



STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

Alaska Geologic Materials Center *Data Report No. 375*



No. 375: 1970 AMEX drill logs and assays for the Orange Hill Property,
Nabesna Quadrangle, Alaska: Drill holes No. 3, 6, 8, 9, 10, 11, 11A, 13,
14, 15, 16, 17, 18, 19, 20, 26, 27, 28, 29, 30A, 31



Received *March, 2010*

All data reports may be downloaded free of charge from the [DGGS website](#).

Explanation of Core Log Designed for Computerization (E. Foord) Decimal points can occur anywhere in indicated fields.

Graphic Log - for quick geologic reference. Key is as follows:

- : Diorite (medium grained Hornblende-biotite-qtz diorite).
- : Mafic, dark fine grained porphyritic Biotite-qtz diorite.
- : Metasediments and/or metavolcanics (pre-mineral)
- : Post-mineral basalt-andesite dikes associated with Wrangell vulcanism.
- : Silicic and potassic porphyry. Qtz-feldspar porphyry dikes.
- : Zones of admixed diorite and metasediment/metavolcanics.

Recovery - given in %

Total sulphide present - given in % also. Includes pyrite, chalcopyrite, molybdenite, sphalerite, bornite, etc.

Modal Rock Analysis - Given as % to the nearest 10%. E.G.: 1 (1-10%), 2 (11-20%), 3 (21-30%), 4 (31-40%), etc. A blank indicates that that particular mineral is extremely minor or absent. Numbers sum to 10 for each interval. 0 is sometimes used to indicate the absence of a mineral group (clay).

% of total rock altered - 1 (0-10% of rock is composed of alteration minerals), 2 (11-20%), and 3 (greater than 21% of the rock is composed of alteration minerals). Alteration minerals are: Epidote, chlorite, carbonate, gypsum and anhydrite, secondary quartz, secondary biotite, sericite and clay. The other minerals are considered primary.

Veins - (veinlets) Key: A-epidote, B-chlorite, C-carbonate, D-gypsum/anhydrite, Q-quartz, F-biotite, G-amphibole, H-Potassium feldspar, I-sericite, J-clay, K-zeolite, M-molybdenum, P-pyrite, E-magnetite, S-sulphide, and L-plagioclase.

Angle from Hole - attitude of veins as angle measured from the core axis: 1-less than or equal to 10°, 2-less than or equal to 20°, 3-less than or equal to 30 degrees, etc.

Texture-Grain size - A - phaneritic, B - aphanitic, C - porphyritic, D - aplitic, E - pegmatitic, F - flow layered, G - pilotaxitic, H - amygdaloidal, I - foliated, J - lineated, K - hornfelsic, L - cataclastic, M - clastic.

Continuation of explanation of Core Log form designed for V-96

Grain Size - 1 - less than or equal to 1 mm, 2 - less than or equal to 2 mm, 3 - less than or equal to 3 mm, 5 - less than or equal to 5 mm, 7 - less than or equal to 7 mm, 8 - less than or equal to 3 cm, 9 - larger than 3 cm.

∠: Plane-hole angle - measured between planar feature of rock and core axis.
1 - less than or equal to 10 degrees, 2 - less than or equal to 20 degrees,
3 - less than or equal to 30 degrees, etc.

Rock Type - 1 - gabbro, 2 - diorite, 3 - granodiorite, 7 - alaskite, 8 - basalt, 9 - andesite, 12 - felsite, 13 - tuff, 14 - porphyry, 15 - aplite, 25 - hornfels, 26 - skarn, 31 - wacke, 32 - graywacke, 33 - mudstone, 38 - metasediment, 39 - metavolcanic, 40 - meta-andesite.

Modifiers - Q - quartz, F - feldspar, K - potassium feldspar, Pl - plagioclase, B - biotite, H - hornblende, P - pyroxene, E - epidote, M - magnetite, C - calcite, G - garnet, Ch - chlorite.

% of Rock Type - 1 (10%), 2 (20%), 3 (30%), 4 (40%), etc.

Metallization - Indicate for chalcopyrite, pyrite and molybdenite whether: D - disseminated or, V - vein, and if latter indicate angle between core axis and vein: 1 - less than or equal to 10 degrees, 2 - less than or equal to 20 degrees, 3 - less than or equal to 30 degrees, etc.

Other - B - bornite, S - sphalerite, T - tennantite or tetrahedrite, P - pyrrhotite, M - magnetite, H - hematite, I - ilmenite, R - rutile, etc.

Faulting - Gouge - indicate thickness: 0 - no gouge, 1 - less than or equal to 1 inch, 3 - less than or equal to 3 inches, 8 - less than or equal to 8 inches, 9 - greater than 8 inches.

∠ To Hole - Angle of fault to core axis - 1 - less than or equal to 10 degrees, 2 - less than or equal to 20 degrees, 3 - less than or equal to 30 degrees, etc.

BX - Brecciated zone with thickness as follows: 1 - less than or equal to 1 inch, 3 - less than or equal to 3 inches, 8 - less than or equal to 8 inches, 7 - less than or equal to 1 foot, 9 - greater than 1 foot.

∠ To Hole - Angle of BX zone to core axis: 1 - less than or equal to 10 degrees, 2 - less than or equal to 20 degrees, 3 - less than or equal to 30 degrees, etc.

PROJECT V-96

AREA ORANGE HILL, ALASKA

HOLE NO. ADH-3

SCALE: 1"=50' DATE JUL 9, 1970

COORDINATES PEN DRILL POSITION PLAT

ELEVATION 3229'

Rock Type

GENERAL

Assays

	Cu	Mo	Au	Ag	Zn
0					
10					
15	.05	.008			
20	.07	.007			
30	.08	.004			
40	.06	.008			
45	.06	.006			.031
50					
60					
70					
80					
90					
100					
110					
120					
130					
140					
150					
160					
170					
180					
190					
200					
210					
220					
230					
240					
250					
260					
270					
280					
290					
300					
310					
320					
330					
340					
350					
360					
370					
380					
390					
400					

6203
 ↓
 6207

overquered

Fresh Bi, Qtz diorite
 " "
 " + MINOR QP
 " "
 " "
 H₂O

Average Values: 50'

Cu 0.07%
MoS₂ 0.007%

Rock Type

Assays

SPECIFIC

400

Few Qtz veinlets w/ no sulphides. Dist. generally green, occasionally black. Dist. FeO locally on joints. All FeO. v. fresh trace of Fe. Chips magnetic.

