

First two pages of this report are missing see 1946 Ann Rpt. Pp 250, 251

OPEN FILE

A 252

REPORT OF MINISTER OF MINES, 1946.

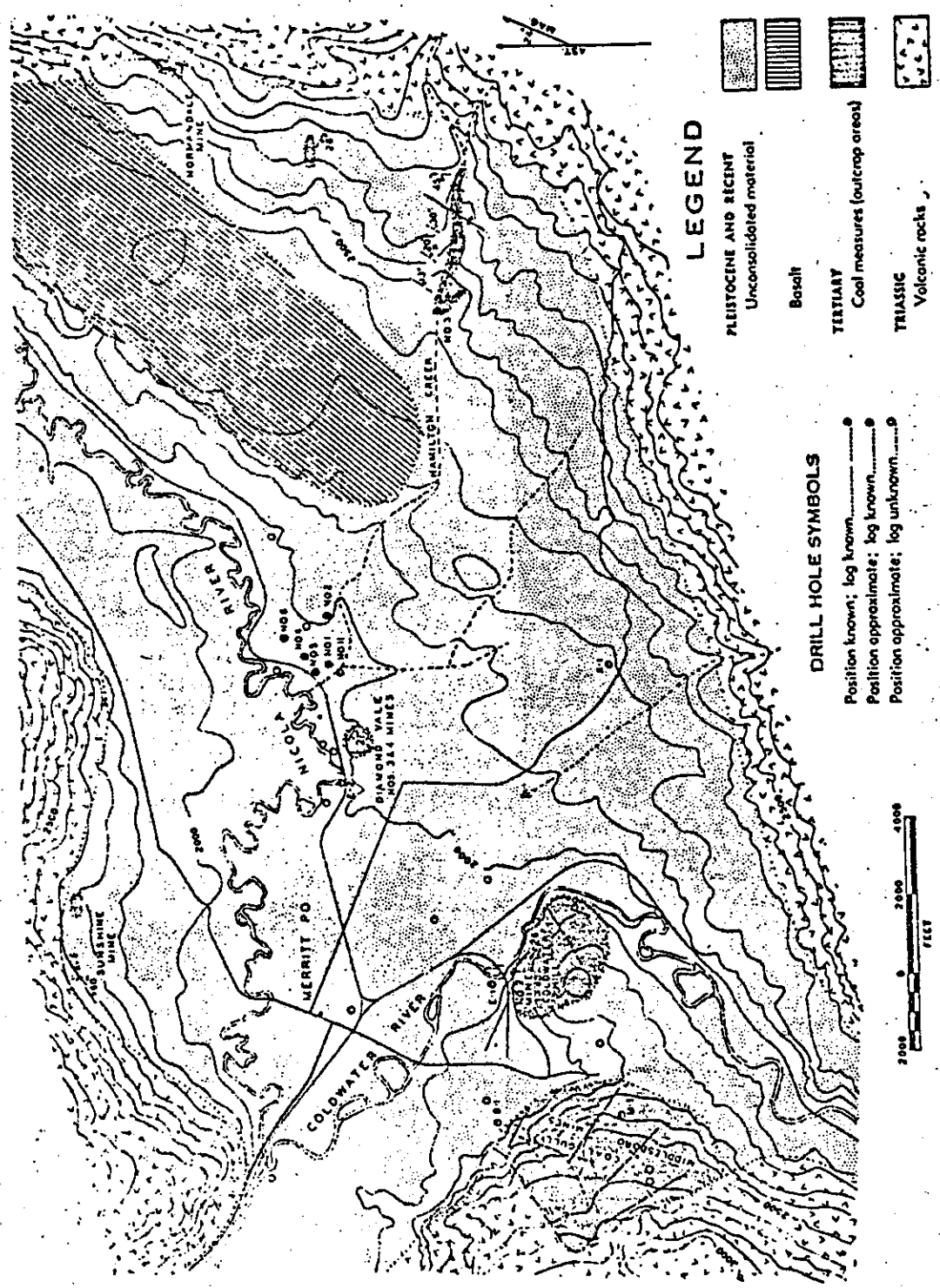


Fig. 20. Geology of Merritt coalfield.

00156

irregular and in places steep. These strata, representing a stratigraphic thickness of about 800 feet, are barren of coal. A concealed interval of 2,000 feet separates these outcrops from the first outcrop of volcanic rock.

Section No. 3 Hole.—Provincial Government No. 3 hole was collared on bed-rock at the base of this section. It was hoped that this hole would cut the continuation of the Normandale seam or other seams lying near the base of the coal-bearing strata. However, after penetrating 1,270 feet of predominantly sandy strata without cutting any coal-seams, the hole was abandoned before reaching the base of the coal-measures.

This hole and the outcrops above indicate a thickness of at least 2,000 feet of sandy beds barren of coal, a section unknown elsewhere in the valley.

ANALYSES OF COALS.

Analyses of split samples of coal from the more important intersections in Drill-holes Nos. 1, 2, 4, and 5 are given in the following table. It is pointed out that these samples exclude shaly partings and coal which was lost in drilling, and cannot be considered representative of mine-run coal. The free-swelling indices of several composite samples were determined by the Research Council of Alberta. The second table, included for purposes of comparison, gives the analysis of other Merritt coals from Bulletin 14, Analyses of British Columbia Coals, 1941, British Columbia Department of Mines.

ANALYSES OF COAL FROM HOLES NOS. 1, 2, 4, AND 5, DRILLED IN 1946.

Seam No.	Depth.	PROXIMATE ANALYSIS.†					B.T.U.	Specific Gravity.	Free-swelling Index.
		Moist.	V.C.M.	F.C.	Ash.	S.			
1A	461' 5½" to 462' 10½"	2.6	33.1	55.0	9.3	0.40	13,347	—	3½
1A	463' 0" to 464' 3"	2.6	34.1	58.0	5.3	0.55	13,740	—	
1A	466' 4½" to 466' 3"	2.0	35.5	49.3	13.2	0.34	13,600	—	4½
1A	469' 6" to 474' 4"	2.3	33.2	54.3	10.2	0.34	12,910	1.26	
1a	550' 6" to 555' 4"	2.4	31.2	51.9	14.5	0.48	12,330	1.32	3
1b	559' 0" to 561' 0"	2.5	32.2	52.2	12.8	0.34	12,685	—	
1c	646' 2" to 650' 6"	2.1	29.6	47.4	20.9	1.19	11,330	—	4
1d	652' 0" to 653' 6"	2.3	26.0	40.8	30.3	0.66	9,758	—	
2A*	651' 4" to 654' 4"	2.5	33.6	53.9	10.1	0.35	13,118	—	—
2A*	655' 4" to 657' 0"	2.4	31.2	47.5	19.0	0.37	11,617	—	
2A	657' 9" to 659' 11"	2.5	25.3	36.3	26.9	0.40	8,545	—	2½
4A	368' 7" to 371' 10"	2.9	34.3	51.6	11.2	0.35	12,670	1.29	
4A	372' 10" to 377' 0"	3.0	33.3	50.6	13.1	0.30	12,690	1.29	2
5A	413' 6" to 421' 0"	2.3	30.2	38.9	28.6	0.60	9,651	—	

* Analyses are averages of two samples.

† Analyses are on basis of sample dried at room temperature.

Analyst: G. C. H. Cave, British Columbia Department of Mines.

ANALYSES OF MERRITT COALS.*

Description.	PROXIMATE ANALYSIS.					B.T.U.	Coking Quality.	Moisture loss after Four Days.
	Moist.	V.C.M.	F.C.	Ash.	S.			
Middlesboro Collieries—	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.			
No. 1 seam†	3.30	30.00	56.10	10.6	0.7	12,090	Fair	2.00
No. 2 seam†	5.30	29.40	56.60	8.7	0.6	12,090	Poor	6.00
No. 4 East seam†	3.40	32.00	58.10	6.5	0.6	12,710	Fair	3.00
No. 5 seam†	4.90	31.30	56.80	4.0	0.7	12,555	Fair	4.00
No. 6 seam†	4.10	30.10	51.50	14.3	0.4	11,160	Non-coking	2.50
Coldwater Hill, 6-ft. seam‡	2.15	27.99	59.56	10.22	—	—	Good	—
No. 2 South mine (mine run)§	3.8	31.2	56.7	8.3	0.53	12,400	—	0.26
No. 2 North mine (mine run)§	5.0	23.0	51.4	20.6	0.93	10,190	—	0.38
Sunshine Coal Co.†	2.80	37.50	55.10	4.6	0.40	13,175	Good	—
Diamond Vale Collieries (lump)‡	2.66	37.84	55.14	4.36	—	—	—	—

* Dickson, James (1941): Analyses of British Columbia Coals—R.C. Dept. of Mines, Bull. 14.

† Table III.—Analyses of British Columbia Coals, 1926.

