

MEMORANDUM

EAST CHICAGO PLANT OF INTERNATIONAL SMELTING AND REFINING COMPANY

At the time it was shut down in August of the current year, this plant consisted of a lead refinery, an electrolytic white lead plant and a zinc oxide plant. The lead refinery was constructed in the year 1912 in connection with the Tooele smelter. It had an initial capacity of 5,000 tons of lead per month which was later increased to 9,000 tons. For the past thirty years, it was used to refine the lead recovered from zinc plant residues at Great Falls and East Helena as well as the lead produced at Tooele. Subsequent to 1929, the quantity of lead available for the refinery declined to between 3000 and 3500 tons per month. As the result of the small intake and the steadily mounting labor costs, the cost of refining became excessive.

In the Spring of the current year, the American Smelting and Refining Company which operates a lead refinery at Omaha, Nebraska, offered us a refining contract which figured out about \$5.00 per ton better than we could do. This contract was accepted and runs for a period of ten years. It covers the refining of lead produced at East Helena as well as at Tooele. The lead is returned to the Anaconda Sales Company and is guaranteed to contain less than 0.1% of bismuth which is a better grade of lead than we were able to produce with the facilities at East Chicago. The lead is returned at Omaha with transit privileges corresponding to those we had at East Chicago. Aside from the fact that the terms offered last Spring by the

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American Smelting and Refining Company are more favorable than any terms previously offered by that company, the contract contains a new clause providing for the return of 90% of all bismuth in excess of 0.25% as refined metal ready for the market.

Tooele lead normally contains about 0.25% bismuth which was not recoverable by the refining methods in use at East Chicago and at times made the sale of the lead difficult as it was considered an objectionable impurity. Three or four times during each year, a by-product of the Anaconda smelter which contained considerable bismuth as well as some lead, was shipped to the Tooele smelter for the production of a lead bullion containing from 2 to 3% of bismuth. This bullion was used in the White Lead Plant and yielded a bismuth residue running about 90% Bi which was readily refined to bismuth metal running 99.9% Bi. Production of bismuth from this source amounted to 3,350,000 pounds for the past ten years and yielded gross profits of nearly \$2,000,000. Under the contract with Omaha, the quantity of bismuth to be returned to us will be substantially the same as the possible recovery with our former practice. The operations at Tooele are simplified in that the so-called "bismuth runs" will no longer be necessary.

The White Lead Plant was established at East Chicago in the year 1919 and used a novel electrolytic process developed by Mr. Elmer A. Sperry. The plant is capable of producing about 10,000 tons of white lead per year. At the time the plant was built, it was considered worth while partly because the new

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process was expected to produce a white lead of superior quality and partly because it provided an additional outlet for lead in times of slack demand. There was a considerable margin between the price of lead and the price of white lead. This margin has tended to diminish and the demand for white lead has steadily decreased on account of competition from other white pigments developed during the past twenty-five or thirty years, such as lithopone and tinox. The future of white lead is now considered somewhat uncertain and since the plant is no longer needed for the recovery of bismuth, it seemed advisable to go out of the white lead business.

In 1922, it was decided to establish a zinc oxide plant at East Chicago and in 1923, a similar plant was built at Akron. These plants were justified on a basis similar to that applying to the White Lead Plant, viz, the spread between the price of zinc oxide and metallic zinc and the need for increasing our market for metallic zinc. The latter consideration was particularly important because up to about eight years ago, the contracts under which we purchased concentrates for our zinc plants, obligated us to pay for the zinc regardless of our ability to market the metal so purchased. During the past eight years most of our large zinc concentrate shippers have gone on a toll basis whereunder we treat the concentrates on agreed upon terms and return the recovered metal to the shipper. This type of contract has relieved us of what formerly was a considerable market risk and since so much of our zinc business is now

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on this basis, we do not need the outlet provided by the zinc oxide plant. In fact, our own zinc is at times scarcely sufficient to provide the needs of the Brass Plants. For the past year or two, the oxide plant has been operating at a very reduced scale on secondary zinc metal, the supply of which is uncertain and fluctuates between wide limits. For these reasons, it was considered advisable to drop out of the zinc oxide business.

We were fortunate in being able to dispose of the East Chicago plant at a price of about \$1,000,000 to the Eagle Picher Company. They propose to use it for the treatment of secondary lead, such as battery plates, and the production of zinc oxide from secondary metal and ores produced from some of their mines. They may continue the operation of the White Lead Plant. They are in the pigment business on a considerable scale and the plant is well adapted to their purposes and is well located. For various reasons, they decided to close down a plant they had in Cincinnati about the time we decided to discontinue operations at East Chicago. The acquisition of the plant by Eagle Picher seems like a logical step. In addition to the money which we received for the plant and adjacent unoccupied land, the discontinuance of our operations released approximately two and one-half million dollars tied up in warehouse and process inventories. Thus, the transaction made available to Anaconda for other purposes approximately three and one-half million dollars. Savings in lead refining costs may be estimated at \$200,000 per year. The best that could be said for our white lead and zinc oxide

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operations is that on a consolidated basis they broke even.

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October 23, 1946

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