

## Annex III-1

### FEATURES OF PHOSPHATE RESERVES AT CHILEMBWE, ZAMBIA AND CONSIDERATIONS FOR USE AS RAW MATERIALS FOR PHOSPHATE FERTILIZER PRODUCTION

#### 1. Introduction

The present feasibility study has been undertaken for the efficient utilization of phosphate concentrate of Chilembwe, which will be mined and concentrated using phosphate reserves at Chilembwe, Zambia, for the domestic production of fused magnesium phosphate or single super phosphate fertilizers in Zambia.

The details of Chilembwe's phosphate reserves and development plan are presented in "A Pre-Feasibility Study for the Phosphate Development Project, the Republic of Zambia, 1985, Japan International Cooperation Agency" and the details of experimental results on the phosphate concentrate, fused magnesium phosphate and single super phosphate production, and the conceptual design of the projects are summarized in the Part III of the Report.

A further supplementary explanation on the specific features of the Chilembwe's phosphate reserves are given hereunder as Annex of the Report.

#### 2. Scale of Phosphate Reserve

World production of phosphate rock (concentrate) amounted to 150.1 MM TPY (equivalent to 45.03 MM TPY- $P_2O_5$ ) in 1985, 0.3 MM TPY more than in 1984 and the historical highest level even recorded. The world export of phosphate amounted to 46.5 MM TPY, in 1985, 1.25 MM TPY less than in 1984.

Major production, exporting and importing countries of phosphate in 1985 are cited as follows:

Major Production, Export and Import Countries of Phosphate Concentrate-1985

<u>Production, MM TPY</u>		<u>Export, MM TPY</u>		<u>Import, MM TPY</u>	
USA	50.84	Morocco/Sahara	14.79	France	4.15
USSR	30.50	USA	10.76	Poland	3.26
Morocco/Sahara	20.74	Jordan	4.61	Spain	2.81
China PR	12.00	USSR	3.95	Romania	2.78
Jordan	6.07	Nauru/Christmas	2.61	Belgium	2.61
Tunisia	4.53	Togo	2.45	Canada	2.59
Brazil	4.21	Israel	2.30	Japan	2.44
Israel	4.08	Senegal	1.25	Netherland	2.09
Togo	2.45	Tunisia	1.13	Germany FR	2.09
South Africa	2.42	Syria	0.89	South Korea	1.87
...	...	...	...	...	...
<b>Total:</b>	<b>150.07</b>	<b>Total:</b>	<b>46.53</b>	<b>Total:</b>	<b>46.53</b>

Source: Phosphate and Potassium, No.144, 1986, The British Sulfur Corp., Ltd.

The scale of individual mining operation is averaged 3.0 MM TPY in the world, and its mining cost for newly implementing projects are estimated US\$30.5 to 38.5/Ton in developed site and US\$53.9 to 62.4/Ton in remote developing site in terms of constant price as of 1982 according to the study by the World Bank in 1983.

While the scale of reserves in Chilembwe is rather limited (total minable ore: 1.53 MM Ton of 11.9% P<sub>2</sub>O<sub>5</sub> quality) and only enable to supply 0.035 MM TPY of phosphate concentrate with 30.0% P<sub>2</sub>O<sub>5</sub> quality for 14 + years of project life. The projected production in Zambia is a marginal of 0.023% of the world production or 0.075% of word trade of phosphate concentrate. Therefore, the economy of scale is not expected, but the advantage is hoped to produce at lower cost than imported one. However, the full production cost is, as discussed in the Part IV of the Report, projected up to above US\$150/Ton at Chilembwe according to the financing conditions of the project.

### 3. Quality of Phosphate Reserve

The phosphate ore in Chilembwe is igneous and its quality of  $P_2O_5$  concentration ranges between 9.5 to 15.1% and averages 11.9% of  $P_2O_5$ . The phosphate is crystalline of fluorapatite and hydroxyapatite with low organic material and carbonate content. The quality of ore in  $P_2O_5$  is rather high as igneous phosphate and concentration efficiency by flotation is high, because of isolated and large sized crystalline structure of apatite in the ore. The  $P_2O_5$  recovery is expected 88.4% for project conceptual design. The impurity of Cd, As and F is also low in concentration than the standard commercial phosphate.

However, the economy of scale is not contributable to reduce the production cost at Chilembwe because of the limited phosphate reserves so far confirmed in the region and the small scale flotation processing makes the production cost at higher level.

It might be also noted that the quality of  $P_2O_5$  in sedimentary phosphate in North Africa and Middle East is high enough to mine and deliver phosphate without flotation processing to realize lower ex-mine costs of phosphate concentrate at multi-million tons mining operations.

### 4. Location of Phosphate Reserves

Phosphate reserve in Chilembwe is located approximately 540 km East from Kafue where the proposed phosphate fertilizer plant will be located as the most optimized plant site in Zambia. The region near Chilembwe is still developing stage in Zambia and transport infrastructure is not well established. Additional investment for project infrastructure for water supply, access roads and bridges construction and others are required.

Moreover, there is no railways system from Chilembwe to Kafue and only possible mode of transport is by truck transport by road which costs additionally US\$73.5/Ton for the transportation of phosphate concentrate from mines in Chilembwe to the consuming plant in Kafue.

## 5. Cost Reduction Countermeasure of Phosphate Concentrate

From the production tests, it is concluded that the production of phosphate concentrate from Chilembwe ores as well as the production of fused magnesium phosphate and single super phosphate from the phosphate concentrate of Chilembwe ores are technically feasible. Major technical problems, although not so critical, encountered during the production tests are fineness of phosphate concentrate for the production of fused magnesium phosphate and low and slow reactivity of phosphate concentrate with sulfuric acid for the production of single super phosphate. By adjusting the plant design and production conditions, which will be specific for Chilembwe phosphate, it is possible to produce standard grade fused magnesium phosphate and single super phosphate in conventional production processes and normal operating procedures.

However, from the financial point of view, these projects are not viable in terms of returns on investment as well as cash flow during the project life under assumed financial conditions for the proposed projects.

Although the most critical factor for the low financial viability of the projects are the product prices which are low because of the present depressed phosphate fertilizer market prevalent in the world for a decade. The cost of phosphate concentrate is also influential factor, and the possibilities of reduction of the cost are assessed as follows:

### (1) Switching to Imported Phosphate Concentrate

As the importing cost and domestically produced phosphate concentrate cost are in a same level, it is not possible to improve financial viability by switching to imported phosphate concentrate from own produced concentrate. The viability is still in negative side. Domestic production of phosphate concentrate is only beneficial when the cost is lower than the landed cost of imported phosphate concentrate in Zambia. The production of phosphate fertilizers using imported phosphate concentrate from North African supply sources is not beneficial under present conditions, because these countries also supply processed phosphate fertilizers under lower arrival pricing at Zambia.

## (2) Reduction of Transportation Cost

The transportation cost of phosphate concentrate from Chilembwe to Kafue is estimated US\$73.5/Ton which will be reduced substantially, if railways system is available. It is reported that a new railways system is now studied by the Government to construct the third railways system from Lusaka to Tete, Mozambique which will pass Katete, near Chilembwe and connect to the existing railways from Tete to Beira Port of Mozambique on Indian Ocean. Implementation of the railways system will be beneficial for the project.

## (3) Scale of Phosphate Reserves

The scale of the conceptual design of the project facilities is rather limited in small scale because of the limited reserves so far confirmed in the region, however it is probable to find out additional quantity with high quality reserves in the region in future. The twice of the present studied production capacity will be absorbed by the domestic consumption of phosphate fertilizers in Zambia. The economy of scale will be beneficial for the project viability in Zambia.

## (4) Quality of Phosphate Concentrate

The conceptual design of the phosphate mining and concentrate project is to produce phosphate concentrate with quality of  $P_2O_5$  30.0% in dry and with free moisture of 12.0% on dry basis after the flotation and filtration for direct shipping.

However, from the production tests in Japan using surface phosphate ores in Chilembwe, a higher quality product of  $P_2O_5$  35.0% at 97.2% of  $P_2O_5$  recovery is obtained without any difficulty. The design allowance is for the fluctuation of ore quality for deeper mining, but the reduction of such design allowance will be possible when the ore quality data is confirmed at the deeper reserves in Chilembwe.

Although the total investment cost will not be reduced, it will also be feasible to dry the phosphate concentrate in Chilembwe instead of in Kafue for variable cost saving of phosphate concentrate transportation from Chilembwe to Kafue.

The above countermeasures will be beneficial for the improvement of financial viability of the proposed projects for future considerations.

CROP RESPONSE AND EVALUATION OF FUSED  
MAGNESIUM PHOSPHATE FERTILIZER

1. Introduction

Effectiveness and commercial value of chemical fertilizers are closely related to the specific conditions of their fertilization environment: climate, soils, crops, agricultural practice and farm management. It is common and true for all fertilizer nutrients: nitrogen, phosphate, potash and others such as sulfur and magnesium.

Present feasibility study are undertaken on the two alternative phosphate fertilizer products of fused magnesium phosphate and single super phosphate. Single super phosphate is well known, produced and consumed widely throughout the world, but fused magnesium phosphate is rather specific and limited fertilizer, and produced commercially only in five countries in the world. Therefore, a brief description on the characteristics of fused magnesium phosphate is given hereunder as an Annex of the Report.

2. Characteristics of Fused Magnesium Phosphate

2.1 Production Method

Generally, finely ground phosphate concentrate is low or nil in agronomic response to the crops, especially igneous phosphate with well developed apatite crystal is low in comparison with sedimentary and carbonate apatite phosphate. Crop response for direct application of ground phosphate is greatly influenced by the crystalline structure of phosphate.

Therefore, it is essential to decompose the apatite crystal of phosphate by chemical processes and to convert into available phosphates which will be absorbed by the root system of agricultural crops.

Following four processes are applied for the industrial production of phosphate fertilizers at present in the world:

- Decomposition by Mineral Acid
- Decomposition by Alkali
- Decomposition by Thermal Treatment with Steaming
- Fusion and Decomposition by the Addition of Third Component

Decomposition by mineral acids are the most widely practised and applied for the production of single super phosphate, triple super phosphate, diammonium phosphate and nitric phosphate fertilizers which give highly water soluble phosphates, while the rest of the processes above cited give available phosphate with low or no water soluble phosphates.

Fused magnesium phosphate was developed in 1946 by Professor Shin-ichiro Kasugai, University of Tokyo, Japan and the first commercial production tests was conducted in 1948 by using electric furnace for melting phosphate concentrate and serpentine mixture. Since then the production of fused magnesium phosphate is spread not only in Japan but also in Korea, Brazil, South Africa and China, and open-hearth furnace are also used. The present production capacity of fused magnesium phosphate in these countries are reported approximately 5.0 MM TPY of fertilizer or 1.0 MM TPY in terms of  $P_2O_5$  in 1986 as tabulated below:

<u>Country</u>	<u>Production Capacity of Fused Magnesium Phosphate</u>
Japan	496,000 TPY
Korea	158,000
Brazil	250,000
South Africa	50,000
China	4,000,000
Total	4,954,000 TPY



Approximate unit consumptions of fused magnesium phosphate production by electric furnace and open hearth furnace processes are as follows:

<u>Unit Consumption for Fused Magnesium Phosphate Production</u>		
<u>Consumption</u>	<u>Electric Furnace Process</u>	<u>Open Hearth Furnace Process</u>
Phosphate Concentrate (P <sub>2</sub> O <sub>5</sub> 30.0%)	0.70 TPT	0.70 TPT
Serpentine	0.38	0.38
Electrode	0.005	-
Brick	-	0.01
Electricity	910 kWh	50 kWh
Fuel Oil	0.028 TPT	0.185 TPT
Raw Water	6.25	6.25

Where low cost hydroelectricity is adequately available, electric furnace process is applied, but where electricity is generated at fuel burning power plant, open hearth furnace process is used by firing natural gas, fuel oil or low ash coke such as petroleum coke for the production of fused magnesium phosphate.

## 2.2 Product Features

Molecular structure of fused magnesium phosphate is glassy and amorphous state as is verified by X-ray diffraction analysis. The constituent phosphate, lime, magnesia and silicate are all not soluble in water but highly soluble in weak acidic solution.

Therefore, these components are slowly but readily available to the agricultural crops. Fused magnesium phosphate composes of 16 to 25% of P<sub>2</sub>O<sub>5</sub> and with a MgO/SiO<sub>2</sub> molar ratio of 1.0 which gives low melting temperature melt for easy vitrification as well as high solubility of phosphate in citric acid and acidic citrate solution.

## (1) Phosphate Nutrients

Phosphate in fused magnesium phosphate is not water soluble but highly soluble in weak acidic medium. Root systems of agricultural crops secrete weak organic acid medium in soils and upon contact with fused magnesium phosphate, phosphate is dissolved in the medium and assimilated by root systems of the crops as plant nutrient.

On the contrary, when the water soluble phosphate fertilizer is applied to the soils, dissolved phosphate is reacted with active ferric, ferrous and aluminum cations in the soils and forms insoluble phosphates gradually which are no more available to the crops.

Therefore, only a fraction of phosphate in water soluble phosphate fertilizer is absorbed by crops, especially in highly acidic and lateritic soils which contain high concentration of iron and aluminum, and have high fixation capability of soluble phosphate. In such soils, the response of water soluble phosphate is relatively lower, while the response of fused magnesium phosphate is relatively higher because phosphate is not readily reactive with iron and aluminum ions to form unavailable phosphates in soils.

However, it is noted that the initial phosphate response of fused magnesium phosphate is slower during a few days period than water soluble phosphate because of its low solubility in water.

## (2) Neutrallizing Effects

Fused magnesium phosphate is highly alkaline in nature and contains high concentration of lime and magnesia. Therefore, fused magnesium phosphate has neutrallizing effects of acidic soils according to the application rates. Generally, liming is practiced in highly acid soil and fused magnesium phosphate is beneficial for such neutrallizing as well as phosphate application in cropping fields.

### (3) Secondary Nutrients

Besides phosphate, fused magnesium phosphate contains various secondary nutrients: approximately 15.0% of MgO, 30.0% of CaO and 25.0% of SiO<sub>2</sub>. These nutrients are soluble and active to stimulate the growth of agricultural crops.

### 3. Official Analytical Methods

There are a variety of phosphate fertilizer production methods and phosphate fertilizer products in the world. Therefore, several official analytical methods have been developed which are applicable to the specific phosphate fertilizer and specific fertilization environment.

For the analysis of water soluble phosphate fertilizers, W-P<sub>2</sub>O<sub>5</sub> (water soluble phosphate) is used for expressing the effectiveness of phosphate fertilizer and for the determination of commercial value of phosphate fertilizers as is stipulated in the Law of Zambia.

However, there are additional effective phosphate remaining over water soluble phosphate in triple super phosphate and in diammonium phosphate. Therefore, citrate soluble phosphate plus water soluble phosphate is measured for expressing the effectiveness of general phosphate fertilizers. In the USA, Av-P<sub>2</sub>O<sub>5</sub> (available phosphate) is measured by the AOAC method by extracting phosphate with neutral ammonium citrate solution, and in Japan, S-P<sub>2</sub>O<sub>5</sub> (soluble phosphate) is measured by the official method with extracting phosphate by ammoniacal alkaline ammonium citrate solution.

Other official method approved for specific fertilizer is C-P<sub>2</sub>O<sub>5</sub> (citric acid soluble phosphate) which extract phosphate using 2.0% solution of citric acid. This method is developed over 100 years ago in Germany to apply phosphate effectiveness assessment of Thomas phosphate, a basic slag fertilizers, which is a co-product of steel production. Extensive agronomical research activities verified that the agronomical response of basic slag is closely correlated to C-P<sub>2</sub>O<sub>5</sub> under wide ranged fertilization environments in Europe. Official methods of C-P<sub>2</sub>O<sub>5</sub> has been adopted in United Kingdom, Austria, Belgium, Eire, France, West Germany, Switzerland, Netherlands, the USSR, Japan and other countries. Production of basic slag fertilizer in the world reached over 7.0 MM tons in 1960 or 1.5 MM tons in

terms of  $P_2O_5$  as is documented in following table. The production in recent years has been greatly reduced due to the technical renovation in steel production as well as the beneficiation of iron ores at mines.

Some countries, F- $P_2O_5$  (formic acid soluble phosphate) and C- $P_2O_5$ -pH4 (soluble phosphate in acidic ammonium citrate solution of pH4) are approved as official method for the determination of effectiveness and commercial value of water insoluble phosphate fertilizers.

The effectiveness of fused magnesium phosphate is measured primarily by C- $P_2O_5$  and in some cases, C- $P_2O_5$ -pH4 or F- $P_2O_5$  is applied in the water insoluble phosphate fertilizers producing countries.

