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O T T A W A

August 8th, 1940.

R E P O R T

of the

ORE DRESSING AND METALLURGICAL LABORATORIES.

Investigation No. 880.

Mercury and Jig Concentrates from the
Preston East Dome Mines, Limited,
South Porcupine, Ontario.

CANADA

Bureau of Mines
Division of Metallic
Minerals

DEPARTMENT
OF
MINES AND RESOURCES

Mines and Geology Branch

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Shipment:

Samples of clean mercury, used mercury, and jig concentrates were received on July 31st, 1940, from the Preston East Dome Mines, Limited, South Porcupine, Ontario.

Trouble has been experienced at the mine with

mercury becoming sickened on amalgamating jig concentrates.

Spectrographic examinations were made on all three samples, and also on a sample of concentrate panned from the jig concentrate. The solution covering the used mercury also was tested.

Results of Spectrographic Examination:

Clean mercury -

This contained no impurities.

Used mercury -

Gold, silver and lead were present. No other element that might be troublesome to amalgamation was detected.

Liquid from used mercury -

Iron and calcium were present.

Jig concentrate -

Iron was the main constituent. Aluminium, arsenic, gold, silver, manganese, silicon, and cobalt are present in small amounts.

Panned concentrate from jig concentrate -

Gold, silver, lead, arsenic, and manganese were detected.

Conclusions:

The used mercury does not contain any element that would tend to cause sickening during amalgamation. The clean mercury is pure.

Examination of the concentrate indicates that

minerals likely to foul the mercury are absent. A small quantity of galena was observed in the concentrate.

The liquid covering the used mercury was black in colour and was alkaline to litmus paper. It contained iron and calcium.

It would appear, therefore, that the trouble is some condition due to increased soluble salts in solution, possibly ferrous iron. Additions of chromates, caustic soda, or lime to the amalgam barrel might have a beneficial effect.

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