



Writer's Direct Dial Number

February 28, 1979

Dr. Glenn Simpson
Cyprus Anvil Mining Corp.
330-355 Burrard Street
Vancouver, British Columbia
V6C 2G8

Dear Dr. Simpson:

During a recent conversation with Pat Parker, he informed me that we had failed to advise you of the test results obtained from samples taken at Urn Site 1 thru 10. I apologize for the oversight.

As an effort towards the rectification of this oversight, I am enclosing a summary of "Sink-Float" data obtained from test work performed on the samples.

In addition, I am also enclosing results from thin-section studies performed on specimens related to the individual samples.

From the "heavy-media" analysis, one can conclude that the liberation of barite occurs somewhere below 20 mesh. The exact point of liberation was not determined.

The "thin-section" analysis tend to reinforce the foregoing conclusion.

Dr. Simpson, if Cyprus Anvil were, at some future date, to consider the exploitation of these deposits, we would appreciate an opportunity to discuss this matter with you.

Very truly yours,

AH Baldo

Alex H. Baldo
Manager, Mining & Exploration

/gj

enclosure

cc: R. E. Jones, V.P. Manufacturing
Patrick R. C. Parker, Senior Geologist

017760

*OK FILE URN
BARITE*

DAVE Baldo

Use → URN BARITE FILE.

*1st B.U. with URN BARITE
REPORT by J. FRANZEM*

*I don't know what
this means except
URN Barite must
be beneficiated
oo zero??*

IMCO Services

Sink-Float Test Results
Barite Samples - Urn Sites 1-10

Sample Preparation

Each sample was crushed to 3/8 inch, mixed and fractionally sampled to obtain a representative portion for sink-float testing. The sink float test samples were wet screened to remove the minus 20-mesh material and yield a clean plus 20 product for sink float tests using a liquid having a specific gravity of 2.96.

Results of Tests

Following is a summary of the data from the sink float tests:

Yukon

<u>Number</u>	<u>Weight-Kilos</u>
2A	5.17
3A	5.58
1B	4.70
2B	10.77
9B	7.67
1C	6.34
2C	2.67
1D	6.58
2D	6.78

<u>Sample Designation</u>	<u>Sink % Wgt</u>	<u>S.G.</u>	<u>Float % Wgt</u>	<u>-20 Heads % Wgt</u>
2A	83.1	3.59	7.8	9.1
3A	78.5	3.82	15.3	6.2
1B	76.5	3.76	16.1	7.4
2B	91.8	4.00 /	1.3	6.9
9B	90.5	4.19 /	1.4	8.1
1C	88.1	3.59	3.8	8.1
2C	92.2	3.90 /	0.7	7.1
1D	86.5	3.84	5.4	8.1
2D	90.8	4.12 /	0.4	8.8

The specific gravities on the minus 4 plus 20 fraction of the sink products from samples No 2C and 1D were essentially the same as for the total sink product which shows that crushing finer would not have any significant effect on the specific gravity for the sink product.

GEOGRAPHER: J. KlugeDATE: February 27, 1950

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Carbonaceous barite similar to K (high intermixture of carbonaceous material) with crosscutting barite veinlets and pyrite. Grain sizes of carbonaceous generally 0.01 mm to 0.04 mm. Pyrite occurs as disseminations of 0.02 mm cubes throughout the carbonaceous barite. Much of the pyrite has been replaced by limonite pseudomorphs. Barite veinlets exhibit an asbestiform structure (blades are normal to vein edges) and widths range from 0.04-0.2 mm. Minor detrital qtz. grains throughout section.

MINERAL

%

DESCRIPTION: (TEXTURAL RELATIONS)

Carbonaceous

70%

Homogeneous material

Barite

Barite veinlets

10%

Crosscutting veinlets and stringers

Pyrite/Limonite

15%

Disseminations

Qtz.

5%

Dispersed grains

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGMATIC HISTORY)

Deposition of barite in reducing environment with carbonaceous material and pyrite.

See metamorphic textures noted in section.

TEXT TYPE:

Carbonaceous bedded barite.

