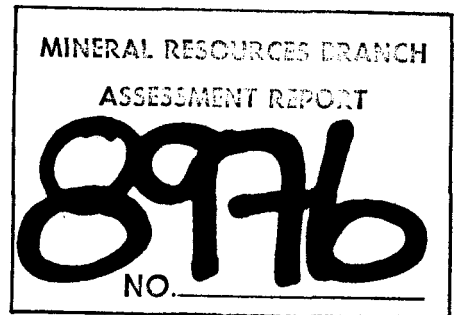


COMINCO LIMITED

KOOT GROUP ASSESSMENT REPORT



The following report describes the results of drilling Diamond Drill Hole K-81-1, a 49.4 metre hole, Diamond Drill Hole K-81-2, a 43.3 metre hole and K-81-3, a 61.9 metre hole in the Canal Flats area on the Koot mineral claims located in the Golden Mining Division.

The N.T.S. location is 82 J/4

D.D.H. K-81-1 Latitude $50^{\circ}08'37''$
Longitude $115^{\circ}45'22''$

D.D.H. K-81-2 Latitude $50^{\circ}08'35''$
Longitude $115^{\circ}45'21''$

D.D.H. K-81-3 Latitude $50^{\circ}08'34''$
Longitude $115^{\circ}45'23''$

Cominco Ltd., owner of the claims, was the operator of the exploration program.

P. Klewchuk is author of this report.

Date of submission: March, 1981

Endorsed for
release by: K.V.S. Meyer P.Eng
K.V.S. Meyer
Manager, Kimberley Operations

Author's Qualifications

As author of this report, I, Peter Klewchuk certify that I am employed by Cominco Ltd. as a geologist active in minerals exploration.

I am a graduate of the University of British Columbia with a degree of Bachelor of Science and a graduate of the University of Calgary with a degree of Master of Science.

I have been continuously engaged in geology and mining exploration for nine (9) years.

I am a member of the Geological Association of Canada.

Peter Klewchuk

Peter Klewchuk

COMINCO LTD.

KOOT GROUP ASSESSMENT REPORT

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INTRODUCTION

i/ Specific Location

D.D.H.'s K-81-1, K-81-2 and K-81-3 are located east southeast of Canal Flats. Access to the drill sites is via Highway 95, the White Swan Lake Road and 2 km of bush road.

ii/ Property Definition

The property being investigated is the Koot group of mineral claims, owned by Cominco Ltd. Cominco Ltd. acquired this group of mineral claims in 1980.

iii/ Three diamond drill holes are being reported on in this report. D.D.H. K-81-1 was drilled to a depth of 49.4 metres using N wireline tools, 7.6 cm in diameter. D.D.H. K-81-2 was drilled to a depth of 43.3 metres using N wireline tools, 7.6 cm in diameter and K-81-3 was drilled to a depth of 46.05 metres using N wireline tools, 7.6 cm in diameter and from 46.05 metres to 61.9 metres using B wireline tools, 6.0 cm in diameter.

iv/ D.D.H.'s K-81-1, K-81-2 and K-81-3 were collared on the Koot 1 Mineral Claim.

DETAILED TECHNICAL DATA AND INTERPRETATION

D.D.H. K-81-1

i/ Purpose

The purpose of D.D.H. K-81-1 was to sample the quartzite rock and test for continuity and extent of high-silica quartzite.

i/ Results

Steeply dipping, poorly bedded light gray quartzite was cored from 3.50 m to 49.40 m.

iii/ Interpretation

0 - 3.50 m Overburden and casing

3.50-49.40m Fine grained light gray colored quartzite with numerous iron oxide-stained fractures. The quartzite is believed to be part of the Cranbrook Formation.

iv/ Conclusion

Below overburden, D.D.H. K-81-1 was drilled in steeply dipping, poorly bedded Cranbrook Formation quartzite for all of its 49.40 m length.

D.D.H. K-81-2

i/ Purpose

The purpose of D.D.H. K-81-2 was to sample the quartzite rock and test for continuity and extent of high-silica quartzite.

ii/ Results

Steeply dipping, poorly bedded light gray quartzite was cored from 3.05 m to 43.30 m.

iii/ Interpretation

0 - 3.05m Overburden and casing.

3.05-43.30m Fine-grained, light gray coloured quartzite with common iron oxide-stained fractures.
The quartzite is believed to be part of the Cranbrook Formation.

iv/ Conclusions

Below overburden, D.D.H. K-81-2 was drilled in steeply dipping, poorly bedded Cranbrook Formation quartzite for all of its 43.30 metre length.

D.D.H. K-81-3

i/ Purpose

The purpose of D.D.H. K-81-3 was to sample the quartzite rock and test for continuity and extent of high-silica quartzite.

ii/ Results

Steeply dipping, poorly bedded light gray quartzite was cored from 4.55 metres to 61.90 metres.

