

times in the eighteen months that the pipe has been running, and normally has no influence whatsoever. Under normal conditions, embracing all but a few hours since the line was installed, there are no riffles whatsoever in the line and the upper three-quarters of the pipe is entirely clear, the pulp flowing in a smooth rapid stream without ripples or disturbance in the lower quarter of the pipe, precisely as in an open launder. I may say that since adding the second 80 stamps, the line which now carries pulp from 160 stamps is running slightly less than half full.

Mr. Overstrom's difficulty in reconciling the performance with many detailed experiments is shared by many. During the time of installation of the line the number of expert opinions passed upon whether it would run or not and based upon experiences with launders, was very large and with one solitary exception, flatly unfavorable. We had, however, demonstrated experimentally that pulp much thicker than that now being handled and somewhat coarser, would run freely in an identical pipe-line 300 ft. long on a $2\frac{1}{4}\%$ grade—running so freely, in fact, that we felt justified in going to a $2\frac{1}{4}\%$ grade to better fit the contour of the country.

The limitations of the line seem clearly marked. With the tube-mill running, no tendency to clog has ever been discovered. With the tube-mills out and on straight battery pulp if the water is reduced to less than five to one, riffles of sand commence to form at a point about 500 ft. from the upper end of the line, giving notice there by a whistling noise, due to the air disturbance in the pipe, which issues through a blow-hole placed at that point. The restoration of the proper dilution at the thickening cone at once corrects the fault.

The economic importance of being able to transfer tailing over great distance at such small grades and at practically no cost (as evidenced in our expense of \$3.57 as the total charges against the carrying of 100,000 tons of ore a mile in distance) is considerable, hence the intrusion upon your space with the foregoing detail.

The wear upon the line to date is not measurable after eighteen months' service.

C. W. VAN LAW.

Guanajuato, September 28.