‡ Table I.—Analyses of British Columbia Coals, Samples taken prior to 1910.

§ Table IV.—Analyses of British Columbia Coals, 1941.

LOGS OF DRILL-HOLES.

The following logs of diamond-drill holes and of the strata cut by the Blair shaft represent all the records of such work in the Merritt coalfield obtainable in 1945 and 1946. Logs of Holes 1 to 6, drilled in 1945 and 1946, were prepared by engineers of the British Columbia Department of Mines. Logs of some of the earlier holes were published in the Annual Report, 1904, Geological Survey, Canada, which publication is no longer available for distribution. Logs of other drill-holes and the log of the Blair shaft were obtained from various sources. Signed original records are not available, except for the six holes drilled in 1945 and 1946. The accuracy of logs of some holes and of positions where some holes were reputed to have been drilled cannot be taken as beyond question. However, it is considered desirable to include along with established data as complete a collection as possible of other data now obtainable which may reasonably be assumed to be substantially accurate. The source of each record is shown for the guidance of the reader. Each log has a symbol by which the site or named site of the hole can be found on Fig. 20.

LOG OF MIDDLESBORO DIAMOND-DRILL HOLE NO. 1.

Drilled at angle of 50 degrees from vertical.

Location: M-1. Source: Unsigned pictorial log found in abandoned office of Middlesboro Collieries, Limited.

Description.	Thick-ness. Ft. In.	Depth. Ft. In.	Description.	Thick-ness. Ft. In.	Depth. Ft. In.
UNCONSOLIDATED MATERIAL.					
Soil	7 0	7 0	Shale and sandstone	21 0	100 0
Sandstone and boulders	16 0	23 0	Dark shale	37 0	137 0
Clay and boulders	8 0	28 0	COAL	2 0	139 0
Boulders	5 0	33 0	Sandstone	3 0	142 0
Clay, shattered boulder, and small rock	15 0	48 0	Dark shale	26 8	168 8
			COAL	3 2	171 10
			Dark shale	5 2	177 0
Hard rock.					
Shale and sandstone	15 "	63 0	Sandstone	32 0	209 0
Grey shale	1 "	64 0	Dark shale	3 0	213 0
COAL	2 0	66 0	Sandstone	34 0	252 0
Grey shale	6 0	72 0	Dark shale	29 0	281 0
COAL	2 0	74 0	COAL	0 3	281 3
Grey shale	4 1	78 1	Grey shale	0 9	282 0
COAL	0 11	78 0	Dark shale	8 0	290 0
			Sandstone	41 0	331 0

LOG OF MIDDLESBORO DIAMOND-DRILL HOLE No. 1—Continued.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
Dark shale	77 0	408 0	Sandstone	12 0	663 1
Brown shale	5 11	413 11	Dark shale	16 0	679 1
COAL	1 1	415 0	COAL	3 0	682 1
Grey shale	1 0	416 0	Fire-clay	2 0	684 1
Sandstone	5 0	421 0	Sandstone	21 0	705 1
Conglomerate	8 0	429 0	Dark shale	2 0	707 1
Dark shale	13 0	442 0	Sandstone	2 0	709 1
Sandstone	20 0	462 0	Dark shale	16 0	725 1
Dark shale	9 0	471 0	Sandstone	28 0	753 1
Sandstone	30 0	501 0	Dark shale	74 0	827 1
Dark shale	49 6	550 6	COAL	2 3	829 4
COAL	7 0	557 6	Dark shale and coal-bands	1 1	830 5
Dark shale	1 4	558 10	COAL	1 11	832 4
COAL	3 3	567 1	Black mud	0 10	833 2
Dark shale with traces of coal	1 0	568 1	Grey shale with sandstone-bands	5 2	838 4
Sandstone	32 0	600 1			
Dark shale	51 0	651 1			

End of hole.

LOG OF BLAIR SHAFT AND DRILL-HOLE.

Location: B-L Source: Old drawing in possession of H. Johns, Merritt, B.C.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
Gravel	10 0	10 0	Coal and shale mixed	17 0	145 0
Sandstone	90 0	100 0	Coal, mud, and shale	8 0	153 0
Shale	13 0	113 0	Shale	1 0	154 0
COAL	15 0	128 0	Mud and black shale	25 6	179 6
Bottom of shaft—collar of drill-hole		136 0	Volcanic rock	4 6	184 0

LOG OF OLD HOLE ON THE COLDWATER RIVER.

Record of boring No. 1, near Coutlee, on Coldwater River, Lot 123, Township 91; approximate elevation above sea-level, 1,996 feet.

Location: E-1. Source: Annual Report, 1904, Geol. Surv., Canada, p. 70A.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
(UNCONSOLIDATED MATERIAL)					
Gravel and clay, dark	53 0	53 0	Sandy shale—dark	9 0	269 0
			COAL	0 10	269 10
			Sandstone—partings of shale	0 7 2(7)	287 0
			Slate—dark	2 0	289 0
			Sandstone—dark	1 0	290 0
			Shale—dark	1 0	291 0
			Slate—black	9 0	300 0
			Shale—black	4 0	304 0
			Sandstone—dark	2 0	306 0
			Shale—dark	7 0	313 0
			Sandstone—dark	1 0	314 0
			Shale—black	2 0	316 0
			Sandstone, carbon streaks	22 7	338 7
			COAL—2" of slate in middle	1 5	340 0
			Slate—1" of coal at bottom	1 0	341 0
			Sandstone and shale—dark	3 0	344 0
			Sandstone—grey	11 0	355 0
			Shale—dark	3 0	358 0
			Sandstone with conglomerate, 1"	29 0	387 0
			Shale, carbon streaks—dark	2 0	389 0
			Sandstone—dark and grey	10 0	399 0
			Shale—dark	8 0	407 0
			Sandstone, carbon streaks—grey	30 0	446 0
			Slate—black	3 7	449 7
			COAL	0 7	450 2
			Sandstone—fine, grey	5 10	456 0

* As in loc.

LOG OF OLD HOLE ON THE COLDWATER RIVER—Continued.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
COAL.	0 6	454 6	Sandstone—dark	8 0	417 0
Sandstone—fine, grey	1 6	464 0	Sandstone and shale—dark	2 0	519 0
Shale—dark	3 0	461 0	Sandstone—soft, grey	15 0	534 0
Sandstone—grey	17 0	478 0	Sandstone and shale—grey	46 0	580 0
Sandstone and shale—dark	11 0	489 0	Shale, carbon streaks—dark	3 8	588 8
Sandstone—dark and grey	16 0	504 0	COAL and shale	1 7	590 8
Sandstone—dark	3 0	507 0	Sandstone and shale—dark	9 9	600 0
Sandstone—grey	2 0	509 0			

Began January, 1891; finished March 17th (?), 1891.
Signed, G. L. Davis.

LOG OF BORE-HOLE NO. 1, INDIAN RESERVE.

Vancouver, B.C., April 25th, 1906.

Location: X-1. Source: Unsigned copy of log in possession of G. Murray, Merritt, B.C.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
UNCONSOLIDATED MATERIAL.					
Overburden	119 0	119 0	Shale—sandy	6 0	294 0
BED-ROCK.					
Shale—dark	9 0	128 0	Sandstone—grey	3 0	297 0
Coarse sand cong.	7 0	135 0	Sandstone—grey	1 0	298 0
Shale	2 0	137 0	Sandstone—shaly	2 0	300 0
Sandstone	9 0	146 0	Sandstone—grey	4 0	304 0
Conglomerate	7 0	153 0	Sandstone—shaly	4 0	308 0
Sandstone	5 0	158 0	Fire-clay	4 0	312 0
Sandstone	1 6	159 6	Fine grey sandstone	6 0	318 0
COAL AL. 1½'	1 6	161 0	Coarse grey sandstone	11 0	329 0
Shale—dark	3 0	164 0	Shaly grey sandstone	3 0	332 0
Sandstone—light	2 0	166 0	Coarse grey sandstone	5 0	337 0
Sandy shale	3 6	169 6	Shaly grey sandstone	2 0	339 0
Sandy shale	3 0	172 6	Grey sandstone	6 0	345 0
Sandy shale	7 8	180 0	Shale—dark	5 0	350 0
Sandstone—light	1 0	181 0	Light shaly fire-clay	2 0	352 0
Sandy shale	14 0	195 0	Grey sandstone	1 0	353 0
Sandstone—coarse, grey	10 0	205 0	Sandy shale	2 0	355 0
Conglomerate	4 0	209 0	Dark shale	2 0	357 0
Shale—dark brown	5 0	214 0	Shale—sandy	5 0	362 0
Shaly sandstone	7 0	221 0	Grey sandstone	8 0	370 0
Shale—dark	1 0	222 0	Shaly sandstone	3 0	373 0
Sandy shale	3 0	225 0	Shale—dark	4 0	377 0
Dark shale	1 0	226 0	Sandy shale	1 0	378 0
Coarse grey sandstone	7 0	233 0	Fire-clay—soft like talc.	1 0	379 0
Shale—dark, with coal showings	2 0	235 0	Shale—dark	1 0	380 0
Grey sandstone	1 0	236 0	Shale—sandy	2 0	382 0
Dark shale with small coal-seams	1 0	237 0	Sandstone	7 0	389 0
Coarse sandstone	3 0	240 0	Shaly sandstone	7 0	396 0
Sandy shale	11 0	251 0	Coarse sandstone	15 0	411 0
Dark shale, ½" coal	4 0	255 0	Shale—sandy	3 0	414 0
Shaly sandstone	3 0	258 0	Sandstone	3 0	417 0
Coarse sandstone	4 0	262 0	Shale—dark	2 0	419 0
Dark sandy shale	3 0	265 0	Sandstone	3 0	422 0
Shale	3 0	268 0	Shale—dark	4 0	426 0
Coarse grey sandstone	2 0	270 0	Coarse sandstone	6 0	432 0
Hard shale	0 6	270 6	Coarse sandstone	3 0	435 0
COAL—dark, hard	0 6	271 0	Shaly sandstone	4 0	439 0
Shale—dark	1 0	272 0	Shale—dark	2 0	441 0
Fire-clay	1 0	273 0	Coarse sandstone	2 6	443 6
Sandy shale	6 0	279 0	Shale—dark, with coal	9 8	443 8
Sandstone—grey	7 0	286 0	Shaly sandstone	1 3	445 0
COAL—powdered	1 0	287 0	Coarse sandstone	6 0	451 0
Shale—dark	1 0	288 0	Coarse sandstone	4 0	455 0
			Shale—dark	8 6	463 6
			Coarse sandstone	20 6	484 0
			Shaly sandstone	4 0	488 0

