Original geologic core logs, sample records and corresponding assay logs for the Arctic Prospect of Northern Alaska; holes no. DH-1, DH-2, DH-3, DH-4, DH-5, DH-7 and DH-8

Received January 2009

Total of 97 pages in report

Alaska Geologic Materials Center Data Report No. 358

Arctic Core at AGMC

A-1, AR-01 (2 boxes)
- 0- 38’ (missing 38- 107’ TD = 107)

A-2, AR-02 (9 boxes)
- 195- 265’, 285- 308’ (TD = 308’) (missing 0-195’ and sulfide zone 265-285’)

A-3, AR-03 (7 boxes)
- 263- 312’, 322-336’ (TD = 600’) (missing 0-263’, sulfide zone 312-322’, and 336-600’)

A-4, AR-04 (5 boxes)
- 117- 139’, 169- 205’ (TD = 285’) (missing 0-117’, sulfide zone 139 to 169’, and 205- 285’)

A-5, AR-05 (5 boxes)
- 325- 347’, 387-407’ (TD = 417’) (missing 0-325’, sulfide zone 347- 387’, and 407-417’)

A-7, AR-07 (18 boxes)
- 248- 408’, 448- 466’ (TD = 466) (missing 0- 248’ and sulfide zone 408- 448’)

A-8, AR-08 (7 boxes)
- 99- 122’, 137- 177’ (TD =177) (missing 0- 99’ and sulfide zone 122- 137’)

PROJECT: Ruby Creek, Alaska Hole No. A-1 Interval 80 To 105 Collar Elev. 2992 Inclination VERT. Bearing Logger A. Johnson Date Aug/67 Sheet No. 2 of 2

GRAPHIC LOG | ROCKS | CLASTS | FILLINGS | ALTERATION | MINERALIZATION

Graphic Log 1" = 10' — Copper % .5 1.0 1.5 2.0 2.5 3.0

ROCKS: Inclination, Composition, Color, Grain Size, Composition, Color, Grain Size, Composition, Color, Grain Size, Composition, Color, Grain Size, Access, Fossils, Misc. Feat.

CLASTS: %, Color, Grain Size, Shape, Size, Type, Resol

FILLINGS: %, Calcite, Dolomite, Quartz, Other, Color, Grain Size, Spec. Features, Width

ALTERATION: Calcit., Dolomit., Oxidation, Porosity, Limestone, Dolomite, Argillite, Replacement, Rexlization, Other, Type

MINERALIZATION: %, E. Pyrite, Pyrite, Cpy., Bornite, Tnt., Chalcocite, Sphal., Galena, Pyrrh., Chalcocite C., Bornite C., CuCo3, Limestone, Dolomite, Lime.-Dol., Dol.-Clast, Phyllite, C. Vn., D. Vn., Q. Vn., Others, Est., Assay.

@ 76.5 · Dark Talc-Chlorite Schist, extremely talcose, noncalcareous, well developed foliation, very greasy feel

77°

@ 82.0 Same as 58.5 - Siliceous Talcose Chlorite Schist.

Same as @ 76.5

END OF HOLE @ 105'

Black Graphitic Phyllite. (734½)

Quartzose Talc Muscovite Schist. (735½ / 737)

Talcose Muscovite Schist. (736)

Calcareous Talcose Chloritic Schist. (739)

Dark Green Talc Chlorite Schist. (738)

Quartzose Talc Chlorite Schist. 738½ / 737

PROJECT: Ruby Creek, Alaska Hole No. A-1 Interval 0 To 80 Collar Elev. 2992 Inclination VERT. Bearing Logger A. Johnson Date Aug/67 Sheet No. 1 of 2

GRAPHIC LOG | ROCKS | CLASTS | FILLINGS | ALTERATION | MINERALIZATION

Graphic Log 1"=10' — Copper % .5 1.0 1.5 2.0 2.5 3.0

Rocks columns: Inclination, Composition, Color, Grain Size, Composition, Color, Grain Size, Composition, Color, Grain Size, Composition, Color, Grain Size, Access, Fossils, Misc. Feat.

Clasts columns: %, Color, Grain Size, Shape, Size, Type, Resol

Fillings columns: %, Calcite, Dolomite, Quartz, Other, Color, Grain Size, Spec. Features, Width

Alteration columns: Calcit., Dolomit., Oxidation, Porosity, Limestone, Dolomite, Argillite, Replacement, Rexlization, Other, Type

Mineralization columns: %, E. Pyrite, Pyrite, Cpy., Bornite, Tnt., Chalcocite, Sphal., Galena, Pyrrh., Chalcocite C., Bornite C., $CuCo_3$, Limestone, Dolomite, Lime.-Dol., Dol.-Clast, Phyllite, C. Vn., D. Vn., Q. Vn., Others, Est., Assay.

Rocks (0–27'):

80° — Quartzose Black-graphitic Phyllite., dark colour and prominent sheen along foliation suggest carbonaceous material. Granular quartz. material scattered throughout core and locally forms thin (<.01") lens-like "augens" (meta-volcanic, sulphur rich carbonaceous muds?)

0–27' (6' of core) "22% Recovery"

Alteration: ✓ (Oxidation) throughout core after pyritic material and in some sections produces punky appearance.

Mineralization: 3-7 — Pyrite ✓ — Cpy. tr. — granular py., often euhedral, scattered through core, grain clusters forms scattered "augens" along foliation. – Sulphides appear completely recrystallized. — Est. tr.

Rocks (38.5'–67'):

@ 38.5' Quartzose Talc Muscovite Schist. Granular quartz, irregular foliation

@ 41.0 Talcose Muscovite Schist, less quartz than above, better developed but highly irregular foliation.

@ 43.5 Copper Zone in Talc-Mica Schist.

@ 47.8' Talcose-Chlorite Schist. - Strongly calcareous. very soapy feel, blotchy appearance caused by calcareous material.

@ 55.0 Dark highly talcose Chloritic Schist.

@ 57.0 Same as 47.8'

72° — @ 58.5 Similar to above but becoming more siliceous. well developed, regular foliation.

@ 67 Same as @ 47.8, spotted Chloritic-Talc Schist.

75°

Fillings: 1-3 ✓ (Calcite) clusters of calcareous material throughout core

Alteration: ✓ (Oxidation) intense oxidation & leaching of pyritic material

pyrite forms as irregular to euhedral grains and clusters.

Mineralization:

%	Pyrite	Cpy.	Sphal.	Galena	Remarks	Est.
1-3	✓	✓				0.5
	✓	✓	✓		irregular knots & clusters of cpy	
7-9					grains squeezed into foliation. Py	3-5
30-50	✓	✓	✓	✓	grains generally euhedral & dissem through core. (43.5–47.8)	9-11
1-3	✓	✓			→ Massive Cu-Zn section. Massive cpy band (44.5–45.5) ~ 65% Cpy (22% Cu) coarse grained material	
					Cpy (45.5–47.8) forms irregular masses in intensely foliated schist. and as matrix for euhedral py. grains	0.1

<1 ✓ 0.5 Scattered py throughout with occasional [illegible] — tr.

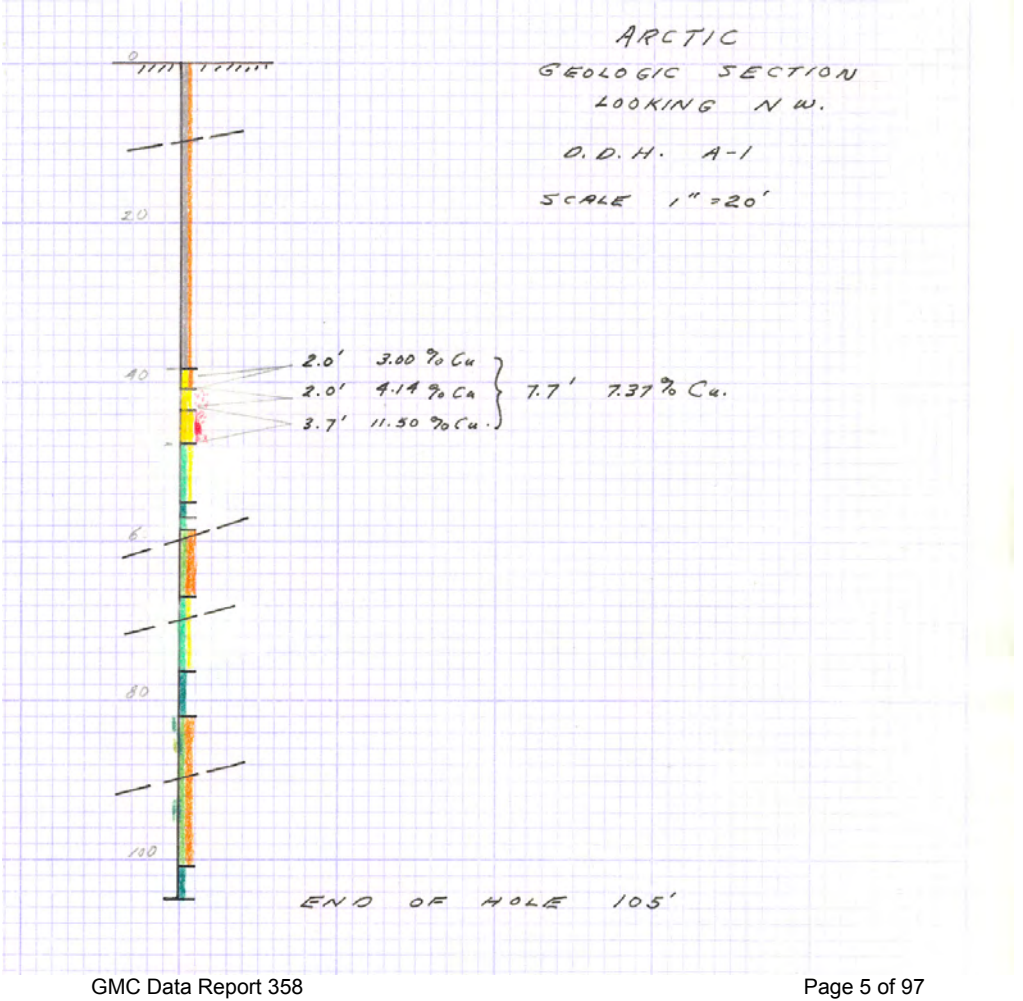
PROJECT 003-00-0013 - Arctic
HOLE NO. DH - 1

ASSAY LOG

* Union
KCC

SAMPLE	SAMPLE INTERVAL			ASSAY							
NUMBER	FROM	TO	FEET	Cu	Pb*	Zn	Ag	Au*			
71075	38.5	39.5	1	0.63		0.05	6.26	0.125			
71076	39.5	41.5	2	3.00		0.06	0.57				
				2.96*		1.00*	0.6*	0.010			
71077	41.5	43.5	2	4.14		38.56	1.27				
				4.25*		3.76*	1.2*	0.025			
71078	43.5	47.2	3.7	11.50		6.13	2.57				
				11.81*	1.2	11.68*	3.2*	0.030			
71079	47.2	50.0	2.8	0.06		0.10	0.17				
71080	50.0	52.0	2	0.02		0.02	0.13				
71081	52.0	57.0	5	0.06		0.07	0.17				
71082	57.0	61.0	4	0.03		0.01	0.13				

BC 12-66


ARCTIC
GEOLOGIC SECTION
LOOKING N W.
O. D. H. A-1
SCALE 1" = 20'
0
20
40
60
80
100
2.0' 3.00 % Cu
2.0' 4.14 % Cu
3.7' 11.50 % Cu.
7.7' 7.37 % Cu.
END OF HOLE 105'

NORTHWEST DISTRICT — NAME ARCTIC

Summary Drill Hole Log — CODE 05-012-0073

Purpose of hole TEST DOWNDIP from cupif. outcropping zone

El – 2990

DRILL HOLE NO. 1 PAGE 1 OF 1

BEARING VERTICAL DIP

LOCATION

TOTAL DEPTH 105, BY CGB

START 8/2/67 COMPLETED 8/3/67

Scale: 1" = 20

Est. of final depth 105

Depth	Copper 2 4 6 8 10 12	Silver 2 4 6	Zinc 2 4 6 8 10 12	Lead 1 2 3 4	Au	Remarks
(2990) 0						Graphitic unit.
(10°)						
(2970) 20						
(2950) 40						TAN CLIFFS T Musc. schist Cp, Py, Sp, Ga
~47.5						Green Bluffs Chlorite Schist unit.
(2930) 60						
(20°)						
(2910) 80						
(25°)						
(2890) 100						
(2870) 120						
140						
160						
180						

Annotations (pencil): red gd. talc schist (0–40); Dick green bluffs chlorite, deep green schist ~~[illegible]~~ Silver loc. (47.5–105)

SAMPLE RECORD

El 2990

PROJECT: ARCTIC WORKING PLACE: DH-1 SAMPLER: DATE / /67

Sample Number	Location	Sample Length	True Width	Cu Assay	Cu Assay Feet	Ag Assay	Ag Assay Feet	Zn Assay	Zn Assay Feet	Au Assay	Au Assay Feet	Pb Assay	Pb Assay Feet	Chan. Size	Wt.	Remarks
71075	38.5-39.5	1.0		0.63		[redacted] 6.26				0.110						
71076	39.5-41.5	2.0	6.00	3.00		0.6 [redacted]	1.2	1.00 0.06	2.00	0.065						
71077	41.5-43.5	2.0	8.28	4.14		1.2 [redacted]	2.4	3.76 3.86	7.80							
71078	43.5-47.2	3.7	42.55	11.14		[redacted] 3.2 2.57	[redacted] 10.4	11.60	42.92							
71079	47.2-50.0	2.8		0.06												
71080	50.0-52.0	2.0		0.02												
71081	52.0-57.0	5.0		0.06												
71082	57.0-61.0	4.0		0.03												
	39.5-47.2 7.7 ft		Cu	7.46 %												
			Zn	6.81 %												
			Ag	2.0 oz												
	Degenhart	~~sliver~~	71075	0.78		6.40				0.110						
			71076	3.69		0.50		0.20		0.065						
			71077	4.46												
			71078	11.44		2.80		10.79								

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME _____
CODE Arctic
Purpose of hole _____

DRILL HOLE NO. 1 PAGE 1 OF 1
BEARING _____ DIP _____
LOCATION _____
TOTAL DEPTH 105', BY _____
START _____ COMPLETED _____

Scale: 1" = 50'
Est. of final depth _____

0
50'
100'
150'

← See Rigs old A-1 Log - WHAT FOR!

Typical sil musc - chlorite schist.
Homogeneous, featureless - dips ±10°

Soft - greasy chloritic schist

← Very soft micaceous - light green.
105' - Bot.

ASSAY LOG

COLLAR LOCATION: N. 9,270 E. 10,775 ELEVATION 2,990 PROJECT Arctic Date 8/5/67 Hole No. Arctic DH-1

BEARING Vertical INCLINATION: LENGTH OF HOLE: 105 ft. COMPILED BY CCB Sheet 1 of 1

DATE	SAMPLE INTERVAL FROM	TO	FEET	RECOVERY WT.	FEET	%	ASSAY SAMPLE	Au oz	Ag oz	Cu %	Zn ~~MoS2 %~~	Pb ~~WO3 %~~
	38.5	39.5	1.0				71075		6.26	0.63	0.05	
	39.5	41.5	2.0				71076		0.57	3.00	0.06	
	41.5	43.5	2.0				71077		1.27	4.14	3.86	
	43.5	47.2	3.7				71078		2.57	12.34	6.13	
DH-7												
	400 ~~403~~	405	5				71151		0.8	0.49	Nil	
	405	409	4				52		0.5	0.49	Nil	
	409	411	2				53		0.5	0.20	0.18	
	411	414	3				54		1.2	2.29	4.15	
	414	416	2				55		0.8	1.08	0.01	
	416	419.5	3.5				56		0.5	0.90	Nil	
	419.5	420.5	1.0				57		0.5	0.90	Nil	
	420.5	422	1.5				58		2.4	5.71	6.64	
	422	425	3				59		3.0	4.33	9.16	
	425	427	2				71160		2.4	5.21	15.9	
	427	430	3				61		2.1	8.54	11.37	
	430	434	4				62		2.6	4.36	10.4	
	434	438	4				63		2.8	5.01	10.4	
	438	442	4				64		2.8	7.81	8.51	
	442	444.5	2.5				65		2.8	2.59	11.4	
	444.5	446.5	2.0				66		0.6	0.15	0.13	
	446.5	451.7	5.2				67		0.6	0.05	Nil	
	451.7	452.7	1.0				68		0.7	2.10	0.39	
	452.7	458	5.3				71169		0.6	0.05	0.16	

Au	Ag Oz	Cu %	Zn ~~MoS2~~ %	WO3
	2.24/8.7 ft	6.96/8.7 ft.	3.51/8.7 ft	
	1.7/7.7 ft.	7.78/7.7 ft.	3.96/7.7 ft.	
	3.60	6.87	12.45	
	1.60	2.16	0.02	
	1.75	3.15	–	
	0.5	0.90	–	
	3.60 (2.63/21.5 ft.)	8.57 (5.81/21.5 ft)	9.96 (10.26/21.5 ft)	
	9.00 (2.64/24 ft)	12.99 (5.98/24 ft)	27.48 (10.37/24')	
	9.80	10.92	31.80	
	6.30	35.62	34.11	
	10.40	17.44	41.60	
	11.20	20.04	41.60	
	11.20	30.04	34.04	
	7.00	6.48	28.50	
	1.20	0.20	0.26	
	3.12			

9,282 N
10,615 E
2,990 El.

PROJECT Arctic 05-00-0013
HO. NO. DH - 1

ASSAY LOG

* Union
KCC

(*) Depth at this elevation

SAMPLE NUMBER	SAMPLE INTERVAL FROM	TO	FEET	Oz/Ton ASSAY Cu	Ag	Zn	Au*	Pb *
71075	38.5	39.5	1.0	0.63	6.26	0.05	0.125	
71076	2950.5(*)			2.96*	0.6*	1.00*	0.010	nil
	39.5	41.5	2.0	3.00	0.57	0.06		
71077	41.5	43.5	2.0	4.25*	1.2*	3.76*	0.025	nil
				4.14	1.27	38.56		
71078	43.5	2842(*)8		11.81*	3.2*	11.68*	0.030	1.2
		47.2	3.7	11.50	2.57	6.13		
71079	47.2	50.0	2.8	0.06	0.17	0.10		
71080	50.0	52.0	2.0	0.02	0.13	0.02		
71081	52.0	57.0	5.0	0.06	0.17	0.07		
71082	57.0	61.0	4.0	0.03	0.13	0.01		

BC 12-66

PROJECT ARCTIC

HOLE NO. DH-1

ASSAY LOG

KCC Assay Report

SAMPLE NUMBER	SAMPLE INTERVAL FROM	TO	FEET	ASSAY Cu	Ag	Zn	Au	Pb			
71075	38.5	39.5	1.0	0.63	6.26	0.05					
71076	39.5	41.5	2.0	3.00	0.57	0.06					
71077	41.5	43.5	2.0	4.14	1.27	3.86					
71078	43.5	47.2	3.7	12.34	2.57	6.13					
71079	47.2	50.0	2.8	0.06	0.17	0.10					
71080	50.0	52.0	2.0	0.02	0.13	0.02					
71081	52.0	57.0	5.0	0.06	0.17	0.07					
71082	57.0	61.0	4.0	0.03	0.13	0.01					
71075				—			.125				
76				2.96	0.6	1.00	.010	=			
77				4.25	1.2	3.76	.025	—			
78				11.81	3.2	11.60	.030	1.2			
79											
71080											
81											
82											

Union

BC 12-66

PROJECT: ~~Ruby~~ Arctic Creek, Alaska | Hole No. A-2 | Interval 0 | To 80 | Collar Elev. 3076 | Inclination VERT. | Bearing | Logger A. Johnson | Date AUG. 1967 | Sheet No. 1 of 4

GRAPHIC LOG | ROCKS | CLASTS | FILLINGS | ALTERATION | MINERALIZATION

Graphic Log 1″=10′ | Copper % .5 1.0 1.5 2.0 2.5 3.0

Depth scale: 0, 10, 20, 30, 40, 50, 60, 70

0–5: OVERBURDEN

80°

Sheared quartz pebble Congl. - irregular white siliceous plotches in fine gr. chloritic schist matrix. No apparent gradation in grain size of siliceous plotches. Locally sections become chloritic rich with the exclusion of rounded pebbles. Poorly developed foliation with weak augen-like features around pebbles.