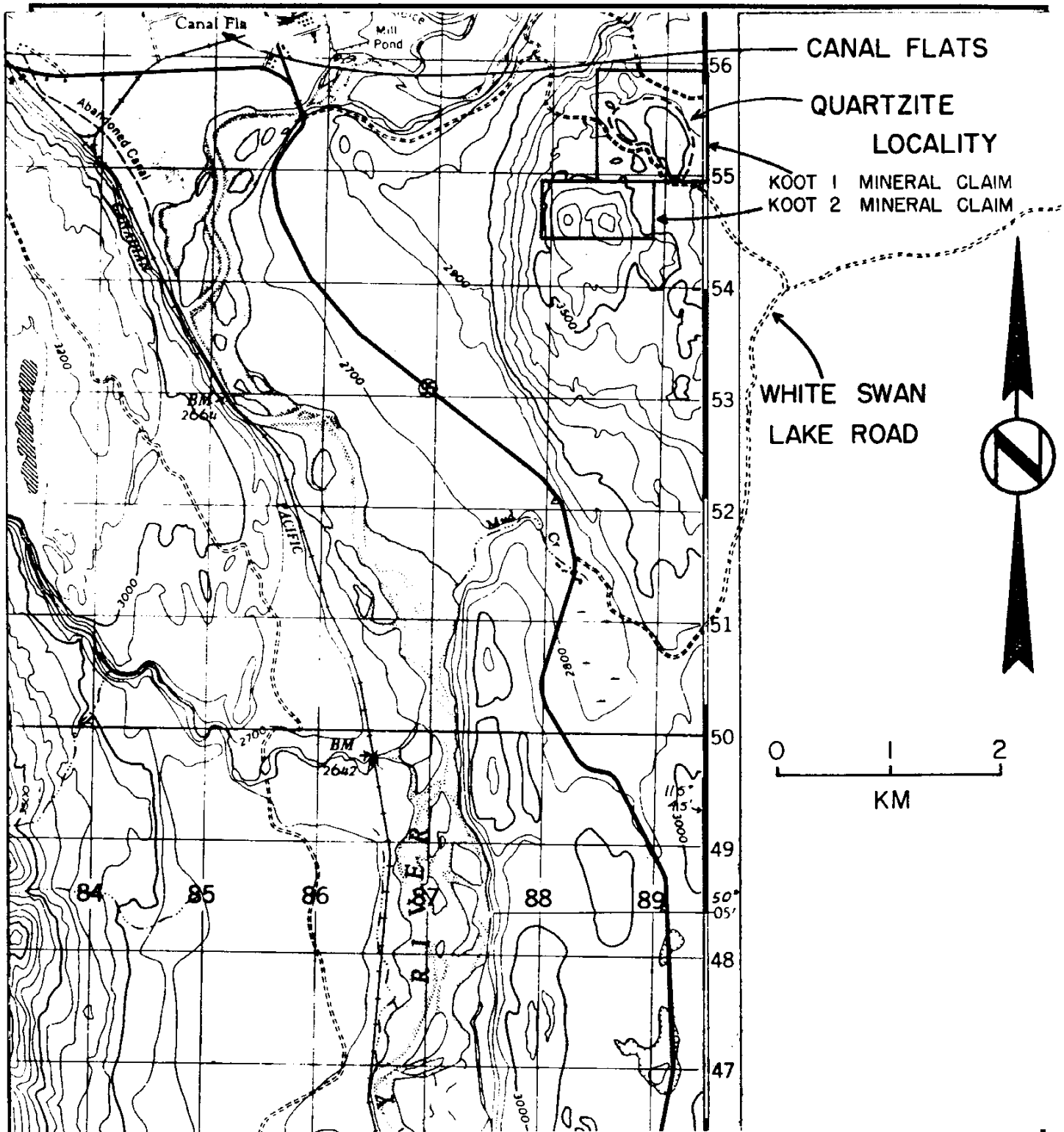
iii/ Interpretation


0 - 4.55m Overburden and casing.

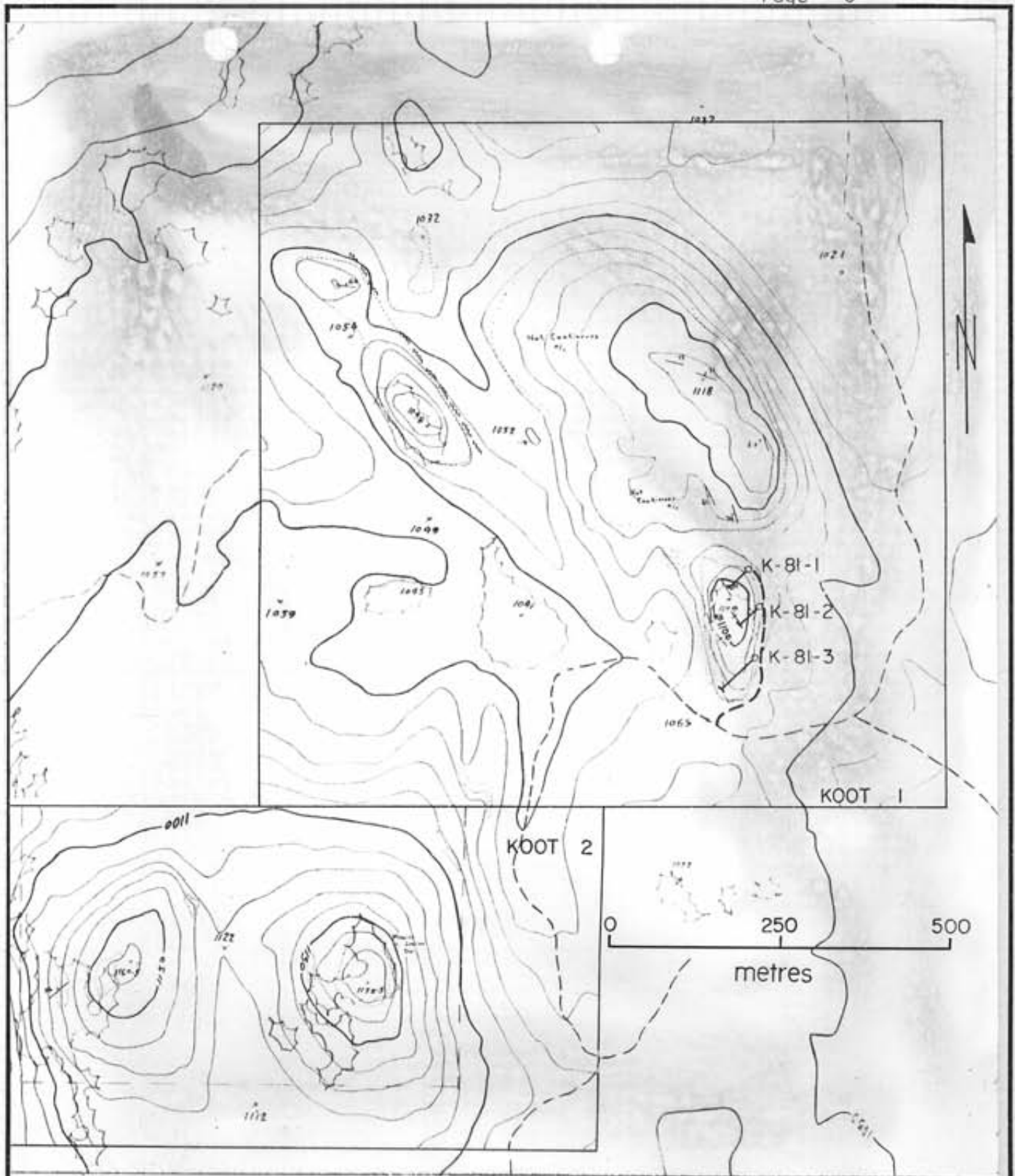
4.55-61.90m Fine-grained, light gray coloured quartzite with common iron oxide-stained fractures. The quartzite is believed to be part of the Cranbrook Formation.

iv/ Conclusion

Below overburden, D.D.H. K-81-3 was drilled in steeply dipping, poorly bedded Cranbrook Formation for all of its 61.90 metre length.



			
Iss'd To:	Date:	INDEX MAP	
		LOCATION OF KOOT GROUP MINERAL CLAIMS	
		NTS 82 J/4	
Drawn by:	Scale:	Date:	Plate:
PK	1:50,000	February, 1981	Fig. 1



Iss'd To:	Date:

LOCATION MAP

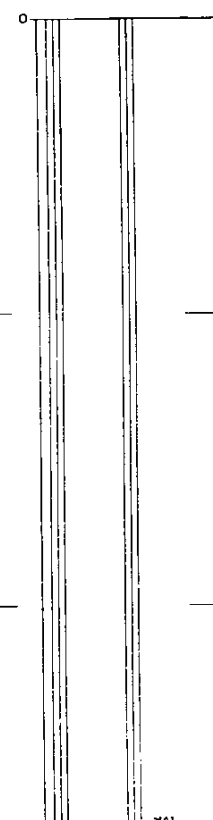
D.D.H.'s K-81-1, K-81-2, K-81-3
KOOT GROUP MINERAL CLAIMS

Drawn by: PK	Scale: 1:8000	Date: February, 1981	Plate: Fig. 2
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Diamond Drill Geological Log



