

R E F E R E N C E T E R M S

TECHNOLOGIES TO PRODUCE SULPHUR IN LARGE SCALE

SANTIAGO, OCTOBER 1989

i) Flotation of caliches of 30-32 percent sulphur that produce concentrates of 85-90 percent sulphur suitable for the fusion and refinement.

ii) Flotation of caliches of low grade (5-10 percent sulphur) as a pre stage of concentration of this material at levels of 30-32 percent sulphur.

iii) Flotation of wastes proceeding from the concentrated fusion of sulphur.

- Characterization of the fusion stage of autoclave flotation concentrates relating to the coalescence phenomenon and the elimination of impurities.

3.4 SEMIPILOT TEST.-

The following tests under predefined conditions at the laboratory stage will be performed.

- Semipilot comminution test the conventional process of grinding, milling, classification in continuous and eventual tests in a impactgrinder will be evaluated.

- Continuous flotation at the semipilot scale in order to obtain criteria of scaling and verifying to the flotation of sulphur caliches.

- Test of continuous fusion geared to obtain the necessary background to estimate the investment and operational costs.

- Refinement tests using the pressurized filter of concentrates from fused sulphur and washed in a continuous process in order to test prototypes of industrial filters and to obtain technical and economical data of this operation.

3.5 Advance Report

The results of the different tests made including the main conclusions will be reported.

3.6 Preliminary of the Proposed process.

Based on the results of the first stage the preliminary design of one plant of a predetermined capacity with the corresponding metallurgic material balance will be made. This will give a description of the main characteristics of design and operation of the considered equipment.

3.7 Preliminary Economical Evaluation

The proposed process will be the basis of the preliminary economical evaluation (calculation of economic indicators)

3.8 Last Report

The results and the respective analysis will be discussed in relation to the projections of the alternative proposed technological.

SCHEDULE OF ACTIVITIES

The description of the stages and activities of the project are in table 3.1

The sequence of activities is indicated in the GANTT LETTER annexed.

TABLE 3.1 SCHEDULE OF ACTIVITIES

No. ACT.	DURATION (WEEEEKS)	GOALS	ACTIVITIES
1	4	Obtaining samples	<ul style="list-style-type: none">- Visit to the terrain- Definition of sampling system.- Definition of sample size.- Reception, identification and preparation of samples.
2	4	Background Summary	<ul style="list-style-type: none">- Bibliographic search.- Analysis of technical background- Visit to the terrain.
3	8	Laboratory Tests	<ul style="list-style-type: none">- Chemical and physical characterization.- Comminution test- Flotation test- Fusion test
4	12	Semipilot Tests	<ul style="list-style-type: none">- Comminution test- Flotation test- Continuous test fusion- refinement test.
5	4	Elaboration of Advanced Report	<ul style="list-style-type: none">- Analysis of the results of the characterization stage and Laboratory test.- Definition of alternatives to implement at the semipilot scale.
6	4	Preliminary design Process	<ul style="list-style-type: none">- Results and background Analysis.- Definition Flowchart- Materials and metallurgical balance- Selection of equipment.

7	4	Economical Evaluation	Cost Estimation of: <ul style="list-style-type: none"> - Investment and Operation. - Parameter calculations VAN and TIR. - Analysis of sensitivity in relation to main variables. - Market profile.
8	4	Final Report	<ul style="list-style-type: none"> - Presentation and Analysis of results of different tests. - Analysis of economical projections of the proposed process and conclusions.