Clasts: 75 % | white | Sub | up to ½″ diam. | qtz. pebbles

75°

70° @ 50.0
Similar to above but with decreasing pebble fragments and increasing siliceous chloritic matrix. Foliation better developed. becoming weakly calcareous

Clasts: 15%

Fillings: <1 % | Calcite ✓ | scattered clusters of calcareous material through core.

@ 54.0
Same as 5′–50′

88

PROJECT: Ruby Creek, Alaska Hole No. A-2 Interval 80 To 160 Collar Elev. 3076 Inclination VERT. Bearing Logger A. JOHNSON Date AUG. 1967 Sheet No. 3 of 9

GRAPHIC LOG

Graphic Log 1"=10'

Copper % .5 1.0 1.5 2.0 2.5 3.0

ROCKS

Inclination | Composition | Color | Grain Size | Composition | Color | Grain Size | Composition | Color | Grain Size | Composition | Color | Grain Size | Access | Fossils | Misc. Feat.

80 @ 80.0 Siliceous - Muscovite Schist (meta sediment, clayey ss.) fine to med. gr. granular, well developed foliation.

77°

@ 115. Quartzose - Muscovite Schist. 70-80% granular quartz forming irregular blotches in a sugary microgeous. Pale yellowish green colour. Similar to 5'-50' but lighter colour and no well-defined pebble outlines.

88

72°

@ 130.0 Same as above but with very light reddish brown siliceous blotches mixed with clean white quartz blotches (probably weak oxidation)

@ 137.0 Similar to 5'-50' - Sheared chloritic siliceous pebble conglomerate mixed with clusters of sugary quartz material with fine grained microgeous matrix. poorly developed foliation.

72°

71°

70°

CLASTS

% | Color | Grain Size | Shape | Size | Type | Resol

FILLINGS

% | Calcite | Dolomite | Quartz | Other | Color | Grain Size | Spec. Features | Width

ALTERATION

Calcit. | Dolomit. | Oxidation | Porosity | Limestone | Dolomite | Argillite | Replacement | Rexlization | Other | Type

✓ Leached pits of oxidation (jarosite) throughout core after sulphide (pyrite?)

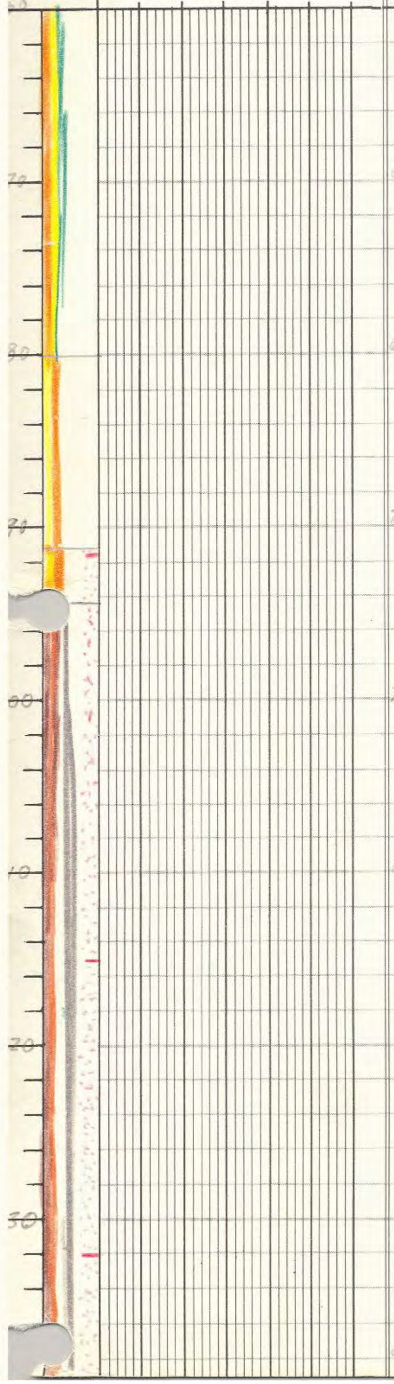
MINERALIZATION

% | E. Pyrite | Pyrite | Cpy. | Bornite | Tnt. | Chalcocite | Sphal. | Galena | Pyrrh. | Chalcocite C. | Bornite C. | CuCo. | Limestone | Dolomite | Lime-Dol. | Dol.-Clast | Phyllite | C. Vn. | D. Vn. | Q. Vn. | Others | Est. | Assay.

<1 | ✓ tr | ✓ | Scattered sulphide grains & clusters through section.

PROJECT: ~~Ruby~~ Arctic Creek, Alaska | Hole No. A-2 | Interval 160 To 240 | Collar Elev. 3076 | Inclination VERT. | Bearing | Logger A. JOHNSON | Date AUG. 1967 | Sheet No. 3 of (4)

GRAPHIC LOG	ROCKS	CLASTS	FILLINGS	ALTERATION	MINERALIZATION
Graphic Log 1″=10′; Copper % .5 1.0 1.5 2.0 2.5 3.0	Inclination, Composition, Color, Grain Size, Composition, Color, Grain Size, Composition, Color, Grain Size, Composition, Color, Grain Size, Access, Fossils, Misc. Feat.	%, Color, Grain Size, Shape, Size, Type, Resol	%, Calcite, Dolomite, Quartz, Other, Color, Grain Size, Spec. Features, Width	Calcit., Dolomit., Oxidation, Porosity, Limestone, Dolomite, Argillite, Replacement, Rexlization, Other, Type	%, E. Pyrite, Pyrite, Cpy., Bornite, Tnt., Chalcocite, Sphal., Galena, Pyrrh., Chalcocite C., Bornite C., CuCo₃, Limestone, Dolomite, Lime.-Dol., Dol.-Clast, Phyllite, C. Vn., D. Vn., Q. Vn., Others, Est., Assay.



Inclination: 80°

Inclination: 65°

@ 180′, Siliceous Muscovite Schist, Sugary texture of quartz with micaceous matrix. well developed foliation.

Inclination: 75°

@ 191 Same as above but becoming Talcose

Mineralization: <1 — Pyrite ✓, Cpy. ✓ tr. — Pyrrh. ✓ — Scattered sulphide grains & occasional cluster of grains along foliation.

@ 194.5 Quartzose Graphitic Biotite Schist; Dark grey due possibly to carbonaceous material, may also be caused by finely dissem pyritic material locally laminated where sugary quartz forms irregular bands. Overall a highly siliceous rock.

Inclination: 77.

Alteration: Oxidation ✓ produces pitted and punky rock.

Mineralization: 1-3 — Pyrite ✓, Cpy. ✓ — Pyrrh. ✓ — @191.5 — Est. .05

Inclination: 67

Mineralization: 3-7 — Pyrite ✓, Cpy. ✓ — @ 215.0 - 0.01′ of cpy with minor py. (0.01′ — Est. 5-7)

Mineralization: 1-3

@ 220′ Same as above but coarser grained.

Mineralization: 2-5 — Pyrite ✓, Cpy. ✓ tr. — Pyrrh. ✓ — same as above but increasing pyrite as coarse (0.1″) granular clusters forming augens rimmed by quartz. — Est. tr.

Mineralization: 5-7 — @ 232 0.01′ of 30% sulphide. — Est. 0.5

Mineralization: 2-5 — Pyrite ✓, Cpy. ✓ — Pyrrh. ✓ — coarse gr. recrystallized py throughout. — Est. tr.

Inclination: 83°

PROJECT: Ruby Creek, Alaska Hole No. A-2 Interval 240 To 320 Collar Elev. 3076 Inclination VERT. Bearing Logger A. JOHNSON Date AUG. 1967 Sheet No. 4 of 10

GRAPHIC LOG

Graphic Log 1"=10'

Copper % .5 1.0 1.5 2.0 2.5 3.0

ROCKS

Inclination	Composition	Color	Grain Size	Composition	Color	Grain Size	Composition	Color	Grain Size	Composition	Color	Grain Size	Access	Fossils	Misc. Feat.
		?													
77°		@ 290' similar to above but becoming more siliceous.													
70°		@ 297' Quartzose Chloritic schist, weak development of talc along foliation. 60-80% quartz, locally foliation faulty.													

END OF HOLE @ 303'

CLASTS

%	Color	Grain Size	Shape	Size	Type	Resol

FILLINGS

%	Calcite	Dolomite	Quartz	Other	Color	Grain Size	Spec. Features	Width

ALTERATION

Calcit.	Dolomit.	Oxidation	Porosity	Limestone	Dolomite	Argillite	Replacement	Rexlization	Other	Type

MINERALIZATION

%	E. Pyrite	Pyrite	Cpy.	Bornite	Tnt.	Chalcocite	Sphal.	Galena	Pyrrh.	Chalcocite C.	Bornite C.	$CuCo_3$	Limestone	Dolomite	Lime.-Dol.	Dol.-Clast	Phyllite	C. Vn.	D. Vn.	Q. Vn.	Others		Est.	Assay.
<1		J																			stained grains			

05-01-0013

To office

PROJECT ARCTIC

HOLE NO. DH-2

ASSAY LOG

KCC assay Report

SAMPLE NUMBER	SAMPLE INTERVAL FROM	TO	FEET	ASSAY Cu	Ag	Zn	Au	Pb			
71255	246.5	250	3.5	2.14	1.93	4.30					
71256	250	252	2	0.78	0.72	0.13					
71257	252	255	3	0.14	0.50	0.09					
71258	265.3	267.3	2	12.81	8.55	16.37					
71259	267.3	269.3	2	12.46	9.46	14.48					
71260	269.3	271.3	2	16.75	12.01	13.21					
71261	271.3	273.3	2	5.76	5.31	7.27					
71262	273.3	275.3	2	8.32	10.98	12.85					
71263	275.3	278	2.7	2.96	0.72	0.10					
			Cu		Ag	Zn	Au	Pb			
71255			2.12	[redacted]	1.1	3.96	0.020	0.8			
256				[redacted]							
257				[redacted]							
258			17.64	[redacted]	6.6	14.95	0.035	1.7			
259			17.59	[redacted]	7.4	11.68	0.025	1.8			
260			16.53		9.8	11.59	0.135	1.4			
261			5.64		4.3	5.69	0.035	1.3			
262			8.27		9.0	9.76	0.075	1.3			
263											

Union assay

BC 12-66

PROJECT 003-00-0013 - Arctic

HOLE NO. DH - 2

ASSAY LOG

* Union
KCC

SAMPLE	SAMPLE INTERVAL			ASSAY							
NUMBER	FROM	TO	FEET	Cu	Pb *	Zn	Ag	Au *			
71255	246.5	250	3.5	2.14		4.30	1.93				
				2.12*	0.8*	3.96*	1.1*	0.020*			
71256	250	252	2	0.78		0.13	0.72				
71257	252	255	3	0.14		0.09	0.50				
71258	265.3	267.3	2	17.81		16.37	8.55				
				17.64*	1.7*	14.95*	6.6*	0.035*			
71259	267.3	269.3	2	17.46		14.48	9.46				
				17.59*	1.8*	11.68*	7.4*	0.025*			
71260	269.3	271.3	2	16.75		13.71	12.01				
				16.53*	1.4*	11.59*	9.8*	0.135*			
71261	271.3	273.3	2	5.76		7.27	5.31				
				5.64*	1.3*	5.69*	4.3*	0.035*			
71262	273.3	275.3	2	8.32		12.85	10.98				
				8.27*	1.3*	9.36*	9.0*	0.075*			
71263	275.3	278	2.7	0.96		0.10	0.72				

BC 12-66

El 3075

SAMPLE RECORD

PROJECT: ARCTIC **WORKING PLACE:** DH-2 **SAMPLER:** **DATE** / /67

Sample Number	Degenhart ▭ Location	Sample Length	True Width	Cu Assay	Cu Assay Feet	Ag Assay	Ag Assay Feet	Zn Assay	Zn Assay Feet	Au Assay	Au Assay Feet	Pb Assay	Pb Assay Feet	Chan. Size	Wt.	Remarks
71255	246.5-250	3.5	7.45	2.12 2.14	Degenhart	1.1 1.93	5.25	3.96 4.30	14.45	0.020		0.8				
71256	250 - 252	2	1.56	0.78		0.72	1.44	0.13	0.26							
71257	252 - 255	3	0.42	0.14		0.50	1.50	0.09	0.27							
71258	265.3- 267.3 0.410	2	35.44	17.64 17.81		6.6 8.55	15.2 ~~7.6~~	14.95 16.37	31.32	0.035		1.7				
71259	267.3-269.3 ~~0.0416~~ Au ~~0.041As ft~~	2	35.04	17.59 17.46		7.4 9.46	8.4	11.68 14.48	13.08	0.025		1.8				
71260	269.3-271.3 Pb 15.0 As ft	2	33.28 ~~16.6~~	16.53 16.75	4.46	9.8 12.01	10.0 21.8	11.59 13.71	11.68 25.30	0.135		1.4				
71261	271.3-273.3 Zn 105.26 As ft	2	11.40	5.64 5.76		4.3 5.31	4.20 9.6	5.69 7.27	5.94 12.96	0.035		1.3				
71262	273.3 -275.3 Ag 75.0 oz ft Cu 131.74 As ft	2	16.58	8.27 8.32		9.0 10.98	9.10 20.0	9.76 12.85	22.60	0.075		1.3				
71263	275.3 - 278	2.7		0.96		0.72		0.10								

10' {
13.17 % Cu
7.5 oz Ag
10.53 % Zn
1.5 % Pb
0.041 oz Au

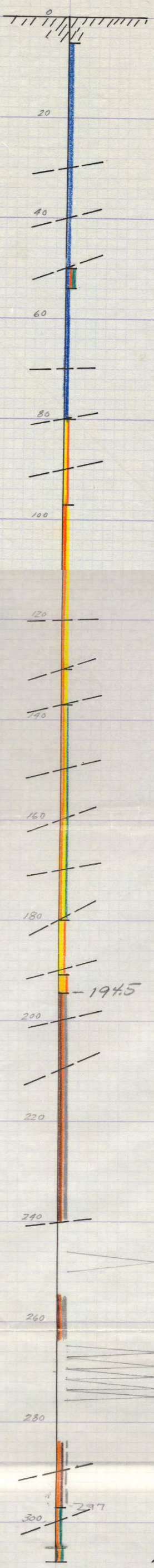
ELEVATION 3076'

ARCTIC

GEOLOGIC SECTION LOOKING N

O.O.H. A-2.

SCALE 1" = 20'



3.5' 2.14 % Cu

2.0' 17.81 % Cu
2.0' 17.46 % Cu
2.0' 16.75 % Cu.
2.0' 5.76 % Cu.
2.0' 8.32 % Cu.

6.0' 17.2 % Cu.

4.0' 7.04 % Cu.

10' 13.14 % Cu.

END OF HOLE 308'

NORTHWEST DISTRICT NAME ARCTIC
Summary Drill Hole Log CODE 05-01-0013
Purpose of hole Test continuity of mineralization in DH-1 along strike, and slightly down-dip to north.

DRILL HOLE NO. A-2 PAGE 1 OF 2
BEARING Vertical DIP
LOCATION
TOTAL DEPTH 308', BY CGB
START 8/4/67 COMPLETED 8/7/67

El 3075

Scale: 1" = 20 Est. of final depth

(3075) 0	Cu 2 4 6 8 10 12	Mo 2 4 6	Zn 2 4 6 8 10 12	Au	Pb 1 2 3 4	REMARKS
(3055) 20						Silicified meta conglomerate
(3035) 40 (40')						
(3015) 60						
(2995) 80						Slightly siliceous muscovite schist.
(2975) 100 (10')						Siliceous Muscovite Schists
(2955) 120						
(2935) 140						Siliceous pebbly conglom. with mica.
(2915) 160						
(2895) 180						

NORTHWEST DISTRICT
Summary Drill Hole Log

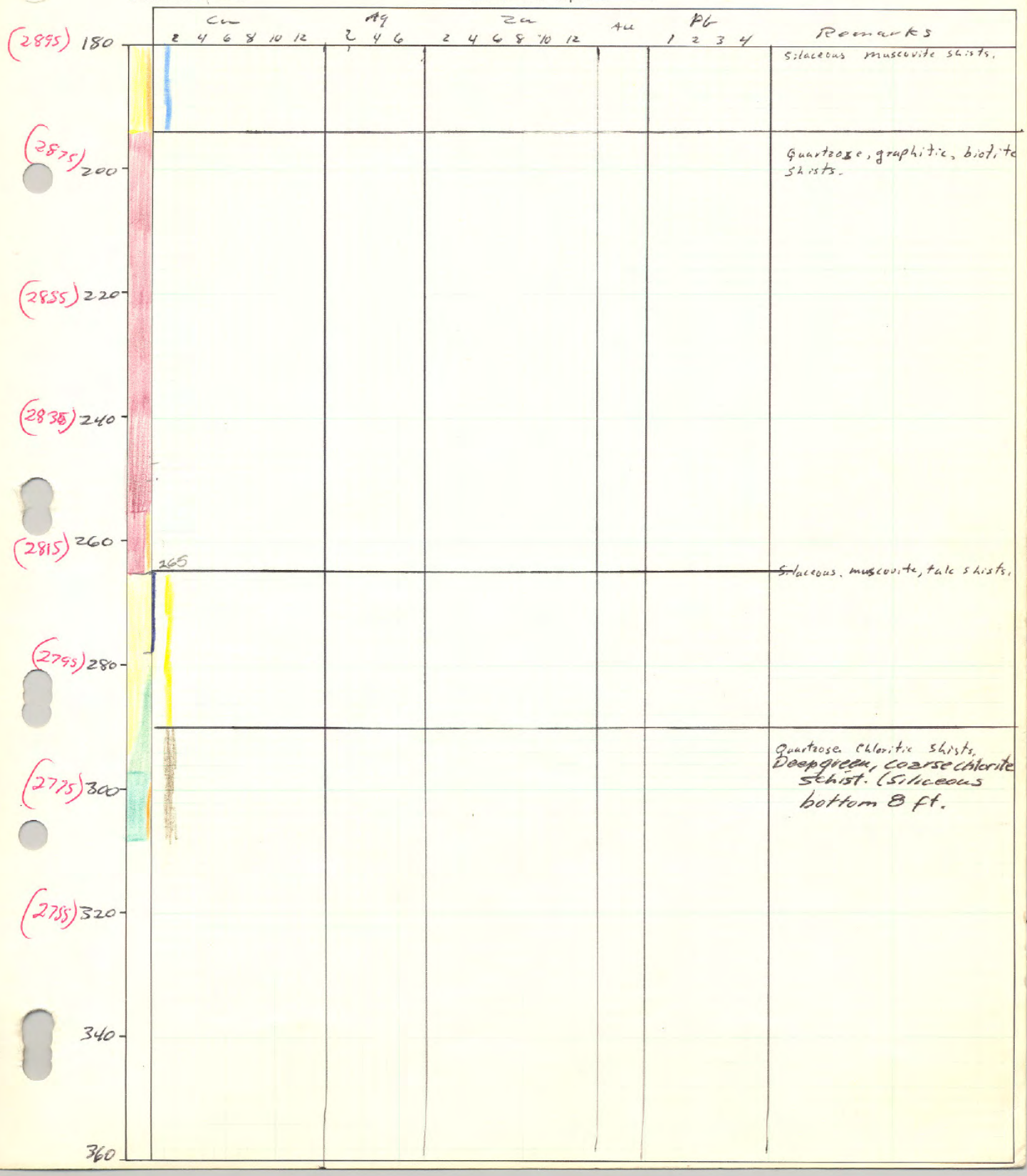
NAME ARCTIC
CODE 05-01-0013

DRILL HOLE NO. 2 PAGE 2 OF 2
BEARING VERTICAL DIP
LOCATION
TOTAL DEPTH 308, BY CGB
START COMPLETED

Purpose of hole

El 3075

Scale: 1" = 20 Est. of final depth



NORTHWEST DISTRICT
Summary Drill Hole Log

NAME Arctic
CODE
Purpose of hole

DRILL HOLE NO. A-2 PAGE 1 OF 1
BEARING DIP
LOCATION
TOTAL DEPTH , BY
START COMPLETED

Scale: 1" = 50' Est. of final depth 308'

0'

Qtz - Bleb schist ±60% white granular qtz augen in med gr. chlorite matrix.

