SHEET No : 1 OF 7...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
180																		
200			<u>SANDSTONE</u> <i>Grey green, indurated massive with interbeds of slst, clst Partings 80° to C.A. Major joint sets 30°, 60°-C.A.</i>															
220																		
240			<u>HARD LIMESTONE</u>		<i>Onychalon fractures infilled with clst</i>													
260			<u>INTERBEDDED CLAYSTONE AND SILTSTONE</u> <i>Light grey to grey green, with some sst and minor lmst and carb. zones ; slightly calc. poorly to moderately indurated. Partings 70°-75° to C. A. Major joint sets 60°, 40°, 20° to C.A. small scale movement on 40° set indicated by migration of fines to joint planes.</i>															
280																		
300																		
320					<i>Lmst, with fractures filled with clst</i>													
340					<i>Hard lmst</i>													
360																		
380			<u>SANDSTONE</u> <i>Elastic calc.</i>															
400																		

DRILL HOLE : ...74-40.....
SHEET No. : .2. OF .7....



DRILL HOLE : ... 74 - 40 ...
 SHEET No. : . 3 . OF . 7 . . .

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620																			
640			<u>SANDSTONE</u> Soft, buffaceous with a clay matrix																
			<u>SILTSTONE</u> Clayey																
660			Carb																
			<u>SANDSTONE</u> Silty																
680																			
700																			
720																			
			<u>SILTSTONE</u>																
740			<u>SANDSTONE</u> Silty																
760																			
			<u>INTERBEDDED SILTSTONE AND CARB. SILTSTONE</u> Dark gray to black, friable, poorly indurated Partings 75° to C.A. Major joint sets 30°, 60° to C.A.																
780																			
800																			
820			<u>COALY SILTSTONE</u> Black, rubbly, with coal beds upto (0.5'), slst beds upto (1.0'); major joint sets 60°, 45° to C.A.																
840																			

DRILL HOLE : ...74.-40.....
SHEET No. : .4. OF .7.....

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840																			
860			<u>CLAYEY TO SANDY SILTSTONE</u>																
			<i>Grey green to black; interbeds with carb. & minor coal zones, poorly indurated friable, Partings 70°-75° to C.A. Joint sets 60° & 45° to C.A</i>		<i>With minor sst beds</i>														
880																			
900					<i>Lmst</i>														
					<i>With minor sst beds</i>														
920					<i>Brecciated with foliation at 60° to C.A.</i>														
940					<i>Mixed sst, slst and silty coal large core losses</i>														
960			<u>COAL</u>		<i>Coaly silt</i>														
					<i>Rusty coating on slst Coaly with (0.3') coal.</i>														
980					<i>Sandy</i>														
					<i>Carb.</i>														
1000					<i>Clayey</i>														
					<i>Fine to medium sst</i>														
1020					<i>Carb</i>														
1040					<i>Clayey</i>														
					<i>Rust coloured coating on slst & sst</i>														
1060																			

DRILL HOLE : ...74-40.....
SHEET No. : ..5 OF .7...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1060																			
1080																			
1100																			
1120																			
1140																			
1160																			
1180																			
1200																			
1220																			
1240																			
1260																			
1280																			

**SANDSTONE, CONGLOMERATE
AND SOME SILTSTONE**
Gray green, graded beds; soft
unindurated; thinly bedded
CONGLOMERATE
MIXED SST AND SLST
Interbedded slst & sst with
minor clayey intervals

MIXED SST AND CONGL.
Interbedded sst (1.5')
pebbles up to 0.2' in
diameter.

Coaly with bands (0.05) coal
subconchoidal fracture

Carb.

Slst grading thru sst to congl.

Pebbles, often enclosed in
caliche hole

1150' - 1220', colour changes
from grey green to blue
green.

↑
Fault gouge oriented at 10°
to C.A.
↓

(0.5) conglomeratic sst

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1280			<u>SILTSTONE</u> <i>Sandy with minor sst</i>																
1300			<u>MIXED SST AND CONGL</u>		<i>Congl. sst grading into calc., brittle congl. Sst grading thru sand sst, silty sst to calc. congl.</i>														
1320			<u>END OF HOLE</u> <i>AT 1318.5 feet</i>																

DRILL HOLE :74-40.....
SHEET N^o. : ..7 OF 7....

126
971

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates : 8000' N Length : 357' Hole No. : 74-41
 : 11,000' E Azimuth : 90° Date : OCT. 1974
 Reference Elev. : 3016.5' Dip : 60° Logged by : Mel de Quadros
 Ground Elev. : 3015' Core Size : NQ Sheet : 1 of 2

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
0			<u>OVERBURDEN</u> Mixed clay, sand, pebbles and boulders											
20														
40														
60														
80														
100														
120														
140														
160														
175			<u>COAL WITH MINOR SILTSTONE AND CLAYSTONE</u>	X										
180				X										

DRILL HOLE : 74-41
SHEET No : 1 OF 2

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE					
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80	
180			<i>Black, quite fragmented, shiny well banded coal</i>		Gray very soft wavy slst		1						
200						Thin layer silty coal		2					
220						Grayish white clst		3					
240				<i>Well banded, parting, very shiny but wavy & uneven parallel to banding. Occasional silty layers & clst</i>		Silty		4					
260						(0.5) contorted white clst		5					
280						(0.8) white clst		6					
300						Large resin beads up to 0.08 in dia. alternating coal & white clst bonds (± 0.2)		8					
320						(0.5) Very irregular banded coal & white clst.		9					
340						Coaly slst							
360			END OF HOLE AT 357 feet.										

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates : 2750' N Length : 532' Hole No. : 74-42
 7100' E Azimuth : Date : OCT. 1974
 Reference Elev. : 3426.5' Dip : 90° Logged by : J. Rotzien
 Ground Elev. : 3425' Core Size : NQ Sheet : 1 of 3

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0		Datum												
	0-55		<u>OVERBURDEN</u> Mixed clay, sand, pebbles and boulders (glacial drift)											
	55-150		<u>GRADED BEDS</u> Sst, sst and congl. Grey green partings 60° gradational, irregular joint sets 45°	60 60 60 45	Weakly consolidated, soft friable, graded beds of sst to congl., pebbles up to 0. Repeating beds: sst → sst → congl. (0.3'- 6.7')									
	150-160		<u>INTERBEDDED SILTSTONE AND SANDSTONE</u> Blue green, soft poorly consolidated, partings 60° joints 45°	60 45 60	(0.5) calc. sst (0.3) coarse sst									
	160-180		<u>INTERBEDDED CLAYSTONE SILTSTONE, SANDSTONE AND CONGLOMERATE</u> Blue green to grey green, soft poorly indurated. Parting parallel to bedding ~ 50°. Congl. rubbly sst, slst, clst pulverised	65 55 60 45 55	carb slst Grey green sst.									

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180			<i>continued</i>																
200					(0.25) carb sst Light gray congl.														
220																			
240																			
260			Carb. light gray to black slst		Coaly shale														
280			<u>GRADED BEDS</u> Clst → slst → sst → coarse sst beds (2.0-4.0) Grey green, moderately indurated soft & friable disintegrates in water.		Partings Joints - planes contain fines (migration?) Massive silty clst														
300			<u>CARB. SILTSTONE</u> Light grey green to black some very soft zones																
320			<u>MIXED UNIT OF CLAYSTONE SILTSTONE, SANDSTONE WITH CONGLOMERITIC ZONES</u> Grey green to dark grey, finely laminated clst, slst, fine to coarse sst, & occasional congl. zones, friable but moderately indurated Partings 80°, joint sets 45° to 60°																
340																			
360																			
380					Carb. zones soft, pliable when wet, slst														
400					highly variable														

DRILL HOLE : ...74-42...
SHEET No. : ..2 OF 3...

HC Hat Creek 74(3)D.

E2.

00 126 $\frac{3}{8}$

DRILL Hole Logs.

74-43 to 75-69

+ 106

(Book-B-2).

Dolmage Campbell and associates Ltd. 1975

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates : 9000' N Length : 1525' Hole No. : 74-43
 7350' E Azimuth : — Date : NOV. 1974
 Reference Elev. : 3300' Dip : 90° Logged by : J. Rotzien
 Ground Elev. : 3300' Core Size : NQ Sheet : 1 of 8

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0			Datum															
			<u>OVERBURDEN</u> <i>Mixed clay, sst, boulders</i>															
100			<u>MIXED CARB. AND CLAYEY SLST WITH MINOR COAL</u> <i>Dark gray to black, laminated partings 60° to C.A. joint sets 45° to C.A.</i>				1											
120							2											
140							3											
160							4											
180							5											

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<u>SILTY COAL AND COALY SILTSTONE</u> Black to brown blocky unindurated. Coal content of slst increases downwards. Coal hard, brittle, and fissile, parallel to banding	X	Coaly - 5% coal at 182' increase to 15-20% at 210' block, finely lam., parting parallel to bedding		6							
200				X	Carb. (0.1) rust brown slst		7							
220				X	Black to brown, fissile due to fine lams., hard, brittle. Partings parallel to bedding joints 40° to C.A.		8							
240			<u>CLEAN COAL</u> Dark brown soft coal to black hard brittle, vitreous coal with subconchoidal fracture (~30% black coal) resin beads upto 0.03' in diameter, joint sets 40°, 60°, partings parallel to bedding	X			9							
260			<u>SILTY COAL</u> Many zones (0.2-0.5) very soft, very fissile brecciated coal	X	Interbedded white clst & coal		10							
280				X			11							
300				X										
320				X	Very soft									
340				X	Soft									
360				X	(0.2) soft		13							
380				X										
400				X	(0.2) soft.		14							

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400			<i>continued</i>																
				65	(0-2) soft														
				65	Irregular, white, calc bands														
420				60			15												
				65	(0-2) soft														
440				70															
				65															
460				65															
				60															
480				60															
				60															
500			<u>MIXED UNIT OF CLAYSTONE, SILTSTONE, AND SANDSTONE WITH CARB. ZONES</u> <i>Grey green to black soft</i>	70	(0-5) carb. slst <i>Grey green, mixed clst, slst, calc sst, poorly indurated</i> <i>Pliable, carb. slst with minor coal</i>		18												
520					<i>Grey green, moderately indurated, joint sets: 30°, 45°</i>														
540				60	<i>Hard, well indurated, light grey /mst</i>														
			<u>GRADED BEDS</u> <i>Light grey to green, hard to soft friable, generally grading: clst - slst -> sst -> congl. downward.</i> <i>Parting planes 75°, joints 60°, 30°</i> <i>congl. - rubble to blocky</i> <i>clst, slst, sst - blocky</i> <i>clst slst - massive to finely lam</i>	40	<i>Clst to congl.</i>														
560					<i>Clst to sst</i>														
					<i>Clst to congl.</i>														
580				75	<i>Clst. to congl. sst</i>														
					<i>Clst to sst</i>														
600					<i>Clst to coarse sst</i>														
					<i>Clst to sst</i>														
620				60															

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20' MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620			<i>continued</i>		Clst to sst Slightly carb.														
640					Slightly carb. Clst to sst														
660				70	Sst to pebble congl.														
680				60	Mixed sst, clst, congl. Clst to sst - clst has coal fragments Clst to sst														
700					Clst to med. sst Clst to coarse sst Clst to 0.05' congl.														
720				60	Clst to 0.2' calc. congl.														
740				60	Clst to 0.1' congl. Clst to med. sst														
760				60 65	Interbedded slst and sst Clst to 0.08' congl. Slst to 0.05' congl.														
780					Interbedded clst, slst grading down into interbedded slst, sst finally to 0.01 congl.														
800																			
820				55	Congl. Clst to coarse sst Clst to med. sst														
840					Slst to med. sst														

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840					Clst to 0.1' congl.									
860					Clst to fine sst 60° Sst to congl.									
880			<u>INTERBEDDED SILTSTONE AND SANDSTONE</u> Grey green, soft unindurated, pliable when wet, partings 75° joint sets 50°, 30°; with minor coal. Boundaries gradational.											
900					Carb. sst with minor coal									
920					Carb. Rubbly Carb.									
940														
960					Interbedded sst & sst 75°									
980					Carb.									
1000					Sst with interbedded sst 65°									
1020														
1040			<u>INTERBEDDED SILTSTONE, SANDSTONE AND CONGLOMERATE</u>		Volcanic pebbles dominant <0.3' matrix - clay to clayey calc. sst friable to well cemented partings 75° to C.A.									
1060														

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1060			<u>SANDY SILTSTONE</u> Grey, green, minor congl. interbeds, soft, poorly indurated, partings 80° to C.A. joint sets 15°, 50° to C.A. blocky to platy		(0.5) sst (0.6) sst									
1080					70	As in 1035' to 1062'								
1100						sst → sst → congl.								
1120			<u>PEBBLE CONGLOMERATE</u> Grey, green, unindurated with occasional cobbles. Pebbles volcanics											
1140														
1160			<u>INTERBEDDED SST AND CONGL.</u> Grey green, silty sst, andesitic, tuffaceous, massive, well indurated white angular detrital fragments.		70° (parting) 65 (0.5) congl. sst congl. 0.05' in diameter Finally interbedded (0.3-0.5) sst and congl.									
1180			<u>COBBLE CONGLOMERATE</u> Grey green unindurated, pebbles volcanics											
1200														
1220			<u>SILTY SANDSTONE</u> As in 1160.5' - 1178.5'											
1240			<u>PEBBLE CONGLOMERATE</u> As in 1035' - 1062'											
1260			<u>SILTY SANDSTONE</u> As in 1160.5' - 1178.5'											
1280														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1280																			
			<u>MIXED DETRITAL ROCKS</u> Grey green, sst and congl. Pebbles generally volcanics		Pebbles and cobbles, quartz crystals 0.03' partings 70°														
1300					Coarse with occasional pebbles Pebbles as in 1286'-1298'														
					Coarse with silty seams														
1320					Dark grey blue massive pliable when wet														
1340					Andestic tuffaceous sst interbedded with congl.														
1360			<u>SANDY SILTSTONE</u> Andestic tuffaceous																
1380																			
1400					Congl.														
					Pebbles														
					Pebble vague														
1420			<u>PEBBLE CONGLOMERATE</u> Some cobbles, volcanic dominance, light gray, hard, brittle, well indurated, with varying calcium carbonate content Partings 75° 80° to C.A.	40															
					Andestic, tuffaceous, sandy														
1440																			
					Andestic, tuff., sandy														
1460					Andestic, tuff., sandy														
1480					Andestic, tuff., sandy														
1500																			

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE №	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1500																			
1520			<p>END OF HOLE AT 1525 feet</p>																
1540																			

DRAFT COPY

DRILL HOLE :74-43.....

SHEET № : ..8 OF ..8...


DRAFT COPY

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

126

Coordinates : 7000' N Length : 2318' Hole No. : 74-44
9400' E Azimuth : 270° Date : NOV. 1974
Reference Elev. : 3202' Dip : 60° Logged by : Met. de Quadros
Ground Elev. : 3200' Core Size : NQ Sheet : 1 of 11

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0			Datum															
0			<u>OVERBURDEN</u> <i>Mainly coarse gravel with large boulders. Very thin clayers generally less than 1 foot thick.</i>															
160			<u>CLAYSTONE</u> <i>Dark grey massive homogenous uncemented rock, rare partings Bedding rarely seen.</i>		UC													

DRAFT COPY

DRILL HOLE : ..74-44...
SHEET No : 1 OF 11...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180			<i>continued</i>																
200				UC															
220																			
240																			
						85	(0.1) brown												
260						85													
						MC													
						90	(0.5) buff												
280																			
300																			
320						MC													
340																			
							(0.05) white slst												
360																			
380						80	(0.5) buff												
400																			

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
400			<i>continued</i> Development of slight fissility partings rough 90° to C.A. and 45° to C.A. But not "shale"															
					(0.1) buff (1.0) fracture but recemented with calcite													
420					Bentonitic													
440					(0.8) buff													
460																		
480					(0.1) buff													
500																		
520					(0.5) recemented (calc.) breccia.													
540					2 white clay layers (0.05)													
560																		
580																		
600					Carb.													
620			COAL Clean blocky finely banded. Partings parallel to banding. Brownish when scratching		(0.2) brown clst													

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620				80	(0.1) brown clst									
640					(1.0) silty, pulverised (1.0) Silty pulverised									
660			STONE Dark gray blocky	80	Carb.									
			COAL Clean blocky		(0.5) white clst									
680			MIXED DETRITAL ROCKS Light grey blocky graded beds		(2.0) coaly slst (2.0) brecciated but recemented coaly calc. slst Soft clayey slst Hard sst									
700			COAL	80	Contorted + brecciated calc. slst									
			Clean, good, blocky finely banded. Fractures schistoidal partings (parallel bedding) lustrous, smooth; partings 20° to C.A also.		(1.0) hard, silty (1.5) } Grey clst, soft (2.0) }									
720														
740					(2.0) coaly slst (1.0) white clst (1.5) coaly clst									
760					(2.0) clayey soft Grey clst (0.5) grey slst									
780					Coaly slst									
800				80	(1.5) striped with thin clst layers (1/8") (0.1) white buff clst Carb. clst									
820				80	(1.0) coaly clst (1.0) } Striped contorted white (2.0) } clst layers									

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840				T 65	(0-01) white clst														
					(1-5) coaly sst														
860					Carb. slst														
					(2-0) carb. clst														
880				T 85	Carb. clst														
900																			
920				T 75															
			<u>MIXED DETRITAL ROCKS</u> Blocky gray																
940			<u>COAL</u> Clean, blocky, banded	T 80															
960					(2-0) silty														
980				WC	(0-5) gray slst														
				T 85	Contorted coaly clayey slst														
1000				T 60	Coaly slst														
				MC															
1020					Mixed clst, slst, sst, graded														
1040				MC															
				T 85	f 30°														
1060																			

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1060					Grey coaly clst													
1080				90	(0.5) brown clst													
1100				60	Silty													
1120					Grey clst													
1140				UC	(2.0) petrified wood													
1160			CLAYSTONE Grey	80														
			SANDSTONE Grey rubbly															
			MIXED DETRITAL ROCKS Grey graded beds, thin coal layers															
1180			MIXED COAL & CLAYSTONE															
			SILTSTONE Dark grey to black,	60	Thin coal beds													
1200			COALY SILTSTONE Black, blocky	60	Thin (upto 0.5') layers of coal & slst													
1220				70														
			MIXED DETRITAL ROCKS Greywacke, grey, coarse		(0.5) slst													
1240			SILTSTONE Grey to dark grey	70														
					(0.2) coal													
			SANDSTONE, Gray CLAYSTONE		(1.0) mylonitic													
1260			Grey to dark grey	65	(0.5) carb.													
1280			COAL silty CLAYSTONE Black carb.															

DRILL HOLE : ... 74-44 ...
SHEET No. : .6 OF .11

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1280			<u>SILTSTONE</u> Carb																
			<u>COAL</u> Blocky black, brownish when scratched. Well banded with parallel lustrous partings. Fissile		(1.0) Clay, (0.1) bands (1.0) clst. banded (1.0) banded coal														
1300				80															
					(0.5) slst														
1320																			
1340																			
				75															
					(1.0) silty														
1360																			
				70															
					(0.3) slst														
1380																			
1400																			
				90															
					(2.0)														
1420																			
				80															
					Carb														
					Silty														
1440			<u>SANDSTONE</u> Grey, hard, blocky Coarse to congl.																
				70															
					(0.1) coal														
1460																			
				WC															
				70															
1480																			
					(0.5) coal														
				WC															
1500																			

DRILL HOLE : ... 74-44 ...
SHEET No. : .7. OF .11.

WC - West Cumberland
 MC - Middle Cambrian
 PC - Pennsylvanian

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1500				WC 75															
1520				WC 65 85	Clst. carb. Carb. streaky														
1540			<u>CLAYSTONE</u> Grey blocky to rubbly		(2.0) f. cemented														
1560			<u>SANDSTONE</u> Variable, rather mixed		(2.0) F Coaly														
1580					Clst														
1600			<u>CLAYEY SILTSTONE</u> Dark grey to black with coal fragments																
1620					Clst														
1640			<u>COAL</u> Clean blocky																
1660			<u>CLAYSTONE</u> Dark grey																
			<u>COAL</u> Clean		(1.0) very fractured														
1680			<u>CLAYSTONE</u> Dark grey, with coal fragments		(1.0) silty														
1700																			
			<u>SANDSTONE</u> Grey blocky																
1720			<u>CLAYSTONE</u> Grey to dark gray		(2.0) carb														

DRILL HOLE :74-44.....
 SHEET No. : .. 8 OF 11

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1720			<u>COAL</u> Clean blocky	X 60 MC										
1740			<u>MIXED COAL & SLST</u>	X	Dark grey to black									
			<u>COAL</u>	X 60										
1760			<u>COALY CLAYSTONE</u> Dark gray to black with coal fragments	X WC 60										
1780				X 60										
1800				X 60										
1820			<u>COAL</u> Clayey coal, rubbly, banded with clst. Bedding slightly contorted.	X 60 80	Thin clst layers									
1840			Black blocky well bedded coal, with lustrous partings flat and parallel to bedding	X 85	(0.2) clst brown									
1860				X	Slightly silty									
1880				X	(0.5) white clst									
1900				X	(0.6) white clst, contorted									
				X	(0.2) white clst									
1920				X f	0.3 fracture 45° calc.									
1940				X										

DRILL HOLE : ... 74-44 ...
SHEET N^o. : . 9 . OF . 11 .

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1940				85										
1960														
1980														
2000				80	(0.1) grey slst									
2020				75										
2040				80										
2040			<u>MIXED DETRITAL ROCKS</u> Grey blocky rocks, well indurated Boundaries gradational due to grading. Cementing good in finer rocks, poor in congl. Bedding vague. Coarser members generally calc.	80	Carb to coaly									
2060			<u>SANDSTONE</u> Grey, coarse	WC										
2080			<u>PEBBLE CONGLOMERATE</u> Grey, moderately coarse	PC										
2100			<u>SANDSTONE</u> Grey coarse	WC	Minor clst & slst									
2120			<u>SILTSTONE</u> Grey	85										
2140					(1.0) clayey lmst									
2160				WC										

DRILL HOLE : 74-44

SHEET No. : 10 OF 11

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
2160																			
2180			<u>CONGLOMERATE</u> Grey coarse	PC	(2.0) mildly carb														
2200				PC	Soft clst carb														
2220			<u>CLAYSTONE</u> Grey fissile, almost shaly	85															
2240				80															
2260				WC	Fissile minor slst + sst														
2280			<u>SANDSTONE</u> Variable intexture	75															
2300			<u>GRADED BEDS</u> clst - slst - congl	90	Varies from clst to congl.														
2320			<u>CLAYSTONE</u> Grey blocky - 3"-11"	WC															
			END OF HOLE AT 2308 feet																

DRAFT COPY

126

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT — DRILL RECORD

Coordinates	: 3000' N	Length	: 1151'	Hole No.	: 74-45
	: 8000' E	Azimuth	: —	Date	: NOV. 1974
Reference Elev.	: 3351.5'	Dip	: 90°	Logged by	: Mel de Quadros
Ground Elev.	: 3350'	Core Size	: NQ (90'-1081')	Sheet	: 1 of 6
			: BQ (1081'-1151')		

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u> Mixed boulders, pebbles and sand											
20														
40														
60														
80														
100			<u>INTERBEDDED MUDSTONES, CONGLOMERATES</u> Grey to dark grey and black rubby to blocky, soft	X	(0.5) coal Grey slst									
120				X	Soft, unconsolidated, black, carb silt with thin layers (0.01) coal									
140				X	Soft grey silt									
				X	Hard, calc. coarse - 126' joint 30' cemented by quartz									
				X	Graded soft grey sst to slst									
				X	Soft unindurated, carb with thin coal (0.01 - 0.02)									
160			<u>INTERBEDDED COAL AND CLAYSTONE</u> Shiny, black, banded, silty coal and clst	X	With thin slst layer									
				X	Grey, soft									
180			<u>COAL</u> With minor carb slst	X										

DRAFT COPY

DRILL HOLE : ...74-45...
SHEET NO : 1 OF 6...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180					Graded clst → slst → calc sst sst fracture 30° to C.A.									
200			<u>MIXED DETRITAL ROCKS WITH MINOR COAL</u> Grey, soft unconsolidated rocks	80	Grey green, clayey, soft unconsolidated									
220				85	Soft coaly Hard silty, carb. with minor coal (0.02)									
240				80	Soft, unindurated, coarse Soft, semi-indurated Grey clayey									
260			COAL		(0.5) coaly Silty									
280			COAL	80	Soft, grey clay grading into carb. clay Silty									
300			<u>INTERBEDDED DETRITAL ROCKS</u> Blocky but soft unindurated; grey to dark grey with minor carb. layers		Carb.									
320				85	Carb Fine									
340					Carb Congl.									
360				70	Coarse Grades into clst									
380					Carb Coal Carb.									
400														

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
400																		
420																		
440																		
460			<u>SILTSTONE</u> Dark grey, soft															
480																		
500																		
520			<u>INTERBEDDED COAL, MUDSTONE AND SST</u>															
540			<u>DETRITAL ROCKS</u> Grey soft															
560			<u>GRADED BEDS</u> Grey, thinly bedded. Beds < 5.0' representing several cycles															
580																		
600			<u>CLAY</u> Black, soft carb. with minor coal.															
620			Grey, thinly bedded, moderately consolidated.															

COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE NO.	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620																			
640			<u>SILTSTONE</u> Grey to dark grey, soft unindurated, carb. to coaly																
660					Coaly														
680					Grey														
700			<u>CARB. CLAYSTONE</u> Dark grey to black, soft unconsolidated																
720																			
740			<u>CLAYSTONE</u> Greenish grey, soft but blocky																
760			<u>COAL</u> Silty																
780					Carb Calc. Gritty														
800			<u>INTERBEDDED DETRITAL ROCKS</u> Dark grey to green, very soft unindurated cyclic sequence. Overall clst 60% soft mushy slst 30% sst 10%																
820																			
840					Calc bands (0.01)														

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
840																				
860																				
880																				
			<u>CONGLOMERATE</u> <i>pebble, unindurated</i>		Calc.															
900			<u>SILTSTONE</u> <i>Grey, blocky unindurated with minor sst</i>	45																
920																				
940																				
960																				
			<u>MIXED COAL AND MUDSTONES</u> <i>Black, soft, thinly bedded</i>	45	Coaly to carb.															
980					Coaly to carb. Grey clst															
					Carb. with thin bands (0.01-0.005) coal.	50														
1000			<u>INTERBEDDED DETRITAL ROCKS</u> <i>Grey, blocky to rubbly often with gradational boundaries</i>		Grey, with small sandy & congl. layers (<0.5')															
					Grey, calc. pebbles <0.1 across															
1020					Grey, with minor interbeds (0.3') slst & pebbles															
1040					Grey clayey Grey clst interbeds (0.5') (0.25) coal															
1060					Soft carb.															

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
1060																				
1080																				
1100																				
1120																				
1140																				
1160																				

↑ NQ core
↓ BA core

Coaly, soft, coal layers (02-03)

Graded sst to slst

MIXED COAL AND CLST
Black, thinly bedded
($< 0.1'$)

SANDSTONE
Grey coarse
END OF HOLE
AT 1151 feet

DRAFT CO

DRAFT COPY

126

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY HAT CREEK PROJECT — DRILL RECORD

Coordinates	: <u>9130' N</u>	Length	: <u>1813'</u>	Hole No.	: <u>74-46</u>
	: <u>8275' E</u>	Azimuth	: <u>090°</u>	Date	: <u>NOV. 1974</u>
Reference Elev.	: <u>3202'</u>	Dip	: <u>60°</u>	Logged by	: <u>J. Rotzien</u>
Ground Elev.	: <u>3200'</u>	Core Size	: <u>NQ</u>	Sheet	: <u>1 of 9</u>

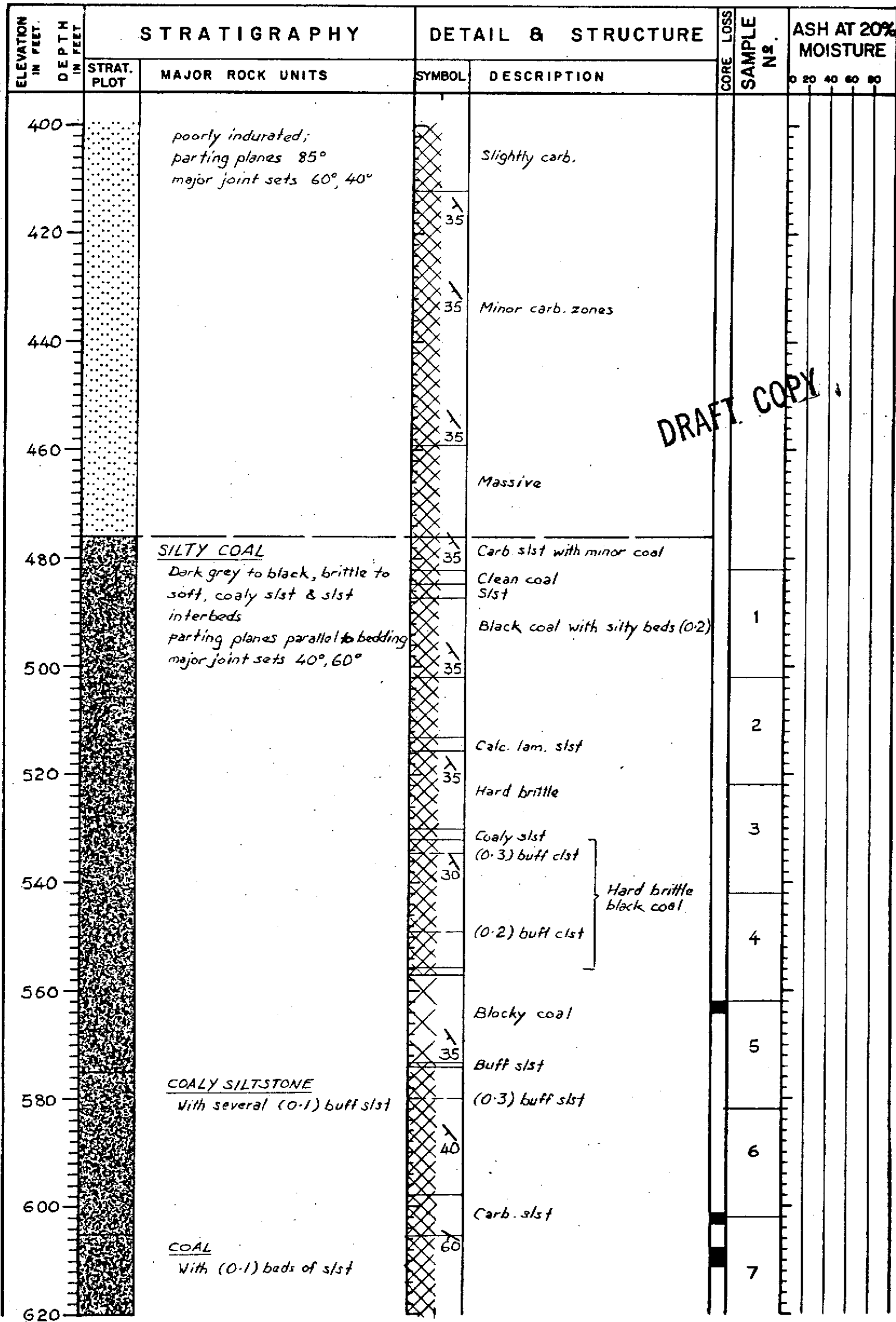
ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0			<u>Datum</u>															
			<u>OVERBURDEN</u> <i>Mixed sand, pebbles and boulders (fill?)</i>															
40			<u>COALY SILT AND COAL</u> <i>Black, moderately indurated coaly silt</i>															
60			<i>Hard, brittle, silty coal</i>															
			<i>Soft, black, pliable coaly silt</i>	25														
80			<i>Good clean coal</i>															
			<i>Soft, friable, silty coal, finely lam. (0.03-0.05)</i>	35														
			<u>SILTSTONE INTERBEDDED WITH SST AND CARB. SLST</u> <i>Grey green to grey blue; fine to medium sst; soft, unindurated, major joint sets: 60°, 45° parting planes 85° slst often well laminated</i>															
120				45														
				30														
				45														
140				60														
				35														
160				85														
				35														
180																		

DRAFT COPY

DRILL HOLE : ...74-46...
SHEET No : 1 OF 9...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE №.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
180			<i>continued</i>		Carb.													
200				40	joint sets Fine sst													
220				35	joint sets Clayey													
240				70	Parting													
260				30	Carb.													
280					Sst													
300					Interbedded slst & sst													
320					Congl. sst													
340				30	Slst with minor carb. zones													
360				30	Carb.													
380				55	Interbedded sandy slst & sst													
400				35	Grey brown lam.													
				35	Sandy													
				35	Congl. sst													
				30	Lam. irregular bedding													
					Carb													
					<u>INTERBEDDED SILTSTONE</u> <u>CARB. SILTSTONE</u> Grey green to dark gray, soft,													

DRAFT COPY



DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			<u>MIXED CARB. TO COALY SILTSTONE AND COAL</u> Soft slst, hard coal grey brown to black Parting planes parallel to bedding. Major sets 80°, 60°		Soft carb									
640					Coal									
					Coaly									
					Coal									
660				40	Soft, with beds of coal (≤0.7')									
				35										
680			<u>BLACK COAL</u> Hard & brittle, interbedded slst & silty coal. parting planes parallel to bedding Major joint sets: 60°, 80°		Dark grey soft slst		8							
				40	Minor slst beds									
700			<u>COALY SILTSTONE</u> With coal beds (≤0.5)				9							
				40										
720							10							
				35	Silty									
740			<u>INTERBEDDED SILTSTONE, COALY SLST AND SILTY COAL</u> Light grey to black, med. hard to hard; parting planes parallel to bedding and 80° joint sets 40°, 60°		Dark grey, med. hard, carb. clayey									
				40	(0.5) coal Hard, light grey, calc. shale									
760					Coal									
					Coaly									
				40	Carb. Calc. shale		11							
				30	Silty coal									
780							12							
					Carb. with minor coal									
800				15	Coaly silt with vary minor calc. shale		13							
820			<u>INTERBEDDED COAL AND SILTSTONE WITH MINOR CARB. SHALE</u> Black, hard brittle clean coal, soft slst zones		Coaly silt		14							
				25	Coaly silt									
840					Slst		15							

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840							15											
							16											
860			<i>coaly silt</i>															
			<u>COAL</u> <i>Clean, hard brittle, black, banded parting planes 80° Major joint sets 60°, 40° With minor slst and shale</i>				17											
880																		
900																		
920																		
940																		
960																		
			<i>Very clean coal</i>				20											
980																		
1000																		
1020																		
1040																		
1060																		

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE NO.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1060			<i>continued</i>															
1080							23											
1100																		
1120																		
1140																		
1160																		
1180																		
1200																		
1220																		
1240																		
1260																		
1280																		

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280			<i>continued</i>				28							
1300				15										
1320							29							
1340				15	(0.25) mixed white clst and coal									
				35	(<0.1) white clst, irregular beds									
				35	(0.5) slightly calc., white clst beds									
1360				20	(0.1) white clst irregular bedding		30							
				50	Buff very fine sst									
				30										
1380							31							
					silty									
1400				20										
1420							32							
				25										
1440														
				15										
1460							33							
				65	Buff, very fine sst (0.1 & 0.2)									
1480														
				40										
1500							34							
				40										

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1500							34							
1520					Very thin veinlets of calcite (0.01) Silty		35							
1540			<u>INTERBEDDED SILTY CLST, COALY SILT AND COAL</u> Grey, brown, pliable silty soft massive clst; parting planes 85° to C.A.; major joint sets 40°, 60° to C.A.		Clst Coal Clst Coaly silt		36							
1560			<u>INTERBEDDED CLAYSTONE, SILTSTONE, SANDSTONE, CONGLOMERATE AND MINOR LMST AND CARB. MATERIAL</u> Soft interbeds parting planes 85°-90° to C.A. joint sets 60°, 30° to C.A.		Silty clst Calc. med. sst Interbedded slst & fine sst Lmst with clay infilled fractures Grey clst with small chunks carb material Silty lmst Finely bedded sst & slst									
1600					Congl. sst									
1620					Slst with interbedded sst Calc. fine sst to coarse congl. with minor slst									
1640					Slst with minor sst Congl. sst with coal fragment upto 0.01' in diameter Very fine to fine sst									
1660					Grey to grey brown clst Carb. & coaly clst with frequent calc. veinlets Sandy slst grading into sst with coal fragments upto 0.01' diameter massive to laminated, Silty clst with carb. fragments									
1680					Pebble congl. upto 0.1' Sst Slst with calc. veinlets Lmst									
1700					Grey green slst Coarse sst to slst, calc.									
1720														

DRAFT COPY!

