

TO: RANDY LOPASCHUK

DATE: 11/2/82

FROM: PETER I. CLARKE

RE: FARO COMPUTER MODEL

November 9, 1981

Dr. A.G. Journel
P.O. Box 2348
Stanford, California
U.S.A. 94305

Dear Andre:

The following is an outline of our computer model used at Faro. It is based on the MINTEC Medsystem Release 9 and is presently located on the Computer Sciences Canada Univac computer in Toronto.

The model is a regular block model. The blocks are 50' x 50' in plan and 20' high. 20' corresponds to the proposed bench height. The model has 110 rows, 90 columns and 40 levels.

The deposit is basically drilled on a 280' spacing with a substantial amount of infill drilling at 140' spacing

Drilling is along sections corresponding to strike and dip, which are approximately at 45° to the model grid. Average dip through the deposit is 25° - 30° .

The geology is described to some degree in Robin Tolbert's letter of October 7, 1981.

Approximately 1/3 of the assaying has been done in samples of 5' lengths of split core regardless of rock type. The remainder has been done at varying lengths usually of 2 1/2' to 5' with some regard to rock type. Most core is NQ size and is split with a chisel. A relatively small proportion of the sampling, less than 20% of the total, has been done by taking the whole core.

Assay determinations have been done on individual samples for Pb, Zn, Ag, Cu, BaO, and S.G. Assaying on grouped samples has been done for Py, Po and Mn. (Au has not been assayed at Faro but has been at Vangorda and Grum).

The assay data has been loaded to the Mintec Medsystem. Individual samples as loaded in the Mintec Medsystem have not been assigned a rock type code. Hard copy records of the geologists log can be referred to for this information. High assay values for Pb, Zn, Ag, Cu are clipped back to a 95 percentile value in order to avoid using very high values. This is somewhat arbitrary of course.

The DDH composites are calculated for 20' lengths. Average grades are calculated for a 20' length by weighting the assays by length and specific gravity of the samples. If samples cross over the composite elevation limits then the overall sample assay and specific gravity have to be used but the length is adjusted to include only that length of the sample within the elevation limits. High composite grades are clipped back to approximately a 97.5 percentile value again to avoid very high grades being assigned to blocks. Again this is arbitrary.

Based on the predominant rock type a code is assigned to a composite. The coding corresponds to the block geology coding which is assigned according to geological interpretation. The geology code can be a number from 1-12. 1-6 are waste rock types, and 7-12 are mineralized rock types. These codes include the main rock types encountered on a mining scale and are characteristic from a mineral processing point of view as well.

Grade interpolation is performed on each level separately (ie. horizontally by bench) on an inverse distance squared basis. The search area from a block centre is elongated in the strike direction, 250', compared with the dip direction 175'. Weighting within is isotopic. Composite grades are interpolated (ie. Pb, Zn, Ag, Cu) but S.G. is not. There is essentially no geologic control in the interpolation other than to not interpolate into blocks coded as waste rock types.

Density is assigned to each block on the basis of its rock type. The density for each rock type is derived from statistics performed on most of the DDH composites. For each rock type the average S.G. value for composites above 4.0% Pb+Zn is found. These densities are then used in calculating reserves for blocks above 4.0% Pb+Zn.

The tonnage and grade computed in this manner are then subject to adjustments before reporting as tonnage and grade as deliverable to the mill. At the present time, based on production comparisons these adjustments are (-5% on the tonnage and) *5% on the grades also.

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I hope this brief description will serve your purposes for the moment. There will be an opportunity in Faro to cover this and other methods in more detail.

Yours truly,
CYPRUS ANVIL MINING CORP.

PIC/mw

Peter I. Clarke
Computer Applications
Engineer