LOG OF BORE-HOLE NO. 1, INDIAN RESERVE—Continued.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
Coarse sandstone	8 0	496 0	Shale—dark	3 0	614 0
Shaly sandstone	10 0	506 0	Sandstone	2 6	616 6
Coarse sandstone	15 0	521 0	Shale—dark	2 6	620 0
Sandy shale	16 0	537 0	Shale and sandstone mixed	4 0	626 0
Shale—dark	1 6	538 6	Shale—sandy	7 0	633 0
Shale—dark, with one-third coal	1 6	540 0	Shale—dark, with veins of calcite	10 0	643 0
COAL	1 9	541 9	Shale—sandy	9 0	652 0
Rone	0 11	542 8	Shale—dark, with coal-seam	1 0	653 0
COAL	1 4	544 0	Shale—dark	4 0	657 0
Brown shale and coal	9 9	544 9	Sandstone	1 0	658 0
Brown shale and coal	0 7	545 4	Shale—dark	1 0	659 0
Sandstone	4 2	549 6	Sandstone—shaly	5 0	664 0
COAL	1 0	550 6	Sandstone—shaly	5 0	669 0
Shaly sandstone	4 6	555 0	Dark shale	2 0	671 0
Shale—dark	3 0	558 0	Sandstone	3 0	674 0
Shale—sandy	11 0	569 0	Shale	3 0	677 0
Shale—dark	1 9	570 0	Sandstone	9 0	686 0
Shale—light, sandy	6 0	576 0	Shale	3 0	689 0
Shale—light, sandy	7 0	583 0	Sandstone	9 0	698 0
Shale—dark, with coal	1 6	585 0	Shale—dark	6 0	704 0
Shale—sandy	21 0	606 0	Sandstone	5 0	709 0
Sandstone	5 0	611 0	Shale—dark	1 0	710 0

LOG OF OLD HOLE ON THE NICOLA RIVER.

Record of boring No. 2, Nicola Valley, 1893, Nicola Valley Co.

Location: E-2. Source: Annual Report, 1904, Geol. Surv., Canada, p. 71A.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
UNCONSOLIDATED MATERIAL.					
Clay and sand	80 0	80 0	COAL	0 5	219 5
BED-ROCK.					
Sandstone—coarse, grey	29 0	109 0	Slate—black	5 7	220 6
Shale—dark	4 0	113 0	Sandstone, shale partings—grey	18 0	235 0
Sandstone—grey	6 0	119 0	Shale, carbon streaks—dark	10 0	245 0
Shale—dark	3 0	122 0	Sandstone—grey	6 0	251 0
Sandstone—grey	7 0	129 0	Sandstone—coarse, grey	4 0	255 0
Shale—dark	8 6	137 6	Conglomerate, carbon streaks, grey	25 0	280 0
COAL	0 8	138 2	Shale—dark	5 0	285 0
Shale—dark	1 1	139 3	Shale, carbon streaks—black	7 0	292 0
COAL	0 6	139 9	Shale—dark	3 0	295 0
Slate—dark	0 4	140 1	Conglomerate—grey	2 0	297 0
COAL	4 4	144 5	Shale—black	3 0	300 0
Shale—dark	3 7	148 0	Sandstone, carbon streaks—black	14 5	314 5
Sandstone—grey	10 0	158 0	COAL	0 7	315 0
Shale—dark	5 0	163 0	Sandstone and shale—dark	16 0	351 0
Sandstone—grey	2 0	165 0	Conglomerate—dark	7 0	358 0
Shale—dark	1 6	166 6	Sandstone and shale—grey, dark	55 0	423 0
COAL	1 11	168 5	Conglomerate—grey	3 0	426 0
Sandstone and shale—grey and dark	21 7	190 0	Sandstone, carbon streaks—grey	4 0	430 0
Sandstone—coarse, grey	13 0	203 0	Conglomerate—grey	37 0	467 0
Conglomerate—grey	12 0	215 0	Sandstone and shale—dark	31 0	498 0
Shale, carbon streaks—black	4 0	219 0	Conglomerate—grey	39 0	537 0
			Shale—dark	11 0	548 0
			Sandstone—grey	14 0	562 0

On North-west Quarter of Section 14, Township 91, property of J. Garcia.
Certified by G. L. Davis.

LOG OF NO. 11 HOLE, DIAMOND VALE COLLIERIES.

Location near centre of North-west Quarter of Section 14, Township 91; elevation of surface, 1,976.47 feet. Started March 30th.

Location: 11. Source: Copy in possession of G. Murray, Merritt, B.C.