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE №	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1720					Calc. grey clst with carb. fragments														
					Coaly clst														
1740				45															
					Calc. silty clst with carb fragments														
1760				40															
					Sandy slst with calc. veinlets														
					Slst grading thru sst to congl. sst.														
					Graded beds clst to congl. sst														
1780					Calcite veinlets in slst														
					Silty clst with sandy zones, carb. fragments and occasional calcite veinlets														
1800				40															
					(0-25) brecciated clst														
					END OF HOLE AT 1813 feet														
1820																			

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

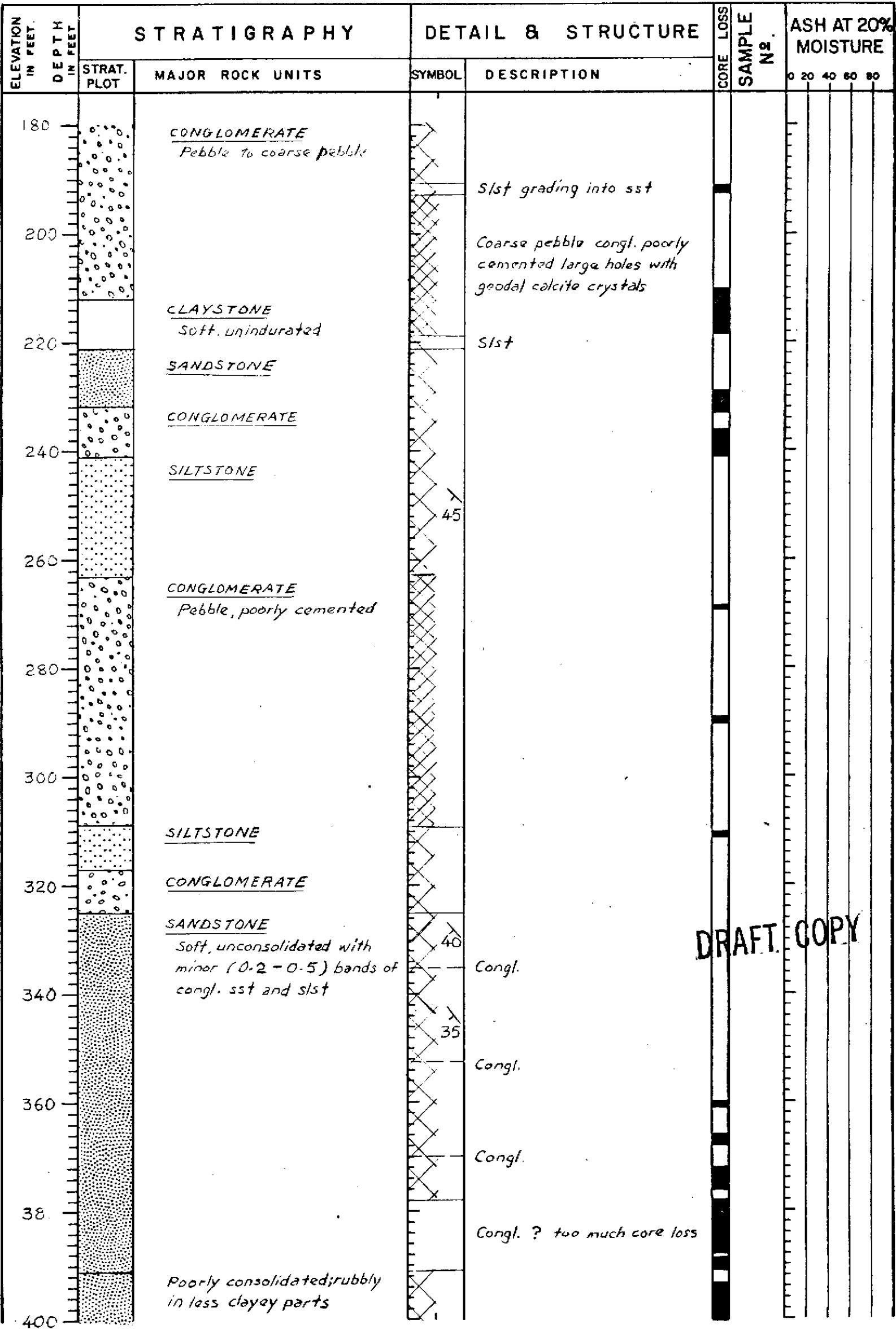
HAT CREEK PROJECT — DRILL RECORD

DRAFT COPY

Coordinates	: 2050' N	Length	: 1004'	Hole No.	: 74-47
	: 6000' E	Azimuth	: -	Date	: NOV. 1974
Reference Elev.	: 3518'	Dip	: 90°	Logged by	: Mel de Quadros
Ground Elev.	: 3520'	Core Size	: NQ	Sheet	: 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
0-145			<u>OVERBURDEN</u> <i>Mixed sand and great many boulders</i>											
145-180			<u>MIXED CYCLIC SEQUENCES OF CONGL., SST, AND MUD ROCKS</u> <i>Greenish, moderate to poor induration representing several cycles of detrital deposition</i> <u>SANDSTONE</u>	X 65										

DRAFT COPY



DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400														
420														
440														
460														
480														
500														
520														
540			<u>SILTSTONE</u> <i>soft clayey</i>											
560			<u>CONGLOMERATE</u> <i>Coarse pebble, poorly indurated, pebbles mostly vesicular basalt</i>											
580			<u>SILTSTONE</u> <i>Gray silt grading into a coarse sst.</i>											
600			<u>CONGLOMERATE</u> <i>Coarse pebble, poorly indurated, very friable, poorly cemented, much core loss.</i>			90								
620			<u>SILTSTONE</u> <i>Green to gray green, becoming coarser & sandier with depth.</i>			85								

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
620					Coarse to congl sst with coal fragments Sandy													
640			<u>INTERBEDDED SLST, SST</u>	80 90	Fine to medium with coal fragments													
660					Fine banded sst and slst with gradational boundaries													
680					Dark green silty clst													
700					Coarse pebbly congl. sst													
720					Sandy													
740					Clst Coarser in depth													
760					Silty clst grading into slst													
780					Hard coarse, pebbly (0.5)													
800					Dark green clst													
820					Interbedded sst & slst													
840			<u>SILTY COAL</u>	45	Rubby silty coal (0.5) Silty clst, more silty downwards													
				50	Green gray Coarse clay to slst													

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840																		
860																		
880																		
900			<u>INTERGRADED COAL AND SILTSTONE</u> <i>Black, soft, rubily to pulverised</i>		(0.2) coaly slst Clean coal, silty for top (0.6) Very silty Carb													
920			<u>INTERBEDDED SILTSTONE SANDSTONE WITH MINOR CLAYSTONE</u> <i>Grey, soft, unindurated thinly bedded.</i>															
940																		
960		△ △	<u>BASALTIC BRECCIA</u> <i>Dark green, very brecciated angular basaltic fragments, in fine ashy matrix. Flow or agglomeratic breccia</i>															
980																		
1000																		
1020			<u>END OF HOLE AT 1004 feet</u>															

DRAFT COPY

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates : 4500' N Length : 1747' Hole No. : 74-48
 9000' E Azimuth : - Date : DEC. 1974
 Reference Elev. : 2196' Dip : 90° Logged by : M.de Quadros/J.Rotzie
 Ground Elev. : 2195' Core Size : N.Q. Sheet : 1 of 9

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20 MOISTUR						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0		Datum												
			<p>OVERBURDEN Glacial drift to 150' app. - an unconsolidated pebble to boulder conglomerate 150'- 195'. Predominantly clay, very sticky, bentonitic.</p>											
20														
40														
60														
80														
100														
120														
140														
160														
180														

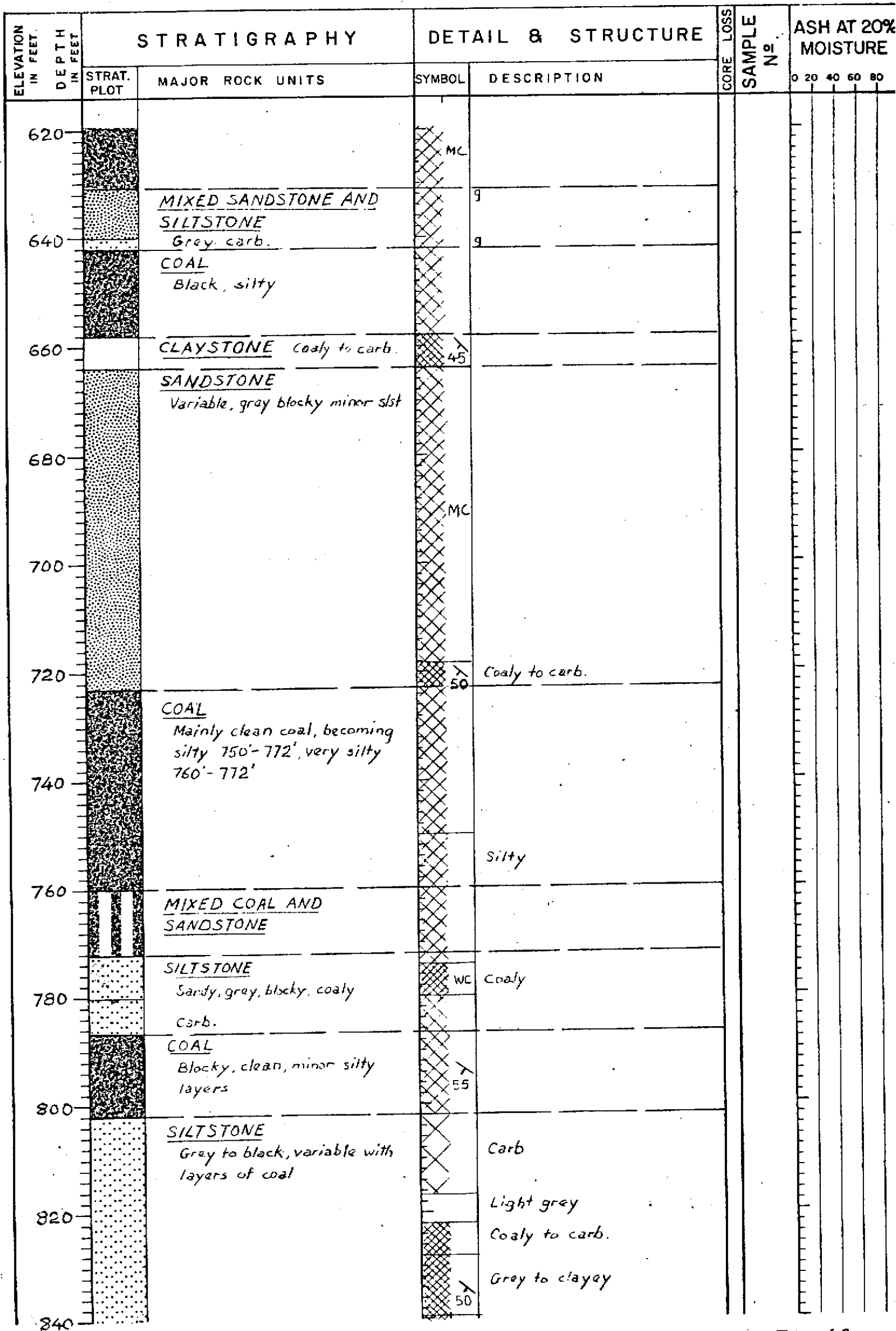
DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
200			<u>CLAYSTONE</u> <i>Massive homogenous grey green to grey brown blocky unbedded rock. Good parting 45° to C.A. and also at 90° to C.A.</i>																
220																			
240						WC													
260																			
280																			
300																			
320																			
340																			
360																			
380																			
400																			

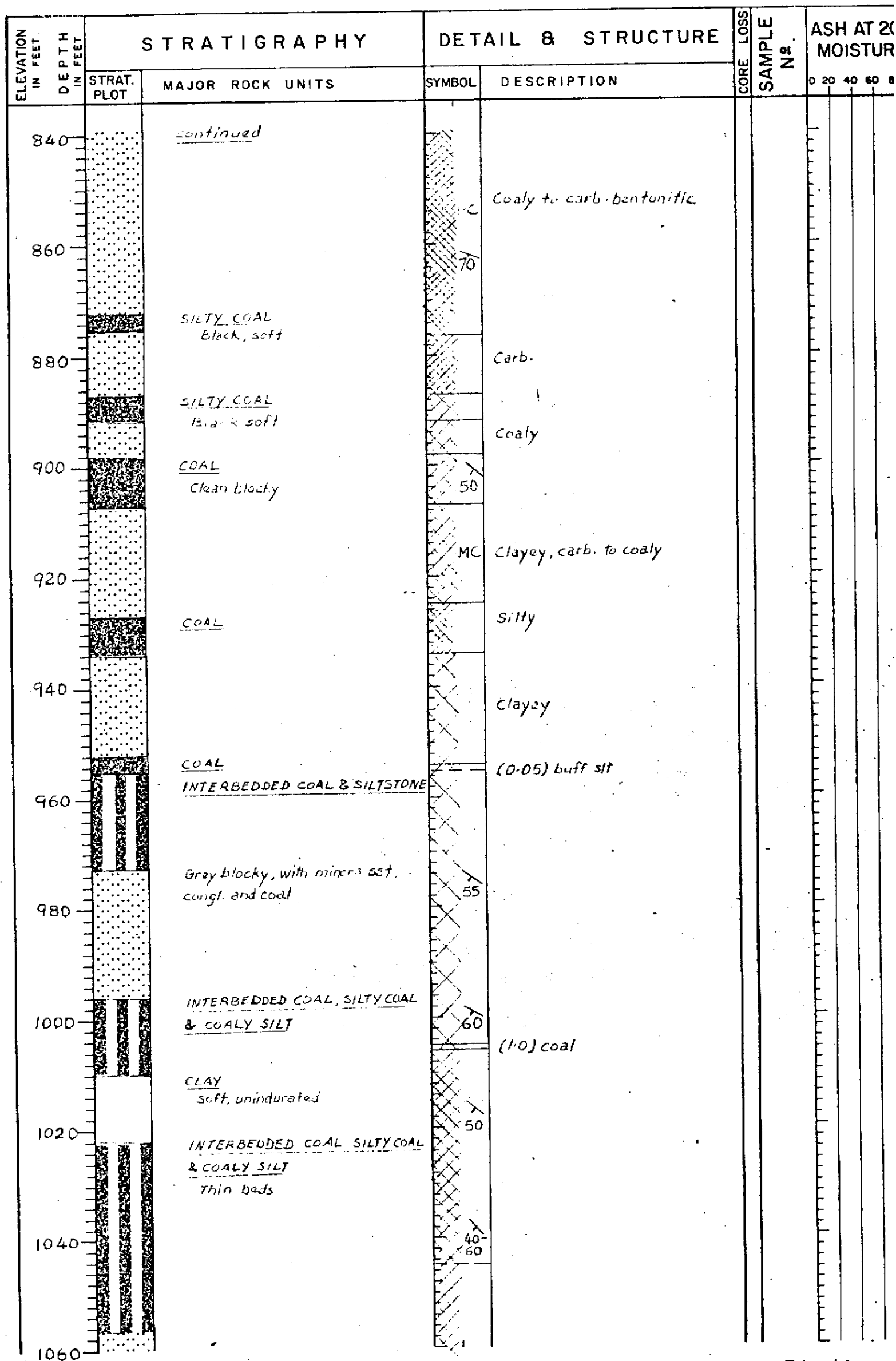
DRILL HOLE : ...74-48...
SHEET No. : ..2 OF 9....

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
400			<i>continued</i>															
420				PC														
440				WC														
460				PC														
480																		
500				45														
500			<u>COAL</u> Massive clean, lustrous banded	45														
520			<u>INTERBEDDED COAL AND SILTY COAL</u>															
540			<u>COAL</u> clean, blocky <u>SILTY COAL</u>	45														
560			<u>SILTSTONE</u> Grey blocky, carb.	9														
580				45														
600			<u>COAL</u> Good, clean, blocky															
600			<u>SILTSTONE</u> Carb.	UC														
600			<u>SANDSTONE</u> Grey blocky grading down to a siltstone	46														
620			<u>COAL</u> Clean, becoming silty down	MC														

DRILL HOLE : ... 74-48 ...
SHEET No. : 3 OF 9 ...



DRILL HOLE : 74-48
 SHEET No. : 4 OF 9



DRILL HOLE : .. 74-48 ..
SHEET No. : .. 5 OF 9 ..

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1060			<u>SILTSTONE</u> With sst. layers															
			<u>COALY SILTSTONE</u> Black soft															
1080			<u>SILTSTONE</u> Grey, carb.			60	Calc. sst											
			<u>INTERBEDDED COAL & SLST.</u> Black soft															
1100			<u>MIXED SST AND SLST</u> Thinly bedded, blocky			35												
1120						55	Congl.											
1140						40												
1160			<u>SILTSTONE</u> Variable			45	(+0) carb sst Calc with solution cavities with quartz crystals. Coaly											
1180						40	Sandy											
1200			<u>INTERBEDDED SILTSTONE, CALC. SLT., COAL</u>			50	(+0) Mylonitised, slickensided irregular slip surfaces in clst.											
			<u>CLAYSTONE</u> Silty, carb.															
1220			<u>SILTSTONE</u> Coaly to carb.			55												
			<u>INTERBEDDED COAL, COALY SLST. AND CARB. - COALY SLST.</u> Very variable, thin															
1240			<u>SILTSTONE</u> Sandy, coaly, occasionally calc.			70												
1260						60												
			<u>INTERBEDDED COAL, SILTY COAL, COALY SLST AND CARB. SLST</u>															
1280						65												

DRILL HOLE : ...74-48...
SHEET No. : ..6 OF 9...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1280																			
1300			<u>CLAYSTONE</u> Grey green, soft, minor slst and sst.	PC															
1320				45															
1340			<u>SILTSTONE</u> Variable, grey		(0.5) carb. (2.0) Coaly														
1360				55															
1380					(0.03) calcite view (0.5) congl.														
1390				40															
1400			<u>MIXED DETRITAL ROCKS</u> Grey green blocky fine to coarse. Hard, parting 80% to 75% and joint. 30% to 25%		Calc. carb. (9.0) medium grained														
1420				35															
1440			<u>CONGLOMERATE</u> Minor slt, sst		M. sst Laminated Sst Congl Slt Congl. sst														
1460				40															
1480			<u>SILTSTONE</u> Variable, hard, blocky		Mixed slt, sst congl.														
1500				50															
				60															
				60															
				40															
					(0.5) congl. (1.0) congl. (0.5) congl. (0.5) coarse sst. Laminated sst. Congl.														

DRILL HOLE : ...74-48...
SHEET No. : ..7. OF 9...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1500				X	Laminated slt. (1.5) slt with (0.2) coaly														
1520				X 40															
1540				X 40	Carb. calc. minor coal														
1560			<u>INTERBEDDED COAL AND SILTSTONE</u> Coal, black silty Grey, carb.	X 50	Silty Calc.														
1580			Mixed coal and slt <u>COAL</u> Black	X 55	(0.2) buff slt														
1600			<u>COAL</u> Good, clean, blocky	X 45 NC 45-50															
1620			<u>SILTSTONE</u> Grey, carb.	X 45	Carb.														
1640			<u>COAL</u> Good, clean	X	Coaly (1.0) silty														
1660			<u>SILTSTONE</u> Carb. to coaly, soft	X WC	Carb.														
1680			<u>COAL</u> Black clean	X 45	Coaly Carb. calc.														
1700			<u>CLAYSTONE</u> Grey to dark grey, soft, with minor coal layers	X	(1.5) clay, soft, sheared 30° CA? bentonitic?														
1720			<u>COAL</u>	X	Clay, soft bentonitic?														

DRILL HOLE : 74-48
SHEET No. : 8 OF 9

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1720				X										
				X	WC									
				X										
				X										
1740			COAL	X										
				X	55		silty							
				X										
			END OF HOLE 1747 feet											
1760														

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT — DRILL RECORD

DRAFT COPY

Coordinates : 4500' N. Length : 1277.5' Hole No. : 75-49
 Reference Elev. : 10,050' E. Azimuth : — Date : JAN. 1975
 Ground Elev. : 3211.5' Dip : 90° Logged by : J. Rotzien/M.d. Quodros
 Core Size : N.Q. Sheet : 1 of 6

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
0		Datum																	
			<u>OVERBURDEN</u> Sandy gravel with boulders																
20																			
40																			
60																			
80			Clay Sandy gravel with boulders																
100																			
120			Sandy clay Boulders and gravel																
140			<u>CLAYSTONE</u> Dark to grey brown with interbeds of slst and minor beds of buff slst. and clst. Vary soft, massive.	X															
160				X															
180				X															

DRAFT COPY

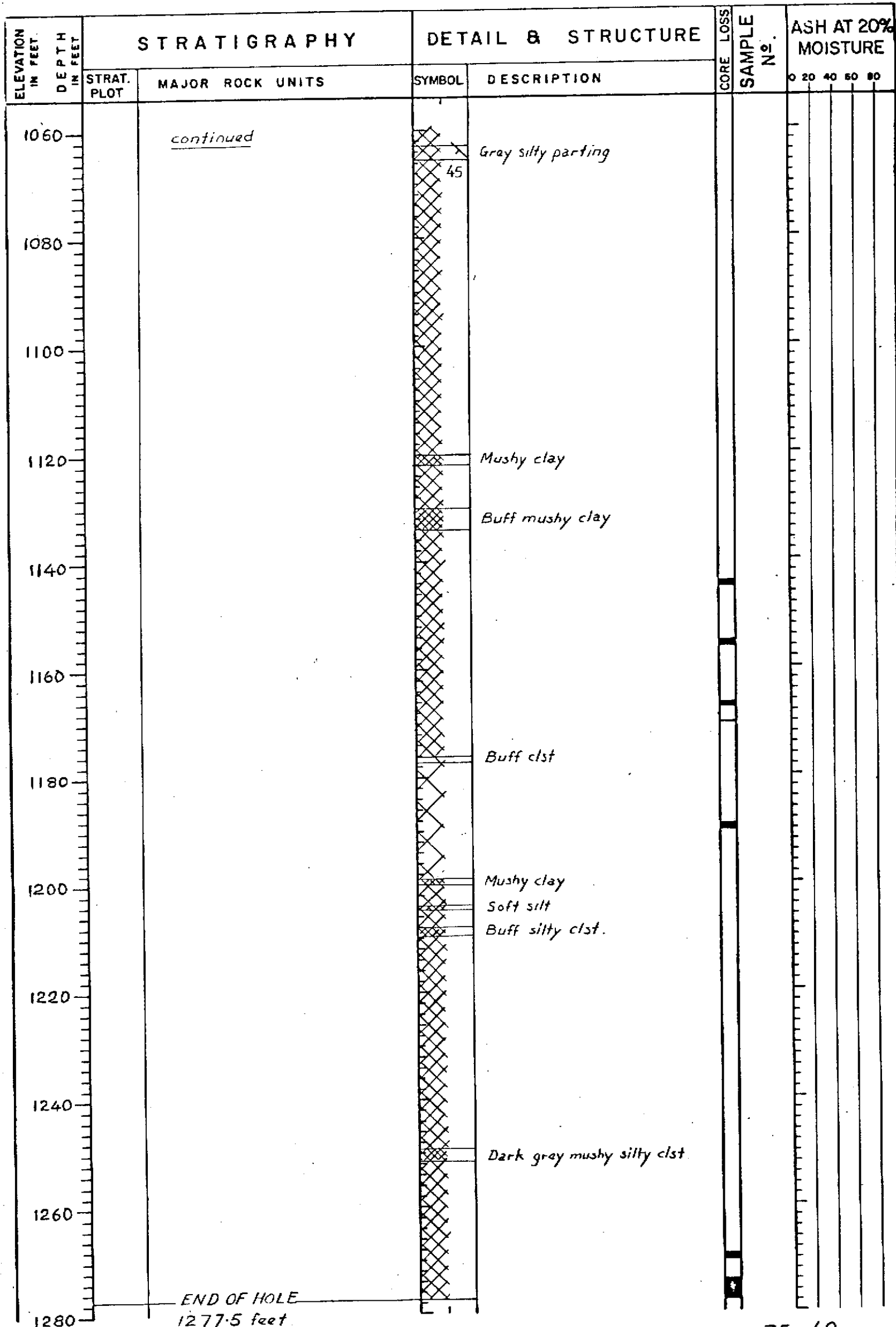
ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			<i>continued</i>											
				X	(0.2)	} <i>Buff slst.</i>								
				X	(0.5)									
				X	(0.5)									
420				X	(0.2)									
				X	(0.5)									
				X	(0.2)									
440				X										
460				X										
480				X										
500				X	(0.3) zone of sheared clst.									
				X	Buff clst									
				X	35									
520				X	50	(0.5) f. sst (0.5) Buff clst.								
540				X										
				X	60	(0.3) Buff slst								
560				X										
580				X	40	(0.3) Buff slst								
600				X		Buff slst								
620				X										

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT MOISTU						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60			
620			<i>continued</i>											
640					(0.5) hard buff clst Light gray slst.									
660			<u>SILTSTONE</u> Laminated gray clayey slst		Laminated gray silty clst Hard buff clst									
680					(0.25) hard buff clst									
700					Clst interbeds Calc. joint									
720					(0.16) hard buff clst									
740														
760														
780														
800			<u>CLAYSTONE</u> Gray to dark grey laminated		(0.5) buff clst									
820					(0.1) white clst									
840					White clst									

DRILL HOLE : ...75-49...
SHEET N^o. : .4. OF .6...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
840																				
860																				
880																				
900																				
920																				
940																				
960																				
980			Grey to dark gray, massive, unlaminated	65	(0.9) buff fine clst															
				65	(0.16) soft light brown clst															
				60	(0.5) hard white banded clayey lmsl.															
1000																				
1020																				
1040																				
1060																				

DRILL HOLE : 75-49
SHEET No. : 5 OF 6



DRAFT COPY

DRILL HOLE : 75-49
SHEET No. : 6 OF 6

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates	: <u>10,000' N</u>	Length	: <u>1002'</u>	Hole No.	: <u>75-50</u>
	: <u>8000' E</u>	Azimuth	: <u>—</u>	Date	: <u>JAN. 1975</u>
Reference Elev.	: <u>3122'</u>	Dip	: <u>90°</u>	Logged by	: <u>M. de Quadros</u>
Ground Elev.	: <u>3120'</u>	Core Size	: <u>N.Q</u>	Sheet	: <u>1 of 5</u>

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE									
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80					
0			<u>Datum</u>														
			<u>OVERBURDEN</u>														
			Sand														
20			Clay														
			Sand & gravel														
40			Clay														
			Coarse gravel														
			Clay														
			Gravel														
60			Clay														
			Sand														
			Gravel														
			Sand														
			<u>BENTONITIC CLAY</u>														
80			Gray soft mushy with coal fragments														
							(0.2) soft silty coal										
			<u>COALY CLAYSTONE</u>														
			Black soft rock, with thinly bedded very minor coal														
100							(0.5) clean coal										
120																	
140			<u>CLAYSTONE</u>														
			Gray soft, with thin coal bands														
160			<u>COALY SILTY CLAYSTONE</u>														
			Black soft with thin coal bands														
			<u>SILTY COAL WITH THIN CLAY BANDS</u>														
			Black well banded silty coal with coaly to carb. clst.														
180																	

DRAFT COPY

DRILL HOLE : 75-50
 SHEET No : 1 OF 5

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
	180		<i>continued</i>		(0.2) clay Clayey ls Clay		3							
	200					Clayey ls Coaly clay		4						
	220		<u>COAL</u> Clayey, black rubbly rock		(0.3) } clay (0.3) } (0.5) }									
	220			Black, blocky to rubbly, thinly banded with lustrous fracture surface 6"-3" apart parallel to banding		Black coaly clst.		5						
	240					(0.5) brown slst								
	260					Silty		6						
	280													
	300													
	320					Thinly banded white clst and coal		8						
	340													
	360													
	380													
	400						11							

DRILL HOLE : ... 75-50 ...
SHEET No. : ... 2 OF 5 ...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			<i>continued</i>				11							
420														
440							12							
460														
480							13							
500														
520							14							
540			<u>CLAY</u> Gray soft mushy Silty black soft crumbly Greenish grey soft											
560			<u>INTER BEDDED DETRITAL ROCKS</u> Greenish grey rocks, sometimes carb., poorly indurated. Thinly bedded, often with cyclic deposition and gradational boundaries.											
580														
600														
620														

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			<i>continued</i>		Silty clst									
					Mushy, blocky sst, dark gray Soft, dark grey clst.									
					Gray green sst.									
					Green silty clst. Green slst.									
640					Green sandy slst with thin sst	80								
					Carb. to coaly } Green clst. (0.16) coal }									
					Green slst (Sandy)									
					Grey green sst with minor clst & slst	75								
					Calc									
700					Sandy, clayey green slst									
					Green soft clst									
					Green sandy slst									
					Green soft clst									
720					Calc Green sst	75								
					Green clayey slst. Green silty sst.									
					Grey calc. pebble congl.									
					Green slst Green sst slightly calc.	80								
					Grey green sandy slst	85								
760					Green silty med. sst Green sandy slst Green soft clay	85								
					Green slst									
					Soft sand Soft clay									
780					Green sandy slst Green sst	80								
					Coarse calc grey congl.	80								
800					Soft mushy clay } Green silty clst									
					Green clayey slst									
					Calc. } Coarse sst (0.5) clayey slst }									
820					Green sst with minor slst & clst									
					Gray hard calc. sst									
840														

DRILL HOLE : 75-50
SHEET No. : .. 4 OF 5

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840			<i>continued</i>		Green sst with minor clst & slst														
860					Fine pebble calc. hard congl.														
				80	Green sandy slst														
880					Green soft pliable clay														
					Green soft pliable calc. clay														
				80	Green sandy slst														
900				MC	Fine pebble congl. unindurated														
				80	Green clayey slst														
					Fine pebble congl. calc.														
920					Green silty sst														
				80	Streaky calc														
				80	Streaky calc. } Soft green silty clst														
940				4C	Green silty sst														
					Dark grey carb. slst														
					Green silty sst, soft														
960					Carb. slst														
					(0.16) soft coal														
				45	(0.1) Calc														
					Carb. clst														
					(0.17) Coal														
980					Green silty clst														
					(0.2) coal														
					Carb. clst														
					Green silty clst } Carb. clst														
					(0.2) coal														
					Grey green soft sst & slst														
1000					unindurated														
					END OF HOLE														
					1002 feet														

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

DRAFT COPY

Coordinates : 7000' N Length : 1616' Hole No. : 75-51
 Reference Elev. : 8000' E Azimuth : _____ Date : JAN. 1975
 Ground Elev. : 3352' Dip : 90° Logged by : M.de Quadros/J.Rotzien
 Core Size : N.Q. Sheet : 1 of 8

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u> Clay											
20			Sand & boulders											
40			Clay											
			Gravel & boulders											
60			Clay											
			Gravel & boulders											
80			Clay											
			Boulders											
100			Clay											
			Boulders Clay Boulders											
120			Small boulders											
			Boulders Mud											
140			Brown gravel											
180			<u>SILTY CLAYSTONE</u> Green to grey green soft plastic silty clst. poorly bedded.											