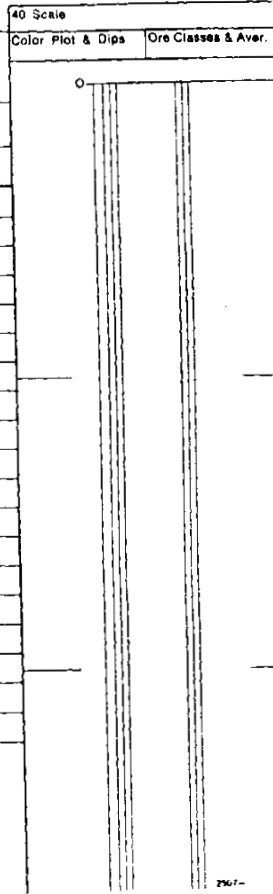
Objective: Sample for Chem Anal		Sampled:		40 Scale	
Logged By: PK		Date: January 1981		Color Plot & Dips	
Block		Composites:		Ore Classes & Avar.	
Sect.:		Place: Kootenay Quartzite Local.		App. Dip.: -30°	
From:		App. Bear: AZ 225°		Length: 43.30 m	
To:		Reason:			
Discard:					
<p>The Kootenay Quartzite locality is located approx. 4 km Est. of Canal Flats and is reached by following the White Swan logging road for 2 1/2 miles from Highway 95, then turning left along a bush road for approx. 2 miles.</p>					
0	3.50m	Overburden; no core			
3.50	8.25m	BQ core Quartzite			
<p>Milky gray coloured, variably weakly mottled by slight variations in colour from light milky white to medium gray. Typically fine grained to very fine grained crystalline with common medium and occasional coarser grains. The quartzite has a dense appearance, possibly due to silicification during metamorphism, with only very fine porosity. The texture is typically massive although locally a fabric is developed by lenses of larger grains within finer grained material. This fabric, presumed bedding or near-bedding (may be some cross bedding locally) is at 65° to core axis at 8.00 m. Numerous very narrow hairline fractures are present throughout the core, most commonly at 35° to 65° to c.a. Core is broken along these fractures, into fragments no longer than 10 cm. Numerous of the fractures are not continuous across individual fragments of core, probably due to healing through subsequent silicification. Iron oxide staining, presumably predominantly hematite (colour varies from yellowish to rusty brown) occurs along many, but not all, fractures. At 4.00 m a hematite vein 1.5 cm wide cuts the core at 10-15° to c.a. Visually, the rock is comprised exclusively of quartz and very minor hematite.</p>					
8.25m	9.40m	At 8.25 m the hole was reamed to H and coring continued with NQ equipment. A misalignment between machine and hole was causing rods to whip so the hole was re-started; NQ was then used in the hope of improving core recovery.			
Quartzite		Core Size			
Generally similar to previous interval; massive to weakly layered milky gray, somewhat mottled, dense, fine grained. Very narrow hematitic fractures		BQ/NQ			
		Hole No		Page	
		K-81-1		1	



Diamond Drill Geological Log



Objective: Sample for Chem Anal		Sampled:	
Logged By: PK		Date: January 1981	
Block:		Composites:	
From:	To:	Discard:	Reason:
Sect.:		Place:	App. Bear:
		Kootenay Quartzite Local.	AZ 225°
App. Dip:		Length:	
-30°		43.30 m	
49.40	occur throughout; occasionally brecciation is evident along wider (1-2 cm) fractures and a hematitic breccia is present. At 15.70 m a 0.5-1.5 cm wide fracture is filled with buff coloured clayey fault gouge. Minor impurities can be visually recognized locally; near 17.70 m a 5 cm length of core contains est 2-3% greenish coloured pyrite. The pyrite occurs in spherical irregular blebs averaging 1.5 mm diam. Minor pyrite occurs also near 18.65 m (est. 1-2% over 10 cm) and near 20.40 m (1-2% over 3 cm). At 20.40 m small vugs encrusted with a rusty coloured oxidation product may represent leached pyrite. At 20.75 m a black amorphous-looking (carbonaceous?) material occurs in minor quantities. This material is concentrated along a bluish-gray lens of quartzite which reaches a maximum thickness of 5 mm. Throughout much of the core, occurring as isolated blebs, usually 1 mm diam.; is a very minor amount of buff yellow-brown material which may represent feldspar weathering to clay. "Bedding" is evident as lenses of varying coloured quartz grains or lenses of coarser quartz grains within fine grained quartzite; 63° to core axis 17.75 m; 48° to c.a. at 20.75 m; 50° to c.a. at 21.35 m; 53° at 24.20 m; 50° at 30.95 m; 36° at 39.65 m.		
21.20 m	2 cm wide zone of rusty vugs from leaching of pyrite.		
21.95 m	Black to blue-black amorphous-looking material along hairline fractures and as discrete small irregular masses between grains of quartz. May be secondary or remobilized; looks like Mn staining or carbonaceous material. 4 cm length of core contains est. 1% of it. Minor brassy-green pyrite is present here, too.		
22.85 m to 23.45 m	Fine disseminated pyrite occurs along this interval. Rounded blebs of pyrite are usually < 1mm diam.; concentration is est. < 1% over any 5 cm length of core. Near 23.0 m fine grained pyrite is.		

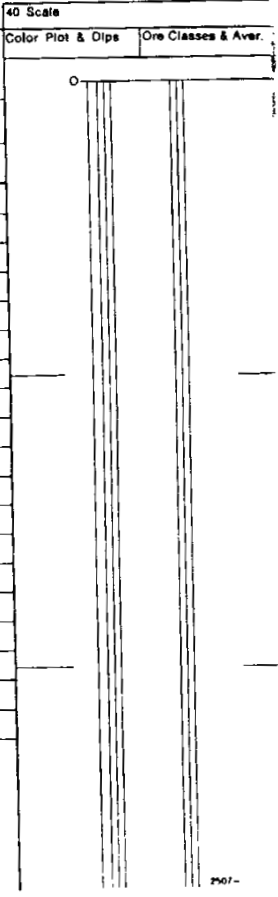


Core Size	BQ/NQ
Hole No.	K-81-1
Page	2

Diamond Drill Geological Log



Objective: Sample for Chem Anal		Sampled:	
Logged By: PK		Date: January 1981	
Block:		Composites:	
Sect.:	Place:	App. Bear:	App. Dip:
	Kootenay Quartzite Local.	AX 225°	-30°
From:	To:	Length:	
		43.30 m	
Discard:			
Reason:			
concentrated along a small healed fracture. 23.30 m rusty-weathering pyrite is disseminated over 10 cm of core. The lower most part of this zone contains a 3 cm length of core with abundant light rusty stained vugs of about 1 mm diam. (presumably from leaching of py.) Est. 10% vugs over 3 cm.			
Generally the core is less broken with depth. 10 cm fragments are common; maximum unbroken length is 40 cm.			
Fe oxide staining along fractures occurs throughout. Fractures are at various angles to core axis; most typically at 30° to 50°.			
49.40 m End of hole. <i>P. Blendhu</i>			
Core Size			
BQ/NQ			
Hole No.		Page	
K-81-1		3	



