

MEMORANDUM

TO: C. H. Macdonald
FROM: R. E. Thurmond
DATE: October 14, 1969
RE: MILL FEED GRADE

Our production rate at the moment is such that we will not be able to meet the scheduled shipment of November 6. One of the prime factors contributing to this is the low grade of mill feed.

I am pretty well convinced that dilution is a major contributor to this problem. Dilution occurred when the material was being mined and placed in the stockpile. Further dilution occurred when the material was being removed from the stockpile for crusher feed. Now that feed will be coming directly from the pit, dilution within the blasts in the pit will contribute to a lower mill feed than indicated by drill hole assays.

Having fought the battle of dilution a number of times in past experience I think that there is only one solution, this is adequate and constant supervision of the ore shovel operation. This supervision should be supplied by the ore control engineer as well as by the pit foreman and mine superintendent. The shovel operators must be trained - and this sometimes requires an extended period - to be able to excavate the ore without dilution. Part of this is a matter of being able to tell by eyeballing the difference between ore and waste. Part of it is a matter of being properly instructed and made to follow instructions with regard to excavating within the area marked as crusher feed.

In order to devote sufficient effort to the matter of dilution control, I believe it is imperative that a crushing shift be changed to day shift and that the need for dilution control and training be impressed upon the mine supervision and engineering department and instructions be given that sufficient time be devoted by this organization to the solution of the problem.

2.

Peter Taggart advises me that it will be most convenient for them to change to a day shift crushing on Thursday, this week, and he is quite willing to do so if this will improve the grade of the mill feed.

I would appreciate your following up on this matter.

R. E. Thurmond
General Manager

RET:lf

cc: J. F. Olk

MEMORANDUM

TO: R. E. Thurmond
FROM: C. H. Macdonald
DATE: October 14, 1969
RE: GRADE CONTROL MEETING - OCTOBER 10, 1969

A brief resume of points discussed as follows:

1. Mill requirement until further notice - average 3300 tons per day at +12% combined lead and zinc.
2. Present stockpiles can provide estimated 10,000 tons at 10% combined. Beyond this ore available from stockpiles would be \angle 10% therefore cannot be counted on for mill feed for 1969.
3. 4170 now ready to provide mill feed. This bench should produce 12% average but ore will probably be erratic and will require careful mining and sorting \angle 12% to stockpile. This bench will provide most of the ore until end of October.
4. 4135 bench should produce +12% ore without undue trouble according to drill information. This and 4135 will be source of ore for balance of 1969.
5. Present pit development indicates that 12% average grade should be available for January to August but latter part of 1970 will require extensive ore to low grade stockpile to maintain 12% grade for mill. A grade of 10.5% to 11% could be established with a minimum amount of stockpiling and this may be the best route provided that operating conditions by that time would allow milling at 110% of mill rated capacity and recovery at test levels or better.

6. During the present critical period the Engineering Office (Grade Control) will supply a daily memo to the Metallurgist with grade forecast of ore to primary crusher and some indication of nature of ore if possible, eg., highly oxidized, high pyrite, fine grained, source of ore (eg, stockpile, etc.).
7. The mine prefers the ore to crusher haul on afternoon shift and this procedure will continue.
8. The Mill Department will give advance notification to the Mine as far as possible if startup of Primary Crusher is delayed for any reason.

C. H. Macdonald
Project Manager

CHM:lf

cc: J. F. Olk
P. Taggart
N. Stephenson
M. Hampton (2)