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

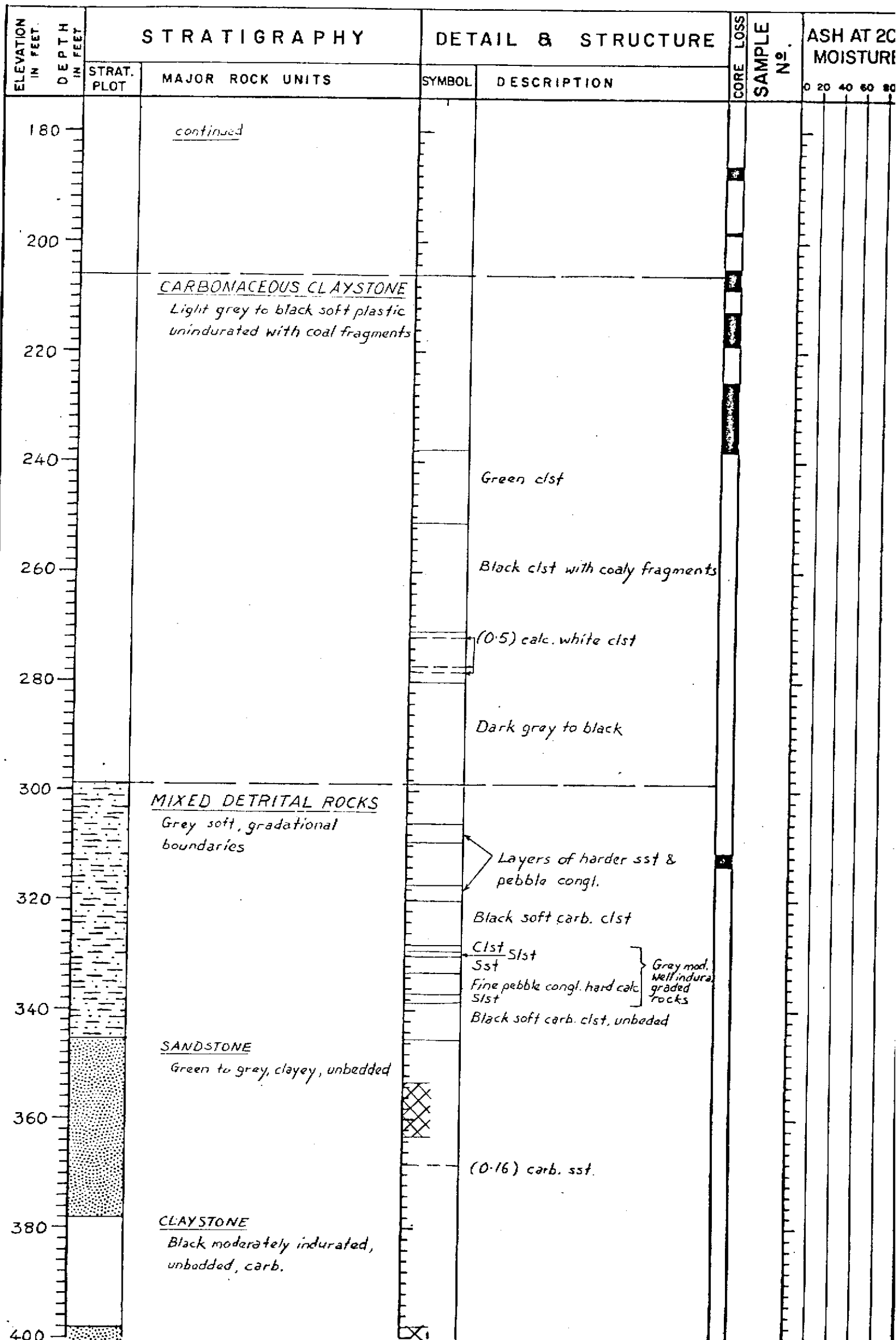
HAT CREEK PROJECT — DRILL RECORD

DRAFT COPY

Coordinates : 7000' N Length : 1616' Hole No. : 75-51
 : 8000' E Azimuth : Date : JAN. 1975
 Reference Elev. : 3352' Dip : 90° Logged by : M.de Quadros/J.Rotzien
 Ground Elev. : 3350' Core Size : N.Q. Sheet : 1 of 8

ELEVATION OR DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE			
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60
0		Datum								
		<u>OVERBURDEN</u> Clay								
20		Sand & boulders								
40		Clay								
		Gravel & boulders								
60		Clay								
		Gravel & boulders								
80		Clay								
		Boulders								
100		Clay								
		Boulders Clay Boulders								
120		Small boulders								
		Boulders Mud								
140		Brown gravel								
180		<u>SILTY CLAYSTONE</u> Green to gray green soft plastic silty clst. poorly bedded								

DRAFT COPY



DRILL HOLE : ... 75-51 ...
SHEET No. : . 2 . OF . 8 .

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
400			<u>SANDSTONE</u> <i>Grey hard unbedded</i>															
420																		
440			<u>SILTSTONE</u> <i>Grey sandy to clayey unbedded soft</i>															
460			<u>CLAYSTONE</u> <i>Black soft, carb. with thin (0.01-0.02) layers of coal</i>															
480																		
500			<u>SANDSTONE</u> <i>Grey, hard, with occasional clst.</i>															
520																		
540			<u>SILTSTONE</u> <i>Grey, hard, sandy, clayey</i>															
560			<u>SANDSTONE</u> <i>Grey hard, clayey, Variable texture</i>															
580			<u>SILTSTONE</u> <i>Grey to black banded, hard carb.</i>															
600			<i>Grey laminated hard</i>															
620																		

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620			<u>CLAYSTONE</u> <i>Black semi indurated, carb. variable texture</i>	60															
640			<u>SILTSTONE</u> <i>Grey, soft, clayey</i>																
660			<i>Thinly interbedded sst, slst, clst grey unbedded with gradational boundaries. Coarser sst usually calc, hard, clst tend to be pulverised</i>		<i>Carb clst, dark grey to black, mushy</i>														
680																			
700																			
720																			
740																			
760																			
780					<i>Fine pebble congl.</i>														
800																			
820			<u>CLAYSTONE</u> <i>Dark grey to black, soft unbedded carb.</i>																
840																			

DRILL HOLE : ...75-51...
SHEET N^o. : ..4 OF .8.....

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840			<i>continued</i>																
					Black soft coaly														
860					Gray soft crumbly														
					Gray silty banded sst texture variable	70 60 30													
880					Calcitised joint														
					Very carb.														
900					Very carb.	60													
					Fine, grey, lam. silty, sst														
920					Very carb.														
					Gray soft sandy, clayey sst														
					Gray sst														
					Gray soft sandy, clayey sst														
940					Congl.														
					Gray hard sst	60													
					Congl.														
					Irrag. banded soft silty	60													
960			Soft carb.		Carb														
980																			
1000					Sst														
					Sst														
					Coaly														
					(0.5) coaly														
1020			Banded, thin coaly (0.01) bands reg dip 60°			60													
1040																			
					Black, soft, mushy carb. to coaly with layers of coal (<0.5)	60													
1060																			

DRILL HOLE : ...75-51.....
SHEET No. : ..5. OF ..8.....

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE							
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80			
1060					Banded speckled gray & white coaly petrified wood.		1								
			<u>SILTY COAL</u> Black rubble to pulverised finely banded, very unhomogenous and variable	60	Silty										
				62	Mushy coaly slst										
1080				60	Grey banded clst										
					Mixed coaly slst & mushy & clean coal			2							
1100				60											
				45											
1120				45											
				45											
1140			45												
			45												
1160			45												
			45												
1180			45												
					Gray soft mushy clay										
1200															
					Black, clean finely banded blocky coal with clean lustrous fractures parallel to banding Very homogenous										
1220															
1240															
1260				60	White clst										
1280					(0-02) white clst										

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1280			<i>continued</i>															
1300					Silty		9											
1320				45			10											
1340				45														
1360				45	Black & white banded coal/ dst		11											
				45	(0.5) buff dst													
1380																		
1400				45	(0.25) buff clst		12											
			<u>INTERBEDDED SILTSTONE, SANDSTONE CONGLOMERATE</u>		Grey green sst													
1420			Grey green, blocky to rubbly poorly indurated, soft, friable partings 80° to C.A. and joint sets 60°, 30°.	80	Blue grey, blocky pebble congl.													
				60	Coaly slst (0.5) Grey green fine sst													
1440				30	(0.5) Blue grey pebble congl. Grey green med. sst Graded slst to sst to congl.													
1460				80	Grey green blocky pebble (vari- coloured) congl. Fine sst graded to fine congl. Grey green slst & fine sst													
1480					Grey green fine sst grading to med sst with beds of slst. Grey green slst grading to sst to pebble slst, soft.													
1500																		

DRILL HOLE : ...75-51...
SHEET No. : .7. OF .8.

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1500			<i>continued</i>		Grey green soft sst grading from fine sst to congl									
1520					Pebble congl. light grey to green hard, brittle calc. with occasional cobbles. Grey green slst.									
1540					Grey green soft fine sst with occasional slst (0.2-0.3)									
1560				45	Black soft carb. sst. Finely soft slst & fine to very fine sst, gray green Soft, very fine sst grading to fine congl.									
1580				50	Fine congl. - coarse f. vari-coloured & dominantly basaltic Soft back carb slst to coarse sst.									
1600				45	Grey green soft, very fine to medium sst. Gray green soft slst Black carb slst Gray green soft slst Dark gray brown to black soft carb. slst Grey green, soft, well graded, fine to med. sst									
1620			END OF HOLE 1616 feet											

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD DRAFT COPY

Coordinates : 4500' N Length : 1004' Hole No. : 75-52
 : 8000' E Azimuth : Date : JAN. 1975
Reference Elev. : 3362' Dip : (Collar) 90° Logged by : J. Rotzien
Ground Elev. : 3360.5' Core Size : N.Q. Sheet : 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE				
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80
0			Datum									
0-80			<u>OVERBURDEN</u> Sand & gravel									
20-45			<i>Silt</i>									
45-65			Gravel with boulders <i>silt</i>									
65-80			Clay with boulders (<i>till</i>)									
80-120			<u>CLAYSTONE</u> Hard grey green		Triconed - no structure Grading into med. sst							
120-145			<u>CARB. SILTSTONE</u> Soft, grey green to black									
145-165			<u>COALY SILTSTONE</u> Soft mushy black with thin (1.5-20) layers of coaly slst				1					
165-180			<u>SANDSTONE</u> Hard light grey, slightly carb.		(0.5) Congl. sst Carb slst							
180							2					

DRAFT COPY

DRILL HOLE : 75-52
SHEET N^o : 1 OF 5

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE			
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60
180			<u>INTERBEDDED SILTSTONE AND CARB. SILTSTONE</u> Grey green to black Moderately hard very unhomogenous		Well indurated brittle fossiliferous grey shale Finely interbedded with sst. soft Well indurated brittle carb. grey shale		2				
200				40 40 80							
220				40 80	Light grey, soft, very fine, weakly laminated sst		3				
240				40 30 80	Carb. slst with layers coal (0.75)		3				
260			<u>COAL WITH INTERBEDDED SILTSTONE AND CARB. SLST</u> Black to grey mixed sequence very variable.	40 80 40	Hard brittle black, clean, with (0.3- 0.4) zones soft mushy slst Grey soft slst Clean with (0.3-0.4) zones soft mushy slst		4				
280				55 40 55 30	Soft, pliable, massive grey brown to black slst with carb. zones Good clean		5				
300				45 50	Soft coaly slst with (0.1-1.5) zones of carb. slst						
320					Carb. slst. Carb. slst.		6				
340			<u>MIXED DETRITAL ROCKS</u> Grey green, mainly slst and sst	75 50 40 45	Partings joints						
360			<u>SILTY COAL</u> Variable black hard to soft	50			7				
380			<u>MIXED DETRITAL ROCKS</u> Light grey green, soft slst, and sst occasionally calc. or carb.	75 35	Partings joints		8				
400											

DRILL HOLE : ... 75-52 ...
SHEET N^o. : ... 2 OF 5 ...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION			0	20	40	60	80		
400					45 Carb.		8							
			<u>INTERBEDDED COAL, SILTY COAL, AND CARB. SLST</u> Black hard coal with soft silty coal & coaly slst soft & mushy carb slst partings 70° 55-60 joints 30°		55 Very fine interbedded with brown gray slst Silty coal Gray green slst									
420					70 Silty coal									
					60 Carb. slst with minor coal									
					30 Grey green very fine sst with carb.									
440					55-60 Silty coal with (0.25') slightly carb slst at 447.5'									
			<u>SANDSTONE AND SILTSTONE INTERBEDDING</u> Light blue sst, soft fine to coarse with interbeds of carb slst & slst partings 80° joints 35° & 75°		50 Sandy sst									
460					80 Laminated sst very fine to fine									
					75 Carb slst with minor silty coal									
					75 Med. sst									
480					45 Gray green slst									
					45 Light grey congl. sst									
					45 Gray green slst									
					45 Coarse sst									
					45 Dark grey slightly carb slst									
					45 Dark grey congl. sst									
					45 Light grey sst									
					45 Carb slst									
500					35 Gray green sst									
					40 Blue grey sandy slst with (0.5-1.0) interbeds of sst.									
520					80 Carb. slst									
			<u>CLEAN COAL WITH CARB. ZONE</u> Black hard clean coal with soft carb. slst		50									
540			<u>SILTSTONE</u> Soft, grey green slst with small beds sst partings 75° major joint sets 60°, 30° slst often sandy with ~5% carb. fragments		30 Calc sst									
					75 Hard, brittle, calc. sst									
					60 Intermixed slst & carb. slst									
					30 Clean coal									
560			<u>INTERBEDDED COAL AND SILTSTONE</u> Hard black brittle coal with grey green soft slst & sst, partings 85°, joint sets 60°, 30°		30 Calc. petrified wood									
					45 Clean coal with 3 (0.5) coaly slst									
					60 Blue grey to gray brown slst									
580					85 Thinly interbedded coal and blue gray slst									
					55 Clean laminated coal									
600					60									
					50 Light gray green laminated fine to very fine sst									
620					60 Soft coaly slst									

DRILL HOLE : ... 75-52 ...
SHEET No. : ... 3 OF 5 ...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE					
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80	
620			<i>continued</i>		Clean coal with 2 (0.2) silty zones Gray green slst		12						
				45	Thinly interbedded slst, carb slst, coaly slst & clean coal grey green to black.								
640				60	Clean coal with (0.2-0.3) zones soft coaly slst.								
			<u>MIXED DETRITAL ROCKS</u>	60	Slst to fine sst								
			Soft to hard, gray green to light grey dst, slst, sst and congl with gradational boundaries Fractures 80°, joint sets 45° and 60°. Cyclic sequence	55	Slst to pebble congl.								
660				60	Laminated fine to coarse sst								
				50	Calc very fine sst interbeds with slst Carb. slst								
680				45	Slst								
				80	Fine to med. sst								
700					Pebble congl. Slst to sst - congl Sst to pebble congl Slst to pebble congl.								
				55	Slst to coarse sst								
				60	Slst to pebble congl. Slst with (0.25) carb zone								
720				60	Sst Pebble congl Dark grey green sst Light gray slightly calc pebble congl.								
740				60	Dark green sst								
				45	Light gray cobble congl								
760					Dark green med. sst								
				80	Dark green congl.								
780				50	Dark green sst with minor interbeds slst								
				45	Dark green slst with minor interbeds sst								
800				60	Carb. slst (0.5) Clean coal								
				70	Dark green slst with (1.0) beds sst								
820				60									
840			<u>CARB. SILTSTONE</u>		(0.4) minor clean coal								

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840			Dark gray to black soft rock with minor coal.															
860			<u>MIXED DETRITAL ROCKS</u> Dark green, very fine sst to coarse sst to hard light blue grey pebble congl. partings 80° joints sets 50°-30° cyclic		Sst													
880					Congl													
900					Sst													
920					Sst to congl.													
940					Sst													
960					Calc. cobble congl.													
980					Blue green med. sst													
1000					Interbedded sst and calc. congl. in (10-30) beds													
1020					Very fine sst to pebble congl.													
			END OF HOLE 1004 feet															

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD DRAFT COPY

Coordinates	: 8000' N	Length	: 999'	Hole No.	: 75-53
	: 7500' E	Azimuth	:	Date	: FEB. 1975
Reference Elev.	: 3378'	Dip	: 90°	Logged by	: J. Rotzien
Ground Elev.	: 3376'	Core Size	: N.Q	Sheet	: 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u> Gravel											
	20		Sticky clay											
	40													
	60													
	80		<u>INTERBEDDED SILTSTONE SANDSTONE AND CONGLOMERATE</u>											
			Blue green interbedded sst, sst congl. soft but generally sound joint sets 60°	60	sst Pebble congl.									
				50	Coarse sst Pebble congl.									
				60										
	100			70	(0.5) sst									
					(0.35) sst									
					Sst									
	120				sst									
					Sst									
					Pebble congl									
	140													
					Pebble congl. Sst									
					Black carb sst									
	160													
					Silty sst with congl. beds									
	180													

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
			<u>SILTSTONE WITH CARB. ZONES</u>																
200			Grey green to grey brown slst, sound but soft & friable with interbedded coal & carb zones hard & brittle to soft and mushy Also minor beds sst & calc slst Joint sets 60° - 40° occasionally partings 80°	40 60	Carb slst with minor beds of lean coal Silty coal														
220																			
240																			
260																			
280																			
300																			
320																			
340																			
360																			
380																			
400																			

DRILL HOLE : ... 75-53 ...
SHEET No. : ... 2 OF 5 ...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400																			
420			<u>CARB. SILTSTONE AND COAL</u> Interbedded coaly to carb. slst. Silty coal and coal: black, variable in texture and hardness; partings parallel to bedding 80° to C.A. Joints 40°-60°		Hard brittle calc. shaly														
440				55	Silty coal		1												
				40	Slightly carb. slst														
460			<u>COAL</u> Clean, hard, brittle with sub- conchoidal fractures		Coaly slst														
				60	Slightly carb. grey brown slst		2												
				80	Carb. slst														
480			<u>COAL</u> Black, hard, brittle clean, fractures parallel to bedding Joint sets 40°-60°		Clean coal with 0.1-0.2 zones of silty coal														
				55	Soft carb. slst		3												
				60	(0.2) rusty brown friable sst Coaly slst														
500					3 (0.01) white bands clst Silty soft mushy														
				60	(0.2) soft silty Soft silty		4												
					(0.5) soft silty Soft coaly slst														
520					Soft silty (0.2) soft silty		5												
				65	Silty														
540					Coaly slst		6												
				60	(0.2) rust brown sst Silty (0.1) coaly sst														
560					(0.3) coaly sst		7												
					Clean hard with silty zones														
580																			
600																			
620																			

DRILL HOLE : 75-53

SHEET No. : 3 OF 5

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			<i>continued</i>											
640				X	Soft silty		8							
660				X	Soft coaly slt (0.2) soft silty		9							
680				X	(0.3) silty									
				X	With (0.1) buff clst									
			<u>INTERBEDDED SILTSTONE AND SANDSTONE</u>	X	Clean coal									
				X	Grading into med. sst									
700			<u>SILTSTONE</u> Gray green slt with sst beds partings 80°	X	Gray green fine sst									
720			<u>SANDSTONE</u> Gray green	X	Med. to coarse									
				X	Very fine to fine									
			<u>SILTSTONE</u> Blue grey	X	Coarse Sandy Congl. sst									
740				X	Sandy Clayey congl. Med. sst									
				X	Blue green to light gray finely interbedded slt, sst, occasional congl. (0.3 - 2.0)									
760				X	Blue grey clayey slt with minor interbedded of fine to congl. sst									
780			<u>SANDSTONE</u> Blue green fine to med. with (0.3) interbeds of congl. sst & slt	X	Slightly carb.									
800				X										
			<u>SILTSTONE</u> Blue grey clayey, massive	X	Very soft, silty slt with brecciated appearance, rust brown slt									
820				X	Grading into congl.									
			<u>CONGLOMERATE</u> varicoloured	X	Blue green slt thru to coarse sst.									
			<u>GRADED BEDS</u>	X	Blue green slt thru pebble congl.									
840				X										

DRILL HOLE : ...75-53...
SHEET No. : .4. OF .5....

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20° MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
840			Blue green to grey green, bedded rocks, with gradational boundaries. Coarser rocks multicoloured; Very variable.		Fine sst thru pebble congl															
					25	Blue green sst thru light grey pebble congl.														
860					85	Sst thru pebble congl.														
					65	2 small graded beds - light gray fine sst to coarse sst.														
880						Blue green sst to light gray coarse sst														
					35	Blue green sst to light gray coarse sst														
900						Blue green sst to green congl sst.														
					35	Light gray fine to coarse sst														
920						Blue green sst to light gray med. sst														
					85	Blue green sst to light gray pebble congl.														
940						Blue green very fine sst to light gray coarse sst														
					50-90	Blue green sst to light gray congl. sst														
960						Blue green fine sst to pebble congl.														
					60	Blue green fine sst to pebble congl.														
980					Blue green fine sst to pebble congl. with (0.1) zeolites															
				85	Blue green fine sst															
1000			END OF HOLE 999 feet		Blue green sst to fine sst															

DRAFT COPY

126

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates	: 8000' N 7500' E	Length	: 999'	Hole No.	: 75-53
Reference Elev.	: 3378'	Azimuth	: _____	Date	: FEB. 1975
Ground Elev.	: 3376'	Dip	: 90°	Logged by	: J. Rotzien
		Core Size	: N.Q	Sheet	: 1 of 5

DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE			
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60
0	Datum									
0 - 80		<u>OVERBURDEN</u> Gravel Sticky clay								
80 - 85		<u>INTERBEDDED SILTSTONE</u>		Sst <i>60</i>						
85 - 90		<u>SANDSTONE AND</u>	<i>60</i>	Pebble congl.						
90 - 95		<u>CONGLOMERATE</u>	<i>50</i>	Coarse sst						
95 - 100		Blue green interbedded sst, sst congl. soft but generally sound joint sets 60°	<i>60</i>	Pebble congl. f.						
100 - 105			<i>70</i>	(0.5) sst						
105 - 110				(0.35) sst						
110 - 115				Sst						
115 - 120				sst						
120 - 125				Sst						
125 - 130				Pebble congl						
130 - 135										
135 - 140				Pebble congl.						
140 - 145				Pebble congl.						
145 - 150				Sst						
150 - 155				Sst						
155 - 160				Black carb sst						
160 - 165				Silty sst with congl. beds						
165 - 170										
170 - 175										
175 - 180										

Duplicate Copy

60
50
60
70

Sandy sst

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates : 4650 S Length : 1000' Hole No. : 75-54
11,300'E Azimuth : — Date : FEB. 1975
 Reference Elev. : 3222' Dip : 90° Logged by : J.Rotzien/M.d.Quadros
 Ground Elev. : 3221' Core Size : NQ Sheet : 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u> Gravel with boulders											
20			Sand											
40			<u>CLAYSTONE</u> Grey brown to grey, massive, poorly indurated clst. with zones of hard, well indurated, fissile shale, parting plane 45° - 80°; major joint set: 25°		Triconed									
60					Shale fissile									
80					Shale fissile									
100														
120														
140														
160														
180														

DRAFT COPY

DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE			
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60
0										
80										
180		<u>SILTSTONE WITH CARB. ZONES</u>								
200		Grey green to grey brown slst, sound but soft & friable with interbedded coal & carb zones hard & brittle to soft and mushy Also minor beds sst & calc slst joint sets 60° - 40° occasionally partings 80°	40 60	Carb slst with minor beds of dean coal		200				
220			X	Silty coal						
				Grey green massive						
				Coaly						
				Sst						
240			X	Carb. calc. with minor coal						
			X	Grey green slst grading into med. sst						
				Black calc.						
				Grey green						
			40	Grey to black carb.						
260				Grey green						
			X	Blue green sst						
			X	Light grey calc. sst						
			60	Blue green to blue grey sst with silty zones						
			X	Slightly carb. grey						
			55							
280			65	(0.2) rust brown hard brittle slst						
			X	Dark grey to black carb						
			40							
300			X	Coaly with (0.2-0.3) zones of carb.						
			60							
			X	Grey green to grey brown laminated						
			55	Dark grey carb.						
320			X	Coaly 1.0 carb						
340			X	Grey to grey green sandy laminated						
			40							
			X	Coaly						
			50	Light grey calc. slightly carb.						
360			X	Coaly						
380			X	Slightly carb.						
400			X	Bands of carb & minor coal						

DRILL HOLE : 75-53
SHEET No. : 2 OF 5

DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
00																			
20		<u>CARB. SILTSTONE AND COAL</u> Interbedded coaly to carb. slst. Silty coal and coal; black, variable in texture and hardness; partings parallel to bedding 80° to C.A. Joints 40°-60°		Hard brittle calc. shaly															
40			55	Silty coal		1													
			40	Slightly carb. slst															
			60	Coaly slst															
			80	Slightly carb. grey brown slst															
			55	Carb. slst															
60		<u>COAL</u> Clean, hard, brittle with sub- conchoidal fractures	55	Clean coal with 0.1-0.2 zones of silty coal		2													
			60	Soft carb. slst															
			60	(0.2) rusty brown friable sst Coaly slst															
			60	3 (0.01) white bands clst Silty soft mushy		3													
80		<u>COAL</u> Black, hard, brittle clean, fractures parallel to bedding Joint sets 40°-60°	60	(0.2) soft silty Soft silty															
			60	(0.5) soft silty Soft coaly slst															
			60	Soft silty (0.2) soft silty		4													
			65																
			65	Silty		5													
			60	Coaly slst															
			60	(0.2) rust brown sst Silty		6													
			60	(0.1) coaly sst															
			60	(0.3) coaly sst		7													
			60	Clean hard with silty zones															
620																			

DRILL HOLE : ... 75-53
SHEET No. : . 3. OF . 5.

DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE			
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60
620		<u>continued</u>								
640			50	Soft silty		8				
660			65	Soft coaly slt (0.2) soft silty		9				
680			60	(0.3) silty						
700		<u>INTERBEDDED SILTSTONE AND SANDSTONE</u>		With (0.1) buff clst Clean coal Grading into med. sst						
720		<u>SILTSTONE</u> Grey green slt with sst beds partings 80°		Grey green fine sst						
740		<u>SANDSTONE</u> Grey green		Med. to coarse						
760		<u>SILTSTONE</u> Blue grey	45	Very fine to fine Coarse Sandy Congl. sst						
780			45	Sandy Claydy Congl. sst						
800			45	Med. sst						
820			60	Blue green to light grey finely interbedded slt, sst, occasional congl. (0.3 - 2.0)						
840				Blue grey clayey slt with minor interbedded of fine to congl. sst						
		<u>SANDSTONE</u> Blue green fine to med. with (0.3) interbeds of congl. sst & slt	55	Slightly carb.						
		<u>SILTSTONE</u> Blue grey clayey massive		Very soft, silty slt with brecciated appearance, rust brown clst						
		<u>CONGLOMERATE</u> varicoloured		Grading into congl.						
		<u>GRADED BEDS</u>	55	Blue green slt thru to coarse sst.						
			60	Blue green slt thru pebble congl.						

DRILL HOLE : ...75-53.....
SHEET No. : .4. OF .5....

DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE				
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80
840		Blue green to grey green, bedded rocks, with gradational boundaries. Coarser rocks multicoloured; Very variable.		Fine sst thru pebble congl							
				Blue green sst thru light grey pebble congl.	25						
860				Sst thru pebble congl.	85						
				2 small graded beds - light grey fine sst to coarse sst.	65						
880				Blue green sst to light grey coarse sst							
				Blue green sst to light grey coarse sst	35						
900				Blue green sst to green congl sst.							
				Light grey fine to coarse sst Blue green sst to light grey med. sst	35						
920				Blue green sst to light grey pebble congl.	85						
940				Blue green very fine sst to light grey coarse sst							
				Blue green sst to light grey congl. sst	50- 90						
960				Blue green fine sst to pebble congl.	60						
				Blue green fine sst to pebble congl. with (0.1) zeolites	85						
980				Blue green fine sst							
			Blue green sst to fine sst								
1000		END OF HOLE 999 feet									

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates : 4650 S Length : 1000' Hole No. : 75-54
 Reference Elev. : 11,300'E Azimuth : — Date : FEB. 1975
 Ground Elev. : 3222' Dip : 90° Logged by : J. Rotzien/M.d. Quadros
 Core Size : NQ Sheet : 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0			Datum															
			<u>OVERBURDEN</u> <i>Gravel with boulders</i>															
20			<i>Sand</i>															
40			<u>CLAYSTONE</u> <i>Grey brown to grey, massive, poorly indurated clst. with zones of hard, well indurated, fissile shale, parting plane 45° - 80°; major joint set: 25°</i>		<i>Triconed</i>													
60					<i>Shale fissile</i>													
80					<i>Shale fissile</i>													
100																		
120																		
140																		
160					<i>Finally interbedded soft clst & hard shale fissile</i>													
					<i>Buff</i>													
					<i>10-3) hard buff Clst & shaly clst.</i>													
					<i>10-3) hard buff</i>													
					<i>Clst and shaly clst</i>													

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<i>continued</i>		(0.2) soft buff Clst and shaly clst									
200														
220														
240														
260														
280														
300				60	Light grey, bedded									
320					Very broken dark grey									
					Light grey									
					Dark grey									
				65	Buff									
340					Grey to dark grey									
360				70	(0.3) brown									
380					Grey to dark grey, soft friable									
400														

DRAFT COPY







ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE												
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80								
400																				
420						70	Buff, silty													
440																				
460							Dark grey to grey, soft, friable													
480																				
500						70	White, soft, friable, mushy													
520						60	Gray soft, friable, mushy													
540						70														
560																				
580																				
600																				
620						70														

Light to dark grey, rubbly, soft
crumbly clst
clean 60° f } 1/4 - 1/10 apart
rough 90° f }
homogenous

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE №	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620			<i>continued</i>																
640																			
660																			
680																			
700																			
720																			
740																			
760																			
780																			
800																			
820																			
840																			

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840					Buff silty														
860					Light grey, very soft, mushy														
880																			
900																			
920					(0.3) buff														
940																			
960																			
980					Light brown, silty														
1000					END OF HOLE AT 1000 feet														

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1720			<u>MIXED COAL & SILTSTONE</u> Grey to grey brown to black, hard slst, carb. slst, silty coal & clean coal; 95% of fractures are parallel to bedding. Bedding erratic, from 30°-55°		Hard calc. carb. petrified wood Black, hard, silty coal		33							
1740						Very finely interbedded silty coal and carb. slst								
				clean coal		Light grey, hard, laminated sst with coal chunks		33						
1760			<u>SILTSTONE AND SANDSTONE</u> Grey well indurated with small carb. & coaly beds. 90% fractures perpendicular to C.A. Dominant joint sets: 45°, 25° to C.A.		Grey slst with sandy laminae Mylonitized, trace gouge Grey calc slst									
					20	Black, hard, tough coaly slst (0.5)								
					45	Grey slst with sandy & carb. laminae & fine carb. fragments								
1780						(0.5) dark grey to black coaly slst								
						Light grey, hard laminated sst								
						Dark grey, hard laminated slst								
1800					Light grey, hard laminated calc. sst									
					Black, hard, silty coal									
					Light grey, hard, laminated sst									
					Grey, hard, massive slst									
					Grey, hard, lam. sst with carb. laminae									
1820			<u>MIXED UNIT</u> Light grey, well indurated hard slst & sst with interbeds of black, hard to soft coal and silty coal; 90% fractures parallel to bedding or perpendicular to C.A., due to drill action. Dominant joint sets: 20°, 60° to C.A.		Hard finely interbedded slst and coaly zones									
						Grey brown, hard, slst								
						Black, hard coaly slst								
1840					40	Black hard carb. slst								
						Grey, hard, brittle; fine to very fine grained sst								
						Black, hard, coaly slst								
1860					Black, hard, silty coal interbedded with slst		34							
					Grey brown, hard slst									
					Hard clean coal									
					Grey brown, hard slst		34							
1880					Hard clean coal with minor slst beds									
					Grey brown, hard slst									
					Hard clean coal with slst laminations									
1900					Grey brown, hard, fine to very fine grained laminated sst. with minor coaly zones and laminations									
1920					Finely interbedded hard clean coal and slst		35							
					Grey, hard calc. petrified wood									
					Finely interbedded, hard silty coal and slst		35							

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1940				▣	Hard to soft rubble coal, silty coal & coaly slst		35							
			END OF HOLE AT 1940 feet											
1960														

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates : 29,450' S Length : 1320' Hole No. : 75-61
 : 14,540 E Azimuth : - Date : MARCH 1975
 Reference Elev. : 3770' Dip : -90° Logged by : J. Rofflen
 Ground Elev. : _____ Core Size : NQ Sheet : 1 of 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0			Datum															
			<u>OVERBURDEN</u>															
			Sand															
20			Boulders															
			Sand, gravel and boulders															
40																		
			Sand, gravel and cobbles															
60																		
			Sand, gravel and boulders															
80																		
			Boulders and soft clay															
120																		
140																		
160																		
			<u>SILTSTONE</u>															
			Grey brown, very soft, healed bracciation with angular fragments of hard slst embedded in soft slst															
180																		

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
200																			
220																			
240			<u>FAULT ZONE</u> Gray to grey brown, loose sand and gravel																
260																			
280																			
300																			
320																			
340			<u>SILTSTONE</u> Grey to grey brown, moderately well indurated, hard, massive with softer laminae beds. Joint sets : 15°, 50°, 0°		Soft (0.2) buff, moderately hard slst Soft (0.2) buff, hard clst Moderately indurated (0.2) buff soft clst														
360																			
380																			
400																			

DRAFT COPY

DRILL HOLE : ...75-61...
SHEET No. : ...2 OF 7...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			<i>continued</i>											
420					(1/4") calcite veins along joint planes									
440				75										
460					As above but softer (0.2) buff, hard clst Buff, hard clst									
480				90	(0.2) buff, hard clst (0.2) buff, hard slst Hard to soft									
500					(0.1) buff hard, clst Hard to soft									
520					(0.3) buff, hard, clst Hard to soft (0.2) buff, hard, lam. slst Hard to soft									
540				80	(0.1) buff, hard, clst (0.3) buff, hard lam. clst Buff hard lam. slst Soft to hard dark grey									
560				75	Dark grey, hard (0.1) buff, hard clst									
580					Dark grey, hard									
600														
620					(0.2) rusty buff, soft slst Dark grey, hard									

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
620					3 minor (0.1 - 0.2) beds of buff, hard slst and clst Dark grey, hard.													
640			<u>MIXED UNIT</u> Grey brown to black, hard to soft, carb. and coaly slst, and silty coal 30% fractures slicken sided : 20° - 30° to C.A.		Grey brown, moderately hard slst grading thru coaly slst to silty coal		1											
658					Hard silty coal with numerous interbeds of soft coaly slst and rasins beads		2											
660					Soft, carb. and coaly													
667					Clean with resin beads													
677			<u>SILTY COAL</u> Black, hard, silty coal with interbeds of slst and clean coal with resin beads upto (1/4") in diameter.		Silty (0.5) gray brown, soft carb. slst		3											
680					Silty with resin beads													
700					Soft carb. with minor silty coal													
720					Fissile, silty coal		4											
740							5											
760																		
780					Fault zone		6											
795																		
800			<u>INTERBEDDED DETRITAL ROCKS</u> Grey green to grey brown, hard, laminated slst and sst. Dominant joint sets 60°, 20° to C.A.		Slst to med. sst, grey brown													
808					(0.5) silty coal, irregular													
820					Grey green lam. sst with carb. fragments													
826					Dark grey, moderately hard slst													
834																		
840																		