Diamond Drill Geological Log



Objective: _____ Sampled: _____
 Logged By: _____ Date: _____ Composites: _____
 Block: _____ Sect.: _____ Place: _____ App. Bear: _____ App. Dip.: _____ Length: _____

From	To	Discard:	Reason:	From	To	Length	Recovered	Short	From	To	Length	Recovered	Short	
		Core Recovery: Shown in feet.												
0	11½	11½	Overburden; no core	73	74	1	½	½	126	128	2	½	1½	
11½	13	1½	½	74	78	4	¾	1	128	131	3	2-¾	½	
13	16	3	2½	78	79.5	1½	¾	¾	131	134½	3½	¾	-	
16	20½	4½	2½	79.5	80.5	1	¾	½	134½	136	1½	1½	-	
20½	23	2½	1½	80.5	83.5	3	2½	½	136	146	10	10	-	
23	26	3	1½	83.5	87.5	4	2	2	146	151	5	4½	½	
26	27	1	1	87.5	89	1½	1½	½	151	153	2	1½	½	
27	34	7	5½	89	94	5	1½	3-¾	153	158	5	4-¾	½	
34	35	1	½	94	98	4	2	2	158	162	4	¾	½	
35	38	3	2	98	100	2	1-¾	½						
38	42	4	2½	100	102	2	1½	½	Summary: BQ&NQ: 150.5' 116' 77.1% 34.5' 22.9%					
42	46	4	3	102	103.5	1½	1½	-						
46	47	1	½	103.5	108	4½	¾	1½	BQ	15.5'	10.5'	67.7%	5' 32.3%	
47	50	3	2	108	109	1	1	-						
50	53	3	¾	109	111	2	1½	¾	NQ	135'	105.5'	78.1%	29.5' 21.9%	
53	55	2	1½	111	115	4	4	-						
55	60	5	5	115	119	4	¾	½						
60	63	3	2½	119	122	3	¾	-						
63	68	5	4	122	124	2	1½	½						
68	71	3	¾	124	126	2	1-¾	½						
71	73	2	¾											

40 Scale

Color Plot & Dips Ore Classes & Aver.

Core Size

Hole No. Page

K-81-1 4

7507-

Diamond Drill Geological Log

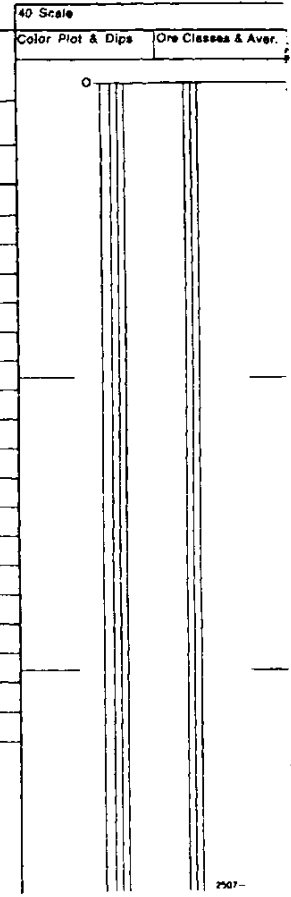


40 Scale		Color Plot & Dips	Ore Classes & Avar.
Objective: Sample for Chem Anal		Sampled:	
Logged By: PK		Date: January 1981	
Block:		Composites:	
Sect.:	Place:	App. Bear:	App. Dip:
	Kootenay Quartzite Local.	AZ 225 ⁰	-33 ⁰
From	To	Discard:	Length:
		Reason:	43-30 m
0	3.05m	Overburden and casing; no recovery.	
3.05m	43.30m	Quartzite	
Generally light gray coloured; milky white-gray to slightly bluish, characteristically weakly mottled.			
Dense, generally fine or very fine-grained, locally medium and coarse-grained - a fabric is locally developed by lenses or layers of larger grains within finer-grained quartzite: this is presumed bedding but locally may be features such as cross bedding.			
Over-all character is of an annealed breccia. Numerous fractures cut through the quartzite, many of which have been healed through silicification to form narrow, often discontinuous veinlets of milky gray quartz. Numerous of the fracture faces are stained by iron oxide, presumably hematite. Hematite also occurs locally, disseminated in the quartzite but in discrete concentrations, indicating some preferential cause for its presence. A yellowish material locally occurs interstitially to quartz grains: this may be a weak iron staining of interstitial silica cement or may in part be a weathering or alteration residue of feldspar. Minor disseminated pyrite is present in a few places as small rounded blebs commonly < 1 mm diam.			
Core recovery is very good; although numerous fractures are present they did not affect drilling progress in this hole.			
4.25 m	15 cm	15 cm length of core with py blebs and Fe stained vugs where blebs have weathered out; est 1% py over this	
4.40 m	4 cm	4 cm wide vein filled with iron oxide stained breccia.	Core Size
5.95 m	2 cm	Minor black to blue-black amorphous-looking material (carbon?) (irregular shard-like wisps between quartz grains < 1% over 2 cm of core.	NQ
6.40 m	10-15 cm	10-15 cm length of core contains abundant (15-20%) Fe oxide-stained	Hole No.
			Page
			K-81-2
			1

Diamond Drill Geological Log



Objective: Sample for Chem Anal		Sampled:	
Logged By: PK	Date: January 1981	Composites:	
Block:	Sect:	Place: Kootenay Quartzite Local.	App. Bear: AZ 225°
			App. Dip.: -33°
			Length: 43.30 m
From	To	Discard:	Reason:
			5.20 m - 54°; 17.68 m - 68°; 31.70 m - 67°
			9.45 m - 56°; 22.25 m - 58°; 40.85 m - 64°
		43.30 m	End of hole
<i>P. Blanchard</i>			
		Core Size	
		NQ	
		Hole No.	Page
		K-81-2	3



Diamond Drill Geological Log



Objective: _____ Sampled: _____

Logged By: _____ Date: _____ Composites: _____

Block: _____ Sect.: _____ Place: _____ App. Bear.: _____ App. Dip.: _____ Length: _____

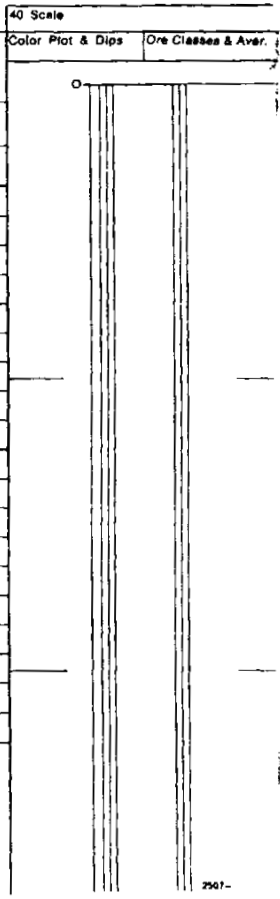
From: _____ To: _____ Discard: _____ Reason: _____