50'

← sharp contact.
Bedded siliceous chl. - musc. schist grading into schist porphyry with ±40% sheared qtz - filled in on med gr. chl. matrix. Cleavage ≈ 15° to the bedding.

100'

cont - homo - almost like qtz. bleb schist.

150'

← sharp contact
classical sil. musc - schist ± 15° cleavage.

200'

250'

CORE - MISSING

300'

← Dunk - could be approaching B/K schist.

ASSAY LOG

COLLAR LOCATION: N.____ E.____ ELEVATION____ PROJECT ARCTIC Date____ Hole No. ARCTIC DH-2

BEARING ____ INCLINATION:____ LENGTH OF HOLE:____ COMPILED BY CGB Sheet 1 of 1

DATE	SAMPLE INTERVAL FROM	TO	FEET	RECOVERY WT.	FEET	%	SAMPLE	ASSAY Au oz	Ag oz	Cu %	Zn ~~MoS~~ %	WO_3 %
	246.5	250	3.5				712 55		1.93	2.14	4.30	
	250	252	2.0				712 56		0.72	0.28	0.13	
	255	255	3.0				712 57		0.50	0.14	0.09	
	265.3	267.3	2.0				712 58		8.55	17.81	16.37	
	267.3	269.3	2.0				712 59		9.45	17.46	14.48	
	269.3	271.3	2.0				712 60		12.01	16.75	13.71	
	271.3	273.3	2.0				712 61		5.31	5.76	7.27	
	273.3	275.3	2.0				712 62		10.98	8.32	12.85	
	278.3	278.0	2.7 / 2.12 / 10				712 63		0.72	0.96	0.10	

Au	Ag	Cu	Zn ~~MoS~~	WO_3
	4.92/21.2 ft.	6.81%/21.2 ft.	6.85%/21.2 ft	
	~~6.75~~ 6.75	~~6.75~~ 7.49	15.05	
	1.45	1.56	0.26	
	1.50	0.42	0.27	
	9.26/10 ft	13.22%/10 ft.	12.94%/10 ft	
	17.10	35.62	32.74	
	18.92	34.92	28.96	
	24.02	33.50	27.42	
	10.62	11.52	14.54	
	21.96	16.64	25.70	
	1.94	2.39	0.27	
	104.26	144.26	145.21	
	92.62	132.20	129.36	

9,588 N
10,430 E
3075 El.
*Depth at this elevation

PROJECT Arctic 05-00-0013
HOLE NO. DH - 2

ASSAY LOG

* Union
K.C.C.

SAMPLE	SAMPLE INTERVAL			Oz/Ton ASSAY							
NUMBER	FROM	TO	FEET	Cu	Ag	Zn	*Au	*Pb			
71255	246.5	250	3.5	2.12*	*1.1	*3.96	0.020	0.8			
				2.14	1.93	4.30					
71256	250	252	2	0.78	0.72	0.13					
71257	252	255	3	0.14	0.50	0.09					
71258	2809.7*	267.3	2	17.64*	*6.6	14.95*	0.035	1.7			
	265.3*			17.81	8.55	16.37					
71259	267.3	269.3	2	17.59*	*7.4	11.68*	0.025	1.8			
				17.46	9.46	14.48					
71260	269.3	271.3	2	16.53*	*9.8	11.59*	0.135	1.4			
				16.75	12.01	13.71					
71261	271.3	273.3	2	5.64*	*4.3	5.69*	0.035	1.3			
				5.76	5.31	7.27					
71262	273.3	2799.7*	2	8.27*	*9.0	9.36*	0.075	1.3			
		275.3		8.32	10.98	12.85					
71263	275.3	278	2.7	0.96	0.72	0.10					

BC 12-66

PROJECT: ~~Ruby Creek~~ ARCTIC, Alaska | Hole No. A-3 | Interval 320 | To | Collar Elev. 2985 | Inclination VERTICAL | Bearing | Logger E. JOHNSON | Date AUG. 1967 | Sheet No. 5 of 5

GRAPHIC LOG	ROCKS	CLASTS	FILLINGS	ALTERATION	MINERALIZATION

Graphic Log 1″=10′ — Copper % .5 1.0 1.5 2.0 2.5 3.0

Rocks: Inclination, Composition, Color, Grain Size, Composition, Color, Grain Size, Composition, Color, Grain Size, Composition, Color, Grain Size, Access, Fossils, Misc. Feat.

Clasts: %, Color, Grain Size, Shape, Size, Type, Resol

Fillings: %, Calcite, Dolomite, Quartz, Other, Color, Grain Size, Spec. Features, Width

Alteration: Calcit., Dolomit., Oxidation, Porosity, Limestone, Dolomite, Argillite, Replacement, Rexlization, Other, Type

Mineralization: %, E. Pyrite, Pyrite, Cpy., Bornite, Tnt., Chalcocite, Sphal., Galena, Pyrrh., Chalcocite C., Bornite C., CuCo₃, Limestone, Dolomite, Lime.-Dol., Dol.-Clast, Phyllite, C. Vn., D. Vn., Q. Vn., Others, Est., Assay.

30

65. @ 322.0 Limy Quartzose Talc Schist med. grained sugary qtz., talc well developed along foliation and some banding of talc-rich schist.
- limy material forms irregular pale creamy blotches.

40

END OF HOLE @ 336′

ARCTIC
PROJECT: ~~Ruby~~ Creek, Alaska Hole No. A-3 Interval 240 To 320 Collar Elev. 2985 Inclination VERTICAL Bearing Logger A. JOHNSON Date AUG. 1967 Sheet No. 4 of 6

GRAPHIC LOG

Graphic Log 1"=10'
Copper % .5 1.0 1.5 2.0 2.5 3.0

ROCKS

Inclination | Composition | Color | Grain Size | Composition | Color | Grain Size | Composition | Color | Grain Size | Composition | Color | Grain Size | Access | Fossils | Misc. Feat.

85

@ 250 - 1.0' of soft pyritic-graphitic clay.

Locally pyritic-quartz bands predominate.

84

85°

@ 274.3' Massive, coarse grained, limy section, similar to that @ 219.,
85° Limy Quartzose Muscovite Schist.
@ 276.5 - Same as 230.0
@ 279. Same as 274.3
@ 280.5 Same as 276.5.
@ 283.0 Same as 279.0
85° @ 284.5 Same as 276.5.

@ 299. Limy Quartzose Muscovite Schist. med. grained, granular, massive unit with poorly developed foliation. Carbonate occurs as light creamy blotches through core.

@

@ 314.5 Chloritic Talc Quartzose Schist. well developed talc particularly along foliation

CLASTS

% | Color | Grain Size | Shape | Size | Type | Resol

FILLINGS

% | Calcite | Dolomite | Quartz | Other | Color | Grain Size | Spec. Features | Width

✓ strong calcareous zone.

ALTERATION

Calcit. | Dolomit. | Oxidation | Porosity | Limestone | Dolomite | Argillite | Replacement | Rexilization | Other | Type

MINERALIZATION

% | E. Pyrite | Pyrite | Cpy. | Bornite | Tnt. | Chalcocite | Sphal. | Galena | Pyrrh. | Chalcocite C. | Bornite C. | CuCo₃ | Limestone | Dolomite | Lime.-Dol. | Dol.-Clast | Phyllite | C. Vn. | D. Vn. | Q. Vn. | Others | Est. | Assay.

1-3 | ✓ | ✓ | ✓ | total amount of sulphide decreases but cpy ≥ po. predominate. | tr.

1-2 | ✓ | ✓ | ✓ | Sulphides becoming less scattered and confined to granular bands which follow an irregular foliation.

314.8-316.2 - Gaudy cpy & sph. in strong limy section, amber coloured sph.

5-9 | ✓ | ✓ | ✓ | 23.

1-3 | ✓ | ✓ | 320.9 - 321.6 - scattered bands along foliation. | 0.5

ARCTIC
PROJECT: ~~Ruby~~ Creek, Alaska Hole No. A-3 Interval 0 To 80 Collar Elev. 2985 Inclination VERTICAL Bearing Logger A. JOHNSON Date Aug. 1967 Sheet No. 1 of 3

GRAPHIC LOG

Graphic Log 1"=10'

Copper % .5 1.0 1.5 2.0 2.5 3.0

OVERBURDEN

ROCKS

Inclination | Composition | Color | Grain Size | Composition | Color | Grain Size | Composition | Color | Grain Size | Composition | Color | Grain Size | Access | Fossils | Misc. Feat.

(sugary qtz.)

@ 24.0' Quartzose Graphitic? Phyllite, strongly pyritic, dark grey, fine grained. well developed foliation with distinct sheen on foliation surfaces.

@ 25.0 Similar to above but more quartzose. 70° and lt. grey colour. locally strongly micaceous and very fine grained. biotite, some of these biotite sections weakly chloritic.

68° @ 39.2' - 0.3' of coarse grained quartz. grains? or pebbles?

75°

73° @ 58' becoming a fine grained Quartzose Micaceous Schist., very light grey to white colour.

73°

(dirty quartzite?)

@ 74.5' Similar to above but becoming coarser grained, more quartzose, with poorly developed foliation.

CLASTS

% | Color | Grain Size | Shape | Size | Type | Resol

FILLINGS

% | Calcite | Dolomite | Quartz | Other | Color | Grain Size | Spec. Features | Width

ALTERATION

Calcit. | Dolomit. | Oxidation | Porosity | Limestone | Dolomite | Argillite | Replacement | Rexilization | Other | Type

✓ scattered throughout but very weak and most distinct around clusters of sulphide grains.

MINERALIZATION

% | E. Pyrite | Pyrite | Cpy. | Bornite | Tnt. | Chalcocite | Sphal. | Galena | Pyrrh. | Chalcocite C. | Bornite C. | $CuCo_3$ | Limestone | Dolomite | Lime.-Dol. | Dol.-Clast | Phyllite | C. Vn. | D. Vn. | Q. Vn. | Others | Est. | Assay.

<1% ✓ tr. scattered grains of recrystallized sulphide often rimmed by granular quartz & oriented along the foliation.

@ 39.2 - 0.3'
3-5 ✓ tr. clusters of fine grained pyritic material drawn out along foliation.

1-3 ✓ @ 48.2 0.01' of med grained granular pyrite. in cluster.

1-3 ✓ @ 51.5 0.01' of med. grained granular sulphide in weak bands along foliation.

✓ @ 55.1 0.02' as above.

1-3 ✓

ARCTIC
PROJECT: Ruby Creek, Alaska Hole No. A-3 Interval 80 To 160 Collar Elev. 2985 Inclination VERTICAL Bearing Logger A. JOHNSON Date AUG. 1967 Sheet No. 2 of 6

GRAPHIC LOG

Graphic Log 1"=10'

Copper % .5 1.0 1.5 2.0 2.5 3.0

ROCKS

Inclination | Composition | Color | Grain Size | Composition | Color | Grain Size | Composition | Color | Grain Size | Composition | Color | Grain Size | Access | Fossils | Misc. Feat.

70°
75°

(meta-quartz-pebble congl?)

@ 83.0' Massive Quartzose-Muscovite Schist. 70-80% granular quartz forming irregular blotches in a sugary micaceous matrix. Locally weak pebble outlines can be recognized, very weakly calcareous

@ 95.0' – 0.3' {massive quartz lenses?} {milky white quartz}
97.0' – 0.3' {mixed with 20% very} {heavily fractured}
{light coloured creamy calcite.}

@ 104' – Same as above but with very light reddish brown blotches predominant (probably weak oxidation)

@ 107' – Same as @ 83.0 but with matrix becoming chloritic. Massive, dense unit. Locally narrow fine grained chloritic bands (<0.5')

@ 114' – Massive milky quartz band

@ 124' increasing quartzitic (80-90%) almost pure quartzite with scattered micaceous matrix. foliation becoming very weak.

CLASTS

% | Color | Grain Size | Shape | Size | Type | Resol

FILLINGS

% | Calcite | Dolomite | Quartz | Other | Color | Grain Size | Spec. Features | Width

	Calcite	Dolomite	Quartz	Other
95.0' – 97.0'	✓		✓	
	✓		✓	

ALTERATION

Calcit. | Dolomit. | Oxidation | Porosity | Limestone | Dolomite | Argillite | Replacement | Rexlization | Other | Type

MINERALIZATION

% | E. Pyrite | Pyrite | Cpy. | Bornite | Tnt. | Chalcocite | Sphal. | Galena | Pyrrh. | Chalcocite C. | Bornite C. | CuCos | Limestone | Dolomite | Lime.-Dol. | Dol.-Clast | Phyllite | C. Vn. | D. Vn. | Q. Vn. | Others | Est. | Assay.

PROJECT: ~~Ruby~~ ARCTIC Creek, Alaska Hole No. A-3 Interval 160 To 240 Collar Elev. 2985 Inclination VERTICAL Bearing Logger A. JOHNSON Date AUG. 1967 Sheet No. 3 of 6

GRAPHIC LOG

Graphic Log 1"=10'

Copper % .5 1.0 1.5 2.0 2.5 3.0

ROCKS

Inclination	Composition	Color	Grain Size	Composition	Color	Grain Size	Composition	Color	Grain Size	Composition	Color	Grain Size	Access	Fossils	Misc. Feat.
77°															
33°															
83°															
80°															
79°															

CLASTS

%	Color	Grain Size	Shape	Size	Type	Resol

FILLINGS

%	Calcite	Dolomite	Quartz	Other	Color	Grain Size	Spec. Features	Width

ALTERATION

Calcit.	Dolomit.	Oxidation	Porosity	Limestone	Dolomite	Argillite	Replacement	Recrystization	Other	Type
		✓								scattered pits due to leaching of pyritic material.

MINERALIZATION

%	E. Pyrite	Pyrite	Cpy.	Bornite	Tnt.	Chalcocite	Sphal.	Galena	Pyrrh.	Chalcocite C.	Bornite C.	CuCos	Limestone	Dolomite	Lime-Dol.	Dol.-Clast	Phyllite	C. Vn.	D. Vn.	Q. Vn.	Others	Est.	Assay.
3-5		✓ tr.							✓														
			7-10%			@ 168.8																	
4-1		✓							✓														
3-5		✓							✓														

@ 166.0 pyritic section begins tr. with pyrite as individual grains, clusters of grains or granular bands along foliation.

@ 168.8 < 0.01" coarse pyrite.

@ 173.0 1.0" coarse granular py.

coarser py. associated with irregular bands of fine grained sugary quartz

scattered grains: pyrrhotite becoming more apparent than in above section.

same as @ 166.0

Quartzose Graphitic Biotite Schist. Dark grey to black due possibly to carbonaceous material, may also be caused by finely dissem. pyritic material, locally well laminated where sugary quartz forms irregular bands. Rock remains highly siliceous (30-50%) as above. Foliation appears rovelly with granular aggregates of qtz. forming weak "augens"-like structures.

-Locally weakly calcareous.

@ 219. Quartzose Chloritic Muscovite Schist. Similar to above but becoming very light gray. Fine grained, regular well developed foliation. Weakly calcareous.

@ 230.0 Same as @ 166.0

PROJECT 003-00-0013 - Arctic
HOLE NO. DH - 3

ASSAY LOG

* Union
KCC

SAMPLE	SAMPLE INTERVAL			ASSAY							
NUMBER	FROM	TO	FEET	Cu	Pb	Zn	Ag	Au			
71083	314.8	316.2	1.4	5.83		8.23	1.44				
71085	316.2	320.9	4.7	1.39		0.23	0.62				
71084	320.9	321.6	0.7	2.66		1.60	0.67				
71086	321.6	322.0	0.4	1.24		0.41	0.41				
71087	322.0	324.0	2	0.31		0.11	0.25				
96360	428	431	3	2.90	.012	.09	0.41	0.02			
96361	436.5	437.5	1	0.41	.002	2.15	.13	0.01			
96362	464	465	1	< .01	< 01	< .01	.02	< 0.01			
96905	530	532	2	.69	.02	.03	.42				
96906	532	537	5	.82	.47	1.2	.75				

BC 12-66

FORM SP-42 (REV. 4)

SURVEY TABULATION SHEET

CUSTOMER BEAR CREEK MINING CO.

WELL NO. D. D. H. # 3 (1970)

FIELD ARCTIC

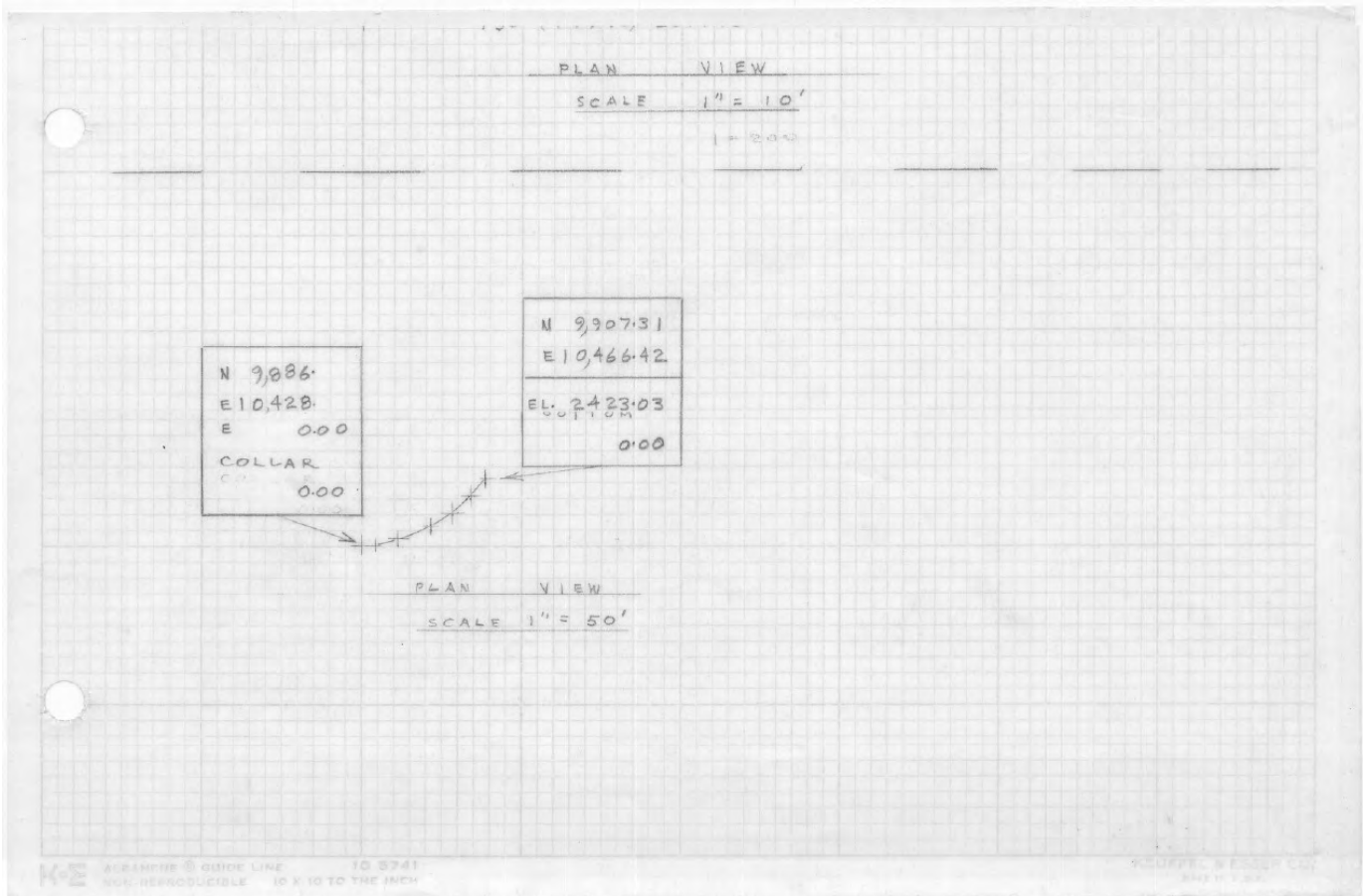
N / W / E / S

SHEET NO. 1

SURVEY JOB NO. 00-00-0013

SURVEY DATE JULY 7/70

CORRECTED TIME	MEASURED DEPTH		VERTICAL DEPTH		ANGLE OF INCLIN-ATION	COURSE DEV.	DIRECTION OF INCLINATION				MEASURED COURSE DISPLACEMENT				TOTAL DISPLACEMENT			
	COURSE	TOTAL	COURSE	TOTAL			OBSERVED	CORR.	CORRECTED		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
	50	50	50.00	50.00	0°00'	-	-	-	-		-	-	-	-	-	-	-	-
	100	150	99.90	149.90	2°30'	4.36	N 64°00' E	+24°30'	N 88°30' E		0.12		4.36		0.12		4.36	
	100	250	99.73	249.63	4°15'	7.41	N 47°00' E	+ "	N 71°30' E		2.35		7.03		2.47		11.39	
	125	375	124.53	374.16	5°00'	10.90	N 44°30 E	+ "	N 69°00' E		3.90		10.18		6.37		21.57	
	100	475	99.66	473.82	4°45'	8.28	N 33°30' E	+ "	N 58°00' E		4.39		7.02		10.76		28.59	
	75	550	74.63	548.45	5°45'	7.51	N 23°30' E	+ "	N 48°00' E		5.03		5.59		15.79		34.18	
	50	600	49.52	597.97	8°00'	6.96	N 13°00' E	+ "	N 37°30' E		5.52		4.24		21.31		38.42	
			ΣV 597.97								ΣN 21.31		Σ E 38.42					
			CORRECT		MAG	DECL	15		22° 30' East									
	100	150						8°	N 86°30 E									
		250							67°30'									
		375							56°50'									
		475							56°50'									
		550							46°50'									
		600							35°20'									
DONE BY:		[illegible]	July	31/70														
CK. BY:																		