DRAFT COPY

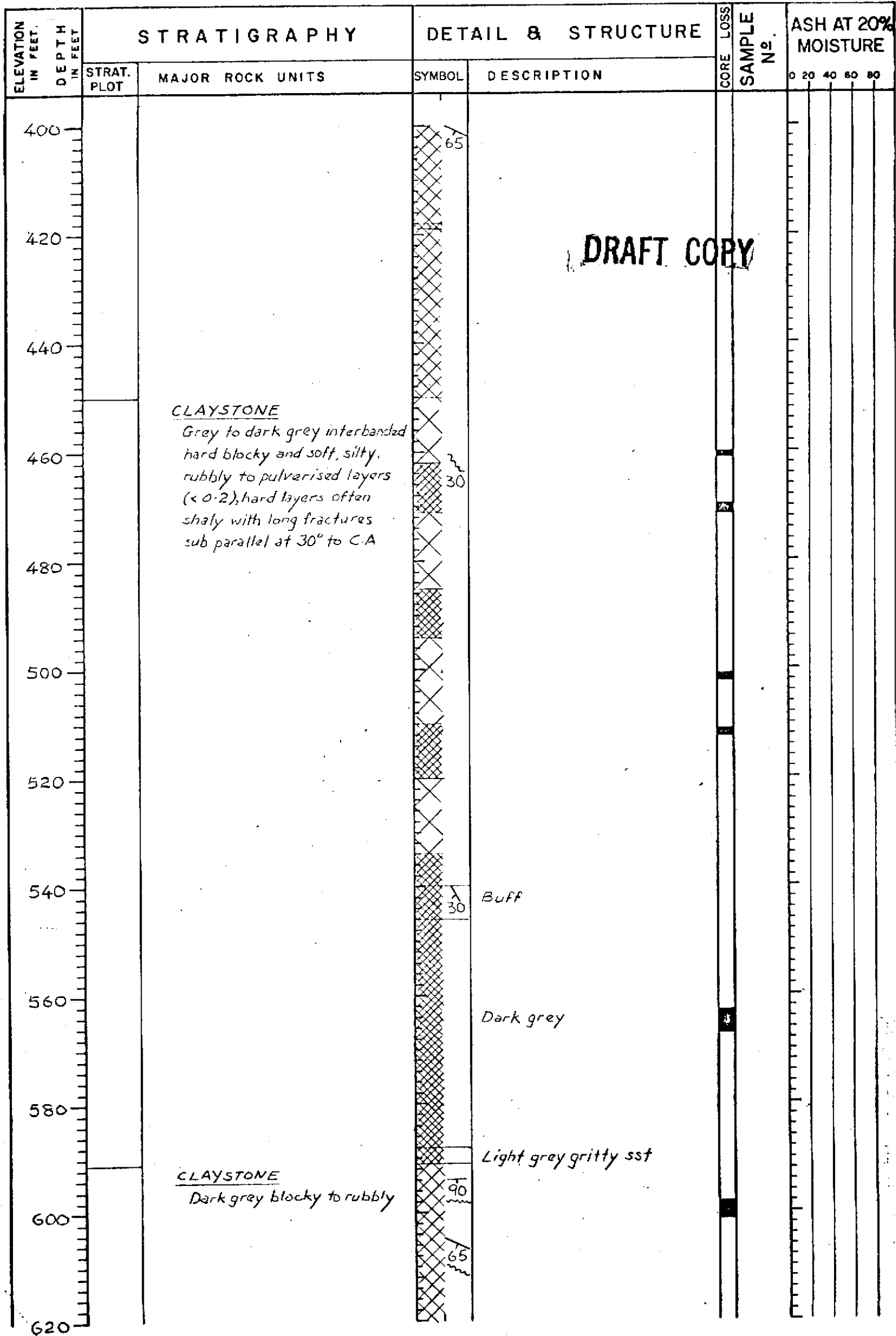
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates : 4925' S Length : 1000' Hole No. : 75-55
7850' E Azimuth : - Date : FEB 1975
 Reference Elev. : 3472' Dip : 90° Logged by : J. Rotzien/M. de Quadros
 Ground Elev. : 3470' Core Size : NQ Sheet : 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
	0		Datum											
			<u>OVERBURDEN</u> Clay											
	20		Gravel and boulders											
	40													
	60		Bedded clay and gravel with boulders											
	80													
	100		<u>GRADED BEDS</u> Blue green, soft detrital rock		Triconed Pebble congl. with clay matrix (0.4) carb. Clst to med. sst (0.5) carb. clst Clst with sandy to congl. Clst to sst at 158' and pebble congl. at 172'. Pebble Congl. Sandy clst									
	120													
	140													
	160													
	180		<u>CLAYSTONE</u>											

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE							
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80			
180			Dark grey brown, massive, sound moderately well indurated clst with softer, rubbly zones; parting planes : 60°, 85° to C.A. major joint sets : 50° to C.A.	65	(0.1) soft buff										
				75	(0.5) " "										
				65	(0.1) " "										
200				60	(0.1) " "										
				50	(0.4) soft buff										
220															
240															
260															
280															
300															
320															
340			<u>CLAYSTONE</u> Gray brown, soft, tending to be muddy or mushy. Variable fractures from parallol to perpendicular to C.A.	60											
360				65											
380				65											
400															

DRAFT COPY



DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE													
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80									
620																					
640																					
660																					
680			CLAYSTONE Light grey blocky with rubbly to finely rubbly zones																		
700																					
720																					
740																					
760																					
780																					
800																					
820																					
840																					

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840			<i>continued</i>											
860				60										
880				60										
900				65										
920				0										
940				60										
940				60										
940				65										
960														
980														
1000			<i>END OF HOLE AT 1000 feet</i>											

DRAFT COPY

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT — DRILL RECORD **DRAFT COPY**

Coordinates : 35,160'S Length : 590' Hole No. : 75-56
 Reference Elev. : 15,480'E Azimuth : — Date : FEB. 1975
 Ground Elev. : 3732' Dip : 90° Logged by : J. Rotzien
 Core Size : NQ Sheet : 1 of 4

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u>											
			<i>Sandy clay with boulders</i>											
20														
			<i>Clay with boulders</i>											
40														
			<i>Gravel</i>											
			<i>Clay</i>											
60														
			<i>Gravel</i>											
			<i>Clay</i>											
80														
100														
120														
			<i>Gravel with high percentage of boulders</i>											
140														
160														
			<i>Coaly clay</i>											
180														

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
200																			
220			<i>Grey brown silt</i>																
240																			
260			<i>Silt and sand</i>																
280																			
300																			
320			<i>Loose medium grained sand with a trace of gravel and occasional cobble</i>																
340																			
360																			
380																			
400																			

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
400			Gravel with cobbles and boulders															
			Sand with some gravel															
420			<u>INTERBEDDED COALY SILTSTONE & CLAYSTONE</u>				1											
			Soft, rubbly to pulverised, black coaly slst and grey green clst with upto (0.3) clean coal.		Carb with some coaly beds (0.4) buff slst Grey green clst Slst													
440																		
							1											
460					Probably carb slst (No core)													
480			<u>CLAYSTONE</u>		(0.5) light gray calc. slst Dark grey green to black carb. Light gray calc. slst													
			Grey green, soft, blocky, massive with interbeds of silty coal and carb. & calc. slst Major joint sets 35°, 55° to C.A. indistinct bedding.		(0.5) light grey, calc slst Coaly slst with (0.4) clean coal													
500					(0.5) calc. slst													
520																		
540																		
560			<u>INTERBEDDED COALY, CARB, SLST AND SLST</u>		Coaly Very fine interbedded grey brown slst and black coaly slst		2											
			Grey green to black, soft slst and coaly beds, poorly indurated Major joint sets 35°, 55° to C.A.		Grey green, med with (0.1- 0.3) slst. Carb with minor coal Grey green, massive		3											
580					Coaly contorted bedding		3											
			END OF HOLE (1) AT 589 feet.															
600																		

DRILL HOLE : ...75-56...
SHEET No. : ...3 OF 4...

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 45,000'S Length : 1548' Hole No. : 75-57
 : 15,600'E Azimuth : - Date : FEB. 1975
 Reference Elev. : 3850' Dip : 90° Logged by : J. Rotzien
 Ground Elev. : 3850' Core Size : NQ Sheet : 1 of 8

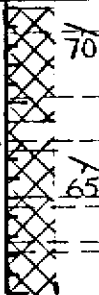
ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0		Datum												
			<i>OVERBURDEN</i>											
20														
40			<i>Sand and gravel with clay seams and boulders</i>											
60														
80														
100														
120														
140														
160			<i>Sand and gravel with boulders</i>											
180														

DRAFT COPY

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180			<i>continued</i>											
200														
220														
240														
260														
280			Clay											
300														
320			Sand											
340			Boulders											
			Sand											
			Boulders											
360			Sand with some gravel											
369			COAL											
			Black, brittle coal with soft silty beds. Blocky to rubbly with partings parallel to bedding. This unit contains resin beads with major axis upto 0.05' long.											
380														
400														

DRAFT COPY



(0.2) coaly slst
 (0.5) hard, brittle buff slst
 Silty zones

1
2

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400							2							
417			<u>GRADED BEDS</u> Grey brown clst to fine sst; weakly indurated. Med. sst to fine pebble congl. - calc., with (0.03-0.6) grey brown sst beds (<0.1) bands carb.	65	Clst Congl									
433			<u>LAMINATED CLAYSTONE</u> material Grey green to buff; blocky to rubbly, moderately well indurated fissile, laminated clst with soft zones and minor carb. zones. The major joint sets are oriented at 15° to C.A. and ≈ 65° to each other.	70	Carb. Clst with <0.1" laminations of carb. material and minor sand.									
440					(1.0) soft									
460				75	(1.5) soft									
480					(0.3) soft black coaly (0.5) soft									
500				70	(1.0) soft									
520					(1.0) soft									
522			<u>COAL</u> Clean hard blocky coal with rubbly zones. 95% fractures are parallel to bedding	75	Grey, green, slightly carb.		3							
540														
558			<u>SHALE</u> Soft grey to grey green to buff, soft moderately well indurated fissile shale. The fissility is parallel to bedding. Soft zones occur frequently but are only 3' to 5' thick	70										
560														
580														
600														
620														

DRAFT COPY

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620														
640														
649														
660			SANDSTONE											
680			Grey green to light grey blocky to sand, moderately, well indurated laminated sst. Weakly fissile parallel to bedding. From 670' to 701.5' the laminations are accented by laminae of coal. No major joint sets occur in this interval.											
700														
701			SHALE											
720			Soft shale as in 556'-649' core is generally blocky											
740														
760														
780														
800														
820														
840														

DRAFT COPY

DRAFT COPY

DRILL HOLE : ... 75 - 57 ...
SHEET N^o : ... 4 OF 8 ...

21, 22, 23 m. 55'
7 - 925 laminated carbon shale
825 - 828 - green prismatic shale - good
828 - 828.5 - laminated carb. shale

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE							
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80			
840			840 - 880 - fine silty bedded clay shale 860 - 880 - coarse silty shale 880 - 883 - carb. sh. w/ some laminated beds	75											
860															
880															
883			<u>COAL</u> Black, hard, blocky clean coal, which at times is massive but usually laminated. Weakly developed fissility is parallel to bedding. Soft, silty zones occasionally occur in the core. Bedding is regular at 75° to C.A. throughout.												
900					(0.1) rusty slst		4								
920						Light grey hard slst		5							
940						(0.2) rusty hard slst silty zone									
960															
980															
1000						Carb. slst (0.5) buff hard slst Calc. petrified wood		7							
1020						Silty Grey shale									
1040						(0.3) light grey hard slst (0.2) hard light grey slst Silty (0.5) petrified wood, calc. Silty		8							
1060			<u>GRADED DETRITAL ROCKS</u> Grey green to grey brown moderately well indurated, blocky to rubbly. The two beds	65	locally laminated slst grading down into a fine pebble congl. - cement.										

DRAFT COPY

DRAFT COPY

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE SAMPLES N ^o .	ASH AT 209 MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		0	20	40	60	80							
1060			contain occasional laminations of carb. material															
1065			COAL WITH INTERBEDDED DETRITAL ROCKS		Carb. slst grading into clean coal soft													
1080			Black, hard, clean coal with silty zones & interbeds of soft, poorly indurated grey green & grey brown detrital rocks.		Coaly with blocky coal. Slightly carb. slst													
1088				55														
1097			The major joint set is orientated at 30° to C.A. & the partings are parallel to the bedding		(0.5) finely rubbly silty													
1100					(0.5) " " "													
1120					(0.5) finely rubbly silty													
1140					Silty													
1160					Silty													
1180					Soft moderately indurated grey-green clst blocky & massive. Soft dark grey brown carb. clst grading into clean coal.													
1200					Hard silty													
1220					Minor silty zones													
1240					Soft carb. clst grading into clst													
1260					Soft grey brown to grey green clst													
1280					Hard, grey brown slst with 50° calc veins													
					Soft, grey green clst													
					Soft coaly													
					Soft, grey green clst grading into carb. clst													
					Interbeds of silty & clean coal													
					(0.4) buff slst.													
					Calc. petrified wood													
					Silty													
					Silty coal grading thru carb. slst into grey brown slst back to silty coal													
					Hard, carb. clst													
					(0.5) calc. petrified wood													
					(0.2) rust brown slst													
					(0.5) soft, carb. clst													
					(0.2) } Soft, coaly slst													
					(0.5) } Soft carb. clst													
					(0.4) soft coaly slst													
					(0.1) rust brown slst													
					(0.2) silty													
					(0.1) silty													
					(0.1) silty													
					Grey to dark grey, hard, lam. slst													
					40° foliation													

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1280																		
1300																		
1305																		
1314																		
1320			COAL Grey moderately indurated, soft, massive slt with major joint set 0°-10° to C.A. Black, hard, blocky clean coal	45	Black soft silty Silty Silty Silty		17											
1340			Well banded unit resin beads up to 12mm banding varies from 30° at 1437' to 10-15° at 1497.5'				18											
1360																		
1380																		
1400																		
1420																		
1440																		
1460																		
1480																		
1500			silty coal															

DRAFT COPY

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1500					Clean		22							
1520			<u>SILTSTONE</u> Grey, moderately well indurated, brittle, massive slst											
1540			END OF HOLE AT 1548 feet											
1560														

DRAFT COPY

DRAFT COPY

DRAFT COPY

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD



126

Coordinates : 52,600' S Length : 643' Hole No. : 75-58
 : 14,420' E Azimuth : — Date : MARCH 1975
 Reference Elev. : 4230' Dip : 90° Logged by : J. Rotzien
 Ground Elev. : 4228' Core Size : NQ Sheet : 1 of 4

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
0			Datum																
			<u>OVERBURDEN</u>																
			Clay																
20																			
			Sand and gravel																
40																			
			Sand																
60																			
			Sand and gravel with boulders																
80																			
			Coarse gravel and boulders																
140																			
			Clay																
160			<u>BASALT</u>																
			Grey to green, hard brittle basalt with wine-red oxidized zones and soft zones enclosed in brecciated basalt.																
180																			


DRAFT COPY

*sh - carb. pieces
w/ not a comp.*

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE								
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80				
180			dominant joint sets : 20°, 40°, 55° often coated with calcite. Calcite prominent in the healed brecciated basalt Soft zones possibly represent slips.		(0.4) gravelly clay bounded above by a chloritic mylonitized plane at 30° Sand with pieces of basalt (0.5) Gravelly chloritic clay - angular coarse particles. (2.0) (0.2) (0.2) (10.0) Mixture of healed brecciated basalt with soft clay zones (0.3) (0.2) (0.2)											
200																
220																
240																
260																
280																
300																
320		▲ ▲				<u>AGGLOMERATIC BASALT</u> Grey green and purplish grey, hard brittle, calcitic, with soft clayey chloritic zone; dominant joint sets are calcitic; 40°, 55° to C.A. Many minor slickensided slips agglomerate angular frags - 1.5 cm.		some chips sp. Agglomerate Agglomerate angular frags - 1.5 cm.								
340		▲ ▲														
360		▲ ▲														
380		▲ ▲														
400		▲ ▲														

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400	△ △ △ △ △ △		<u>CLAYSTONE MIXTURE</u>											
420			<u>FAULT ZONE</u> Grey green, very soft, sandy, chloritic clay mixed with volcanic fragments; fragments increase in diameters with depth up to 1.5' at 643'		(0.3) carb. clst									
440			<i>partly ...</i>		(0.2) carb. clst									
460					(0.4) carb. clst									
480														
500														
520														
540														
560														
580														
600														
620														

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620																			
640			END OF HOLE AT 643 feet																
660																			

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400					With interbeds of soft silty zones									
420				75	(0.5) dark grey brown, soft, carb. slst		7							
440					With occasional distorted calcite laminae									
460				50										
480					Black and white hard calc petrified wood With resin beads up to 1" in dia. Soft, coaly (0.5) soft coaly slst.		8							
500				60	Distorted white clst laminae									
520			<u>COAL</u> Black, hard, clean coal with numerous beds of carb. slst and coaly slst. Dominant joint sets: 30° to C.A.		Soft coaly slst with minor clean coal. Silty (0.2) white, hard, clst		9							
540				60	Silty Hard and silty with minor clean coal.		10							
560					With numerous minor zones of carb. and coaly slst									
580				55			11							
600					White, hard lmsl									
620			<u>CLEAN COAL</u> Black, hard, clean coal with occasional minor beds of slst		Blue grey, moderately hard clst Soft, silty coal and coaly slst (0.3) rusty brown, hard slst.		12							

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400					(0.5) light grey, very hard, lam. sst (0.3) buff, very hard clst									
420														
440			<u>LAMINATED SILTSTONE</u> Light grey, moderately well indurated, hard, blocky slst with laminae of very light grey, fine sst at 75° parting planes; 85° to C.A.	75	gradually									
460			<u>SILTSTONE</u> Grey, moderately well indurated, hard, blocky to rubbly massive slst with minor soft zones of blue grey sst and buff clst beds. Sometimes slst becomes fissile along dominant fracture planes: 85°, 75° to C.A.	75	more massive									
480				75	(0.2) buff, hard clst									
500														
520														
540				75	(0.2) buff, hard clst									
560				75	(0.1) blue grey hard lam. sst (0.3) buff moderately hard clst (0.1) buff, hard, lam. sst (0.1) blue grey, hard lam. sst									
580				75	(0.1) white to rust brown, soft lam. sandy clst (0.1) rusty, hard clst									
600					(0.2) buff, soft, clayey sst									
620				75	(0.2) buff, hard clst (0.2) buff, soft, lam. clst (0.1) buff, hard clst (0.2) buff, hard clst (0.1) grey brown, hard clst									

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620					(0.1) grey brown, hard clst														
640					Buff clst 75° lam. Buff, lam. clst														
660			<u>SILTSTONE</u> With several zones (0.1) of lam. buff clst		Buff, lam. clst (0.5) light grey, hard clst														
680																			
700																			
720			<u>SILTSTONE</u> Rubbly and fissile in parts, fissility oriented at 75° to C.A.																
740																			
760																			
780					(0.2) buff to rusty clst														
800					2 (0.3) buff to rusty clst														
820					(0.2) buff to rusty clst														
840			<u>COAL</u> Black, hard, brittle, blocky,																

DRAFT COPY

← slickens

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840			banded, clean coal with resin beads and beds of silty coal 90% fractures parallel bedding.	X	Silty		2							
860				X	(0.3) soft, coaly slst									
				X	(0.5) soft, silty coal									
880				X	(0.2) soft, silty coal									
			<u>GRADED DETRITAL ROCKS</u> Grey brown to grey green, poorly to moderately well indurated, blocky to rubbly, lam. clst, slst, sst and occasionally carb. laminae. Most fracture parallel bedding	X	(0.4) soft, silty Silty		3							
				X	(0.3) soft, silty									
900				X	Clst to slst - lam. Fine to coarse sst - lam.									
				X	Slst to medium sst									
920				X	Clst to fine sst - lam.									
				X	Soft finely interbedded slst and sst									
940			<u>INTERBEDDED COAL AND SILTSTONE</u> Black to grey green, hard to soft, blocky, clean coal with slst and silty coal. Resin beads up to 1" in diameter in clean coal; minor joint sets: 45° to C.A. 90% fractures parallel bedding	X	(0.5) silty Slightly carb., gray brown.		4							
960				X	Gray green, soft slst									
				X	Silty with (3') clean and (2') carb. slst.		5							
980				X										
			<u>INTERBEDDED DETRITAL ROCKS</u> Grey to grey green, moderately well indurated, blocky, lam. sst & slst, with slightly carb. zones and minor coal. minor joint set: 40° to C.A. 90% fractures parallel bedding	X	Grey green, hard, lam. fine to medium sst									
1000				X	Grey green, hard, finely interbedded sst & slst									
				X	Grey green, hard, lam. fine to medium sst									
1020				X	Hard, grey brown slst with minor sst beds									
1040			<u>CARB. SILTSTONE</u> Dark grey brown, poorly to moderately indurated, slightly carb slst with (1.5) coal	X			6							
			<u>GRADED BEDS</u> Grey brown to light grey, hard, lam. graded beds from slst to coarse sst. Major joint sets: 80°, 35° to C.A.	X										

DRAFT COPY

DRILL HOLE : ... 75 - 59
 SHEET NO. 5 OF 7
 Mod. lith. ...
 Mod. ...

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1060																			
			<u>SILTSTONE</u> Gray to grey brown, moderately well indurated, sandy laminae with occasional sst beds Prominent fracture surface: 80°, 60°, 10-15° to C.A.																
1080																			
1100																			
1120																			
1140																			
1160																			
1180																			
1200																			
1220																			
1240																			
1260																			
1280																			

DRAFT COPY

60

50

Laminations, erratic, from
45° to 70° to C.A.

Siltstone
gray to grey brown
well indurated
sandy laminae
with occasional sst beds
prominent fracture surface
80°, 60°, 10-15° to C.A.

bedded
with sst
laminations

Light grey, hard, medium sst - 90° to 105°
Sandy
laminated

Light grey hard, fine lam.
smoothly

Gray brown soft clst
sandy sst

Gray medium hard, with sandy
and carb. laminae and minor
sst beds (0.1-1.0)

Light grey, hard lam. sst with
minor sst beds

Gray, medium hard to hard lam.
sandy sst with minor sst beds

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE NO.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280					interbedded sst of carb. slst little thin bedded									
1300														
1320														
1340														
1360			MIXED UNITS Black to dark gray, hard to soft, silty coal, clean coal and carb. slst Fracture sets 80°, 0°, 60°		(0.5) fmst with clay infilling Silty Clean with resin beads, coal 55 Finely interbedded soft silty and hard clean coal		7							
1380					(0.4) buff, hard clst Hard clean coal (0.5) rust brown clst Hard clean coal with resin bead up to 1" in diameter									
1400					Silty Soft carb. slst Hard silty									
1420					55 Finely interbedded soft to hard carb slst, silty coal and clean coal		8							
1440			GRADED DETRITAL ROCK WITH COAL Grey green, poorly indurated, soft graded detrital rock interbedded with black, hard, clean coal joint sets : 25°, 5°		Clean coal 50 slst to congl. sst up section Grey, hard, calc. carb slst Grey brown carb. slst to grey green congl. sst Very fine sst to coarse sst Grey brown carb. sst to black silty coal Silty hard		9							
1460					65 Hard, clean coal with minor silty zones, resin beads upto 1/2" in diameter									
1480					75 Fine sst (0.5) clean coal Fine sst laminated w/ carb. layers Soft slst (0.5) hard silty coal Soft fine sst									
1500			END OF HOLE AT 1488 feet		Very soft slst									

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 22,030'S Length : 1948' Hole No. : 75 - 60
12,770'E Azimuth : — Date : MARCH 1975
 Reference Elev. : 3550' Dip : 90° Logged by : J. Rotzien
 Ground Elev. : 3549' Core Size : NQ Sheet : 1 of 10

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
	0		Datum											
			<u>OVERBURDEN</u>											
	20		<i>Clay and boulders</i>											
	40		<i>Sand and boulders</i>											
	60													
	80		<i>Clay</i>											
	100													
	120		<i>Gravel</i>											
	140		<i>Sand and boulders</i>											
	160		<i>Gravel and boulders</i>											
	180		<i>Clay</i>											

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			<i>continued</i>											
420				X	Barely discernible									
440				X	(0.2) buff, hard clst									
460				X	Mixed slst and lmst									
480				X	(0.1) buff, hard slst									
500				X	(0.1) buff, hard clst									
520				X										
540				X										
560				X										
580				X										
600				X										
620				X										

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620			<i>continued</i>																
640																			
660					(0.2) hard buff clst with (0.1) soft buff clst; 45° shear														
680																			
700					2(0.2) hard, buff clst														
720			CLAYSTONE Brown to grey, moderately well to poorly indurated Brown clst extremely fissile in softer zones at 75° Gradually grades into carb clst		(0.1) buff moderately hard (0.1) buff, soft (0.3) buff, hard														
740																			
760																			
780					Distinct laminae at 55°														
800																			
820					(0.3) buff hard (0.1) buff hard														
840																			

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840																			
			<u>CARBONACEOUS CLAYSTONE</u> Dark grey to dark brown, poorly to well indurated; fissile in parts (0.3) buff, hard beds exists		Indistinct		1												
860							2												
880																			
			<u>COAL</u> Black, hard, brittle, blocky, banded, clean coal and inter- bedded, soft to moderately hard silty coal, 80% fractures parallel to bedding; minor joint sets: 40°, 50°, 20°		Silty		3												
900					Silty with (1.5) carb. slst														
920			Finely interbedded coal, silty coal, and coal slst (app. 60% clean coal)				4												
940																			
					(0.5) (0.4) } Irregular laminae of hard, (0.5) } buff clst		5												
960																			
980							6												
			Numerous soft silty zones (app. 80% clean coal)		Coal with irregular laminae of lmst														
1000							7												
					(1.0) (0.5) } Irregular laminae of hard, (0.5) } buff clst														
1020																			
1040							8												
1060																			

DRAFT COPY

DRILL HOLE : ...75-60...
SHEET No. : 5 OF 10...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1060				X			9							
1080			<u>MIXED CARB. UNIT</u> Dark grey to black, thinly bedded.				10							
1100				X			11							
1120			<u>COAL AND SILTY COAL</u> Black, hard, brittle, blocky, clean coal with moderately hard fissile silty coal, 90% fractures parallel to bedding: minor joint sets: 35°, 50°, 0°-c. A.	X			12							
1140				X	Slst (0.1) buff, hard, irregular clst lam. Interbedded clean and silty Light grey lam. Grey brown, soft, slightly carb.		13							
1160				X	Silty beds (≤ 2.0)		14							
1180				X	Carb. Grey, moderately hard Soft, silty		15							
1200			<u>COAL</u> Black, hard, brittle, blocky, clean coal with minor silty zones and 2 slst beds 90% fractures parallel to bedding in coal; minor joint sets: 40°, 80° to C.A.	X	(0.1-0.2) beds of silty coal every 1.5' to 2.0'		16							
1220				X	Grey to grey brown, hard grading into carb. black Silty with minor clean		17							
1240				X	(0.2) light grey, hard, calc. slst (0.4) irregular calc. slst laminae (0.2) clean coal									
1260			<u>CLEAN COAL</u> Black, hard, brittle, blocky, clean coal with silty coal and slst beds. 90% fractures parallel to bedding minor joint sets: 40°, 80° to C.A.	X	(0.2) clean coal Hard silty With minor soft, silty beds		18							
1280				X	Silty finely interbedded coal and carb. slst		19							

DRAFT COPY

DRILL HOLE : ...75-.60...
SHEET No. : .6 OF .10...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1500					Silty, hard		25							
			<u>MIXED COAL AND SILTSTONE</u>		Hard, dark grey brown, carb with minor coaly and silty coal zones		26							
1520			Interbedded black, hard, clean coal; black soft to hard silty coal; black soft, carb slst; grey brown slst;		Finally interbedded slst, coaly slst and silty coal - hard		27							
			Dominant fracture sets: 60°, 45° bedding erratic: 45° to 60°		Hard		28							
1540					Coaly slst with minor silty coal and slst.		29							
			Clean coal with minor silty zones; numerous buff clst laminations, resin beads up to 0.5"		Slightly carb.		30							
1560					Sandy carb. Coaly		31							
1580					Coaly with minor carb		32							
			<u>INTERBEDDED SILTSTONE AND COAL</u>		Grey brown, well to poorly indurated slst & carb. slst laminae		33							
1600			Dark brown to light grey, hard to soft slst and minor sst interbedded with black hard to soft coal, silty coal and coaly slst.		Silty coal with minor slst & clean coal		34							
			Dominant joint sets: 30°, 80° to C.A. 60% of the fractures are parallel to bedding. Bedding erratic from 0°-70°		Hard interbedded slst and sst with minor congl. sst		35							
1620					Clean coal		36							
					Moderately indurated silty coal, coaly and carb. slst beds (0.5-1.0)		37							
1640					Slightly carb. slst laminated with minor coaly slst.		38							
					Grey brown to black, hard coaly slst with minor carb. slst		39							
1660			<u>INTERBEDDED DETRITAL ROCKS</u>		Grey brown slightly carb. slst		40							
			Grey brown to light grey, moderately to well indurated with minor coal and carb. slst. 90% fractures due to drill action. Bedding constantly 45°-50°		Light grey hard sst		41							
1680					Grey hard slst with carb. laminae and minor sst		42							
					Silty		43							
1700					Grey-green to light grey hard slst grading to fine sst		44							
					Grey-green to light grey hard slst grading to a coarse multi-coloured pebble congl.		45							
1720							46							

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280							19							
1300					Finely interbedded soft silty coal and carb. slst with minor clean coal and light grey slst									
1320			Minor silty zones		(0.5) (0.4) (0.1) (1.0) } S/sst		20							
1340					3 (0.2) slst									
1360					2 (0.1) slst (0.3) rusty, hard clst									
1380					(0.5) carb. slst		21							
1400			Silty with carb. slst				22							
1420			<u>MIXED COAL AND DETRITAL ROCKS</u>		Light grey, hard, congl. sst									
					Dark to light grey, hard slst grading to fine pebble congl. with minor clean coal (0.1-0.3)									
					Dark brown to black, hard, heavy silty coal grading into slightly carb. slst									
					Dark brown, moderately hard carb. slst		23							
1440					Finely interbedded black, hard, clean coal and light grey, hard slst (app. 40% coal)									
1460			<u>COAL</u> Black, hard, brittle, blocky, clean coal with minor silty coal zones (0.1-0.2) every 2'-3' 80% fractures parallel to bedding minor joint sets: 80°, 45°, 75°		(0.5) dark grey brown, hard, heavy tough slst		24							
1480					(0.5) grey brown, hard slst									
					Silty (0.3) rust brown, hard clst		25							
					Grey brown, carb. slst									
1500					Dark grey brown, hard carb.									

DRAFT COPY

DRILL HOLE : ...75-60...
SHEET No. : ..7 OF 10...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20 MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180														
200														
220														
240					(0.6) very light grey, clayey									
260					(0.3) very light grey, clayey									
280					(0.3) very light grey, clayey									
300					(0.2) very light grey, clayey									
300			<u>INTERBEDDED SLST & SST</u>		Light grey, hard, with carb. fragments									
300			Grey, moderately well indurated, massive slst with interbedded blue grey, well indurated, hard sst.		(0.5) sst									
320				70	Congl. sst ^{with mostly tubular frags}									
320				75	Very finely interbedded slst & sst									
320				35										
320				75	Congl. sst ^{few coarse frags}									
340			<u>SILTSTONE</u>	75	(0.3) clst									
340			Dark to light grey, moderately to poorly indurated, hard to soft, rubbly slst	75	(0.1) clst									
340			Soft zones : (0.1 - 1.0)	75	(0.2) buff sst									
340			Dominant fractures : 80°-90° (probably due to drill action)	75										
360				75	3 (0.2) buff sst									
360				75	(0.1) light grey sst									
380				70										
400														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840				X	Grey green lam. fine sst														
860				X	Grey green lam. slightly calc. med. to coarse														
870				X	Carb. with minor silty coal														
875				X	Blue grey, moderately hard														
880				X		Irregular grey green finely interbedded slst and fine to very fine sst													
890				X															
900				X															
905				X	Grey to grey brown, finely interbedded lam. slst and sst														
920				X	Soft														
929				X	Grey to grey brown														
940				X															
943				X															
951				X	MIXED UNIT Grey green to black, hard to soft, interbedded, slst, sst, carb. slst and silty coal. Dominant joint set: 50° to C.A.														
960				X															
972				X															
980				X															
985				X															
1000				X															
1020				X															
1024				X															
1040				X															
1045				X															
1060				X															

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1060	1063				Silty and clean, hard with minor carb. slst beds													
1080	1084				(0.5) light grey, very hard lmsst Dark grey to black, interbedded carb. slst and silty coal soft to moderately hard		12											
1100	1097			85	Hard clean with silty zones and resin beads		13											
1109					Grey green, hard fine													
1120	1117				Interbedded slst, carb slst, and sst gray to grey brown, soft to hard													
1140	1135			90	Hard to soft silty coal with interbedded carb. and coaly slst		14											
1160							15											
1180	1177			75	Lam. carb. slst grading into fine pebble congl. Fine pebble congl. to slst Slst to silty coal to slst		16											
1200	1202-3				Interbedded slst and lam. sst (0.4) hard silty coal Very hard, calc. grey petrified wood Silty Coaly		16											
1211	1213				Grey, moderately hard with coaly lam. Grey green hard													
1219	1220			80	Carb. slst with minor coal Coaly Silty with resin beads		16											
1221	1225				Carb. slst grading into fine sst Grey green, soft very fine													
1228	1230-2				Grey green soft, carb. Hard, clean													
1233-38	1240				Moderately hard, lam. carb. Very hard calc. petrified wood Very hard, lam. grey green, medium		17											
1239	1245				Hard interbedded slst and sst													
1260	1266			85	Hard clean Carb. with minor coal Grey, soft		18											
1280				85	(0.3) rust brown, hard sst		19											

Hard silty coal with minor slst, carb. slst and clean coal

DRAFT COPY

DRILL HOLE : ...75-61...

SHEET No. : 5 OF 7...


ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE №.	ASH AT 20% MOISTURE						
		SYMBOL	DESCRIPTION	STRAT. PLOT	MAJOR ROCK UNITS			0	20	40	60	80		
1280		[Cross-hatched symbol]					19							
1292		[Dotted symbol]												
1300		[Cross-hatched symbol]												
1320					END OF HOLE AT 1320 feet									

DRAFT COPY

DRILL HOLE : .. 7
SHEET №. :

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 14,800' S Length : 1678' Hole No. : 75-62
 : 11,700' E Azimuth : — Date : MARCH 1975
 Reference Elev. : 3590' Dip : 90° Logged by : J. Rotzlen
 Ground Elev. : 3588' Core Size : NQ Sheet : 1 of 8

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
0			<u>OVERBURDEN</u> Sand and gravel											
20														
40														
60														
80														
100														
120														
140														
160			<u>MIXED COALY UNIT</u> Grey to black, soft to hard, slt thru all grades to clean coal											
180														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180					Triconed									
220			<u>COAL</u> Black, hard, clean coal with interbeds of silty coal and coaly slst. Dominant joint sets: 50° 20° bedding contorted and irregular	50	Silty with (0.2) rusty, hard sst (0.5) soft coaly slst		2							
240					(0.5) soft silty									
260					Soft, coaly With resin beads		3							
280			<u>CLEAN COAL</u> Black, hard, clean coal with occasional minor beds of silty coal and coaly slst; resin beads up to 1/4" in diameter; dominant joint sets: 50°, 30°, 20°	50	Hard to soft silty Soft, coaly, black to dark grey brown.		4							
300					Soft silty Soft to hard silty									
320					Hard to soft, finely interbedded, with resin beads < 3/8" in dia. 2 (0.4) silty zones		5							
340					(0.5) soft									
360					(0.1) soft (0.1) buff, hard, calc. slst									
380					40		6							
400					With some silty coal									

DRAFT COPY.