BASIC SLAG FERTILIZER STATISTICS

(Unit: P<sub>2</sub>O<sub>5</sub>, 1,000 TPY)

Country		1964/65	1969/70	1974/75	1979/80	1983/84
Austria	- Production	-	-	-	-	-
	- Imports	54.8	46.4	21.9	12.0	na
	- Consumption	54.8	46.4	16.9	12.0	8.1
	- Exports	-	-	-	-	-
Belgium-Luxembourg	- Production	345.2	368.1	372.7	268.0	na
	- Imports	18.0	15.1	24.9	na	na
	- Consumption	63.1	55.2	89.0	16.0	na
	- Exports	306.2	300.1	296.3	na	na
France	- Production	429.4	408.6	na	na	na
	- Imports	147.5	177.0	na	na	na
	- Consumption	370.3	384.6	na	224.1	na
	- Exports	63.5	52.9	na	na	na
Germany FR	- Production	444.9	313.5	244.5	162.9	64.2
	- Imports	-	-	106.9	84.7	55.6
	- Consumption	382.6	300.1	265.6	152.3	61.7
	- Exports	42.9	36.3	-	1.2	1.8
Netherlands	- Production	-	-	-	-	-
	- Imports	39.2	21.9	14.8	6.3	2.3
	- Consumption	39.2	21.9	14.2	4.6	2.3
	- Exports	-	-	-	-	-
Poland	- Production	75.8	89.5	0.3	-	-
	- Imports	-	-	-	-	-
	- Consumption	76.8	92.5	-	-	-
	- Exports	-	-	-	-	-
United Kingdom	- Production	120.6	85.2	na	30.0	na
	- Imports	10.4	9.3	na	2.7	na
	- Consumption	127.8	95.6	na	32.0	na
	- Exports	-	-	-	-	-
Others	- Production	56.6(+)	34.6	18.8(+)	1.0(+)	-(+)
World Total	- Production	1,472.5(+)	1,299.5	636.3(+)	461.9(+)	64.2(+)

Sources: FAO Fertilizer Yearbook, 1978-1984, FAO  
Annual Fertilizer Review, 1970-1977, FAO

#### 4. Effectiveness and Commercial Value of Fused Magnesium Phosphate

As is explained in preceding sections, fused magnesium phosphate features in its alkaline and water insoluble nature, and is appreciated as an excellent fertilizer for acidic and lateritic soils. In those regions, commercial value is established at higher level than straight water soluble phosphate. In Japan, the Soil Amendment Act was introduced in 1952 for encouraging the use of fused magnesium phosphate in acidic and magnesia deficit soils due to leaching of alkaline by heavy rainfall. The  $P_2O_5$  in fused magnesium phosphate is priced 25.0% higher than that of single super phosphate in Japan, where intensive agriculture is practiced in acidic and magnesia deficit soil extensively.

The effectiveness of specific fertilizer should be examined in accordance with the specific and regional fertilization environments: climate, soils, crops, agricultural practice and farm management. Therefore, the effectiveness evaluation of fused magnesium phosphate fertilizer in Zambia should be based on the crop response testings in Zambia.

In the present feasibility study, not only Av- $P_2O_5$  content but also sulfur content in the single super phosphate is reflected in its commercial value calculation in view of well recognized and accepted sulfur benefits in sulfur deficit agricultural soils in Zambia.

However, as the effectiveness of C- $P_2O_5$ , magnesia, silica and alkaline contents in fused magnesium phosphate at Zambian climate and soils have not been well tested so far, therefore, such additional benefits for the calculation of commercial value of fused magnesium phosphate have not been reflected in the present feasibility study in Zambia.

#### 5. Importance of Crop Response Testings of Fused Magnesium Phosphate in Zambia

In principle, a high crop response of fused magnesium phosphate is expected in Zambian soils because of the specific features of the phosphate as well as the strong acidic nature of Zambian soils. However, in practice, a fair and neutral evaluation of commercial value of fused magnesium phosphate are unable due to the lack of scientific verification records in Zambia.

Therefore, it is recommendable to undertake an intensive crop response experiments in Zambia based on well designed experimental planning. The experimental project should be designed, supervised and evaluated at the central research institution to identify the effectiveness of fused magnesium phosphate at regional experimental stations throughout Zambia.

The dosage of fertilization should be formulated taking into consideration of present and future farming practices in Zambia.

Field experiments should be continued at least three years terms to verify the following issues on fused magnesium phosphate applications in Zambia:

- Absorption of applied citric acid soluble phosphate by crops
- Agronomic effects of applied soluble magnesia
- Agronomic effects of applied soluble silica and alkaline
- Overall crops yields
- Official analytical method for fused magnesium phosphate





Annex III-3

BRIEF INFORMATION FOR THE PRODUCTION OF TRIPLE SUPER PHOSPHATE,  
DIAMMONIUM PHOSPHATE AND NITRIC PHOSPHATE FERTILIZER

1. Introduction

Although the present study is confined to prepare the complete feasibility study for the production of two product alternatives: fused magnesium phosphate and single super phosphate using phosphate concentrate ( $P_2O_5$ : 30.0%, 35,181 TPY-dry for 15 years of supply) which will be mined and concentrated at Chilembwe, Zambia. The scope of work for the study is also stipulating that a brief technical information should be prepared as Annex of the Report on the three additional product alternatives: triple super phosphate (TSP), diammonium phosphate (DAP) and nitric phosphate (NP) using the same phosphate concentrate from Chilembwe.

The detailed analysis for the two projects are documented in the Report and a brief process explanation and the implications of the three additional projects on the Chilembwe phosphate in Zambia are described hereunder.

The study results show that the production of fused magnesium phosphate and single super phosphate are technically feasible to produce standard quality products by conventional technology, however the projects are not financially viable in terms of capital return and cash flow, and the projects are not justifiable in terms of economic benefit for the economy of Zambia by the financial and economic analysis under assumed conditions. It is also concluded that the switching from domestic phosphate of Chilembwe to importing one from overseas will not improve the project feasibility because of low landed cost of imported phosphate fertilizer than imported phosphate concentrate in terms of fertilizer nutrients. The financial and economic internal rate of return for the two projects are negative.

There are several reasons for such negative project feasibility of the studied projects: economy of scale, quality and location of phosphate reserves, product analysis (low in analysis and citric acid soluble phosphate), high cost of raw materials, depressed international phosphate fertilizer industries, high pricing of supplementary inputs (serpentine and sulfuric acid) in Zambia.

Taking the above project evaluation results and reasons behind for granted, it might be reasonable to conclude that the three additional product alternative projects are also negative in feasibility under the assumed conditions.

The production scale of the three additional products should also be a same as far as using Chilembwe phosphate concentrate ( $P_2O_5$ : 30.0%, 35,181 TPY -dry for 15 years of supply) and the project will be located in Kafue because of the raw material and product logistics optimization. The product analysis will be higher for the three but the product pricing by nutrients basis of available phosphate for matching to the imported product price should be the same. Therefore, project sales revenues are identical. The sulfur content in single super phosphate is advantageous for Zambian agriculture, but no sulfur is contained in the additional three products. In addition to the complexity of the project, the investment cost should be higher, because phosphoric acid plant is additionally required for the production of triple super phosphate and diammonium phosphate. The returns will be more negative because of higher capital investment and a same sales revenue.

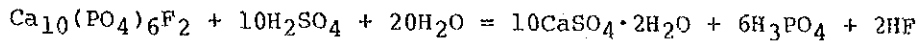
Although the production scheme of nitric phosphate will have some advantageous aspects through by-pass utilization of ammonia and nitric acid to produce nitric phosphate melt for the production of the presently producing compound fertilizers and ammonium nitrate at the existing facilities of NCZ in Kafue without any additional supplementary inputs except carbon dioxide which will be recoverable at ammonia plant of NCZ, Kafue Zambia, the financial viability will not be positive because of depressed international fertilizer industries at present as mentioned above.

## 2. Phosphoric Acid

Phosphoric acid is required for the production of triple super phosphate and diammonium phosphate as an intermediate in Zambia.

Phosphoric acid ( $H_3PO_4$ ) is an intermediate in the manufacture of water soluble phosphate fertilizers, except single super phosphate and nitric phosphate, and is manufactured from phosphate and sulfuric acid. Process routes for making the acid can be classified as wet (acid) and thermal (electricity). The thermal processes give an acid of higher purity but not used for fertilizer production in view of production costs.

In a wet process the phosphate is digested with an acid. The reaction taking place with sulphuric acid produces gypsum and hydrogen fluoride as by-products:



The reaction itself is fast, but the gypsum crystals form slowly and  $\text{P}_2\text{O}_5$  tends to be included in the lattice of gypsum.

The various commercial processes developed have basic objectives:

- Transferring the maximum amount of  $\text{P}_2\text{O}_5$  into product acid or ensuring little  $\text{P}_2\text{O}_5$  left in the gypsum
- Obtaining high concentration of  $\text{P}_2\text{O}_5$  in the product acid (30 to 45%  $\text{P}_2\text{O}_5$ )
- Having by-product gypsum in a suitable form for filtration and of acceptable quality for further uses

There are several commercially proven process know-hows available for the project in Zambia, but it is essential to carry out detailed test on phosphate concentrate from Chilembwe prior to the preparation of conceptual and basic design of the plant at the potential licensors. Recovery of phosphate and filtrability of gypsum are specific for each combination of process and phosphate concentrate. As an example, the most typical process are explained hereunder:

Phosphate concentrate ground to 90% passes through 100 mesh and sulphuric acid of 60% concentration are fed at predetermined rates to the digesters provided with agitators. The ratio between the weights of phosphate concentrate and sulphuric acid (as 100%  $\text{H}_2\text{SO}_4$ ) is 1.1 to 1.2 depending on the concentrate quality. Weak phosphoric acid from the filtration section is recycled to the digesters, and slurry from the first digester flows to the second one. A temperature of 90 to 100°C is maintained in the digesters. These conditions are favourable for the growth of calcium sulphate hemihydrate ( $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$ ) crystals.

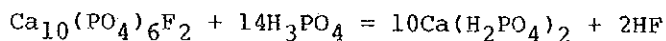
The hemihydrate slurry from the second digester flows to crystallizers in series where hydrated crystals are already present. Cooling is done with air to maintain a temperature of 60 to 65°C. Under these conditions the

hemihydrate crystals are dissolved so that the phosphate inclusions are transferred to the acid. Sufficient time is allowed for the seed crystals to grow, and the slurry containing the dihydrate (gypsum,  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ) is sent to filtration and is partially recycled to the crystallizer to maintain optimum conditions. The filtration is done in a tilting-pan filter, and the product acid filtrate has a concentration of 30 to 32%  $\text{P}_2\text{O}_5$ . This filtrate is sent to evaporator for increasing the concentration to 45 to 54%  $\text{P}_2\text{O}_5$ . As a by-product, gypsum is separated and recovered for disposal or industrial uses according to the specific conditions of the region.

The standard world scale of the process plant at present is 500 to 1,000 TPD -  $\text{P}_2\text{O}_5$  while assumed project scale in Zambia is approximately 30 TPD -  $\text{P}_2\text{O}_5$  due to the limited availability of phosphate concentrate in Chilembwe.

### 3. Triple Super Phosphate

Triple super phosphate (TSP) is an excellent phosphate fertilizer, with high  $\text{P}_2\text{O}_5$  content of 44 to 48% in water-soluble form which is manufactured by reacting phosphoric acid (47 to 54%  $\text{P}_2\text{O}_5$ ) with phosphate concentrate:



When the phosphate concentrate and phosphoric acid are mixed, the resulting mass solidifies rapidly than in the case of single super phosphate. That is the main difference between the two processes. The manufacture of triple super phosphate by typical process is described below:

Phosphate, ground to 90% passes through 100 mesh, and 47 to 54%  $\text{P}_2\text{O}_5$  phosphoric acid are metered continuously into a mixer in a weight ratio of 1 to 1.5 to 1.6. The mixer employed is cone or turbine-agitator type. The slurry produced is discharged into a belt conveyor which acts as a den and the mass hardens in a short time. The product is then cut by a disintegrator and sent to a curing pile. After a specified curing period: approximately four weeks, the product is pulverized for shipping.

The den system is provided with a fume-scrubbing to reduce atmospheric pollution of the fluorine-bearing off-gases by lime water washing.

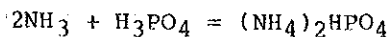
Triple super phosphate is manufactured in granular form also by using the conventional slurry process. Merchant grade phosphoric acid (47 to 54%

P<sub>2</sub>O<sub>5</sub>) and phosphate concentrate are mixed in cascade reactors. The slurry from the reactor is granulated with a pug-mill type blunger or a drum-type granulator. The granules are screened to separate and recycle the oversize material and fines. The product is sent to storage or direct shipping.

The typical product grade is (0-46.3-0) and the world scale plant has capacity of 500 to 1,000 TPD by single train. The studied project in Zambia is 72.8 TPD.

#### 4. Diammonium Phosphate

Diammonium Phosphate (DAP) is a reaction product of two moles of ammonia and a mole of phosphoric acid, and is the most important phosphate fertilizer in the world because of high analysis of fertilizer nutrients as well as the high water solubility of phosphate. The reaction is presented as follows:



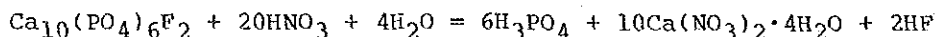
Ammonia is reacted with merchant grade phosphoric acid (50 to 54% P<sub>2</sub>O<sub>5</sub>) in a pre-neutralizer operating at 115°C, where the mole ratio of ammonia to the acid is maintained at 1.4 to 1. The slurry is pumped to the ammoniator-granulator with recycled fines and ammonia is injected to increase the mole ratio to 1.8 to 2.0 to 1. The product granules from the granulator go to a con-current drier to reduce the moisture content to 1% and then are screened. The oversize and fines are recycled; the ratio of recycle to fresh feed is 2 to 5 to 1. The product from the screens is cooled and sent to storage. Ammonia losses from the pre-neutralizer and the granulator are kept to the minimum by scrubbing the vapours with phosphoric acid and returning the acid to the pre-neutralizer. The grades obtained are in the range of (18-46-0) to (16-48-0).

The world scale plant has production capacity of 500 to 1,000 TPD by single train while the proposed project in Zambia will be 72.8 TPD.

## 5. Nitric Phosphate

Nitric phosphate contains the fertilizer nutrients of nitrogen and phosphate and is obtained by acidulation of phosphate concentrate with nitric acid; the resulting slurry contains a mixture of nitrates and phosphates.

The acidulation reaction between phosphate concentrate and nitric acid can be expressed as follows:



The reaction product is in the form of water-soluble phosphoric acid and calcium nitrate. However, the calcium nitrate is hygroscopic and convert phosphate into water insoluble phosphate during granulation. Various processes have been developed to eliminate the calcium nitrate as follows:

- Removal by crystallization of  $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$  followed by centrifuging or filtration
- Conversion to calcium sulphate by using ammonium sulphate, potassium sulfate or sulphuric acid
- Conversion to monocalcium phosphate by using phosphoric acid
- Conversion to calcium carbonate by using carbon dioxide

Among these processes, the most typical process by calcium nitrate removal by deep cool crystallization is explained hereunder:

Phosphate concentrate and 55 to 60% nitric acid are fed to digesters continuously with a small amount of defoamer. The mixture flows to the second digester, where dissolution is completed. The slurry is then pumped to the crystallizers, which are equipped with cooling coils cooled by brine and operated in series continuously or in batches. The temperature maintained in the crystallizers is based on the amount of calcium nitrate to be removed and the degree of water solubility of phosphate to be obtained in the product. Easily filterable crystals of uniform particle size are obtained; these are separated by filters. The liquor from the calcium nitrate filtration stage is pumped to the neutralization section, where gaseous ammonia is added. Neutralization is carried out in stages to avoid

the viscous solutions that occur at intermediate pH values. Depending on the requirement of nitrogen and phosphate in the final product, ammonium nitrate produced in the calcium nitrate conversion by ammonia and carbon dioxide is added after due concentration.

The neutralized solution is then pumped to the evaporator section, where the water content is reduced to enable prilling or drum granulation. Evaporation is done under vacuum in two stages in specially designed equipment. Scrubbing units are provided to remove fluorine and ammonia in the vapors released during evaporation. After the evaporation, the solution is either prilled or granulated. The calcium nitrate by-product separated in the filter can either be used in the production of calcium ammonium nitrate (CAN) or converted to ammonium nitrate both of which are sold as straight nitrogen fertilizers. The most typical products are (20-27-0), (22-22-0) and (27-13-0).

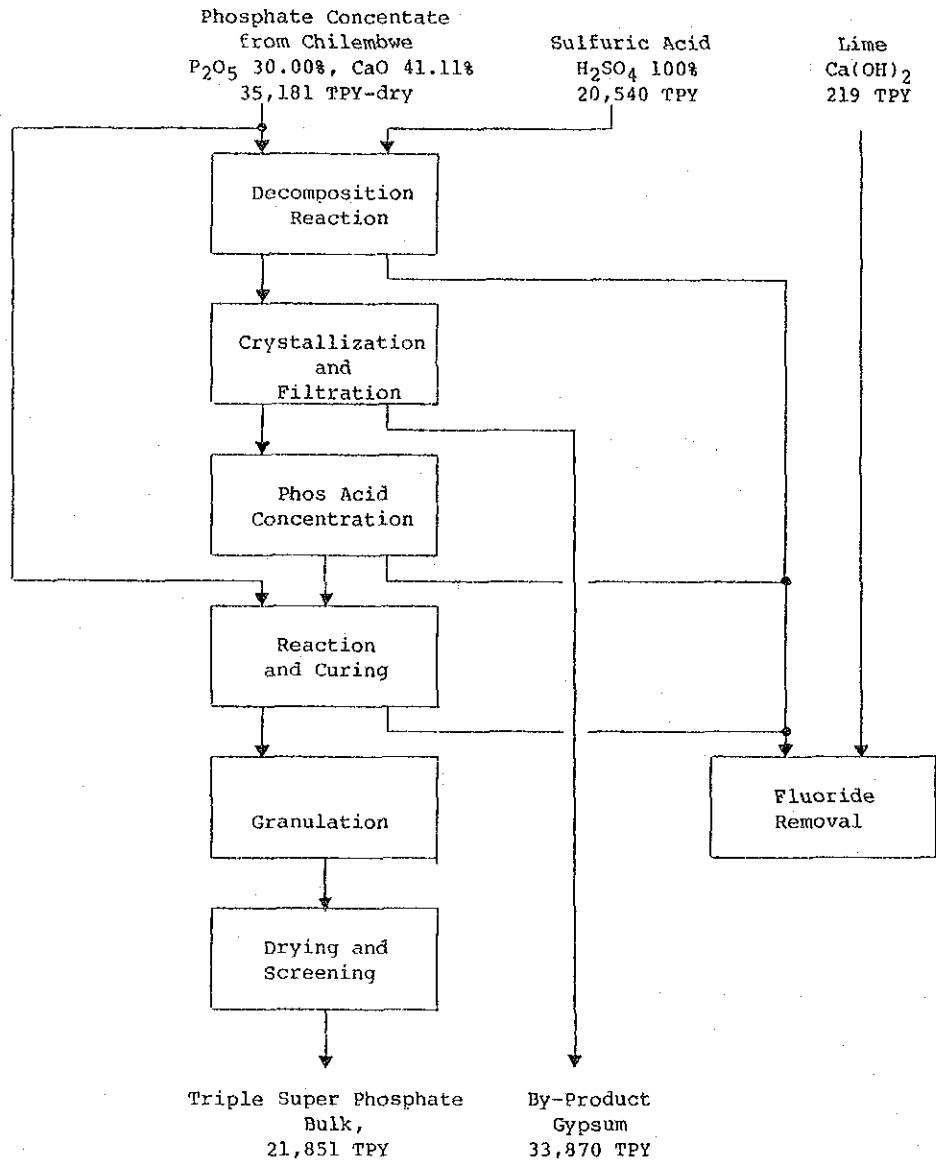
The standard world scale of the process plant at present is 1,000 to 2,000 TPD while the assumed project scale in Zambia is 256 TPD.