Description.	Thick-ness. Ft. In.	Depth. Ft. In.	Description.	Thick-ness. Ft. In.	Depth. Ft. In.
UNCONSOLIDATED MATERIAL.					
Sand and clay.....	16 0	16 0	Dark sandy shale.....	5 0	302 2
Coarse gravel with clay and sand.....	10 7	26 7	COAL.....	1 9	303 11
Sand.....	1 0	27 0	Dark brown shale.....	2 5	
Coarse gravel.....	4 4	31 11	Dark sandy shale.....	13 0	319 4
Clay and gravel.....	64 2	96 11	Sandstone.....	1 0	
Hard-rock.					
Conglomerate.....	5 4	101 5	Sandy shale.....	2 0	
Sandy shale.....	4 0	105 5	Sandstone, dip 15°.....	5 0	330 0
Coarse sandstone.....	8 3	113 8	Dark sandy shale.....	13 6	
Conglomerate.....	1 2	114 8	Sandstone.....	1 6	
Light sandy shale.....	7 8	122 4	Sandy shale.....	2 0	
Dark sandy shale.....	3 10	126 2	Sandstone.....	1 0	
Light sandy shale.....	10 0	136 2	Dark sandy shale.....	5 0	353 4
Conglomerate.....	1 0	137 2	Sandstone.....	2 0	
Light sandy shale.....	1 0	138 2	Sandy shale.....	4 0	
Dark sandy shale.....	5 6	143 8	Dark sandy shale.....	6 0	
Conglomerate.....	0 11	144 7	Sandstone.....	1 6	
Sandstone.....	1 7	146 2	Dark sandy shale.....	1 3	
Sandy shale.....	5 2	151 2	Sandstone.....	4 0	372 1
Conglomerate.....	5 2	156 0	Conglomerate.....	2 0	
Light sandy shale.....	2 0	158 0	Sandstone.....	11 9	392 1
Conglomerate.....	1 10	160 0	Conglomerate.....	2 0	
Dark brown shale with coal markings.....	1 3	161 3	Sandstone.....	2 0	
Sandy shale.....	3 0	164 0	Light sandy shale.....	6 0	
Sandstone.....	2 0	166 0	Sandstone.....	2 0	
Sandy shale.....	1 9	168 0	Coarse conglomerate.....	16 0	419 1
Conglomerate.....	2 3	170 3	Dark sandy shale, dip 15°.....	3 8	427 9
Sandy shale.....	5 6	175 9	Sandstone.....	2 0	
Sandstone.....	1 0	176 9	Dark sandy shale, dip 27°-33°.....	6 0	
Sandy shale, dip 20°.....	1 0	177 0	Sandstone, dip 33°-20°.....	11 0	446 9
Conglomerate.....	3 0	180 0	Light sandy shale.....	3 0	
Dark sandy shale.....	5 0	185 0	Dark sandy shale.....	7 0	
Conglomerate.....	1 6		Conglomerate.....	1 0	
Sandy shale.....	0 6		Dark shale with coal marks.....	3 0	
Conglomerate.....	1 0		COAL.....	4 0	464 9
Dark sandy shale with coal marks.....	3 0	191 9	Dark sandy shale.....	2 10	
Sandstone.....	1 0		COAL.....	1 4 1/2	
Dark sandy shale.....	1 0		COAL-bony.....	0 3	
Conglomerate.....	1 0		COAL.....	2 4 1/2	
Dark sandy shale.....	1 0		COAL-bony.....	0 2	
Conglomerate.....	1 0	196 9	COAL.....	0 4	472 1
Dark sandy shale.....	3 0		Dark brown sandy shale.....	2 3	
Sandstone, dip 47°.....	1 0		COAL.....	0 9	
Sandy shale.....	5 4	206 1	Dark brown shale.....	1 10	
Dark sandy shale with coal marks.....	2 0	208 1	COAL.....	0 5 1/2	
Sandy shale.....	6 0		Dark brown shale.....	0 7 1/2	
Dark sandy shale.....	14 4	222 5	COAL.....	1 6	479 7
Sandstone.....	1 0		Dark brown shale, coal markings.....	3 4	482 11
Dark sandy shale.....	5 0	231 5	COAL.....	0 7	
Light sandy shale.....	3 0		Dark brown shale, occasional coal streaks.....	8 3	
Dark sandy shale.....	2 0		COAL.....	0 2	
Sandstone, dip 38°.....	2 0	241 5	Dark brown shale.....	0 4	
Light sandy shale, dip.....	3 3	244 8	COAL.....	0 1	
Dark sandy shale.....	2 0		Brown shale.....	0 2	
Sandy shale.....	8 0	254 8	COAL.....	0 6	
Dark sandy shale.....	3 0		Brown shale.....	0 6	
Light sandy shale.....	5 0	262 8	Light sandy shale, dip 20°.....	14 3	
Sandstone, dip 22°.....	8 0	270 8	Sandstone.....	9 0	
Dark sandy shale.....	9 6	280 2	Light sandy shale.....	8 10	
Sandstone, dip 13°.....	9 0		COAL.....	0 8	
Light sandy shale, dip 14°.....	8 0		Sandy shale.....	1 0	

LOG OF NO. 11 HOLE, DIAMOND VALE COLLIERIES—Continued.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
COAL	0 3		Light sandy shale	2 4	
Light sandy shale	28 9	568 0	Dark sandy shale	2 0	
Sandstone	11 0		Sandstone	32 6	
Light sandy shale	5 0		Dark sandy shale	5 0	
Sandstone, dip 25°	14 0				
Light sandy shale, dip 18°	0 9	610 4	11c { COAL, 1' 10"		
			COAL-bony, 2"	2 9	709 4
11s { COAL, 6' 3"			COAL, 9"		
COAL-bony, 6"	13 2	628 3	Dark sandy shale	6 9	
COAL, 6' 3"			Light sandy shale	9 0	
Dark brown shale	3 6		Sandstone	5 0	
COAL	3 8		Light sandy shale	2 0	
Dark brown shale	7 0		Sandstone	2 0	
Light sandy shale	2 0		Light sandy shale	11 6	
Sandstone	1 0		Sandstone	2 0	
Light sandy shale	2 6		Light sandy shale	3 0	750 7
COAL	0 10	658 9			

Original log apparently signed by Alfred T. Wall, Benjamin Browitt, and N. L. Wimmler.

NOTE.—Discrepancies are apparent in the original copy of this log, which is reproduced without alteration.

LOG OF DRILL-HOLE NO. 1

Located on North-west Quarter of Section 14, Township 91, 378 feet north 35 degrees east from Diamond Vale Hole No. 11; elevation, 1,986 feet.

Location: 1. Source: Signed original on file at British Columbia Department of Mines.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
UNCONSOLIDATED MATERIAL					
Boulder clay	102 0	102 0	Sandstone—medium to coarse, poorly sorted, few finesand and shaly streaks	19 0	230 0
BED-ROCK.					
Sandstone—grey, medium to coarse grain, with shaly streaks	14 0	116 0	Shale—black, compact, leaf moulds	13 6	252 6
Shale—dark, sandy	6 6	122 6	COAL	0 8	253 2
Sandstone—very coarse, poorly sorted, shaly streaks	5 0	127 6	Shale—black, much fractured	8 10	262 0
Shale—grey, sandy	3 6	131 0	Sandstone—fine grain, shaly, dip 14°	4 0	266 0
Sandstone—grey, coarse, coal marks	2 10	133 10	Sandstone—very coarse, poorly sorted, with some irregular fine conglomerate bands; abrupt contact below	14 0	280 0
COAL—bony	0 10	134 8	Shale—black, fractured	3 11	283 11
Shale—dark, fissile, coal marks	1 6	136 2	COAL	0 4 1/2	283 6
Sandstone—grey, coarse, some fine sand and shaly streaks	11 0	147 2	Shale—black, fissile, leaf moulds	9 0	292 6
Shale—black, leaf moulds, few sandy streaks	9 0	156 2	Sandstone—medium to fine-grained, somewhat shaly	8 0	300 6
Sandstone—shaly, finely bedded	2 6	158 8	Shale—dark, fractured	4 0	304 6
Shale—dark to black, coal marks	3 0	161 8	Sandstone—grey, shaly, coal marks	3 0	307 6
Shale—dark, sandy	1 0	162 8	Shale—grey to black, fractured, 1/2" coal-wax	6 6	314 0
Sandstone—medium grain, with few shaly streaks	4 8	167 4	Sandstone—shaly, dark grey	4 6	318 6
Shale—sandy, grey	2 4	169 10	Sandstone—light grey, coarse, poorly sorted, irregular conglomerate streaks	12 0	330 6
Sandstone—medium grain, shaly streaks, coal marks	3 2	173 0	Conglomerate—fine	0 0	331 3
Shale—black, coal marks, much fractured	7 0	180 0	Sandstone—light grey, coarse, friable, poorly sorted	27 0	358 3
Sandstone—light grey, coarse	3 8	183 8	Shale—dark, sandy, with fine-sand streaks, dip 14°	5 9	364 0
Shale—grey, sandy	5 6	189 2	Sandstone—grey, medium-grained, shaly streaks	4 6	368 6
Sandstone—grey, coarse, poorly sorted	10 10	200 0	Conglomerate—fine, with coarse sand streaks and 2" streak of sandy shale	5 0	373 6
Shale—dark grey, slightly sandy, dip 25°	0 0	209 0	Sandstone—fine grained	1 6	375 0
Sandstone—shaly, dip 15°	4 6	213 6	Conglomerate—fine	0 8	375 8
Shale—dark grey, sandy, fractured	6 6	220 0	Sandstone—fine grained	1 0	376 8