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620			and coaly slst. Dominant joint sets : 60°, 30° banding in coal not always coincidental to bedding - both highly contorted	50	(0.2) soft silty coal Soft coaly (0.2) soft coaly slst		12							
640														
660			<u>INTERBEDDED CLEAN AND SILTY COAL</u> Black, hard, clean and silty coal with occasional minor beds of coaly and/or carb. slst ; Dominant joint sets : 60°, 30° banding and bedding highly contorted but not coincidental	50	Silty Carb. Soft coaly Finely interbedded, silty and clean coal and carb. slst.		13							
680														
700					(0.2) silty coal		14							
720					Silty with minor carb. slst									
740					Silty		15							
760			<u>CLEAN COAL</u> Black, hard, clean coal with minor silty zones and some silty coal ; 95% of the fractures are either sub- parallel to bedding or perpendicular to C. A.	45	(0.5) silty Finely interbedded, black to grey coal, silty coal and slst		16							
780					(1.0) black med. hard carb. slst Silty (0.2) grey brown slst									
800					(0.5) blue grey, hard, blocky clst Clean with frequent minor beds of silty coal		17							
820					Finely interbedded coal with clst laminae and grey hard clst Clean with occasional white clst laminae		18							
840														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840							18												
			<u>MIXED COALY UNIT</u> Grey to grey brown to black, hard to soft. Interbedded slst, carb slst, coaly slst, silty coal and clean coal. Dominant joint sets, 60° to C.A.		Black, soft, silty grading to grey mod. hard slst Grey brown, soft carb. slst Intensely sheared at 20° to C.A. Slightly carb. with carb. laminae Finely interbedded silty and clean silty with 2 (0.2) beds of buff hard slst		19												
880			<u>SILTY COAL</u> Black, hard, silty coal with interbedded clean coal. Dominant joint sets 60°, 10°-20°; pulverised core		2 (0.1) veins? (marcasite) With interbeds of clean coal		20												
900							21												
920					Clean Clean with numerous 1/4" clst laminae (white)		22												
940					Clean Hard to moderately hard, inter- bedded clean coal, silty coal and coaly slst.		23												
960					Clean Several (1/4" - 1/2") calcite veins ?? (Marcasite) vein Clean with numerous ?? (marca- site) veins		24												
980					Grey soft slst with minor coal Silty Grey, med. hard slst with (0.5) clean coal and ?? (marcasite) vein Clean Mod. hard. coaly		25												
1000			<u>MIXED COALY UNIT</u> Black, hard, clean and silty coal with interbedded coaly, carb and clean slst Dominant joint set: 50° Prominent banding: 60°-0°		Silty Finely interbedded silty coal and hard to soft, grey brown carb. slst		26												
1013					Silty Finely interbedded clean coal, carb. and coaly slst, and dark grey to buff, hard clst.		27												
1020					Silty & clean with ?? (marcasite) vein Rust brown, very hard, coarse sst		28												
1040			<u>COAL</u> Black, hard, silty and clean coal with coaly slst and minor carb. and clean slst; Dominant		Finely interbedded silty and clean coal and coaly slst Silty Clean		29												
1060							30												

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1060			joint sets : 40° - 50°		Silty, with resin beads $\leq \frac{1}{4}$ " in diameter and minor beds of clean coal and coaly slst		26							
1080					Coaly Silty Coaly Silty Mottled grey, very hard, coaly, fine sst Silty (0.3) soft, coaly slst		27							
1100					Silty (0.3) soft, coaly slst Silty with minor clean coal Carb., mod. hard (0.5) soft, carb. slst Silty		28							
1120					Dark grey, carb. Finely interbedded silty coal and carb. slst		29							
1140					Silty with with minor clean coal As above except clean coal is pulverised		30							
1160					Buff to black, hard, carb clst Silty		31							
1180					Dark grey brown to black, moderately hard coaly Silty with minor clean coal		32							
1200					Dark grey, hard, coaly Silty Finely interbedded, hard grey slst and silty coal		33							
1220					Silty with minor clean coal and slst		34							
1240			<u>CLEAN COAL</u> Black, hard, clean coal with small interbeds of silty coal & coaly slst & minor beds of detrital rocks. 80% of the fractures are perpendicular to C.A. and are due to drill action. The major joint sets are at 60° and 40° with minor fracture sets parallel to the banding of the coal which varies from 0° - 90° to the C.A.		Silty Occasional irregular laminae of white clst.									
1260					Silty Clean with (0.4) of buff slst (0.3) dark grey soft carb clst Finely interbedded, silty & clean coal with buff clst laminae Brittle, clean, with occasional minor clst laminae									
1280					(0.8) grey hard clst									

DRAFT COPY

DRILL HOLE : ... 75-62 ...
SHEET No. : .. 6 OF .. 8 ..

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE.											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1280			<i>Continued</i>																
				50	(0.2) grey clst Clean with numerous irregular lam. of buff, very fine grained sst.														
1300					Finally interbedded coal and grey, hard clst		35												
					Buff to rust brown, very hard, brittle clst														
1320				60	Dark grey, hard, coaly clst														
					(0.2) silty (0.8) silty		36												
1340					(1.0) silty Moderately hard, silty Clean Silty														
1360				45	Clean with occasional grey clst laminae		37												
					Silty Clean with very thin silty laminae every 2'-3'														
1380					Clean with infrequent silty and clst laminae		38												
1400				45	With irregular zones of white to rust brown, medium grained sst														
1420					(0.4) same as above														
1440				45	Clean with infrequent irregular laminae of white clst and resin beads up to 0.5" in diameter		39												
1460				60															
1480							40												
1500																			

DRAFT COPY

DRILL HOLE : ...75-62
SHEET No. : 7 OF 8

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1500				X			40							
1520				X		45								
1540				X		45								
1560				X		45								
1580				X		50								
1600				X		40								
1620				X		45								
1640				X		40								
1660				X		40								
1680				X		40								

*Coaly with (0.3) rust brown,
hard, blocky slst*

*Infrequent, irregular, white
clst laminae and resin beads
up to 0.5" in diameter*

END OF HOLE
AT 1678 feet

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 10,000'S Length : 1000' Hole No. : 75-63
 : 13,050'E Azimuth : — Date : MARCH 1975
 Reference Elev. : 3560' Dip : 90° Logged by : J. Rotzien
 Ground Elev. : 3558' Core Size : NQ Sheet : 1 of 5

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u>											
20														
40														
60			<i>Sand and gravel</i>											
80														
100														
120			<i>Interbedded clay and sand</i>											
140														
160			<i>Coarse gravel</i>											
180			<i>Sand and gravel</i>											

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180														
200														
220														
240			Clay											
260			<u>SILTSTONE</u> Grey to grey brown, moderately hard to soft, with fissile zones and interbedded clst	?	Triconed									
280			Grey brown											
300														
320														
340			Grey moderately hard											
360			Grey moderately hard to hard, massive											
380														
400			Grey to grey brown, moderately hard, slightly fissile											

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			Grey - brown, moderately hard, slightly fissile	60	(0.1) buff soft clst									
420					(0.4) buff hard clst									
			Grey - brown to blue grey, soft to moderately hard, slightly fissile		(0.2) buff soft clst									
440				60										
			Grey moderately hard		(0.2) buff soft clst									
460					Grey soft, clst and sst									
480			Grey soft	20	(0.5) light grey sst									
				50	Light grey hard Grey, hard with carb. fragments									
500					(0.2) buff, soft									
520					2(0.2) buff, soft, sandy sst beds									
					Grey-brown to buff, soft clst									
			Grey moderately hard	20	(0.2) buff, soft (0.5) buff, soft, pulverized clst with rusty									
540					(0.1) rusty brown clst									
				50	Buff to light gray, moderately hard clst.									
560					(0.3) buff, soft									
					Soft to moderately hard									
580					(0.3) buff hard clst									
600					Grey soft, clst									
620					Soft to moderately hard									

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620																			
640																			
660																			
680																			
700																			
720																			
740																			
760																			
780			<u>CLAYSTONE</u> Grey, moderately hard massive. Dominant joint sets 20°, 45° to C.A. with parting planes 60° to C.A.																
800																			
820																			
840																			

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
840				X	Buff, soft														
860				X															
880				X															
900				X	0.1, buff, soft														
920				X	Buff, soft														
940				X	(0.2) buff														
960				X	(0.3) buff, hard														
980				X	(0.2) buff, soft														
1000				X	(0.1) buff, soft														
					END OF HOLE AT 1000 feet														

DRAFT COPY

DRILL HOLE : ...75-63...
SHEET No. : .5. OF .5.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 12,770'S Length : 487' Hole No. : 75-64
12,970'E Azimuth : — Date : APRIL 1975
 Reference Elev. : 3640' Dip : -90° Logged by : J. Rotzen
 Ground Elev. : 3638' Core Size : HQ Sheet : 1 of 3

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
0		Datum																
			OVERBURDEN															
20																		
40																		
60																		
80																		
100																		
120																		
140																		
160																		
180																		

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180														
200														
220			<u>CLAYSTONE</u> Grey to grey brown, moderately hard massive clst with joints at 60° and 80° and numerous slips at 40°. Traces of carb. fragments.		Triconed									
240				X	Grey brown									
260				X	Grey									
280				X	(0.1) buff, soft									
300				X	Grey Buff, soft tuffaceous									
320				X	Grey, moderately hard									
340				X	(0.3) grey, soft, highly sheared.									
360				X	Grey, moderately hard									
380				X	Grey, soft, sheared									
400				X	Grey, moderately hard, with minor slips.									
				X	(0.4) light grey, moderately hard Grey, moderately hard slst.									
				X	(0.5) grey, moderately hard, lam. Grey, moderately hard. slst.									
				X	Grey, moderately hard to soft intensely sheared.									
				X	Grey, moderately hard									
				X	(0.3) fault gouge. Grey, moderately hard									
				X	(0.3) buff, moderately hard									
				X	Grey, moderately hard to hard									

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400				X 20															
				X 40															
420				X 40															
				X 20															
				X 40															
440				X 20															
				X 40															
				X 20															
460				X 40															
				X 20															
				X 40															
				X 10															
480				X 20															
500																			

Gray, moderately hard.

END OF HOLE
AT 487 feet

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 12,700' S Length : 549' Hole No. : 75-64 A
 : 12,850' E Azimuth : - Date : MAY 1975
 Reference Elev. : 3610' Dip : -90° Logged by : J. Rotzien
 Ground Elev. : 3607' Core Size : NQ Sheet : 1 of 3

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
0			Datum																
			<u>OVERBURDEN</u>																
			<i>Sand and gravel</i>																
20			<i>Boulders</i>																
40			<i>Sand</i>																
60																			
80			<i>Boulders</i>																
100			<i>Gravel</i>																
120																			
140			<i>Boulders</i>																
160			<i>Sand and clay</i>																
180																			

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
200			<u>CLAYSTONE</u> Dark grey, moderately hard. Dominant joint sets : 40° and 60° to C.A. - minor beds buff, hard slst.		Triconed														
220					(0.3) grey brown moderately hard slst.														
240				40	(0.3) buff, soft clst														
260					(0.5) grey brown, hard, brittle slst														
280				40	(0.2) buff. to rust - brown, hard slst														
300					(0.5) light grey brown to buff, hard, rubbly slst														
320				40	(0.1) buff, hard, tuff. slst Grey brown, hard slst Soft intensely sheared (35° to C.A.)														
340				40	(0.1) light grey, moderately hard clst														
360					(0.2) buff, hard slst														
380					Soft, intensely sheared (35° to C.A.)														
400																			

DRAFT COPY


ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400			<i>continued</i>		Soft, rubbly, highly sheared (30° to C.A.)									
420					Numerous zones of soft highly sheared slst slips (30° to C.A.)									
440					Grey brown moderately hard slst with slickensided slips (30° to C.A.)									
460					(0.1) buff, hard, slst									
480					(0.2) grey brown, hard, slst									
500					Grey brown, moderately hard, slst with numerous slickensided slips containing traces of fault gouge. (10°-30° to C.A.)									
520					(0.5) light grey, mod. hard, slst Laminated									
540					(1.0) grey brown mod. hard, with slickensided slips (40° to C.A.) Light grey, moderately hard									
560					(0.2) buff, hard tuff. slst Light grey to grey brown, mod. hard with numerous slickensided slips (45°, 50° and 20° to C.A.), also with fine carb. fragments									
			END OF HOLE. AT 549 feet											

DRAFT COPY

DRILL HOLE : ...75-64A.
SHEET No. : 3 OF 3...

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 15,000' S Length : 135' Hole No. : 75-66
 : 4600' E Azimuth : - Date : MAY 1975
 Reference Elev. : 3850' Dip : -90° Logged by : J. Rotzien
 Ground Elev. : 3848' Core Size : NQ Sheet : 1 of 1

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
0			<u>OVERBURDEN</u> <i>Clay</i>											
20														
40														
60														
80														
100														
120			<u>SILTSTONE</u> <i>Grey brown, soft to moderately hard, intensely sheared by 0° and 20° slips</i>											
135			END OF HOLE AT 135 feet		<i>Triconed</i>									
140														
160														
180														

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 15,000' S Length : 715' Hole No. : 75-67
 : 5600' E Azimuth : — Date : MAY 1975
 Reference Elev. : 3740' Dip : -90° Logged by : J. Rotzien
 Ground Elev. : 3738' Core Size : NQ Sheet : 1 of 4

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u> <i>Boulders and silt</i>											
20			<i>Clay</i>											
40														
60			<i>Gravel and cobbles</i>											
80			<u>FAULT ZONE</u> <i>Dark green, soft to moderately hard, chloritic, silt and sand with angular to subangular basalt fragments.</i>	X	<i>Triconed.</i>									
100				X										
120			<u>SANDSTONE</u> <i>Light grey green, moderately hard to hard, silty sst; probably of granitic origin; minor chloritization; weakly slickensided slips; joint sets : 80°, 30°</i>	X										
140				X										
160				X										
180				X										

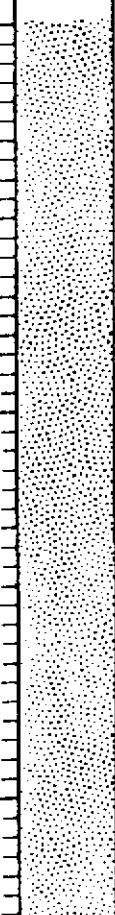







DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180																			
200																			
220																			
240																			
260																			
280																			
300			BASALT <i>Grey to grey green, very hard, resicular basalt with some malachite stains; slips frequent and usually chloritized; 30° and 40°</i>		<i>Volcanic cobble congl., moderately hard.</i>														
320																			
340			INTERBEDDED DETRITAL ROCK <i>Grey to grey green, soft to hard, sst and volcanic congl.; highly chloritized matrix; dominant joint set: 70°</i>		<i>Soft, pebble congl. Soft sst Pebble congl. with basaltic boulders. Sst grading into a grit at 351'.</i>														
360			CONGLOMERATE <i>Grey green, moderately hard, volcanic pebble congl.; highly chloritized matrix; 3" maximum grain size; a few minor sst interbeds; dominant joint set: 80°</i>		<i>Hard, minor chloritized.</i>														
380																			
400																			

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400					Soft														
420					Sst														
440					Grit														
					Soft sst Soft sandy														
460					Conglomeratic sst														
					Moderately hard to soft														
480					Sst														
					Soft														
520					Sst with minor congl.														
540																			
					SANDSTONE Grey green, moderately hard sst, with minor congl. beds ; volcanic and some chloritization, few minor slips : 40° ; joint sets : 40°, 60° and 30°														
560					Occasional congl. beds.														
580																			
					Pebble congl.														
600																			
					Hard, pebble congl.														
620																			


DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620					With congl. beds														
						Pebble congl.													
640						Graded bed from pebble congl. to fine sst													
						With minor conglomeratic beds.													
660						Grey, soft pebble congl.													
680						With minor conglomeratic beds.													
700					Grey, hard pebble congl.														
720			END OF HOLE AT 715 feet																

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 16,450' S Length : 1843' Hole No. : 75-68
 : 11,590' E Azimuth : — Date : MAY 1975
 Reference Elev. : 3500' Dip : -90° Logged by : J. Rotzien
 Ground Elev. : 3498.5' Core Size : NQ Sheet : 1 of 9

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum											
			<u>OVERBURDEN</u>											
			<i>Boulders</i>											
20			<i>Gravel and boulders</i>											
40			<i>Gravel</i>											
60			<i>Gravel and clay</i>											
80			<i>Gravel</i>											
100			<i>Clay</i>											
120														
140			<u>SILTSTONE</u>											
			<i>Grey brown, moderately hard, with minor bed buff slst and a trace of very fine carb. fragments ; Joint sets : 75°, 50°</i>											
160														
180														

DRAFT COPY

DRAFT COPY

2(0.1) light grey, soft sst

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
180					Soft Buff									
200				45	(0.2) buff, hard Dark grey (0.2) light grey, soft slst									
220				50	(0.3) buff, hard (0.2) buff, hard									
240					Dark weakly laminated									
260				50										
280				30	Dark grey soft Dark									
300				45	(0.3) light grey Dark (0.3) light grey, hard with rust stains.									
320				40	Light grey to dark grey brown laminated.									
340					<u>MIXED UNIT</u> Silty coal, carb. slst and slst, soft interbedded.									
360				40	Very hard clean coal with minor soft slst Grey brown interbedded carb. and clean slst									
380					<u>MIXED UNIT</u> (0.3) calcite veins									
400				45	<u>COAL</u> Black, hard, silty to clean, with minor interbeds of carb. slst - zones of resin beads upto 1/4" in diameter.									
				50	Clean (0.2) soft silty Clean									
				65	Silty with soft zones Soft coaly slst. Dark grey to black, hard to soft interbedded clean coal & carb. slst.									

DRAFT COPY

DRILL HOLE : ...75-68.....
SHEET No. : .2. OF 9.....

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 209 MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
400				50															
420																			
440																			
460																			
480																			
500				50	(0.6) with buff, very hard slst laminations. Interbedded silty coal, coaly, carb. and clean slst.														
520					Very hard, clean														
540					Silty														
560					Interbedded slst, coaly slst and silty coal.														
580				50	Very hard, clean														
600					Dark grey, soft carb. slst Light grey, very hard calc. wood														
620				45	Silty with minor coaly slst beds.														
					Light grey, soft, slightly carb. slst														
					Silty and clean														

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
620				X	Slightly carb. slst									
				X	Soft, coaly slst									
				X	Hard, slightly carb. with calc. fossils									
640				X	Clean Soft, coaly slst									
				X	Silty Dark grey, moderately hard slst									
				X	Clean with minor silty beds									
660				X	(0-1) buff. hard slst									
				X	Clean with minor silty beds									
				X	(0-1) buff. hard slst with									
				X	Clean									
680				X										
			<u>CARB. SILTSTONE</u>	X	Light grey to grey brown, moderately hard to soft; minor silty coal.									
700				X	Silty									
			<u>COAL</u>	X	Black, hard, clean, with silty coal and minor interbeds of coaly, carb. and clean slst.									
				X	Silty									
720				X	Dark grey, mod. hard, coaly slst									
				X	Silty and clean									
				X	Moderately hard, coaly slst									
740				X										
				X	(0-5) dark grey, mod. hard, coaly slst									
				X	Dark grey, mod. hard, carb. slst									
760				X	Very hard									
				X	Silty with minor clean beds									
780				X	Dark grey to black, hard, carb. and coaly slst.									
				X	Resin beads up to 1/2" in diameter.									
800				X										
			<u>SILTY COAL</u>	X	Black, hard, silty with interbedded clean coal and minor beds of clean and carb. slst.									
				X	Dark grey, soft carb. slst									
				X	Interbedded silty coal and coaly slst.									
820				X	Silty coal and coaly slst									
840				X	(0-5) buff. very hard slst with some Marcasite..									

DRAFT COPY

DRILL HOLE : ...75..68...
SHEET No. : .4. OF .9. ...

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840				50	With minor beds clean and coaly slst									
860														
880				60										
			MIXED UNIT <i>Interbedded coal, coaly slst, carb. slst and slst; black to light grey, moderately to very hard.</i>		<i>Slightly carb. slst</i>									
900					<i>Interbedded carb. slst and silty coal.</i>									
					<i>Clean coal (0.3) buff slst</i>									
					<i>Silty coal</i>									
920					<i>Calc. wood</i>									
					<i>Carb. slst</i>									
					<i>Silty coal with coaly slst.</i>									
				50	<i>Interbedded coaly and carb. slst</i>									
940					<i>Calcified wood</i>									
					<i>Silty coal</i>									
					<i>Silty coal and carb. slst with (1.5) congl. slst.</i>									
960					<i>Slst and sst with coal fragments and minor clean coal beds.</i>									
				60										
980					<i>Silty coal</i>									
1000														
					<i>(0.1) buff slst</i>									
					<i>Clean coal</i>									
1020					<i>(0.2) buff slst</i>									
					<i>Clean coal.</i>									
					<i>Slst with coal fragments and minor clean coal</i>									
1040				40	<i>(0.5) congl. slst.</i>									
					<i>Slst with minor clean coal</i>									
1060					<i>Silty coal and coaly slst</i>									

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1060					<i>with minor clean coal.</i>									
1080				50	<i>Calc. sst with coal fragments</i>									
1100					<i>Interbedded clean and silty coal and coaly slst</i>									
1120				50	<i>Slst with coal laminae</i>									
1140					<i>Silty coal</i>									
1160					<i>Very fine to fine grained with coal laminae and small clean coal beds.</i>									
1180					<i>Clean coal with minor slst beds</i>									
					<i>Laminated carb. to coaly slst with minor clean coal.</i>									
					<i>Slst with coal laminae and minor clean coal.</i>									
1200				50	<i>Sst with carb. laminae</i>									
1220				40	<i>Lam. carb. to coaly slst</i>									
1240					<i>Lam. carb. slst</i>									
1260					<i>Fine sst with carb. fragments</i>									
					<i>Carb. slst with minor clean coal beds.</i>									
1280					<i>Clean coal with minor carb slst beds.</i>									

DRAFT COPY

DRILL HOLE : ...75-68.....
SHEET No. : ..6 OF ..9..

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1280				X	Coaly slst													
				X	Carb. to coaly lam. in slst													
1300				X	Clean coal													
				X	Slst with carb. fragments													
1340			<u>CLEAN COAL</u> Black, very hard, with finely interbedded light grey, very hard slst	X	Interbedded clean coal and carb. slst													
				X	Slst													
				X	With minor slst beds													
1380				X	Interbedded slst and sst													
				X	With minor slst beds													
1420				X	Fine congl.													
			<u>INTERBEDDED SANDSTONE AND SILTSTONE</u> Light grey, very hard inter- bedded slst and sst with carb. fragments	X	Sst													
1440				X	Lam. slst with minor sst beds.													
1460				X	Sst with minor slst, congl, and traces of clean coal beds.													
1480				X														
1500				X														

DRAFT COPY

DRILL HOLE : ...75-68...
SHEET No. : .7. OF .9....

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1500				50										
1520			<u>MIXED UNIT</u> Black to light gray, very hard interbedded clean coal and carb. slst and sst.		Coaly slst Clean coal with interbedded coaly slst (0.3)									
1540					Carb. sst Carb. slst									
1560				45	Finely interbedded clean coal and carb. slst Carb. slst with minor silty coal.									
1580			<u>CLEAN COAL</u> Black, very hard, clean, with minor beds of carb. slst											
1600				50										
1620				55	(0.1) buff, very hard slst									
1640					(0.4) grey brown, hard carb. slst									
1660				50	(0.3) grey brown, hard carb. slst Silty.									
1680					Grey brown, hard, calc. carb. slst									
1700					(0.2) grey brown, hard, calc. carb. slst Grey brown, hard carb. slst (0.5) carb. slst.									
1720				50	(0.1) buff, hard slst Silty									
				60	(0.3) carb. slst (0.1) buff, very hard slst									
					Buff, hard, carb. tuff.									
					Cavity - Fault zone.									

DRAFT COPY

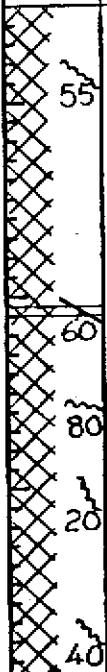
DRILL HOLE : ... 75-68 ...
SHEET No. : . 8 OF . 9 . . .

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1720				X 50										
			<u>MIXED UNIT</u> Black to light grey, very hard to hard, clean and silty coal with coaly slst	X 40	Clean coal and carb. slst									
1740				X	Carb. slst									
				X	Silty coal									
				X	Coaly slst									
1760				X	Coaly slst, petrified wood resin beads $\frac{3}{4}$ "									
				X 40										
1780				X 60	Finely interbedded coaly slst and silty and clean coal.									
				X 40										
1820			<u>CLEAN COAL</u> Black, very hard	X 40										
				X 50										
1840			END OF HOLE AT 1843 feet	X 45										
1860														

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
 HAT CREEK PROJECT — DRILL RECORD

Coordinates : 14,050' S Length : 1338' Hole No. : 75-69
 : 9650' E Azimuth : — Date : JUNE 1975
 Reference Elev. : 3470' Dip : -90° Logged by : J. Rotzien
 Ground Elev. : 3468' Core Size : NQ Sheet : 1 of 7

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
0		Datum																	
			<u>OVERBURDEN</u>																
20			<i>Clay</i>																
40																			
60																			
80			<i>Sand and boulders</i>																
100																			
			<i>Sand and gravel</i>																
120			<u>CLAYSTONE</u> <i>Dark grey to light gray, moderately hard, massive.</i>																
140																			
160																			
180																			

DRAFT COPY

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180			<i>Continued</i>																
						60	(0.2) buff, soft slst												
200						55													
						60	Buff, soft slst												
220						80													
240						20													
260						55	Buff, very hard slst												
280						40													
300						55													
320						60	(0.1) light grey hard, calc. slst												
340						80													
360						20													
380						40													
400																			

DRAFT COPY

ELEVATION IN FEET. DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE			
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60
400		<i>Continued</i>								
420			55	<i>Buff, sst</i>						
440			55	<i>(0-5) light grey, very hard sst</i>						
460			80	<i>(0-3) buff, hard sst</i>						
480			20	<i>(0-2) buff, soft sst</i>						
500			60	<i>(0-2) buff, hard sst</i>						
520			40							
540			60	<i>(0-2) buff, hard sst</i>						
560			55							
580			50	<i>(0-2) light grey, soft sst</i>						
600			80							
620			20							
			40							

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620			<i>Continued</i>																
640					(0.4) buff slst (0.1) buff, hard slst (0.4) buff, hard slst														
660					(0.2) buff, hard slst (0.2) buff, hard slst Buff, laminae at 50°														
680																			
700																			
720					(0.2) buff, hard slst (0.1) buff slst														
740																			
760																			
780					(1/10") clean coal														
800																			
820																			
840					(0.1) buff (0.1) buff slst														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280			<i>Continued</i>	[Cross-hatched symbol]	<i>Blue grey, hard, weakly fossiliferous</i>									
1300					<i>Hard</i>									
1320														
1340			<i>END OF HOLE AT 1338 feet</i>											

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
840			<i>Continued</i>															
860																		
880																		
900																		
920																		
940																		
960																		
980																		
1000																		
1020																		
1040																		
1060																		

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE N ^o .	ASH AT 20% MOISTURE										
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80						
1060			<i>Continued</i>															
						45												
						55												
1080																		
1100																		
						80												
1120																		
1140						50												
1160																		
						20												
1180																		
1200						40												
1220																		
1240																		
						55												
1260																		
1280						45												

DRAFT COPY

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

1974 report

Coordinates : 77, 956' N Length : 1987' Hole No. : 75-106
 Reference Elev. : 19,220' E Azimuth : — Date : NOV. 1975
 Ground Elev. : 3174' Dip : -90° Logged by : P. Northrop
 Core Size : NQ Sheet : 1 of 10

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
0			Datum		Note: Original ground elev.									
			<u>OVERBURDEN</u> Sand with boulders											
80			<u>CLAYSTONE</u> Blue grey to dark grey, mod. hard to soft clst		Triconed									
				X 50	Grey brown, hard clst									
				X 50	(0.2) grey, very soft, silty clst									
				X 50	Blue grey soft clst									
				X 50	Grey, very hard, fractured clst with white clst infills.									
				X 70										
				X 70										
				X 60										
				X 35										
				X 50	(0.6) brown, very hard clst									

DRAFT COPY

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
180					(0.6) brown soft cohesive clst Grey brown hard clst with white clst fracture fillings Blue grey, hard clst Grey brown, hard clst														
				50	(0.5) brown, hard, laminae of clst														
200				55															
				50															
220				70															
				50															
240				65	(0.4) brown, very hard, clst lam.														
				70															
260				65	(0.3) buff, hard clst														
				70															
280				50	(0.1-0.3) lam. of very hard lmst in dark grey, hard clst Grey, very hard lmst														
				70															
300				50	(0.1) brown, hard clst														
				70															
320				70															
				75	(0.4) brown, hard clst														
340				50															
				50															
360				70															
				70	Grey, very hard lmst														
380				70	(0.6) black, hard carb. slst (0.2) brown, soft clst (0.3) brown, mod. hard clst (0.2) dark brown, very hard irregular clst laminae.														
				70	(0.3) black, soft carb. slst														
400					CLEAN COAL Black, very hard, clean coal with interbeds of clst and slst														

DRAFT COPY

DRILL HOLE : ...75-106...
SHEET No. : 2 OF 10

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
400				80	Black, soft, carb. slst		416							
420				80	Black, soft to hard, carb. slst									
440			<u>MIXED COAL UNIT</u> Black to grey brown, very hard to very soft, interbedded clean coal, silty coal, coaly to carb. slst and clst and slst	70	Dark brown, mod. hard to very soft, mixture of coaly carb. and clean clst. Clean coal									
460				70	Grey brown, mod. hard to very soft interbedded clean and silty coal Clean coal Brown to black, hard coaly slst Silty coal Grey brown to black soft to hard Clean coal Irregular, grey, very hard calc. slst lam. in clean coal									
480				80	Clean coal									
500				80	Black, hard silty coal with clean coal beds. Grey, hard slst Black, hard, carb. slst Grey hard slst grading to sst Black, hard coaly slst									
520				80	Black, very hard, clean coal (0.4) silty coal Clean coal									
540				70	Silty coal (0.4) brown, soft, carb. slst Silty coal									
560				80	Clean coal Silty coal Black to brown, hard to soft, coaly to carb. slst Silty coal Grey brown soft carb. slst Silty coal (0.4) buff, very hard, calc. slst		562							
580				70	Black, hard, silty coal with calcite particles Black to brown, very hard to soft interbedded clean coal and carb. slst (0.3) silty coal Clean coal (0.8) irreg. lam. of buff, very hard slst Silty coal (0.6) brown, soft clst Black, hard, finely interbedded clean and silty coal.									
600				80	Black and white, very hard carbonate Clean coal Grey, very hard sst									
620				80	Black, very hard, clean coal Dark grey to grey, mod. hard to soft slst									

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
620					Silty coal (0.6) black, soft carb. slst Black, hard, silty coal														
					70 Clean coal														
					Black to dark brown, soft, coaly to carb. slst Clean coal (0.3) brown, very hard slst Clean coal														
640					60 Dark brown, soft, slightly carb. slst														
			<u>CLEAN COAL</u>		70 (0.4) black, soft coaly slst														
			Black, very hard to hard clean coal with silty coal interbeds		35 Irregular blob of brown, very hard slst														
660					(0.1) buff, very hard, calc. slst (0.2) Silty coal (0.2) black, soft, carb. slst														
					35 Silty coal with resin beads Dark brown to black, mod. hard, carb. to coaly slst														
680					70 Silty coal Irregular lam. of brown, very hard slst in silty coal														
					70 Silty coal Black, soft coaly slst														
700					(0.4) black, soft, coaly slst Silty coal														
					Brown, soft slightly carb. slst (0.3) brown, soft slst														
720					35 Black, hard silty coal														
					(0.2) black, soft, carb. slst Very hard to hard finely interbeds of clean and silty coal Brown, soft, carb. slst														
740					70 (0.9) black, soft, coaly slst Finely interbedded clean and silty coal														
			<u>SILTY COAL AND MIXED COAL UNIT</u>		45 Black, soft, carb. slst														
			Black to grey, very hard to very soft, mixture of interbedded clean and silty coal, carb. to coaly slst and slst		(0.6) brown, very hard clst (0.1) buff, hard slst														
760					45 Dark brown, hard, carb. slst														
					45 Grey brown to black, hard to soft carb. to clean slst														
780					45 Very hard, finely interbedded clean and silty coal														
					(0.8) black, very hard, carbonate lam. Black, hard to soft, carb. slst														
800					45 Brown, soft, carb. slst														
					70 Grey to black, hard to soft, coaly to carb. slst														
820					70 Grey, very soft slst (0.6) brown, hard coaly slst														
					70 Hard, finely interbedded clean and silty coal Grey brown, hard slst Clean coal														
840					70 Black to grey, hard to very soft, coaly slst grading to slst Clean coal with sparse resin beads														

DRAFT COPY

DRILL HOLE : .75.-106.....

SHEET No. : 4 OF 19...

ELEVATION IN FEET	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
840				45	Grey brown, soft slst Black, very hard to hard, finely interbedded clean and silty coal Black, soft, carb. slst									
860				70	Clean coal Black, hard to soft, interbedded, clean and silty coal and carb. slst									
880				70	(0.3) black, very soft, carb. slst									
900				45	Black, soft coaly slst Black, hard, clean and silty coal Grey brown to black, mod. hard to soft, carb. slst grading to slst									
920				45	(0.5) silty coal Black, very hard, carbonate material with grey slst interbed Black to brown, hard to soft carb slst									
940				70	Black to gray, hard to very soft slst with minor carb. slst lam.									
960			COAL Black, very hard to hard, interbed of clean and silty coal with minor slst and clst beds	45	Grey brown, hard clst Clean coal (0.4) blsp of buff very hard calc. slst Clean coal (0.6) brown, very soft, slightly carb. clst Clean coal (0.8) black, soft, carb. slst									
980				90	Clean coal (0.6) silty coal Hard									
1000				45	Black, hard to soft, interbedded coaly slst and silty coal Silty coal Brown, hard to soft coaly clst		1001							
1020				90	(0.3) black, soft coaly slst (0.8) black, soft, carb. slst									
1040				65	(0.2) black, soft carb. slst (0.6) black, soft coaly slst (0.6) brown, soft, slightly carb. slst									
1060				45	(0.8) black, soft coaly slst (0.3) brown, hard clst (0.2) black, soft, carb. clst									

DRAFT COPY

DRILL HOLE : ... 75 - 106 ...
SHEET No. : 5. OF 19.

