

Notes of a Meeting in Toronto

*Copy to W.A. Moore
PJR & PZ*
February 27, 1979
11:00 a.m. - 12:30 p.m.

Re: Arsenic Upgrading

Present: P. Zaharuk, P.J. Raleigh, L. Hurst, T. Desanti
D. Zeraldo, L.S. Price, H.T. Evans, F.G.T. Pickard,
W.A. Moore and D.J. Emery.

The meeting was called to discuss progress on the arsenic upgrading proposal in order that everybody could be fully informed, and especially that W.A. Moore, General Manager, would be up-to-date on work being done by head office staff.

Flowsheet

Lionel Hurst presented a flowsheet that has been designed. It is based on 20 tons per day of product on a three shift per day basis. He went through the flowsheet stating that the surge tank would probably be one of the existing tanks at the mine, and therefore it is not included in their estimate of cost. In the dissolving tank they are considering two types of burners - one indirect fired and the other submerged. There will be a scrubber required.

With reference to the filters, they will be shell type. There will be two used alternately so that they can be cleaned regularly, i.e., once a shift and it would take about one hour. Zaharuk raised the question of whether a centrifuging would be better for environmental reasons. It was noted it had been considered but it would be much more expensive and that the environmental hazard on the pressure leaf filters was not all that great. Price also noted that there would be some problem with the centrifuging and a polishing filter might be required on top of it. There was some discussion of the product size and Pickard made some reference as to the possibility of it being too fine, i.e., 90% -320 mesh. Test work on the filter seems to be indicated both as to filter size and pre-coat material. It was agreed that we should stay away from asbestos and use cellulose.

We next discussed mine water used for cooling. This would be likely 110 gal. per minute instead of the 50 gal. per minute as shown and will come from thickener overflow. Pickard questioned the 40°F temperature indicated as in the summer time the building heats up. Moore asked a question about heat recovery and whether this had

been anticipated or planned. Price indicated that it could be done but it really hasn't been looked at in the calculations to date. It will be considered further.

There was considerable discussion initiated by Zaharuk on the need for a vacuum crystallizer, and that maybe this should be looked at. There was some disagreement from Evans, he felt we should be doing it as cheaply as possible, and Raleigh cautioned against getting things too complicated. On the matter of heat, Evans stated it would be a matter of the value of heat recovery vs. the capital required to capture it. It was noted that the crystallizer will be of stainless steel to prevent build-up of crystals. There was also some discussion of gas bubbles coming off submerged burners carrying toxic waste and the need for scrubbers.

A Sweco West vibrating screen will be used for dewatering. Crystals will overflow into a dryer of the Holoflyte type. Such dryers are expensive and it may be possible to work some sort of conveyor drying system.

Capital costs have tentatively estimated at \$850,000. This includes a figure of \$50,000 to renovate the Giant kiln building. All equipment costs have now been obtained.

Piloting Work

It was generally agreed that there is piloting work required for the filtering part of the process and the gold recovery. It may also be a necessity to check on crystallization. Pickard noted that there was a small plate and frame type filter located at Strathcona that might be useful for the test work and that he would look into seeing if it was still around.

Timing

Moore indicated some concern as to timing. Toronto Engineering seems to think by year end we could be moving product. There was some question raised as to any environmental problems we might have in transportation. Emery noted that he would like to have a proposal in the hands of the directors for their April 10th meeting in order to get approval for the capital required. In order to keep the ball rolling, Price will be going to Yellowknife next

week and will cwork with Moore on getting the pilot plant work going. Someone suggested that there might be an old gold press available at Giant to help with the pilot plant work. It was noted that storage and truck-loading facilities at Giant would cost in the neighbourhood of \$50,000.

Marketing

Desanti reviewed what had been found out on the Marketing side of things by Dan Zeraldo who had made trips into the States. There seems to be an appreciable market of some 13,000-21,000 tons per year. They have a number of letters that are not firm, but at least strong indications that they could sell 6,000 tons and would not have to rely on Koppers. Raleigh and Emery made a comment that there is some obligation to Koppers to supply them with arsenic as they were the ones who first opened the door on this possibility.

There was some question as to who would do the trucking. Desanti indicated they were talking with Trimac to see what sort of deal might be arranged with them.

Evans asked about present supplies and how this might affect the market. Evidently the major supplies are coming from Asarco, and Mexico and ^{there} does seem to be a shortage. The question was raised as to the Tacoma situation. Desanti feels it will keep going. Raleigh and Evans indicated that Hite of Koppers is getting stronger on this and will be prepared to sign a long-term contract. Nobody is interested in untreated material.

At this point in the meeting (about 12:00 Noon) W.A. Moore left to catch an aeroplane.

Operating Costs

There was a brief discussion on operating costs and no figures were put out. This will have to be developed by mine staff.

Con Material

There needs to be further talk with the Con people on upgrading of their material. Evans noted that the Con material has to be piloted too. Pickard suggested that with 7% of the roaster feed coming from the filter cake of the treated products, ^{might} we end up bugging the roasts. There was agreement that work would have to be done on this aspect. Raleigh noted that gold recovery side has to be looked at especially from the Con product.

There was some discussion of a pilot plant. Pickard felt that we don't have enough staff at the mine at present to do the job with all our other duties and that we should try for some help from F.N.M. especially if we expected to have much of the piloting done by the April 10th deadline. It was also noted that the transportation end has to be worked out. With reference to a letter to the Water Board, it looked like it was advisable to let them know what is going on. Con should be held responsible for the transportation of their own material over to the Giant upgrading plant.



D. J. Emery