## 6. Material Balance

A simplified block flow diagram for the production of triple super phosphate, diammonium phosphate and nitric phosphate assuming the use of Chilembwe phosphate concentrate are illustrated in the following Figures.

Figure PRODUCT ALTERNATIVE FOR STUDY AND TECHNICAL INFORMATION SUPPLY (1/3)

- Triple Super Phosphate -



Product Specification	
T- P <sub>2</sub> O <sub>5</sub>	47.0%
Av-P <sub>2</sub> O <sub>5</sub>	46.0
W- P <sub>2</sub> O <sub>5</sub>	40.0
T-S	3.0
Bagging	Bulk

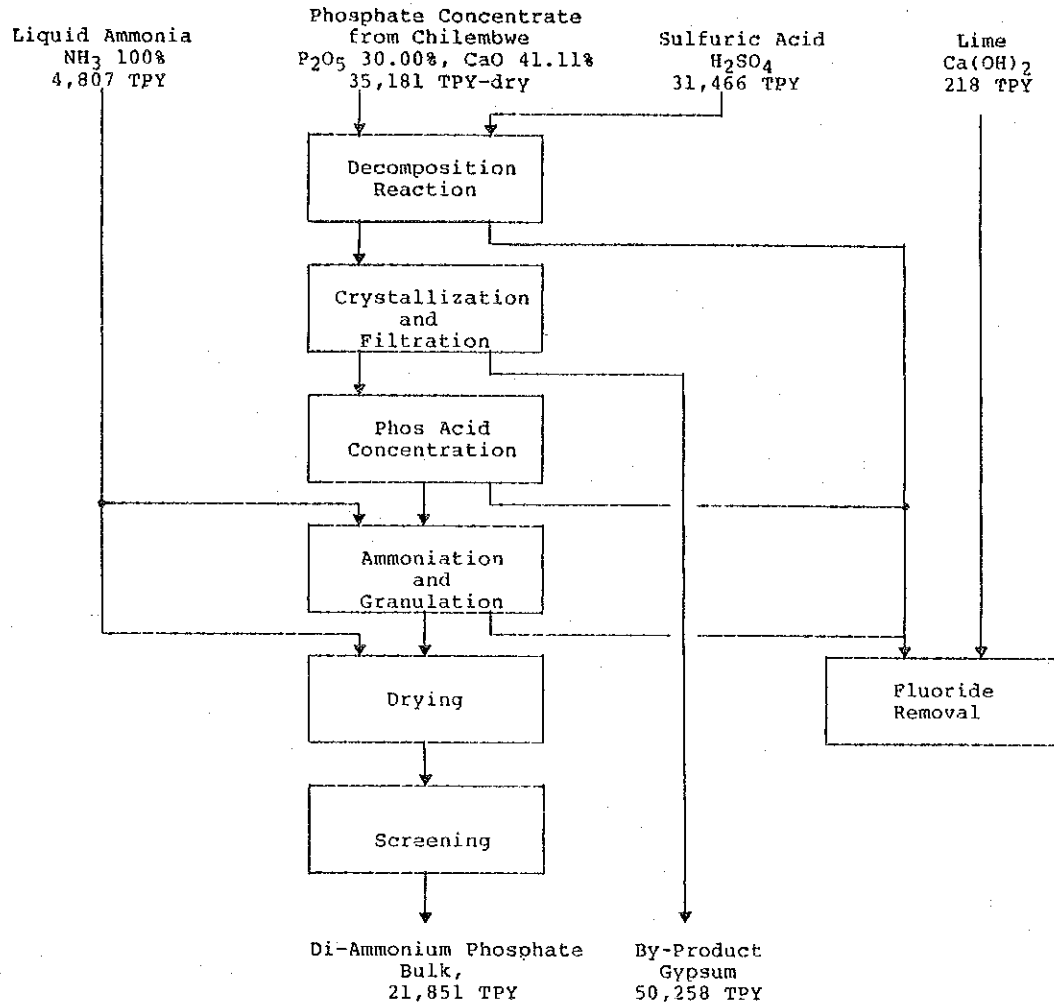
Unit Consumption, TPT	
Phos Concentrate	1.610 Ton
Sulfuric Acid	0.940
Lime	0.010
Anti-Foaming	0.0001
Electricity	75.0 kWh
Fuel	0.030 Ton
Raw Water	2.500

Plant Capacity	
Capacity	72.8 TPD
Site Area	50,000 m <sup>2</sup>
Location	Kafue, Zambia



Figure PRODUCT ALTERNATIVE FOR STUDY AND TECHNICAL INFORMATION SUPPLY (2/3)

- Diammonium Phosphate -



Product Specification

T- N	18.0%
T- P <sub>2</sub> O <sub>5</sub>	47.0
Av-P <sub>2</sub> O <sub>5</sub>	46.0
W- P <sub>2</sub> O <sub>5</sub>	40.0
T-S	3.0
Bagging	Bulk

Unit Consumption, TPT

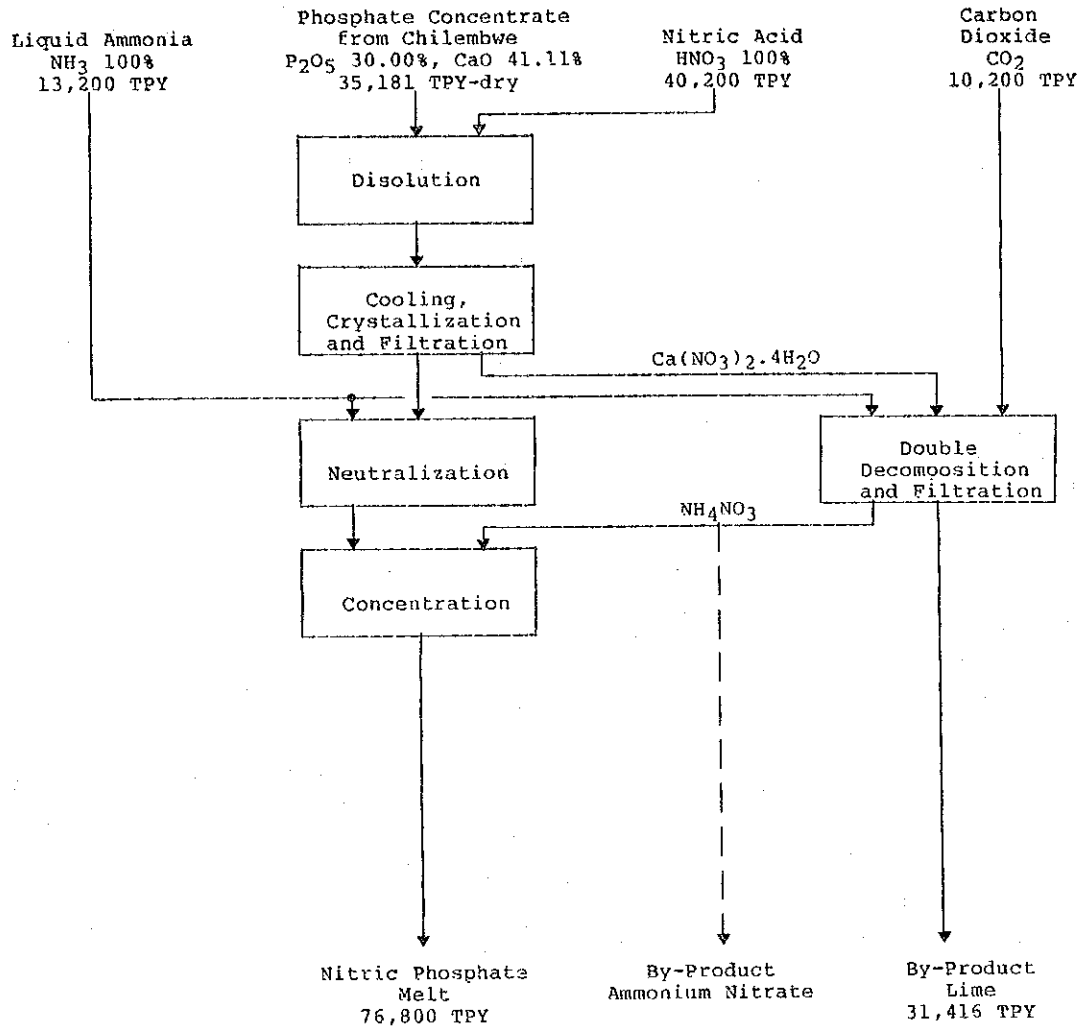
Phos Concentrate	1.610 Ton
Sulfuric Acid	1.440
Ammonia	0.220
Lime	0.010
Anti-Foaming	0.0001
Anti-Caking	0.005
Electricity	85.0 kWh
Fuel	0.040 Ton
Raw Water	3.000

Plant Capacity

Capacity	72.8 TPD
Site Area	50,000 m <sup>2</sup>
Location	Kafue, Zambia

Figure PRODUCT ALTERNATIVE FOR STUDY AND TECHNICAL INFORMATION SUPPLY (3/3)

- Nitric Phosphate -



Product Specification	
T- N	24.9%
A- N	14.0
N- N	10.9
T- P <sub>2</sub> O <sub>5</sub>	13.3
Av-P <sub>2</sub> O <sub>5</sub>	13.2
W- P <sub>2</sub> O <sub>5</sub>	10.3
T-S	0.0
Bagging	Bulk

Unit Consumption, TPT	
Phos Concentrate	0.445 Ton
Ammonia	0.172
Nitric Acid	0.524
Carbon Dioxide	0.135
Lime	0.010
Anti-Foaming	0.0001
Anti-Caking	0.005
Electricity	100.0 kWh
Fuel	0.065 Ton
Raw Water	3.500

Plant Capacity	
Capacity	256 TPD
Site Area	50,000 m <sup>2</sup>
Location	Kafue, Zambia





Annex IV-1 PROJECT FINANCIAL ANALYSIS DETAILS (1/5)

Financial Analysis Data

Project Title : Phosphate Mining and Concentrate Project

Project Location: Chilembwe, Zambia

1. Base Case (Interest Rate: 12%/Year)

- Production and Sales Plan
- Production Cost Statements
- Income Statements
- Funds Flow Statements
- Balance Sheet
- Profitability and Financial Indicators
  - Profit Ratio
    - Sales Revenue
    - Investment
    - Share Holder Equity
    - Share Capital
  - Current Ratio (Assets/Liability)
  - Quick Ratio (Cash + Receivable)/(Liability)
  - Debt Service Ratio (Depreciation + Interest + Net Profit)/(Repayment + Interest)
  - Long Term Debt to Share Holder Equity
  - Break Even Point
    - Profit/Capacity Utilization
    - Cash/Capacity Utilization
    - Cash/Sales Price
- Financial Rate of Return by Discounted Cash Flow (in terms of constant prices)
  - Return on Investment, FIRROI
    - Before Tax
    - After Tax
- Sensitivity Analysis
  - Product Price
  - Investment Cost
  - Raw Material Cost
  - Utility and Transport Cost

2. Low Interest Rate Case (Interest Rate: 4%/Year)

- Funds Flow Statements
- Profitability and Financial Indicators
- Financial Rate of Return (In Terms of Constant Price)

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
RATED CAPACITY	0.	0.	35181.	35181.	35181.	35181.	35181.	35181.	35181.	35181.
CAPACITY UTILIZATION	0.0	0.0	0.350	0.800	0.900	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	0.	0.	12313.	28145.	31663.	35181.	35181.	35181.	35181.	35181.
INCREASE IN INVENTORY	0.	0.	1759.	1759.	0.	0.	0.	0.	0.	0.
SALES VOLUME	0.	0.	10554.	26386.	31663.	35181.	35181.	35181.	35181.	35181.
UNIT SALES PRICE	0.0	0.0	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300
SALES REVENUE	0.	0.	1372.	3430.	4116.	4574.	4574.	4574.	4574.	4574.
TOTAL SALES REVENUE	0.	0.	1372.	3430.	4116.	4574.	4574.	4574.	4574.	4574.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
RATED CAPACITY	35181.	35181.	35181.	35181.	35181.	35181.	35181.
CAPACITY UTILIZATION	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	35181.	35181.	35181.	35181.	35181.	35181.	35181.
INCREASE IN INVENTORY	0.	0.	0.	0.	0.	0.	0.
SALES VOLUME	35181.	35181.	35181.	35181.	35181.	35181.	35181.
UNIT SALES PRICE	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300
SALES REVENUE	4574.	4574.	4574.	4574.	4574.	4574.	4574.
TOTAL SALES REVENUE	4574.	4574.	4574.	4574.	4574.	4574.	4574.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION COST STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
PRODUCTION (VOLUME)	0.	0.	12313.	28145.	31663.	35181.	35181.	35181.	35181.	35181.
RAW MATERIAL COST	0.	0.	263.	601.	676.	751.	751.	751.	751.	751.
RAW ORE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CONSUMABLE/CHEMICAL	0.	0.	263.	601.	676.	751.	751.	751.	751.	751.
UTILITIES COST	0.	0.	950.	2172.	2443.	2714.	2714.	2714.	2714.	2714.
TRANSPORT CHARGES	0.	0.	905.	2069.	2327.	2586.	2586.	2586.	2586.	2586.
RAW WATER	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIESEL OIL	0.	0.	23.	53.	59.	66.	66.	66.	66.	66.
ELECTRICITY	0.	0.	22.	50.	56.	63.	63.	63.	63.	63.
VARIABLE COST	0.	0.	1213.	2772.	3119.	3466.	3466.	3466.	3466.	3466.
EMPLOYMENT COST	0.	0.	127.	262.	262.	262.	262.	262.	262.	262.
LABOUR COST	0.	0.	98.	202.	202.	202.	202.	202.	202.	202.
OVERHEAD	0.	0.	29.	61.	61.	61.	61.	61.	61.	61.
MAINTENANCE COST	0.	0.	103.	212.	212.	212.	212.	212.	212.	212.
INSURANCE/PROPERTY TAX	0.	0.	33.	62.	58.	53.	49.	44.	40.	35.
DIRECT FIXED COST	0.	0.	264.	537.	532.	528.	523.	518.	514.	509.
CASH FACTORY COST	0.	0.	1477.	3309.	3651.	3993.	3988.	3984.	3979.	3975.
DEPRECIABLE ASSETS (PLANTS)	0.	0.	403.	807.	807.	807.	807.	807.	807.	807.
DEPRECIABLE ASSETS (PRE-OPE)	0.	0.	10.	19.	19.	19.	19.	19.	19.	19.
INTEREST DURING CONSTRUCTION	0.	0.	41.	83.	83.	83.	83.	83.	83.	83.
DEPRECIATION AND AMORTIZATION	0.	0.	455.	909.	909.	909.	909.	909.	909.	909.
TOTAL FACTORY COST	0.0	0.0	1931.	4218.	4560.	4902.	4898.	4893.	4888.	4884.
UNIT FACTORY COST			0.1568	0.1499	0.1440	0.1393	0.1392	0.1391	0.1390	0.1388
SALES EXPENSES	0.	0.	21.	51.	62.	69.	69.	69.	69.	69.
OPERATING EXPENSES	0.	0.	1952.	4270.	4622.	4971.	4966.	4962.	4957.	4953.
INTEREST ON LONG TERM DEBT	0.	0.	557.	1267.	1180.	1092.	1005.	918.	830.	743.
INTEREST ON SHORT TERM DEBT	0.	10.	0.	73.	483.	881.	1319.	1826.	2416.	3106.
TOTAL PRODUCTION COST	0.0	0.0	2509.	5610.	6285.	6944.	7290.	7705.	8203.	8601.
UNIT PRODUCTION COST			0.2037	0.1993	0.1985	0.1974	0.2072	0.2190	0.2332	0.2502