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1060					(0.6) black, mod. hard carb. clst (0.8) black, soft carb slst (0.5) black, soft coaly slst Black, very hard, carbonate									
1080				55	(0.5) brown to black, hard, coaly clst									
					Buff, very hard, irregular calc. slst lam. Black, hard, carb. clst Black to brown, hard to soft, carb. clst		1090							
1100				65	Black to brown, hard, coaly to carb. slst									
1120				40	(0.3) } Black, mod. hard carb. clst (0.4) }									
1140				45	(0.6) dark brown, mod. hard carb. clst (0.2) black, hard, coaly clst									
1160					(0.5) black, hard, carb. clst (0.2) dark brown, soft carb. clst (0.6) black, soft coaly slst (0.2) black, soft coaly slst									
1180				90	(0.9) black, soft carb. clst									
					(0.6) black, mod. hard, carb. clst Black, to light grey brown, hard to soft, carb. clst to clst									
1200				90										
				45	(0.4) } black, soft, carb. clst (0.2) }									
1220					(0.3) black, mod. hard carb. clst									
				65	Banding Dark brown, hard, coaly slst Black, hard coaly slst Black, hard coaly clst									
1240				70	Dark brown to black, mod. hard slightly coaly slst Brown, very hard sst Brown to black, hard coaly clst									
					(0.4) grey, very hard sst with coal lam (0.6) dark brown hard coaly slst (0.6) grey, very hard sst with coal lam Brown to black, hard coaly clst (0.8) buff, very hard slst with coal lam									
1260				10	Black to brown, hard carb. to coaly clst (0.6) buff, very hard coaly clst Brown to black hard coaly clst									
1280														

DRAFT COPY

DRILL HOLE : ..75..106.....
SHEET No. : .6. OF .10..

ELEVATION IN FEET.	DEPTH IN FEET.	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE						
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80		
1280				85	Grey to blue grey, hard to soft interbedded clst and sst									
				45	Brown to grey brown, hard, slightly carb clst									
1300				45	Blue grey, very hard sst Grey hard coaly slst laminae of coal									
				45	Grey hard slst with sparse coal lam.									
1320				45	(0.2) buff very hard slst									
				85	Dark brown to black hard carb. clst									
1340				85	Brown to black, very hard, irregular coal lam in slst									
					(0.1) buff, hard slst Irregular white hard, thin calc. slst lam.									
1360			<u>SILTY COAL</u> Black, hard with minor interbeds of carb. slst and clst		Grey brown soft slst									
				70	(0.6) dark brown, hard carb. clst (0.2) dark brown, hard coaly clst									
1380				40	Black hard carb. clst									
					(0.2) black, hard coaly clst									
1400				40	Black to brown. Very hard to hard coaly clst									
					(0.6) dark brown, slst lam. (0.4) buff, very hard slst (0.2) brown, hard clst									
1420				70	Grey brown, hard slightly carb. clst Grey brown to black hard coaly clst									
					Grey brown to black hard coaly clst									
1440				40	Black, hard, coaly clst									
					(0.6) dark brown hard clst (0.5) brown, very hard slst (0.6) black, hard, carb clst									
1460				90	(0.2) brown, very hard, slst Dark brown, hard, carb. clst (0.2) dark brown, hard, carb. clst (0.1) grey, very hard calc. slst (0.6) brown, soft clst (0.4) brown, soft clst									
				40	Irregular, buff, very hard slst lam									
1480					(0.1) } black, hard, carb. clst (0.2) } (0.2) grey, very hard, slst lam. (0.3) brown, hard coaly slst									
				90	(0.2) grey, very hard slst									
1500														

DRAFT COPY

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1500					Resin beads														
					banding														
1520																			
1540					(0.4) dark brown to black, hard, coaly slst														
					Irregular, gray, very hard, slst laminae														
1560																			
					(0.1) dark brown, hard coaly clst		1570												
					(0.2) grey, very hard slst														
1580																			
					Con. of resin beads														
1600					(0.2) dark brown, hard clst with white clst particles														
					Con. of resin beads														
1620					Banding														
					Con. of resin beads														
1640																			
1660					Gray, very hard, blob of calc. slst														
					(0.5) dark brown, hard slst lam. in coal														
1680																			
1700					(0.3) black, hard coaly clst														
1720																			




DRAFT COPY

DRILL HOLE : ...75-106.....
SHEET No. : ...8 OF ...10...

DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE				
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80
720	[Patterned Column]		[X-pattern]	50		1740					
740				70							
760				60	(0.1) grey, hard bleb of slst						
780				70	2(0.1) grey, white, very hard coaly chalk						
800				50							
820				70	(0.1) black, soft, carb. slst						
840				50							
860				45	<u>INTERBEDDED DETRITAL ROCKS</u> Grey to blue grey, very hard to hard, interbedded slst and tuff, sst and congl.						
880				90	Grey, very hard slst						
900				45	Grey hard tuff sst						
920	90	Grey to blue grey to black, very hard slst									
940	40	Grey hard, tuff sst Grey, hard, tuff sst grading to congl									
960	45	Grey, very hard slst									
980	45	Grey, very hard, fractured slst with calc. filling									
1000	90	Dark grey, very hard slst									
1020	45	Grey, very hard, tuff sst									
1040	90	Blue grey, soft slst									
1060	55	Blue grey, very hard to hard, tuff sst									
1080	45	Blue grey hard slst									
1100	45	Grey to dark grey hard clst									
1120	90	Black, hard, carb clst									
1140	45	Dark grey, very hard clst									
1160	90	Blue grey, very hard, interbedded sst and slst									
1180	45	Grey to black, very hard slightly carb. clst									

DRAFT COPY

DRILL HOLE : ...75-106...
SHEET No. : .9 OF .10..

ELEVATION IN FEET.	DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE No.	ASH AT 20% MOISTURE											
		STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			0	20	40	60	80							
1940					Blue grey, very hard, inter-bedded sst and slst														
				60	Blue grey, very hard, congl.														
1960					Blue grey to grey, very hard slst and fine grained sst														
					Dark gray to black, very hard to hard carb. clst														
					Blue grey hard slst														
1980			END OF HOLE AT 1987 feet																
2000																			

DRAFT COPY

HC-Hat Creek 74(3)D.

E3

00 126 $\frac{4}{8}$

DRILL Hole Logs

74-01 to 74-42

25-1 to 75-107

Dolmage Campbell and associates Ltd.

00126 4/8

①

[DOLMAGE, CAMPBELL AND ASSOCIATES LTD.]

BRITISH COLUMBIA HYDRO AND POWER DEVELOPMENT

HAT CREEK PROJECT - DRILL RECORD

Coordinates: 77,971' N, 19,990' E, Length: 2072', Azimuth: 090', Date: 74-25 OCTOBER, 1974, Reference Elev: 3125', Dip: 60', Logged by: M. G. D. (MOS/J) R. Green, Ground Elev: 3124', Core Size: NQ, Sheet: 1 of 10

Table with columns: STRATIGRAPHY (Major Rock Units, Description), DETAIL & STRUCTURE (Lithology, Bedding, etc.), and ASH AT 20% MOISTURE. Rows include units like OVERBURDEN, SANDSTONE, COAL AND SILTY COAL, SILTSTONE, and SHALE, with detailed descriptions and moisture data.

126

00126 4/8

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

3

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 73.103' N. Length: 1355' Hole No: 74-22
 123.287' E. Azimuth: 90° Date: AUG. 1974
 Reference Elev: 3195' Dip: 90° Logged by: P.J. SIBBELL
 Ground Elev: 3193' Core Size: HQ Sheet: 7 of 7

RELATIVE DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		SAMPLE NO.	ASH AT 20% MOISTURE
	STRAIT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0		Original ground		Original ground elev. 3194'		
0-20		CLAY SANDSTONE		Medium to light buff, generally cohesive and blocky with few thin sandy laminae. Below 200 laminae predominantly carb. leaf and stem impressions common. Silt fissile to hard and cohesive. Occasionally shaly.		
240		SILTSTONE		210 (G) coal	24	
260		COAL		Coal fragments (10) fairly banded coal	25	
280		COAL		Four silty interbeds, 1/2" - 2" thick	26	
300		COAL		(11) hard silty carb (12) carb silty silty (13) clay silty carb	1	
320		SILTSTONE		Coal (10) coal	2	
340		COAL (50-70%) with silty		Coal (10) coal	27	
360		MIXED COAL AND SILTSTONE		(10) hard buff silty (11) silty silty (12) silty silty (13) silty	28	
380		SILTSTONE		(11) coal	3	
400		INTERBEDDED COAL AND SILTSTONE		Contacted bedding	4	
420		SILTY COAL		(11) coal	29	
440		COAL WITH MINOR SILT		(10) silty carb (11) silty carb (12) silty carb	5	
460		SILTSTONE		(10) silty carb (11) silty carb (12) silty carb	6	
480		COAL		(10) silty carb (11) silty carb (12) silty carb	7	
500		COAL		(10) silty carb (11) silty carb (12) silty carb	8	
520		COAL		(10) silty carb (11) silty carb (12) silty carb	9	
540		COAL		(10) silty carb (11) silty carb (12) silty carb	10	
560		COAL		(10) silty carb (11) silty carb (12) silty carb	11	
580		COAL		(10) silty carb (11) silty carb (12) silty carb	12	
600		COAL		(10) silty carb (11) silty carb (12) silty carb	13	
620		COAL		(10) silty carb (11) silty carb (12) silty carb	14	
640		COAL		(10) silty carb (11) silty carb (12) silty carb	15	
660		COAL		(10) silty carb (11) silty carb (12) silty carb	16	
680		COAL		(10) silty carb (11) silty carb (12) silty carb	17	
700		COAL		(10) silty carb (11) silty carb (12) silty carb	18	
720		COAL		(10) silty carb (11) silty carb (12) silty carb	19	
740		COAL		(10) silty carb (11) silty carb (12) silty carb	20	
760		COAL		(10) silty carb (11) silty carb (12) silty carb	21	
780		COAL		(10) silty carb (11) silty carb (12) silty carb	22	
800		COAL		(10) silty carb (11) silty carb (12) silty carb	23	
820		COAL		(10) silty carb (11) silty carb (12) silty carb		
840		COAL		(10) silty carb (11) silty carb (12) silty carb		
860		COAL		(10) silty carb (11) silty carb (12) silty carb		
880		COAL		(10) silty carb (11) silty carb (12) silty carb		
900		COAL		(10) silty carb (11) silty carb (12) silty carb		
920		COAL		(10) silty carb (11) silty carb (12) silty carb		
940		COAL		(10) silty carb (11) silty carb (12) silty carb		
960		COAL		(10) silty carb (11) silty carb (12) silty carb		
980		COAL		(10) silty carb (11) silty carb (12) silty carb		
1000		COAL		(10) silty carb (11) silty carb (12) silty carb		
1020		COAL		(10) silty carb (11) silty carb (12) silty carb		
1040		COAL		(10) silty carb (11) silty carb (12) silty carb		
1060		COAL		(10) silty carb (11) silty carb (12) silty carb		
1080		COAL		(10) silty carb (11) silty carb (12) silty carb		
1100		COAL		(10) silty carb (11) silty carb (12) silty carb		
1120		COAL		(10) silty carb (11) silty carb (12) silty carb		
1140		COAL		(10) silty carb (11) silty carb (12) silty carb		
1160		COAL		(10) silty carb (11) silty carb (12) silty carb		
1180		COAL		(10) silty carb (11) silty carb (12) silty carb		
1200		COAL		(10) silty carb (11) silty carb (12) silty carb		
1220		COAL		(10) silty carb (11) silty carb (12) silty carb		
1240		COAL		(10) silty carb (11) silty carb (12) silty carb		
1260		COAL		(10) silty carb (11) silty carb (12) silty carb		
1280		COAL		(10) silty carb (11) silty carb (12) silty carb		
1300		COAL		(10) silty carb (11) silty carb (12) silty carb		
1320		COAL		(10) silty carb (11) silty carb (12) silty carb		
1340		COAL		(10) silty carb (11) silty carb (12) silty carb		
1360		COAL		(10) silty carb (11) silty carb (12) silty carb		
1380		COAL		(10) silty carb (11) silty carb (12) silty carb		
1400		COAL		(10) silty carb (11) silty carb (12) silty carb		
1420		COAL		(10) silty carb (11) silty carb (12) silty carb		
1440		COAL		(10) silty carb (11) silty carb (12) silty carb		
1460		COAL		(10) silty carb (11) silty carb (12) silty carb		
1480		COAL		(10) silty carb (11) silty carb (12) silty carb		
1500		COAL		(10) silty carb (11) silty carb (12) silty carb		
1520		COAL		(10) silty carb (11) silty carb (12) silty carb		
1540		COAL		(10) silty carb (11) silty carb (12) silty carb		
1560		COAL		(10) silty carb (11) silty carb (12) silty carb		
1580		COAL		(10) silty carb (11) silty carb (12) silty carb		
1600		COAL		(10) silty carb (11) silty carb (12) silty carb		
1620		COAL		(10) silty carb (11) silty carb (12) silty carb		
1640		COAL		(10) silty carb (11) silty carb (12) silty carb		
1660		COAL		(10) silty carb (11) silty carb (12) silty carb		
1680		COAL		(10) silty carb (11) silty carb (12) silty carb		
1700		COAL		(10) silty carb (11) silty carb (12) silty carb		
1720		COAL		(10) silty carb (11) silty carb (12) silty carb		
1740		COAL		(10) silty carb (11) silty carb (12) silty carb		
1760		COAL		(10) silty carb (11) silty carb (12) silty carb		
1780		COAL		(10) silty carb (11) silty carb (12) silty carb		
1800		COAL		(10) silty carb (11) silty carb (12) silty carb		

126

00126 4/8

(4)

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAY CREEK PROJECT - DRILL RECORD

R4-7504

Coordinates: 78,998 N Length: 1480' Hole No.: 75-04
 Reference Elev.: 2858' Azimuth: - Date: JAN. 1973
 Ground Elev.: 2858' Dip: 90° Logged by: J. REILLY
 Core Size: NO CORE Sheet: 1 of 7

DEPTH FEET	STRATIGRAPHY		DETAIL & STRUCTURE		LOG SCALE	ASH AT 80% MOISTURE
	UNIT	MAJOR ROCK UNITS	PROV.	DESCRIPTION		
0	DIRTY					
0-20		OVERBURDEN Gravelly sand with silt & some clay. Coarser fraction well sorted to angular. Well graded grey brown silt. Fine to medium sub-rounded quartz and silt. Fine to sub-rounded pyrite and small grey green, spotted (15%) Sandy gravel 1-50% (for chips, the gravel grey brown, is hard (10.3) >50% of the chips are green with and some silt, well graded grey brown sub-rounded (10.3)		<i>NOTE: Standard classification rotary drill hole. Only limited stratigraphic information available from rock chips Original ground elev. 2858'</i>		
20-2800		PEBBLE CONGLOMERATE WITH INTERBEDDED COAL Mixed cherty shales and bands fragments with about 10% - 20% and pebbles. Maximum size 1/2"				
2800-2400		COAL Largely sand, with silt fragments (from 20-30%)			1	
2400-440		SILTSTONE WITH SANDY AND CONGLOMERATIC ZONES Dark grey, sometimes sandy to sand. (due to sandstone from above) Sometimes calc.			2	
440-2200					3	
2200-680					4	
680-760					5	
760-800		MIXED DETRITAL ROCKS Mixed sequence of fairly bedded silt, sand, and gravel.			6	
800-2000					7	
2000-840					8	
840-1480					9	
1480-1460					10	
1460		END OF HOLE 1460 feet			11	

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

5

Coordinates: 73,888' N, 14,933' E
 Reference Elev.: 3873'
 Ground Elev.: 3873'
 Length: 1065'
 Azimuth: -
 Dip: 90°
 Core Size: No. 5 CMR
 Note No.: RM 74-02
 Date: DEC. 1974
 Logged by: J. Reizler
 Sheet: 1 of 8

ELEVATION IN FEET DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		LOG LOSS SAMPLE No.	ASH AT 20% MOISTURE
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0		OVERBURDEN Mixed sand and silt		<i>Note:</i> Reverse Circulation Rotary Hole. Only chip samples obtained. Limited structural and stratigraphical information. Original ground elev. 3573'		
20		Gravel				
		Clayey silt				
40		Sandy gravel with sandy layers, and minor silt and clay				
60		Sand, medium grained				
80		Sand with silt and clay				
100		Silty sand				
120		SILTY SANDSTONE Gray brown, slightly calc. and slightly congl.		Trace of clay		
140						
160				Blue gray		
180				Light gray, 20% congl. Light gray, 20% congl. trace of carb. fragments.		
200		SILTSTONE Gray green, interbedded with minor silt and calc. Generally sandy		Slightly calc.		
220				Mixed silt and sst, trace of clay calc.		
240		CONGL. SANDSTONE Gray green, calc.		Slightly clayey		
260		CLAYSTONE Gray green, sandy, silty				
280		SANDY SILTSTONE Gray green, general sandy		Slightly calc.		
300				45-50% sandy		
320		SANDSTONE Gray green, slightly congl. slightly calc.		Slightly calc.		
340				Slightly congl.		
360		SILTSTONE Gray brown, with trace of fine sand		Sandy silt		
380				Sandy congl.		
400		SANDSTONE Gray brown, calc.		Calc.		
420				Slightly congl. gray Calc., gray brown		
440				Silty		
460		SILTSTONE Gray brown, calc. with some clay		Congl. slightly calc.		
480				Silty Congl. slightly calc. gray		
500				Trace of coal		
520				Slightly congl. calc.		
540				Clayey, non-calc.		
560				Silty, slightly calc and congl gray green		
580				Sandy, calc., gray brown		
600				Green sand 5%, buff		
620				Buff, silt, trace of coal		
640				Buff		
660						
680		SANDSTONE Gray green, silty calc. slightly congl.		Silty sst		
700						
720		SILTSTONE Light gray, calc. and slightly sandy and clayey and with coal fragments.		Congl. sst		
740				Fine coal fragments		
760				Fine coal fragments		
780				Buff, no coal		
800		SANDSTONE Gray brown, silty calc.		Sandy, no coal		
820		CHERTY SHALE Dark gray, with quartz veins and trace of magnetite and pyrrhotite along fractures		30% chips reddish brown		
840						
860				Quartz grains		
880		CLAYSTONE Gray slightly calc.		Sst. gray with chert, clay and silt fragments.		
900		CHERTY SHALE WITH CLST Gray slightly calc.		Gray to reddish brown with quartz and sst		
920		CHERTY SHALE Dark gray with quartz veins and joint coatings. Trace of magnetite and pyrrhotite				
940		MIXED CHERTY SHALE AND CLAYSTONE Gray, pink, red and dark green cherty shale with pink gray and light gray clst				
960				N/A calc. silty sst		
980		CLAY Sandy clay with fragments of reddish gray basalt and blue gray chst				
1000		BASALT Reddish gray and gray-green finely crystalline with sub- parallel feldspar laths. Well jointed. Calcite joint surfaces and biotite - chlorite chip surfaces				
1020						
1040						
1060		END OF HOLE AT 1065 feet.				

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates : 77.284' N Length : 1.188' Hole No. : RH 75-03
 Reference Elev. : 2204' E Azimuth : Date : JANUARY 1978
 Ground Elev. : 2379' Dip : 80° Logged by : J. Reisine
 Core Size : Sheet : 1 of 8

ELEVATION IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		LOG USE SAMPLE NO.	ASH AT 20% MOISTURE
	STAY POINT	MAJOR ROCK UNITS	THICK	DESCRIPTION		
0						
0		OVERBURDEN Gravel, 50% sand 10% rock chips 10% fines Grey green		NOTE: Reverse Circulation Recovery Rate. Only rock chips obtained Limited stratigraphic and structural data Original ground elev. 2397.5'		
40		Sand and Gravel: 50% sand 45% rock chips 5% fines Grey green				
80		SILTY SAND Dark grey with some rock chips				
80		SAND GRAVEL , Grey green 30% sand, 70% rock chips				
2800 100		SILTY CLAYSTONE Grey brown, with 10% sand; weakly indurated.		Trace of coal fragments		
140		COAL? Sample missing		Trace of coal with resin beads		
140		SILTY CLAYSTONE Grey brown, weakly indurated with trace of sand.				
160				5% white silty slt 5% buff clayey slt		
180				10% white slt		
200				Traces of coal		
220				White slt with grey brown silty slt		
240						
260				Carbonaceous		
280				With trace of calcite and magnetite		
2600 300						
320						
340						
360				10% white slt		
380						
400						
420				Slightly carb.		
440						
460						
480						
540						
560				40% grey brown slt, 50% buff slt, 10% light grey slt		
580				Trace of calcite		
600		SILTSTONE Grey brown clayey		Grey brown to purplish slt with trace of calcite and magnetite		
620				10% buff to rust brown slt		
640						
660				10% buff slt		
680				Trace of calc. root brown to buff sandy slt		
2200 700						
720						
740				15% light grey slt		
760						
780				Quartzitic sand surfaces 10% buff slt		
800				Trace of carb.		
820				Trace of amber pyrrhotite? and 30% buff quartzitic slt Trace of carb. material		
840						
860						
880				10% rust brown fine slt		
2000 900						
920				Trace of coal fragments		
940				Trace of coal and pyrrhotite		
960				10-20% buff to rust brown slt		
980						
1000						
1020						
1040						
1060						
1080				Trace of buff slt varicoloured slt and pyrrhotite		
1800 1100						
1120				Trace of buff slt and coal		
1140				10-15% sand, 10% buff slt and trace of pyrrhotite? 10-15% sand, 10% buff slt 20% buff slt		
1160						
1180						
		END OF HOLE AT 1163 Feet				

126
4/8
⑥

00126 4/8

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

⑦

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates : 78,890' N Length : 960' Hole No. : RM 74-01
 19,892' E Azimuth : - Date : DECEMBER 1974
 Reference Elev. : 3480' Dip : -90° Logged by : J. PRILLEN
 Ground Elev. : 3480' Core Size : - Sheet : 1 of 8

ELEVATION FEET DEPTH FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE USE SAMPLE NO.	ASH AT 20% MOISTURE
	STRAT. PLAT.	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0	Q ₁ to 10	OVERBURDEN Sandy gravel with some silt, cobbles and boulders		NOTE: Reverse Circulation Rotary Hole. Only chips samples obtained. Lateral structural and stratigraphical data Original ground elev. 3459.5'		
20		Brown sand				
40		Sand and gravel				
40		S.M. sand and gravel				
3400 40		WEATHERED BASALT Red finely crystalline and vesicular, with glassy vesicles				
80						
100		FRESH BASALT Dark gray, slight to non- vesicular.				
120				Quartz (minor)		
140		CRYSTAL TUFF Slightly weathered, with up to 5% biotite and a trace of garnet		Coarser crystals, pale blue gray.		
160				With chips of granitic basalt, at and below		
180		CALC. SANDSTONE Gray and white, fine to medium				
200		SILTY SANDSTONE Light to dark gray, with minor congl. and silty zones		Calc. and coal fragments Calc. Calc. congl. Congl. : coal fragments Silt		
220						
240						
260						
3200 260						
280						
300						
320		SILTSTONE Dark to light gray with minor silt				
340						
360				Sandy calc. gray green to light gray		
380				Silty sst, light gray Calc., sst 30% sst, 40% silt and 30% coal 25% sst, 25% silt, 50% coal Sandy, silt and pepper gray Sandy 1st sst, light gray with trace of coal Silty calc. sst		
400						
420						
440		PEBBLE CONGLOMERATE Well rounded pebbles about 20% volcanic. Generally light gray				
3000 460				Silty sst		
480						
500						
520				Silty sst with trace of coal		
540		INTERBEDDED DETRITAL ROCKS Gray brown				
560		PEBBLE CONGL. With 35-40% andesitic particles and 20-30% volcanics				
580		SANDY SILTSTONE Gray brown				
600		CONGL. SILTSTONE Grading to a sst. at base				
620				Congl. sst		
640		SANDY SILTSTONE, with thin conglomerate Dark gray, some clay, 20% volcanic chips				
660		SANDY SILTSTONE, Gray brown				
2800 660		SILTY CONGLOMERATE Gray brown, calc.				
680				Gray green		
700		SILTY SANDSTONE		Trace of carb. material		
720		INTERBEDDED PEBBLE CONGL. AND CONGL. SANDSTONE, Gray green		Gray green slightly calc.		
740		PEBBLE CONGLOMERATE Blue gray to gray brown, slightly calc.				
760				With 10% clay		
780		SILTY CONGL. SANDSTONE Rust brown, slightly calc.				
800				Gray brown		
820		SILTY SANDSTONE Gray brown, clayey, slightly calc.				
840		CONGL. SANDSTONE Gray brown, calc.				
860		SANDSTONE Gray brown, calc.				
880		CONGLOMERATE Gray green				
900		CONGL. SANDSTONE, Gray green				
2600 860		CONGLOMERATE Dark gray, pebbles mostly volcanic				
880		SILTY SANDSTONE Gray green, slightly calc.				
900		CONGLOMERATE Dark gray with silt				
920				Dark gray to gray green, silty		
940		SANDY SILTSTONE Blue gray				
960		SILTY SANDSTONE Blue gray to gray green				
960		END OF HOLE AT 960 Feet				

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD



Coordinates: 79,170' N Length: 1522' Hole No: 74-26
 Reference Elev: 2874' Azimuth: 090 Date: JULY 1974
 Ground Elev: 2871' Core Size: NQ Dia: 55' Logged by: P. J. Street
 Sheet: 1 of 8

ELEVATION IN FEET DIP	STRATIGRAPHY		DETAIL & STRUCTURE		SAMPLE NO.	ASH AT 20% MOISTURE
	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			
0	Open			Notes: Original ground elev 2871'		
0-20	OVERBURDEN					
0-10	Mixed sand clay and boulders					
10-20	Mixed sand silt and clay					
20-60	COAL AND CLAYEY COAL			(10-1) Shale		
20-60	App. 75% coal, dull brittle with some desiccation cracks. 1/4" to 1/2" layers of clayey coal. App. 1/4" sandy sand.			(10-1) Shale		
60-100	SILTSTONE					
60-100	Medium grey, soft					
100-120	COAL AND CLAYEY COAL					
100-120	App. 75% coal, 1/4" clayey coal. Bedding not seen.					
120-140						
140-160						
160-180						
180-200				(10) silt, reddish brown		
200-220						
220-240				(10) silt		
240-260	COAL					
240-260	Black, hard, uniform and general dull					
260-280				(10) silt, sandy		
280-300						
300-320				(20) sandy silt		
320-340				(10) silt		
340-360				(10) silt		
360-380				(10) silt, hard contorted		
380-400						
400-420				Traystone		
420-440						
440-460						
460-480	COAL AND CLAYEY COAL					
460-480	Mixed lumpy rocks					
480-500	coal			(10) silt, calc. fractures		
500-520	COAL					
500-520	dark, cohesive & uniform, green					
520-540				(10) silt		
540-560	LOESS					
540-560	Light grey, soft, with up to 10% rock fragments					
560-580	COAL					
560-580	Black finely banded, cohesive with conchoidal fractures, lustreous					
580-600				Barrenitic clay		
600-620				Barrenitic clay		
620-640				Barrenitic clay		
640-660				variable 0-45°		
660-680				(10) gauge		
680-700				Gauge		
700-720						
720-740				Clean blocky		
740-760	SILTSTONE					
740-760	Light grey brown, uniform, fossiliferous, soft. Beds generally not detectable					
760-780				(0.5) coal		
780-800				Mixed silt & calc silt		
800-820				(10) pale brown silt		
820-840				Darker grey		
840-860				(10) dark grey		
860-880						
880-900						
900-920						
920-940						
940-960						
960-980				Soft mudstone		
980-1000						
1000-1020						
1020-1040						
1040-1060				(10) silt		
1060-1080						
1080-1100						
1100-1120				(10) faint laminae		
1120-1140						
1140-1160						
1160-1180				(10) pale brown silt		
1180-1200						
1200-1220						
1220-1240				(10) calc breccia		
1240-1260						
1260-1280						
1280-1300						
1300-1320						
1320-1340						
1340-1360						
1360-1380						
1380-1400				(10) gauge		
1400-1420						
1420-1440	COAL					
1420-1440	Black massive hard brittle with conchoidal fractures. Surfaces dull to moderately finely banded. Very clean.					
1440-1460	SILTSTONE					
1440-1460	Medium brown, carb.					
1460-1480						
1480-1500						
1500-1520	SILTSTONE					
1500-1520	Medium brown, carb.					
1520-1540	END OF HOLE					
1520-1540	1522 feet					

126
4/8

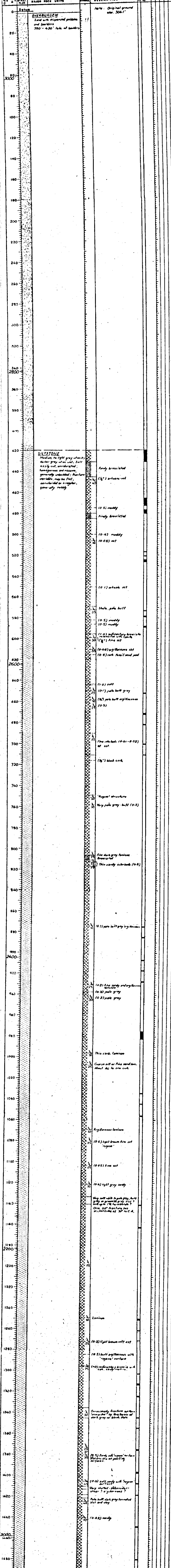
126 4/8

9

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates	78.028° W	Length	1501'	Core No.	74-27
Reference Elev.	3041'	Azimuth	090°	Date	Aug. 1974
Ground Elev.	3041'	Dip	45°	Logged by	P. J. Street
		Core Size	M.R.	Sheet	1 of 7



BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 78,998' N. Length: 1469' Hole No.: 74-28
 23,934' E. Azimuth: 199° Date: SEPT. 1974
 Reference Elev.: 3176' Dip: 70° Logged by: Mol de Queiroz
 Ground Elev.: 3176' Core Size: NG Sheet: 1 of 7

ELEVATION IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORRECTION SAMPLE NO.	ASH AT 20% MOISTURE
	STRAT. PLAT.	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0	Defun			Note: Original ground elev. 3176'		
0-20		OVERBURDEN Thick successions of mixed sand clay and unsorted boulders with minor river bed gravels				
3000		MIXED DETRITAL ROCKS Grey mudstones, sst and congl with coal fragments		Pebbly (36-5')		
360		CLAYSTONE		Grey, gritty sst		
380		SILTSTONE Dark grey siltstone				
2800						
420						
440				Grey graded sst. with streaks of coal		
460				Blocky, MC sst		
480				(0-1) white chf		
500						
520				(0-5) grey sst. with coal fragments		
540						
560						
580						
600						
2600						
620						
640				(0-5) white chf		
660						
680						
700						
720						
740				(0-5) white chf		
760						
780				White sst with fine carb layers		
790				(0-5) white sandy		
800				(0-8) white sandy		
810				(0-5) white sandy		
820						
2400						
840						
860		SILTSTONE WITH SST Blocky with banded sst with up to (0-3)-(0-6) sst				
880						
900		SILTSTONE Grey, blocky and massive hard competent		(10) rubble		
920						
940				(20) rubble (0-2) sst with (0-05) carb sst		
960						
980				(10) congl sst		
1000						
1020						
1040						
2200						
1060						
1080		MIXED SST, SILT & CONGL Grey hard well indurated rock				
1100		CONGLOMERATIC SANDSTONE Grey coarse				
1120		SANDSTONE Grey blocky, inhomogeneous				
1140		SILT SANDSTONE Grey fine silty rock with (0-2) (0-5) layers		(0-2) coarse layers (2-0) grey coarse sst		
1160		CONGLOMERATE Grey compact blocky with some congl sst; pebbles 1/2-4" subrounded to subangular in a sandy matrix with coal fragments and rare carb layers		Very coarse Very coarse (0-1) black brown coal		
1180						
1200						
1220		SILTSTONE Dark grey blocky with thin sandy layers. Well bedded, good fracture parallel to bedding				
1240						
1260						
2000						
1280						
1300		SANDSTONE Coarse grey sst, blocky, well indurated, with numerous coal fragments up to (0-5)				
1320						
1340						
1360				Coaly Coaly (0-5) Coaly		
1380		CONGLOMERATE Coarse grey blocky, well indurated, with pebbles up to (0-5). Numerous coal fragments		(10) rubble (1-5) rubble		
1400						
1420						
1440		CARB. SHALE Dark grey with 1/2-1/4" carb nodules. Well bedded with parallel parting				
1460		SILTSTONE Grey muddy highly fractured, occasional chert pebbles		(2-0) calc.		
1480		END OF HOLE AT 1469 feet				

126 4/18

00126 4/8

DOLMADE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT - DRILL RECORD

(11)

Coordinates: A 83,349 M Length: 1358' Hole No.: 74-29
 Reference Elev.: 2990' E Azimuth: 090° Date: SEPT. 1974
 Ground Elev.: 2978' Core Size: NQ Dip: 70° Logged by: Mel de Quadras
 Sheet: 1 of 7