PLAN VIEW
SCALE 1" = 10'
N 9,907.31
E 10,466.42
EL. 2423.03
COLLAR
0.00
N 9,886.
E 10,428.
E 0.00
COLLAR
0.00
PLAN VIEW
SCALE 1" = 50'

SAMPLE RECORD

EI 3021

PROJECT: ARCTIC WORKING PLACE: DH-3 SAMPLER: DATE 1/67

Sample Number	Location	Sample Length	True Width	Cu Assay	Cu Assay Feet	Ag Assay	Ag Assay Feet	Zn Assay	Zn Assay Feet					Chan. Size	Wt.	Remarks
										Assay	Assay Feet	Assay	Assay Feet			
71083	314.8 – 316.2	1.4	8.16	5.83		1.44	2.0	8.23	11.52							
71085	316.2 – 320.9	4.7	5.14	1.39		0.62	2.3	0.23	0.85							
71084	320.9 – 321.6	0.7	1.46	2.66		0.67	0.5	1.60	1.12							
71086	321.6 – 322.0	0.4	0.50	1.24		0.41		0.41								
71087	322.0 – 324.0	2.0	0.62	0.31		0.25		0.11								
	314.8 – 321.6		6.8'	1.45% Cu												
				0.7 oz Ag												
				1.98% Zn												

Ag 4.8 oz ft
Cu 15.16 A ft

DEPTH* FROM	DEPTH* TO	INTERVAL	MINERALIZATION ppm AU	AG	PB	CU	ZN	ROCK TYPE	REMARKS
428	431	2.4	.02	.41	.012	2.90	.09	LT. SLI CHL. MUSC. QTZ. SCH	
436.5	437.5	1	.01	.13	.002	.41	2.15		
464	465	1	<.01	.02	<.01	<.01	<.01		BACKGROUND SMP.
530	532	2		.42	.02	.69	.03	↓	
532	537	5		.75	.47	.82	1.2		

NWD PROJECT ARCTIC 05-00-0013 HOLE NO. 3 PAGE / OF / VERTICAL ✓ HOLE DEPTH 600 TRUE _____ ASSAY SHEET

BY PKB DATE AUG 23/70 SUBJECT ARCTIC D.D.H. # 3 SHEET NO. 1 OF 1
CHKD. BY DATE DRILLED JUNE 1970 JOB NO. 05-00-0013
SURVEY JULY 7/70

STATION	DIFFERENCE	INTERVAL	INCL. ∠	OBSERVED BEARING	CORRECTED BEARING	COURSE HOR. DEV.	ACCUM. HOR. DEV.
0'							
	100'	50' - 0 = 50'					
100'							
	100'	150' - 50' = 100'	2°30'	N64°00' E	N88°30' E	4·36	4·36
200'							
	100'	250' - 150' = 100'	4°15'	N47°00' E	N71°30' E	7·41	11·77
300'							
	150'	375' - 250' = 125'	5°00'	N44°30' E	N69°00' E	10·90	22·67
450'							
	150'	475' - 375' = 100'	4°45'	N33°30' E	N58°00' E	8·28	30·95
500'							
	100'	550' - 475' = 75'	5°45'	N23°30' E	N48°00' E	7·51	38·46
600'							
		600' - 550 = 50'	8°00'	N13°00' E	N37°30' E	6·96	45·42

Hole No.	Survey Point Depth	Bear.	Inclin.	At Elev.	North	East	Deviat. Vert.	Horiz.	Bottom Location El.	North	East
# 3	0			3021.10	9,886.	10,428.					
	50			2971	9,886	10,428	50.00				
	150	N88°30'E	2° 30'	2871.10	9,886.12	10,432.36	99.90	4.36			
	250	N71°30'E	4° 15'	2771.37	9,888.47	10,439.39	99.73	7.41			
	375	N69°00'E	5° 00'	2646.84	9,892.37	10,449.57	124.53	10.90			
	475	N58°00'E	4° 45'	2547.18	9,896.76	10,456.59	99.66	8.28			
	550	N48°00E	5° 45'	2472.55	9,901.79	10,462.18	74.63	7.51			
	600	N37°30'E	8° 00'	2423.03	9,907.31	10,466.42	49.52	6.96			

NWD Project ARCTIC Hole(s) No(s) # 3 Data [illegible] Date Aug. 24/70 Down-Hole Surveys JULY 7/70

BEAR CREEK MINING COMPANY
NORTHWEST DISTRICT

ARCTIC PROJECT

05-00-0013 CODE NO.

3 HOLE NO.

9,886 NORTH

10,428 EAST

VERTICAL INCLINATION

_____ BEARING

6/18/70 START } 1970 DEEPENING

6/26/70 COMPLETE }

600 DEPTH

FIKKAN DATA BY

PLANS: NO FUTURE DEEPENING OF HOLES AT NORTH END OF ORE BODY.

HOLE STATUS: HOLE COMPLETED AT 600 HOLE FAILED TO PENETRATE ANY SIGNIFICANT MINERALIZATION BELOW OLD DEPTH OF 336

HOLE SIZE

FROM	TO	CONDITION
336	600	BX WL NO CASING

PURPOSE: TO TEST POSSIBILITY OF DEEPER MINERALIZATION.

RESULTS: WAS BOTTOMED AT 600 FEET HOLE FAILED TO PENETRATE SIGNIFICANT SULFIDES FROM 336 → 600

SIGNIFICANCE: THOUGH DDH # 3 PENETRATED SULFIDES UP TO 2.90% Cu WIDTHS WERE NOT THICK ENOUGH TO MAKE AN ORE HOLE

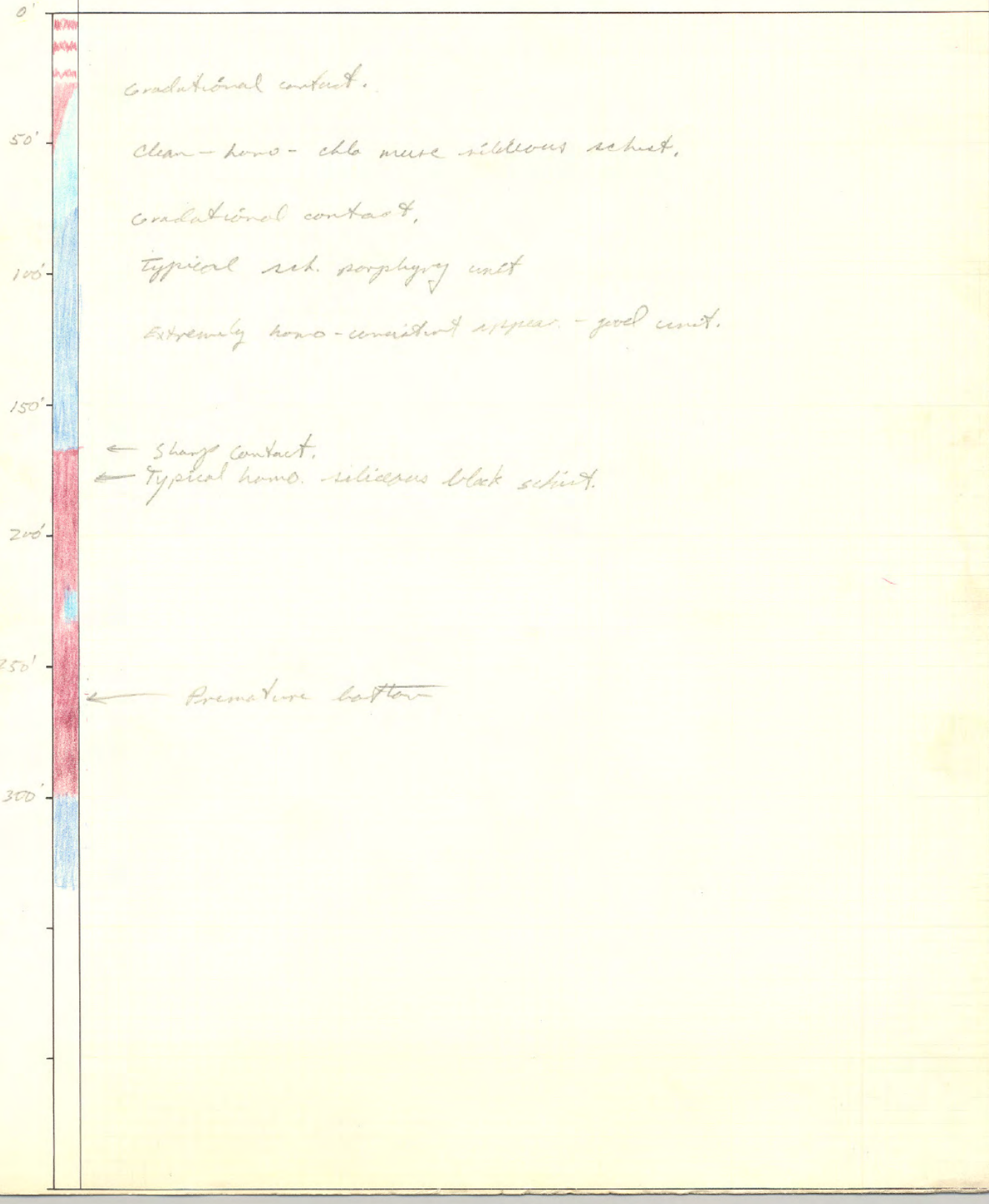
PROJECT 05-00-0013 HOLE NO. 3 SUMMARY SHEET

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME Arctic
CODE 1968 Relog

DRILL HOLE NO. 3 PAGE 1 OF
BEARING DIP
Purpose of hole
LOCATION
TOTAL DEPTH , BY
START COMPLETED

Scale: 1" = 50'
Est. of final depth 263'



NORTHWEST DISTRICT NAME ARCTIC DRILL HOLE NO. 3 PAGE 1 OF 1

Summary Drill Hole Log CODE 05-00-0013 BEARING ——— DIP VERTICAL

Purpose of hole CHECK POSSIBILITY OF DEEPER MINERALIZED HORIZONS IN NORTHERN END OF ORE BODY. LOCATION 9886 N 10,428 E.

TOTAL DEPTH 600, BY P.R.F. H.B. & D.G.

START 6/18/70 COMPLETED 6/26/70

Scale: 1" = 50' Est. of final depth 600

ASSAY DATA. % -1-2-3-4-5-6-7-8-9	DESCRIPTION
300	
	LT. SILVERY GRN. CHY, TALCY. SLI. CHL. MUS. QTZ. SCH. W OCCASSIONAL ZONES UP TO 2 FT. OF CONFORM. DTY. GRY. CHL. MUS. QTZ. SCH. W. FAINT. PORPHYRO. AND SOME CALC. MINOR PY. IN LP. SCH. APPROX. 5% IN DTY. GRY. SCH. FOL. ≈ 10°
350	
	A/A LT. SCH. DOM. WITH. WI. VARIBLE QTZ. & MICA. DISTRIBUTION. FOL. ≈ 10-15°. MINOR. < 1% PY.
400	
	A/A. SCH. V. LT. IN COLOR. WITH DISTINCT. SEGREGEL. OF MUSC. & TALC. FOL. ≈ 10°. CHANGES TO 50° WITH SMALL FOLD AT 450. THEN BACK TO ≈10° UP TO 428 MINOR. PY. 428-431 IRREGULAR STRINGERS OF CPY. ≈ < 1%. 436.5-437.5 FURTHER V. SMALL IRREG. STRINGERS CPY.
450	
	SCH. A/A. MINOR PY. SCH. SOMETIMES LOOKS V. FNT. PORPHYRO. FOL. ≈ 10-15° OCCASSIONAL. SLI. CALC. SCH. ZONES W. 3-4% PY.
500	
	SCH. A/A. PY. UP TO 3%. FOL. < 10° 530-532 (ASSAY SMP. 96905) ≈ 5% PY 1% CPY.
	532-537 (ASSAY SMP. 96906) ≈ 2% JACK. SOME CPY, SPHAL. BUT MAINLY. PY. FOL. ≈ 6°
550	
	SCH. A/A. W. SOME QTZ. PORPHYROBLASTS. FOL. V. POOR. < 1% PY.
600 T.D. 600	A/A POOR. DEVEL. QTZ. PORPHYRO. MINOR PY < 1%

ASSAY SAMPLE	FOOTAGE	Cu %	Pb %	Zn %	Ag Oz/Ton
96905	530-532	.69	.02	.03	.42
96906	532-537	.82	.47	1.2	.75
96360	428-431	2.90	.012	.09	.41
96361	436.5-437.5	.41	.002	2.15	.13
96362	464-465	<.01	<.01	<.01	.02

SUMMARY: DDH 3 TERMINATED HAVING BEEN DEEPENED TO 600 WITH PENETRATING SIGNIFICANT LOWER MASSIVE SULFIDE HORIZONS AT NORTH END OF OREBODY.

To Phil

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME: ARCTIC
CODE: 05-01-0013
Purpose of hole: Continue test of mineralized Tan Clyfe schist unit to north along strike

El. 3021

Scale: 1" = 20'
Est. of final depth ______

DRILL HOLE NO. 3 PAGE 1 OF 2
BEARING: Vertical DIP: ______
LOCATION: ______
TOTAL DEPTH: 336, BY: CGB
START: 8/9/67 COMPLETED: 8/12/67

Column headings: Cu (2 4 6 8 10 12) | Ag (2 4 6) | Zn (2 4 6 8 10 12) | Pb (1 2 3 4) | Au | Remarks

Note - blue colors correspondes to pres color scheme.

Phil - This is the rush job I did with Lefty book - You must have anything else. Dick relogged - It's his color strip to right!

Depth (elevation)	Remarks
(3021) 0	
(3001) 20	DK Gray quartzose mica schist
(20°)	
(2981) 40	Dips (Ag column); Dips ± 5°-10°
(25°)	
(2961) 60	Light gray quartzose mica schist
(25°)	
(2941) 80	Chloritic "pebbly" quartzose schist
(2921) 100	Dips flat
(2901) 120	
(2881) 140	Gray quartzite
(2861) 160	
(approx. 172)	DK gray-Grayish black graphitic schist.
(2841) 180	

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME Arctic
CODE 05-01-0013
Purpose of hole

El 3021

Scale: 1" = 20'

DRILL HOLE NO. 3 PAGE 1 OF 2
BEARING VERTICAL DIP
LOCATION
TOTAL DEPTH 336, BY CGB
START COMPLETED
Est. of final depth

(3021) 0
(3001) 20
(2981) 40
(2961) 60
(2941) 80
(2921) 100
(2901) 120
(2881) 140
(2861) 160
(2841)

Quartzose-graphitic phyllite, also chlorite & fine gr. biotite

Quartzose, micaceous schist.

varing amts quartz-chlorite

Quartzose, graphitic, biotite schists

NORTHWEST DISTRICT NAME ARCTIC DRILL HOLE NO. 3 PAGE 2 OF 2
Summary Drill Hole Log CODE 05-01-0013 BEARING VERTICAL DIP
Purpose of hole LOCATION
TOTAL DEPTH 336 , BY CGB
El. 3021
Scale: 1" = 20' Est. of final depth START COMPLETED

(2841) 180	Cu 2 4 6 8 10 12	Ag 2 4 6	Zn 2 4 6 8 10 12	Au	Pb 1 2 3 4	Remarks
(2821) 200						Dips ± 10°
(2801) 220						Quartzose phlorite, muscovite schists. Dick Graphitic units - cont.
(2781) 240						Dips ±10°
(2761) 260						
(2741) 280						Limy Quartzose muscovite schists.
(2721) 300						Limy quartzose muscovite to talc schists.
(2701) 320						
(2681) 340						
(2661) 360						

NORTHWEST DISTRICT NAME ARCTIC DRILL HOLE NO. 3 PAGE 1 OF
Summary Drill Hole Log CODE 05-00-0013 BEARING DIP
Purpose of hole CHECK POSSIBILITY OF FURTHER MINERALIZATION WITH DEPTH LOCATION
TOTAL DEPTH , BY
START COMPLETED
Scale: 1" = 20' Est. of final depth 810

300
320
340
360
380
400
420
440
460
480

LT. SILVERY TALCY CKN. SLI. CHL. MUSC. QTZ. SCH. FOL. ≈ 10° NO SULFIDES

DTY. GRY. CHL. MUSC. QTZ. SCH. W FAINT PORPHYRO. BLASTIC APPEAR. DISSEM. PY. TO ≈ 5%. SLI. CALC. (UNIT 344-345). FOL. ≈ 10°

HI. IRREG. QTZ. + CALC VN. 348-349

345 → 419.5 LT. SILVERY CKN — CKN. CHL. TALCY MUSC. QTZ SCH. CHL. CONTENT QUITE VARIABLE THROUGHOUT SECTION. ARE SOME V. TALCY ZONES I.E. 397.5, 373.5 (POSS. FLT) 376.5, 386.5. FOL. 350 = 10° 380 = 5° 400 = 15° SULFIDES V. MINOR < 1% PY.

DTY. GRY, CHL. MUSC. QTZ. SCH. W FAINT PORPHYROBLAST AS IN 344-345. V. POOR FOL. SLI. CALC. SULFIDES DISSEM. CUBIC PY. UP TO 3-4% W TRACE OF CPY. (UNIT 419.5-420.5)

SCH. AS IN 345-419.5. QUITE TALCY AT 430, & 434

428 — 435 SCH. HAS MOTTLED STREAKING DUE TO LENSES OF LIGHT TALCY MUSCOVITE & OR CHL. FOL. 430 = 10° 440 = 5% 450 = CHANGES ABRUPTLY 10° → 50° SULFIDES MINOR PY. 420.5 → 428 428 → 431 ~~432~~ STRINGS V. IRREGULAR OF CPY, ≈ < 1%. SMP. INTERVALS 428-432 ~~436~~ 436.5 — 437.5 (FURTHER V. SMALL IRREG STRINGERS OF CPY).

445 — 465 V. LT. SILVERY CKN. MUSC. SCH. W. DISTINCT LENSES OF MUSCOVITE. QUITE TALCY IN PLACES A427 FOL. 451. BACK TO ≈ 10°

* NOTE FROM ≈ 452 → SCHIST HAVE ENT. PORPHYROBLASTS.

NORTHWEST DISTRICT
Summary Drill Hole Log
NAME ARCTIC
CODE 05-00-0013
Purpose of hole CHECK POSS. MINERALIZED HORIZONS W DEPTH.

DRILL HOLE NO. 3 PAGE 1 OF
BEARING DIP
LOCATION
TOTAL DEPTH , BY
START COMPLETED

Scale: 1" = 20 Est. of final depth 810

400

SULFIDES. PRIM. PY. IN THIN LENSES. PARALLEL TO FOL. PY. LENSES MAY MAKE UP TO 3-4% IN PLACES. FOR CHECK OF POSS. CPY. & SPHAL. CONTENT. SAMPLE.

464 → 465

465 – 465.75 DTY. GRY. V. POOR. FOL. MUS. QTZ. SCH. (CALC). W. DISSEM. PY. UP TO 3%.