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION COST STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
PRODUCTION (VOLUME)	35181.	35181.	35181.	35181.	35181.	35181.	35181.
RAW MATERIAL COST	751.	751.	751.	751.	751.	751.	751.
RAW ORE	0.	0.	0.	0.	0.	0.	0.
CONSUMABLE/CHEMICAL	751.	751.	751.	751.	751.	751.	751.
UTILITIES COST	2714.	2714.	2714.	2714.	2714.	2714.	2714.
TRANSPORT CHARGES	2586.	2586.	2586.	2586.	2586.	2586.	2586.
RAW WATER	0.	0.	0.	0.	0.	0.	0.
DIESEL OIL	66.	66.	66.	66.	66.	66.	66.
ELECTRICITY	63.	63.	63.	63.	63.	63.	63.
VARIABLE COST	3466.	3466.	3466.	3466.	3466.	3466.	3466.
EMPLOYMENT COST	262.	262.	262.	262.	262.	262.	262.
LABOUR COST	202.	202.	202.	202.	202.	202.	202.
OVERHEAD	61.	61.	61.	61.	61.	61.	61.
MAINTENANCE COST	212.	212.	212.	212.	212.	212.	212.
INSURANCE/PROPERTY TAX	30.	26.	21.	17.	12.	8.	3.
DIRECT FIXED COST	505.	500.	496.	491.	487.	482.	478.
CASH FACTORY COST	3970.	3966.	3961.	3957.	3952.	3948.	3943.
DEPRECIABLE ASSETS (PLANTS)	807.	807.	807.	807.	807.	807.	807.
DEPRECIABLE ASSETS (PRE-OPE)	19.	19.	19.	19.	19.	19.	19.
INTEREST DURING CONSTRUCTION	83.	83.	83.	83.	83.	83.	83.
DEPRECIATION AND AMORTIZATION	909.	909.	909.	909.	909.	909.	909.
TOTAL FACTORY COST	4879.	4875.	4870.	4866.	4861.	4857.	4852.
UNIT FACTORY COST	0.1387	0.1386	0.1384	0.1383	0.1382	0.1380	0.1379
SALES EXPENSES	69.	69.	69.	69.	69.	69.	69.
OPERATING EXPENSES	4948.	4943.	4939.	4934.	4930.	4925.	4921.
INTEREST ON LONG TERM DEBT	655.	568.	481.	393.	306.	218.	131.
INTEREST ON SHORT TERM DEBT	3915.	4868.	5993.	7324.	8904.	10781.	13015.
TOTAL PRODUCTION COST	9518.	10379.	11412.	12652.	14139.	15924.	18066.
UNIT PRODUCTION COST	0.2706	0.2950	0.3244	0.3596	0.4019	0.4526	0.5135



\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
OPERATING INCOME	0.	0.	1372.	3430.	4116.	4574.	4574.	4574.	4574.	4574.
TOTAL SALES REVENUE	0.	0.	1372.	3430.	4116.	4574.	4574.	4574.	4574.	4574.
COST OF SALES	0.	0.	1655.	3967.	4581.	4919.	4898.	4893.	4889.	4884.
VARIABLE COST	0.	0.	1213.	2772.	3119.	3466.	3466.	3466.	3466.	3466.
DIRECT FIXED COST	0.	0.	264.	537.	532.	528.	523.	518.	514.	509.
DEPRECIATION AND AMORTIZATION	0.	0.	455.	909.	909.	909.	909.	909.	909.	909.
INC. IN PRODUCT INVENTORY	0.	0.	276.	251.	-21.	-16.	-0.	-0.	-0.	-0.
GROSS PROFIT ON SALES	0.	0.	-283.	-537.	-465.	-345.	-324.	-320.	-315.	-311.
SALES EXPENSES	0.	0.	21.	51.	62.	69.	69.	69.	69.	69.
OPERATING PROFIT	0.	0.	-304.	-588.	-526.	-414.	-393.	-389.	-384.	-379.
NON-OPERATING EXPENSES	0.	10.	557.	1341.	1663.	1973.	2324.	2743.	3246.	3848.
INTEREST ON LONG TERM DEBT	0.	0.	557.	1267.	1180.	1092.	1005.	918.	830.	743.
INTEREST ON SHORT TERM DEBT	0.	10.	0.	73.	483.	881.	1319.	1826.	2416.	3106.
NET PROFIT OR (LOSS) BEFORE TAX	0.	-10.	-861.	-1929.	-2189.	-2387.	-2717.	-3132.	-3630.	-4228.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	0.	-10.	-861.	-1929.	-2189.	-2387.	-2717.	-3132.	-3630.	-4228.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	0.	-10.	-861.	-1929.	-2189.	-2387.	-2717.	-3132.	-3630.	-4228.

## \*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*

## INCOME STATEMENTS

(USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
OPERATING INCOME	4574.	4574.	4574.	4574.	4574.	4574.	4574.
TOTAL SALES REVENUE	4574.	4574.	4574.	4574.	4574.	4574.	4574.
COST OF SALES	4880.	4875.	4871.	4866.	4862.	4857.	4853.
VARIABLE COST	3466.	3466.	3466.	3466.	3466.	3466.	3466.
DIRECT FIXED COST	505.	500.	496.	491.	487.	482.	478.
DEPRECIATION AND AMORTIZATION	909.	909.	909.	909.	909.	909.	909.
INC. IN PRODUCT INVENTORY	-0.	-0.	-0.	-0.	-0.	-0.	-0.
GROSS PROFIT ON SALES	-306.	-302.	-297.	-293.	-288.	-284.	-279.
SALES EXPENSES	69.	69.	69.	69.	69.	69.	69.
OPERATING PROFIT	-375.	-370.	-366.	-361.	-357.	-352.	-348.
NON-OPERATING EXPENSES	4570.	5436.	6473.	7717.	9209.	10999.	13146.
INTEREST ON LONG TERM DEBT	655.	568.	481.	393.	306.	218.	131.
INTEREST ON SHORT TERM DEBT	3915.	4868.	5993.	7324.	8904.	10781.	13015.
NET PROFIT OR (LOSS) BEFORE TAX	-4945.	-5806.	-6839.	-8079.	-9566.	-11351.	-13493.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	-4945.	-5806.	-6839.	-8079.	-9566.	-11351.	-13493.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	-4945.	-5806.	-6839.	-8079.	-9566.	-11351.	-13493.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*

FUNDS FLOW STATEMENTS

- BASE CASE -

(USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	2234.	10195.	2703.	2737.	4787.	7089.	9645.	12600.	16053.	20104.
CASH GENERATED	0.	0.	151.	321.	383.	495.	516.	521.	525.	530.
PROFIT AFT. TAX, BFR INT.	0.	0.	-304.	-588.	-526.	-414.	-393.	-389.	-384.	-379.
DEPRECIATION AND AMORTIZATION	0.	0.	455.	909.	909.	909.	909.	909.	909.	909.
FINANCIAL RESOURCES	2234.	10195.	2552.	2416.	4404.	6593.	9129.	12079.	15528.	19575.
SHARE CAPITAL	546.	2549.	546.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	1638.	7646.	1630.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	50.	0.	367.	2416.	4404.	6593.	9129.	12079.	15528.	19575.
USES OF FUNDS	2234.	9605.	3292.	2737.	4787.	7089.	9645.	12600.	16053.	20104.
FIXED CAPITAL EXPENDITURE	2234.	9545.	2045.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	189.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	1859.	8674.	1859.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	187.	871.	187.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	326.	301.	-21.	-16.	-0.	-0.	-0.	-0.
DEBT SERVICES	0.	60.	921.	2436.	4807.	7105.	9645.	12600.	16054.	20105.
REPAYMENT OF LONG TERM DEBT	0.	0.	364.	728.	728.	728.	728.	728.	728.	728.
REPAYMENT OF SHORT TERM DEBT	0.	50.	0.	367.	2416.	4404.	6593.	9129.	12079.	15528.
INTEREST ON LONG TERM DEBT	0.	0.	557.	1267.	1180.	1092.	1005.	918.	830.	743.
INTEREST ON SHORT TERM DEBT	0.	10.	0.	73.	483.	881.	1319.	1826.	2416.	3106.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	0.	590.	-590.	0.	0.	-0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	0.	0.	590.	0.	0.	0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	0.	590.	0.	0.	0.	-0.	-0.	-0.	-0.	-0.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	24873.	30502.	37164.	45066.	54455.	65630.	78946.
CASH GENERATED	534.	539.	543.	548.	552.	557.	561.
PROFIT AFT. TAX, BFR INT.	-375.	-370.	-366.	-361.	-357.	-352.	-348.
DEPRECIATION AND AMORTIZATION	909.	909.	909.	909.	909.	909.	909.
FINANCIAL RESOURCES	24338.	29963.	36621.	44518.	53903.	65073.	78385.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	24338.	29963.	36621.	44518.	53903.	65073.	78385.
USES OF FUNDS	24873.	30502.	37164.	45066.	54455.	65630.	78946.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.
DEBT SERVICES	24873.	30502.	37165.	45066.	54456.	65630.	78947.
REPAYMENT OF LONG TERM DEBT	728.	728.	728.	728.	728.	728.	728.
REPAYMENT OF SHORT TERM DEBT	19575.	24338.	29963.	36621.	44518.	53903.	65073.
INTEREST ON LONG TERM DEBT	655.	568.	481.	393.	306.	218.	131.
INTEREST ON SHORT TERM DEBT	3915.	4868.	5993.	7324.	8904.	10781.	13015.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	0.	0.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ASSETS	2234.	12369.	13746.	13189.	12259.	11333.	10424.	9514.	8605.	7695.
CURRENT ASSETS	0.	0.	376.	727.	707.	690.	690.	689.	689.	688.
OPERATING CASH	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	0.	0.	276.	527.	507.	490.	490.	489.	489.	488.
ACC. EXCESS CASH	0.	590.	0.	0.	0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	2234.	11780.	13370.	12461.	11552.	10643.	9734.	8825.	7916.	7007.
INVESTMENT	2234.	11780.	13825.	13825.	13825.	13825.	13825.	13825.	13825.	13825.
NON-DEPR. ASSETS	189.	189.	189.	189.	189.	189.	189.	189.	189.	189.
DEPRECIABLE ASSETS	1859.	10533.	12392.	12392.	12392.	12392.	12392.	12392.	12392.	12392.
INTEREST DRG CONSTR.	187.	1057.	1244.	1244.	1244.	1244.	1244.	1244.	1244.	1244.
LESS: ACC. DEPRECIATION	0.	0.	455.	1364.	2273.	3182.	4091.	5000.	5909.	6818.
LIABILITIES	1688.	9285.	10976.	12347.	13607.	15068.	16875.	19097.	21818.	25136.
CURRENT LIABILITIES	50.	364.	1145.	3245.	5232.	7422.	9957.	12908.	16356.	20403.
ACCOUNT PAYABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	0.	364.	728.	728.	728.	728.	728.	728.	728.	728.
SHORT TERM DEBT	50.	0.	367.	2416.	4404.	6593.	9129.	12079.	15528.	19575.
FIXED LIABILITIES	1638.	8920.	9831.	9102.	8374.	7646.	6918.	6190.	5461.	4733.
LONG TERM DEBT BALANCE	1638.	8920.	9831.	9102.	8374.	7646.	6918.	6190.	5461.	4733.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	546.	3085.	2770.	842.	-1348.	-3734.	-6451.	-9583.	-13213.	-17441.
SHARE CAPITAL	546.	3095.	3641.	3641.	3641.	3641.	3641.	3641.	3641.	3641.
ACC. RETAINED EARNINGS	0.	-10.	-871.	-2799.	-4989.	-7375.	-10092.	-13224.	-16854.	-21082.
LIABILITIES & S/H EQUITY	2234.	12369.	13746.	13189.	12259.	11333.	10424.	9514.	8605.	7695.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
ASSETS	6786.	5876.	4967.	4057.	3148.	2238.	1329.
CURRENT ASSETS	688.	687.	687.	687.	686.	686.	685.
OPERATING CASH	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	488.	487.	487.	487.	486.	486.	485.
ACC. EXCESS CASH	-0.	-0.	-0.	-0.	-0.	0.	0.
NET FIXED ASSETS	6098.	5189.	4280.	3371.	2462.	1553.	644.
INVESTMENT	13825.	13825.	13825.	13825.	13825.	13825.	13825.
NON-DEPR. ASSETS	189.	189.	189.	189.	189.	189.	189.
DEPRECIABLE ASSETS	12392.	12392.	12392.	12392.	12392.	12392.	12392.
INTEREST DRG CONSTR.	1244.	1244.	1244.	1244.	1244.	1244.	1244.
LESS: ACC. DEPRECIATION	7727.	8636.	9545.	10454.	11363.	12272.	13181.
LIABILITIES	29172.	34068.	39998.	47167.	55824.	66265.	78849.
CURRENT LIABILITIES	25167.	30791.	37449.	45346.	54731.	65901.	78849.
ACCOUNT PAYABLE	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	728.	728.	728.	728.	728.	728.	364.
SHORT TERM DEBT	24338.	29963.	36621.	44518.	53903.	65073.	78385.
FIXED LIABILITIES	4005.	3277.	2549.	1820.	1092.	364.	0.
LONG TERM DEBT BALANCE	4005.	3277.	2549.	1820.	1092.	364.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	-22386.	-28192.	-35031.	-43110.	-52676.	-64027.	-77520.
SHARE CAPITAL	3641.	3641.	3641.	3641.	3641.	3641.	3641.
ACC. RETAINED EARNINGS	-26027.	-31833.	-38672.	-46751.	-56317.	-67668.	-81161.
LIABILITIES & S/H EQUITY	6786.	5876.	4967.	4057.	3148.	2238.	1329.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 LONG TERM DEBT  
 - BASE CASE - (USD 1000)

AMOUNT OF DEBT 10923.  
 INTEREST RATE 12.000 PER CENT/YEAR  
 REPAYMENT 15 YEAR-EQUAL-INSTALLMENT-REPAYMENT (ANNUAL REPAYMENT)

YEAR	SER.NO	PRINCIPAL	INTEREST	DEBT SERVICE	BALANCE AFT. PAYMENT
1989	1	0.	0.	0.	1638.
1990	2	0.	0.	0.	9285.
1991	3	364.	557.	921.	10559.
1992	4	728.	1267.	1995.	9831.
1993	5	728.	1180.	1908.	9102.
1994	6	728.	1092.	1820.	8374.
1995	7	728.	1005.	1733.	7646.
1996	8	728.	918.	1646.	6918.
1997	9	728.	830.	1558.	6190.
1998	10	728.	743.	1471.	5461.
1999	11	728.	655.	1384.	4733.
2000	12	728.	568.	1296.	4005.
2001	13	728.	481.	1209.	3277.
2002	14	728.	393.	1121.	2549.
2003	15	728.	306.	1034.	1820.
2004	16	728.	218.	947.	1092.
2005	17	728.	131.	859.	364.
TOTAL		10559.	10344.	20903.	364.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - BASE CASE -  
 (USD 1000)

YEAR	(1) AFT TAX PROFIT -10- SALES REV S/M (PCT)	(2) AFT TAX PROFIT -10- EQUITY (PCT)	(3) BFR TAX PROFIT -10- INVESTMENT (PCT)	(4) AFT TAX PROFIT -10- S/CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -10- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-62.7	-31.1	-6.2	-23.6	0.33	0.09	0.16	78 / 22	285.0	229.1	265.1
1992	-56.2	-229.1	-13.9	-53.0	0.22	0.06	0.12	92 / 8	345.1	205.8	323.1
1993	-53.2	162.5	-15.8	-60.1	0.14	0.04	-0.05	119 / -19	285.7	192.8	269.4
1994	-52.2	63.9	-17.3	-65.6	0.09	0.03	-0.21	195 / -95	313.9	192.2	297.6
1995	-59.4	42.1	-19.7	-74.6	0.07	0.02	-0.46	** / **	345.1	202.1	328.8
1996	-68.5	32.7	-22.7	-86.0	0.05	0.02	-0.79	** / 282	382.6	213.9	366.3
1997	-79.4	27.5	-26.3	-99.7	0.04	0.01	-1.21	-70 / 170	427.6	228.0	411.2
1998	-92.4	24.2	-30.6	-116.1	0.03	0.01	-1.75	-37 / 137	481.5	245.0	465.2
1999	-108.1	22.1	-35.8	-135.8	0.03	0.01	-2.44	-22 / 122	546.3	265.4	529.9
2000	-126.9	20.6	-42.0	-159.5	0.02	0.01	-3.34	-13 / 113	624.0	289.9	607.6
2001	-149.5	19.5	-49.5	-187.8	0.02	0.01	-4.51	-8 / 108	717.2	319.2	700.9
2002	-176.6	18.7	-58.4	-221.9	0.02	0.00	-6.04	-4 / 104	829.1	354.5	812.7
2003	-209.2	18.2	-69.2	-262.7	0.01	0.00	-8.08	-2 / 102	963.3	396.8	947.0
2004	-248.2	17.7	-82.1	-311.8	0.01	0.00	-10.80	-1 / 101	1124.4	447.5	1108.1
2005	-295.0	17.4	-97.6	-370.6	0.01	0.00	-14.49	-0 / 100	1317.7	508.4	1301.4
AVERAGE1	-122.5	15.1	-39.1	-148.6	0.07	0.02	-3.59	108 / -8	599.2	286.0	582.3
AVERAGE2	-127.2	22.1	-36.7	-139.3	0.02	0.01	-2.76	-29 / 129			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)

WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.