SAME AS ABOVE. A FAIR AMT OF FeO ASSOC. W. Qtz. CHIPS AS WHOLE ARE GENERALLY MAGNETIC. FEW ST. SEEN. MINOR PLAS AND FRESH LIKE ABOVE. Qtz porphyry like present (?). Chips show phenocrysts of Qtz + HBL. No st. assoc with dike. Chips of FeO same as above.

450

A few Qtz stringers. No assoc. st. Dist. FeO - CuFeS₂ in g.O.

500

550

600

650

700

750

800

SAME AS ABOVE. V. FRESH. POSSIBLY A FEW GRAINS OF PINK K.F.S. V. LITTLE st. H₂O AT 72'. NI SAMPLE.

(Cu, Zn in %; Mo as % MoS₂; Au & Ag as oz/ton; N.D. = NONE DETECTED)

PROJECT V-96

AREA ORANGE HILL, ALASKA

HOLE NO. A-DH-6

SCALE: 1"=50' DATE 7/11/70

COORDINATES See PLAT LOCATIONS

ELEVATION 3401'

Rock Type

Assays

Rock Type

Assays

GENERAL

SPECIFIC

Elev	GENERAL		SPECIFIC				
	Cu	Mo	Au	Ag	Zn	Notes	
0						400 OXY OR STAINED CHIPS, SULPHIDES (CPY + PY) VISIBLE CHEEQUER PLAS IS SLIGHTLY ALT.	
10						VEINS CLAY AGE PRESENT, DISSEM CRYP + FRESH CENTRAL PARTS NOT REAR TO BE HIGH	
20	.21	.013				PLAS IS SLIGHTLY ALTERED LOCALLY, SOME MONT. SEEN AS ABOVE. ZONES OF ARGILLIC GRADE ALT MONT. FRESH, CHIPS ARE FAIRLY MAGNETIC. SOME DISSEM CRYP ROCK AS A WHOLE IS FRESH. HOWEVER, PLAS IS FAIRLY SLIGHTLY ALTERED. FEW RELAX PRESENT.	
30	.12	.013				CRYP ALIVE WITH QTZ VEINS + IS DISSEM. SOME FOR	
40	.09	.009				450	
50	.10	.021				450	
60	.12	.013				450	
70	.09	.012				450	
80	.09	.012				450	
90	.05	.011				450	
100	.07	.008				500	
110	.07	.006				500	
120	.10	.016				500	
130	.07	.012	.005	.153		500	
140	.09	.016				500	
150	.12	.016				500	
160	.09	.012				500	
170	.09	.012				500	
180	.07	.010				500	
190	.07	.010				500	
200	.07	.010				500	
210	.07	.010				500	
220	.07	.010				500	
230	.07	.010				500	
240	.07	.010				500	
250	.07	.010				500	
260	.07	.010				500	
270	.07	.010				500	
280	.07	.010				500	
290	.07	.010				500	
300	.07	.010				500	
310	.07	.010				500	
320	.07	.010				500	
330	.07	.010				500	
340	.07	.010				500	
350	.07	.010				500	
360	.07	.010				500	
370	.07	.010				500	
380	.07	.010				500	
390	.07	.010				500	
400	.07	.010				500	

Avg. Values - 260'

Cu	.089%
MoS ₂	.008%
Au	N.D.
Ag	.169
Zn	.01173

NOTES

SOFT ZONES AT: 55'-57'
74'-76'
108'-110'
114'-117'
185'-186'
175'-178'
193'-195'

INCREASED H₂O FLOW AT: 220'-227'
230'

Ca Zn in % Mo in % MoS₂ Ag (Au in Ca/Au) N.D. = none detected

PROJECT V-96

AREA Orange Hill, Alaska

HOLE NO. A-DH 7

SCALE: 1"=50' DATE 24 Aug '70

COORDINATES See map

ELEVATION 3397

Rock Type

Assays

Cu Mo Au Ag Zn

0					
10					
20					
30	.17	.006			
40	.13	.006			
50	.124	.018			
60	.17	.015			
70	.12	.011			
80	.13	.010			
90	.20	.006			
100	.13	.007	ND	.073	.035
110	.15	.008			
120	.14	.003			
130	.12	.014			
140					
150					
160					
170					
180					
190					
200					
210					
220					
230					
240					
250					
260					
270					
280					
290					
300					
310					
320					
330					
340					
350					
360					
370					
380					
390					
400					

Rock Type

Assays

400					
410					
420					
430					
440					
450					
460					
470					
480					
490					
500					
510					
520					
530					
540					
550					
560					
570					
580					
590					
600					
610					
620					
630					
640					
650					
660					
670					
680					
690					
700					
710					
720					
730					
740					
750					
760					
770					
780					
790					
800					

0'-13' overburden
- X
slightly indurated

H₂O

Terminated because of
contamination from
upper part of hole
obscured by H₂O

AVERAGES:

.15 .009 ND .09 .04

Mod amt sulphides, diss. py & py ovt lit
gone to gra ment clay; Lix. black, blk. Small
wt 50

As above

Two spp. vary. blk. mat. - 2" diss. 8.0
sulf. but rx 300 mat. hid. A very little
very little vein qtz. Local at 150 ft
Sulf. pers. at 50'-59'. Increase in py. Very py. slight increase in vein qtz. otherwise
decrease in amt of vein qtz 40-50%, otherwise as above

From 70'-74' soft; py & py, more
slight increase in vein qtz 40-50% water at 80'. Rx soft

Bio fresh; plag. orn. clay; see as above, 0.5% anhyd. - 0.5% vein qtz.
Increase in bio. Small amt of contamination from top of hole.

