

860218

Date: 2 March, 1989
To: Mine Geologist
From: Mill Metallurgist

Subject: Possible processing routes for Lindquist Lake property ore.

Introduction;

The Lindquist Lake consists of two separate ore types, a vein structure containing precious metals and sulphides, and a 'talus' slope containing scheelite.

Possible processing routes;

a) Precious metal/sulphide ores:

From the reports written on this property, the value mineral assemblage consists of the following:-

| Mineral | Specific gravity | Hardness |
|------------------------------|------------------|------------|
| Hessite (Ag ₂ Te) | 8.24 - 8.45 | 2 - 3 |
| Chalcopyrite | 4.1 - 4.3 | 3.5 - 4 |
| Galena | 7.5 - 7.6 | 2.5 - 2.75 |
| Altaite (PbTe) | 8.15 | 3 |
| Pyrite | 4.8 - 5.0 | 6.0 - 6.5 |
| Pyrrhohite | 4.6 - 4.7 | 3.5 - 4.5 |

Gold occurs mainly within the Hessite, but also as native(?).

The assay values of the base metals are not stated in the reports, however there is a mention that total sulphide does not exceed 10%.

No specific mention of a flotation route for Hessite has been found in any flotation text. Contacts within the flotation chemical supply companies have also not been able to find any references. Technically it could be possible to float Hessite, as it is possible to float other metals (ie gold, silver), however this would have to be tested for confirmation.

If the remote location of the orebody is considered, then the possibility of a preconcentration step onsite would greatly reduce ore transportation costs. All the value minerals are of a high specific gravity, thus a simple environmental 'safe' gravity separation could be performed. This gravity concentrate then being transported offsite for further upgrading. As no indication exists in the reports with respect to grain size by mineral type no comments can be made about possible gravity separation equipment selection.

b) Scheelite in talus:

Scheelite is commonly recovered by a flotation route, and as such is a well understood process. As with the sulphide orebody, scheelite has a high specific gravity (6.1) and the gravity preconcentration route is an option.

Conclusions:

Both the sulphide/precious metal and scheelite/talus ore bodies could be upgraded by a simple gravity separation preconcentration route.

The flotation response of the scheelite should be favourable, but this would need to be confirmed by testwork. The flotation response of the Hessite is unknown.

Until additional information is obtained about the base metal content and the relationship of the base metal sulphides to the valuable Hessite, no further processing route comments can be made.