\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 FINANCIAL RATE OF RETURN (IN CONSTANT PRICE)  
 - BASE CASE - (USD 1000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW	(5) AFT-TAX NET IN-FLOW
							(2)-(1)	(4)-(3)	
1989	2048.	0.	2048.	0.	0.	0.	0.	-2048.	-2048.
1990	8674.	0.	8674.	0.	0.	0.	0.	-8674.	-8674.
1991	1859.	326.	2185.	-304.	455.	151.	0.	-2034.	-2034.
1992	0.	301.	301.	-588.	909.	321.	0.	20.	20.
1993	0.	-21.	-21.	-526.	909.	383.	0.	403.	403.
1994	0.	-16.	-16.	-414.	909.	495.	0.	512.	512.
1995	0.	-0.	-0.	-393.	909.	516.	0.	516.	516.
1996	0.	-0.	-0.	-389.	909.	521.	0.	521.	521.
1997	0.	-0.	-0.	-384.	909.	525.	0.	526.	526.
1998	0.	-0.	-0.	-379.	909.	530.	0.	530.	530.
1999	0.	-0.	-0.	-375.	909.	534.	0.	535.	535.
2000	0.	-0.	-0.	-370.	909.	539.	0.	539.	539.
2001	0.	-0.	-0.	-366.	909.	543.	0.	544.	544.
2002	0.	-0.	-0.	-361.	909.	548.	0.	548.	548.
2003	0.	-0.	-0.	-357.	909.	552.	0.	553.	553.
2004	0.	-0.	-0.	-352.	909.	557.	0.	557.	557.
2005	-644.	-586.	-1229.	-348.	909.	561.	0.	1791.	1791.
	11937.	-0.	11937.	-5906.	13181.	7276.	0.	-4662.	-4662.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -4.27 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -4.27 PER CENT

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	2106.	9596.	2205.	328.	399.	499.	519.	523.	862.	1295.
CASH GENERATED	0.	0.	148.	322.	387.	499.	519.	523.	528.	532.
PROFIT AFT. TAX, BFR INT.	0.	0.	-278.	-530.	-465.	-353.	-333.	-329.	-325.	-320.
DEPRECIATION AND AMORTIZATION	0.	0.	426.	852.	852.	852.	852.	852.	852.	852.
FINANCIAL RESOURCES	2106.	9596.	2056.	7.	12.	0.	0.	0.	334.	763.
SHARE CAPITAL	514.	2399.	514.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	1542.	7197.	1542.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	50.	0.	0.	7.	12.	0.	0.	0.	334.	763.
USES OF FUNDS	2106.	9006.	2413.	709.	399.	410.	411.	668.	915.	1295.
FIXED CAPITAL EXPENDITURE	2106.	8947.	1917.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	189.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	1859.	8674.	1859.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	58.	272.	58.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	322.	298.	-20.	-16.	-0.	-0.	-0.	-0.
DEBT SERVICES	0.	60.	175.	411.	419.	426.	411.	668.	915.	1296.
REPAYMENT OF LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.	257.	514.	514.
REPAYMENT OF SHORT TERM DEBT	0.	50.	0.	0.	7.	12.	0.	0.	0.	334.
INTEREST ON LONG TERM DEBT	0.	0.	175.	411.	411.	411.	411.	411.	401.	380.
INTEREST ON SHORT TERM DEBT	0.	10.	0.	0.	1.	2.	0.	0.	0.	67.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	0.	590.	-209.	-381.	0.	89.	108.	-145.	-53.	0.
BEGINNING CASH BALANCE	0.	0.	590.	381.	0.	0.	89.	197.	53.	0.
ENDING CASH BALANCE	0.	590.	381.	0.	0.	89.	197.	53.	0.	0.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	1790.	2357.	3013.	3774.	4661.	5700.	6922.
CASH GENERATED	536.	540.	545.	549.	553.	557.	562.
PROFIT AFT. TAX, BFR INT.	-316.	-312.	-308.	-303.	-299.	-295.	-290.
DEPRECIATION AND AMORTIZATION	852.	852.	852.	852.	852.	852.	852.
FINANCIAL RESOURCES	1254.	1817.	2468.	3225.	4108.	5143.	6360.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	1254.	1817.	2468.	3225.	4108.	5143.	6360.
USES OF FUNDS	1790.	2357.	3013.	3774.	4661.	5700.	6922.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.
DEBT SERVICES	1790.	2358.	3013.	3774.	4662.	5701.	6922.
REPAYMENT OF LONG TERM DEBT	514.	514.	514.	514.	514.	514.	514.
REPAYMENT OF SHORT TERM DEBT	763.	1254.	1817.	2468.	3225.	4108.	5143.
INTEREST ON LONG TERM DEBT	360.	339.	319.	298.	278.	257.	236.
INTEREST ON SHORT TERM DEBT	153.	251.	363.	494.	645.	822.	1029.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	0.	0.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	0.	0.	0.	0.	0.	0.	0.
ENDING CASH BALANCE	0.	0.	0.	0.	0.	0.	0.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 -- LOW INTEREST CASE -- (USD 1000)

YEAR	(1) AFT TAX PROFIT -10-- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -10-- SALES REV S/H EQUITY (PCT)	(3) BFR TAX PROFIT -10-- INVESTMENT S/CAPITAL (PCT)	(4) AFT TAX PROFIT -10-- INVESTMENT S/CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -10-- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-33.0	-15.3	-3.5	-13.2	7.43	2.00	0.85	78 /	194.2	158.2	100.5
1992	-27.5	-46.5	-7.3	-27.5	6.75	1.88	0.78	84 / 16	224.7	142.8	121.1
1993	-21.3	-76.6	-6.8	-25.6	6.24	1.78	0.94	90 / 10	167.4	130.2	90.5
1994	-16.8	-201.9	-5.9	-22.4	6.84	2.00	1.21	96 / 4	167.7	127.1	90.8
1995	-16.3	204.0	-5.7	-21.7	1.92	0.56	1.26	104 / -4	167.1	126.9	90.2
1996	-16.2	67.0	-5.7	-21.6	1.11	0.33	0.78	113 / -13	166.8	134.1	113.1
1997	-15.9	39.6	-5.6	-21.2	0.72	0.21	0.58	126 / -26	165.4	141.0	134.9
1998	-16.8	29.5	-5.9	-22.4	0.50	0.15	0.52	144 / -44	169.2	142.2	138.7
1999	-18.1	24.2	-6.4	-24.2	0.37	0.11	0.44	175 / -75	174.7	143.9	144.2
2000	-19.7	20.8	-7.0	-26.3	0.28	0.08	0.34	238 / **	181.3	146.0	150.8
2001	-21.6	18.6	-7.6	-28.9	0.22	0.06	0.22	428 / **	189.3	148.5	158.8
2002	-23.9	17.1	-8.4	-32.0	0.18	0.05	0.07	** / **	198.8	151.5	168.3
2003	-26.7	16.0	-9.4	-35.6	0.14	0.04	-0.12	** / 443	210.2	155.1	179.7
2004	-30.0	15.2	-10.6	-40.1	0.12	0.03	-0.34	** / 250	223.9	159.4	193.4
2005	-34.0	14.7	-12.0	-45.4	0.10	0.03	-0.62	-86 / 186	240.4	164.6	209.8
AVERAGE1	-22.5	8.4	-7.2	-27.2	2.19	0.62	0.46	** / **	189.4	144.8	139.0
AVERAGE2	-21.9	32.8	-6.7	-25.5	0.31	0.09	0.35	147 / -47			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)

WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

\*\*\* PHOSPHATE MINING AND CONCENTRATE PROJECT, ZAMBIA \*\*\*  
 FINANCIAL RATE OF RETURN (IN CONSTANT PRICE) (USD 1000)  
 - LOW INTEREST CASE -

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	GROSS CASH IN-FLOW	INCOME TAX	BFR-TAX NET IN-FLOW	AFT-TAX NET IN-FLOW
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989	2048.	0.	2048.	0.	0.	0.	0.	-2048.	-2048.
1990	8674.	0.	8674.	0.	0.	0.	0.	-8674.	-8674.
1991	1859.	322.	2180.	-278.	426.	148.	0.	-2032.	-2032.
1992	0.	298.	298.	-530.	852.	322.	0.	24.	24.
1993	0.	-20.	-20.	-465.	852.	387.	0.	407.	407.
1994	0.	-16.	-16.	-353.	852.	499.	0.	515.	515.
1995	0.	-0.	-0.	-333.	852.	519.	0.	519.	519.
1996	0.	-0.	-0.	-329.	852.	523.	0.	524.	524.
1997	0.	-0.	-0.	-325.	852.	528.	0.	528.	528.
1998	0.	-0.	-0.	-320.	852.	532.	0.	532.	532.
1999	0.	-0.	-0.	-316.	852.	536.	0.	536.	536.
2000	0.	-0.	-0.	-312.	852.	540.	0.	541.	541.
2001	0.	-0.	-0.	-308.	852.	545.	0.	545.	545.
2002	0.	-0.	-0.	-303.	852.	549.	0.	549.	549.
2003	0.	-0.	-0.	-299.	852.	553.	0.	554.	554.
2004	0.	-0.	-0.	-295.	852.	557.	0.	558.	558.
2005	-615.	-580.	-1195.	-290.	852.	562.	0.	1757.	1757.
	11966.	-0.	11966.	-5055.	12355.	7300.	0.	-4666.	-4666.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -4.29 PER CENT  
 ON (5) AFT-TAX NET IN-FLOW (4)-(3) -4.29 PER CENT

Annex IV-1 PROJECT FINANCIAL ANALYSIS DETAILS (2/5)

Financial Analysis Data

Project Title : Fused Magnesium Phosphate Project

Project Location: Kafue, Zambia

1. Base Case (Interest Rate: 12%/Year)

- Production and Sales Plan
- Production Cost Statements
- Income Statements
- Funds Flow Statements
- Balance Sheet
- Profitability and Financial Indicators
  - Profit Ratio
    - Sales Revenue
    - Share Holder Equity
    - Investment
    - Share Capital
  - Current Ratio (Assets/Liability)
  - Quick Ratio (Cash + Receivable)/(Liability)
  - Debt Service Ratio (Depreciation + Interest + Net Profit)/(Repayment + Interest)
  - Long Term Debt to Share Holder Equity
  - Break Even Point
    - Profit/Capacity Utilization
    - Cash/Capacity Utilization
    - Cash/Sales Price
- Financial Rate of Return by Discounted Cash Flow (in terms of constant prices)
  - Return on Investment, FIRROI
    - Before Tax
    - After Tax
- Sensitivity Analysis
  - Product Price
  - Raw Material Cost
  - Investment Cost
  - Utility and Transport Cost

2. Low Interest Rate Case (Interest Rate: 4%/Year)

- Funds Flow Statements
- Profitability and Financial Indicators
- Financial Rate of Return (In Terms of Constant Price)

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
RATED CAPACITY	0.	0.	50400.	50400.	50400.	50400.	50400.	50400.	50400.	50400.
CAPACITY UTILIZATION	0.0	0.0	0.350	0.800	0.900	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	0.	0.	17640.	40320.	45360.	50400.	50400.	50400.	50400.	50400.
INCREASE IN INVENTORY	0.	0.	2520.	2520.	0.	0.	0.	0.	0.	0.
SALES VOLUME	0.	0.	15120.	37800.	45360.	50400.	50400.	50400.	50400.	50400.
UNIT SALES PRICE	0.0	0.0	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800
SALES REVENUE	0.	0.	2722.	6804.	8165.	9072.	9072.	9072.	9072.	9072.
TOTAL SALES REVENUE	0.	0.	2722.	6804.	8165.	9072.	9072.	9072.	9072.	9072.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
RATED CAPACITY	50400.	50400.	50400.	50400.	50400.	50400.	50400.
CAPACITY UTILIZATION	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	50400.	50400.	50400.	50400.	50400.	50400.	50400.
INCREASE IN INVENTORY	0.	0.	0.	0.	0.	0.	0.
SALES VOLUME	50400.	50400.	50400.	50400.	50400.	50400.	50400.
UNIT SALES PRICE	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800
SALES REVENUE	9072.	9072.	9072.	9072.	9072.	9072.	9072.
TOTAL SALES REVENUE	9072.	9072.	9072.	9072.	9072.	9072.	9072.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION COST STATEMENTS  
 -- BASE CASE --

(USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
PRODUCTION (VOLUME)	0.	0.	17640.	40320.	45360.	50400.	50400.	50400.	50400.	50400.
RAW MATERIAL COST	0.	0.	2576.	5889.	6625.	7361.	7361.	7361.	7361.	7361.
PHOSPHATE CONCENTRATE, DRY	0.	0.	1401.	3659.	4116.	4574.	4574.	4574.	4574.	4574.
SERPENTINE, DRY	0.	0.	309.	706.	795.	883.	883.	883.	883.	883.
CALEIUM HYDROXIDE	0.	0.	6.	13.	15.	16.	16.	16.	16.	16.
ELECTRODE	0.	0.	352.	806.	906.	1007.	1007.	1007.	1007.	1007.
CATALYST/CHEMICALS	0.	0.	2.	4.	5.	5.	5.	5.	5.	5.
PACKAGING	0.	0.	307.	701.	788.	876.	876.	876.	876.	876.
UTILITIES COST	0.	0.	288.	658.	740.	822.	822.	822.	822.	822.
RAW WATER	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FUEL OIL	0.	0.	92.	210.	236.	262.	262.	262.	262.	262.
ELECTRICITY	0.	0.	196.	448.	504.	560.	560.	560.	560.	560.
VARIABLE COST	0.	0.	2864.	6546.	7365.	8183.	8183.	8183.	8183.	8183.
EMPLOYMENT COST	0.	0.	77.	155.	155.	155.	155.	155.	155.	155.
LABOUR COST	0.	0.	60.	119.	119.	119.	119.	119.	119.	119.
OVERHEAD	0.	0.	18.	36.	36.	36.	36.	36.	36.	36.
MAINTENANCE COST	0.	0.	147.	295.	295.	295.	295.	295.	295.	295.
INSURANCE/PROPERTY TAX	0.	0.	47.	88.	82.	75.	69.	62.	56.	49.
DIRECT FIXED COST	0.	0.	272.	538.	531.	525.	518.	512.	505.	499.
CASH FACTORY COST	0.	0.	3136.	7084.	7896.	8708.	8701.	8695.	8688.	8682.
DEPRECIABLE ASSETS(PLANTS)	0.	0.	578.	1156.	1156.	1156.	1156.	1156.	1156.	1156.
DEPRECIABLE ASSETS(PRE-OPE)	0.	0.	12.	24.	24.	24.	24.	24.	24.	24.
INTEREST DURING CONSTRUCTION	0.	0.	59.	118.	118.	118.	118.	118.	118.	118.
DEPRECIATION AND AMORTIZATION	0.	0.	649.	1298.	1298.	1298.	1298.	1298.	1298.	1298.
TOTAL FACTORY COST	0.0	0.0	3785.	8382.	9194.	10006.	9999.	9993.	9986.	9980.
UNIT FACTORY COST			0.2146	0.2079	0.2027	0.1985	0.1984	0.1983	0.1981	0.1980
SALES EXPENSES	0.	0.	41.	102.	122.	136.	136.	136.	136.	136.
OPERATING EXPENSES	0.	0.	3826.	8484.	9316.	10142.	10135.	10129.	10122.	10116.
INTEREST ON LONG TERM DEBT	0.	0.	823.	1872.	1743.	1614.	1485.	1356.	1227.	1098.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	666.	1334.	2093.	2977.	4011.	5224.
TOTAL PRODUCTION COST	0.0	0.0	4649.	10356.	11726.	13090.	13713.	14462.	15360.	16437.
UNIT PRODUCTION COST			0.2636	0.2569	0.2585	0.2597	0.2721	0.2869	0.3048	0.3261



\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION COST STATEMENTS

(USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
PRODUCTION (VOLUME)	50400.	50400.	50400.	50400.	50400.	50400.	50400.
RAW MATERIAL COST	7361.	7361.	7361.	7361.	7361.	7361.	7361.
PHOSPHATE CONCENTRATE, DRY	4574.	4574.	4574.	4574.	4574.	4574.	4574.
SERPENTINE, DRY	883.	883.	883.	883.	883.	883.	883.
CALEMIUM HYDROXIDE	16.	16.	16.	16.	16.	16.	16.
ELECTRODE	1007.	1007.	1007.	1007.	1007.	1007.	1007.
CATALYST/CHEMICALS	5.	5.	5.	5.	5.	5.	5.
PACKAGING	876.	876.	876.	876.	876.	876.	876.
UTILITIES COST	822.	822.	822.	822.	822.	822.	822.
RAW WATER	0.	0.	0.	0.	0.	0.	0.
FUEL OIL	262.	262.	262.	262.	262.	262.	262.
ELECTRICITY	560.	560.	560.	560.	560.	560.	560.
VARIABLE COST	8183.	8183.	8183.	8183.	8183.	8183.	8183.
EMPLOYMENT COST	155.	155.	155.	155.	155.	155.	155.
LABOUR COST	119.	119.	119.	119.	119.	119.	119.
OVERHEAD	36.	36.	36.	36.	36.	36.	36.
MAINTENANCE COST	295.	295.	295.	295.	295.	295.	295.
INSURANCE/PROPERTY TAX	43.	36.	30.	23.	17.	10.	4.
DIRECT FIXED COST	492.	486.	479.	473.	466.	460.	453.
CASH FACTORY COST	8675.	8669.	8662.	8656.	8649.	8643.	8636.
DEPRECIABLE ASSETS(PLANTS)	1156.	1156.	1156.	1156.	1156.	1156.	1156.
DEPRECIABLE ASSETS(PRE-OPE)	24.	24.	24.	24.	24.	24.	24.
INTEREST DURING CONSTRUCTION	118.	118.	118.	118.	118.	118.	118.
DEPRECIATION AND AMORTIZATION	1298.	1298.	1298.	1298.	1298.	1298.	1298.
TOTAL FACTORY COST	9973.	9967.	9960.	9954.	9947.	9941.	9934.
UNIT FACTORY COST	0.1979	0.1978	0.1976	0.1975	0.1974	0.1972	0.1971
SALES EXPENSES	136.	136.	136.	136.	136.	136.	136.
OPERATING EXPENSES	10109.	10103.	10096.	10090.	10083.	10077.	10070.
INTEREST ON LONG TERM DEBT	968.	839.	710.	581.	452.	323.	194.
INTEREST ON SHORT TERM DEBT	653.	8340.	10337.	12707.	15524.	18877.	22874.
TOTAL PRODUCTION COST	17730.	19282.	21144.	23378.	26059.	29277.	33138.
UNIT PRODUCTION COST	0.3518	0.3826	0.4195	0.4639	0.5171	0.5809	0.6575