As above but py & py and slight increase in S, mostly py. Diss. contam.

Plat. still at to gr. clays, soft. Decrease in vein qtz. & py but still
diss. Bio fresh - less anhyd. Some malachite staining. Some contam.
As above but less bio & most py diss. & more of it. Increase in bio, in qtz. Small
amt cont. Bio still slight, as is local.

Increase in amt of diss. py. & py; small amt of mat. vein qtz ~ 0.3%, 0.1%
anhyd. Contamination > 0.5% but < 1.0%. Bio fresh, plag. orn. clay.

See map of Orange Hill to Alaska, Aug 10, 1970

PROJECT

V-96

AREA ORANGE HILL, ALASKA

HOLE NO.

A-DH 8

SCALE: 1"=50' DATE JUL 10/70

COORDINATES

SEE PLAT LOCATIONS

ELEVATION

3321'

Rock Type

Assays

Rock Type

Assays

GENERAL

SPECIFIC

	Cu	Hg	Ag	Au	Zn
6209 OVERTURBONATE WEATHERED SEDIMENT. MA-QTZ DIORITE	.19	.020			
SUBSTANTLY ALTERED MA-QTZ DIORITE	.22	.005			
"	.19	.014			
"	.20	.014			
"	.15	.042			
50 ONLY SLIGHTLY ALTERED MA-QTZ D.	.19	.048	.29	N.D.	.13
"	.16	.022			
VERY SLIGHTLY ALT. MA-QTZ DIOR.	.15	.024			
FRESH MA-QTZ DIOR.	.17	.022	.29	N.D.	.01
100 "	.15	.018			
SLIGHTLY ALTERED MA-QTZ D.	.16	.014			
" " "	.20	.020			
" " "	.13	.012			
" " "	.11	.008			
150 " " "	.13	.009			

WEATHERED CHIPS. FAIRLY WELL ALTERED. SULPHIDES (CPY+PY) PRESENT. DISSEM PY+CPY. NUM. QTZ VEINS. HIGH QTZ. FLAG IS CLOUDY. SOME CLAY (?). MA VERY SOME Fe₂O₄. FLAG STILL SLIGHTLY ALTERED, SOME CLAYS PRESENT. SOME PY+CPY. BLACK MA. OTHERWISE SAME AS ABOVE. SHALLOW AMTS OF Fe₂O₄. STILL DISSEM CPY+PY. AMT OF HI IS LOWER? DISSEM PY. V. LOW HI CONTENT. ALT. STRINGS (UNMIN) ARE STILL PRESENT. HI LOW. POSSIBLY SOME RES. PY+CPY LOW. SAME AS ABOVE. SOME Fe₂O₄. SAME. NUKES SEEN. MOST SULPHIDE SEEN IN PYRITE. FLAG IS FRESHER. GOOD TWINNING. HI IS BETTER DEVELOPED. A LOT IS LIGHT GREEN - BROWN. ORANGE + RED BROWN SPOTS SEEN. V. LITTLE CLAY. HI IS FRESH (?). A TRACE OF CLAYS. HI IS STILL PRETTY FRESH LOOKING. NO GOOD TWINNING IN FLAG. PY+CPY IS DISSEM. QUITE FRESH. HIGHER HI CONTENT. ALT. CHIPS SEEM TO BE SLIGHTLY MORE MAGNETIC. FRESH. SHIP FLAG SEEN. FEW DISSEM SULPHIDES. SOME PY+CPY ASIDE WITH QTZ STRINGS. CHIPS ARE ALL FAIRLY MAGNETIC. FEW GRAINS OF CLAY. ALT. FLAG. FLAG IS DCF. MORE ALTERED. GREENISH-WHITE IN COLOR. FRESH. LESS MAGNETIC. FAIR AMT OF CPY+PY. PY ALSO ASSC. WITH QTZ. CPY DISSEM. HI STILL FRESH. FRESHER THAN ABOVE. SOFT STRIKE AT 120-150. GOOD MINT. NOT VERY MAGNETIC. FAIR AMT OF DISSEM. CPY+PY. SOME OBTAINED. ALT. SULPHIDES IS MOSTLY PY. FLAG IS ALSO QUITE FRESH. SOME LOCAL MINOR ALT. DETRAGGED. V. MUCH MORE MA ALSO. FAIR AMT OF CPY+PY. MOSTLY PY. QTZ VEINS FEW. FLAG FAIRLY MAGNETIC. FLAG ALTERED SLIGHTLY. SAME AS ABOVE. FS ALMOST PERFECTLY FRESH. SOME d. BLOT. FAIR AMT OF CPY+PY. DISSEM. FEW QTZ VEINS. HI + SULPHIDES MAYBE SLIGHTLY LOWER. CHIPS FAIRLY MAGNETIC. SAME. FS NEARLY PERFECT. SOME ALT. B.P. PARTIALLY FRESH. CHIPS NOT OVERLY MAG. FEW QTZ VEINS. TOTAL SULPHIDES LOW. H₂O -162'

Ave. Values: 160'
 Cu 0.17%
 NoS₂ 0.020%
 Ag 0.29 oz/100
 Au N.D.
 Zn 0.07%

NOTE: SCARING FROM HARNER TO ACTUAL HOLE IS 8 1/2° E 56'

Cu & Zn as %, also as % of S₂, Au & Ag as oz/100 (N.D. = NONE DETECTED)

PROJECT

1-96

AREA

JUNIOR HILL, ALASKA

HOLE NO.

