

## **PART III CONCLUSIONS AND RECOMMENDATIONS**

## CHAPTER 1 CONCLUSIONS

During the Cooperative Mineral Exploration in the South Batinah Coast that lasted 3 years from 1997 to 1999, the results obtained from the geological, geophysical and drilling surveys can be summarized as conclusions as follows:

### **(1) Ghuzayn area**

The third massive sulphide deposit was discovered in Ghuzayn (ore body No. 3) and its preliminary results shows an ore reserve of about 8.6 million tons with an average Cu grade of 1.5%. The best scale and grade was intercepted in the drilling MJOB-G30, which presented a core length and copper grade of 91.4m and 2.68%, respectively. And from all the results obtained so far, it can be estimated that the total reserve of the three bodies is probably around 14 million tons with an average Cu grade of 1.4%.

### **(2) Other areas**

Not only in Ghuzayn area but also in South Batinah Coast, mineralization was detected in several places, but the existence of massive sulphide deposits that has economical meaning is limited to Ghuzayn area.

### **(3) Importance of the methodology**

In exploration for copper deposits in Oman, ground geophysics plays an important part in the exploration because of wide coverage of the Quaternary sediments in the area. For the exploration of massive sulphide deposits of Cyprus-type in the Cooperative Mineral Exploration project in Central Batinah Coast area, it was confirmed the effectiveness of a systematic methodology to carry out the geophysical methods, i.e., the first step is to carry out TDIP to clarify the mineralized zones, and as a second step, TEM geophysical method is utilized as a suitable method to extract possible ore bodies from the mineralized zone.

### **(4) Further exploration studies**

In Ghuzayn as well as in other areas around the Oman Mountains, many exploration works have been already carried out mostly near the known mineral occurrences. However these works were only limited to the vicinity of mineralization zones with surface indications and if the whole area is taken into consideration, it is reasonable to think that only very limited portions were merely explored. Therefore, it is likely that massive sulphide deposits of the Cyprus type remain yet undiscovered in Oman.

## **CHAPTER 2 RECOMMENDATIONS**

To obtain a more realistic economical evaluation of the reserve it is recommended to carry out a more detailed exploration and precise evaluation because from the 3 ore bodies detected in Ghuzayn, a preliminary estimation of the reserve resulted in about 14 million tons. However, it seems rather risky to develop this area in an independent manner because the deposit in Ghuzayn is relatively deep and not accompanied by gold. To develop this deposit in a more efficient way, it is recommended to carry out an economical evaluation together with the existing deposit in Yanqul area, where only a part of the gossan has been developed.

It is also recommended to continue the exploration studies to find new ore deposits in potential areas yet to be studied, such as around Rakah area, old mines of Sohar and other areas around the Oman Mountains.

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