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Samples: 14 zinc concentrates of various size fractions from two flotation tests -
KM 111-29 and KM 111-30.

Summary:

Attached are two tables showing the percentages of each particle type in the various size fractions of each test. As before, between 1000 and 1500 grains were counted in each section.

The following two samples were not done because of insufficient material due to spillage: KM 111-29 +325 Zn Con Comp .02 and KM 111-29 +200 Zn Con Comp .04. Contamination may have occurred in the following: KM 111-29 u/s Zn Con 10 μ (finest fraction) contains a small percentage of large pyrite grains up to 0.08mm in size; these were not counted. KM 111-29 Zn Con Comp .43 (coarsest fraction) contains many grains of sphalerite approximately 5 μ in size; these were not counted.

Grain types consist of single minerals or simple aggregates of two minerals. The minerals are: sphalerite, galena, pyrite, chalcopyrite and silicates. The silicates appear to be mainly quartz but other softer minerals are present. Silicate-sulphide aggregates (sphalerite, minor galena) are not always quartz-bearing. The other silicates could not be identified due to the fine size.

Sulphide-sulphide aggregates were too few in number to statistically differentiate between, say, sphalerite dominant and pyrite dominant pairs. Most aggregates are with sphalerite with the sphalerite dominant. Grain boundaries are simple curves or straight lines.

Many of the sphalerite grains contain one or more inclusions (blebs, sometimes thin veinlets) of chalcopyrite or in some cases galena. In a few cases the inclusions were crowded at the edge of the sphalerite grain and was counted as an aggregate.

During routine examination a few pyrrhotite grains were found in the middle size fractions of both tests. Pyrrhotite also occurred as an inclusion in sphalerite.

A single inclusion in sphalerite in sample KM 111-30 Cy2 consisted of a bluish, weakly anisotropic mineral. This could be an Ag-Sb sulphosalt. Pyrrhotite occurs in this sample.

A. L. Littlejohn, M.Sc.

KM 111-29

	<u>u/s</u>	<u>Cy 5</u>	<u>Cy 4</u>	<u>Cy 3</u>	<u>Cy 2</u>	<u>Cy 1</u>
sp	96.89 *(0.00)	97.34 (0.40)	97.23 (1.31)	96.99 (1.42)	96.36 (2.40)	90.64 (3.04)
ga	1.21	0.97	0.64	0.65	0.50	3.12
py	0.59	0.52	0.10	0.72	1.41	3.76
cpy	0.76	0.19	0.07	0.07	0.08	0.37
sil	0.13	0.19	0.43	0.20	0.33	0.37
sil-sulph	0.19	0.32	0.28	0.46	0.17	0.00
sp-ga	0.00	0.07	0.07	0.20	0.25	0.18
sp-py	0.00	0.19	0.00	0.33	0.50	1.01
sp-cpy	0.25	0.39	0.28	0.40	0.41	0.28
py-ga	0.00	0.00	0.00	0.00	0.00	0.18
py-cpy	0.00	0.00	0.00	0.00	0.00	0.09

* Percentage of sphalerite grains containing inclusions -
mainly chalcopyrite, minor galena.

KM 111-30

	<u>u/s</u>	<u>Cy 5</u>	<u>Cy 4</u>	<u>Cy 3</u>	<u>Cy 2</u>	<u>Cy 1</u>
sp	97.49 *(0.00)	97.89 (0.54)	97.56 (0.84)	96.56 (1.75)	95.37 (4.50)	89.27 (6.90)
ga	1.08	0.61	0.34	0.27	0.59	2.82
py	0.86	0.37	0.61	0.88	1.52	4.57
cpy	1.23	0.41	0.14	0.41	0.25	0.28
sil	0.00	0.16	0.54	0.54	1.10	0.09
sil-sulph	0.00	0.04	0.14	0.27	0.42	0.47
sp-ga	0.00	0.04	0.00	0.14	0.33	0.00
sp-py	0.17	0.12	0.21	0.34	0.17	2.14
sp-cpy	0.17	0.36	0.34	0.54	0.08	0.47
cpy-ga	0.00	0.00	0.00	0.00	0.08	0.00
cpy-py	0.00	0.00	0.00	0.07	0.00	0.00

* Percentage of sphalerite grains containing inclusions -
mainly chalcopyrite, minor galena.