AD4-9 [at] (250' E. of road) 9EATS PLOTTED

SCALE: 1"=50'

DATE 3 AUG 1970

COORDINATES

See map

ELEVATION

3352'

Rock Type

Assays

Rock Type

Assays

GENERAL

OVERLAPED

Cu Mo Au Ag Zn

SPECIFIC

400

6961

OVERLAPED TO 2 X
Slightly alt. fine grained
dark bluish gray

moderately alt. fine grained
dark bluish gray

moderately alt. fine grained
dark bluish gray

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dark bluish gray

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dark bluish gray

moderately alt. fine grained
dark bluish gray

GENERAL MASSIVE B.C. ...
Slightly alt. fine grained ...
moderately alt. fine grained ...

moderately alt. fine grained ...
moderately alt. fine grained ...

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moderately alt. fine grained ...
moderately alt. fine grained ...

moderately alt. fine grained ...
moderately alt. fine grained ...

NOTE: PERVASIVE WATER NEVER ENCOUNTERED, BUT
PROGRESSIVELY WETTER MATERIAL WAS DRILLED
FROM 140' TO TERMINATION FOOTAGE WHICH WAS
CAUSED BY EXCESSIVE CONTAMINATION.

Avg. Values
Cu .38%
Mo .021%
Zn .09%
Au N.D.
Ag .047 oz/ton

PROJECT V-96

AREA ORANGE HILL, ALABAMA

HOLE NO. ADH-11

SCALE: 1"=50' DATE 10/10/70

COORDINATES SEC MAP

ELEVATION 3334

Rock Type

Assays

GENERAL

OVERSAMPLING

11

6378 SILICIFIED & STAINED

11-3-0.

11

6379

Cu .09%
M.S. 0.07%

	Cu	Mn	Au	Ag	Zn
0					
10					
20					
30	.07	.011			
40	.10	.002			
50					
60					
70					
80					
90					
100					
110					
120					
130					
140					
150					
160					
170					
180					
190					
200					
210					
220					
230					
240					
250					
260					
270					
280					
290					
300					
310					
320					
330					
340					
350					
360					
370					
380					
390					
400					

Rock Type

Assays

SPECIFIC

GLACIAL SEDIMENTS

11

V. ALTERED H. & R. 2-80% qtz. qtz
SEG. KAOLIN TYPE CLAY
SAME AS ABOVE. FINEER qtz (NOT
SOME ANTHRACITE.
STOPPED AT 49' SAMPLING 11-A.

400				
410				
420				
430				
440				
450				
460				
470				
480				
490				
500				
510				
520				
530				
540				
550				
560				
570				
580				
590				
600				
610				
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700				
710				
720				
730				
740				
750				
760				
770				
780				
790				
800				

PROJECT V-96

AREA ORANGE HILLY PLACES

HOLE NO. A-0114

SCALE: 1"=50' DATE JUL 15, 1977

COORDINATES See PLAT LOCATIONS

ELEVATION 3446

Rock Type

Assays

Rock Type

Assays

GENERAL

SPECIFIC

	Cu	MoS ₂	Au	Ag	Zn
0					
10					
20					
30					
40					
50					
60					
70					
80					
90					
100					
110					
120					
130					
140					
150					
160					
170					
180					
190					
200					
210					
220					
230					
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260					
270					
280					
290					
300					
310					
320					
330					
340					
350					
360					
370					
380					
390					
400					

	Cu	MoS ₂	Au	Ag	Zn
400					
410					
420					
430					
440					
450					
460					
470					
480					
490					
500					
510					
520					
530					
540					
550					
560					
570					
580					
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670					
680					
690					
700					
710					
720					
730					
740					
750					
760					
770					
780					
790					
800					

6274

628

Aug. Values: 170'

- Cu .13%
- MoS₂ .006%
- Au N.D.
- Ag .056%/ton
- Zn .135%

Cu and Zn 90%, Au 7.1%, Ag 0.056%, Zn 13.5%

PROJECT V-96
 HOLE NO. ADH-17
 COORDINATES PER SITE MAP

AREA ORANGE HILL, ALASKA
 SCALE: 1"=50' DATE JUL 21, 1970
 ELEVATION 7302

Rock Type GENERAL **Assays**

Rock Type SPECIFIC **Assays**

B6315

B6321

0	Cu	Mo	Au	Zn	
0					
10	.07	.007			
20	.06	.012			
30	.05	.012			
40	.08	.024			
50	.07	.017			
60	.09	.025	N.D.	.026	.01
70	.09	.011			
100					
150					
200					
250					
300					
350					
400					

Ave Values: .07 .017

400					
400					
450					
500					
550					
600					
650					
700					
750					
800					

ABUNDANT CHAPS OF VA CR. SOME...
 REFINED Q.D. W/ FEED...
 (15 ACT. #...)
 SAME, W/ BIT WHERE...
 APP LACK OF...
 DIRECT AS ABOVE...
 V L...
 MORE...
 AS ABOVE BUT...
 5' W/ NO...
 WITH...
 IN A...

Cu and Zn as %, Mo as % MoS₂ Au and Ag as oz/t, Au 35

PROJECT

V-96

AREA

ORANGE HILL ALASKA

HOLE NO.

A-DH 20

SCALE: 1"=50'

DATE 7.20.70

COORDINATES

ELEVATION

3301

Rock Type

Assays

GENERAL

C Mo Au Ag Zn

OVERLAP

0

"

10

SLIGHTLY A. TENS.

20

+ S. S. OF COOR.

30

6304 FRESH QUARTZ FELDSPAR

40

6305 " "

50

Avg. Values: 48'

Cu .05%

Mn .018%

As N.D.

Pb <.009%/Tm

Zn .01

100

150

200

250

300

350

400

Rock Type

Assays

SPECIFIC

400

SOIL + FRAGILE ROCK FRAGS. + H₂O USING BENTONITE DRILLING MUD.

NOT MUCH VISIBLE TOTAL SULPHIDE (MAY BE PY + CPY). ALLOT MAY BE WITH THE CLAY FRACTION. PY + CPY ARE ABSENT. VERY HARD. SOME

CLAY (GREENISH-WHITE COOR). CPY + MOLY + PY. NO GOOD PINK REF. SLIGHTLY COAR.