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 INCOME STATEMENTS  
 -- BASE CASE --  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
OPERATING INCOME	0.	0.	2722.	6804.	8165.	9072.	9072.	9072.	9072.	9072.
TOTAL SALES REVENUE	0.	0.	2722.	6804.	8165.	9072.	9072.	9072.	9072.	9072.
COST OF SALES	0.	0.	3244.	7875.	9220.	10027.	10000.	9993.	9987.	9980.
VARIABLE COST	0.	0.	2864.	6546.	7365.	8183.	8183.	8163.	8183.	8183.
DIRECT FIXED COST	0.	0.	272.	538.	531.	525.	518.	512.	505.	499.
DEPRECIATION AND AMORTIZATION	0.	0.	649.	1298.	1298.	1298.	1298.	1298.	1298.	1298.
INC. IN PRODUCT INVENTORY	0.	0.	541.	507.	-26.	-21.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	0.	0.	-523.	-1071.	-1055.	-955.	-928.	-921.	-915.	-908.
SALES EXPENSES	0.	0.	41.	102.	122.	136.	136.	136.	136.	136.
OPERATING PROFIT	0.	0.	-564.	-1173.	-1178.	-1091.	-1064.	-1057.	-1051.	-1044.
NON-OPERATING EXPENSES	0.	0.	823.	1872.	2409.	2948.	3578.	4333.	5237.	6321.
INTEREST ON LONG TERM DEBT	0.	0.	823.	1872.	1743.	1614.	1485.	1356.	1227.	1098.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	666.	1334.	2093.	2977.	4011.	5224.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	-1387.	-3045.	-3587.	-4039.	-4642.	-5390.	-6288.	-7366.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	-1387.	-3045.	-3587.	-4039.	-4642.	-5390.	-6288.	-7366.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	0.	0.	-1387.	-3045.	-3587.	-4039.	-4642.	-5390.	-6288.	-7366.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
OPERATING INCOME	9072.	9072.	9072.	9072.	9072.	9072.	9072.
TOTAL SALES REVENUE	9072.	9072.	9072.	9072.	9072.	9072.	9072.
COST OF SALES	9974.	9967.	9961.	9954.	9948.	9941.	9935.
VARIABLE COST	8183.	8183.	8183.	8183.	8183.	8183.	8183.
DIRECT FIXED COST	492.	486.	479.	473.	466.	460.	453.
DEPRECIATION AND AMORTIZATION	1298.	1298.	1298.	1298.	1298.	1298.	1298.
INC. IN PRODUCT INVENTORY	-1.	-1.	-1.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	-902.	-895.	-889.	-882.	-876.	-869.	-863.
SALES EXPENSES	136.	136.	136.	136.	136.	136.	136.
OPERATING PROFIT	-1038.	-1031.	-1025.	-1018.	-1012.	-1005.	-999.
NON-OPERATING EXPENSES	7621.	9179.	11048.	13288.	15976.	19200.	23068.
INTEREST ON LONG TERM DEBT	968.	839.	710.	581.	452.	323.	194.
INTEREST ON SHORT TERM DEBT	6653.	8340.	10337.	12707.	15524.	18877.	22874.
NET PROFIT OR (LOSS) BEFORE TAX	-8659.	-10210.	-12072.	-14307.	-16988.	-20206.	-24066.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	-8659.	-10210.	-12072.	-14307.	-16988.	-20206.	-24066.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	-8659.	-10210.	-12072.	-14307.	-16988.	-20206.	-24066.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 -- BASE CASE --  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	3228.	15064.	3313.	3457.	6791.	10674.	15120.	20295.	26367.	33516.
CASH GENERATED	0.	0.	85.	125.	120.	207.	234.	241.	247.	254.
PROFIT AFT. TAX, BFR INT.	0.	0.	-564.	-1173.	-1178.	-1091.	-1064.	-1057.	-1051.	-1044.
DEPRECIATION AND AMORTIZATION	0.	0.	649.	1298.	1298.	1298.	1298.	1298.	1298.	1298.
FINANCIAL RESOURCES	3228.	15064.	3228.	3332.	6671.	10467.	14886.	20054.	26120.	33263.
SHARE CAPITAL	807.	3766.	807.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	2421.	11298.	2421.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	3332.	6671.	10467.	14886.	20054.	26120.	33263.
USES OF FUNDS	3056.	13628.	4872.	3505.	6791.	10674.	15120.	20295.	26367.	33516.
FIXED CAPITAL EXPENDITURE	3056.	13628.	2920.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	136.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	2656.	12393.	2656.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	265.	1235.	265.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	591.	557.	-26.	-21.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	1361.	2948.	6817.	10695.	15121.	20295.	26367.	33517.
REPAYMENT OF LONG TERM DEBT	0.	0.	538.	1076.	1076.	1076.	1076.	1076.	1076.	1076.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	3332.	6671.	10467.	14886.	20054.	26120.
INTEREST ON LONG TERM DEBT	0.	0.	823.	1872.	1743.	1614.	1485.	1356.	1227.	1098.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	666.	1334.	2093.	2977.	4011.	5224.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	172.	1436.	-1559.	-49.	0.	-0.	0.	-0.	0.	0.
BEGINNING CASH BALANCE	0.	172.	1607.	49.	0.	0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	172.	1607.	49.	0.	0.	-0.	-0.	-0.	-0.	-0.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS

	(USD 1000)						
YEAR	1999	2000	2001	2002	2003	2004	2005
- BASE CASE -							
SOURCE OF FUNDS	41959.	51954.	63810.	77901.	94673.	114662.	138512.
CASH GENERATED	260.	267.	273.	280.	286.	293.	299.
PROFIT AFT. TAX, BFR INT.	-1038.	-1031.	-1025.	-1018.	-1012.	-1005.	-999.
DEPRECIATION AND AMORTIZATION	1298.	1298.	1298.	1298.	1298.	1298.	1298.
FINANCIAL RESOURCES	41699.	51687.	63537.	77621.	94387.	114369.	138213.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	41699.	51687.	63537.	77621.	94387.	114369.	138213.
USES OF FUNDS	41959.	51954.	63810.	77901.	94673.	114662.	138512.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	41960.	51954.	63811.	77901.	94673.	114663.	138513.
REPAYMENT OF LONG TERM DEBT	1076.	1076.	1076.	1076.	1076.	1076.	1076.
REPAYMENT OF SHORT TERM DEBT	33263.	41699.	51687.	63537.	77621.	94387.	114369.
INTEREST ON LONG TERM DEBT	968.	839.	710.	581.	452.	323.	194.
INTEREST ON SHORT TERM DEBT	6653.	8340.	10337.	12707.	15524.	18877.	22874.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	-0.	0.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ASSETS	3228.	18292.	19645.	18906.	17582.	16263.	14964.	13666.	12367.	11068.
CURRENT ASSETS	0.	0.	641.	1248.	1222.	1201.	1200.	1199.	1199.	1198.
OPERATING CASH	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	0.	0.	541.	1048.	1022.	1001.	1000.	999.	999.	998.
ACC. EXCESS CASH	172.	1607.	49.	0.	0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	3056.	16685.	18956.	17658.	16360.	15062.	13764.	12466.	11168.	9871.
INVESTMENT	3056.	16685.	19605.	19605.	19605.	19605.	19605.	19605.	19605.	19605.
NON-DEPR. ASSETS	136.	136.	136.	136.	136.	136.	136.	136.	136.	136.
DEPRECIABLE ASSETS	2656.	15049.	17705.	17705.	17705.	17705.	17705.	17705.	17705.	17705.
INTEREST DRG CONSTR.	265.	1499.	1764.	1764.	1764.	1764.	1764.	1764.	1764.	1764.
LESS: ACC. DEPRECIATION	0.	0.	649.	1947.	3245.	4543.	5841.	7139.	8437.	9734.
LIABILITIES	2421.	13719.	15652.	17958.	20221.	22941.	26284.	30376.	35366.	41433.
CURRENT LIABILITIES	0.	538.	1126.	4508.	7847.	11643.	16062.	21230.	27296.	34439.
ACCOUNT PAYABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	0.	538.	1076.	1076.	1076.	1076.	1076.	1076.	1076.	1076.
SHORT TERM DEBT	0.	0.	0.	3332.	6671.	10467.	14886.	20054.	26120.	33263.
FIXED LIABILITIES	2421.	13181.	14526.	13450.	12374.	11298.	10222.	9146.	8070.	6994.
LONG TERM DEBT BALANCE	2421.	13181.	14526.	13450.	12374.	11298.	10222.	9146.	8070.	6994.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	807.	4573.	3993.	948.	-2639.	-6678.	-11320.	-16710.	-22999.	-30364.
SHARE CAPITAL	807.	4573.	5380.	5380.	5380.	5380.	5380.	5380.	5380.	5380.
ACC. RETAINED EARNINGS	0.	0.	-1387.	-4432.	-8019.	-12058.	-16700.	-22090.	-28379.	-35744.
LIABILITIES & S/H EQUITY	3228.	18292.	19645.	18906.	17582.	16263.	14964.	13666.	12367.	11068.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
ASSETS	9770.	8471.	7173.	5874.	4576.	3277.	1978.
CURRENT ASSETS	1197.	1197.	1196.	1195.	1195.	1194.	1193.
OPERATING CASH	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	977.	997.	996.	995.	995.	994.	993.
ACC. EXCESS CASH	-0.	-0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	8573.	7275.	5977.	4679.	3381.	2083.	785.
INVESTMENT	19605.	19605.	19605.	19605.	19605.	19605.	19605.
NON-DEPR. ASSETS	136.	136.	136.	136.	136.	136.	136.
DEPRECIABLE ASSETS	17705.	17705.	17705.	17705.	17705.	17705.	17705.
INTEREST DRG CONSTR.	1764.	1764.	1764.	1764.	1764.	1764.	1764.
LESS: ACC. DEPRECIATION	11032.	12330.	13628.	14926.	16224.	17522.	18820.
LIABILITIES	48793.	57705.	68479.	81487.	97177.	116083.	138851.
CURRENT LIABILITIES	42875.	52863.	64713.	78797.	95563.	115545.	138851.
ACCOUNT PAYABLE	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	1076.	1076.	1076.	1076.	1076.	1076.	538.
SHORT TERM DEBT	41699.	51687.	63537.	77621.	94387.	114369.	138213.
FIXED LIABILITIES	5918.	4842.	3766.	2690.	1614.	538.	0.
LONG TERM DEBT BALANCE	5918.	4842.	3766.	2690.	1614.	538.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	-39023.	-49234.	-61306.	-75613.	-92601.	-112806.	-136873.
SHARE CAPITAL	5380.	5380.	5380.	5380.	5380.	5380.	5380.
ACC. RETAINED EARNINGS	-44403.	-54614.	-66686.	-80993.	-97981.	-118186.	-142253.
LIABILITIES & S/H EQUITY	9770.	8471.	7173.	5874.	4576.	3277.	1978.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 LONG TERM DEBT  
 - BASE CASE - (USD 1000)

AMOUNT OF DEBT 16140.

INTEREST RATE 12.000 PER CENT/YEAR

REPAYMENT 15 YEAR-EQUAL-INSTALLMENT-REPAYMENT (ANNUAL REPAYMENT)

YEAR	SER.NO	PRINCIPAL	INTEREST	DEBT SERVICE	BALANCE AFT. PAYMENT
1989	1	0.	0.	0.	2421.
1990	2	0.	0.	0.	13719.
1991	3	538.	823.	1361.	15602.
1992	4	1076.	1872.	2948.	14528.
1993	5	1076.	1743.	2819.	13450.
1994	6	1076.	1614.	2690.	12374.
1995	7	1076.	1485.	2561.	11298.
1996	8	1076.	1356.	2432.	10222.
1997	9	1076.	1227.	2303.	9146.
1998	10	1076.	1098.	2174.	8070.
1999	11	1076.	968.	2044.	6994.
2000	12	1076.	839.	1915.	5918.
2001	13	1076.	710.	1786.	4842.
2002	14	1076.	581.	1657.	3766.
2003	15	1076.	452.	1528.	2690.
2004	16	1076.	323.	1399.	1614.
2005	17	1076.	194.	1270.	538.
TOTAL		15602.	15285.	30887.	538.



\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - BASE CASE - (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV (PCT)	(2) AFT TAX PROFIT -TO- S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-51.0	-34.7	-7.1	-25.8	0.57	0.09	0.06	78 / 22	-438.7	300.1	-411.4
1992	-44.8	-321.2	-15.5	-56.6	0.28	0.04	0.04	93 / 7	1182.8	268.1	1113.9
1993	-43.9	135.9	-18.3	-66.7	0.16	0.03	-0.19	127 / -27	490.5	253.6	465.5
1994	-44.5	60.5	-20.6	-75.1	0.10	0.02	-0.42	245 / **	551.9	255.3	526.9
1995	-51.2	41.0	-23.7	-86.3	0.07	0.01	-0.73	** / **	622.0	267.7	597.1
1996	-59.4	32.3	-27.5	-100.2	0.06	0.01	-1.13	** / 221	706.2	282.5	681.2
1997	-69.3	27.3	-32.1	-116.9	0.04	0.01	-1.63	-54 / 154	807.2	300.4	782.2
1998	-81.2	24.3	-37.6	-136.9	0.03	0.01	-2.29	-30 / 130	928.4	321.7	903.4
1999	-95.4	22.2	-44.2	-160.9	0.03	0.00	-3.13	-18 / 118	1073.8	347.4	1048.8
2000	-112.5	20.7	-52.1	-189.8	0.02	0.00	-4.22	-11 / 111	1248.3	378.2	1223.4
2001	-133.1	19.7	-61.6	-224.4	0.02	0.00	-5.63	-7 / 107	1457.7	415.1	1432.8
2002	-157.7	18.9	-73.0	-265.9	0.02	0.00	-7.50	-4 / 104	1709.0	459.4	1684.1
2003	-187.3	18.3	-86.7	-315.8	0.01	0.00	-9.97	-2 / 102	2010.6	512.6	1985.6
2004	-222.7	17.9	-103.1	-375.6	0.01	0.00	-13.29	-0 / 100	2372.5	575.5	2347.5
2005	-265.3	17.6	-122.8	-447.3	0.01	0.00	-17.78	-0 / 100	2606.7	653.1	2781.8
AVERAGE1	-108.0	6.7	-48.4	-176.3	0.10	0.02	-4.52	-42 / 142	1168.6	372.8	1144.2
AVERAGE2	-112.4	22.0	-45.3	-165.3	0.02	0.00	-3.50	-23 / 123			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE (WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)  
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE  
 OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FINANCIAL RATE OF RETURN (IN CONSTANT PRICE)  
 - BASE CASE - (USD 1000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATION	GROSS CASH-IN-FLOW	TAX	INCOME TAX	NET IN-FLOW	NET IN-FLOW	NET IN-FLOW
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1989	2792.	0.	2792.	0.	0.	0.	0.	0.	-2792.	-2792.	-2792.
1990	12393.	0.	12393.	0.	0.	0.	0.	0.	-12393.	-12393.	-12393.
1991	2656.	591.	3246.	-564.	649.	85.	0.	0.	-3161.	-3161.	-3161.
1992	0.	557.	557.	-1173.	1298.	125.	0.	0.	-432.	-432.	-432.
1993	0.	-26.	-26.	-1178.	1298.	120.	0.	0.	146.	146.	146.
1994	0.	-21.	-21.	-1091.	1298.	207.	0.	0.	228.	228.	228.
1995	0.	-1.	-1.	-1064.	1298.	234.	0.	0.	235.	235.	235.
1996	0.	-1.	-1.	-1057.	1298.	241.	0.	0.	241.	241.	241.
1997	0.	-1.	-1.	-1051.	1298.	247.	0.	0.	248.	248.	248.
1998	0.	-1.	-1.	-1044.	1298.	254.	0.	0.	254.	254.	254.
1999	0.	-1.	-1.	-1038.	1298.	260.	0.	0.	261.	261.	261.
2000	0.	-1.	-1.	-1031.	1298.	267.	0.	0.	267.	267.	267.
2001	0.	-1.	-1.	-1025.	1298.	273.	0.	0.	274.	274.	274.
2002	0.	-1.	-1.	-1018.	1298.	280.	0.	0.	280.	280.	280.
2003	0.	-1.	-1.	-1012.	1298.	286.	0.	0.	287.	287.	287.
2004	0.	-1.	-1.	-1005.	1298.	293.	0.	0.	293.	293.	293.
2005	-785.	-1074.	-1859.	-999.	1298.	299.	0.	0.	2178.	2178.	2178.
	17056.	-0.	17056.	-15350.	16820.	3470.	0.	0.	-13586.	-13586.	-13586.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -10.06 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -10.06 PER CENT