465.75 → 470.5 LT. GRY. GRN. V. SLI CHL. MUSC. QTZ. SCH. AS IN 445-465 FOL. = 10° SULFIDES AS IN 445-465 LENSES OF PY. UP TO 3-4% IN PLACES

520

540

470.5 → 471.8 CALC SCH. AS IN 465-465.75. 1-2% PY.

471 → 472 SCH. AS IN 465.75-470.5 FOL. ≈ 10° FAINTLY PORPHYROBLASTIC

472 – 472.5 CALC SCH. AS IN 465-465.75. ≈ 465 → 475. ¼" NEAR 90° CALC VN. OFFSET ≈ ½" PAR. TO FOL. SULFIDES IN LT. SCH. & CALC SCH. UNCHANGED. PRIM. PY.

472.5 – 492 LT. SILVERY GRY. GRN. SCH. AS IN 471 → 472 FOL ≈ 10-15° POSS FLT. LOW ANGLE ≈ 10° AT 482'

NORTHWEST DISTRICT
Summary Drill Hole Log
Purpose of hole

NAME
CODE

DRILL HOLE NO. 3 PAGE OF
BEARING DIP
LOCATION
TOTAL DEPTH , BY
START COMPLETED

Scale: 1" = 20'
Est. of final depth

490

1 492-525 Lt. silver gray qtz musc schist with pyritic bands composing Less than 1% of the rock - foliation 8° off horiz

510

2. 525-530 Lt grayish bands of sulphides in Lt silver gray qtz musc. schists. Bands of pyrite more common - perhaps 3% of rock

3. 530-532 Same silver gray rock as above but with Larger bands of sulphides ($\frac{1}{4}$"-$\frac{3}{8}$" thick) with approx 5% pyrite & 1% chalcopyrite

530

4. 532-537 Lt. silver gray unit as # 1 above except contains approx. 2% sulphides - some sphalerite & chalcopyrite but mainly pyrite

550

5. 537-570 Lt silver gray qtz musc schist as # 1 above with 1-2% pyrite foliation 6°

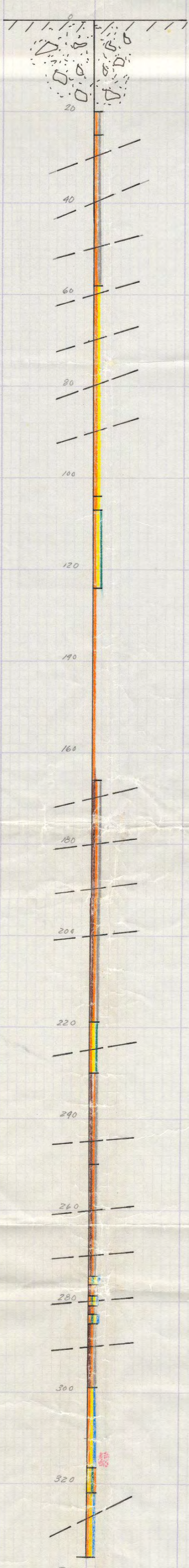
570

6. 570-590 Lt silver gray qtz musc schist with some qtz porphyroblasts. foliation not very distinctive. Sulphides: very minor pyrite pyrite < 1%

590

590-600 A/A PORPHYROBLASTS QUITE VAGUE POOR FOL. MINOR TRACE PY. < 1%

TD 600


ELEVATION 298
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
END OF HOLE 336'

PROJECT Arctic
HOLE NO. 3 Rig 40C

ASSAY LOG

Date	Drilling - Feet NX	BX	AX	Rate	Hrs. Setting Up or Standby @$16.00	Hrs. Wedging or Surveying @$25.00	Remarks	$
6/12							Waterline 9 hrs.	72.00
6/12							" 18 hrs.	144.00
? ~~6/13~~					~~9 8½ = 13½~~			~~216.00~~
6/13					9 [illegible]			144.00
6/13					4½ [illegible]			72.00
6/15					3 [illegible]		Waterline 12 hrs.	144.00
6/15					1½ [illegible]		Waterline 6 hrs.	72.00
6/16					3½ [illegible]		" 2 hrs.	72.00
6/16					7		" 4 hrs.	144.00
6/17					9			144.00
6/17					9			144.00
6/18		10		8.65			Otter tow - No Chg.	86.50
6/19		25		8.65			Otter tow + 3 hrs N.C.	216.25
6/21		47		8.65			Otter tow 2 hrs N.C.	406.55
6/22					1 hr.			16.00
6/22		70		8.65				605.50
6/23							Waterline 8 hrs. only	64.00
6/23		5		8.65				43.25
		45		9.30				418.50
6/24		28		9.30				260.40
6/24							Waterline stby 2 hrs.	16.00
? 6/25		11		9.30				102.30
6/26		16		9.30			Hole completed TD	148.80
							Total	3,536.05

Return to: T. Hammitt

BC 12-66

A-3

~~263-299-N~~

263-274 - MDG Graphite schist - same as 193-215 segment in A-2

274-299 - MG-MLG schist - some graph; rx looks good except for 6" sect of broken rx (<10% of total)

299-312 - Highly siliceous competent muscov schist - Light gray - gritty

312-334 - Talcy muscovite schist LGG-LG -

Spec. 263, 304, 311, 334.

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME Arctic
CODE 1968 Relog

DRILL HOLE NO. 4 PAGE 1 OF 1
BEARING ____ DIP ____
LOCATION ____
TOTAL DEPTH ____, BY ____
START ____ COMPLETED ____

Purpose of hole ____

Scale: 1" = 50'

Est. of final depth ____

0'
50'
100'
150'
200'
250'

CORE GONE

← Skarn?

Typical sil. musc-chl. schist grading into schist porphyry.

Typical sedimentary sequence

← Almost the sericitic talc facies.

← All of the core at R.C. Bottom?

NORTHWEST DISTRICT NAME *Arctic*

Summary Drill Hole Log CODE *05-01-0013*

Purpose of hole *Test for continuity downdip from DH-1*

El. ~~2924~~ 3077

Scale: 1" = *20* Est. of final depth ______

DRILL HOLE NO. *4* PAGE *1* OF ____

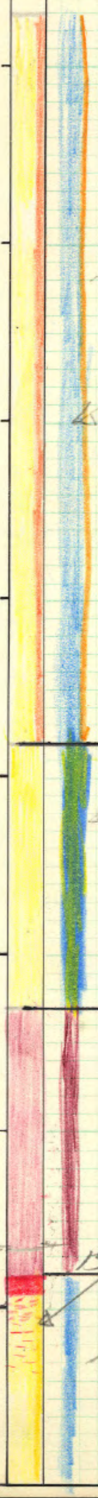
BEARING *Vertical* DIP ______

LOCATION ______

TOTAL DEPTH *285* , BY *CCG*

START *8/13/67* COMPLETED *8/19/67*

Depth (ft)	Elev.	Cu (2 4 6 8 10 12)	Ag (2 4 6)	Zn (2 4 6 8 10 12)	Pb (1 2 3 4)	Au	Remarks
0	(3077 ~~2924~~)						
20	(3057 ~~2904~~)						Quartz - mica schist. ~~Muscov~~ Siliceous (gritty) muscovite schist
40	(3037 ~~2884~~)						
60	(3017 ~~2864~~)						
80	(2997 ~~2844~~)						
100	(2977 ~~2824~~)						"Talcy" muscovite schist type
120	(2957 ~~2804~~)						
140	(2937 ~~2784~~)						Quartzose, graphitic phyllite. Siliceous, graphitic phyllite - schist - pyritic - GB - DG
160	(~~2764~~ 2917)						SLIGHTLY CHLORITIC MUSCOVITE SCHIST (pale green chlorite - not Green Bluffs types)
180	(2897 ~~2744~~)						



Dick - in yellow signifies the muscov. schist has some chlorite - but not the deep Green Bluffs

Chloritic - muscovite schist

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME ARCTIC
CODE 05-01-0013
Purpose of hole

~~El. 3924~~ EL 3077

DRILL HOLE NO. 4 PAGE 2 OF 3
BEARING VERTICAL DIP
LOCATION
TOTAL DEPTH 285, BY CGB
START COMPLETED

Scale: 1" = 20'
Est. of final depth

(~~2897~~ ~~2744~~) 180
(~~2877~~ ~~2724~~) 200
(~~2857~~ ~~2704~~) 220
(~~2837~~ ~~2684~~) 240
(~~2797~~ ~~2664~~) 260
(~~2797~~ ~~2644~~) 280
(2777 2624) 300
320
340

SLIGHTLY Siliceous muscovite schist

"TALC" Muscovite schist

Highly schistose muscov. Qtzite - Sandy

SLIGHTLY SILICEOUS muscovite schist

Quartz - chlorite schist, Coarse grained deep green "talcy" chlorite schist - with consid. muscovite

ARCTIC
DH-4
Rig
8/21/67

TR. MK. REG. U.S. PAT. OFF.

0-14 - Speckled
garnetif massive chlorite
~~96-126 ry,~~
14-96 - Pale green siliceous
muscov schist - local
narrow intensely oxidized
zones - 10°±

~~St - 12°~~

96-126 - Pale green - wh - lt gray
muscov schist - diss. py.
loc. oxidized - 2 ft Qvn at
114.5 - ±10° loc. green
speckled chlorite - x (ash.

28

ARCTIC
DH-4
Rig

TR. MK. REG. U.S. PAT. OFF.

126 - 153 DG-GB - Biot-graph?
schist - pyritic
Cu ±1-2% as Cpy 146.5-153
153 - 156.5
Siliceous muscov - biotite
schist - dull dk - med gray
sheen.
Dissem. py - cpy - sp along
foliae ± 1% Cu
156.5 - 158 - Mass. py - Cpy -
Sp in muscov talck
Cu ± 4-5% schist - minor oxidat.
158.5 - 161 - Chlorite - muscov.
schist with blobs Cp, py
and dissem Sp.
3 ± 5% Cu
161 - 167 - Massive dissem
granular py - Sp. x
in muscov schist
with variable Cp.
Cu 5-7%
167-169 - Same as above - with
increas. pale green
chlorite and
5% Zo.
169 - 181 Same as 181 +

28

ORIGINAL COPR. 1919 BY J. C. PARKER — 5 LINES TO INCH — LEFAX, PHILADELPHIA, PA 19107 MADE IN U.S.A.

ARCTIC
DH-4

TR. MK. REG. U.S. PAT. OFF.

ORIGINAL COPR. 1919 BY J. C. PARKER

181 – ~~200~~ – 208 – Muscov. – sericite – chlorite schist.
± 10°

208 – 209 – Deep green chl. schist
gougey - crumbly.

209 – 223 – white - lt gray
muscov - schist.
± 10°
Cu ± 1% Cpy 216.5 – 217.5 –
Cu Negl. 217.5 – 222
Cu 1-2% 222 – 223 –

223 – 227 – Musc sericite
schistose qtzite –
Cpy, Bo, Sp, Ga
Cu ± 12% poor
core recov
± 10° dip

227 – 243 poor core recov.
Gougy light Talc muscov
Schist
227 – 229.8 – Cu 1 – 3%

5 LINES TO INCH

LEFAX, PHILADELPHIA, PA 19107 MADE IN U.S.A.

28

ARCTIC
DH-4
Ricz
8/21/67

TR. MK. REG. U.S. PAT. OFF.

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243 – ~~2?~~ 256 Poor core recov.
talcy lumpy sericite
muscov schist.
243 – 251 – Minor Cu.
251 – 253.8 1-3 Cu
as Cpy – consid Zn.

253.8 – 256 Cu < 1%

256 – 285 – Siliceous pale green
muscov chlorite schist.
± 5° dip.

5 LINES TO INCH

LEFAX, PHILADELPHIA, PA 19107 MADE IN U.S.A.

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A-4

~~117-126~~

117-125 - Siliceous talcy schist lea. FeO - Pale Green muscov. Common - breaks into ~~[illegible]~~ wafers on splitting competent - ± 5°

125-139 - MDG schist - minor siliceous - competant to cleaved - porous - ~~[illegible]~~ likely to be a prob.

169-193 - Very talcy muscov. schist - comm. badly broken ± 10° locally siliceous -

193-205 - Siliceous musc schist

Over

5 LINES TO INCH

LEFAX. PHILADELPHIA, PA 19107 MADE IN U.S.A.

28

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A 4 cont

± 0° - competent - pale green muscov. - may be siliceous enough to get by

Spec. 118.5'
134 ft. 174'
183 ft. - 201'

5 LINES TO INCH

LEFAX. PHILADELPHIA, PA 19107 MADE IN U.S.A.

28

PROJECT 003-00-0013 - Arctic
HOLE NO. DH-4

ASSAY LOG

* Union
KCC

SAMPLE NUMBER	SAMPLE INTERVAL FROM	TO	FEET	ASSAY Cu	Pb	Zn	Ag	Au
71291	119	126	7	0.06		0.11	0.26	
71281	141	146.5	6.5	0.08		0.08	0.35	
71282	146.5	149	2.5	1.44		0.10	0.53	
				1.518*				.010*
71283	149	151	2	1.28		0.11	0.53	.005*
				1.340*				
71284	151	153	2	1.68		0.31	0.59	
71285	153	158	5	4.40		6.71	1.32	
71286	158	161	3	3.55		4.19	1.03	
							1.3*	.010*
71287	161	164	3	4.50		13.11	1.32	
71288	164	167	3	0.51		12.33	1.12	
71289	167	169	2	2.41		4.46	0.82	
				2.454*			0.6*	.010*
71290	169	171	2	0.01		0.08	0.38	
71268	214.5	216.5	2	0.04		0.11	0.38	
71269	216.5	217.5	1	2.21		2.93	0.53	
				2.226*	0.4*	2.9*	0.3*	
71270	217.5	222	4.5	0.02		0.34	0.35	
71271	222	223	1	0.84		0.14	0.41	
71272	223	226	3	18.51		7.41	8.79	
				18.35*	1.0*	8.0*	15.1*	.075*
71273	226	227	1	7.65		14.65	1.82	
				7.64*			1.90*	.005*
71274	227	229.5	2.5	3.41		1.29	0.85	
71275	229.5	231	1.5	0.14		0.23	0.41	
71276	242	243	1	2.00		0.85	0.56	
71277	243	251	8	0.01		0.06	0.38	
71278	251	252	1	6.33		12.87	2.71	
				6.704*		15.4*	3.7*	.005*
71279	252	253.8	1.8	3.06		1.68	0.68	
71280	253.8	256.5	2.7	0.16		0.08	0.35	

BC 12-66

SAMPLE RECORD

EI 3077

PROJECT: ARCTIC **WORKING PLACE:** DH-4 **SAMPLER:** **DATE** / /67

Sample Number	Location	Sample Length	True Width	Cu Assay	Cu Assay Feet	Ag Assay	Ag Assay Feet	Zn Assay	Zn Assay Feet	Au Assay	Au Assay Feet	Pb Assay	Pb Assay Feet	Chan. Size	Wt.	Remarks
71281	141-146.5	6.5		0.08	—	0.35		0.08								
71282	146.5-149	2.5	1.48	1.518 1.44	3.70	0.53	1.32	0.10		0.010						
71283	149-151	2	1.31	1.340 1.28	2.62	0.53	1.06	0.11		0.005						
71284	151-153	2		1.765 1.68	3.36	0.40 0.59	1.18	0.31		.015						
71285	153-158 Cu 46.15 A ft	5		1.746 4.40	22.00	1.32	6.60	6.43 6.71	33.55			0.42				
71286	158-161 Ag 13.2 A ft Zn 85.45 A ft	3		3.55	10.65	1.3 1.03	3.6	4.19	12.57	0.010						
71287	161-164	3		4.50	13.50	1.32	3.96	13.11	39.33							
71288	164-167 Cu 52.62 A ft Ag 18.4 A ft	3		0.51	1.53	1.12	3.36	12.33	36.99							
71289	167-169 Zn 131.36 A ft	2		2.454 2.41	4.94	0.6 0.82	1.4	4.46	8.92	0.010						
71290	169-171	2		0.01	—	0.38	0.76	0.08								
77268	214.5-216.5	2		0.04	—	0.3 0.38	0.6	0.11								
71269	216.5-217.5	1		2.226 2.21	2.22	0.53	0.53	2.9 2.93				0.4				
71270	217.5-222	4.5		0.02	—	0.35	1.57	0.34								
71271	222-223	1		0.84	0.84	0.41	0.41	0.14								
71272	223-226 Cu 71.46 As. ft.	3	18.43	18.35 18.51	55.29	15.1 8.79	35.7	8.10 7.41	23.10	0.005		1.0				
71273	226-227 Ag 39.7 oz ft	1	7.64	7.64 7.65	7.64	1.90 1.82	1.86	14.65	14.65							
71274	227-229.5 Zn 40.98 As ft.	2.5		3.41	8.53	0.85	2.13	1.29	3.23							
71275	229.5-231	1.5		0.14	0.21	0.41	0.62	0.23								
71276	242-243	1		2.00	2.00	0.56	0.56	0.85								
71277	243-251	8		0.01	—	0.38	3.04	0.06								
71278	251-252 Cu 12.02 Ass ft	1	6.51	6.704 6.33	6.51 ~~12.02~~	3.7 2.71	3.2	15.40 12.87	14.13 (14.13)							
71279	252-253.8 Ag 4.4 oz ft Zn 15.81 Ass ft	1.8		3.06	5.51	0.68	1.22	1.68	1.68							
71280	253.8-256.5	2.7		6.16	0.43	0.35		0.08								
71281	119-126	7		0.06	0.42	0.26		0.11								

Remarks: 11' {4.20 Cu, 1.2 Ag, 7.7 Zn} 153-164 or 16' {3.29 Cu, 1.15 Ag, 8.21 Zn} 153-169

Remarks: 6.5 ft {10.99 Cu, 6.1 Ag, 6.3 Zn} 223-229.5; 2.8 ft {4.29 Cu, 1.6 Ag, 5.65 Zn} 251-253.8

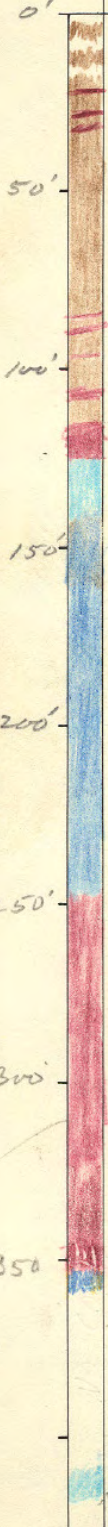
NORTHWEST DISTRICT
Summary Drill Hole Log

NAME Arctic
CODE

DRILL HOLE NO. 5 PAGE 1 OF 1
BEARING DIP
LOCATION
TOTAL DEPTH 417, BY
START COMPLETED

Purpose of hole

Scale: 1" = 50'
Est. of final depth



Typical G. B. S. interbeded with thin layers of dark to Black schist.

Consistant - homogenous appearing

- cont - interbedded series

siliceous musc. schist gradational into the schist porphyry unit.

Very consistent - homo. Good correllative unit in this area.

Sharp contact

Typical B/t siliceous schist.

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME ARCTIC
CODE 05-01-0013
Purpose of hole To follow the high-grade (Test area between, and downdip from dh 3 & 2

El. 3088

Scale: 1" = 20 Est. of final depth

DRILL HOLE NO. 5 PAGE 1 OF 3
BEARING VERTICAL DIP
LOCATION
TOTAL DEPTH 417 , BY CGB
START 8/15/67 COMPLETED 8/22/67

(3088) 0	Cu 2 4 6 8 10 12	Ag 2 4 6	Zn 2 4 6 8 10 12	Pb 1 2 3 4	AN	Remarks
(3068) 20						
(3048) 40						
(3028) 60						
(3008) 80						
(2988) 100						
(2968) 120						
(2948) 140						
(2928) 160						
(2908) 180						

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME ARCTIC
CODE 05-01-0013

DRILL HOLE NO. 85 PAGE 2 OF 2
BEARING VERTICAL DIP
LOCATION
TOTAL DEPTH 417 , BY CGB
START COMPLETED

Purpose of hole

El. 3088

Scale: 1" = 20 Est. of final depth

Cu 2 4 6 8 10 12 | Ag 2 4 6 | Zn 2 4 6 8 10 12 | Pb 1 2 3 4 | AN | Remarks

(2908) 180
(2888) 200
(2868) 220
(2848) 240
(2828) 260
(2808) 280
(2788) 300
(2768) 320
(2748) 340
(2728) 360

NORTHWEST DISTRICT NAME ARCTIC

Summary Drill Hole Log CODE 05-01-0013

Purpose of hole To test area downdip to west between drill holes 3 & 2

El. 3088

Scale: 1" = 20 Est. of final depth

DRILL HOLE NO. 5 PAGE 3 OF 3

BEARING VERTICAL DIP

LOCATION

TOTAL DEPTH ~~414~~ 417, BY CGB

START 8/15/67 COMPLETED 8/22/67

	Cu	Ag	Zn	Pb	AM	Remarks
	2 4 6 8 10 12	2 4 6	2 4 6 8 10 12	1 2 3 4		

(2728) 360

(2708) 380

(2688) ~~400~~ ~~390~~ (10')

(2668) 420

440

460

480

500

520

ARCTIC
DH-5
Ri
8/26/67

TR. MK. REG. U.S. PAT. OFF.