FEB 28 1 31 PM '79

ROGRAPHER: J. Klinge

DATE: February 27, 1979

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Granular textured (0.04mm grains) barite and carbonaceous barite are divided by a sharp contact and represent 1/3 and 2/3 of the section respectively. Although some fingering pinch out of the granular barite occur near the contact. The carbonaceous barite has a somewhat mottled texture produced by varying concentrations of carbonaceous material. The carbonaceous barite (0.01-0.03mm grains) also has minor black blotches of carbon and black carbonaceous bedding seams (0.01mm).

MINERAL	%	DESCRIPTION: (TEXTURAL RELATIONS)
Barite	40%	Granular
Carbonaceous barite	60%	Fine granular intermixure

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGMATIC HISTORY)

A changing depositional environment of carbonaceous material and barite which later undergone metamorphisms (some shear structures noted and granularity)

ROCK TYPE: Grey metabedded carbonaceous barite

FEB 28 1 26 PM '79

GEOGRAPHER: J. KlingeDATE: February 21, 1979

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Carbonaceous barite (0.01-0.03mm) with porphyroblast of an unidentified mineral and qtz. aggrs. The unidentified mineral is hexagonal (6) in basal section and occurs as crystals and irregular mass areas up to 3mm wide. It has high relief and is isotropic. It may be a mica mineral. The qtz. aggrs are granular (0.04-0.08mm) pods up to 0.3-0.5 wide and 1.0mm long. A trace of pyrite pseudomorphs occurs in the carbonaceous barite.

MINERAL	%	DESCRIPTION: (TEXTURAL RELATIONS)
Carbonaceous barite	80%	Massive
Unidentified mineral	15%	Porphyroblast
Qtz.	5%	Aggrs

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGMATIC HISTORY)

Deposition of barite in a carbonaceous environment and later metamorphosed.

TEXT TYPE: Metabedded carbonaceous barite

FEB 28 1 35 PM '79

ROY-RAPHER:

J. Klinge

DATE: February 21, 1978

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Carbonaceous barite exhibiting rhythmic banding of carbo barite (0.01-0.03mm) and granular barite (0.04-0.05mm). Bands or laminations vary from 0.12 - 1.40mm wide and are divided by seams of red limonite (0.01mm wide) possibly replacement of carbo seams. Minor pyrite (0.04mm) cubes occur in the carbonaceous barite. Some fracture filling of remobilized barite (0.12mm grains & 0.30-0.50mm wide veins). Grains in the granular barite are elongate indicated strain (0.04mm wide & 0.15mm long).

MINERAL

%

DESCRIPTION: (TEXTURAL RELATIONS)

Barite	30-40%	Interlaminated with carbo barite
Carbonaceous barite	55-65%	Interlaminated with granular barite
Limonite	5%	Seam replacement

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGNETIC HISTORY)

Deposition in changing environment of barite and carbonaceous barite with pyrite and later metamorphosed changing grain sizes and shapes.

Hand specimen appears somewhat greissic in character.

OR TYPE: Metabanded carbonaceous barite.

Feb 28 1 22 PM '79

ALITY

MINOR

SAMPLE NO.

2 B

NO. OF PAGES:

J. Klinge

DATE: February 21, 1979

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Dark grey or black granular barite (0.02-0.03mm grains) with minor carbonaceous seams (0.01mm wide) and minor intermixtures.

MINERAL	%	DESCRIPTION: (TEXTURAL RELATIONS)
Barite	90-95%	Granular
Carbonaceous material	5%	Seams and minor intermixed areas barite/carbonate material

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGMATIC HISTORY)

Deposition of barite in sedimentary environment.

ROCK TYPE:

Dark grey bedded barite

1
Feb 28 1 17 PM '79

PROGRAMMER: J. KlisonDATE: February 27, 1979

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Granular textured barite (0.04mm grains) with minor areas of grains 0.2mm diameter.
 Grains exhibit a lineation pattern as seen in most metamorphic rocks.
 Carbonaceous material is intermixed interstitially and along hairline (0.01mm) seams.

MINERAL

%

DESCRIPTION: (TEXTURAL RELATIONS)

Barite	85-95%	Fine granular
Carbonaceous material	5-15%	Interstitial and bedding seams

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGMATIC HISTORY)

Deposition of barite in low to moderate carbonaceous environment which later undergone metamorphism producing the lineation and granularity.