Core Recovery in feet									
		Length	Recovered	Lost	From	To	Length	Recovered	Lost
0	10	10	No recovery; casing		93	98	5	4 1/2	1/2
10	11 1/2	1 1/2	1 1/2	-	98	102	4	4	-
11 1/2	16	4 1/2	4 1/2	-	102	107	5	5	-
16	20	4	3 1/2	1/2	107	111 1/2	4 1/2	4 1/2	-
20	22 1/2	2 1/2	2 1/2	-	111 1/2	116 1/2	5	5	-
22 1/2	26	3 1/2	3 1/2	-	116 1/2	122	5 1/2	5	1/2
26	30	4	3 1/2	1/2	122	127	5	5	-
30	35	5	5	-	127	130	3	3	-
35	40	5	5	-	130	132 1/2	2 1/2	2 1/2	-
40	45	5	5	-	132 1/2	137	4 1/2	4 1/2	-
45	50	5	5	-	137	138	1	1	-
50	55	5	5	-	138	142	4	4	-
55	60	5	5	-					
60	65	5	5	-			142	129 1/2	2 1/2
65	70	5	5	-				98.1%	1.9%
70	75	5	5	-					
75	80	5	5	-					
80	85	5	5	-					
85	90	5	5	-					
90	93	3	2 1/2	1/2					

Core Size: NQ

Hole No. K-81-2

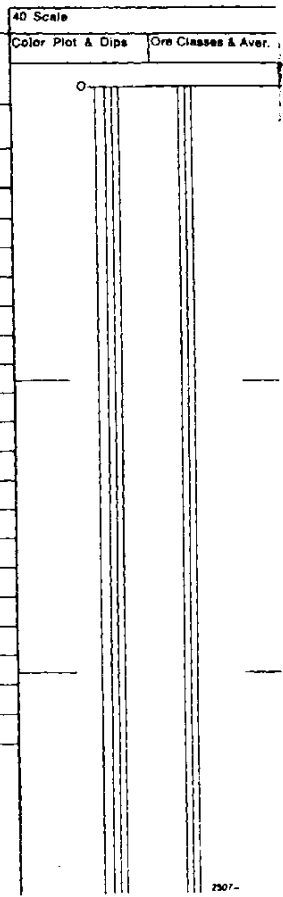
Page 4



Diamond Drill Geological Log



Objective:			Sampled:		
Logged By: PK			Date: January 1981		
Block:			Composites:		
Sect.:		Place:	App. Bear:	App. Dip.:	Length:
		Kootenay Quartzite Local.	225°	-33°	61.90 m
From	To	Discard:	Reason:		
			hematitic matrix along an irregular vein about 7 mm wide.		
			A dark, black or blue-black mineral (carbonaceous?) occurs locally, interstitially to quartz grains, discolouring the quartzite to bluish-gray. This mineral may comprise 1/2% over a given 30 cm length of core, although on the average the concentration is much lower.		
	14.15 m		Fine-grained oxidized pyrite, weathering reddish-brown. Blebs 1/4 - 1 mm diam. occur along trains at 30° to c.a., est. 1-1/2% over 5 cm of core.		
	15.25 m		Few vugs near here, some larger than diameter of core. Encrusted internal lacework of silica is covered with an oxidation product - some Fe oxide. Colour is yellowish-brown to red brown. Similar vugs are present at least to 24.4 m and form an est. 2% by volume from 15.25 m to 24.4 m.		
	19.2-22.85 m		Fe-oxidized veinlets are very abundant. Core is a network of rusty fractures; most fractures are healed or partially healed, presumably by silicification.		
	23.75-27.15 m		Relatively clean milky-white quartzite with common rusty fractures. This is the "cleanest" looking core to this depth.		
	30.15-32.10 m		Fault or shear zone: only about 55 cm of core recovered. Rock is a brecciated mixture of light yellow stained feldspar, milky-gray quartz and reddish brown hematite (?). About 25-30% of the recovered core is feldspar; vein contacts near 31.4 m are at 33° to c.a.		

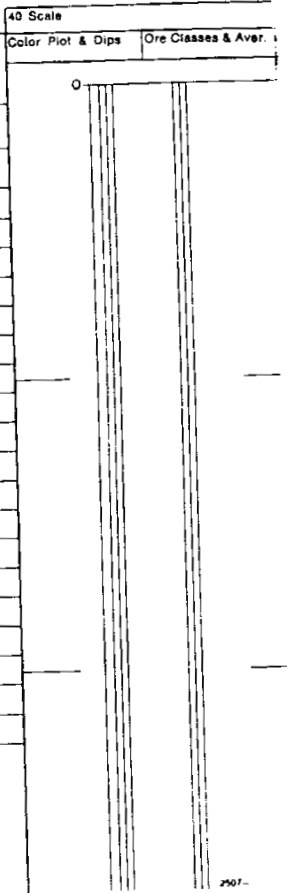


Core Size
NQ & BQ
Hole No. K-81-3
Page 2



Diamond Drill Geological Log

Objective:		Sampled:	
Logged By: PK		Date: January 1981	
Block:		Composites:	
Sect.:	Place:	App Bear:	App Dip:
	Kootenay Quartzite Local	AZ 225°	-33°
From:	To:	Discard:	Length:
			61.90 m
		Reason:	
		32.0 - 46.05	Clean-looking milky-gray quartzite with weakly Fe-oxidized fractures.
46.05	61.3m	BQ core	Quartzite, generally similar to upper interval. Strongly brecciated locally with Fe oxide staining on numerous fractures.
61.3	61.9m	No core.	Very poor core recovery from 55.20 m to 61.30 m - the small amount of recovered core is good quartzite and doesn't indicate any explanation for the poor recovery.
<i>P. Klenchuk</i>			
Bedding			
19.80 m - 44°			
40.55 m - 53°			
42.05 m - 55°			
53.95 m - 74°			
61.90 m End of Hole			
Core Size		NQ & BQ	
Hole No.		Page	
K-81-3		3	



Diamond Drill Geological Log



Objective: _____ Sampled: _____
 Logged By: _____ Date: _____ Composites: _____
 Block: _____ Sect.: _____ Place: _____ App. Bear: _____ App. Dip.: _____ Length: _____