0-31 More or less chloritic typical augen cong. schistose qtzite. Porphyroblasts and frags. in a siliceous chloritic matrix; loc. layers slightly graph. med. gray qtzite - Rx is yell-grayish dirty appear. - schistosity gen. poorly developed. The w blebs & frags variable in size to 3/4": <1/2" to 44'; ±1" below 44'. Med. oxid - loc. intense ±20°.

31-96 Same as above; matrix (similar) gen pale green-siliceous chlorite - black speckled shiny blebs biotite (?) common to 80'. Minor mod. oxidation; ± 10°; loc. pale green homog. talcy chlorite; gray slightly carbonac. layer 81-83 as described section below; loc. pyritic pale green homog. chl. matrix decreas. below 44'.

28

ARCTIC
DH-5
Ri
8/21/67

TR. MK. REG. U.S. PAT. OFF.

96-107.5 Altern. layers ±6" fine fine grain slightly carbonac. ~~and~~ qtzite & pale green talcy chlorite ~~and~~ w/ white blebs. ~~±10°~~ intense oxid. <10°

107.5-114 - Augen qtzite - white augen in sandy and pale green chlor-musc. matrix - ~~and~~ minor oxid ±10°

114-124 ~~Gray~~ Med. dk gray slightly carbon. even layered highly siliceous schist - seric. sheen. ±10-15° - loc. thin pale green mod contorted ~~pa~~ chlorite seams ~~v.f.g.~~ vfg diss. py ~~tr.~~ <1%

28

ARCTIC
DH-5
KA
8/21/67
TR. MK. REG. U.S. PAT. OFF.

124-149 - Micaceous glyste ~
fine gritty - light gray with
pale green coarse mica seams
loc - good glyste
loc. patchy gray mottling
±10°. loc. intense oxid
130-131
134-136
140-~~149~~ 154
Mod. to weak oxid loc.
Rx - Orange-brown where
oxidized
Pyritic zone 124-129.
± 10%
Unit has gray white fine
sandy appear.

ORIGINAL COPR. 1818 BY J. C. PARKER
5 LINES TO INCH
MADE IN U.S.A.
LEFAX, PHILADELPHIA, PA. 19107
28

ARCTIC
DH-5
RIZ
8/21/67
TR. MK. REG. U.S. PAT. OFF.

~~244~~

158-244 Typical schist porph.
unit. Natural pale-med.
green chlorite with white
blebs - blebs angular
to slightly rounded -
~~locally~~ where adjacent
to one another borders
indistinct - square to
rot shaped
INTENSLY OXID 157-168
177-~~176~~178
MOD OXID 161-164
169-169
175-177
178-180
Intense OXID 203-206
210-211
223-224
229-231
233-237
241-245
MOD oxid - ~~de~~ for 1-2'
adjacent to intens
oxid. zones.
oxidized zones porous sugary
minor py - negl. sulfides gen.

ORIGINAL COPR. 1818 BY J. C. PARKER
5 LINES TO INCH
MADE IN U.S.A.
LEFAX, PHILADELPHIA, PA. 19107
28

ARCTIC
DH-5
RG
8/21/67
TR. MK. REG. U.S. PAT. OFF.

244-247 Siliceous banded chlorite schist - ~~alternat~~ muscovite schist pale green and gray layers - talcy - 5∠10°

247-325 graphitic siliceous mica schist ± 10° - feathery - lensy siliceous layers

pyrite - py 3-5%
loc. minor oxid.
loc. sooty black highly carbonac. crumbly zones partic 263-270.
Native Cu seam x cutting to 1/4" at 269'.
Unit dk gray to black py as blebs and diss. grains along cleavage.
dip 10° top. loc. minor Cpy
5° bot.

325
247
78

Minor Cpy. 321-322.5
±.5-.7
Sample 321-322.5
Concord.

ARCTIC
DH-5
RG
8/22/67
TR. MK. REG. U.S. PAT. OFF.

325-329.5 Slightly carbonac. bot. schistose qtzite - fine gritty appear. - bottom ft gradational into underlying unit. dip ± 10° pyrite - TRACE Cpy, minor Sp.

→ Sample 325-329.5

329.5-347 - Extremely carbonac gougy dull black slate alternating with more competent black graph. schist with Cpy seams & diss. py. ± 10°

→ Sample 333-340
→ 346-347
→ 343-346

28

28

ARCTIC
DH-5
Rx
8/22/67

TR. MK. REG. U.S. PAT. OFF.

347-353 DK. siliceous graph. schist altern. with schistose Qtzite - dip ±10°. scattered py - loc. Cp seams & Sp.

→ sample # 347-353

353-357 - Mottled slightly chloritic qtzite - punky appear - fresh py dissem. grains - minor Sp. Tr Cp in seams

→ Sample 353-357

~~357~~ - Same as above with green
351-~~383~~ chlor. ptings. → loc. talcy
370 yell. green chlorite ± 5-10° gougy loc. - soft.

→ Sample 361.3 - 364.3
→ " 364.3 - 366.3
→ " 366.3 - 367.3
→ " 367.3 - 375
→ " 375 - 377
→ 377 - 380
→ 380 - 382
→ 382 - 383

~~To Union~~
~~364.3 - 36~~
36

ORIGINAL COPR. 1918 BY J. C. PARKER — 5 LINES TO INCH — MADE IN U.S.A. — LEFAX, PHILADELPHIA, PA 19107

28

ARCTIC
DH-5
Rx
8/22/67

TR. MK. REG. U.S. PAT. OFF.

To Union from DH-5
346-347 Au
361.3-364.3 Cu Ag, Pb
364.3-366.3 Cu, Ag, Zn, Pb
~~366.3~~
~~36~~ 375-377 Cu, Ag, Pb, Au
377-380 Cu, Ag, Pb
380-382 Cu, Ag

370-383 Muscovite-chl. schist - very soft - gougy - high-grade massive sulfides as shown by samples - py ±10% in sulfide zones - 2-3 elsewhere.

383-385 Bleby pale green chlorite schist - soft ±5°

385-407 Pale green chlorite schist - bot rx? 5-10°

Barren to negl sulfides below 383'.

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28

A-5

schistose rx - very competent - becomes quite talcy below 397 -

flat to 50

Spec. 338
355
391
409

28

A-5

325 - 351.5 - MDG top grading dn to MG near base - graph top - core is split - freq pulverizes or splitting but appear competent prior to this ±5°-0° pyritic typ. gray phyllite

351.5 - 357 competent dull green schistose congl? gen massive competent ±5°-10° (split)

387 - 407 Pale tannish green to gray massive to slightly

28

Exhibit "F-1"

DOWN-HOLE SURVEY DATA (cont'd)

DOWN-HOLE FOOTAGE	INCLINATION	AZIMUTH
ARCTIC DRILL HOLE 43		
155	80	90
355	72	82
545	68.5	82
745	63	63
ARCTIC DRILL HOLE 46		
385	73	2
455	72	12
ARCTIC DRILL HOLE 48		
139	88	ND
239	83	

AVERAGE ARCTIC DRILL DEVIATION

DEPTH	INCLINATION	AZIMUTH	CUMULATIVE DEVIATION	
			HORIZONTAL	VERTICAL
100	86	45	3.5	0.1
200	81	45	14.8	0.8
300	77	45	33.8	2.7
400	74	45	58.8	5.9
500	73	45	87.2	10.0
600	72	45	117.2	14.6
700	71	45	148.9	19.7
800	70	45	182.3	25.4
900	69	45	217.3	31.7
1000	68	45	253.9	38.6
1100	67	45	292.2	46.2
1200	66	45	332.2	54.5

0 - 50	Vertical		
50 - 150	4	6.97'	7.0
150 - 250	9	15.64'	15.6
250 - 350	13	22.5	22.5
350 - 417 (67')	16	18.5	18.5
			63.6'

22.6

ARCTIC DDH-5

1" = 100'

2/16/73 HS

DDH log is incomplete

PROJECT 003-00-0013 - Arctic

HOLE NO. DH - 5

ASSAY LOG

* Union
KCC

SAMPLE NUMBER	SAMPLE INTERVAL FROM	TO	FEET	ASSAY Cu	Pb	Zn	Ag	Au
71145	60	70	10	0.08		0.04	0.28	
71146	124	129	5	0.04		0.04	0.31	
71147	154	158	4	0.04		0.14	0.44	
71148	263	268	5	0.29		0.46	0.57	
								.005*
71149	268	270	2	0.74		0.28	0.44	
								.010*
71150	321	322.5	1.5	1.35		0.24	1.06	
								.030*
71117	325	329.5	4.5	0.19		0.58	0.88	
71118	333	340	7	0.48		0.23	0.73	
71119	343	346	3	0.26		0.68	0.59	
71120	346	347	1	4.40		1.36	1.03	
								.045*
71121	347	353	6	0.29		0.40	0.58	
71122	353	357	4	0.03		0.03	0.47	
71123	361.3	364.3	3	2.01		0.16	0.64	
				1.992*	0.3*		0.24*	
71124	364.3	366.3	2	1.50		17.70	1.06	
				1.429*	3.9*	17.45*	1.04*	
71125	366.3	367.3	1	2.68		0.45	0.70	
71126	367.3	375	7.7	0.15		0.13	0.57	
71127	375	377	2	7.36		13.70	1.92	
				7.307*	0.5*	13.35*	2.1*	.010*
71128	377	380	3	12.85		6.28	1.81	
				12.570*	0.3*		1.86*	
71129	380	382	2	4.69		2.48	0.89	
71130	382	383	1	0.78		0.59	0.51	

BC 12-66

SAMPLE RECORD

E1 3088

PROJECT: ARCTIC **WORKING PLACE:** DH-5 **SAMPLER:** **DATE** 1/67

Sample Number	Location (Degenhart Black ink)	Sample Length	True Width	Cu Assay	Cu Assay Feet	Ag Assay	Ag Assay Feet	Zn Assay	Zn Assay Feet	Au Assay	Au Assay Feet	Pb Assay	Pb Assay Feet	Chan. Size	Wt.	Remarks
71145	60 - 70					0.28										
71146	~~124~~ - 129					0.31										
71147	1~~54~~ - 158					0.44										
71148	263 - 268					0.57										
71149	268 - 270					0.44										
71150	321 - 322.5					1.06										
71117	325 - 329.5					0.88										
71118	333 - 340					0.73										
71119	3~~4~~3 - 346	3		0.26		0.59		0.68								
71120	346 - 347	1		4.40		1.03		1.36		0.045						
71121	347 - 353	6		0.29		0.58		0.40								
71122	353 - 357	4		0.03		0.47		0.03								
71123	361.3 - 364.3	3	6.00	1.992 2.61		0.24 0.64	~~0.24~~ 1.32	0.16				0.3				
71124	364.3 - 366.3	2	2.90	1.429 1.50		1.04 1.06	~~1.04~~	17.45 17.70				3.9				
71125	366.3 - 367.3	1	2.68	2.52 2.68		0.35 0.70		0.45		.005		0.05				
71126	367.3 - 375	7.7		0.58 0.15		0.15 0.57		0.13		Tr		0.10				
71127	375 - 377	2	14.614	7.307 7.36	14.614	2.10 1.92	4.02	13.35 13.70	27.04	0.010		0.5				
71128	377 - 380	3	37.710	12.570 12.85	37.710	1.86 1.81	5.49	6.28	18.84			0.3				
71129	380 - 382	2	9.38	4.69		0.89	1.78	2.48	4.96							
71130	382 - 383	1		0.78		0.51		0.59								

(Margin notes beside 71123–71125: 1.935 Cu, 11.58 A ft; beside 71127–71129: Zn 58.84 A ft, Ag 16.29 oz ft, Cu 51.70 A ft)

375 - 382 7 ft. { 8.81 % Cu, 1.61 oz Ag, 7.26 % Zn }

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME Arctic
CODE 1968 Relog

DRILL HOLE NO. 7 PAGE 1 OF 2

Purpose of hole

BEARING DIP

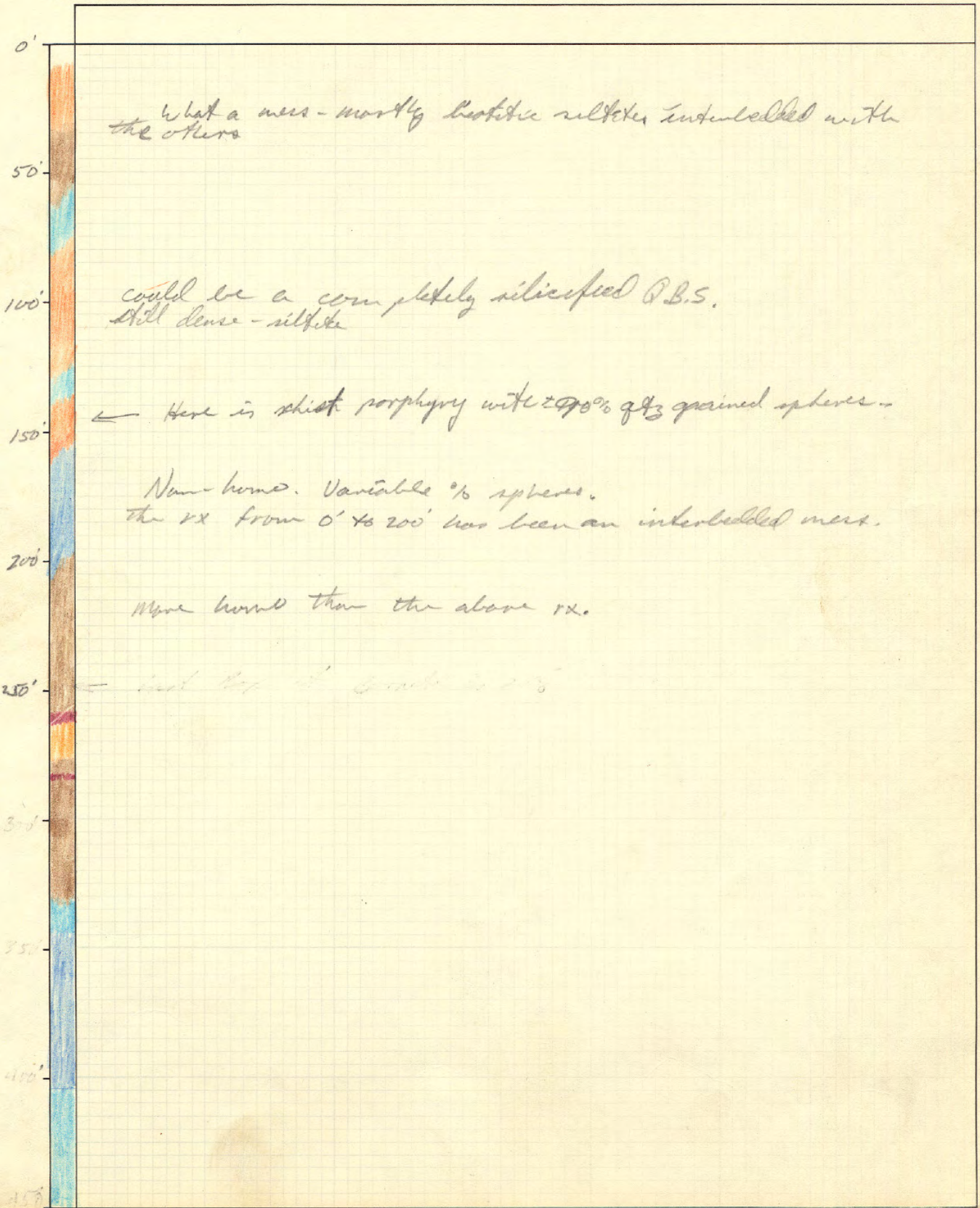
LOCATION

TOTAL DEPTH , BY

START COMPLETED

Scale: 1" = 50'

Est. of final depth



NORTHWEST DISTRICT
Summary Drill Hole Log

NAME Arctic
CODE 05-01-0013

DRILL HOLE NO. 7 PAGE 1 OF 3
BEARING VERTICAL DIP
LOCATION
TOTAL DEPTH 466 , BY CGB
START 5/24/67 COMPLETED ~~5~~/9/4/67

Purpose of hole
El 3079

Scale: 1" = 20 Est. of final depth

(3079) 0	Cu 2 4 6 8 10 12	Ag 2 4 6	Zn 2 4 6 8 10 12	Pb 1 2 3 4	AN	Remarks
(3059) 20						Lt-Med lt gray quartzite (gritty) with more or less muscovite as shown - very locally highly siliceous muscovite schist.
20°						
(3039) 40						
20°						
15°						
(3019) 60						
(2999) 80						
(2979) 100						
10°-15°						
(2959) 120						
(2939) 140						
10°-15°						
(2919) 160						
(2899) 180						

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME ARCTIC
CODE

DRILL HOLE NO. 7 PAGE 2 OF 3
BEARING VERTICAL DIP
LOCATION
TOTAL DEPTH 466 , BY CGB
START 8/24/67 COMPLETED 9/4/67

Purpose of hole

El 3079

Scale: 1" = 20 Est. of final depth

(2899) 180
SLIGHTLY SILICEOUS MUSCOVITE SCHIST — Very light gray
10°
(2879) 200
(2859) 220
10°
(2839) 240
(2819) 260
(2799) 280
(2779) 300
(2759) 320
(2739) 340
(2719) 350

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME ARCTIC
CODE 05-01-0013
Purpose of hole

El 3079

DRILL HOLE NO. 7 PAGE 3 OF 3
BEARING VERTICAL DIP
LOCATION
TOTAL DEPTH 466 , BY CGB
START 8/24/67 COMPLETED 9/4/67

Scale: 1" = 20'
Est. of final depth

(2719) ~~2669~~ 360
(2699) ~~2649~~ 380
(2679) 400
(2659) 420
(2639) 440
(2619) ~~2619~~ 460
(2599) ~~2579~~ 480
(2579) ~~2559~~ 500
(2559) ~~2539~~ 520
(2539) ~~2519~~ 540

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME
CODE
Purpose of hole

DRILL HOLE NO. 7 cont PAGE OF
BEARING DIP
LOCATION
TOTAL DEPTH , BY
START COMPLETED

Scale: 1" = 50'
Est. of final depth

450'

142.02

SAMPLE RECORD

EI 3079

PROJECT: ARCTIC WORKING PLACE: DH-7 SAMPLER: DATE 1/67

Sample Number	Location	Sample Length	True Width	Cu AV. Assay	Cu AV. Assay Feet	Ag AV. Assay	Ag AV. Assay Feet	Zn Assay	Zn Assay Feet	Au Assay	Au Assay Feet	Pb Assay	Pb Assay Feet	Chan. Size	Wt.	Remarks
	Regular Black Ink															
71151	406 - 405	5		0.49		0.5										
71152	405 - 409	4		0.49		0.5										
71153	409 - 411	2		0.20		0.5										
71154	411 - 414	3	2.29	2.299 2.29	6.87	0.9 1.2	1.0	4.15	9.96	0.010		0.9				
71155	414 - 416	2	1.05	1.020 1.08	2.10	0.54 0.8	0.7	0.01	0.00			0.3				
71156	416 - 419.5	3.5	0.90	1.16 0.90	3.15	0.5	0.5	N.1	0.60	0.010		0.05				
71157	419.5 - 420.5	1	0.92	0.932 0.90	0.92	0.2 0.5	0.3	N.1	0.00	0.010		0.05				
71158	420.5 - 422	1.5	5.70	5.569 5.71	8.55	2.8 N 2.4	3.9	6.64	9.96	0.140		1.0	1.5			
71159	422 - 425	3	4.21	4.190 4.24	12.63	3.2 3.0	9.3	9.16	27.48	0.020		1.0	3.0			
71160	425 - 427	2	5.36	5.599 5.13	10.72	2.2 2.4	4.6	15.9	31.80	0.075						
71161	427 - 430	3	8.21	8.176 8.25	24.63	2.7 N 2.10	7.2	12.08 11.37	34.11	0.040		1.0	3.0			
71162	430 - 434	4	4.34	4.292 4.39	17.36	2.78 2.6	10.8	10.4	41.60	0.030			0.32			
71163	434 - 438	4	4.85	4.8030.97 4.90	19.40	2.94 2.8	11.6	10.4	41.60	0.030			0.32			
71164	438 - 442	4	7.33	7.307 7.36	29.32	3.4 2.8	12H	(8.5) 8.51	34.04	0.035		0.7	2.8			
71165	442 - 444.5	2.5	2.55	2.503 2.59	6.37	3.5 2.80	7.7	11.4	28.50	0.055		1.4	3.5			
71166	444.5 - 446.5	2.0	0.13	0.119 0.15	0.26	0.2 0.6	0.8	0.13	0.26	Tr		0.2	0.4			
71167	446.5 - 451.7	5.2		0.05	0.6	0.6		N.1		N.1						
71168	451.7 - 452.7	1.0	2.10	2.10		0.7		0.39								
71169	452.7 - 458	5.3		0.05	0.6	0.6		0.16								
	420.5 - 444.5 = 24 ft	(5.37) 5.37 % Cu				411 - 445.5				4.24 % Cu						
	Cu & Ag MR of KCC	2.8 oz. Ag				= 33.5'				2.1 oz Ag						
	& Union Assays.	10.38 % Zn								7.56 % Zn						

ARCTIC
DH-7
9/9/67
Rs

TR. MK. REG. U.S. PAT. OFF.