VERY HARD. SAME AS ABOVE. GREENISH FS. MANY DRILL BIT FRAGS.

WATER & CAPING - NO SAMPLES FROM 45'. STOPPED @ 48'.

500

550

600

650

700

750

800

Cu and Zn as T₂ Mo as T₂ MnS₂

PROJECT V-96

AREA ORANGE HILL LEASES

HOLE NO. A-04-21

SCALE: 1"=50' DATE 7/20/78

COORDINATES SEE PLAT

ELEVATION 3343

Rock Type

Assays

Rock Type

Assays

GENERAL

SPECIFIC

	CU	Mo	AU	Ag	Zn
6312	.84	.001			
6311	.96	.003			
6307	.47	.003			
6308	2.35	.001	<.001	.122	.019
6309	.13	.02			
6310	.12	.007			
6313	.12	.011			

400
 SOIL GLACIOFLUVIAL FEOS. AND SANDY RECOVER W/ CERAMIC CHIPS IN AVECT
 1" TALK AT 9' CLAYS ASSOC WITH VEIN QZ.
 QUITE FRESH SILICIFIED POTASSIC QZ DIORITE. SOME ACT. WITH PLEISTOCENE SANDS. E. SIDE
 VEIN OF CPY RICH QZ CLAY. A FAIR AMT. OF SPY. QUANTITATIVE QZ. ALITTLE CPY TRACES
 LESS QZ. NO BIOT. SOME FINE K-SPAR. RICH
 OF PDS. CHIPS NOT MAGNETIC.
 CU RICH ZONE AT 70.5-72. HARKER PARTS. FINE K-SPAR. CHIPS MAGNETIC. CH
 SEE MAGNETITE. MOSTLY PY WITH QZ. SOME CPY.
 FLAG SANDY QZ. PARS. SHALE. E. STAINING QZ. CHIPS NOT MAGNETIC. QZ. CONTENT
 AVERAGE. FLAGGERS IN PARTLY WITH MIN. 450
 V. HARD. HIGH SILICA CONTENT. LOW QZ. TUNDING CONTENT. QZ. ALL MOSTLY PY
 + SOME SPY. LITTLE BIOT. K-SPAR. THROUGH. CHIPS NOT MAGNETIC.
 AS ABOVE, WITH ANHILIZATION. SLIGHTLY MORE SUBMINE.

Avg. Va lues: 70'
 Cu .70%
 MoS₂ .007
 Au N.D.
 Ag .122 oz/ton
 Zn .019%

100						500
150						550
200						600
250						650
300						700
350						750
400						800

CU and Zn as %, Mo as ‰ MoS₂, AU and Ag as oz/TON N.D. = NONE DETECTED.

PROJECT Y-26

AREA 013000 Hill Works

HOLE NO. A TH 25

SCALE: 1"=50' DATE 2-2-77

COORDINATES See map

ELEVATION 2878

Rock Type

Assays

Rock Type

Assays

General
0-10' overburden
Fresh to sh, med min
H₂O, 25'
045
049

	Cu	Mo	Ag	Au	Zn
0					
10					
20	.10	.009			
30	.11	.016			
40	.03	.005			
50	.10	.012			
60					
70					
80					
90					
100					
110					
120					
130					
140					
150					
160					
170					
180					
190					
200					
210					
220					
230					
240					
250					
260					
270					
280					
290					
300					
310					
320					
330					
340					
350					
360					
370					
380					
390					
400					

Specific
0.006

0-10' Fresh to sh, med min
10-20' Fresh to sh, med min
20-30' Fresh to sh, med min
30-40' Fresh to sh, med min
40-50' Fresh to sh, med min
50-60' Fresh to sh, med min
60-70' Fresh to sh, med min
70-80' Fresh to sh, med min
80-90' Fresh to sh, med min
90-100' Fresh to sh, med min
100-110' Fresh to sh, med min
110-120' Fresh to sh, med min
120-130' Fresh to sh, med min
130-140' Fresh to sh, med min
140-150' Fresh to sh, med min
150-160' Fresh to sh, med min
160-170' Fresh to sh, med min
170-180' Fresh to sh, med min
180-190' Fresh to sh, med min
190-200' Fresh to sh, med min
200-210' Fresh to sh, med min
210-220' Fresh to sh, med min
220-230' Fresh to sh, med min
230-240' Fresh to sh, med min
240-250' Fresh to sh, med min
250-260' Fresh to sh, med min
260-270' Fresh to sh, med min
270-280' Fresh to sh, med min
280-290' Fresh to sh, med min
290-300' Fresh to sh, med min
300-310' Fresh to sh, med min
310-320' Fresh to sh, med min
320-330' Fresh to sh, med min
330-340' Fresh to sh, med min
340-350' Fresh to sh, med min
350-360' Fresh to sh, med min
360-370' Fresh to sh, med min
370-380' Fresh to sh, med min
380-390' Fresh to sh, med min
390-400' Fresh to sh, med min

AVERAGES

Cu - .12
Mo - .011
Ag - N.D
Au - .032
Zn - .006

Cu, Zn in % Mo in % Ag in % Au in %

PROJECT V-96
 HOLE NO. AD4-27
 COORDINATES See map

AREA 202400 - ALASKA
 SCALE: 1"=50' DATE 11/19/71
 ELEVATION 3273

Rock Type

Assays

Rock Type

Assays

	Cu	Mo	Au	Ag	Zn
0					
385					
86	.10	.026			
88	.11	.029			
	.15	.022			
	.09	.018			
	.12	.016	N.D.	.05	.15
100	.10	.059			
	.08	.035			
393	.09	.049			