From		To		Discard:			Reason:							
Core recovery in feet														
		Length	Recovered	Short			From	To	Length	Recovered	Short			
0	15	Overburden; No recovery			89	91	2	1 1/2	1/2	168	170	2	2	-
15	17	2	2	-	91	99	8	1 1/2	6 1/2	170	173	3	1 1/2	1 1/2
17	19 1/2	2 1/2	1 1/2	1	99	102	3	1/2	2 1/2	173	178	5	1 1/2	3-3/4
19 1/2	23	3 1/2	2 1/2	1	102	107	5	2	3	178	181	3	2 1/2	1/2
23	26	3	2 1/2	3/4	107	110 1/2	3 1/2	1 1/2	2	181	186	5	1/2	4-3/4
26	27 1/2	1 1/2	1	1/2	110 1/2	114	3 1/2	1 1/2	2	186	192	6	1/2	5 1/2
27 1/2	34	6 1/2	1 1/2	5	114	118	2	1-3/4	1/2	192	194	2	1/2	1-3/4
34	38	4	1 1/2	2 1/2	118	119	3	1/2	2-3/4	194	201	7	1/2	6 1/2
38	41	3	2	1	119	121	2	-	2	201	203	2	0	2
41	46	5	5	-	121	125 1/2	4 1/2	4 1/2	-					
46	51	5	5	-	125 1/2	128 1/2	3	3	-	188' 57.98% recovery				
51	53	2	1	1	128 1/2	132	3 1/2	3 1/2	-					
53	55	2	1 1/2	1/2	132	136	4	3	1	NQ 136' Recovered 90' - 66.18%				
55	58	3	1/2	2 1/2	136	140	4	3	1					
58	62	4	2 1/2	1 1/2	140	142 1/2	2 1/2	2 1/2	-	BQ 52' Recovered 19' - 36.54%				
62	66	4	4	-	142 1/2	143	1/2	1/2	1/2					
66	68	2	2	-	143	146	3	2 1/2	3/4					
68	73	5	4 1/2	1/2	146	149	3	2 1/2	1/2					
73	78	5	3 1/2	1 1/2	149	151	2	3/4	1 1/2					
78	82 1/2	4 1/2	4 1/2	-	151	156	5	2	3					
82 1/2	84	1 1/2	1 1/2	-	156	163	7	4 1/2	2 1/2					
84	89	5	4 1/2	1/2	163	168	5	3-3/4	1 1/2					

40 Scale

Color Plot & Dip: _____ Ore Classes & Aver.: _____

0

Core Size

NQ & BQ

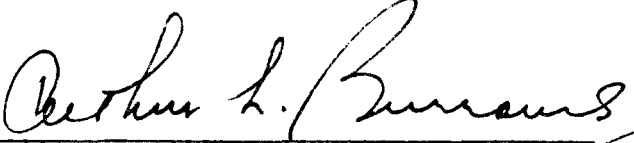
Hole No. _____ Page _____

K-81-3 4

2507-

SULLIVAN MINECOMINCO LTD.COST SUMMARY
KOOT 1 MINERAL CLAIMKIMBERLEY, B.C.

DDCH K-81-1	\$ 15,033.00
K-81-2	6,257.00
K-81-3	<u>14,842.00</u>
TOTAL EXPENDITURE	<u>\$ 36,132.00</u>


Arthur L. Burrows

SULLIVAN MINECOMINCO LTD.KIMBERLEY, B.C.

KOOT 1 GROUP
DDCH K-81-1

Start : January 15, 1981
Finish: January 21, 1981

Contractor: Acadia Drilling Inc.
Location : Canal Flats

Footage (in metres)

0 - 3.05	OB @ 72.60 per m.	\$ 221.43	
3.05 - 8.23	BQ @ 65.60 per m.	339.81	
3.05 - 49.38	NQ @ 72.60 per m.	<u>3,363.56</u>	\$ 3,924.80

Hourly Charges

Reaming	\$ <u>768.00</u>	\$ 768.00
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Materials

Casing Shoes	\$ 365.04	
<i>Bits</i>	<u>3,186.71</u>	\$ 3,551.75

Moving Charges

Hourly MOB/Demob @ \$2.00 per m.	\$ 1,806.00	
	<u>98.76</u>	\$ 1,904.76

Cominco Charges

Operator	\$ 311.50	
Heavy Equip.	375.70	
Geology Supervision	2,256.00	
Assay Charges	<u>324.00</u>	\$ 3,267.20

Miscellaneous

Core Boxes @ \$5.09 per box	\$ 50.90	
Water Truck @ 450.00 per day	<u>1,575.00</u>	\$ <u>1,625.90</u>

TOTAL COST

\$ 15,033.41

SULLIVAN MINECOMINCO LTD.KIMBERLEY, B.C.KOOT 1 GROUP
K-81-2Start : January 21, 1981
Finish: January 22, 1981Contractor: Acadia Drilling Inc.
Location : Canal FlatsFootage (in metres)

0 - 3.05	OB @ 72.60 per m.	\$ 221.43	
3.05 - 43.28	NQ @ 72.60 per m.	<u>2,920.70</u>	\$ 3,142.13

Hourly Charges

Nil

Materials

Nil

Mud

Kutwell 80 gal.	\$ 86.84	\$ 86.84
-----------------	----------	----------

Moving Charges

Hourly	\$ 588.00	
MOB/Demob @ 2.00 per m.	<u>86.56</u>	\$ 674.56

Cominco Charges

Operator	\$ 273.10	
Heavy Equip.	329.40	
Geology Supervision	752.00	
Assay Charges	<u>284.00</u>	\$ 1,638.00

Miscellaneous

Core Boxes @ \$5.09 per box	\$ 40.72	
Water Truck @ \$450.00 per day	<u>675.00</u>	\$ 715.72

TOTAL COST

\$ 6,257.75

SULLIVAN MINE

COMINCO LTD.

KIMBERLEY, B.C.

KOOT 1 GROUP
K-81-3

Start : January 23, 1981
Finish: January 27, 1981

Contractor: Acadia Drilling Inc.
Location : Canal Flats

Footage (in metres)

0 - 2.44	OB @ \$72.60 per m.	\$ 177.14	
2.44 - 46.02	NQ @ \$72.60 per m.	3,163.91	
46.02 - 61.87	BQ @ \$65.60 per m.	<u>1,039.76</u>	\$ 4,380.81

Hourly Charges

Hole Conditioning	192.00	
Reaming	<u>\$ 384.00</u>	\$ 576.00

Materials

Casing Shoe	\$ 365.04	
Bits	2,769.67	
Rods	<u>125.16</u>	\$ 3,259.87

Mud Or Additives

Alcomer (1 pail)	<u>\$ 229.02</u>	\$ 229.02
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Moving Charges

Hourly	\$ 1,113.00	
MOB/Demob @ 2.00 per m.	<u>123.74</u>	\$ 1,236.74

Cominco Charges

Operator	\$ 390.40	
Heavy Equip.	470.90	
Geology Supervision	1,504.00	
Assay Charges	<u>406.00</u>	\$ 2,771.30

Miscellaneous

Core Boxes @ 5.09 per box	\$ 61.08	
Water Truck @ \$450.00 per day	1,800.00	
Truck Rental @ \$48.00 per hr.	<u>528.00</u>	\$ 2,389.08

TOTAL COST \$ 14,842.82

ACADIA DRILLING INC.
501 McBride St. W.
Cranbrook, B.C.
VIC 4H3

I N V O I C E

Cominco Ltd.
P.O. Box 2000
Kimberley, B.C.
VIA 2G3

Attention: Mr. John M. Hamilton
Chief Geologist, Kimberley

TERMS: 30 days
INVOICE DATE: February 3, 1981
INVOICE NO: 826
ORDER NO: S 23363 R
BILLING PERIOD: January 16 - 31, 1981
JOB LOCATION: Cranbrook area

<u>DESCRIPTION</u>	<u>AMOUNT</u>
<u>Hole # K-81-1</u>	
Drilling Detail	\$ 3,924.80
Material	3,551.75
Waiting Time	2,574.00
Other	2,175.00
	<u>12,225.55</u>
<u>Hole # K-81-2</u>	
Drilling Detail	3,142.13
Material	86.84
Waiting Time	588.00
Other	675.00
	<u>4,491.97</u>
<u>Hole # K-81-3</u>	
Drilling Detail	4,380.81
Material	3,488.89
Waiting Time	996.00
Other	2,328.00
	<u>11,193.70</u>
<u>Hole # 6443</u>	
Drilling Detail	3,224.00
Material	335.92
Waiting Time	2,295.00
	<u>5,854.92</u>
	<u>\$ 33,766.14</u>
	=====

ACADIA DRILLING INC.
Calculations
January 15 to January 31, /81 Billing

13

planned to probably by the 8.10.
This hole was reworked 23 times.