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5 LINES TO INCH

LEFAX PHILADELPHIA PA 19107 MADE IN U.S.A.

0 - 31' Gray siliceous qz (qtzite) tiny specks dark material;

31' - 40' - Black speckled blebs in pale greenish gray qtzite matrix - chlorite increases downward. spec. A-39

40 - 44 - Dull green chloritic (granular) quartzite; thin layers blebby dark inclusions interlayered with fine grained siliceous gray-bleached appear. bands. ∓20° (A-39 shows the black specks & chlorite)

44 - 59 - Continued of banded dull green qz with thin wispy layers carbonac? matter. carbon material less than 5%; loc. white blebby inclusions near top. mod. schistose 10 - 15°

59 - 68 - Similar to above but gray bands to 10%. Negl. graphite - highly schistose due to fine grain chlorite - talcy bot 2'.

28

ARCTIC
DH-7
Rs
9/9/67

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5 LINES TO INCH

LEFAX PHILADELPHIA PA 19107 MADE IN U.S.A.

Negl. oxid. below 20' until 66' - 66 - 107' mod. oxid; negl. below 107'.

68 - 103 - Gritty fine grained clear light gray qtzite with very tiny black biotite specks; even chloritic seams particul prom. above 82 ft & give qz property of splitting into thick dollars - very even bedding; schistose plngs common below 82' bedding less prominent; less chlorite. ∓10°

103 - 113 Interlayered ffg qtzite and pale green chlorite schist - glossy sheen to chlorite - breaks across foliae commonly; many dark blebs & specks bottom 3'.

113 - 118 - Typical ffg gritty qtzite with dozen chlor.

28

ARCTIC ~~ARCTIC~~
DH-7
R11
9/9/67

118 - 127 - Pale dull green chlorite rx - poorly developed schistose; conspic. subangular gray blebs in a sea of dull green locally; particularly prominent ~~bottom~~ feature ± 10 - 15°

127 - 141 - ~~Highly siliceous~~ Pale green chlorite schistose qtzite - Thin wafer width layers of fine sandy clean qtzite separated by chlorite - ~~[illegible]~~ slightly wavy chlorite layers: 10 - 15°; subangular white blebs. to 1/8" comming in at 135' - loc. above this; chlorite decreases downward.

28

ARCTIC
DH-7
R12
9/9/67

~~141~~ - ~~165~~ 173 + chloritic qtzite; clean quartz grains with dissem. chlorite & discont. seams; chlorite pale green clean appear (washed) and glassy qtzite; locally layered & schistose high chlorite zones ± 10°

173 - 185 increased chlorite takes rx back into same aspect as 127 - 141 ± 10°

185 - 191.5 - Siliceous chlorite schist - same as above but increased chlorite; wavy banding; distinctive rippled appear. ± 15°

191.5 - 216 Chlorite schist with squeezed pebbles of qtzite CONGLOMERATE. Fragments rounded to augen shaped to ±1" diam. Chlorite Med dk green; oxid. intense. - gritty dirty green appear; distinctive unit

28

ARCTIC
DH-7
9/9/67
R

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216 - 238+ Conglomeratic chlorite schist - cleaner appear than above; frags gen. < ½" max diam; pebbles gen. augen shaped. ±10°; highly siliceous chlor. rx.; - frags to 30%; very loc. minor slightly carbonac. layer 240.5 - 240.8' & very loc. elsewhere below 233'.

5 LINES TO INCH

LEFAX PHILADELPHIA, PA 19107 MADE IN U.S.A.

28

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A-7

248 - ~~258~~ 260 Blebby greenish dark gray schist - highly siliceous - pyritic - rounded to subangular - irreg. whitish blebs - competent ±10° ~~[illegible]~~ blotchy appear - good competent ~~[illegible]~~ silic. schist. graph. bot. 2 ft.

~~258~~ ~~258~~ 260 - 280 - ~~[illegible]~~

258 - ~~[illegible]~~ schistose qutz[illegible] to siliceous schist to 276. Granular - gen. competent except loc. water courses. loc. graph. schistose layers to 8". pyrite - pale green to greenish gray to MLG -

over

28

A-7 cont.

pale greenish muddy appearance near base -

280 - 282 - Slightly graph. thin even varved layered appear. ±5°

282 - 288 - as above 280 except becoming white bleby in greenish matrix pistacho - competent - flat

288 - 292 - rounded quartzite blebs to 1/4 - 1" in gray and dull greenish matrix - highly siliceous cong. competent

292 - 308 - competent 5° - [illegible] lenses in green matrix [illegible] pale muddy green layers

5-10° near base - competent

Spec. 254
258
266
275
280
288
291
294
300
307

308 - 312 - cont. before

312 - 322 - layers of deep brownish red-brown micaceous material [illegible] in highly bleby cong. matrix - [illegible] (highly [illegible]) with [illegible] pale muddy green [illegible] schist layers

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5 LINES TO INCH
LEFAX, PHILADELPHIA, PA 19107 MADE IN U.S.A.
28

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A-7

Competent - flat to 5° schist layers light pale green to light gray highly siliceous.

322 - 350 - very highly siliceous homog. musc. schist - pale green musc. fol. to flat - 5° - competent except for broken porous zone 324-328 and 336-338

350 - finely porous in other layers

350 - 388 - very highly siliceous. pale green chl-musc. layers and planes - round to rubbing of light flops. competent - ± 10°, 5°

pistachio green or feldspar seg.

5 LINES TO INCH

LEFAX. PHILADELPHIA, PA 19107 MADE IN U.S.A.

28

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A-7

Specimens,

314 -
324
336
350
370

At 372 - Minor Cpy in concord Q Vne

388 - 408 - continue of rx above 388 deep green chl.-musc. competent highly siliceous gd. rx. all way ±5°

5 LINES TO INCH

LEFAX. PHILADELPHIA, PA 19107 MADE IN U.S.A.

28

A-7

448-~~458~~ ~~460~~ 464

Homog. M.B.
finely blebby dark
biotite-siliceous xx-
split - competent
should stand -
~~flat~~ to flat
(all [illegible] green

464-466 Bot -
Same as above
but dark chloritic -
may not be pitted
Green Bluffs

Spec: 401 451 465

28

PROJECT 003-00-0013 - Arctic
HOLE NO. DH - 7

ASSAY LOG

* Union
KCC

SAMPLE	SAMPLE INTERVAL			ASSAY							
NUMBER	FROM	TO	FEET	Cu	Pb	Zn	Ag	Au			
71151	400	405	5	0.49		nil	0.5				
71152	405	409	4	0.49		nil	0.5				
71153	409	411	2	0.20		0.18	0.5				
71154	411	414	3	2.29		4.15	1.2				
				2.299*	0.9*		0.9*	0.010*			
71155	414	416	2	1.08		0.01	0.8				
				1.020*	0.3*		0.54*				
71156	416	419.5	3.5	0.90		nil	0.5				
								0.010*			
71157	419.5	420.5	1	0.90			0.5				
				0.932*		nil	0.2*	0.010*			
71158	420.5	422	1.5	5.71		6.64	2.4				
				5.569*	1.0*		2.8*				
71159	422	425	3	4.24		9.16	3.0				
				4.190*	1.0*		3.2*	0.020*			
71160	425	427	2	5.13		15.9	2.4				
				5.599*			2.2*				
71161	427	430	3	8.25		11.37	2.1				
				8.176*	1.0*		2.7*	0.040*			
71162	430	434	4	4.39		10.4	2.6				
				4.292*			2.78*				
71163	434	438	4	4.90		10.4	2.8				
				4.803*			2.94*				
71164	438	442	4	7.36		8.51	2.8				
				7.307*	0.7*		3.4*	0.035*			
71165	442	444.5	2.5	2.59		11.4	2.8				
				2.503*	1.4*		3.5*	0.055*			
71166	444.5	446.5	2	0.15		0.13	0.6				
				0.119*	0.2*		0.2*	tr*			
71167	446.5	451.7	5.2	0.05		nil	0.6				
								nil*			
71168	451.7	452.7	1	2.10		0.39	0.7				
71169	452.7	458	5.3	0.05		0.16	0.6				

BC 12-66

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME Arctic
CODE 1966 Relog

DRILL HOLE NO. 8 PAGE 1 OF 1
BEARING DIP
Purpose of hole
LOCATION
TOTAL DEPTH , BY
START COMPLETED
Scale: 1" = 50'
Est. of final depth

0'

Typical of the siliceous chl.-musc. schist.

50'

Hons - cleavage is 25° to horiz.

100' ← Hole ends at 99'

NORTHWEST DISTRICT
Summary Drill Hole Log

NAME ARCTIC
CODE 05-01-0013

DRILL HOLE NO. 8 PAGE 1 OF 1
BEARING VERTICAL DIP
LOCATION
TOTAL DEPTH 177, BY COB
START 8/24/67 COMPLETED 8/26/67

Purpose of hole
El. 3195
Scale: 1" = 20'
Est. of final depth

(3195) 0
(3175) 20
(3155) 40
(3135) 60
(3115) 80
(3095) 100
(3075) 120
(3055) 140
(3035) 160
(3015) 180

SLIGHTLY CHLORITIC Muscovite schist (The chlorite not same as deep green chlorite of underlying GREEN BLUFFS UNIT

INCREASING DEEP GREEN coarse, soft chlorite (transitional zone into the Green Bluffs unit Below

Deep green, coarse CHLORITE SCHIST TRUE GREEN BLUFFS

1305 West 36th Avenue
Anchorage, Alaska

October 14, 1971

MEMO TO: The Files

FROM: L. L. Lackey

SUBJECT: ALASKA - Ambler River - Arctic Patent

Samples from the "new" discovery pit on amended Arctic 10 claim assayed as follows:

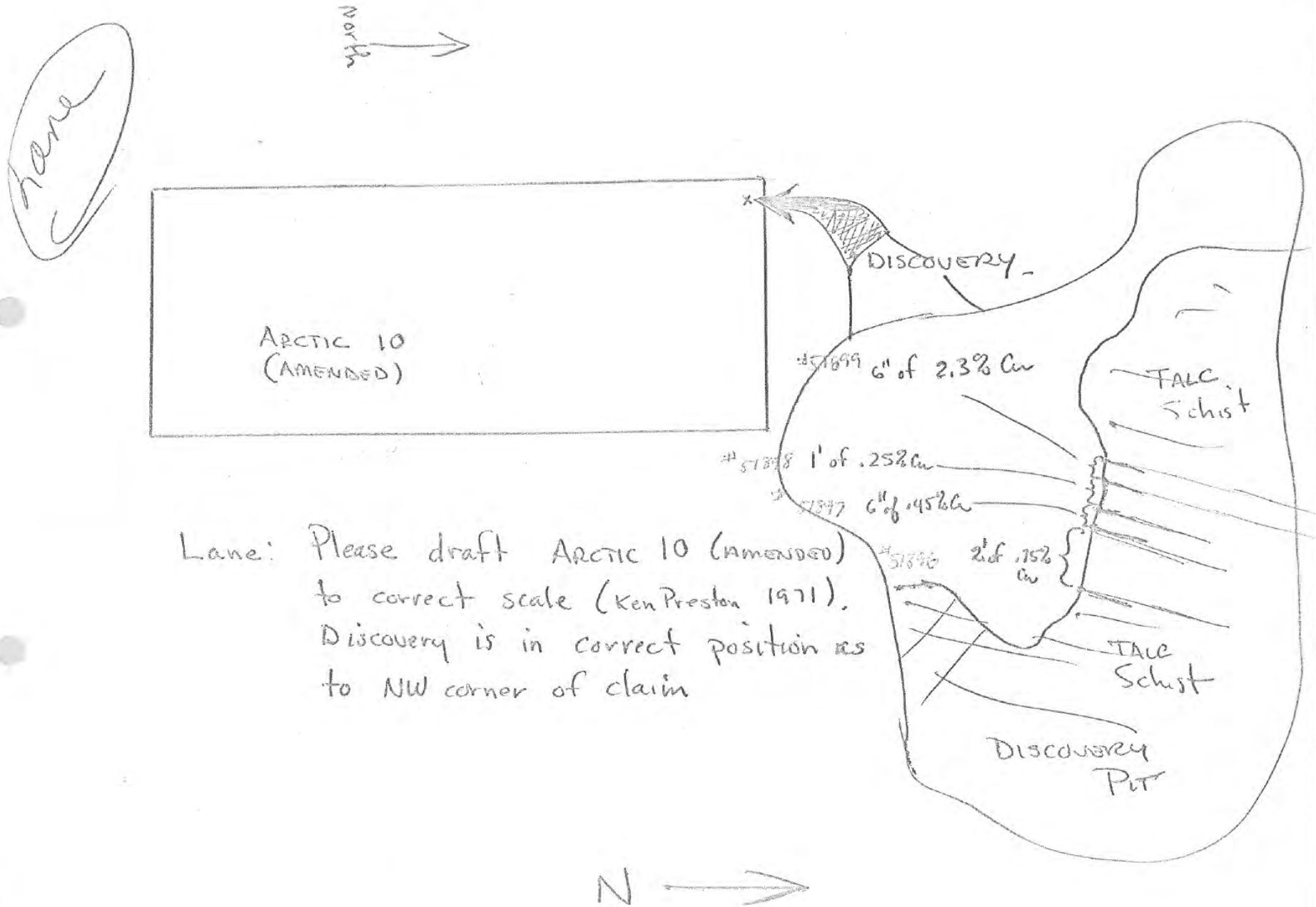
Sample		Cu, %	Zn ppm	Pb ppm	Ag oz/ton	Au oz/ton
51899	6"	2.3	510	100	.61	.09
51898	1'	.255	670	95	.05	.02
51897	6"	.45	725	130	.06	.02
51896	2'	.75	675	170	.24	.07

L. L. Lackey

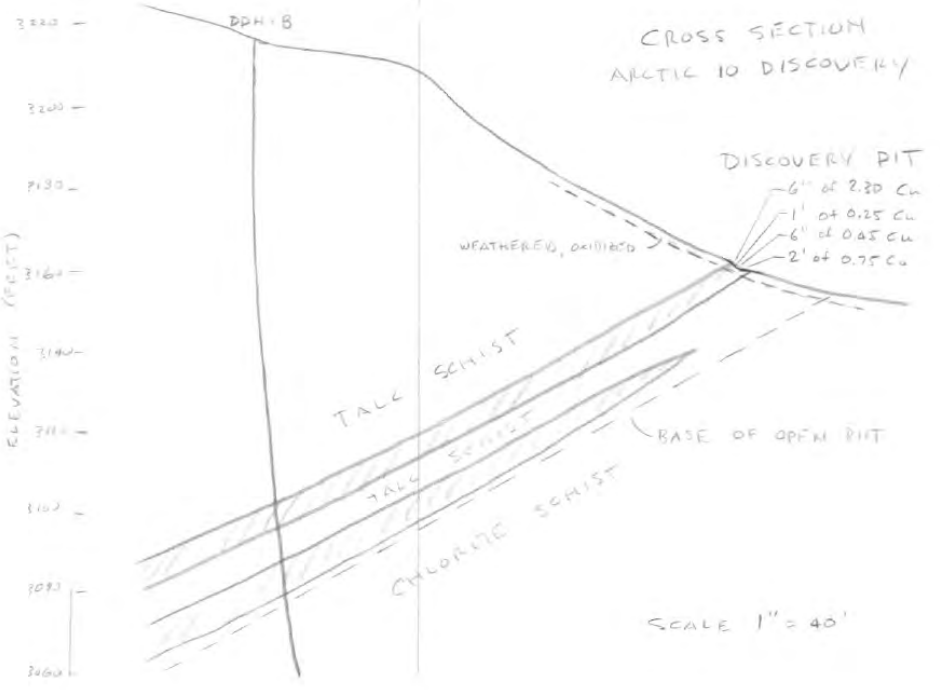
LLL/mi

Attachment: Diagram

cc: Glenn C. Reed



Lane: Please draft ARCTIC 10 (AMENDED) to correct scale (Ken Preston 1971). Discovery is in correct position as to NW corner of claim


DDH-8
CROSS SECTION
ARCTIC TO DISCOVERY
DISCOVERY PIT
-6" of 2.20 Cu
-1' of 0.25 Cu
-6" of 0.45 Cu
-2' of 0.75 Cu
WEATHERED, OXIDIZED
TALC SCHIST
TALC SCHIST
CHLORITE SCHIST
BASE OF OPEN PIT
SCALE 1" = 40'
ELEVATION (FEET)

	%Cu	%Pb	%Zn	oz/ton Ag	oz/ton Au
5'	1.39	NA	0.18	0.35	NA
9'	0.06	NA	0.14	0.24	NA
4.5'	1.59	0.40	0.65	0.50	0.005
3'	11.29	2.40	11.50	3.50	0.020
11'	0.04	NA	0.04	0.32	NA
7'	0.23	0.30	0.40	0.32	nil