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	3046.	14216.	3128.	126.	467.	997.	1550.	2563.	4137.	5988.
CASH GENERATED	0.	0.	82.	126.	127.	213.	238.	244.	251.	257.
PROFIT AFT. TAX, BFR INT.	0.	0.	-526.	-1091.	-1091.	-1004.	-979.	-973.	-967.	-960.
DEPRECIATION AND AMORTIZATION	0.	0.	609.	1217.	1217.	1217.	1217.	1217.	1217.	1217.
FINANCIAL RESOURCES	3046.	14216.	3046.	0.	340.	784.	1311.	2319.	3887.	5732.
SHARE CAPITAL	762.	3554.	762.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	2285.	10662.	2285.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	340.	784.	1311.	2319.	3887.	5732.
USES OF FUNDS	2875.	12780.	3582.	1162.	584.	997.	1550.	2563.	4137.	5988.
FIXED CAPITAL EXPENDITURE	2875.	12780.	2739.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	136.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	2656.	12393.	2656.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	83.	386.	83.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	585.	552.	-25.	-20.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	259.	609.	609.	1017.	1550.	2564.	4138.	5989.
REPAYMENT OF LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.	381.	762.	762.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	340.	784.	1311.	2319.	3887.
INTEREST ON LONG TERM DEBT	0.	0.	259.	609.	609.	609.	609.	609.	594.	564.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	68.	157.	262.	464.	777.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	172.	1436.	-454.	-1036.	-118.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	0.	172.	1607.	1154.	118.	0.	0.	0.	0.	0.
ENDING CASH BALANCE	172.	1607.	1154.	118.	0.	0.	0.	0.	0.	0.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 -- LOW INTEREST CASE -- (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	8172.	10755.	13816.	17452.	21778.	26931.	33076.
CASH GENERATED	263.	269.	275.	281.	287.	293.	299.
PROFIT AFT. TAX, BFR INT.	-954.	-948.	-942.	-936.	-930.	-924.	-918.
DEPRECIATION AND AMORTIZATION	1217.	1217.	1217.	1217.	1217.	1217.	1217.
FINANCIAL RESOURCES	7909.	10486.	13542.	17171.	21491.	26638.	32777.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	7909.	10486.	13542.	17171.	21491.	26638.	32777.
USES OF FUNDS	8172.	10755.	13816.	17452.	21778.	26931.	33076.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	8173.	10756.	13817.	17453.	21779.	26931.	33077.
REPAYMENT OF LONG TERM DEBT	762.	762.	762.	762.	762.	762.	762.
REPAYMENT OF SHORT TERM DEBT	5732.	7909.	10486.	13542.	17171.	21491.	26638.
INTEREST ON LONG TERM DEBT	533.	503.	472.	442.	411.	381.	350.
INTEREST ON SHORT TERM DEBT	1146.	1582.	2097.	2708.	3434.	4298.	5328.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	-0.	-0.	0.	0.	0.	-0.	0.
BEGINNING CASH BALANCE	0.	0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	0.	-0.	-0.	-0.	-0.	-0.	-0.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/ (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-28.9	-18.3	-4.3	-15.5	12.69	2.00	0.32	78 / 22	-289.4	227.0	-139.8
1992	-25.0	-65.6	-9.2	-33.5	12.37	2.00	0.21	85 / 15	763.9	206.1	386.1
1993	-20.8	-190.7	-9.2	-33.5	2.75	0.45	0.21	94 / 6	278.4	190.1	141.5
1994	-18.5	212.8	-9.1	-33.1	1.35	0.23	0.24	105 / -5	286.9	188.8	150.0
1995	-19.2	68.8	-9.5	-34.4	0.66	0.11	0.13	121 / -21	296.2	190.5	159.3
1996	-20.3	42.1	-10.0	-36.3	0.37	0.06	-0.02	145 / -45	307.3	200.0	213.3
1997	-22.3	31.6	-11.0	-39.9	0.25	0.04	-0.16	192 / -92	327.6	211.1	276.4
1998	-25.4	26.4	-12.5	-45.3	0.18	0.03	-0.39	325 / **	358.8	216.6	307.5
1999	-29.0	23.2	-14.3	-51.9	0.14	0.02	-0.68	** / **	396.2	223.2	344.9
2000	-33.4	21.1	-16.5	-59.7	0.10	0.02	-1.04	** / 432	441.0	231.1	389.8
2001	-38.7	19.6	-19.1	-69.2	0.08	0.01	-1.48	** / 235	494.9	240.6	443.6
2002	-45.0	18.6	-22.2	-80.5	0.07	0.01	-2.02	-76 / 176	559.5	252.0	508.3
2003	-52.6	17.9	-26.0	-94.1	0.05	0.01	-2.68	-49 / 149	637.1	265.7	585.8
2004	-61.8	17.3	-30.5	-110.4	0.04	0.01	-3.51	-33 / 133	730.1	282.1	678.9
2005	-72.7	16.9	-35.9	-129.9	0.04	0.01	-4.52	-23 / 123	841.8	301.8	790.5
AVERAGE1	-34.3	16.1	-16.0	-57.8	2.08	0.33	-1.03	202 / **	428.7	228.5	349.1
AVERAGE2	-34.8	25.4	-15.0	-54.2	0.11	0.02	-1.27	821 / **			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)

WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

\*\*\* FUSED MAGNESIUM PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FINANCIAL RATE OF RETURN (IN CONSTANT PRICE)  
 - LOW INTEREST CASE - (USD 1000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	(1) GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATION	(2) GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW (2)-(1)	(5) AFT-TAX NET IN-FLOW (4)-(3)
1989	2792.	0.	2792.	0.	0.	0.	0.	-2792.	-2792.
1990	12393.	0.	12393.	0.	0.	0.	0.	-12393.	-12393.
1991	2656.	585.	3240.	-526.	609.	82.	0.	-3158.	-3158.
1992	0.	552.	552.	-1091.	1217.	126.	0.	-427.	-427.
1993	0.	-25.	-25.	-1091.	1217.	127.	0.	152.	152.
1994	0.	-20.	-20.	-1004.	1217.	213.	0.	233.	233.
1995	0.	-1.	-1.	-979.	1217.	238.	0.	239.	239.
1996	0.	-1.	-1.	-973.	1217.	244.	0.	245.	245.
1997	0.	-1.	-1.	-967.	1217.	251.	0.	251.	251.
1998	0.	-1.	-1.	-960.	1217.	257.	0.	257.	257.
1999	0.	-1.	-1.	-954.	1217.	263.	0.	263.	263.
2000	0.	-1.	-1.	-948.	1217.	269.	0.	269.	269.
2001	0.	-1.	-1.	-942.	1217.	275.	0.	276.	276.
2002	0.	-1.	-1.	-936.	1217.	281.	0.	282.	282.
2003	0.	-1.	-1.	-930.	1217.	287.	0.	288.	288.
2004	0.	-1.	-1.	-924.	1217.	293.	0.	294.	294.
2005	-745.	-1086.	-1830.	-918.	1217.	299.	0.	2130.	2130.
	17096.	-0.	17096.	-14144.	17648.	3504.	0.	-13592.	-13592.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -10.11 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -10.11 PER CENT

Annex IV-1 PROJECT FINANCIAL ANALYSIS DETAILS (3/5)

Financial Analysis Data

Project Title : Single Super Phosphate Project

Project Location: Kafue, Zambia

1. Base Case (Interest Rate: 12%/Year)

- Production and Sales Plan
- Production Cost Statements
- Income Statements
- Funds Flow Statements
- Balance Sheet
- Profitability and Financial Indicators
  - Profit Ratio
    - Sales Revenue
    - Investment
    - Share Holder Equity
    - Share Capital
  - Current Ratio (Assets/Liability)
  - Quick Ratio (Cash + Receivable)/(Liability)
  - Debt Service Ratio (Depreciation + Interest + Net Profit)/(Repayment + Interest)
- Long Term Debt to Share Holder Equity
- Break Even Point
  - Profit/Capacity Utilization
  - Cash/Capacity Utilization
  - Cash/Sales Price
- Financial Rate of Return by Discounted Cash Flow (in terms of constant prices)
  - Return on Investment, FIRROI
    - Before Tax
    - After Tax
- Sensitivity Analysis
  - Product Price
  - Investment Cost
  - Raw Material Cost
  - Utility and Transport Cost

2. Low Interest Rate Case (Interest Rate: 4%/Year)

- Funds Flow Statements
- Profitability and Financial Indicators
- Financial Rate of Return (In Terms of Constant Price)

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
RATED CAPACITY	0.	0.	57205.	57205.	57205.	57205.	57205.	57205.	57205.	57205.
CAPACITY UTILIZATION	0.0	0.0	0.350	0.800	0.900	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	0.	0.	20022.	45764.	51484.	57205.	57205.	57205.	57205.	57205.
INCREASE IN INVENTORY	0.	0.	2860.	2860.	0.	0.	0.	0.	0.	0.
SALES VOLUME	0.	0.	17162.	42904.	51484.	57205.	57205.	57205.	57205.	57205.
UNIT SALES PRICE	0.0	0.0	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500
SALES REVENUE	0.	0.	2574.	6436.	7723.	8581.	8581.	8581.	8581.	8581.
TOTAL SALES REVENUE	0.	0.	2574.	6436.	7723.	8581.	8581.	8581.	8581.	8581.

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
RATED CAPACITY	57205.	57205.	57205.	57205.	57205.	57205.	57205.
CAPACITY UTILIZATION	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	57205.	57205.	57205.	57205.	57205.	57205.	57205.
INCREASE IN INVENTORY	0.	0.	0.	0.	0.	0.	0.
SALES VOLUME	57205.	57205.	57205.	57205.	57205.	57205.	57205.
UNIT SALES PRICE	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500
SALES REVENUE	8581.	8581.	8581.	8581.	8581.	8581.	8581.
TOTAL SALES REVENUE	8581.	8581.	8581.	8581.	8581.	8581.	8581.



\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION COST STATEMENTS  
 - BASE CASE -

(USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
PRODUCTION (VOLUME)	0.	0.	20022.	45764.	51484.	57205.	57205.	57205.	57205.	57205.
RAW MATERIAL COST	0.	0.	2503.	5722.	6437.	7152.	7152.	7152.	7152.	7152.
PHOSPHATE CONCENTRATE, DRY	0.	0.	1601.	3659.	4117.	4574.	4574.	4574.	4574.	4574.
SULFURIC ACID, 100% H2SO4	0.	0.	894.	2043.	2299.	2554.	2554.	2554.	2554.	2554.
CALCIUM HYDROXIDE	0.	0.	6.	14.	16.	18.	18.	18.	18.	18.
CATALYST/CHEMICALS	0.	0.	2.	5.	5.	6.	6.	6.	6.	6.
UTILITIES COST	0.	0.	48.	110.	124.	137.	137.	137.	137.	137.
RAW WATER	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FUEL OIL	0.	0.	37.	85.	95.	106.	106.	106.	106.	106.
ELECTRICITY	0.	0.	11.	25.	28.	31.	31.	31.	31.	31.
VARIABLE COST	0.	0.	2551.	5832.	6560.	7289.	7289.	7289.	7289.	7289.
EMPLOYMENT COST	0.	0.	72.	143.	143.	143.	143.	143.	143.	143.
LABOUR COST	0.	0.	55.	110.	110.	110.	110.	110.	110.	110.
OVERHEAD	0.	0.	17.	33.	33.	33.	33.	33.	33.	33.
MAINTENANCE COST	0.	0.	126.	253.	253.	253.	253.	253.	253.	253.
INSURANCE/PROPERTY TAX	0.	0.	41.	77.	72.	66.	60.	55.	49.	43.
DIRECT FIXED COST	0.	0.	239.	473.	467.	462.	456.	450.	445.	439.
CASH FACTORY COST	0.	0.	2791.	6305.	7028.	7751.	7745.	7740.	7734.	7728.
DEPRECIABLE ASSETS(PLANTS)	0.	0.	496.	991.	991.	991.	991.	991.	991.	991.
DEPRECIABLE ASSETS(PRE-OPE)	0.	0.	22.	43.	43.	43.	43.	43.	43.	43.
INTEREST DURING CONSTRUCTION	0.	0.	51.	103.	103.	103.	103.	103.	103.	103.
DEPRECIATION AND AMORTIZATION	0.	0.	569.	1138.	1138.	1138.	1138.	1138.	1138.	1138.
TOTAL FACTORY COST	0.	0.	3360.	7442.	8166.	8889.	8883.	8877.	8872.	8866.
UNIT FACTORY COST	0.0	0.0	0.1678	0.1626	0.1586	0.1554	0.1553	0.1552	0.1551	0.1550
SALES EXPENSES	0.	0.	39.	97.	116.	129.	129.	129.	129.	129.
OPERATING EXPENSES	0.	0.	3398.	7539.	8281.	9017.	9012.	9006.	9000.	8995.
INTEREST ON LONG TERM DEBT	0.	0.	757.	1722.	1603.	1485.	1366.	1247.	1128.	1009.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	331.	800.	1314.	1907.	2593.	3392.
TOTAL PRODUCTION COST	0.0	0.0	4155.	9261.	10215.	11302.	11692.	12160.	12722.	13396.
UNIT PRODUCTION COST	0.0	0.0	0.2075	0.2024	0.1984	0.1976	0.2044	0.2126	0.2224	0.2342

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PRODUCTION COST STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
PRODUCTION (VOLUME)	57205.	57205.	57205.	57205.	57205.	57205.	57205.
RAW MATERIAL COST	7152.	7152.	7152.	7152.	7152.	7152.	7152.
PHOSPHATE CONCENTRATE, DRY	4574.	4574.	4574.	4574.	4574.	4574.	4574.
SULFURIC ACID, 100% H2SO4	2554.	2554.	2554.	2554.	2554.	2554.	2554.
CALCIUM HYDROXIDE	18.	18.	18.	18.	18.	18.	18.
CATALYST/CHEMICALS	6.	6.	6.	6.	6.	6.	6.
UTILITIES COST	137.	137.	137.	137.	137.	137.	137.
RAW WATER	0.	0.	0.	0.	0.	0.	0.
FUEL OIL	106.	106.	106.	106.	106.	106.	106.
ELECTRICITY	31.	31.	31.	31.	31.	31.	31.
VARIABLE COST	7289.	7289.	7289.	7289.	7289.	7289.	7289.
EMPLOYMENT COST	143.	143.	143.	143.	143.	143.	143.
LABOUR COST	110.	110.	110.	110.	110.	110.	110.
OVERHEAD	33.	33.	33.	33.	33.	33.	33.
MAINTENANCE COST	253.	253.	253.	253.	253.	253.	253.
INSURANCE/PROPERTY TAX	37.	32.	26.	20.	15.	9.	3.
DIRECT FIXED COST	433.	428.	422.	416.	411.	405.	399.
CASH FACTORY COST	7723.	7717.	7711.	7706.	7700.	7694.	7689.
DEPRECIABLE ASSETS (PLANTS)	991.	991.	991.	991.	991.	991.	991.
DEPRECIABLE ASSETS (PRE-OPE)	43.	43.	43.	43.	43.	43.	43.
INTEREST DURING CONSTRUCTION	103.	103.	103.	103.	103.	103.	103.
DEPRECIATION AND AMORTIZATION	1138.	1138.	1138.	1138.	1138.	1138.	1138.
TOTAL FACTORY COST	8860.	8855.	8849.	8843.	8838.	8832.	8826.
UNIT FACTORY COST	0.1549	0.1548	0.1547	0.1546	0.1545	0.1544	0.1543
SALES EXPENSES	129.	129.	129.	129.	129.	129.	129.
OPERATING EXPENSES	8989.	8983.	8978.	8972.	8966.	8961.	8955.
INTEREST ON LONG TERM DEBT	891.	772.	653.	534.	416.	297.	178.
INTEREST ON SHORT TERM DEBT	4325.	5420.	6710.	8232.	10034.	12172.	14712.
TOTAL PRODUCTION COST	14205.	15176.	16341.	17739.	19416.	21429.	23845.
UNIT PRODUCTION COST	0.2483	0.2653	0.2857	0.3101	0.3394	0.3746	0.4168

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -

PAGE 1

(USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
OPERATING INCOME	0.	0.	2574.	6436.	7723.	8581.	8581.	8581.	8581.	8581.
TOTAL SALES REVENUE	0.	0.	2574.	6436.	7723.	8581.	8581.	8581.	8581.	8581.
COST OF SALES	0.	0.	2880.	6992.	8189.	8907.	8884.	8878.	8872.	8867.
VARIABLE COST	0.	0.	2551.	5832.	6560.	7289.	7289.	7289.	7289.	7289.
DIRECT FIXED COST	0.	0.	239.	473.	467.	462.	456.	450.	445.	439.
DEPRECIATION AND AMORTIZATION	0.	0.	569.	1138.	1138.	1138.	1138.	1138.	1138.	1138.
INC. IN PRODUCT INVENTORY	0.	0.	480.	450.	-23.	-18.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	0.	0.	-305.	-556.	-466.	-326.	-303.	-297.	-292.	-286.
SALES EXPENSES	0.	0.	39.	97.	116.	129.	129.	129.	129.	129.
OPERATING PROFIT	0.	0.	-344.	-653.	-582.	-455.	-432.	-426.	-420.	-415.
NON-OPERATING EXPENSES	0.	0.	757.	1722.	1934.	2284.	2680.	3154.	3721.	4401.
INTEREST ON LONG TERM DEBT	0.	0.	757.	1722.	1603.	1485.	1366.	1247.	1128.	1009.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	331.	800.	1314.	1907.	2593.	3392.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	-1101.	-2375.	-2516.	-2739.	-3112.	-3580.	-4142.	-4816.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	-1101.	-2375.	-2516.	-2739.	-3112.	-3580.	-4142.	-4816.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	0.	0.	-1101.	-2375.	-2516.	-2739.	-3112.	-3580.	-4142.	-4816.