LOG OF DRILL-HOLE NO. 1—Continued.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
Shale—light grey, sandy.	2 0	378 3	Shale—sandy, with sand streaks.	7 0	773 0
Sandstone—light grey, coarse, few shaly streaks.	71 4	450 "	Sandstone—grey, poorly sized, with shaly streaks, dipping at high angles.	29 0	802 0
Shale—dark grey, sandy, sand streaks, coal marks.	11 5½	461 5½	Shale—grey, sandy.	2 8	804 8
COAL, with 1½" shale parting.	3 7½	464 9	Sandstone—shaly streaks at high angles.	6 4	811 0
Shale—dark grey, coal streaks.	1 7½	466 4½	Sandstone—light grey, coarse, poorly sorted.	2 9	813 9
1A COAL.	1 10½	468 3	Shale—grey, sandy.	6 3	820 0
Shale.	0 3	468 6	Sandstone—light grey, coarse.	3 0	823 0
COAL, with 2" shale parting.	5 10	474 4	Conglomerate—medium to coarse, with few sand lenses.	26 0	849 0
Shale—black.	0 9	475 1	Sandstone—grey, coarse, cross bedded.	8 0	857 0
COAL.	0 3	475 4	Shale—black, coal marks.	2 0	859 0
Shale—black.	0 4	475 8	Shale—black, coal marks and soft black mud.	4 0	862 6
COAL.	0 9	476 5	COAL.	0 8	862 6
Shale—black.	0 1½	476 6½	Shale—dark, grey compact.	16 6	879 0
COAL.	0 2½	476 9	Shale—grey, sandy.	4 0	883 0
Shale—black, coal marks and several ½" coal seams.	9 1	485 10	Shale—dark grey, compact.	5 0	888 0
COAL.	0 10	496 8	Shale—grey, sandy, with sand streaks.	2 0	890 0
Shale—black, coal marks.	1 6	498 2	Sandstone—coarse, cross-bedded, shaly streaks.	3 0	893 0
COAL—bony.	1 6	499 8	Shale—dark grey, fractured.	7 0	900 0
Shale—black, coal streaks.	1 0	499 8	Shale—dark, soft, slickensided partings, carbonate stringers; abrupt irregular contact.	10 0	910 0
COAL.	0 8	491 4	Sandstone—light, coarse-grained.	0 4	910 4
Shale—black, fusile, leaf moulds, coal marks.	10 8	502 0	Shale—dark, finely cross-bedded.	0 1	910 5
COAL.	0 6	502 6	Sandstone—light grey, coarse, cross-bedded; cross-bedding dips 70°.	0 8	910 10
Shale—grey, somewhat sandy.	4 6	507 0	Shale—dark, with intercalated seams of fine sand.	1 0	911 10
Sandstone—coarse, poorly sorted.	1 0	508 0	Sandstone—light grey, coarse (about 1 mm.), with some grains of shale; abrupt contact.	2 0	913 10
Shale—dark grey to black, fractured and sheared.	7 0	515 0	Shale—black, with a few fine-grained sand streaks interbedded.	1 2	915 0
Sandstone—grey, medium-grained with shaly and fine-sand streaks, dip 18°.	32 4	547 6	Shale—black, compact, wavy bedding with average dip 46°.	3 5	918 5
Shale—black, coal marks.	3 0	550 6	COAL—bony, bright partings, friable.	0 1½	918 6½
COAL.	4 10	555 4	Shale—black, much fractured, slickensided fragments.	1 3½	919 10
1b Shale—black.	1 2	554 6	Shale—black, with a few sandy streaks and wavy bedding dipping about 45°.	4 2	924 0
COAL—some bony streaks.	4 6	561 0	Shale—grey, badly fractured; abrupt, irregular contact, dip 38°.	3 4	927 4
Shale—black, fusile, coal marks, leaf moulds.	6 0	567 0	Sandstone—grey, fine even-grained.	0 8	928 0
Sandstone—shaly.	6 0	573 0	Sandstone—grey, fine even-grained; scattered grains of sulphide.	4 0	932 0
Sandstone—light grey, medium-grained with a few coarse streaks, carbonized twigs.	70 0	643 0	Shale—grey, compact, somewhat sandy.	0 11	932 11
Shale—black, compact, coal marks.	3 8	646 6	Sandstone—grey, fine even-grained, dip 29°.	0 1	933 0
COAL—in part bony.	4 0	650 6	Shale—grey, compact, sandy.	3 10	936 10
1c Shale—black, coal streaks.	1 6	652 0	Shale—grey, compact, sandy; fine-sand streaks; dip 23°; seam of carbonate.	1 2	938 0
COAL—bony.	0 10	652 10	Shale—grey, compact, sandy.	0 11	938 11
Shale—dark grey, sandy, fractured.	3 2	656 0	Sandstone—coarse, poorly sorted.	0 1	939 0
Sandstone—dark grey, shaly.	1 6	657 6	Shale—grey, compact, sandy; fine-sand seams, dip 31°.	3 0	942 0
Shale—grey, sandy, with many sand lenses, much fractured, and high core loss.	9 6	667 0	Shale—grey, compact, numerous sand seams, dip 29°.	7 6	949 6
Sandstone—coarse, poorly sorted.	2 0	669 0	Shale—dark, badly fractured.	2 6	952 0
Shale—dark grey, sandy, fractured.	19 0	688 0	Shale—black, coal marks, badly sheared.	1 10	953 10
Sandstone—grey, shaly, dip 10°.	10 0	698 0	Mud or gouge seam, contains fragments of shale and a ½" seam of crushed COAL.	0 5	954 5
Sandstone—grey, coarse.	10 0	708 0			
Sandstone—medium to fine-grained with shaly streaks.	3 10	711 10			
Shale—dark grey, with sandy streak.	8 2	718 0			
Sandstone—shaly streaks, dip 8°.	3 8	721 8			
Shale—black, fractured.	2 6	724 2			
Shale—grey, sandy, cross-bedded sandstone streaks.	2 6	726 8			
Shale—black, compact.	1 4	728 0			
Shale—grey, sandy, with sand lenses.	18 6	746 6			
Sandstone—shaly—shaly streaks dipping at high angles, vertical channeling.	19 6	764 0			

LOG OF DRILL-HOLE No. 1—Continued.

Description.	Thick- ness, Ft. In.	Depth, Ft. In.	Description.	Thick- ness, Ft. In.	Depth, Ft. In.
Breccia, coarse fragments, sand cement	2 9	957 0	Breccia—fragments of shale and vol- canics	4 0	968 0
Mud or gouge seam, containing frag- ments of breccia and fine flakes of shale	1 0		Conglomerate—soft, muddy, coaly shale streaks	1 8	969 8
COAL, about 1" of bony fragments and some coal mud recovered	0 6	958 6	Breccia—large volcanic fragments with muddy cement; rock soft and friable	6 4	976 0
Mud or gouge seam, as above	1 6	960 0	Felsite—light grey, fine-grained	2 0	978 0
Shale, ground up, containing some coal fines	0 10	960 10	Greenstone—fine-grained, dark green, chloritic	7 0	985 0
Diorite—medium coarse grained, con- taining biotite and hornblende; sheared contact with shale dips 45°	0 8	961 8	Greenstone—fine-grained, somewhat brecciated	3 6	988 6
Shale—dark, badly sheared	0 6	962 0	Shale—compact, indurated	1 0	989 6
Conglomerate—poorly sorted, with coarse sand lenses	2 0	964 0	Greenstone—pillowed, somewhat por- phyritic	5 6	995 0
			End of hole.		

Hole started December, 1945. Hole finished February 20th, 1946.

LOG OF DRILL-HOLE No. 2.

Located on North-east Quarter of Section 14, Township 91, 1,233 feet north 88 degrees east from Hole No. 1; elevation, 2,022 feet. Hole started February 27th, 1946.

Location: 2. Source: Signed original on file at British Columbia Department of Mines.

Description.	Thick- ness, Ft. In.	Depth, Ft. In.	Description.	Thick- ness, Ft. In.	Depth, Ft. In.
UNCONSOLIDATED MATERIAL.					
Boulder clay, with some sand and gravel beds	150 0	150 0	Sandstone—dark grey, medium- to fine- grained, thin-bedded, showing cross- bedding and channelling	6 2	251 2
Sand—loose, coarse, undecomposed	14 0	164 0	Sandstone—light grey, coarse, massive- bedded, friable, containing two ¼" coal-seams, and grading downwards into conglomerate	8 10	260 0
Gravel, with very little interstitial sand	14 0	178 0	Conglomerate—fine-grained, scattered coaly material	9 0	269 0
Sand—loose, coarse, with layers of coarse gravel	15 0	193 0	Sandstone—fine-grained, few shaly streaks	1 0	270 0
Sand—fine, with few large boulders	10 0	203 0	Shale—grey, compact	4 8	274 8
RED ROCK.					
Sandstone—weathered and broken	8 0	211 0	Shale—black, compact, many coal streaks, dip 22°	1 5	276 1
Sandstone—grey, compact, poorly sort- ed, medium- to coarse-grained, with a few thin shaly streaks, dip 14°	4 9	215 9	Sandstone—dark grey, fine-grained, shaly	3 11	280 0
Conglomerate—fine-grained; abrupt con- tact	0 6	216 3	Shale—grey, sandy	0 9	280 9
Shale—black, fissile, coaly streaks, be- coming sandy at the bottom	2 0	218 3	Shale—black, fissile, coal marks and coal streaks, dip 14°	3 3	284 0
Sandstone—grey, variable texture from fine to very coarse; irregular bedding	2 6	220 9	Shale—black, fissile, coal marks and coal streaks, dip 18°	2 6	286 6
Conglomerate—fine-grained; abrupt con- tact	1 3	222 0	Sandstone—dark grey, micaceous, shaly, dip 19°	3 0	289 6
Shale—light grey, sandy, coaly twigs	1 7	223 7	Shale—grey, sandy	2 0	291 6
Sandstone—grey, fine even grain, mas- sive	1 3	224 10	Sandstone—dark grey, shaly	1 2	292 8
Sandstone—dark grey, fine-grained, thin-bedded, with dark laminae dip- ping irregularly from 8° to 18°	4 0	228 10	Shale—dark grey, coal marks, broken	1 4	294 0
Sandstone—light grey, medium to coarse, massive	2 5	231 3	Shale—grey, compact, becoming sandy	4 0	298 0
Shale—grey, sandy	0 5	231 8	Sandstone—dark grey, fine-grained, thin-bedded, somewhat shaly, dip variable 5° to 20°	5 2	303 2
Shale—black, coal marks	1 4	233 0	Sandstone—light grey, medium to coarse, massive	2 10	306 0
Sandstone—light grey, coarse, friable	4 4	237 4	Sandstone—light grey, medium to coarse, massive	6 0	312 0
Conglomerate—fine-grained, poorly sort- ed	2 0	239 4	Shale—black, compact, few coal streaks	0 9	312 9
Sandstone—light grey, coarse, friable	3 8	243 0	Shale—jet black, compact, with numer- ous coal streaks making up to 25% of the core, dip 14°	2 1	314 10
Sandstone—grey, medium- to fine- grained	1 2	244 2	Shale—black, compact, few coal streaks	1 2	316 0
Shale—grey, sandy	0 10	245 0			