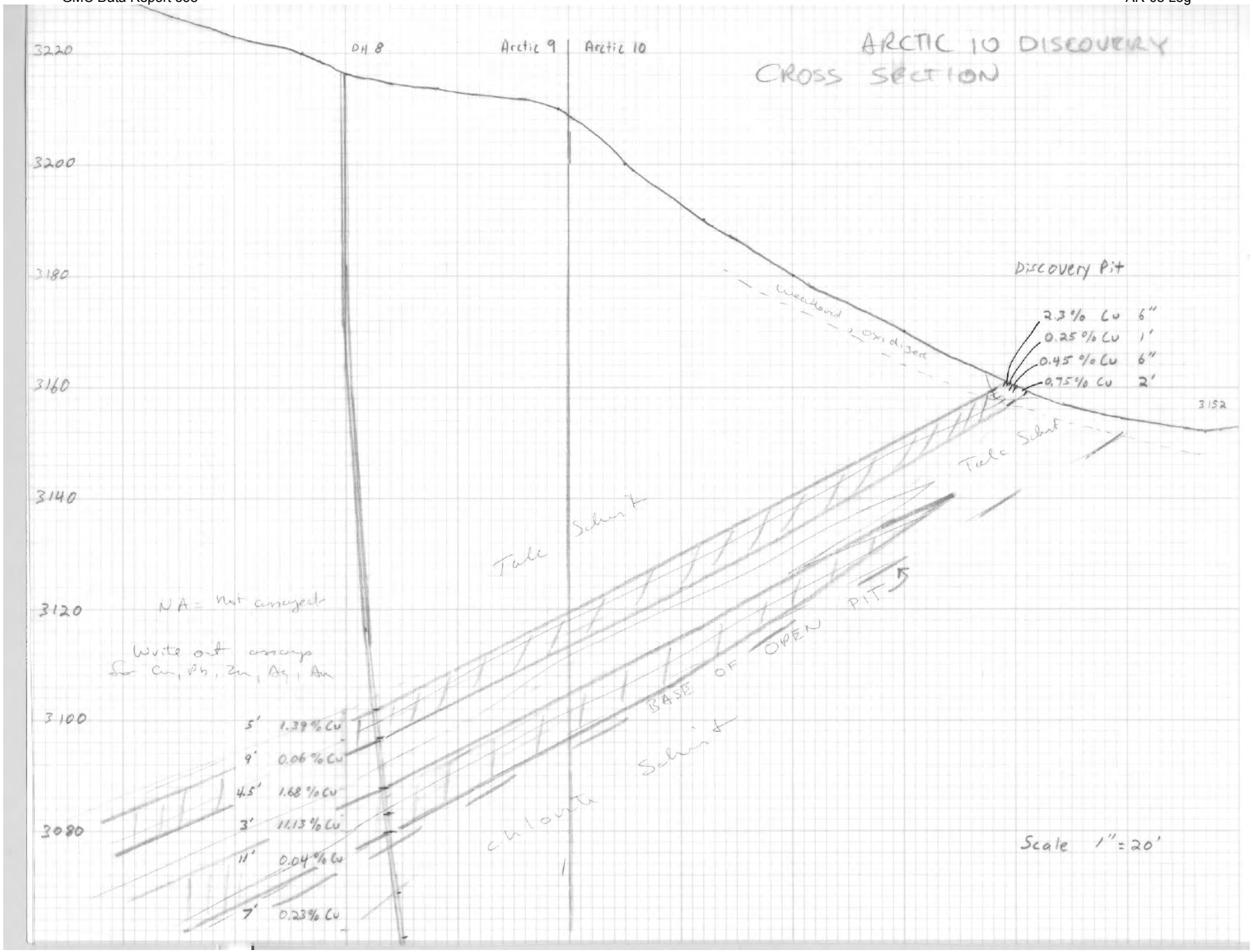
Chuck -

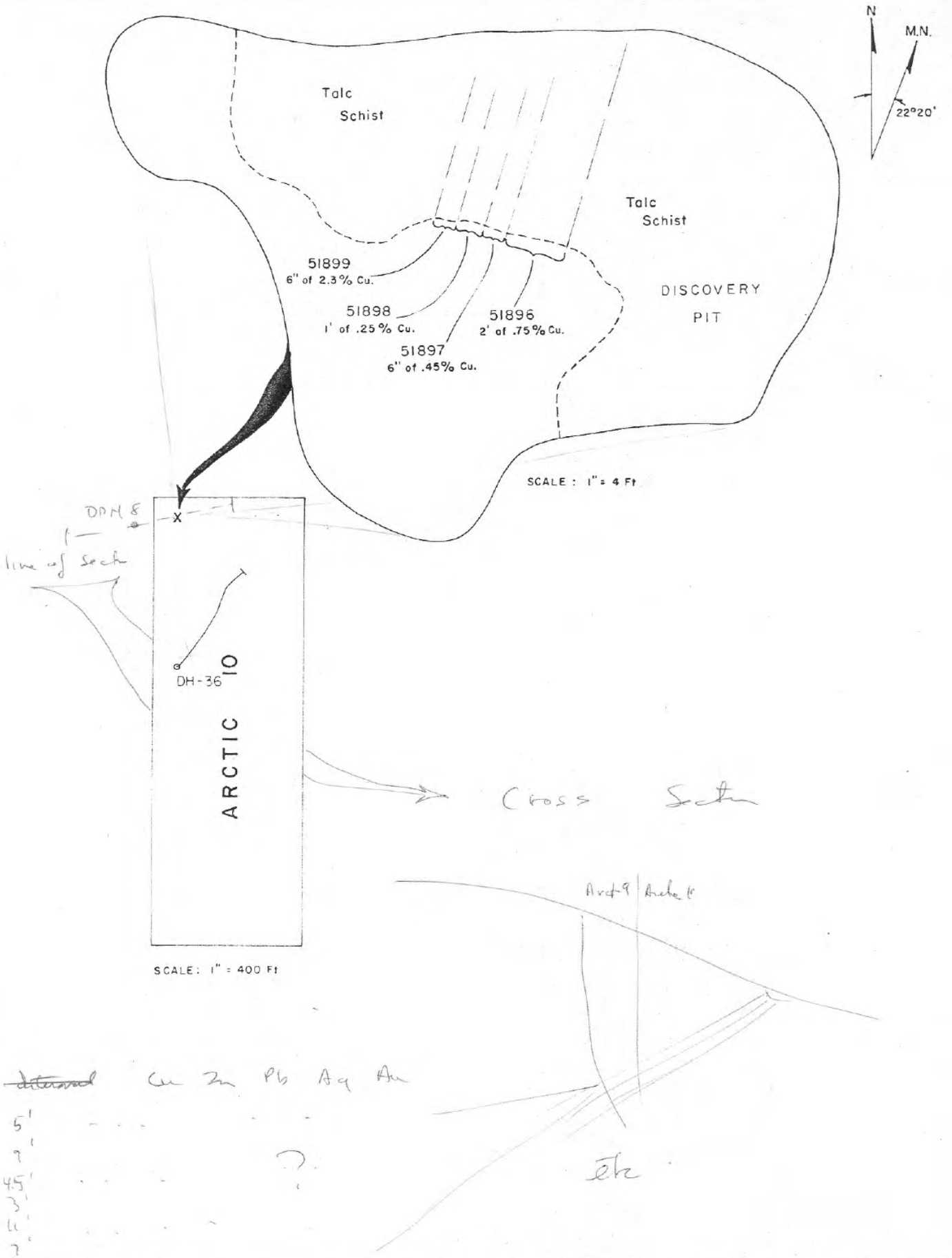
Please Revise this May '74 drawing to include the location of DH 8, — a line of section, and the section as shown, but reduced to fit the page

We want to add the Pb, Zn, Ag, Au values to all samples, too. Should we just build a table, or can we list them out next to the intercept or sample? I'll leave this to you.

I've attached all the file data.

We'll need this in a week.


ARCTIC 10 DISCOVERY
CROSS SECTION
DH 8
Arctic 9
Arctic 10
3220
3200
3180
3160
3140
3120
3100
3080
Discovery Pit
2.3% Cu 6"
0.25% Cu 1'
0.45% Cu 6"
0.75% Cu 2'
3152
Weathered
Oxidized
Talc Schist
Talc Schist
PIT
OPEN
BASE OF
Schist
chlorite
NA = Not assayed
Write out assays for Cu, Pb, Zn, Ag, Au
5' 1.39% Cu
9' 0.06% Cu
4.5' 1.68% Cu
3' 11.13% Cu
11' 0.04% Cu
7' 0.23% Cu
Scale 1" = 20'



BEAR CREEK MINING COMPANY NORTHWEST DISTRICT	DATA BY: H.S	REVISED	DISCOVERY POSITION ARCTIC 10 CLAIM	FIGURE
	DWN. BY: S.K.M			
	DATE MAY 7, 1974			

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TR. MK. REG. U.S. PAT. OFF.

A-8

99–118 – Typ.
~~Ka~~ 5° – 15°
pale green siliceous
chl – musc schist –
competent but
could cause trouble
oxidized.

118 – 127 – Green (med)
chl schist – competent
as above
10 – 15°

137 – 138 as above

138 – 154 – Very bad –
muscov sericite crumbly
talcy schist.

5 LINES TO INCH

LEFAX. PHILADELPHIA. PA. 19107 MADE IN U.S.A.

28

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A-8

154 – 177 – Siliceous
deep med green
chlorite schist
± 10° – becomes
talcy less competent
below 173 ft.

Spec 99
127
145
158
177

5 LINES TO INCH

LEFAX. PHILADELPHIA. PA. 19107 MADE IN U.S.A.

28

Sample No. 51894
Date 7-22-71
Quadrangle AMBLER A-1

ROCK SAMPLE

STREAM SEDIMENT GEOCHEM SAMPLE INFORMATION

1. LOCATION OF SAMPLE RELATIVE TO CR. D ---------- hi water lev. C ---------- water level B A

2. SEDIMENT SIZE SAMPLED A-sand B-silt & clay

3. ORGANIC CONTENT OF SAMPLE A Black w/much organic matter B gray, mixed C light w/little organic matter

4. CREEK SIZE AND VOLUME Width A -2' B 2-8' C 8-20' D 20-60' E 60- F - Fordable, UF - Unfordable

5. STREAM PROFILE A Steep w/many falls, rocky, difficult to get sample B Rapid, few falls, fine seds. present as well as boulders, gravel C Shallow grade, meandering, mainly fine sediment

6. OUTCROPS OF BEDROCK A cr. flows on bedrock B bedrock exposed w/in 100' C no bedrock seen

7. TYPE OF BEDROCK (list types and percentages under appropriate headings)
Sedimentary Metamorphic Igneous

SEVERAL PIECES FROM ~10' S OF 51892

8. FLOAT IN CREEK (as per #7)

9. GEOCHEMICAL FIELD TEST
x Cu
x H.M.

Sample No. 51895
Date 7-22-71
Quadrangle AMBLER A-1

ROCK SAMPLE

STREAM SEDIMENT GEOCHEM SAMPLE INFORMATION

1. LOCATION OF SAMPLE RELATIVE TO CR. D ---------- hi water lev. C ---------- water level B A

2. SEDIMENT SIZE SAMPLED A-sand B-silt & clay

3. ORGANIC CONTENT OF SAMPLE A Black w/much organic matter B gray, mixed C light w/little organic matter

4. CREEK SIZE AND VOLUME Width A -2' B 2-8' C 8-20' D 20-60' E 60- F - Fordable, UF - Unfordable

5. STREAM PROFILE A Steep w/many falls, rocky, difficult to get sample B Rapid, few falls, fine seds. present as well as boulders, gravel C Shallow grade, meandering, mainly fine sediment

6. OUTCROPS OF BEDROCK A cr. flows on bedrock B bedrock exposed w/in 100' C no bedrock seen

7. TYPE OF BEDROCK (list types and percentages under appropriate headings)
Sedimentary Metamorphic Igneous

COMPOSIT CHIP SAMPLE FOR LENGTH OF 15' N-S ALONG PIT WALL.

8. FLOAT IN CREEK (as per #7)

9. GEOCHEMICAL FIELD TEST
x Cu
x H.M.

Sample No. 51892
Date 7-22-71
Quadrangle AMBLER A-1

ROCK SAMPLE

STREAM SEDIMENT GEOCHEM SAMPLE INFORMATION

1. LOCATION OF SAMPLE RELATIVE TO CR. D ---------- hi water lev. C ---------- water level B A

2. SEDIMENT SIZE SAMPLED A-sand B-silt & clay

3. ORGANIC CONTENT OF SAMPLE A Black w/much organic matter B gray, mixed C light w/little organic matter

4. CREEK SIZE AND VOLUME Width A -2' B 2-8' C 8-20' D 20-60' E 60- F - Fordable, UF - Unfordable

5. STREAM PROFILE A Steep w/many falls, rocky, difficult to get sample B Rapid, few falls, fine seds. present as well as boulders, gravel C Shallow grade, meandering, mainly fine sediment

6. OUTCROPS OF BEDROCK A cr. flows on bedrock B bedrock exposed w/in 100' C no bedrock seen

7. TYPE OF BEDROCK (list types and percentages under appropriate headings)
Sedimentary Metamorphic Igneous

INDIVIDUAL PIECE FROM N. END OF DISCOVERY PIT ARCTIC CLAIM #10 N. EDGE OF CLAIM.

8. FLOAT IN CREEK (as per #7)

9. GEOCHEMICAL FIELD TEST
x Cu
x H.M.

Sample No. 51893
Date 7-22-71
Quadrangle AMBLER A-1

ROCK SAMPLE

STREAM SEDIMENT GEOCHEM SAMPLE INFORMATION

1. LOCATION OF SAMPLE RELATIVE TO CR. D ---------- hi water lev. C ---------- water level B A

2. SEDIMENT SIZE SAMPLED A-sand B-silt & clay

3. ORGANIC CONTENT OF SAMPLE A Black w/much organic matter B gray, mixed C light w/little organic matter

4. CREEK SIZE AND VOLUME Width A -2' B 2-8' C 8-20' D 20-60' E 60- F - Fordable, UF - Unfordable

5. STREAM PROFILE A Steep w/many falls, rocky, difficult to get sample B Rapid, few falls, fine seds. present as well as boulders, gravel C Shallow grade, meandering, mainly fine sediment

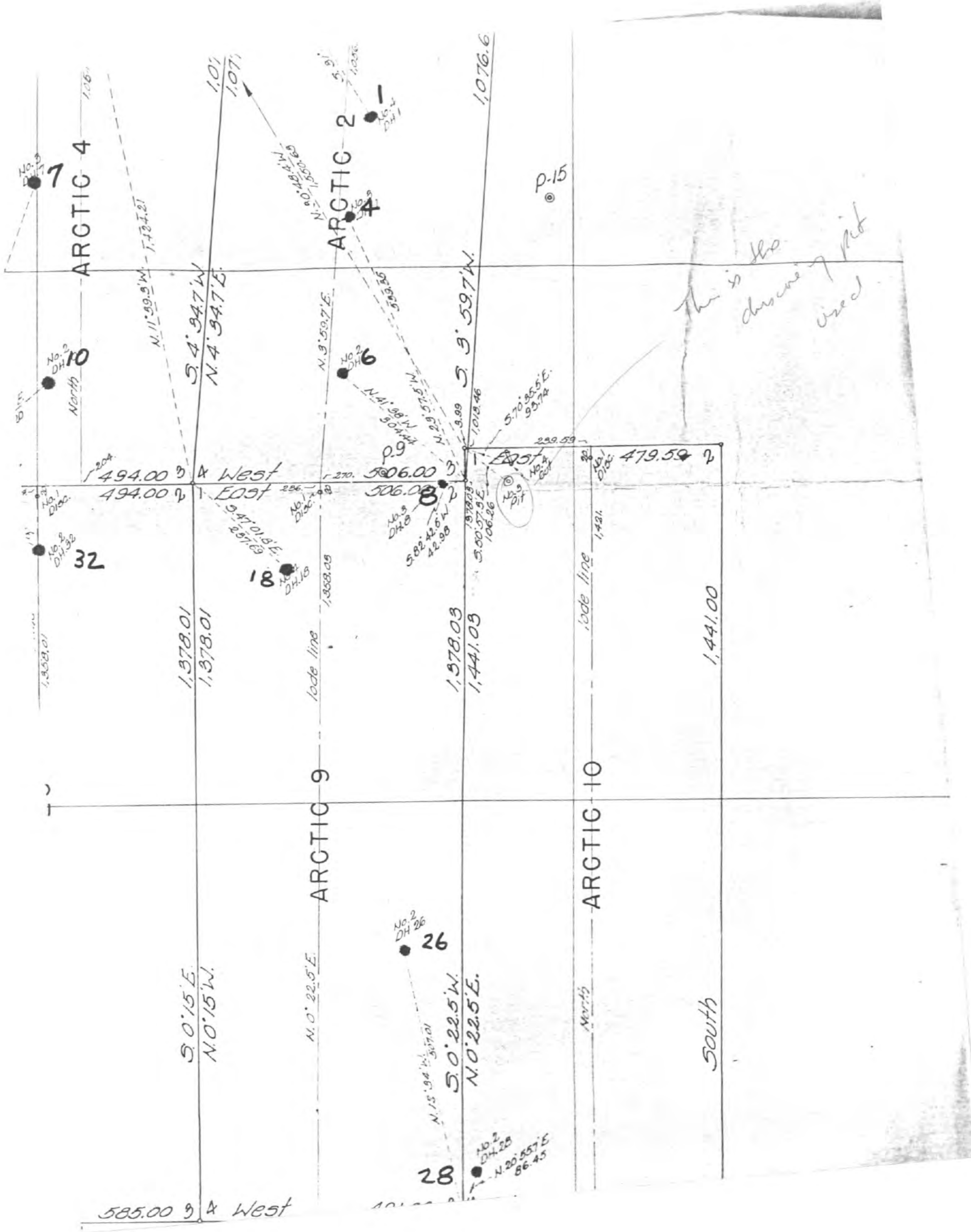
6. OUTCROPS OF BEDROCK A cr. flows on bedrock B bedrock exposed w/in 100' C no bedrock seen

7. TYPE OF BEDROCK (list types and percentages under appropriate headings)
Sedimentary Metamorphic Igneous

INDIVIDUAL PIECE FROM 3' SOUTH OF 51892

8. FLOAT IN CREEK (as per #7)

9. GEOCHEMICAL FIELD TEST
x Cu
x H.M.


ARCTIC 4
ARCTIC 2
ARCTIC 9
ARCTIC 10
P-15
P.9
1,076.6
S. 4° 34.7' W.
N. 4° 34.7' E.
S. 3° 59.7' W.
N. 3° 59.7' E.
494.00
West
East
506.00
479.59
1,378.01
1,378.03
1,441.03
1,441.00
lode line
North
South
S. 0° 15' E.
N. 0° 15' W.
N. 0° 22.5' E.
S. 0° 22.5' W.
585.00
West
No. 2 DH 26
No. 2 DH 28
No. 3 DH 8
No. 9 Pit
1
4
6
7
8
10
18
26
28
32

Bornite

Bear Creek Mining Company

Northwest District

1305 West 36th Avenue
Anchorage, Alaska

July 30, 1971

MEMO TO: G. C. Reed

FROM: L. L. Lackey

SUBJECT: ALASKA - Ambler - Arctic Land

Fwd these

Samples 51892 - 51895 were taken from outcrop on the northwest corner of Arctic 10. The claim was amended to include this outcrop.

The claims (18) have been adjusted. Those claims amended that are in Patent Proceedings include 1, 2, 3, 4, 10, 17, 19, 24, 25, 26, 27, 28, and 29.

The corners of these claims were amended in order to include drill holes of ore grade. See Lane for the map.

L. L. Lackey

L. L. Lackey mi

LLL/mi

E. SPRAGUE AVENUE • SPOKANE, WASHINGTON 99213 • PHONE: 509-924-2600 • TWX: 509-328-6570

PROJECT 003-00-0013 - Arctic
HOLE NO. DH - 8

ASSAY LOG

* Union
KCC

SAMPLE	SAMPLE INTERVAL			ASSAY							
NUMBER	FROM	TO	FEET	Cu	Pb	Zn	Ag	Au			
71088	114.5	119.5	5	1.39		0.18	0.35				
71089	119.5	128.5	9	0.06		0.14	0.24				
71090	128.5	133	4.5	1.68			0.50				
				1.587*	0.4*	0.65*	nil*	0.005*			
71091	133	136	3	11.13		11.50	2.59				
				11.293*	2.4*		3.5*	0.020*			
71092	136	147	11	0.04		0.04	0.32				
71093	147	154	7	0.23		0.40	0.32				
					0.3*			nil*			

BC 12-66

SAMPLE RECORD

El 3195

PROJECT: ARCTIC WORKING PLACE: DH-8 SAMPLER: DATE //

Sample Number	Location (Degenhart in black ink)	Sample Length	True Width	Cu (%) Assay	Cu (%) Assay Feet	Ag (Au) Assay	Ag (Au) Assay Feet	Zn Assay	Zn Assay Feet	Au Assay	Au Assay Feet	Pb Assay	Pb Assay Feet	Chan. Size	Wt.	Remarks
71086	114.5 - 119.5	5.0		1.39												
71089	119.5 - ~~128.4~~ 128.5	9.0		0.06												
71090	~~128.4~~ 128.5 - 133.0	4.5		1.63	7.33	0.25	1.12	0.65	2.93			0.4	1.80			
71091	133.0 - 136.0	3.0		11.21 11.26	33.63	3.0	9.00	12.37 11.50	34.50			2.4	7.20			
71092	136.0 - 147.0	11.0		0.04												
71093	147.0 - 154.0	7.0		0.23												
	Cu															
	128.5 - 136	—	5.46% Cu		(Cu)	—		133 - 136				11.21% Cu				
		—	1.3 oz Ag									3.0 oz Ag				
	7.5 ft.	—	5.0% Zn		(4.99)				3.0 ft.			11.50% Zn				
			1.2% Pb									0.020 Au				
												2.40% Pb				