DRILLING DETAIL

Hole # K-81-1

Overburden (NW)	0 metres to (6.10) metres =	(3.05 @ \$72.60 per metre	\$ 221.43 ?
Drilling (BQ)	3.05 metres to 8.23 metres =	5.18 @ \$65.60 per metre	339.81
(NQ)	3.05 metres to 49.38 metres =	46.33 @ \$72.60 per metre	3,363.56
<i>in 2-2 work, as mentioned for NQ.</i>			<u>3,924.80</u>

Hole # K-81-2

Overburden (NW)	0 metres to 3.05 metres =	3.05 @ \$72.60 per metre	221.43
Drilling (NQ)	3.05 metres to 43.28 metres =	40.23 @ \$72.60 per metre	2,920.70
			<u>3,142.13</u> ✓

Hole # K-81-3

Overburden (NW)	0 metres to 2.44 metres =	2.44 @ \$72.60 per metre	177.14 ✓
Drilling (NQ)	2.44 metres to 46.02 metres =	43.58 @ \$72.60 per metre	3,163.91 ✓
Drilling (BQ)	46.02 metres to 61.87 metres =	15.85 @ \$65.60 per metre	1,039.76 ✓
			<u>4,380.81</u> ✓

MATERIAL

Hole # K-81-1

1 #41436 BW Imp. casing shoe ✓	@ \$152.00 + \$ 6.08 PST	158.08
1 #46348 NQ Imp. bit (green) ✓	@ \$415.00 + \$16.60 PST	431.60
1 #95551 BQ 75 series bit ✓	@ \$548.15 + \$21.92 PST	570.07
1 #43617 NW casing shoe ✓	@ \$199.00 + \$ 7.96 PST	206.96
1 #46291 NQ Imp. bit (green) ✓	@ \$415.00 + \$16.60 PST	431.60
1 #46290 NQ Imp. bit (green) ✓	@ \$415.00 + \$16.60 PST	431.60
1 #46294 NQ Imp. bit (green) ✓	@ \$415.00 + \$16.60 PST	431.60
1 #94892 NQ 100 series bit ✓	@ \$856.00 + \$34.24 PST	890.24
		<u>3,551.75</u> ✓

Hole # K-81-2

80 gal Kutwell 45	@ \$ 78.95 + 10% (invoice attached)	<u>86.84</u> ✓
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Hole # K-81-3

1 NW casing shoe ✓	@ \$199.00 + \$ 7.96 PST	206.96
1 #46353 NQ Imp. bit (green) ✓	@ \$415.00 + \$16.60 PST	431.60
1 10' HQ rod	@ \$120.35 + \$ 4.81 PST	125.16
1 #6252 NQ bit ✓	@ \$415.00 + \$16.60 PST	431.60
1 #47761 NQ Imp. bit (green) ✓	@ \$415.00 + \$16.60 PST	431.60
1 #41434 BW Imp. casing shoe ✓	@ \$152.00 + \$ 6.08 PST	158.08
1 #32681 BQ Imp. bit (green) ✓	@ \$290.00 + \$11.60 PST	301.60
1 #32682 BQ Imp. bit (green) ✓	@ \$290.00 + \$11.60 PST	301.60
1 #32674 BQ Imp. bit (green) ✓	@ \$290.00 + \$11.60 PST	301.60
1 #95547 BQ 75 series bit	@ \$548.15 + \$21.92 PST	570.07
1 pail Alcomer ✓	@ \$200.20 + \$ 8.00 PST + 10%	229.02
		<u>3,488.89</u> ✓

1, 2

ACADIA DRILLING INC.
 Calculations
 January 15 to January 31, /81 Billing

WAITING TIME	Rig and 2 Men (\$64.00 /Hr.)	Extra Labour (\$21.00 /Hr.)	
<u>Hole # K-81-1</u>			
Jan. 15 - Move set up		40 ✓	\$ 840.00
16 - Move set up		30 ✓	630.00
18 - Reaming	5 ✓		320.00
19 - Reaming	5 ✓		320.00
20 - Reaming	2 ✓		128.00
20 - Move set up		16 ✓	336.00
	12	86	2,574.00

<u>Hole # K-81-2</u>			
Jan. 21 - Move set up		16 ✓	336.00
22 - Move set up		12 ✓	252.00
		28	588.00

<u>Hole # K-81-3</u>			
Jan. 24 - Condition hole	3 ✓		192.00
25 - Reaming	6 ✓		384.00
27 - Move set up		20	420.00
	9	20	996.00

<u>Hole # 6443</u>			
Jan. 28 - Move		33 ✓	693.00
29 - Move set up		38 ✓	798.00
30 - Reaming	5 ✓		320.00
30 - Install water line		12 ✓	252.00
30 - Travel time		4 ✓	84.00
31 - Reaming	1 ✓		64.00
31 - Travel time		4 ✓	84.00
	6	91	2,295.00
	27	225	\$ 6,453.00

OTHER

<u>Hole # K-81-1</u>			
(7 shifts) Water Truck	(3 1/2 shift days @ \$450.00)		\$ 1,575.00 ✓
Mobilization Fee	(5 X \$1,200.00)		600.00 ✓
			2,175.00

<u>Hole # K-81-2</u>			
(3 shifts) Water Truck	(1 1/2 shift days @ \$450.00)		675.00 ✓

<u>Hole # K-81-3</u>			
(8 shifts) Water Truck	(4 shift days @ \$450.00)		1,800.00 ✓
11 Truck hours @ \$48.00 per hour.			528.00 ✓
8 + 3 on Jan 27 & 28 that on 27 th should be for job K-81-3			2,328.00
			\$ 5,175.00

Diamond Drill Geological Log



QUARTZITE SAMPLES FOR CHEM ANALYSES

Objective: _____ Sampled: _____

Logged By: _____ Date: _____ Composites: _____

Block: _____ Sect.: _____ Place: _____ App. Bear: _____ App.: Dip.: _____ Length: _____

From To Discard: Reason: **SAMPLE INTERVALS, NUMBERS, COMPOSITE GROUPINGS FOR ASSAY.**