LOG OF DRILL-HOLE NO. 2—Continued.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
Shale—grey, sandy	0 8	316 8	Shale—dark grey, slightly sandy, many coal streaks, dip 8°	2 4	480 10
Sandstone—dark grey to grey, fine-grained, thin-bedded with thin shaly partings; some cross-bedding; dip and strike variable	22 0	338 8	Sandstone—light grey, medium- to coarse-grained	5 6	486 4
Shale—dark, compact, coal marks	1 3	339 11	Shale—grey, sandy, few coal streaks	4 6	490 10
Sandstone—light grey, coarse	0 5	340 4	Sandstone—grey, variable texture from fine to coarse irregular cross bedding; abrupt contact with underlying shale	10 0	500 10
Shale—dark to black, compact, coal marks and few streaks, dip 18°	6 8	347 0	Shale—dark grey, slightly sandy, compact	12 2	513 0
Shale—grey, sandy	1 0	348 0	Sandstone—dark grey, shaly, dip 5°	1 0	514 0
Sandstone—dark grey, shaly bands	3 6	351 6	Sandstone—grey, medium-grained	2 1	516 1
Sandstone—light grey, medium- to coarse-grained, massive bedded	19 2	370 8	Shale—black, fissile, few coal streaks, dip 9°	0 11	517 0
Shale—dark grey, sandy, dip 8°	1 4	372 0	Sandstone—dark grey, shaly	2 0	519 0
Sandstone—dark grey, shaly	1 0	373 0	Sandstone—light grey, coarse, cross-bedded	2 0	521 0
Shale—dark grey, sandy	2 6	376 6	Sandstone—dark grey, shaly	1 0	522 0
Sandstone—dark grey, thin-bedded, with shaly streaks	2 8	377 8	Shale—black fissile, leaf impressions, coal streaks	4 1	526 1
Shale—dark, compact	3 3	381 0	Shale—grey, sandy, few coal streaks	2 0	528 1
Shale—grey, sandy	1 0	382 0	Shale—dark grey, finely sheared in part, few coal streaks	3 9	531 10
Sandstone—dark grey, shaly bands and streaks, dip 15°	4 0	386 0	Sandstone—dark grey, shaly	2 2	534 0
Sandstone—dark grey, shaly	1 0	387 0	Shale—dark, sandy, few coal streaks	2 0	536 0
Sandstone—grey, medium-grained; faulted contact with underlying shale dips 45°	7 0	394 0	Sandstone—dark, very shaly, several coal streaks	2 6	538 6
Shale—grey, sandy, broken	1 0	396 0	Shale—dark, sandy streaks, coal marks, dip 10°	7 8	546 2
Shale—grey; numerous talcose shear-planes and rouge-filled fault-planes dipping about 45°	5 0	400 0	Sandstone—grey, medium grain, few shaly partings	7 4	553 6
Shale—grey, broken in all directions by many curved talcose shear-planes	7 0	407 0	Sandstone—light grey, coarse to very coarse, friable (border-line of fine conglomerate)	9 9	563 3
Shale—grey; very broken, in part finely comminuted; abrupt faulted contact with sandy shale below	3 6	410 6	Shale—grey, sandy	1 6	564 9
Shale—grey, sandy, compact	1 0	411 6	Sandstone—dark grey, medium- to fine-grained, with numerous shaly bedding-planes	15 2	579 11
Sandstone—grey, fine-grained, thin-bedded, with few shaly partings, dip 9°	10 0	421 6	Sandstone—light grey, coarse	0 10	580 9
Sandstone—light grey, medium-grained, massive	6 0	427 6	Sandstone—dark grey, fine grain, shaly partings	1 0	581 9
Shale—grey, somewhat broken but not sheared; one fault-plane dipping 45°	7 8	435 0	Conglomerate—fine-grained, friable, with indistinct bands of coarse sandstone and two 1" shale bands, and several coal streaks which vary in dip from 0° to 10°	11 3	593 0
Sandstone—dark grey, fine-grained, some shaly streaks	2 1	437 1	Sandstone—light grey, coarse, few coal streaks, dip 10°	34 0	627 0
Shale—dark grey, sandy	2 8	439 9	Conglomerate—fine	3 0	630 0
Sandstone—dark grey, shaly	2 8	442 5	Sandstone—light grey, very coarse, friable	2 0	632 0
Shale—dark grey, sandy	1 0	443 5	Sandstone—light grey, coarse to very coarse, with irregular conglomerate beds	11 3	643 3
Sandstone—dark grey, shaly	1 0	444 5	Sandstone—dark grey, shaly	0 9	644 0
Shale—dark, somewhat sandy	1 10	446 3	Shale—dark grey, sandy, compact	4 6	648 6
Sandstone—dark grey, shaly streaks, dip 10°	2 6	448 9	Shale—black, containing two ½" coal-seams and several thinner coal streaks	2 0	650 6
Sandstone—grey, few shaly bands; irregular bedding	9 6	458 3	COAL lony	0 3	650 9
Shale—dark, slightly sandy, very compact	10 0	468 3	Shale grey, sandy, with coal marks	0 7	651 4
Shale—finely crushed in fault-zone	1 0	469 3			
Shale—grey, sandy, compact	0 7	469 10			
Sandstone—light grey, medium-grained	0 6	470 3			
Shale—dark, slightly sandy; few streaks of sand	4 4	474 7			
Sandstone—dark grey, fine-grained, shaly	1 4	476 0			
Sandstone—dark grey, fine-grained, shaly	2 6	478 6			