SPECIFIC					
400					
450					
500					
550					
600					
650					
700					
750					
800					

Cu .11%
 Mo₂ .038%
 Zn .15%
 Au N.D.
 Ag .05 oz/ton

6000 71200

PROJECT V 96

AREA ORANGE HILL, ALASKA

HOLE NO. A-DH 29

SCALE: 1"=50' DATE 8/16/70

COORDINATES PER LOCATION MAP

ELEVATION 3317

Rock Type

Assays

Rock Type

Assays

GENERAL

SPECIFIC

	Cu	MoS ₂	Au	Ag	Zn
0					
10					
20					
30					
40					
50					
60					
70					
80					
90					
100					
110					
120					
130					
140					
150					
160					
170					
180					
190					
200					
210					
220					
230					
240					
250					
260					
270					
280					
290					
300					
310					
320					
330					
340					
350					
360					
370					
380					
390					
400					

400					
410					
420					
430					
440					
450					
460					
470					
480					
490					
500					
510					
520					
530					
540					
550					
560					
570					
580					
590					
600					
610					
620					
630					
640					
650					
660					
670					
680					
690					
700					
710					
720					
730					
740					
750					
760					
770					
780					
790					
800					

B6421

B6425

Cu .156%

MoS₂ .011%

Zn .004%

Au N.D.

Ag N.D.

Cu & Zn in %, Mo as % MoS₂, Au & Ag in oz/ton

unconsolidated (Silt. Bnd)

"

"

FRESH TO IMPURE SILT & POORLY CONSOLIDATED BND

ALTERED, POORLY INDUR. BND w/ 20% Vn GR.

"

" LOCAL FRESH

FRESH TO IMPUR. SILT. BND

EST 15% Vn GR. BAD PRESERVATION ALTHOUGH LOCALITY STRONGLY DEGRADED. NO SILT. BUT IN Vn GR. NO APPAR. VENTURE OF QUARTZ. MINOR KALIN

AS ABOVE. BIOTITE FRESH, HIGH FeS₂. MINOR PURE KALIN w/ GR. Vn.

AS ABOVE, BUT W/ FRAGS OF Vn QUARTZ. MINOR BIOTITE FRESH & 10% Vn GR. PURE KALIN BEEN OIL. W/ BIC. IN CHIPS. BIOTITE FRESH.

BIOTITE & ACCT PLAC. FRESH. SAME KALIN AS ABOVE. BIOTITE FRESH. BIOTITE FRESH. Vn GR. - 10%. S. UNCONFORMED W/ RE S₂ & QUARTZ. LATER W/ BIOTITE OR Vn GR.

HARD. 20% Vn GR. TO QUARTZ BUT NOT FeS₂. - W/ Vn GR. BIOTITE FRESH, PLAC. FRESH IN PL.

REW FRAGS KALIN & SERICITE. L. SOME KALIN OCC. SMT ZONES OF 6".

As above, some KALIN, FeS₂. BIOTITE, only slightly, but KALIN in veins, not common.

HARD. 20% Vn GR. FRESH W/ LOCAL ACCT. BIOTITE FRESH W/ GR. & KALIN.

Vn GR. - 15%. LOCAL V. HARD. FRESH TO LOCAL ACCT. BIOTITE FRESH. W/ 1" ZONE SMT. (SMT BND) IN WHICH PLAC. QUARTZ, BIC. ALT. AND KALIN(?) PRESENT. MINOR FeS₂, QUARTZ, usually w/ Vn GR.

PROJECT V-96

AREA ORANGE HILL, ALASKA

HOLE NO. A-DH 30 & 30-A

SCALE: 1"=50' DATE 6/18/70

COORDINATES PER LOCATION MAP

ELEVATION 3363

Rock Type

Assays

Rock Type

Assays

GENERAL

0-6' OVERLAP
6-10' WEATHERED QTZ-KYAN
6433 0-12' 0-12' WEATHERED QTZ-KYAN RICK
FRASHER ALLUVIAL

	Cu	NiO	Au	Ag	Zn
0	.08	.006			
50					
100					
150					
200					
250					
300					
350					
400					

SPECIFIC

400 SOIL + WEATHERED QTZ-KYAN...
NEAR...
BITES...
HOLE STOPPED AT 22' BECAUSE OF...
HOLE NOT CASED

400					
450					
500					
550					
600					
650					
700					
750					
800					

30-A

GENERAL

6431 0-11' 0-11' WEATHERED QTZ-KYAN
0-12' 0-12' WEATHERED QTZ-KYAN
0-12' 0-12' WEATHERED QTZ-KYAN
0-12' 0-12' WEATHERED QTZ-KYAN

	Cu	NiO	Au	Ag	Zn
0	.09	.005			
50	.07	.004			
100	.10	.007	N.D.	N.D.	
150					
200					
250					
300					
350					
400					

500 SOIL + WEATHERED K-FS QTZ RICK
CHIPS ABUNDANTLY STAINED (FRASHER) SUPPHIDES (PY) PRESENT FAINTLY AS
VEINS ASSOC WITH QTZ. MINORUS QTZ VEINS
MOSTLY QTZ, WHITE FS-CLAY, AND ANHYDRITE. SOME PYRITE. NOT MUCH (2%) PINK COLOR IS V.
KYAN RICK IS ONLY ALTERED. NI DEFIC. NUMEROUS QTZ VEINS. SOME STAINED CHIPS.
Y HARD FRESH QTZ-KYAN RICK. A BIT OF PY. SOME RED GRAY. NEAR BY ALL
FRASHER QTZ-KYAN. SOME MINOR ANHYDRITE. KYAN FRASHER ABUNDANT.
STOPPED AT 38' BECAUSE OF HARDNESS (4 DTS FOR 40 FEET)

Cu .097%
Ni .0057%
Zn .0037%
Au N.D.
Ag N.D.