From	To	Discard:	Reason:	From	To	LENGTH	SAMPLE No.
K-81-1 SAMPLE No.							
3.5m	8.25m	4.75m	1951 } SEPARATE BQ				
8.25m	13.25m	5.0m	1952 } COMPOSITE NQ				
13.25m	18.25m	5.0m	1953 } COMPOSITE NQ				
18.25m	23.25m	5.0m	1954 } COMPOSITE NQ				
23.25m	28.25m	5.0m	1955 } COMPOSITE NQ	4.55	9.55	5.0	1968
28.25m	33.25m	5.0m	1956 } COMPOSITE NQ	9.55	14.55	5.0	1969
33.25m	38.25m	5.0m	1957 } COMPOSITE NQ	14.55	19.55	5.0	1970
38.25m	43.25m	5.0m	1967 } COMPOSITE NQ	24.55	29.55	5.0	
43.25m	49.38m	6.13m	1958 } COMPOSITE NQ	19.55	24.55	5.0	1971
				24.55	29.55	5.0	1972
				29.55	34.55	5.0	1973
K-81-2							
3.05m	8.05m	5.0m	1959 } COMPOSITE NQ	34.55	39.55	5.0	1974
8.05m	13.05m	5.0m	1960 } COMPOSITE NQ	39.55	45.70	6.15m	1975
13.05m	18.05m	5.0m	1961 } COMPOSITE NQ				
18.05m	23.05m	5.0m	1962 } COMPOSITE NQ	45.70	50.70	5.0m	1926
23.05m	28.05m	5.0m	1963 } COMPOSITE NQ	50.7	55.7	5.0	1927
28.05m	33.05m	5.0m	1964 } COMPOSITE NQ	55.7	61.26	5.56	1928
33.05m	38.05m	5.0m	1965 } COMPOSITE NQ				
38.05m	43.28m	5.23m	1966 } COMPOSITE NQ				

Core Size _____
 Hole No. K-81-1
 K-81-2
 K-81-3
 Page _____

MG FEASIBILITY
(Kootenay Quartzite)

Feb.16,1981
Page 1

V81-0053R

Component (Element)	Composite:R81-299 FIELD NO. → 1951 - 4.75 m			Component (Element)	Composite:R81-331 A and B FIELD NO. → 1952-1955 - 20m		
	Composite (A)	Duplicate Com. (B)	Replicate Analysis		Composite (A)	Duplicate Com. (B)	Replicate Analysis
1. SiO ₂ %	99.01			1.SiO ₂ %	98.97	98.69	
2. Al ₂ O ₃ %	0.44			2.Al ₂ O ₃ %	0.42	0.47	
3. Fe ₂ O ₃ %	0.25			3.Fe ₂ O ₃ %	0.14	0.17	
4. CaO %	0.029			4.Cao %	0.018	0.018	
5. MgO %	0.022			5.MgO %	0.014	0.014	
6. S(total) %	0.024			6.S(total) %	0.046	0.049	
7. P %	0.006			7.P %	0.005	0.005	
8. L.O.I. %	0.26			8.L.O.I %	0.21	0.21	
9. As ppm	2			9.As ppm	2	4	
10. Moisture %	<0.01			10.Moisture %	<0.01	0.02	
Total %	100.041			Total	99.823	99.626	

11

Component (Element)	Composite: R81-332 FIELD NO. → 1956, 57, 67, 58 - 21.13 m			Component (Element)	Composite: R81-333 FIELD NO. → 1959-1962 -20 m		
	Composite (A)	Duplicate Com. (B)	Replicate Analysis		Composite (A)	Duplicate Com. (B)	Replicate Analysis
1. SiO ₂ %	99.22		99.46	1. SiO ₂ %	99.24		
2. Al ₂ O ₃ %	0.25		0.24	2. Al ₂ O ₃ %	0.32		
3. Fe ₂ O ₃ %	0.10		0.10	3. Fe ₂ O ₃ %	0.27		
4. CaO %	0.010		0.011	4. CaO %	0.013		
5. MgO %	0.007		0.009	5. MgO %	0.008		
5. S(total) %	0.010		0.010	6. S(total) %	0.049		
7. P %	0.006		0.006	7. P %	0.006		
8. L.O.I. %	0.20		0.20	8. L.O.I. %	0.26		
9. As ppm	2		2	9. As ppm	3		
10. Moisture %	<0.01		<0.01	10. Moisture %	<0.01		
Total %	99.803		100.036	Total %	100.166		

Component (Element)	Composite: R81-334 FIELD NO. → 1963-1966 - 20-23 m			Component (Element)	Composite: R81-335 A and B FIELD NO. → 1968-1971 - 20m		
	Composite (A)	Duplicate Com. (B)	Replicate Analysis		Composite (A)	Duplicate Com. (B)	Replicate Analysis
. SiO ₂ %	99.28		98.96	1. SiO ₂ %	97.48	97.35	
. Al ₂ O ₃ %	0.36		0.37	2. Al ₂ O ₃ %	0.47	0.53	
. Fe ₂ O ₃ %	0.17		0.18	3. Fe ₂ O ₃ %	0.44	0.41	
. CaO %	0.012		0.012	4. CaO %	0.32	0.32	
. MgO %	0.008		0.009	5. MgO %	0.22	0.22	
. S(total) %	0.032		0.033	6. S(total) %	0.011	0.011	
. P %	0.006		0.006	7. P %	0.007	0.006	
. L.O.I. %	0.17		0.17	8. L.O.I. %	0.64	0.51	
. As ppm	6		6	9. As ppm	8	12	
0. Moisture %	<0.01		<0.01	10. Moisture %	<0.01	0.01	
Total %	100.038		99.740	Total %	99.588	99.357	

Component (Element)	Composite; R81-336 FIELD NO. → 1972-1975 - 21.15 m			Component (Element)	Composite; R81-337 FIELD NO. → 1926-1928 - 15.6 m		
	Composite (A)	Duplicate Com. (B)	Replicate Analysis		Composite (A)	Duplicate Com. (B)	Replicate Analysis
. SiO ₂ %	97.27			1. SiO ₂ %	98.50		98.27
. Al ₂ O ₃ %	0.51			2. Al ₂ O ₃ %	0.64		0.65
. Fe ₂ O ₃ %	0.28			3. Fe ₂ O ₃ %	0.24		0.24
. CaO %	0.57			4. CaO %	0.021		0.018
. MgO	0.43			5. MgO %	0.018		0.016
. S(total) %	0.010			6. S(total) %	0.017		0.018
. P %	0.006			7. P %	0.007		0.007
. L.O.I. %	1.06			8. L.O.I. %	0.30		0.29
. As ppm	2			9. As ppm	4		4
0. Moisture %	<0.01			10. Moisture %	<0.01		0.01
Total %	100.136			Total %	99.742		99.509

Component (Element)	Composite: R81-338 A and B FIELD NO. → 1929-1932 - 20m					
	Composite (A)	Duplicate Com. (B)	Replicate Analysis			
1. SiO ₂ %	99.06	98? 99.89				
2. Al ₂ O ₃ %	0.29	0.30				
3. Fe ₂ O ₃ %	0.26	0.26				
4. CaO %	0.013	0.014				
5. MgO %	0.009	0.009				
6. S(total) %	0.052	0.052				
7. P %	0.006	0.006				
8. L.O.I. %	0.23	0.24				
9. As ppm	6	6				
10. Moisture %	<0.01	<0.01				
Total %	99.920	99.771				