LOG OF DRILL-HOLE NO. 2—Continued.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
COAL—bright, hard, with two-way cleat	2 8	654 0	Shale—dark grey, sandy, few coal streaks	0 6	811 6
COAL	0 4	654 4	Sandstone—dark grey, shaly	1 4	812 10
Shale	0 3	654 7	Shale—grey, sandy, with sand-filled mud cracks; few coal streaks	9 2	822 0
COAL	0 3	654 10	Sandstone—dark grey, shaly	0 8	822 8
Shale	0 1	654 11	Shale—dark to black, compact, indurated, having a false cleavage at 45°; few carbonate seams	2 4	831 0
2A COAL	0 3	655 2	Shale—grey, sandy with sand-lenses, few coal streaks	2 0	834 0
Shale	0 2	655 4	Sandstone—light grey, medium even grain	4 6	838 6
COAL—bright, hard, narrow streaks of bone	1 8	657 0	Sandstone—grey to dark grey, fine-grained, thin-bedded, shaly with several shale-bands (dip 23°, fairly regular)	14 6	853 0
Shale—grey, sandy	0 9	657 9	Sandstone—finely crushed, with more gouge in fault-zone	4 0	857 0
COAL—bony, with numerous thin streaks of shale	2 2	659 11	Shale—black, many coal streaks, dip 38°	1 0	858 0
Shale—dark grey, sandy	1 8	661 7	Sandstone—grey, fine-grained, somewhat broken	9 0	867 0
Sandstone—light grey, very coarse	2 8	664 3	Sandstone—grey, shaly, crushed and faulted zone	3 0	870 0
Conglomerate—fine, with indistinct beds of coarse sandstone and scattered larger pebbles	3 9	668 0	Sandstone—light grey, fine-grained, compact except in narrow crushed zone at 875°; calcite stringers	6 3	876 3
Sandstone—light grey, very coarse	2 0	670 0	Sandstone—grey, fine-grained, shaly bedding-planes: variable dip at low angles	1 9	878 0
Conglomerate—fine to medium-grained	1 0	671 0	Shale—grey, sandy, few coal streaks	1 0	879 0
Sandstone—light grey, very coarse	2 0	672 0	Shale—dark grey, few coal streaks, dip 15°	0 11	879 11
Conglomerate—fine to medium-grained, with a few scattered pebbles up to 2" and with indistinct beds of coarse sandstone	4 0	677 0	COAL—very bony (nearly half black shale), sheared	1 0	880 11
Sandstone—light grey, coarse	2 0	679 0	Shale—grey, sandy, few coal streaks; in part finely crushed	4 1	885 0
Conglomerate—medium-grained	0 6	679 6	Shale—black, few coal streaks; finely crushed	0 8	885 8
Sandstone—light grey, coarse, with few large pebbles	9 0	688 6	Shale—grey, compact, few coal streaks, dip 45°	1 0	886 8
Conglomerate—medium to coarse-grained, several coal streaks	5 6	694 0	Shale—black, numerous coal streaks up to ¼" thick comprise nearly half the core; coal streaks dip about 60°, and shearing evident parallel to the bedding	0 10	887 6
Shale—grey, sandy, compact, few coal marks	4 0	698 0	Shale—black, several coal streaks up to ¼" thick; severely sheared, in part finely comminuted	2 9	890 2
Sandstone—dark grey, shaly	2 0	700 0	COAL—very bony (nearly half black shale); severely sheared, in part finely comminuted	1 7	891 10
Sandstone—grey, fine to medium-grained	20 0	720 0	Shale—grey, sandy, compact	1 2	893 0
Shale—grey, sandy, few coal streaks, dip 3°	1 8	721 8	Sandstone—dark grey, shaly	1 8	894 6
Shale—grey, sandy, with irregular steep bedding	4 2	725 10	Sandstone—grey, medium grained, shaly streaks, dip 31°	4 0	898 6
COAL—hard, bright	0 2	726 0	Sandstone—light grey, medium to coarse-grained; few carbonate stringers	8 7	907 0
Shale—grey, sandy, one ¼" coal-seam	0 6	726 6	Shale—grey, sandy	1 1	908 1
Sandstone—dark, shaly, irregular bedding	1 10	728 4	Shale—dark, sheared, few coal streaks	2 9	910 10
Sandstone—grey, fine even grain	4 6	732 10	Shale—black, sheared, many coal streaks, dip 32°	1 6	912 3
Sandstone—light grey, coarse to very coarse; rude bedding dips from 10° to 35°	18 2	749 0	Shale—dark, compact	1 0	913 3
Conglomerate—fine-grained	3 6	752 6	Tuff—light-coloured, fine-grained, coal marks	1 6	914 9
Conglomerate—medium-grained	1 0	753 6			
Shale—light grey, few coal streaks, dip 37°	2 2	755 8			
Sandstone—dark grey, shaly streaks; shows irregular cross bedding	5 4	761 0			
Sandstone—dark grey, shaly; numerous intercalated bands of sandy shale; dip variable, 0° to 20°	11 6	772 6			
Sandstone—almost white in colour, thin-bedded, mostly fine-grained, with thin dark bedding-planes having variable dips at low angles	20 4	793 0			
Sandstone—dark grey, shaly	8 0	801 0			
Shale—dark grey, broken, in part finely sheared; many carbonate stringers	5 0	806 0			
Shale—dark grey, sandy	1 8	807 8			
Sandstone—dark grey, shaly	3 4	811 0			

LOG OF DRILL-HOLE NO. 2—Continued.

Description	Thick- ness. Ft. in.	Depth. Ft. in.	Description.	Thick- ness. Ft. in.	Depth. Ft. in.
Conglomerate—volcanic fragments, medium- to coarse-grained, dip 25°	11 7	928 4	Volcanics—greenstone, fine-grained, dark green, in part brecciated or pillowed	5 6	941 0
Shale—dark, compact, coal marks	0 5	928 9			
Horreis—medium- to fine-grained, vol- canic fragments	2 3	929 0	Sandstone—metamorphosed, with bio- tite and feldspar developed	2 0	944 0
Volcanics—probably basalt, finely porphyritic	2 6	932 6			
			End of hole.		

Hole started February 27th, 1946. Hole finished April 17th, 1946.

LOG OF DRILL-HOLE NO. 4.

Located on North-east Quarter of Section 14, 675 feet bearing north 18 degrees east from Hole No. 1; elevation, 1,975 feet.

Location: 4. Source: Signed original on file at British Columbia Department of Mines.

Description.	Thick- ness. Ft. in.	Depth. Ft. in.	Description.	Thick- ness. Ft. in.	Depth. Ft. in.
UNCONSOLIDATED MATERIAL.					
Boulder clay and gravel	181 0	181 0	Sandstone—brown, medium grain, com- pact with very many angular coal fragments up to 1" across oriented parallel to bedding which dips 20°	0 9	259 0
BEDROCK.					
Sandstone—medium- to fine-grained, cross bedded with dark laminae, three thin beds of conglomerate, dip 18°	5 0	186 0	Sandstone—coarse with conglomerate	3 10	262 10
Sandstone—medium- to fine-grained, with dark laminae shaly towards base and 4" of friable coal and mud, probably some coal that is missing, dip 10°	5 9	191 9	Shale—dark grey, numerous coal part- ings, some mud seams, dip 20°	10 2	273 0
Sandstone—coarse	3 2	195 0	Shale—dark grey	4 0	277 0
Shale—dark grey, shattered, getting more sandy to base, dip 14°	6 0	201 0	Shale—dark grey	2 0	279 0
Sandstone—medium-grained, dark grey with darker laminae, has one near vertical slip of about 1/4", another dip about 45°, breccia and gouge about 2" thick, calcite stringer	6 0	207 0	Sandstone—medium-grained, light and dark grey, dip 10°	1 9	280 9
Shale—dark grey, micaceous, near base, sandy, dip 7°	10 0	217 0	Shale—dark, with coal partings	2 0	282 9
Shale—dark, sandy, micaceous, at base two seams 1/4" and 1/2" of bony coal	5 6	222 6	Sandstone—medium- to coarse-grained	2 0	284 9
Sandstone—medium-grained, light grey with dark laminae; dip 5°-18°, sev- eral strike fractures; dip 30°-60° N., with calcite	4 6	227 0	Shale—dark	1 3	286 0
Sandstone—coarse, light-coloured, mica- ceous, massive; contact with shale below dips 30°	4 0	231 0	Shale—dark grey, coal partings	1 8	287 8
Shale—dark grey, fractured at contact	4 0	235 0	Sandstone—dark, compact, becoming coarser at base, dip 11°	5 7	293 8
COAL	0 6	235 6	Shale—dark to black, coal partings, broken	3 9	297 0
Shale—dark grey, sandy, fractured coal partings, 2" to 3" broken coal at base	4 6	240 0	Sandstone—medium-grained, some dark laminae, dip 20°	2 0	299 0
Sandstone—grey, medium-grained, frac- tured, shaly toward base; at 242' black shale	5 0	245 0	Shale—dark fissile, coal partings	2 0	301 0
Shale—dark grey, some coal partings, some sandy and micaceous beds, dip 30°	3 0	248 0	Sandstone—medium-grained, dark lam- inae, dip 12°	1 6	302 6
Sandstone— with dark laminae, some cross bedding; medium grain to 250' 3"; coarse massive to 255' 4", with few conglomerate beds, coal frag- ments	10 2	258 2	Shale—dark with coal partings	3 6	306 0
			Sandstone—medium-grained, getting coarser downwards, at base massive; some cross-bedding	13 0	319 0
			Conglomerate—fine, few sandy beds, coal fragments 331' 9"	21 3	340 3
			Sandstone—medium-grained, dark lam- inae; dip 13° at base, massive, light- coloured, irregular	10 9	351 0
			Sandstone—medium-grained, with dark laminae, getting shaly towards base	10 0	361 0
			Sandstone—dark and light; few coarse beds	3 2	364 2
			Shale—dark, with coal partings	2 0	366 2
			COAL	1 0	367 2
			Shale—dark, with coal partings	1 4	368 7
			COAL	3 3	371 10
			4A Shale—bony	0 3	372 1
			COAL	0 3	372 4
			Shale—bony	0 2	372 6
			COAL, four shaly partings, total ing 5"	4 6	377 0