HOLE CASED TO 8'
HOLE IS SIFTER THAN 30
90' HARD 22' - FRESH RICK

Cu & Zn in %, NiO as % NiO₂, Au & Ag in oz/ton

PROJECT V-96 AREA ORANGE HILL, ALASKA
 HOLE NO. ADH-31 SCALE: 1"=50' DATE 18 Aug
 COORDINATES SEE MAP ELEVATION 3365

Rock Type **Assays**

Rock Type **Assays**

GENERAL

SPECIFIC

	Cu	Mo	Au	Ag	Zn
0					
10					
1446	.041	.006			
1435	.249	.019			
30	.257	.018			
40	.134	.018			
50	.080	.010			
60	.114	.012	N.D.	.012	.004
70	.118	.026			
80	.095	.017			
90	.088	.020			
100	.127	.025			
110	.129	.016			
120	.082	.025	N.D.	N.D.	.004

SOIL + DEBRIS... FRESH...
 SOME...
 WHITE...
 SOME...
 MAJOR...
 MORE...
 SOIL...
 FEW...
 VEIN...
 NEARLY...
 R...
 400

AVERAGES
 .134% Cu
 .018% Mo
 .004% Zn
 .012% Ag
 Au N.D.

Notes:
 70-80' INTERVAL IS ACTUALLY ABOUT
 82'-82'.
 0-60' 1st INT
 67-85' 2nd INT
 85-95' 3
 95-105' 4
 105-115' 5
 115-120' 6
 120-120' 0
 112' SOFT INTERVAL

150					
200					
250					
300					
350					
400					

400					
500					
550					
600					
650					
700					
750					
800					

PROJECT V-96

AREA ORANGE HILL, ALASKA

HOLE NO. A-DH 35

SCALE: 1"=50' DATE 8/23/70

COORDINATES PER SITE LOCATION MAP

ELEVATION 3454

Rock Type

Assays

GENERAL

0 Cu Mo Au Ag Zn

SPECIFIC

Rock Type

Assays

400

OVERBURDEN
0-102'

50

GLACIO-FLUVIAL
GRAVEL

450

100

EGAB7 102-110 Act f n/w BOD

.47 .017

500
Bottom of 102. SAMPLE 102-110 CONTAMINATED W/ SOME MINERAL FLUIDS EITHER
OF THE HOST ROCK. COULD BE QUARTZ OR GLAUCOPHANE. WITH FLUID
ACT, SOME BRINE FLOW IN PLACE, LEAKING FROM HOST ROCK. SOME QUARTZ, UNCLE MINER.
ACT AN ABOVE. MIN. W/ 2% OF CUBIC S, SOME QUARTZ IN ACT. MINOR AMOUNTS W/ V. ACT.
2% QUARTZ, INTER GRANULAR. ACT RES.
MO. WHICH HIGHER, ALL W/ V. ACT. 310 FRESH TO QUARTZ ACT. AND SOME OR. STONE (?)
TRAG ONLY INCL. ACTED. REPAIR MINOR. AMPHIBOLE MINOR. SOME (IN TARGET ON) RES.
BIG FRESH. PLAC FLOW TO W/ACT. ACT. MINOR - LOW. TOTAL 5% MUCH LOWER
THAN ABOVE, BUT HIGHER CUBIC S. RES. CUBIC S. IN ACT. V. ACT. MINOR. 2%
AS ABOVE. FEW VERY NARROW SWIRLS OF ACTED. V. ACT. 5%. TOTAL 5% HIGHER.
BUT POOR ON THE WHOLE. CUBIC S. IN ACTED.

500

" , SORT & DAMP
WETLY Act f n/w BOD

.40 .030

.31 .001119

.16 .017

150

.28 .015
.25 .014 N.D. .012 .013

550

EGAB7

.18 .008

AS ABOVE. MOST CUBIC S. IN V. ACT. ACTED W/ MINOR. W/ ACT.
AS ABOVE. LOCALLY GRADES TO GRAVELLY MATE (?) - AT LEAST 75% KSPAR.
HOLE STOPPED AT 165' DUE TO UNUSUAL (CERTAIN CA) W/NG OVER NIGHT

AUG. VALUES

0.28 .028 N.D. .012 .01

600

200

250

650

300

700

SURVEY CP3 - A-DH 35

INT 1 S42E, +5, 354'

→ DH 35 S32W, -3 1/2, 172'

350

750

400

800

Cu & Zn in % Mo as % MoS₂, Au & Ag in oz/ton

AMEX DRILL HOLE No.	COLLAR ELEVATION	DEPTH OF HOLE	DEPTH OF OVERBURDEN	SAMPLED FOOTAGE	AVERAGE VALUES		CU VALUES > .30%		CU VALUES > .50%	
					% Cu	% MoS ₂	COMBINED FOOTAGE	% Cu	COMBINED FOOTAGE	% Cu
3	3229'	72'	20'	20-70'	.07	.007				
6	3401	260	10	10-260	.09	.008				
7	3397	130	13	20-130	.15	.009				
8	3321	162	2	0-160	.17	.020				
9	3352	182	28	30-180	.38	.021	90'	.48	10'	1.23
10-10A	3364	165	40	40-165	.30	.022	46'	.34		
11	3334	40	19	20-40	.09	.007				
11A	3324	91	10	10-90	.16	.004				
12	3293	130	28	30-130	.29	.002	20'	1.03	20'	1.03
13	3429	240	20	20-240	.23	.019	10'	1.53	10'	1.53
14	3446	170	30	30-170	.13	.006	10'	.32		
15	3421	118	68	70-118	.15	.008				
16	3441	200	75	80-200	.25	.035	30'	.45	10'	.57
17	3302	95	27	30-95	.07	.017				
18	3324	60	30	30-60	.10	.011				
19	3305	60	40	40-60	.06	.008				
20	3301	45	20	30-45	.05	.018				
21	3340	70	8	0-70	.70	.007	40'	1.14	30'	1.37
22B	2914	75	10	20-75	.17	.016				
23	2920	70	36	40-70	.26	.033				
25	2878	50	10	10-50	.12	.011				
26	3334	100	18	20-100	.07	.008				
27	3273	130	48	50-130	.11	.038				
28	3405	135	15	20-135	.54	.064	115'	.54	60'	.61
29	3317	90	10	10-90	.16	.011	10'	.47		
30A	3364	38	11	10-38	.09	.005				
31	3365	130	14	10-130	.13	.018				
32	3379	100	23	30-100	.14	.007				
33	3275	95	5	10-90	.36	.041	70'	.37	5'	.55
34	3417	220	13	20-220	.15	.008	30'	.49	10'	.71
35	3454	165	102	102-165	.28	.028	30'	.39		
36	3351	100	43	50-100	.13	.005				
37	3344	175	15	20-173	.26	.017	40'	.43		