DEPTH FEET	STRATIGRAPHY		DETAIL & STRUCTURE		SAMPLE NO.	ASH AT 20% MOISTURE
	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION	SYMBOL		
0	OVERBURDEN		Mixed boulders, gravel sand and clay.			
0			Note: Original ground elev. 2978.6'			
20						
40						
60						
80						
100						
120						
140						
160						
180						
200						
220						
240						
260						
280						
300						
320						
340						
360						
380						
400	MIXED CYCLIC DETRITAL ROCKS	PC	Grey greyish white and grey-green silt. silt and congl. Often graded with gradational boundaries.	Congl.		
420	SANDSTONE	PC	Light greyish green. Fractures 75° to 90° to C.A. Partings 40° to 50° to C.A. (a bedding?)	Silty (15) congl.		
440						
460	PEBBLE CONGLOMERATE	PC	Greenish grey calc. Fresh pebbles 0.01 to 0.06	Silt greenish grey Silt		
480						
500	SANDSTONE	PC	Light green, gradational. Rough fractures 90° to C.A. sand partings (a bedding?) 45°-50° to C.A.	Brown Brown		
520						
540	PEBBLE CONGLOMERATE	PC	Greyish white calc pebbles (0.01 - 0.05)	Greenish grey		
560	SANDSTONE	PC	Grey poorly indurated grading to a congl.	White calc content variable		
580	SILTSTONE	PC	Dry, ranging from silt to silt. silt base	Congl.		
600	COALY CLAYSTONE	UC	Black to dark grey, with coal layers		1	
620	SILTY CLAYSTONE	UC	Greyish white, very soft, unconsolidated	(17) silt		
640	COALY CLAYSTONE	UC	Black with thin beds of coal		2	
640	MIXED DETRITAL ROCKS	PC	Grey soft unindurated	Sandy		
660	PEBBLE CONGLOMERATE	PC	Greyish white	Very calc.		
680	SILTSTONE	PC	Grey homogeneous, moderately indurated with thin carb. streaks	Calc (10) silt (10) congl	3	
700	MIXED COAL AND COALY CLAYSTONE	UC	Dark grey to black, thin bedded lignite. Coal when clean hard and blocky but overall dull and rubbly to pulverized	Silty (10) coal clean, lustrous	4	
720					5	
740					6	
760					7	
780	MIXED DETRITAL ROCKS	PC	Grey unindurated to moderately indurated blocky to rubbly. Unconformities 90° to E. A. and grad parting (a bedding) 45°. Cyclic graded beds.	Silt White calc congl. Grey silt Congl. silt Grey silt Grey silt Grey silt Grey silt Calc congl. white	8	
800					9	
820					10	
840	MIXED MUDSTONES AND COAL	PC	Grey to black, finely bedded, rubbly	Coaly silt Silty, rubbly Coaly silt, rubbly Clean lustrous	10	
860	SILTY SANDSTONE	PC	Grey to black, unindurated	Silty Clean (15) congl		
880	CLAYSTONE	UC	Calc. black, silt		11	
900					12	
920	MIXED DETRITAL ROCKS	PC	Greyish white and grey well indurated and blocky (except congl.) representing several cycles of graded deposition. Coarser units, often calc. Rough fractures 90° to C.A. Poorly bedded	Grey green sandy Calc. rubbly Fine silt	13	
940						
960						
980						
1000	SILTSTONE TO CONGLOMERATE	PC	Graded	Calc.		
1020						
1040						
1060	CALC. SANDSTONE	PC	Grey, blocky	Calc. congl.		
1080	CONGLOMERATE	PC	White calc	(15) brownish silty		
1100	SANDSTONE	PC	Grey, variable, calc in coarser layers	Silt Congl.		
1120						
1140						
1160						
1180	PEBBLE CONGLOMERATE	PC	Well indurated, blocky calc	Very calc.		
1200	SILTSTONE	PC	Grey, blocky well indurated			
1220						
1240	DRIFTY SANDSTONE	PC		Silt Calc. congl.		
1260	SANDSTONE CALC.	PC				
1280	CALC. CONGLOMERATE	PC		(10-12) silt		
1300	SANDSTONE	PC	Variable	Fine Coarse calc. streaks Coarse		
1320						
1340						
1360	END OF HOLE AT 1359 FEET			Congl. Medium to coarse		

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates : 93,508' N	Length : 1099'	Hole No. : 74-30
Reference Elev. : 2791'	Azimuth : 99.9°	Date : SEPT. 1974
Ground Elev. : 2789'	Dip : 30°	Logged by : Mel G. Quodras
	Core Size : HQ	Sheet : 1 of 6

ELEVATION IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		SCALE CORE SAMPLE No.	ASH AT 20% MOISTURE
	SYMBOL FOOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0		Delem OVERBLINDEN Mixed boulders and gravel		Note Original ground elev. 2789'		
20						
40						
60						
80						
100						
120						
140						
160		INTLUBERKED DETRITAL ROCKS Generally greenish green poorly consolidated cyclic with quartzite in thin layers, poorly bedded		Congl. calc.		
180		MUDSTONE Greyish green, slightly sandy. Parting 65° to C.A.		(0-1) calc.		
200		SILTSTONE Greyish green		9		
220		SANDSTONE Greyish white unbedded calc. Fractures perpendicular to C.A.		(0-1) pebbly		
240		SILTSTONE Greyish white		(0-1) gritty		
260		SANDSTONE Greenish white pebbly up to calc. coal fragments		PC		
280		SANDSTONE Greenish white pebbly up to calc. coal fragments		PC		
300		SANDSTONE Greenish white pebbly up to calc. coal fragments		PC		
320		GRITTY SANDSTONE Greenish grey to greenish white Unsorted, minor calcite		9		
340				Calc		
360		CONGLOMERATE Greenish white pebbly pebbles rounded to subrounded calc		(1-4) coarse		
380		SANDSTONE Green, gritty unbedded, pebbly		9		
400		CONGLOMERATE Greenish unconsolidated pebbles (0.02-0.4), rounded to subrounded		9		
420				UC		
440		SANDSTONE Green, gritty competent		MC		
460		SILTSTONE Green coarse		9		
480		SANDSTONE Green, gritty		9		
500		CONGLOMERATE Greenish coarse pebbles (0.05) to (0.4), generally rounded, poorly cemented		UC		
520				UC		
540		SILTSTONE Green coarse calc friable		9		
560		PEARLE CONGLOMERATE Greyish white unsorted		9		
580		GRITTY SANDSTONE Light green, well indurated		Congl.		
600		SANDSTONE Green, well consolidated coarse, massive blocky to nobby, fractures rough, perpendicular to C.A.		(0-3) coarse		
620				MC		
640				(2-0) silty		
660				Porous, gritty		
680				Pebbly		
700				Pebbly (1-2)		
720				9		
740		FINE CONGLOMERATE Greenish coarse well cemented, pebbles less than (0.05) Fractures 90° to C.A.		9		
760		COARSE SANDSTONE Green, massive relative, Fractures clean 90° to C.A. and also 45° to C.A.		MC		
780				9		
800		COARSE CONGLOMERATE Greenish massive, cohesive pebbles, basaltic, unsorted		9		
820		COARSE SANDSTONE Green, pebbly		9		
840		COARSE CONGLOMERATE Poorly indurated pebbles (0-1) to (0.05), subrounded		UC		
860		SANDSTONE Green, massive, cohesive well cemented generally blocky, Medium to coarse grained		PC		
880				9		
900		CONGLOMERATE Pebbly, rubbly		green sil		
920		GRITTY SANDSTONE Green, medium well rough fracture 45° to C.A.		9		
940		PEARLE CONGLOMERATE Medium grained pebbles small, rounded		Silty		
960		SANDSTONE Dark green, generally rubbly variable		Coarse		
980				PC		
1000		MUDSTONE Green pulverized, soft		UC		
1020		SANDSTONE Greyish green, incompetent unconsolidated, pulverized Fractures 90° and 45° to C.A.		9		
1040		MUDSTONE Green, pulverized, soft		UC		
1060		SANDSTONE Greyish green, slightly pebbly in part, pulverized		UC		
1080		MUDSTONE Green, incompetent MIXED SANDSTONE & CONGLOMERATE Greenish, very incompetent		UC		
1100		END OF HOLE AT 1099 Feet				

126
4/8

13

DOLMAGE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates : 83,729 N Length : 864' Hole No. : 74-31
 Reference Elev. : 2785' Azimuth : 090° Date : AUG 1974
 Ground Elev. : 2785' Dip : 52° Logged by : E. J. Street
 Core Size : NQ Sheet : 1 of 4

DEPTH FEET	STRATIGRAPHY		DETAIL & STRUCTURE		SAMPLE No	ASH AT 20% MOISTURE	
	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION		%	%
0		Bottom		Note: Original ground elev 2785'			
0-20		OVERBURDEN Med. bluish gravel and sand with some clay					
20-2600							
2600		MIXED SANDSTONE AND SILTSTONE Medium gray to fairly greenish, finely inter-bedded and inter-gradational. Interbeds (0.1) to 3" thick. Generally rubby & pulverised, possibly of volcanic origin. Fractures in poorly bedded rock at 90° but in beds with partial to bedding. Occasionally carb. laminae.		Slightly conglomeratic			
2600-2650				Muddy gouge			
2650-2700				Muddy gouge Muddy gouge			
2700-2800				Congl.			
2800-2900				(0.1) carb			
2900-3000				Carb			
3000-3100				Carb			
3100-4200							
4200		SILTSTONE Medium gray, similar to above but with 5-10% carb bedding. Rubby. Fractures 90° to C.A. or parallel to bedding.					
4200-4400							
4400		SHALE (?) Dark brownish gray very soft waxy					
4400-4800							
4800				Fossil's 50°-60° to C.A.			
4800-5200							
5200		SANDSTONE Pale greenish gray, medium to coarse sst. Fine to very fine.		Gr. fly to congl.			
5200-5400							
5400		CONGLOMERATE Greenish with minor sst. Pebbles var. coloured up to (0.2) and generally volcanic.					
5400-5500							
5500		MIXED DETRITAL ROCKS SILTSTONE CONGLOMERATE SANDY SILTSTONE					
5500-5600							
5600		CONGLOMERATE					
5600-5800							
5800		SANDSTONE Med to dark dull gray		Congl.			
5800-6000							
6000		CONGLOMERATE					
6000-6200							
6200		MIXED SST, SANDY SLSST AND CONGL.		(2.0) congl. Congl.			
6200-6400							
6400				Archaic grit Congl.			
6400-6600							
6600		CONGLOMERATE END OF HOLE AT 664 feet					
6600-6800							

126
4/8

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 79,322' N Length: 1386' Hole No.: 74-33
 Reference Elev.: 3195' E Azimuth: 090° Date: JULY 1974
 Ground Elev.: 3198' Core Elev.: 89' Dip: 38° Logged by: S. J. Street
 Sheet: 1 of 7

DEPTH METERS	STRATIGRAPHY		DETAIL & STRUCTURE		CORRECTION METERS	SAMPLE NO.	WATER MOISTURE
	STRAT. UNIT	MAJOR ROCK UNITS	PROB.	DESCRIPTIONS			
0	BELEM	OVERBURDEN Mixed gravel, boulders and sand		Note: Original ground elev. 3195.5'			
20							
40							
60							
80							
100							
120							
140							
160							
180							
200							
220		SILTSTONE Medium to light grey, ultra- fine grained though occasionally granular. Massive poorly bedded but core blocky but dry core muddy to pulverized. Undersorted. Fractures 40°- 50° to C.A., parallel to bedding and also random, ranging from parallel to perpendicular to C.A.					
240		Note: Core Run 640-1386 soaked by a mine burn and almost totally disintegrated					
260							
280							
300				Pulverized			
320							
340				Soft, muddy plastic but muddy			
360				(10) very friable			
380				Soft muddy			
400				Muddy and friable			
420				Muddy and friable			
440							
460							
480							
500							
520							
540							
560							
580							
600							
620							
640							
660							
680							
700							
720							
740							
760							
780							
800							
820				(10-5) 6" pale buff grey			
840				(10-5) buff sh			
860				(10-5) buff (10-6) darker buff fine sil			
880							
900				(10-5) buff grey			
920				(10-5) buff grey			
940				(10-1) white			
960				(10-6) buff			
980				(10-5) buff			
1000				(10-2) buff (10-2) buff			
1020				(10-5) grey with buff spherules			
1040							
1060				(10-2) very pale grey (10-2) buff sh			
1080							
1100							
1120							
1140				(10-5) buff sh			
1160							
1180							
1200				(10-2) grey sil (10-5) buff sh			
1220				(10-2) buff			
1240				Spale buff			
1260				(10-2) buff			
1280				(10-2) buff			
1300				(10-2) buff			
1320				(10-2) buff (10-2) buff (10-2) buff			
1340				(10-2) very pale grey			
1360							
1380				(10-5) pale grey			
1400							

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates : 76,488' N Length : 998' Hole No. : 74-34
 Reference Elev. : 2927' E Azimuth : 070° Date : SEPT. 1974
 Ground Elev. : 2925' Core Size : N Q Logged by : M de Quadros
 Sheet : 1 of 5

ELEVATION IN FEET VERT. X DIST. Y IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		SAMPLE NO.	ASH AT 20% MOISTURE	
	STRAT UNIT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			
0	Datum			Note: Original ground elev. 2924.5'			
0-110	OVERBURDEN	Gravel with boulders					
110-115	SILTSTONE AND CLAYSTONE	Gray well indurated silt with minor coal fragments grading into fine silt unindurated & silt boundaries gradational					
115-435							
435-440	CLAYSTONE	Soft unconsolidated dark gray silt with partings of 60% to 65% C.A.		(2) white gritty silt			
440-480							
480-500	SILTSTONE	Fine light gray silt occasionally grading into silt		Very soft porous gray silt			
500-540							
540-550				Very soft porous gray silt			
550-560				clst			
560-580							
580-590				clst			
590-600				clst			
600-610				clst			
610-620				clst			
620-640							
640-650	CLAYSTONE	Soft unconsolidated dark gray with minor layers of slightly more competent silt		white sandy			
650-660	SILTSTONE	Dark gray to light gray fine with layers of soft incompetent silt		clst (0.5) white fish			
660-670				clst			
670-680				clst			
680-690				clst			
690-700							
700-710	CLAYSTONE	Dark gray friable and unindurated		(0.5) soft			
710-720				(0.5) soft			
720-730				soft			
730-740				clastic whitish gray silt			
740-750				soft			
750-760	SILTSTONE	Fine gray relatively competent fairly homogeneous		(0.03) sandy fracture			
760-770	CLAYSTONE	Grayish white, soft		white with shaly streaky partings 80% to 85% C.A.			
770-780				Greenish black mudstone			
780-790	SILTSTONE	Gray well indurated partings 50% - 60% chertoidal fracture					
790-800	CLAYSTONE	Gray soft homogeneous incompetent very friable		(0.5) whitish gray silt			
800-810							
810-820	SILTSTONE	Gray soft homogeneous unindurated with chertoidal fract. & grad parting 82%					
820-830	CLAYSTONE	Gray very soft pliable					
830-840	SILTSTONE	Gray relatively incompetent with blocky fracture, often grading into minor silt lenses					
840-850							
850-860	CLAYSTONE	Gray soft unindurated		(0.4) competent silt incompetent gray			
860-870				Gray well indurated gritty with angular fragments			
870-880							
880-890	INTERBEDDED SILTSTONE AND CLAYSTONE	Gray alternating graded bands of gray silt, clst incompetent & soft		Competent			
890-900							
900-910							
910-920							
920-930							
930-940							
940-950							
950-960							
960-970							
970-980							
980-990							
990-1000	END OF HOLE	998 feet					

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
MAT CREEK PROJECT - DRILL RECORD

Coordinates : 83,306' N Length : 932' Hole No. : 74-35
 Reference Elev. : 3129' E Azimuth : 090° Date : SEPT 1975
 Ground Elev. : 3128' Dip : 70° Logged by : Mel de Quadros
 Core Size : N 0.566" Sheet : 1 of 8
 S 0.666-932"

ELEVATION FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE NO.	ASH AT 20% MOISTURE		
	STRAT PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			1	2	3
0	Surf	DEBRIS Mixed boulders gravel, sand and clay		Note: Original ground elev 3128.5'					
20									
40									
60									
80									
100									
120									
140									
160									
180									
200									
220									
240									
260									
280									
300									
320									
340									
360									
380									
400		COARSE CALCAREOUS SANDSTONE							
420		Dark gray pebbly soft, totally unindurated, crumbly sand, grades into silt numerous coal fragments up to 0.2 across but generally much less than 1/4"							
440									
460									
480		SOFT, GREY CLAY							
500		Grey to gray brown, totally unindurated very plastic when wet very calc.							
520									
540		COARSE SAND							
560		Dark gray soft similar 396- 429 but grades into congl with unconsolidated crumbly calc.							
580		CONGLOMERATE Brownish grey MIXED M. S. SANDS SST AND CONGL. in conglomerate matrix in texture and color similar generally unindurated							
600		SANDSTONE							
620		Soft green, poorly indurated crumbly generally fine							
640									
660		CLAY							
680		Green silt							
700		SANDSTONE							
720		Greenish to greenish gray soft unconsolidated and plastic when wet calcareous when dry							
740									
760									
780		CLAY							
800		Black soft unconsolidated fossiliferous clay							
820		SANDSTONE							
840		Grey to gray green, soft calc. to fine grained parting at 810' to C.A. clayey plastic when wet hard when dry Bedding incl. due to geological boundaries							
860									
880									
900									
920									
940		END OF HOLE AT 932 feet							

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates : 78,948' N Length : 287' Hole No. : 74-36
 Reference Elev. : 3267 Azimuth : 990° Date : OCT 1973
 Ground Elev. : 3265 Dip : 70° Logged by : Mel de Quadros
 Core Size : N.G. Sheet : 1 of 5

DEPTH (FEET)	STRATIGRAPHY	DETAIL & STRUCTURE		CORE LOSS SAMPLE No.	ASH AT 20% MOISTURE
		SYMBOL	DESCRIPTION		
0	Datum		Note: Original ground elev 3264'		
0-32	OVERBURDEN 2'-32' sand with some silt loam				
32-160	52'-160' boulders, pebbles, sand and hard clay				
160-300	160'-300' alternating layers of silt and hard gravel, sand and clays				
300-320					
320-360	COARSE LINGULOMERATE Gray well-sorted very competent but porous rounded to subangular pebbles 4-0.3" diameter, cemented in coarse sandy matrix sparsely with coal fragments 0.05" diameter				
360-380			Shales - fairly - coarse silt		
380-400	FINE LINGULOMERATE Fine rounded hard pebbles clayey matrix, very friable		Grades into very coarse silt		
400-420	SILTSTONE Gray green with minor silt and undulating friable, grades into cherty pebbly congl. Bedding indeterminate				
420-440			clay and pebbles (0.01-0.6 diameter) muddy matrix calc. B-crusted silt cemented by clayey material		
440-460	CHERTY SHALE Very brittle very competent hard very friable in part cemented & brecciated. Brittle when dry. Bedding white siliceous hard, gray quite soft, unconsolidated clayey material		Shale with soft clay		
460-480			Soft clay Soft clay		
480-500			Cemented breccia		
500-520					
520-540			Very laminated - cemented by greenish clayey matrix		
540-560			Well banded fissile quite regular textures		
560-580			Very fragmented		
580-600			Good bedding		
600-620			Good bedding		
620-640					
640-660					
660-680					
680-700					
700-720					
720-740			Brecciated rough angular green blue pieces cemented with a clayey matrix		
740-760			Red matrix		
760-780	SILTSTONE Siltstone layers with occasional pebbles				
780-800	VOLCANIC BRECCIA Agglomerate? interbedded in angular chert silt. Volcanic rock cemented in green friable matrix. Appears to be tuffaceous at least in part				
800-820			Red fairly competent matrix. Matrix indeterminate?		
820-840	BASALT BRECCIA Mixed rocks with fragments and boulders of amygdaloidal basic lava cemented in greenish tuffaceous matrix		Amygdaloids: white (calcite) green (malachite) and native copper		
840-860					
860-880					
880-900					
900-920	BASALT Amygdaloidal fine grained spherulitic, possibly nodular at 20" diameter 35" Numerous hairline fractures interbedded with quartz impure brecciated material of friable black carb. material & native copper amygdaloids				
920-940					
940-960	BASALT BRECCIA Amygdaloidal Basalt fragments in green matrix				
960-967	END OF HOLE AT 967 feet				

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

19

Coordinates: 76,930' N Length: 2186' Hole No: 74-37A
Reference Elev: 3200' E Azimuth: 090° Date: OCTOBER 1974
Ground Elev: 3199' Core Size: NQ Dip: 60° Logged by: M de Quadros
Sheet: 1 of 11

ELEVATION (FEET)	STRATIGRAPHY MAJOR ROCK UNITS	DETAIL & STRUCTURE	CORRECTION	CORRECTED ELEVATION	CORRECTION	CORRECTED ELEVATION	ASH AT 20% MOISTURE	
							Wt %	Vol %
1200	DENUM	Wife: Original ground elev 3200'						
1200	OVERBURDEN Predominantly silty clay drift with large cobbles of basalt, granite and sandstone in clay layers beneath.							
180	SILTY CLAYSTONE Grey to dark grey, brown with plastic rock, massive homogenous, rarely fissile, rarely bedded.	Fractures 45-60° 20' minor						
3000								
2400								
2600								
2800								
3000								
3200								
3400								
3600								
3800								
4000								
4200								
4400								
4600								
4800								
5000								
5200		(10) White						
5400								
5600								
5800		(0.5) White						
6000								
6200		(0.6) White						
6400								
6600		Light grey						
6800								
7000								
7200								
7400	COAL Black, blocky compact well bedded, hard. Good partings, thin smooth but uneven. Silty shales near Nine clay interbeds. Fractures parallel and at right angle to bedding.	(3-0)						
7600		(15-0) Banded - thin (20) White silty centered						
7800								
8000		Grey, mc, coaly						
8200		(0.5) White silty centered, clay layers (2%)						
8400	Claystone - grey, soft benign.	Grey silty						
8600								
8800								
9000		(0.8) Very centered white silt.						
9200								
9400								
9600								
9800	SILTSTONE Grey, coaly	Silty Coaly						
10000		Grey coaly						
10200	COAL Black, clean SILTSTONE Grey, carbonaceous GRADED BEDS Dark grey to black, coaly	Silty Coaly (10) stratified wood 2.0%						
10400		Coaly						
10600	COAL Black, clean coal with lustrous fractures. Finely bedded	Silty						
10800								
11000	SANDSTONE - grey with COAL Clean, black with lustrous fractures, finely bedded	1.5%						
11200								
11400		Rare silty layers						
11600								
11800								
12000	GRADED BEDS Grey, black, ranging from silt to clay, thin bedded	Sandy						
12200								
12400	COAL Black, blocky clean coal, lustrous fractures, finely bedded.	(0.5) very centered min (3%) (0.5) white silty stripes						
12600		(0.5)						
12800	SILTSTONE dark grey COAL Black, blocky clean coal, lustrous fractures, finely bedded	(0.5) Coaly						
13000		Silty layers up to 9"						
13200								
13400		Silty						
13600	SILTSTONE Grey, coaly	Coaly						
13800	COAL Black, clean							
14000	SILTSTONE Dark grey, coaly	Coaly						
14200	COAL Black, silty at top, becoming clean downward	Silt						
14400								
14600								
14800								
15000								
15200	Very clean, compact, well bedded							
15400								
15600								
15800								
16000								
16200								
16400								
16600								
16800								
17000								
17200								
17400								
17600								
17800	MIXED COAL AND SILTSTONE Black, finely interbedded mixed sequence							
18000								
18200								
18400	COAL Black, blocky clean coal with lustrous fractures							
18600								
18800	MIXED COAL AND SILTSTONE Black, finely interbedded							
19000	COAL Black, blocky clean, SILTSTONE Silty to dark grey, carbonaceous COAL Massive, homogeneous hard coal, with lustrous curved fractures, well bedded, good fractures, parallel to bedding. Large resin beads. Bedding variable, changing by 10°-15° in a foot.							
19200								
19400								
19600								
19800								
20000								
20200		(10) Stripping white silt centered.						
20400								
20600								
20800		(0.5) white silty (2%) layers centered fractures with white rock silty layers - centered						
21000								
21200								
21400								
21600								
21800	MIXED SANDSTONE AND SILTSTONE Grey, blocky	Blocky						
22000	FIND OF HOLE 210 & feet							

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

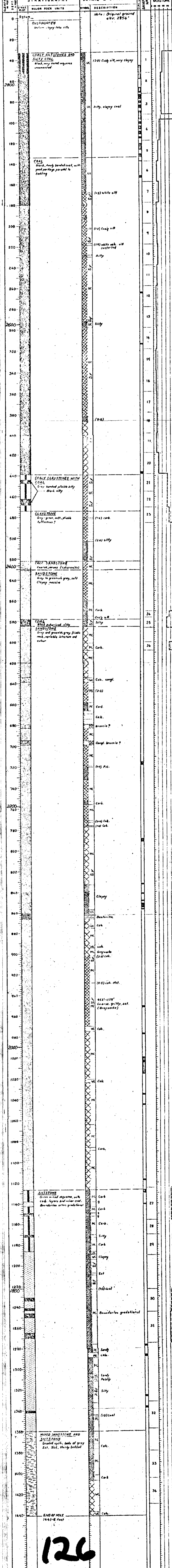
Coordinates : 79,862' N Length : 2992' Hole No : 74-38
 19,486' E Azimuth : 090° Date : OCTOBER 1974
 Reference Elev. : 3010' Dip : 60° Logged by : M de Quadros
 Ground Elev. : 3010' Core Size : NQ Sheet : 1 of 10

DEPTH FEET	STRATIGRAPHY		DETAIL B STRUCTURE		ASH AT 20% MOISTURE
	UNIT	DESCRIPTION	UNIT	DESCRIPTION	
0	DETAILED OVERGREEN SANDS	Black and grey, blocky poorly indurated and friable. Fracture 45° to C.A.	MC	Notes: Original ground elev. 3014.5'	
30	CLAY	Soft, buff, red, white poorly indurated and friable. Fracture 45° to C.A.	MC	Pinkish, very soft	
40			MC	white hard	
60			MC	fractured, with calcite	
100			MC	fine bedded coarse buff & large, pebbly, buff sand	
120			MC	silty	
140			MC	buff beige white bedded	
150	SANDSTONE	Black and grey, blocky poorly indurated. Fracture 60° to C.A.	MC	(10) coal gradational carb.	53
180			MC	blocky friable	
200	MIXED COAL AND CLAYSTONE	Black, fine, bedded, buff, blocky coal. Sandstone part. 30° to C.A. Bedding variable.	MC	Coaly mixed silt & coal carb.	54
210			MC	silty	45
220	COAL	Black, coal, blocky. Fractures flat, rustrous, 60°-30° to C.A. (Usually perpendicular to bedding)	MC		2
240			MC	(10) Silt	5
260			MC	(10) Silt	4
280			MC	(15) Silt, concretion	5
300			MC	(15) Silt	6
320			MC		7
340	SANDSTONE (Calyfornia)	Coarse, buff, sandstone with large pieces of calcite. Fracture 60° to C.A.	MC	Gradational	16
360	COAL	Black, blocky coal, with uneven bed. Fracture bedding - large approx. 50° to C.A. and parallel to fracture.	MC	(10) Silt	9
380			MC	Silty	10
400			MC	Carb.	57
420			MC	Silty	58
440			MC	(10) Resin beads	12
460	SANDSTONE	Very dark grey, granular blocky	MC		59
480	COAL	Black, blocky to sandy coal. Fractures flat, rustrous, 60° to C.A. Fractures dull, flat, parallel to bedding.	MC		13
500			MC	(20) Carb. silt	14
520			MC	Silty	15
540	SILTSTONE	Grey to dark grey carb. soft friable	MC		16
560	COAL	Black, blocky, finely bedded. Partings parallel to bedding. Homogeneous.	MC		17
580			MC	Coaly silt, soft	62
600			MC		18
620			MC	(70) brown silt, concretion	20
640			MC		19
660			MC	(10) Coaly sand	21
680			MC		22
700			MC		23
720			MC		24
740			MC		25
760			MC		26
780			MC		27
800			MC	(50) Silty	18
820			MC		28
840			MC	Coaly silt soft	10
860			MC	(20) Carb. silt layer - Pe bed	31
880			MC	(10) Mixed coal and silt	32
900			MC	Coaly carb silt	33
920			MC		63
940			MC	Coaly silt	34
960			MC		35
980			MC	(10) carb silt	36
1000			MC		37
1020			MC		38
1040			MC		39
1060			MC		40
1080			MC		41
1100			MC		42
1120			MC		43
1140			MC		44
1160			MC		45
1180			MC		46
1200			MC		47
1220			MC		48
1240			MC		49
1260	SILTSTONE WITH COAL	Black to grey with carb. coal with thin layers of coaly silt and carb.	MC		50
1280	MIXED DETRITAL ROCKS WITH LIMESTONE	Siltstone grey, soft	MC		51
1300	SANDSTONE	Grey, soft, conglomeratic	MC		52
1320	GRADED BEDS	Grey, soft, porous silt, sand and clay	MC		53
1340			MC	Carb.	65
1360			MC	Carb. congl. silt	
1380	SILTSTONE	Dark grey, blocky, carb. coal	MC		
1400	LIMESTONE	Grey to sandy, hard	MC		
1420	SANDSTONE	Grey, soft, carb.	MC		
1440	SILTSTONE	Grey, blocky, fractures 60° to C.A. Becomes coarser down	MC		
1460			MC	(30) carb.	
1480	LIMESTONE	Grey, hard, sandy carb. layers	MC	(20) Clayey lenses	
1500	SILTSTONE	Light grey blocky clayey in parts	MC	Carb.	
1520			MC	Carb. concretion	
1540			MC	Carb. congl.	
1560	LIMESTONE white with silty layers	Blocky, compact	MC		
1580	SANDSTONE	Grey, green, soft	MC		
1600	SANDSTONE	Grey, coarse, soft	MC		
1620	SILTSTONE	Grey, soft	MC		
1640	SANDSTONE	Grey, soft	MC		
1660	SILTSTONE	Grey, soft	MC		
1680	SANDSTONE	Greenish soft, calc.	MC	(10) Fracture carb.	
1700	SANDSTONE	Grey, soft, congl.	MC	(10) carb. fractured, carb.	
1720	SILTSTONE	Greenish soft	MC		
1740	SANDSTONE	Greenish soft, uneven	MC		
1760	CONGLOMERATE	Grey carb. hard	MC		
1780	MIXED UNBEDDED BEDS	Grey mixed beds, hard, nested	MC		
1800			MC		
1820			MC	(10) Coaly lens	
1840	LIMESTONE	Grey, hard, clayey	MC		
1860	MIXED GRADED BEDS	Greenish grey, mostly silty unindurated.	MC	Carb. hard	
1880			MC	(10) sandy congl.	
1900			MC	Sandy silt	
1920			MC	(10) carb silt	
1940			MC	Dark grey silt	
1960			MC	Sandy lens	
1980			MC		
2000	SILTSTONE	Black, carb.	MC		
2020	SANDSTONE	Grey, coarse	MC		
2040	MIXED DETRITAL ROCKS	Blocky, grey, sandy	MC		
2060			MC	(10) carb silt	
2080			MC	(20) clayey lens	
2100	END OF HOLE	2095 feet			

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 81,852' N Length: 641.8' Hole No.: 74-39
 Reference Elev.: 2800' E Azimuth: 0.80° Date: OCT. 1924
 Ground Elev.: 2853' Core Size: 40' Dip: -8.0° Logged by: M. G. Quattrone
 Sheet: 1 of 7



126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 81,553' N Length: 1318.5' Hole No.: 74-40
 Reference Elev.: 2840' E Azimuth: 090° Date: OCT. 1973
 Ground Elev.: 2837' E Core Size: HQ Dip: 80° Logged by: J. Rollins
 Sheet: 1 of 7

ELEVATION FEET DOWN	STRATIGRAPHY		DETAIL & STRUCTURE		CORRECTION IN FEET	SAMPLE NO.	ASH AT 20% MOISTURE
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			
0		OVERBURDEN Mixed sand, gravel with some boulders		Note: Original ground elev. 2838'			
20							
40							
60							
80							
100		SILTY CLAYSTONE Light grey to grey green, mud to well indurated Partings 80° to C.A. Joint sets 30° 60° to C.A.				1	
120				(0-5) med.			
140				Fine, coaly		2	
160		GRADED BEDS, CLST - SST - SST Grey green, indurated massive Bedding highly variable and often subhorizontal and gradational Partings 80° to C.A. Joint sets 30° 60° to C.A.				3	
180				Carb.		4	
200		SANDSTONE Grey green, indurated massive with interbeds of sil. clst Partings 80° to C.A. Major joint sets 30° 60° to C.A.					
220							
240		HARD LIMESTONE		Dissection fractures, indurated			
260		INTERBEDDED CLAYSTONE AND SILTSTONE Light grey to grey green, with some sil. and minor part sand carb. zones; slightly calc. poorly to moderately indurated Partings 70°-75° to C.A. Major joint sets 60° 80° to C.A. small scale mammillate on 80° set indicated by migration of lines to joint planes					
280							
300							
320				Int. with fracture filled with clay			
340				Hard part			
360							
380		SANDSTONE Flinty calc.					
400							
420							
440						5	
460							
480		INTERBEDDED SILT AND SANDSTONE Grey green, poorly to moderately indurated Partings 75° 80° to C.A. Joint sets 30° 60° to C.A. Sandstone silty		Minor nodules of sil. at 15° to C.A. with brown clay gouge			
500		SANDSTONE Clayey					
520							
540		CLAYSTONE Massive					
560		SANDSTONE Fine					
580		SILTSTONE Clayey					
600							
620							
640		SANDSTONE Silt interbedded with calc. nodules					
660		SILTSTONE Clayey					
680		SANDSTONE Silty				7	
700							
720							
740		SILTSTONE					
760		SANDSTONE Silty					
780		INTERBEDDED SILTSTONE AND SANDSTONE Dark grey to black, friable, poorly indurated Partings 75° to C.A. Major joint sets 30° 60° to C.A.					
800				Int. with silty			
820						9	
840		COARSE SILTSTONE Black, silty with coal beds up to 0.5' sil. beds up to 1.0' up joint sets 60° 45° to C.A.					
860						10	
880		CLAYEY TO SANDY SILTSTONE Grey green to black, indurated, with some minor coal seams, poorly indurated Partings 70°-75° to C.A. Joint sets 60° 45° to C.A.					
900							
920							
940							
960		COAL					
980							
1000							
1020							
1040							
1060							
1080							
1100							
1120							
1140							
1160		SANDSTONE CONGLOMERATE AND SOME SILTSTONE Grey green graded beds; soft indurated, thin bedded CONGLOMERATE MEDIUM SILT AND SILT Interbedded silty sst with minor clayey interbeds					
1180							
1200							
1220							
1240							
1260							
1280		SILTSTONE Sandy with minor sil					
1300		MIXED SILT AND COAL					
1320		END OF HOLE AT 1318.5 Feet					

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates : 72,695' N Length : 233' Hole No. : 74-42
 Reference Elev. : 3407' E Azimuth : Date : OCT 1974
 Ground Elev. : 3405' Core Size : NQ Dip : 90° Logged by : J. Reigien
 Sheet : 1 of 3

ELEVATION DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		SAMPLE No.	ASH AT 20% MOISTURE
	SYMBOL	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0		Datum		Note: Original ground elev. 3405'		
3400		GRAVELLY SAND		Massive, silty sand pebbles and boulders (glacial drift)		
20						
40						
60		GRAVEL BEDS		Silt, sst and congl Gray green partings 60° proglacial, irregular joint sets 45°		
80				Repeating beds: sst + sst + congl (03-67)		
100		INTERBEDDED SILTSTONE AND SANDSTONE		Blue green soft poorly consolidated partings 60° joints 45°		
120				(05) calc sst (1-3) coarse sst		
140				Calc sst Gray green sst	1	
160		INTERBEDDED CLAYSTONE SILTSTONE, SANDSTONE AND CONGLOMERATE		Blue green to gray green soft poorly indurated partings parallel to bedding ~50° congl (sub) sst, sst clay pulverised		
180					2	
200						
220				(025) carb sst light gray congl		
240						
260		Carb light gray to black sst		Congl shale	3	
280						
300		GRAVEL BEDS		Clst - Sst - Sst - coarse sst beds (2-3-6-0) Gray green moderately indurated with some disintegration in water		
320				Partings Joints - planes contain fines (migration)		
340		CLAY SILTSTONE		Light gray green to black sand very silty matrix		
360				Massive silty clst	4	
380						
400		MIXED SILT AND CLAYSTONE SILTSTONE SANDSTONE WITH CONGLOMERATE BEDS		Gray green to dark gray finely indurated silt and sandstone with occasional congl on a fault but moderately indurated Partings 80° joint sets 45° to 60°		
420					5	
440						
460				Carb fines soft phallo when wet. Sst	6	
480						
500		SILTY COAL		Highly variable Carb sst with some congl sst partings Silty gray sst		
520				Carb sst in contact zone	7	
540		CLAYSTONE		Gray green to blue green silty with carb. matrix, blocky joint sets ~30° 50° to C.A.		
560				(1-25) white clst sst sst carb sst (01) white clst carb sst	8	
580					9	
600		COAL AND CARB CLST		(02) white clst Silty	10	
620				Carb clst	11	
640				Carb	12	
660		END OF HOLE AT 533 feet				

