

P. Brown

MEMORANDUM

006954

TO: P.J. Brown
FROM: N.G. Cornish
DATE: October 5, 1971
RE: LYALL AMES' REPORT

Attached please find a copy of Lyall Ames' report dated September 24, 1971. Please review the nine items mentioned in this report and give me a written proposal of action that will be taken with regard to these items by Tuesday, October 12.

N.G. Cornish

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Resident Manager

NGC:dlw

Att.

cc - P. Taggart

MEMORANDUM

TO: N.G. Cornish
FROM: P.J. Brown
DATE: October 13, 1971
RE: LYALL AMES' REPORT

I agree entirely with Lyall when he states that "trial and error testing" is the only satisfactory method of investigating flowsheet changes. However, I would stress the point that any flowsheet change should be adequately supported by mass and volume flow data.

It is imperative too that when a test plan is devised that plan be adhered to despite any operational problems. Random, ill-considered plant testing is not only dangerous to circuit stability but produces data which cannot be objectively analysed.

1. Cleaning

The Mattabi data indicating 800 ft.³ of final cleaner capacity, (compared with our 600 ft.³ for the same tonnage output), shows the widespread philosophy of low density cleaning being superior to any other mechanism.

As outlined in my report "Proposed Zinc Circuit Modifications", our current cleaner circuit is crippled because of its totally inadequate capacity. The test work noted in that report is proceeding slightly behind schedule but I would expect to be able to make some recommendations to improve the cleaner circuit operation within two months.

2. Regrinding

a. Regrinding Sands

Regrinding of the lead scavenger tailing either totally or partially will probably be an expensive project. However metal-recovery-size distribution data indicates a dramatic improvement of zinc recovery in the finer size ranges.

The most desirous product to grind with the present operation is the "conditioner sands". Although we have no recent test results it is believed that the sands in unground form exhibit a

metal recovery of only 50%. (In our circuit, the rejection of sands to the regrind may be the most important function of the conditioners).

b. Primary Grind

I really cannot see any reason why work to improve the grind cannot be continued in parallel with other work on the circuit. In particular, the use of smaller primary grind balls should not pose too much of a testing problem.

3. Aeration

The results contained in my report "Interim Report on Aeration"* should convince even the most hardened sceptic that aeration is of value to us. However, the installation of aeration units within the present mill building may not be feasible without extensive and expensive modifications. A study will be made of the siting of the aeration units.

* It would appear that Lyall has not yet received this report.

4. Conditioners

I agree drastic measures are needed to make the conditioners operable, but manipulating sands does not attack the root of the problem. Sands settle because of a lack of turbulence within the conditioner. If we are unable to get adequate turbulence with the present drive motors then larger motors should be installed at once to provide the necessary agitation.

This approach (coupled with improved air-lift systems) may lack finesse but will ensure conditioners that operate more or less continuously.

5. Soda Ash

A plant test program to investigate effects of varied soda ash addition has been discussed and a formal program will be presented within the next few days.

A relatively short test cycle will be employed in the plant testing to offset the effects of ore changes.

6. Copper Sulphate

Plots of copper consumption versus zinc recovery show a linear relationship. More copper is essential to improved zinc recovery. (A good indication can be obtained from the laboratory tests where 1.5 lb./ton CuSO_4 produces 85-95% zinc recovery regularly.

Plans have now been made to encourage the operators to use more copper with a target consumption of 1.80 lb./ton milled.

7. Lead Upgrading

Our lead sales can be greatly enhanced by producing a premium grade lead concentrate, since the sales contract is in terms of tons of concentrate. It is with this point in mind that our current work on lead upgrading is proceeding.

8. Bulk Float

This is one of the projects which has been shelved due to a lack of manpower. I expect to be in a position to recommend a plant test about six weeks after commencement of laboratory test work.

Currently the program is scheduled for startup about mid-November.

P. Brown

c.c. P. TAGGART
W. WALMINEER