

The discrepancy between the railroad returns of ore shipped and the statement of ore shipped obtained from the mine managers is due to the fact that railroad shipments include all ore shipped from January to November, 1906, whereas the statements received from the mine managers in some cases include all shipment of ore since the beginning of operations, while in other cases the shipments are given for a few months only.

SMELTERS TO WHICH COBALT-SILVER ORES ARE SHIPPED AND TERMS ON WHICH ORE IS RECEIVED FOR TREATMENT.

I found on investigation that the ore from the Cobalt district was shipped to three firms:—

The American Smelting and Refining Company, who have their Smelting Works at Perth Amboy, New Jersey, with head office at 71 Broadway, New York.

The Balbach Smelting and Refining Company at Newark, New Jersey.

The Orford Copper Company at Copper Cliff, Ont., with head office at 43 Exchange Place, New York.

In order to obtain the information regarding the processes employed and cost of operations of extracting the metal from the ore, I visited the smelting works and head offices of the first two named smelting companies and the head office of the Orford Copper Company in New York city.

The American Smelting and Refining Company and the Balbach Smelting and Refining Company have no process for saving cobalt, nickel or arsenic contents of the ore. They are both extensive lead smelters and the process employed for saving the silvers contents is to use the lead ores as a collector. No detailed description of the process was obtainable, nor could anything be learned regarding costs of extraction.

The following are the terms on which they receive and treat the ores from the Cobalt district:—

THE AMERICAN SMELTING AND REFINING COMPANY.

Silver: Pay for 94 per cent of contents at New York quotations as given on date of assay settlement by Messrs. Handy and Harman to Western Union Telegraph Company.

Treatment charge: \$10 per ton of 2,000 pounds of ore, dry weight.

Payment: Cash immediately on agreement of assays.

The above terms are f.o.b. cars in the yard of their works at Perth Amboy, N.J.

Cars may be stopped and ore sampled in transit by Messrs. Ledoux & Co., whose sampling will be accepted as a basis of settlement, if given opportunity to have a representative of the company present during the process. Weights to govern would be those of the Perth Amboy Plant.

The American Smelting and Refining Company do not pay for cobalt contents, as in their processes they are unable to recover this element.

The Balbach Smelting and Refining Company receive silver ore, if not too high in arsenic, upon the following terms:—

Ore run: Up to 400 oz. silver per ton, smelting charge \$6 per ton.

Above 400 to 500 oz. silver per ton, smelting charge \$5 per ton.

Above 500 to 600 oz. silver per ton, smelting charge \$4 per ton.

Above 600 to 700 oz. silver per ton, smelting charge, \$3 per ton.

Above 700 to 800 oz. silver per ton, smelting charge, \$2 per ton.

Above 800 oz. silver per ton, no smelting charge.

They pay for 93 per cent of the silver contents of the ore at the New York market price for silver ruling on the day of agreement of assays. Settlement, 14 days after agreement of assays, or cash less 1 per cent.

If settlement is based on assays of Ledoux & Co., weights and moisture as found in their works in the presence of Ledoux & Company's representative are to be taken as