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT — DRILL RECORD

Coordinates : 77,942' N Length : 357' Hole No. : Z4-41
 Reference Elev. : 3025' E Azimuth : 090° Date : OCT. 1974
 Ground Elev. : 3023.5' Core Size : N.G. Logged by : Mel de Quadros
 Sheet : 1 of 2

ELEVATION IN FEET DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE NO.	SAMPLE NO.	ASH AT 20% MOISTURE
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			
0				Note: Original ground elev. 3024.5'			
0-180		VERBURLEN Mixed clay sand pebbles and boulders					
180		COAL WITH MINOR SILT & ANS CLASTINE Dark grey fragmental shaly weathered coal		Very very soft coal/clst	1		
180-200				Thin layers of coal	2		
200-220				Greyish white clst	3		
220-240		COAL Well bedded, partly very shaly, but very uneven parallel to bedding. Occasional clay layers & clst		Silty	4		
240-260				(0.5) contact white clst	5		
260-280				(0.2) white clst	6		
280-300					7		
300-320				Large resin beds up to 0.75" dia. containing small white clst sands (0.2)	8		
320-340				(0.5) Very irregular bedded coal & white clst	9		
340-360							
360		END OF HOLE AT 357 feet		Clst 1.1			

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 78,923 N Length: 1525' Hole No: 74-43
 Reference Elev: 3295' Azimuth: Date: NOV. 1974
 Ground Elev: 3299' Core Size: 1.9" Dip: 90° Logged by: J. Rozier
 Sheet: 1 of 8

DEPTH FEET	STRATIGRAPHY		DETAIL & STRUCTURE		SAMPLE No	ASH AT 20% MOISTURE
	STRAIT PLUG	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0		OVERBURDEN Hard clay ss, boulders		Note: Original ground elev. 3296'		
20						
40						
60						
80						
92						
100		9.5' RED CLAY AND LAYER SILT WITH MINOR COAL Dark grey to black laminated partings 40° to C.A. Joint 20° to 45° to C.A.		Clayey with fine interbeds (O.P.S.) and silt massive gray	2	
120					3	
140					4	
160					5	
180						
200		6.5' SILTY TAL AND COALY SILTS Black to brown blocky unindurated silt with silt and coal partings Coal partings 40° to C.A. and fine silt parallel to bedding		Clayey - 5% coal at 188' more with 20% at 210' blocky fine tan parting parallel to bedding silt 1) rust brown silt	7	
220					8	
240					9	
260		4.5' SILTY COAL In a thin siltstone with silt in the upper part with some small coal partings Coal partings 40° to C.A. and fine silt parallel to bedding		Black to brown, fissile with fine lentic hard silt partings parallel to bedding joints 40° to C.A.	10	
280					11	
300					12	
320					13	
340					14	
360					15	
380					16	
400					17	
420					18	
440					19	
460					20	
480						
500		MIXED UNIT OF CLAYSTONE SILTSTONE AND SANDSTONE WITH CARB. ZONE Grey green to black silt		Clay carb silt Grey green mixed silt silt silt poorly indurated partings silt with minor coal	21	
520						
540						
560						
580						
600						
620						
640						
660						
680						
700						
720						
740						
760						
780						
800						
820						
840						
860						
880						
900						
920						
940						
960						
980						
1000						
1020						
1040						
1060						
1080						
1100						
1120						
1140						
1160						
1180						
1200						
1220						
1240						
1260						
1280						
1300						
1320						
1340						
1360						
1380						
1400						
1420						
1440						
1460						
1480						
1500						
1520						
1540						

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT — DRILL RECORD

Coordinates : 7E 990' N. Length : 2308' Hole NR : 74-44
 Reference Elev. : 3201' E. Azimuth : 230° Date : NOV 1974
 Ground Elev. : 3199' Dip : 60° Met. de Quodrig : of 11
 Core Size : NQ Sheet : of 11

DEPTH (FEET)	STRATIGRAPHY	DETAIL & STRUCTURE	ASH AT 20% MOISTURE
3200	MECHANIUM Very coarse sand with to 80 pebbles. Very thin layers generally less than 1/2 inch thick.	None: Original ground over 3200.5'	
2800	CLAYSTONE Dark grey massive homogeneous massive bedded rock, rare partings bedding sandy nears.	(10.1) brown (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
2600	MIXED DETRITAL ROCKS Light grey bluish graded soft clay.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
2400	CLAYSTONE Dark grey silty COAL Clean blocky	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
2200	MIXED DETRITAL ROCKS Light grey bluish graded soft clay.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
2000	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
1800	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
1600	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
1400	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
1200	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
1000	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
800	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
600	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
400	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
200	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	
0	CLAYSTONE Grey SANDSTONE Grey MIXED DETRITAL ROCKS Grey to black with thin coal layers.	(10.1) buff (10.2) buff (10.5) buff (10.05) white silt (10.9) buff Development of slight fissility partings with 85° N.C.A. and 45° W.C. but not "steep"	

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 73,086' N Length: 118' Hole No.: 74-48
 Reference Elev.: 18,014' E Azimuth: Date: NOV. 1974
 Ground Elev.: 3330' Dip: 90° Logged by: Malé Guédon
 Core Size: HQ (90'-108') Sheet: 1 of 6
 HQ (108'-118')

ELEVATION DEPTH FEET	STRATIGRAPHY		DETAIL & STRUCTURE		SAMPLE NO.	ASH AT 20% MOISTURE
	STRAT. PUT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0	Surface	OVERBURDEN Mixed boulders, pebbles and sand		Note: Original ground elev. 3338'		
20						
40						
60						
80						
100		INTERBEDDED MUDSTONES CONGLOMERATES Grey to dark grey and black, rubbly to blocky, soft		(0.5) coal Grey silt Soft unconsolidated black carb silt with thin layers (0.01) coal	1	
120				Soft grey silt Hard calc. coarse - 1/2" joint 30' cemented by quartz Graded soft grey silt to silt		
140				Soft unconsolidated carb with thin layers (0.01) coal	2	
160		INTERBEDDED COAL AND CLAYSTONE Shiny, black, banded silty coal and silt		With thin silt layer Grey, soft silt	3	
180		COAL With minor carb silt			4	
200				Graded chl - silt - carb silt silt fracture 30' to C.A.	5	
220		MIXED DETRITAL ROCKS WITH MINOR COAL Grey, soft unconsolidated rock		Grey green, clayey soft unconsolidated		
240				Soft coaly Hard silty carb with minor part (0.02)	6	
260		COAL		Soft unconsolidated, coarse		
280		COAL		Soft, semi-consolidated Grey clayey	7	
300		INTERBEDDED DETRITAL ROCKS Blocky but soft unconsolidated, grey to dark grey with minor carb. layers		(0.8) coaly Silty	8	
320				Soft grey clay grading into carb clay Silty		
340						
360						
380						
400						
420						
440						
460		SILTSTONE Dark grey soft		Carb Carb Carb Coarst Grades into chl	9	
480				Carb Carb Congl. Coal Coal Calc	10	
500						
520		INTERBEDDED COAL, MUDSTONE AND Silt INTRAITAL ROCKS Grey soft		Grey to carb Silty Carb Grey	11	
540		GRADED BEDS Grey, thin bedded beds = 50 representing several cycles			12	
560						
580						
600		CLAY Black soft carb with minor coal GRADED BEDS Grey, thin bedded, moderately consolidated		Carb Coaly Soft chl Silty coal	13 14	
620						
640		SILTSTONE Grey to dark grey, soft unconsolidated, carb to coaly			15	
660						
680						
700		CARB. CLAYSTONE Dark grey to black, soft unconsolidated			16	
720						
740		CLAYSTONE Greenish grey, soft but blocky			17	
760		COAL Silty			18	
780		INTERBEDDED DETRITAL ROCKS Dark grey to green, very soft unconsolidated cyclic sequence Overall chl 60% soft carb silt 30% silt 10%			19	
800						
820						
840						
860						
880						
900		CONGLOMERATE Auhé, unconsolidated		Calc bands (0.01)	20	
920		SILTSTONE Grey blocky unconsolidated with minor silt			21	
940						
960		MIXED COAL AND MUDSTONE Black, soft thin bedded		Coaly to carb Coaly to carb Grey chl Carb with thin beds (0.01) carb coal	22	
980		INTERBEDDED DETRITAL ROCKS Grey, blocky to rubbly often with gradational boundaries		Grey, with small sandy & congl layers (<0.5) Grey calc pebbles <0.1 inches Grey with minor interbeds (0.5) silt & pebbles Grey clayey Grey chl interbeds (0.5) (0.25) coal Soft carb.	23	
1000						
1020						
1040						
1060						
1080		NO core BO core		Coaly soft coal layers (0.2-0.5)	24	
1100				Graded silt to silt		
1120		MIXED COAL AND CLST Black, thin bedded (<0.1')			25	
1140		SANDSTONE Grey coarse				
1160		END OF HOLE AT 1151 FEET				

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 79,103' N Length: 1813' Hole No.: 74-46
 Reference Elev.: 3193' Dip: 60° Date: NOV. 1974
 Ground Elev.: 3193' Core Size: 70" Logged by: J. Retzlaff
 Sheet: 1 of 9

ELEVATION IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		SAMPLE NO.	ASH AT 20% MOISTURE
	UNIT SYMBOL	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0		Overburden Med. sand, pebbles and boulders (41-2)		Note: Original ground lev. 3194'		
20						
40		COALY SILT AND COAL		Black, moderately indurated coaly silt	40	
60				Hard brittle silty coal Silt black, platy, coaly silt		
80				Hard clean coal	41	
100				Soft, fibrous, silty coal, fine grained (0-05-0-05)		
120		INTERBEDDED SILTSTONE AND COAL		Grey green to grey silty medium silty, silt laminated major joint sets 40°-45° parting planes 85° silt often well laminated		
140				Silt		
160				Carb.	42	
180				Carb.		
200				part silt fine silt		
220				part silt clayey		
240				Parting		
260				Carb.		
280				Silt		
300				thin bedded silt & silt		
320				Coarse silt		
340				Silt with minor carb. zones		
360				Carb.	43	
380				interbedded early silt & silt		
400				Grey brown silty		
420				Coarse silt		
440				1cm regular bedding		
460				Carb.	44	
480				Slightly carb.		
500				Minor carb. zones	45	
520				Massive	46	
540					47	
560				Carb. silt with minor coal clean coal silt	1	
580				Black coal with silty beds (0-2)	2	
600				Calc. tan silt	3	
620				Hard brittle	4	
640				Coaly silt silt (0-1) buff silt	5	
660				Hard brittle black coal	6	
680				Blocky coal	7	
700				Buff silt	8	
720				(0-3) buff silt	9	
740				Carb. silt	10	
760				COAL with (0-1) beds of silt	11	
780				MIXED CARB TO COAL SILTSTONE AND COAL Silt silt hard coal grey brown black Parting planes parallel to hardly Major joint sets 30°, 60°	12	
800				Coal	13	
820				Coal	14	
840				Coal	15	
860				Coal	16	
880				Coal	17	
900				Coal	18	
920				Coal	19	
940				Coal	20	
960				Coal	21	
980				Coal	22	
1000				Coal	23	
1020				Coal	24	
1040				Coal	25	
1060				Coal	26	
1080				Coal	27	
1100				Coal	28	
1120				Coal	29	
1140				Coal	30	
1160				Coal	31	
1180				Coal	32	
1200				Coal	33	
1220				Coal	34	
1240				Coal	35	
1260				Coal	36	
1280				Coal	37	
1300				Coal	38	
1320				Coal	39	
1340				Coal	40	
1360				Coal	41	
1380				Coal	42	
1400				Coal	43	
1420				Coal	44	
1440				Coal	45	
1460				Coal	46	
1480				Coal	47	
1500				Coal	48	
1520				Coal	49	
1540				Coal	50	
1560				Coal	51	
1580				Coal	52	
1600				Coal	53	
1620				Coal	54	
1640				Coal	55	
1660				Coal	56	
1680				Coal	57	
1700				Coal	58	
1720				Coal	59	
1740				Coal	60	
1760				Coal	61	
1780				Coal	62	
1800				Coal	63	
1820				Coal	64	

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 74,533' N Length: 1747' Hole No: 74-48
 Reference Elev: 3243' E Azimuth: 90° Date: DEC 1974
 Ground Elev: 3244' Dip: 90° Logged by: M de Quader/J.P. Hagen
 Core Size: MQ Sheet: 1 of 8

ELEVATION IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORRECTIONS	CORRECTIONS	CORRECTIONS	CORRECTIONS	CORRECTIONS	ASH AT 20% MOISTURE	
	START PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION						wt %	wt %
0				Note: Original ground elev 3264'							
0-20		OVERBURDEN in 150 yds. of drift with abundant pebbles Narrowly congl 150-195 granitic, very silty, to fine clay									
20-200		CLAYSTONE Massive homogeneous gray green to gray brown blocky unbedded rock. Good parting 45° to C.A. and thin 1° 90° to C.A.									
200-300				(0.5) white							
300-360				(0.5) white (0.2) white							
360-500											
500-520		COAL Massive clean, lustrous laminated								1	
520-540		INTERBEDDED COAL AND SILTY COAL								12	
540-560		COAL Clean blocky MIX COAL								13	
560-580		SILTSTONE Silty blocky, carb.									
580-600		COAL Good, clean, blocky								2	
600-620		SILTSTONE Silty, gray blocky SANDSTONE Gray blocky Clean, becoming silty down								14 3	
620-640		MIXED SANDSTONE AND SILTSTONE Silty carb. Block silty								15	
640-660		CLAYSTONE Coaly to carb								4	
660-680		SANDSTONE Variable, gray blocky minor sil								16	
680-720										17	
720-740		COAL Mainly clean coal becoming silty 750-772 very silty 760-772								8	
740-760										18	
760-780		MIXED COAL AND SANDSTONE								19	
780-800		SILTSTONE Silty, gray blocky, coaly Carb								20	
800-820		COAL Mainly clean minor silty layers								6	
820-840		SILTSTONE WITH COAL Gray to black, variable with layers of coal								21	
840-860										22	
860-880		COAL Silty, carb. Coaly to clayey								23	
880-900		SILTSTONE Silty, carb. Coaly to carb blocky								24	
900-920		COAL Silty, carb.								7	
920-940		COAL Silty, carb.								25	
940-960		COAL Silty, carb.								26	
960-980		COAL Silty, carb.								27	
980-1000		COAL Silty, carb.								28	
1000-1020		COAL Silty, carb.								29	
1020-1040		COAL Silty, carb.								30	
1040-1060		COAL Silty, carb.								31	
1060-1080		COAL Silty, carb.								32	
1080-1100		COAL Silty, carb.								33	
1100-1120		COAL Silty, carb.								34	
1120-1140		COAL Silty, carb.								35	
1140-1160		COAL Silty, carb.								36	
1160-1180		COAL Silty, carb.								37	
1180-1200		COAL Silty, carb.								38	
1200-1220		COAL Silty, carb.								39	
1220-1240		COAL Silty, carb.								40	
1240-1260		COAL Silty, carb.								41	
1260-1280		COAL Silty, carb.								42	
1280-1300		COAL Silty, carb.								43	
1300-1320		COAL Silty, carb.								44	
1320-1340		COAL Silty, carb.								45	
1340-1360		COAL Silty, carb.								46	
1360-1380		COAL Silty, carb.								47	
1380-1400		COAL Silty, carb.								48	
1400-1420		COAL Silty, carb.								49	
1420-1440		COAL Silty, carb.								50	
1440-1460		COAL Silty, carb.								51	
1460-1480		COAL Silty, carb.								52	
1480-1500		COAL Silty, carb.								53	
1500-1520		COAL Silty, carb.								54	
1520-1540		COAL Silty, carb.								55	
1540-1560		COAL Silty, carb.								56	
1560-1580		COAL Silty, carb.								57	
1580-1600		COAL Silty, carb.								58	
1600-1620		COAL Silty, carb.								59	
1620-1640		COAL Silty, carb.								60	
1640-1660		COAL Silty, carb.								61	
1660-1680		COAL Silty, carb.									
1680-1700		COAL Silty, carb.									
1700-1720		COAL Silty, carb.									
1720-1740		COAL Silty, carb.									
1740-1760		COAL Silty, carb.									
1760		END OF HOLE 1747 feet									

30

126

DOLMADE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 76,485' N Length: 1277.5' Note No.: 75-49
 Reference Elev.: 3218' Azimuth: Date: JAN. 1973
 Ground Elev.: 3214.8' Core Size: N.G. Logged by: J. Rozier/M. Quodras
 Sheet: 1 of 8

ELEVATION in feet DEPTH in feet	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS SAMPLE NO.	ASH AT 20% MOISTURE
	STRAT. NO.	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0		Datum		Note: Original ground elev 3215'		
0-3200		OVERBURDEN Sandy gravel with boulders				
80-100		Clay Sandy gravel with boulders				
120		Sandy clay Boulders and gravel				
140-2600		CLAYSTONE Dark to gray brown with interbeds of silt and minor beds of buff silt and clay. Very soft, massive				
260			(10) Buff silt			
280			(20) Buff clay			
320			(10.25) clayey silt			
400			(12.25) Buff clayey silt			
420			(10.2) } (10.5) } Buff silt (10.2) } (10.5) } (10.2) }			
500			(10.3) zone of sheared clay			
520			Buff clay (10.5) f. silt (10.5) Buff clay			
540			(10.3) Buff silt			
580			(10.3) Buff silt			
600			Buff silt			
620			(10.5) hard buff clay light gray silt.			
640			Laminated gray silty clay hard - block.			
660		SILTSTONE Laminated gray clayey silt				
680			(10.25) hard buff clay			
700			Clay interbeds Calc. joint			
720			(10.6) hard buff clay			
800		CLAYSTONE Gray to dark gray laminated		(10.5) buff clay		
820			(10.1) white clay			
840			White clay			
980			(10.9) buff fine clay (10.14) soft light brown clay			
1000		Gray to dark gray, massive, unstratified	(10.5) hard white banded clayey ls.			
1060			Gray silty parting			
1120			Muddy clay Buff muddy clay			
1180			Buff clay			
1200			Muddy clay Soft silt Buff silty clay			
1240			Dark gray muddy silty clay			
1280		END OF HOLE 1277.5 feet				

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 72.908' N, 18.033' E, Length: 1002', Hole No.: 75-50
Reference Elev.: 3197', Azimuth: ---, Date: JAN. 1975
Ground Elev.: 3198', Dip: 30°, Logged by: M. de Quadros
Core Size: N.R., Sheet: 1 of 5

ELEVATION DEPT. IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE LOSS	SAMPLE NO.	ASH AT 20% MOISTURE
	STRAT. UNIT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION			
0	Surface			Note: Original ground elev. 3165'			
0-20	OVERBURDEN	Sand Clay Sand & gravel					
20-40		Clay Coarse gravel Clay Gravel					
40-60		Clay Sand Gravel Sand					
60-80	BENTONITIC CLAY	Gray soft muddy with coal fragments		(0-3) soft silty coal			
80-100	COALY CLAYSTONE	Black soft rock, with finely bedded very minor coal		(0-5) clean coal		1	
100-140				Coal with white clay layers (0-1)		2	
140-160	CLAYSTONE	Gray soft, with thin coal bands		Coaly clay Light gray sand Dark clay			
160-180	COALY SILTY CLAYSTONE	Black soft rock, with thin silty coal bands		10-25 red brown clay			
180-200	SILTY COAL WITH THIN CLAY BANDS	Black well bedded silty coal with coaly to carb. clay		Clay (0-2) clay Clayey sand Clay Clayey sand Coal Coaly clay		3 3 4	
200-220	COAL	Clayey, black lustrous rock		(0-3) clay (0-3) clay (0-3) clay			
220-240		Black, blocky to rubble, thinly bedded with lustrous fracture surface 6"-5" apart parallel to bedding		Black coaly clay		5	
240-260				(0-5) brown clay		6	
260-280				Silty		7	
280-300							
300-320				Thinly bedded white clay and coal		8	
320-340							
340-360							
360-380							
380-400							
400-420							
420-440							
440-460				Concentric white clay bands			
460-480				(1-3) white clay		14	
480-500							
500-520							
520-540	CLAY	Gray soft muddy Silty black soft crumbly Brownish grey soft		Clayey sand Coarse gray hard clay Coaly clay, black, soft, muddy			
540-560	INTER BEDDED DETRITAL ROCKS	Brownish grey rocks, sometimes carb. granular indurated. Thinly bedded, often with cyclic deposition and gradational boundaries.		Greenish grey silt Coarse sand, green clay, fine sand Green silt Soft green comp. silt Carb. green silty clay Green silty silt Gray silt med. to coarse Calc. streaks Green soft clay Green green clayey silt Green green fine sand Green silty clay Green silty clay Green coarse silt Silty clay Silty clay Muddy, blocky silt, dark gray Soft, dark gray clay Green green silt Green silty clay Green silt			
560-580				Green sandy silt with thin sand			
580-600				Carb. pebbly } Green clay (0-1) coal } Green silt (sandy)			
600-620				Gray green silt with minor clay & silt Calc.			
620-640				Sandy, clayey green silt			
640-660				Green soft clay Green sandy clay Green soft clay Calc. Green silt Green clayey silt Green silty silt Gray calc. pebbly congl. Green clay Green silt slightly calc.			
660-680				Green green sandy clay			
680-700				Green silty med. silt Green sandy silt Green soft clay Green silt Soft sand Silty clay Green silt Green sandy silt			
700-720				Coarse calc. gray congl. Soft muddy clay Green silty silt Green clayey silt Calc. (0-1) clayey silt Green silt with minor clay & silt			
720-740				Gray hard calc. silt			
740-760				Green silt with minor clay & silt			
760-780				Fine pebbly calc. hard congl. Green sandy silt			
780-800				Green soft pebbly clay Green soft pebbly calc. clay Green sandy silt Fine pebbly congl. unindurated Green clayey silt Fine pebbly congl. calc.			
800-820				Green silty silt			
820-840				Shaly calc. Shaly calc. } Soft green silty clay Green silty silt			
840-860				Dark gray calc. silt Green silty silt, soft			
860-880				Calc. silt (0-1) calc. med.			
880-900				(0-1) Calc. } Soft greenish gray silty silt			
900-920				Dark silt (0-1) calc. } Carb. silt (0-2) calc. }			
920-940				Very green soft calc. & silt unindurated			
940-960							
960-980							
980-1000							
1000	END OF HOLE						
1002	1002 feet						

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates : 75,904' N Length : 1515' Hole No : 75-51
Reference Elev : 3342' Azimuth : — Date : JAN 1975
Ground Elev : 3360' Core Size : N.O. Logged by : M.G. Gordon/J. Peterson
Sheet : 1 of 8

ELEVATION DEPTH IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORRECTION SAMPLE NO.	ASH AT 20% MOISTURE
	STRAIT PLUG	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0		DETERM		Note: Original ground elev. 3360'		
0-20		OVERBURDEN Clay				
20-40		Sand & boulders				
40-60		Clay				
60-80		Gravel & boulders				
80-100		Clay				
100-120		Gravel & boulders				
120-140		Clay				
140-160		Boulders				
160-180		Clay				
180-200		Boulders				
200-220		Small boulders				
220-240		Boulders				
240-260		Mud				
260-280		Brown gravel				
280-300		SILT CLAYSTONE Green to grey green soft plastic silty clay poorly bedded				
300-320		CARBONACEOUS CLAYSTONE Light grey to black soft plastic interstratified with coal fragments			13	
320-340				Green silt		
340-360				Black silt with coaly fragments		
360-380				(O5) calc white silt	14	
380-400				Dark grey to black	15	
400-420		MIXED DETRITAL ROCKS Grey soft, gradational boundaries		Layers of harder silt & pebble congl.		
420-440				Black soft carb silt	16	
440-460				Silt silt		
460-480				Fine pebble congl hard calc silt		
480-500				Black soft carb silt unbedded	17	
500-520		SANDSTONE Brown to grey, silty, unbedded				
520-540				(O4) calc silt		
540-560		CLAYSTONE Black moderately indurated, unbedded, carb.			18	
560-580		SANDSTONE Grey hard unbedded				
580-600		SILTSTONE Grey sandy to silty unbedded silt		Grey hard unbedded silt		
600-620		CLAYSTONE Black soft carb with thin (001-002) layers of coal			19	
620-640		SANDSTONE Grey hard with occasional silt				
640-660		SILTSTONE Grey, hard sandy, clayey				
660-680		SANDSTONE Grey hard clayey, variable texture				
680-700		SILTSTONE Grey to black banded hard carb			20	
700-720				Grey coarse silt		
720-740				Carb		
740-760				Black coaly		
760-780						
780-800						
800-820						
820-840						
840-860						
860-880						
880-900						
900-920						
920-940						
940-960						
960-980						
980-1000						
1000-1020						
1020-1040						
1040-1060						
1060-1080						
1080-1100						
1100-1120						
1120-1140						
1140-1160						
1160-1180						
1180-1200						
1200-1220						
1220-1240						
1240-1260						
1260-1280						
1280-1300						
1300-1320						
1320-1340						
1340-1360						
1360-1380						
1380-1400						
1400-1420						
1420-1440						
1440-1460						
1460-1480						
1480-1500						
1500-1520						
1520-1540						
1540-1560						
1560-1580						
1580-1600						
1600-1620						
1620		END OF HOLE 1616 Feet				

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates : 79,802' N Length : 1004' Hole No. : 75-52
 Reference Elev. : 3334.5 Azimuth : Dip : Date : JAN. 1978
 Ground Elev. : 3334.5 Core Size : NQ. Logged by : J. Reizen
 Sheet : 1 of 3

ELEVATION FEET ± 0.1	STRATIGRAPHY		DETAIL & STRUCTURE		CORRECTION SAMPLE NO.	ASH AT 20% MOISTURE
	STRAT. PLOT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0	Surface	OVERBURDEN Sand & gravel		Note: Original ground elev. 3334.5		
20						
40						
60		Silt Gravel with boulders Clay with boulders (NT)				
80		CLAYSTONE Hard grey green		Traced a no structure Grading into med. sst		
100						
120		CARB. SILTSTONE Soft, grey green to black			13	
140		COALY SILTSTONE Soft muddy black with thin (0.5-2) layers of earthy silt			1	
160		SANDSTONE Hard light grey, slightly carb.		(0.5) Congl. sst Carb. sst	2	
180		INTERBEDDED SILTSTONE AND CARB. SILTSTONE Grey green to black Moderately hard very inhomogeneous		Med. interbedded brittle fossiliferous grey shale Thinly interbedded with sst Med. interbedded with carb. grey shale	2	
200				Light grey, soft very fine, weakly laminated sst	14	
220				Carb. sst with layers and (0.75)	3	
240				(0.5) clean coal Clean coal	15	
260		COAL WITH INTERBEDDED SILTSTONE AND CARB. SILT Black to grey mudstone very variable.		Hard black, block, clean with (0.5-1.0) seams soft muddy sst Grey soft sst Clean with (0.7-0.8) seams soft muddy sst	4	
280				Soft, friable, massive grey brown to black sst with carb. shales Sand shales and	16	
300				Soft earthy sst with (0.1-1.5) seams of carb. sst	5	
320				Carb. sst	6	
340				Carb. sst		
360		MIXED DETRITAL ROCKS Grey green earthy sst and sst		No shgs joints		
380		SILTY COAL Variable block hard to soft			7	
400		MIXED DETRITAL ROCKS Light grey green soft sst, and sst occasionally carb. or carb.		Partings joints Carb.		
420		INTERBEDDED COAL, SILTY COAL AND CARB. SILT Black hard coal with soft silty coal & earthy sst soft & muddy carb. sst partings 10" 55-60 joints 30"		Very fine, interbedded with brown grey sst Silty coal Grey green sst Silty coal Carb. sst with minor coal Grey green very fine sst with coal Silty coal with (0.25) slightly carb. sst at 427.5'	8	
440		SANDSTONE AND SILTSTONE INTERBEDDED Light grey sst soft to med. to hard with 1-2 beds of carb. sst & sst partings 8" joints 35" 75"		Carb. sst with minor silty coal Med. sst Grey green sst Light grey cong. sst Grey green sst Med. sst Med. grey sandy sst with (0.5-1.0) interbeds of coal	17	
460				Carb. sst	9	
480		CLEAN COAL WITH CARB. SILTSTONE Black hard clean coal with soft carb. sst		Carb. sst		
500		SILTSTONE Soft grey green sst with small beds of partings 75" major joint sets 60" 30" sst often sandy with 5% carb. fragments		Hard brittle, carb. sst Interbedded sst & carb. sst Clean coal Clean coal with 3 (0.5) earthy sst	10	
520		INTERBEDDED COAL AND SILTSTONE Hard black brittle coal with grey green soft sst & sst partings 85" joint sets 60" 30"		Blue grey to grey brown sst Thinly interbedded coal and blue grey sst Clean laminated coal	11	
540				Light grey green laminated fine to very fine sst Soft earthy sst Clean coal with 2 (0.8) silty seams Thinly interbedded sst carb. sst, earthy sst, clean coal grey green to black Clean coal with (0.2-0.3) seams soft earthy sst	12	
560		MIXED DETRITAL ROCKS Soft to hard, grey green to light grey sst, sst, sst and cong. with gradational boundaries Fractures 80", joint sets 45" and 60". Cyclic sequence		Sst to fine sst Sst to pebble cong. Laminated fine to coarse sst Calc. very fine sst interbeds with sst Carb. sst Sst Fine to med. sst Pebble cong. Sst to med. cong. Sst to pebble cong. Sst to pebble cong. Sst to coarse sst Sst to pebble cong. Sst with (0.85) carb. seam Sst Pebble cong. Dark grey green sst Light grey slightly carb. pebble cong. Dark green sst Light grey pebble cong. Dark green med. sst Dark green cong. Dark green sst with minor interbeds sst Dark green sst with minor interbeds sst Carb. sst (0.5) Clean coal Dark green sst with (1.0) beds sst		
580				(0.4) minor clean coal	18	
600				Sst Congl. Sst Sst to cong. Sst Calc. pebble cong. Blue green med. sst Interbedded sst and calc. cong. in (10-30) beds Very fine sst to pebble cong. Blue green fine sst with cong. seams up to 2" thick Sst, blocky to rubble (70) calc. petrified wood Sst		
620						
640						
660						
680						
700						
720						
740						
760						
780						
800						
820						
840						
860						
880						
900						
920						
940						
960						
980						
1000		END OF HOLE 1004 feet				

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAT CREEK PROJECT - DRILL RECORD

Coordinates: 78,009' E Length: 282' Hole No.: 75-53
 17,978' N Azimuth: Date: FEB. 1978
 Reference Elev.: 3378' Dip: 90° Logged by: J. Pezles
 Ground Elev.: 3375' Core Desc: RQ Sheet: 1 of 9

ELEVATION IN FEET	STRATIGRAPHY		DETAIL & STRUCTURE		CORE SAMPLE NO.	ASH AT 20% MOISTURE
	STRAT. UNIT	MAJOR ROCK UNITS	SYMBOL	DESCRIPTION		
0	Surface			Note: Original ground elev. 3376'		
0 - 20	OVERBURDEN	Gravel				
20 - 80		Sticky clay				
80 - 180	INTERBEDDED SILTSTONE SANDSTONE AND CONGLOMERATE	Blue green interbedded silt, sst congl. soft but generally curved joint into 60°				
180 - 200				60		
200 - 240				60		
240 - 260				60		
260 - 280				60		
280 - 300				60		
300 - 320				60		
320 - 340				60		
340 - 360				60		
360 - 380				60		
380 - 400				60		
400 - 420				60		
420 - 440	SILTSTONE WITH CARB. LENSES	Gray green to gray brown silt, sandy but soft & friable with interbedded coal & carb lenses hard & brittle to soft and mushy blue siltstone silt & carb silt joint into 60° - 65° occasionally partings 80°				
440 - 460				60		
460 - 480				60		
480 - 500				60		
500 - 520				60		
520 - 540				60		
540 - 560				60		
560 - 580				60		
580 - 600				60		
600 - 620				60		
620 - 640				60		
640 - 660				60		
660 - 680				60		
680 - 700				60		
700 - 720	INTERBEDDED SILTSTONE AND SANDSTONE					
720 - 740	SILTSTONE	Gray green silt with soft beds partings 80°				
740 - 760	SANDSTONE	Gray green				
760 - 780	SILTSTONE	Blue gray				
780 - 800	SANDSTONE	Blue green fine to med with (103) interbeds of congl sst & silt				
800 - 820	SILTSTONE	Blue gray clayey, massive				
820 - 840	CONGLOMERATE (interbedded)					
840 - 860	CONGLOMERATE (interbedded)					
860 - 880						
880 - 900						
900 - 920						
920 - 940						
940 - 960						
960 - 980						
980 - 1000						
1000	END OF HOLE	999 feet				

126

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT - DRILL RECORD

Coordinates: 77, 35, 58' N, 12, 20' E; Length: 1887'; Hole No: 75-106; Date: NOV 1978; Reference Elev: 3178'; Dia: 3"; Logged by: P. Northrop; Ground Elev: 3174'; Core Size: ; Sheet: 1 of 10

Geological log table with columns: STRATIGRAPHY (Major Rock Units, Dates), DETAIL & STRUCTURE (Symbol, Description), and ASH AT 20% MOISTURE (Ash content percentages). The log details rock layers from 0 to 2000 feet depth, including units like OVERBURDEN, CLAYSTONE, CLEAN COAL, MIXED COAL UNIT, SILTY COAL AND MIXED COAL UNIT, and COAL. Each unit is described with lithological characteristics and associated symbols.

126

36

126

BOLMARE CAMPBELL AND ASSOCIATES LTD.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
HAY CREEK PROJECT - DRILL RECORD

Coordinates	78 228.8 W 49 01.1 N	Length	1288'	Note No.	78-107
Referenced Elev.	2227.0'	Azimuth	270°	Date	NOV. 1978
Ground Elev.	2229'	Dip	-88°	Logged by	J. Neilson
		Core Desc.	HQ	Sheet	1 of 6