TABLE 1

ASSAY & GEOLOGIC DATA - ROTARY DRILL HOLES

50% Cu	GENERAL ROCK TYPE(S)	WALL ROCK ALTERATION				VEIN QUARTZ		ANHYDRITE VEINLETS	ACC FeS	
		EPIDOTE	LOW GRADE ARGILLIC *		MEDIUM GRADE ARGILLIC *		<10%			>10%
			LOCAL	PERVASIVE	LOCAL	PERVASIVE				
	BIOTITE QUARTZ DIORITE						✓		✓	
	" " "	✓	✓				✓		✓	
	" " "			✓			✓	✓	✓	
	" " "		✓				✓		✓	
23	" " "		✓		✓		✓	✓	+	
	" " "			✓			✓	✓	+	
	" " "			✓	✓			✓(60%)	✓	
	" " "			✓	✓			✓(60%)	✓	
03	" " "			✓	✓			✓	✓	
93	" " "		✓		✓		✓	✓	✓	
	" " "		✓				✓	✓	✓	
	" " "			✓	✓		✓	✓	+	
57	" " "		✓		✓		✓	✓	✓	
	" " "			✓				✓	✓	
	" " "			✓				✓	✓	
	QUARTZ-K FELDSPAR ROCK							✓	TR	
	" " "							✓	TR	
37	BQD 8-90, QFROCK					✓(8-90)		✓(>90)	✓	
	BIOTITE QUARTZ DIORITE	✓	✓				✓		✓	
	" " "	✓	✓				✓		✓	
	" " "	✓					✓		✓	
	" " "			✓				✓(50%)	✓	
	" " "		✓					✓(39%)	✓	
51	" " "			✓	✓		✓	✓	+	
	" " "		✓(40-90)	✓(10-40)	✓(10-40)		✓(<40)	✓(>40)	✓	
	QUARTZ-K FELDSPAR ROCK							✓	✓	
	BIOTITE QUARTZ DIORITE		✓		✓			✓	✓	
	" " "	✓	✓				✓	✓	✓(+9)	
5	" " "			✓	✓		✓	✓	+	
1	" " "		✓		✓		✓	✓	✓	
	" " "	✓	✓		✓		✓	✓	✓	
	" " "		✓				✓	✓	✓	
	" " "	✓	✓		✓		✓	✓	✓	

* LOW GRADE - PLAGIOCLASE ALTERED TO CLAYS, BIOTITE FRESH

* MEDIUM GRADE - BOTH PLAGIOCLASE & BIOTITE ALTERED

	ESSENTIAL MINERALS (+ > 1%)			OCCURRENCE OF Cu SULPHIDES		OTHER NOTES
	CuFeS ₂	MoS ₂	OTHER	DISSEMINATED	IN VEINS (± Qtz)	
	✓	TR		✓	✓	MINOR QP, H ₂ O AT 72'
	✓	TR	ZnS	✓	✓	H ₂ O FROM 130'
	✓	✓	K-SPAR	✓	✓	K-SPAR IN VEINS WITH Qtz, H ₂ O AT 80'
	✓	✓		✓	✓	H ₂ O AT 162'
	+	✓		✓	✓	WET FROM 140'
	+	✓	Cu ₂ S? Cu ₉ FeS ₄ ?	✓	✓	H ₂ O AT 122'
	TR	TR	KAOLIN SERICITE	✓	✓	
	TR	TR	KAOLIN SERICITE	✓	✓	H ₂ O AT 91'
	✓	TR	Fe ₂ O ₃ ?	✓	✓	
	✓	✓		✓	✓	
	✓	TR		✓	✓	WET AT BOTTOM
	✓	TR		✓	✓	ARTESIAN FLOW AT 118'
	✓	✓		✓	✓	
	TR	TR	KAOLIN SERICITE K-SPAR	✓	✓	H ₂ O AT 99', K-SPAR w/ Qtz VEINS
	✓	TR	K-SPAR	✓	✓	NUMEROUS Qtz-KSPAR VEINS (40%)
	TR	TR			✓	
	TR	TR			✓	
	+(8-90)	TR			✓	
	✓	TR		✓	✓	3-5% EPIDOTE, MINOR QP
	✓	✓	MALACHITE	✓	✓	
	✓	✓		✓	✓	
	TR	TR	K-SPAR		✓	NUMEROUS Qtz-KSPAR VEINS
	✓	TR		✓	✓	
	+	✓	ZnS	✓	✓	H ₂ O AT 114'
	✓	TR	K-SPAR	✓	✓	MINOR K-SPAR 30-90'
	TR	TR	KAOLIN SERICITE	✓	✓	
	✓	TR		✓	✓	NEARLY FRESH 90-130'
-64	✓	TR		✓	✓	
	+	✓		✓	✓	OXIDE ZONE 40-55', H ₂ O AT 85'
	✓	TR	KAOLIN SERICITE K-SPAR	✓	✓	K-SPAR IN VEINS & DISSEM.
	✓	✓	K-SPAR	✓	✓	LOCALLY TO 5% MATRIX K-SPAR
	✓	TR	K-SPAR	✓		MINOR K-SPAR w/ VEU QUARTZ
	✓	✓	ZnS?	✓	✓	