ROCK TYPE: Metabedded barite

FEB 28 12 51 PM '79

LOCALITY

Yukon

SAMPLE NO.

16

PHOTOGRAPHER:

J. Klinge

DATE: February 27, 1979

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Carbonaceous barite (0.01-0.03mm grains) with minor carbonaceous bedding veins (0.01mm) and disseminated pyrite.

MINERAL

%

DESCRIPTION: (TEXTURAL RELATIONS)

Carbonaceous
barite

95%

Homogeneous

Pyrite

5%

Disseminated

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGMATIC HISTORY)

Deposition of barite in reducing environment with carbonaceous material and pyrite.

Hand specimen has a slight sugary texture, but no evidence in thin section points to metamorphism.

TEXT TYPE: Carbonaceous bedded barite.

Feb 28 1 13 PM '79

HO:RAIHER: J. Klinge

DATE: February 27, 1979

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Carbonaceous barite similar to 2A with several carbonaceous seams (bedding planes) 0.01mm wide. Microfractures fillings of remobilized barite (0.04-0.30mm wide) crosscut the carbonaceous barite. Slight color changes indicate differing degree of carbonaceous material concentrated with the barite. Pyrite is disseminated as 0.02mm cubes throughout section but concentrates in the darker areas higher in carbonaceous material. Also minor detrital qtz. throughout section.

MINERAL

%

DESCRIPTION: (TEXTURAL RELATIONS)

Carbonaceous barite	85%	Laminations of varying concentration of carbonaceous material from 0.04-0.50mm wide.
Barite veins	5%	Crosscutting veins
Pyrite	< 5%	Disseminated
Qtz.	< 5%	Dispersed

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGMATIC HISTORY)

Deposition of under varying environmental of barite, carbonaceous material, pyrite and qtz.

TEXT TYPE: Carbonaceous bedded barite.

FEB 28 1 09 PM '79

LOCALITY YukonPHOTOGRAPHER: J. KlingeDATE: February 27, 1979

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Carbonaceous barite (0.01-0.03mm grains) with pyrite and limonite pseudomorphs. These pyrite cubes and pseudomorphs are generally 0.06mm square and occur in the higher concentrated carbonaceous zones. Red limonite replaces most of the carbonaceous bedding seams (0.01-0.04mm) thick throughout the section. Barite free of carbon material occurs in fracture fillings (0.06mm wide) and pods (up to 2.5mm diameter).

MINERAL	%	DESCRIPTION: (TEXTURAL RELATIONS)
Carbonaceous barite	80%	Fine grain granular intermixture
Barite	15%	Pods and veinlets
Limonite seams	5%	Bedding seams

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGMATIC HISTORY)

Deposition of barite in a carbonaceous environment with pyrite later fractured and filled with remobilized barite. Pods or veins may have formed due to metamorphism. Weathering leached the pyrite into limonite which replaced carbonaceous seams.

TEXTURE TYPE: Weathered metabedded barite with remnant pyrite.

FEB 28 1 04 PM '79

PHOTOGRAPHER: J. KlingeDATE: February 27, 1979

GENERAL CHARACTER: (TEXTURE, GRAIN SIZE, ETC.)

Fine grain (0.01-0.02mm) carbonaceous barite with mass areas of coarser (0.5mm) grained barite. Areas are from 3-4mm wide. Some incipient bedding seams (0.1mm) of carbonaceous material and minor quartz (detrital) grains about 0.5mm diameter.

No metamorphism evident in thin section, if there is it is suppressed.

MINERAL	%	DESCRIPTION: (TEXTURAL RELATIONS)
Carbonaceous barite	95±	Fairly homogeneous material with some carbonaceous bedding seams.
Qtz.	5±	Irregular dispersed grains throughout carbonaceous barite
Mica mineral?	trace	Isotropic, high relief, hexagonal basal section

INTERPRETATION: (HISTORY OF CRYSTALLIZATION; POST MAGMATIC HISTORY)

Deposition of barite/carbonaceous material/detrital qtz. simultaneously.

ROCK TYPE:

Carbonaceous bedded barite

FEB 28 12 55 PM '79