

The most important project at the Huachipato steel mill is the coke plant under the Still-Otto license, with a capacity of 500,000 tpy and an investment of US\$ 140 million. It was inaugurated in 1990 and replaced the old concentrating plant. Coal consumption at the new plant will be 700,000 tpy, and production is expected to reach 1 million 200 tons of steel.

The following projects will be added to this investment: continuous sheet melting (US\$ 5 to 7 million), roll mill improvement (US\$ 25 to 30 million), modernization of flat sheet galvanizing, and replacement of the current sheet galvanizing system through immersion by a new process (Galvalume), which will provide better coating and adherence and higher tolerance. US\$ 15 million will be invested in the new galvanization process which will have a capacity of 100,000 annual tons.

A pellet feed plant was completed in 1991. This plant makes it possible to use marginal minerals from Romeral, which are not being used now because of their high level of impurities or low iron grade. Investment in the plant was approximately US\$ 30 million, and the capacity will be 2 million tpy.

The thermal hardening project, which is related to the preceding investment will improve the quality of iron produced in Chile and the efficiency of the facilities at the Huasco Port.

A project to recover Vanadium from the El Romeral mines is being evaluated by the company. Technical and economical feasibility studies of this project have been carried out with the Center of Mining and Metallurgical Research, which has determined the advantages of the proposed process. With an investment of approximately US\$ 30 million the company can process some 1,500 tpd of magnetic concentrates with high vanadium content, obtain around 4,000 annual tons of vanadium pentoxide, and supply as much as 10% of the Western market. Romeral has reserves that represent 6% of world vanadium with grades between 0.5% and 0.7%.

Chilean iron production was 8.6 million long tons in 1991, compared to 7.8 million tons of ore in 1990. Deliveries to the market were 8.4 million long tons, which was 11% higher than the previous year.

Tonnage for the foreign market was 7.3 million long tons, a 15.5% decrease. Deliveries to the domestic market (Siderúrgica de Huachipato) were 1.1 MTL which is a similar figure to 1989.

Compañía Minera del Pacífico's earnings related to the respective sales were US\$ 248 million. Operating profits for the year increased to US\$ 34 million which was 8.2% less than in 1990.

Total CMP investments were US\$ 20 million. The start-up of the Pellet Feed Plant inaugurated in December 1990, and the new Tailings Dam at the El Romeral Mine, which started operating in February 1990, should be noted. In 1989 the Pellet Plant started using the thermal hardening process and investments were made in mobile mining equipment for both CMP work sites and others.

El Romeral.

The El Romeral deposit is located north of La Serena and is made up of high-grade, solid lenticular bodies, concentrated in a 3.5 by 0.4 km area and in areas of partial rock replacement and rock fracture fillings in the lower grade sectors. Proven reserves are 64 million tons of mineral with an average grade of more than 55% iron, 0.11% sulfur and 0.23% phosphorus. Proven and inferred reserves of low-grade mineral are more than 145 million tons with an iron content between 25% and 45%.

Romeral produces 4 million tons of ore per year for direct export, mainly to Japan, with the remainder for Siderúrgica Huachipato. Its exploitation started in 1956 at a rate of 1 million tpy; this production tripled in 1963. In 1972 it increased production capacity to 4 million tpy, almost 500,000 tons of which are consumed at the Huachipato plant and the rest in the external market.

The exploitation of the mine is open pit, and it produces approximately 17 thousand tpd of high-grade mineral for the processing plant. The mineral is crushed in the plant and then treated by means of wet magnetic concentration, producing gravel with 62% of iron, 0.089 of sulfur, 0.115% of phosphorus and fines for sintering of 64.1% of iron, 0.070% of sulfur and 0.075% of phosphorus.

El Algarrobo.

The mineralized bodies of El Algarrobo, located southwest of Vallenar, have a multiform and lenticular configuration with proven reserves of 52 million tons with an average content of 52% iron, 0.46% sulfur and 0.48% phosphorus. Its exploitation is carried out as open pit, extracting around 22 thousand tpd of ore.

El Algarrobo supplies the pellet plant in Huasco, and El Laco is exporting its production to Argentina and China. Algarrobo has reserves to supply the pellet plant in Huasco for twenty years.