LOG OF DRILL-HOLE NO. 4—Continued.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
Shale—dark, sandy, coal partings, mud seam	3 0	380 0	Sandstone—medium-grained, light, with dark laminae, dips 10°-12°	9 0	481 0
Sandstone—dark, compact, shaly, dip 10°-18°	5 0	385 0	Sandstone—medium to fine-grained, some shaly beds	4 9	485 9
Sandstone—medium grain, dark and light, some coal partings	1 6	386 6	Shale—dark, dip 13°, some calcite-filled fractures	2 3	488 0
Conglomerate—dark, fairly coarse to 1", few coal fragments	5 6	395 0	Sandstone—medium and coarse grain, some silty beds	3 0	491 0
Conglomerate—light coloured, with few coaly streaks	10 0	405 0	Sandstone—light, massive, medium grain, few coal partings, at 500' coarser	10 0	501 0
Conglomerate	5 0	410 0	Sandstone—massive, medium grain, coarse 504'-08"	10 0	511 0
Conglomerate—some coarse sandy beds, coal fragments at 413', at 420' 5" very coarse, pebbles to 2" closely packed	11 0	421 0	Sandstone—massive	2 9	513 9
Sandstone—medium-grained, thin, dark and light, beds dip 15°-18°, some mica, towards base beds thicker and coarser	10 0	431 0	Conglomerate—fine and sandy at top	5 0	518 9
Sandstone—coarse, light, with few dark fine beds, some coal fragments, disturbed	5 0	436 0	Sandstone—medium to fine grain, dark grey, dip 5°	1 3	520 0
Sandstone—medium-grained, dark and light beds, some coarser beds, dip 8°-12°-14°, getting shaly at base	7 0	443 0	Sandstone—grading down to shaly sandstone	3 0	523 0
Shale—sandy, with coal marks	4 0	447 0	Sandstone—massive, light, medium grain, dip 17°, some silty beds dip 5°	7 0	530 0
Shale—sandy, black, with abundant coal partings	2 6	449 6	Sandstone—light, medium grain, few silty beds, dip 4°-8°, somewhat coarser at 535' and few coal fragments there	7 0	537 0
Sandstone—brown, fine-grained	0 4	449 10	Sandstone—light, medium grain, mostly massive, few silty beds, dip 5°, coaly partings 538"	9 0	546 0
Shale—black, much broken	5 2	455 0	Sandstone—massive, light-coloured	5 0	551 0
Shale—black, fissile, broken	2 0	457 0	Sandstone—thin bedded, silty, dip 5°	2 0	553 0
COAL and bony shale—5" coal	2 0	459 0	Sandstone—massive, light, medium to fine grain, few silty beds, coaly partings 557', 560', dip 5°, few irregular dips	2 0	561 0
COAL, and shale—4" coal, 8" shale	1 10	460 10	Sandstone—massive, calcite stringer at base	2 0	569 0
Sandstone—shaly, dip 18°, some irregular bedding	3 2	464 0	Sandstone—light and dark, thin-bedded, shaly	3 0	572 0
Sandstone—shaly	4 0	468 0			
Sandstone—dark and light, fine to medium grain	4 0	472 0			

Hole started June 20th, 1946. Hole finished July 4th, 1946.

LOG OF DRILL-HOLE NO. 5.

Elevation, 1,975 feet; approximately 471 feet bearing north 28 degrees west from Hole No. 1.

Location: 5. Source: Signed original on file at British Columbia Department of Mines.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
UNCONSOLIDATED MATERIAL					
Clay and boulders		178 0	Shale, mud, and coal partings	2 0	202 0
BED ROCK.					
Sandstone—light, medium to coarse grain, dip 10°, few shaly beds	4 0	182 0	Shale—dark grey, few coal partings, few sandy beds, dip 5°-10°	5 0	207 0
Sandstone—light, medium to coarse, massive, getting shaly towards base	3 0	190 0	Shale—dark grey	2 3	209 3
Shale—dark, many coal partings, some pyrite, 5"	2 0	192 0	Sandstone—light, medium to fine grain, massive, shaly at 212"	7 9	217 0
COAL, 4"			Sandstone—light, medium grain	9 0	226 0
Shale, with many coal partings	0 6	192 6	Sandstone—light, massive, medium to coarse	10 2	236 2
COAL, with little shale	0 6	193 0	Shale—dark grey, few coal partings, sandy towards base	4 10	241 0
Shale, with many coal partings	0 4	193 4	Sandstone—light, medium-grained, few shale beds	3 0	244 0
Shale—dark grey, with few coal partings	6 8	200 0	Shale—dark grey	2 0	246 0
			Shale—dark grey mud seam 249' 6"	4 6	250 6

LOG OF DRILL-HOLE No. 5—Continued.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
Sandstone—light grey, fine to medium grain, massive	5 6	258 0	COAL (2½" bone, two seams), dip 13°	1 6	415 0
Sandstone—light and dark, few shale beds, dip 10°	5 6	261 6	COAL (5" bone, five seams)	2 0	417 0
Shale—dark and medium grey, few sandy beds, dip 0°-20°	14 6	276 0	COAL (1" bone, one seam)	2 0	419 0
Shale—dark, broken at 277'	2 6	278 6	COAL (4" bone, three seams)	2 0	421 0
Mud, shale, coal	1 0	279 6	Shale, with abundant coal partings, 2" coal	2 0	423 0
Shale—dark	3 6	283 0	Sandstone—shaly, dip 10°	1 0	424 0
Shale—medium to dark grey, fractured	6 0	289 0	Conglomerate—few sandy beds, very coarse at base	17 9	441 9
Sandstone—dark and light, medium to fine grain, dip 25°	4 9	293 9	Shale—black, fissile, broken, few coal partings	1 3	443 0
Shale—dark	1 3	295 0	Shale—sandy, few coal partings, dip 5°	8 0	451 0
Sandstone—medium grain, thin-bedded	3 6	298 6	Sandstone—light and dark, medium and fine grain, few shaly beds, dip 5°-20°	19 0	470 0
Sandstone—coarse, massive	4 0	302 6	Shale—sandy, many leaf impressions, dip 18°	6 0	476 0
Sandstone—grey, medium to fine grain, broken at 303' 0", dip 30°	3 6	306 0	Shale—few sandy beds, many coal partings, two 1" seams of coal, broken and slickensided	5 0	481 0
Shale—dark grey, some sandy beds, coal partings at 306' 6"	4 6	310 6	Shale and coal broken, probably loss of coal 5'-6"	9 0	490 0
Shale—grey	2 0	312 6	Sandstone—medium grain, few shale beds	3 0	493 0
Shale—grey, broken, little mud	3 6	316 0	Shale—sandy, much broken	2 6	495 6
Shale—sandy, coal partings at 317'	1 0	317 0	Sandstone—fine-grained, broken	3 0	498 6
Sandstone—shaly, fine grain, dip 5°-10°, few coal partings	12 6	329 6	Shale—dark	1 0	499 6
Sandstone—light, medium-grained	7 0	336 6	Sandstone—dark and light, fine-grained, thin-bedded, broken, dips to 35°	4 6	504 0
Sandstone—shaly, dip 15°	4 0	340 6	Sandstone—grey, massive, medium-grained	4 6	508 6
Sandstone—light and dark, medium and fine grain, dip 12°	2 0	342 6	Sandstone—thin-bedded, fine-grained, dip 25°	4 6	513 0
Shale—sandy, coal partings at 344'	2 6	345 0	Shale—sandy	2 6	515 6
Sandstone—fine and medium	1 6	346 6	Sandstone—dark, fine-grained, some shale beds, broken	4 6	520 0
Sandstone—light, massive, coarse, very coarse 352'-56'	10 6	357 0	Sandstone—dark and light, thin-bedded, upper part broken, dip 30°	10 0	530 0
Shale—sandy, dip 10°	8 0	362 0	Sandstone—light and dark, broken, dip 25°-30°	6 0	535 0
Sandstone—few shaly beds, fine-grained	2 0	364 0	Sandstone—light, coarse, massive, fine at 540', conglomerate at 543', dip 35°	18 0	550 0
Sandstone—coarse, lowest 6" fine-grained	3 6	367 6	Sandstone—coarse, broken	5 0	555 0
Sandstone—light, coarse, massive, dip 13°	27 0	394 6			
Sandstone—light, coarse, massive	8 6	403 0			
Sandstone—shaly	2 0	405 0			
Sandstone—shaly, poorly sorted, few coal partings	7 0	412 0			
Shale—with abundant coal partings	1 6	413 6			

Hole started July 18th, 1946. Hole finished July 30th, 1946.

LOG OF DRILL-HOLE No. 6.

Located approximately 680 feet bearing north 42½ degrees east from Hole No. 4; elevation, approximately 1,985 feet.

Location: 6. Source: Signed original on file at British Columbia Department of Mines.

Description.	Thick- ness. Ft. In.	Depth. Ft. In.	Description.	Thick- ness. Ft. In.	Depth. Ft. In.
UNCONSOLIDATED MATERIAL.					
Overburden	210 6	210 6	Shale—grey, sandy	4 0	218 0
BED ROCK.					
Shale—sandy	2 6	213 0	Sandstone—light, fine-grained, massive	6 9	243 9
Shale and sandstone	2 0	215 0	Sandstone and shale—interbedded, dip 5°-10°	5 3	249 0
Sandstone—grey, fine-grained, few shaly beds	4 6	219 6	Sandstone—massive, few shaly beds 234' 235', grading to very coarse at base	7 0	256 0
Shale—sandy, grey	5 6	225 0	Shale—grey, sandy, with sandy interbeds	4 0	260 0
Sandstone—light, fine-grained, dip 15°-20°	9 0	234 0	Shale—dark, few sandy beds	10 0	270 0
			COAL	0 6	270 6