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -

(USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
OPERATING INCOME	8581.	8581.	8581.	8581.	8581.	8581.	8581.
TOTAL SALES REVENUE	8581.	8581.	8581.	8581.	8581.	8581.	8581.
COST OF SALES	8861.	8855.	8850.	8844.	8838.	8832.	8827.
VARIABLE COST	7289.	7289.	7289.	7289.	7289.	7289.	7289.
DIRECT FIXED COST	433.	428.	422.	416.	411.	405.	399.
DEPRECIATION AND AMORTIZATION	1138.	1138.	1138.	1138.	1138.	1138.	1138.
INC. IN PRODUCT INVENTORY	-1.	-1.	-1.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	-280.	-274.	-269.	-263.	-257.	-252.	-246.
SALES EXPENSES	129.	129.	129.	129.	129.	129.	129.
OPERATING PROFIT	-409.	-403.	-397.	-392.	-386.	-380.	-375.
NON-OPERATING EXPENSES	5216.	6192.	7363.	8767.	10450.	12469.	14890.
INTEREST ON LONG TERM DEBT	891.	772.	653.	534.	416.	297.	178.
INTEREST ON SHORT TERM DEBT	4325.	5420.	6710.	8232.	10034.	12172.	14712.
NET PROFIT OR (LOSS) BEFORE TAX	-5625.	-6596.	-7760.	-9158.	-10836.	-12849.	-15265.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	-5625.	-6596.	-7760.	-9158.	-10836.	-12849.	-15265.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	-5625.	-6596.	-7760.	-9158.	-10836.	-12849.	-15265.

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE -

(USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	2969.	13856.	3194.	2138.	4554.	7254.	10240.	13677.	17676.	22349.
CASH GENERATED	0.	0.	225.	485.	556.	683.	706.	712.	717.	723.
PROFIT AFT. TAX, BFR INT. DEPRECIATION AND AMORTIZATION	0.	0.	-344.	-653.	-582.	-455.	-432.	-426.	-420.	-415.
FINANCIAL RESOURCES	2969.	13856.	2969.	1653.	3998.	6571.	9534.	12965.	16958.	21626.
SHARE CAPITAL	742.	3464.	742.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	2227.	10392.	2227.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	1653.	3998.	6571.	9534.	12965.	16958.	21626.
USES OF FUNDS	2658.	11945.	4342.	3212.	4554.	7254.	10240.	13677.	17676.	22349.
FIXED CAPITAL EXPENDITURE	2658.	11945.	2560.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	98.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	2328.	10865.	2328.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	232.	1081.	232.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	530.	500.	-23.	-18.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	1252.	2712.	4577.	7272.	10241.	13678.	17676.	22349.
REPAYMENT OF LONG TERM DEBT	0.	0.	495.	990.	990.	990.	990.	990.	990.	990.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	1653.	3998.	6571.	9534.	12965.	16958.
INTEREST ON LONG TERM DEBT	0.	0.	757.	1722.	1603.	1485.	1366.	1247.	1128.	1009.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	331.	800.	1314.	1907.	2593.	3392.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	311.	1910.	-1148.	-1074.	0.	-0.	-0.	-0.	0.	0.
BEGINNING CASH BALANCE	0.	311.	2222.	1074.	0.	0.	0.	0.	0.	0.
ENDING CASH BALANCE	311.	2222.	1074.	0.	0.	0.	0.	0.	0.	0.

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	27831.	34283.	41901.	50917.	61610.	74316.	89437.
CASH GENERATED	729.	734.	740.	746.	752.	757.	763.
PROFIT AFT. TAX, BFR INT.	-409.	-403.	-397.	-392.	-386.	-380.	-375.
DEPRECIATION AND AMORTIZATION	1138.	1138.	1138.	1138.	1138.	1138.	1138.
FINANCIAL RESOURCES	27102.	33549.	41161.	50171.	60858.	73559.	88675.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	27102.	33549.	41161.	50171.	60858.	73559.	88675.
USES OF FUNDS	27831.	34283.	41901.	50917.	61610.	74316.	89437.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	27831.	34284.	41902.	50917.	61610.	74316.	89438.
REPAYMENT OF LONG TERM DEBT	990.	990.	990.	990.	990.	990.	990.
REPAYMENT OF SHORT TERM DEBT	21626.	27102.	33549.	41161.	50171.	60858.	73559.
INTEREST ON LONG TERM DEBT	891.	772.	653.	534.	416.	297.	178.
INTEREST ON SHORT TERM DEBT	4325.	5420.	6710.	8232.	10034.	12172.	14712.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	0.	0.	0.	0.	0.	-0.	0.
BEGINNING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ASSETS	2969.	16825.	18248.	16587.	15426.	14270.	13132.	11994.	10855.	9717.
CURRENT ASSETS	0.	0.	580.	1130.	1107.	1089.	1088.	1088.	1087.	1087.
OPERATING CASH	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	0.	0.	480.	930.	907.	889.	888.	888.	887.	887.
ACC. EXCESS CASH	311.	2222.	1074.	0.	0.	0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	2658.	14603.	16594.	15456.	14319.	13181.	12044.	10906.	9768.	8631.
INVESTMENT	2658.	14603.	17163.	17163.	17163.	17163.	17163.	17163.	17163.	17163.
NON-DEPR. ASSETS	98.	98.	98.	98.	98.	98.	98.	98.	98.	98.
DEPRECIABLE ASSETS	2328.	13193.	15521.	15521.	15521.	15521.	15521.	15521.	15521.	15521.
INTEREST DRG CONSTR.	232.	1312.	1544.	1544.	1544.	1544.	1544.	1544.	1544.	1544.
LESS: ACC. DEPRECIATION	0.	0.	569.	1706.	2844.	3982.	5119.	6257.	7395.	8532.
LIABILITIES	2227.	12619.	14401.	15114.	16469.	18053.	20026.	22468.	25471.	29148.
CURRENT LIABILITIES	0.	495.	1040.	2743.	5088.	7661.	10624.	14055.	18048.	22715.
ACCOUNT PAYABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	0.	495.	990.	990.	990.	990.	990.	990.	990.	990.
SHORT TERM DEBT	0.	0.	0.	1653.	3998.	6571.	9534.	12965.	16958.	21626.
FIXED LIABILITIES	2227.	12124.	13361.	12371.	11382.	10392.	9402.	8412.	7423.	6433.
LONG TERM DEBT BALANCE	2227.	12124.	13361.	12371.	11382.	10392.	9402.	8412.	7423.	6433.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	742.	4206.	3847.	1472.	-1043.	-3783.	-6894.	-10474.	-14616.	-19431.
SHARE CAPITAL	742.	4206.	4948.	4948.	4948.	4948.	4948.	4948.	4948.	4948.
ACC. RETAINED EARNINGS	0.	0.	-1101.	-3476.	-5992.	-8731.	-11843.	-15423.	-19564.	-24380.
LIABILITIES & S/H EQUITY	2969.	16825.	18248.	16587.	15426.	14270.	13132.	11994.	10855.	9717.

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
ASSETS	8579.	7441.	6302.	5164.	4026.	2888.	1749.
CURRENT ASSETS	1086.	1085.	1085.	1084.	1084.	1083.	1083.
OPERATING CASH	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	886.	885.	885.	884.	884.	883.	883.
ACC. EXCESS CASH	-0.	-0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	7493.	6355.	5218.	4080.	2942.	1805.	667.
INVESTMENT	17163.	17163.	17163.	17163.	17163.	17163.	17163.
NON-DEPR. ASSETS	98.	98.	98.	98.	98.	98.	98.
DEPRECIABLE ASSETS	15521.	15521.	15521.	15521.	15521.	15521.	15521.
INTEREST DRG CONSTR.	1544.	1544.	1544.	1544.	1544.	1544.	1544.
LESS: ACC. DEPRECIATION	9670.	10808.	11945.	13083.	14221.	15358.	16496.
LIABILITIES	33635.	39092.	45714.	53735.	63432.	75143.	89269.
CURRENT LIABILITIES	28192.	34639.	42251.	51260.	61948.	74648.	89269.
ACCOUNT PAYABLE	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	990.	990.	990.	990.	990.	990.	495.
SHORT TERM DEBT	27102.	33549.	41161.	50171.	60858.	73559.	88675.
FIXED LIABILITIES	5443.	4454.	3464.	2474.	1485.	495.	0.
LONG TERM DEBT BALANCE	5443.	4454.	3464.	2474.	1485.	495.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	-25056.	-31652.	-39412.	-48570.	-59406.	-72255.	-87520.
SHARE CAPITAL	4948.	4948.	4948.	4948.	4948.	4948.	4948.
ACC. RETAINED EARNINGS	-30005.	-36600.	-44361.	-53519.	-64355.	-77204.	-92468.
LIABILITIES & S/H EQUITY	8579.	7441.	6302.	5164.	4026.	2888.	1749.



\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 LONG TERM DEBT  
 - BASE CASE - (USD 1000)

YEAR	SER.NO	PRINCIPAL	INTEREST	DEBT SERVICE	BALANCE AFT. PAYMENT
1989	1	0.	0.	0.	2227.
1990	2	0.	0.	0.	12619.
1991	3	495.	757.	1252.	14351.
1992	4	990.	1722.	2712.	13361.
1993	5	990.	1603.	2593.	12371.
1994	6	990.	1485.	2474.	11382.
1995	7	990.	1366.	2355.	10392.
1996	8	990.	1247.	2237.	9402.
1997	9	990.	1128.	2118.	8412.
1998	10	990.	1009.	1999.	7423.
1999	11	990.	891.	1880.	6433.
2000	12	990.	772.	1762.	5443.
2001	13	990.	653.	1643.	4454.
2002	14	990.	534.	1524.	3464.
2003	15	990.	416.	1405.	2474.
2004	16	990.	297.	1287.	1485.
2005	17	990.	178.	1168.	495.
TOTAL		14351.	14059.	28409.	495.

AMOUNT OF DEBT 14845.

INTEREST RATE 12.000 PER CENT/YEAR

REPAYMENT 15 YEAR-EQUAL-INSTALLMENT-REPAYMENT (ANNUAL REPAYMENT)

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - BASE CASE -  
 (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(4) AFT TAX PROFIT -TO- S/CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-42.8	-28.6	-6.4	-22.3	0.56	0.10	0.18	78 / 22	248.0	237.8	2335.1
1992	-36.9	-161.3	-13.8	-48.0	0.41	0.07	0.16	89 / 11	454.2	212.4	434.6
1993	-32.6	241.1	-14.7	-50.8	0.22	0.04	0.09	110 / -10	283.0	195.5	271.6
1994	-31.9	72.4	-16.0	-55.4	0.14	0.03	-0.05	157 / -57	310.7	195.0	299.2
1995	-36.3	45.1	-18.1	-62.9	0.10	0.02	-0.05	375 / **	340.9	201.8	329.5
1996	-41.7	34.2	-20.9	-72.3	0.08	0.01	-0.53	** / 508	377.2	210.0	365.7
1997	-48.3	28.3	-24.1	-83.7	0.06	0.01	-0.89	** / 203	420.7	219.8	409.2
1998	-56.1	24.8	-28.1	-97.3	0.05	0.01	-1.33	-49 / 149	472.9	231.6	461.4
1999	-65.6	22.4	-32.8	-113.7	0.04	0.01	-1.91	-28 / 128	535.5	245.7	524.1
2000	-76.9	20.8	-38.4	-133.3	0.03	0.01	-2.66	-16 / 116	610.7	262.7	599.2
2001	-90.4	19.7	-45.2	-156.8	0.03	0.00	-3.63	-10 / 110	700.9	283.1	689.5
2002	-106.7	18.9	-53.4	-185.1	0.02	0.00	-4.91	-5 / 105	809.2	307.5	797.7
2003	-126.3	18.2	-63.1	-219.0	0.02	0.00	-6.61	-3 / 103	939.1	336.8	927.6
2004	-149.7	17.8	-74.9	-259.7	0.01	0.00	-8.87	-1 / 101	1095.0	372.0	1083.5
2005	-177.9	17.4	-88.9	-308.5	0.01	0.00	-11.94	-0 / 100	1262.0	414.2	1270.6
AVERAGE1	-74.7	26.1	-35.9	-124.6	0.12	0.02	-2.88	12 / 88	738.7	261.7	719.9
AVERAGE2	-77.2	22.6	-33.7	-116.8	0.03	0.01	-2.16	-37 / 137			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)  
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE  
 OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

*** SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA ***									
FINANCIAL RATE OF RETURN (IN CONSTANT PRICE)									
-- BASE CASE -- (USD 1000)									
YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	(1) GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	(2) GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW	(5) AFT-TAX NET IN-FLOW
								(2)-(1)	(4)-(3)
1989	2426.	0.	2426.	0.	0.	0.	0.	-2426.	-2426.
1990	10865.	0.	10865.	0.	0.	0.	0.	-10865.	-10865.
1991	2328.	530.	2858.	-344.	569.	225.	0.	-2633.	-2633.
1992	0.	500.	500.	-653.	1138.	485.	0.	-16.	-16.
1993	0.	-23.	-23.	-582.	1138.	556.	0.	579.	579.
1994	0.	-18.	-18.	-455.	1138.	683.	0.	701.	701.
1995	0.	-1.	-1.	-432.	1138.	706.	0.	707.	707.
1996	0.	-1.	-1.	-426.	1138.	712.	0.	712.	712.
1997	0.	-1.	-1.	-420.	1138.	717.	0.	718.	718.
1998	0.	-1.	-1.	-415.	1138.	723.	0.	724.	724.
1999	0.	-1.	-1.	-409.	1138.	729.	0.	729.	729.
2000	0.	-1.	-1.	-403.	1138.	734.	0.	735.	735.
2001	0.	-1.	-1.	-397.	1138.	740.	0.	741.	741.
2002	0.	-1.	-1.	-392.	1138.	746.	0.	746.	746.
2003	0.	-1.	-1.	-386.	1138.	752.	0.	752.	752.
2004	0.	-1.	-1.	-380.	1138.	757.	0.	758.	758.
2005	-667.	-983.	-1650.	-375.	1138.	763.	0.	2413.	2413.
	14952.	-0.	14952.	-6469.	16496.	10027.	0.	-4925.	-4925.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -3.52 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -3.52 PER CENT

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	2810.	13113.	3032.	486.	561.	687.	710.	715.	720.	726.
CASH GENERATED	0.	0.	222.	486.	561.	687.	710.	715.	720.	726.
PROFIT AFT. TAX, BFR INT.	0.	0.	-311.	-581.	-505.	-379.	-357.	-352.	-346.	-341.
DEPRECIATION AND AMORTIZATION	0.	0.	533.	1067.	1067.	1067.	1067.	1067.	1067.	1067.
FINANCIAL RESOURCES	2810.	13113.	2810.	0.	0.	0.	0.	0.	0.	0.
SHARE CAPITAL	702.	3278.	702.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	2107.	9835.	2107.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS	2499.	11203.	3164.	1058.	540.	544.	561.	913.	1250.	1222.
FIXED CAPITAL EXPENDITURE	2499.	11203.	2401.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	98.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	2328.	10865.	2328.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	72.	338.	72.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	525.	496.	-22.	-18.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	239.	562.	562.	562.	562.	913.	1250.	1222.
REPAYMENT OF LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.	351.	702.	702.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON LONG TERM DEBT	0.	0.	239.	562.	562.	562.	562.	562.	548.	520.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	311.	1910.	-132.	-573.	21.	143.	148.	-198.	-529.	-496.
BEGINNING CASH BALANCE	0.	311.	2222.	2090.	1517.	1538.	1681.	1830.	1632.	1103.
ENDING CASH BALANCE	311.	2222.	2090.	1517.	1538.	1681.	1830.	1632.	1103.	607.

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FUNDS FLOW STATEMENTS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	731.	1022.	1480.	1995.	2579.	3245.	4009.
CASH GENERATED	731.	736.	742.	747.	752.	758.	763.
PROFIT AFT. TAX; BFR INT.	-336.	-330.	-325.	-320.	-314.	-309.	-304.
DEPRECIATION AND AMORTIZATION	1067.	1067.	1067.	1067.	1067.	1067.	1067.
FINANCIAL RESOURCES	0.	285.	738.	1248.	1826.	2487.	3246.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	285.	738.	1248.	1826.	2487.	3246.
USES OF FUNDS	1194.	1166.	1480.	1995.	2579.	3245.	4009.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	1194.	1166.	1480.	1995.	2579.	3245.	4010.
REPAYMENT OF LONG TERM DEBT	702.	702.	702.	702.	702.	702.	702.
REPAYMENT OF SHORT TERM DEBT	0.	0.	285.	738.	1248.	1826.	2487.
INTEREST ON LONG TERM DEBT	492.	464.	436.	407.	379.	351.	323.
INTEREST ON SHORT TERM DEBT	0.	0.	57.	148.	250.	365.	497.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	-463.	-144.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	607.	144.	0.	0.	0.	0.	0.
ENDING CASH BALANCE	144.	0.	0.	0.	0.	0.	0.

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT (PCT)	(4) AFT TAX PROFIT -TO- S/CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-21.4	-13.3	-3.4	-11.8	11.49	2.00	0.93	77 / 23	1599.1	178.6	784.9
1992	-17.8	-38.2	-7.1	-24.4	11.21	2.00	0.86	82 / 18	290.5	162.2	149.2
1993	-13.8	-55.5	-6.6	-22.8	10.99	2.00	1.00	88 / 12	171.0	149.6	88.3
1994	-11.0	-96.0	-5.8	-20.1	10.81	2.00	1.22	93 / 7	171.5	147.5	88.9
1995	-10.7	-1494.8	-5.7	-19.6	2.40	0.44	1.26	100 / 0	171.1	147.4	88.5
1996	-10.6	107.2	-5.7	-19.5	1.35	0.25	0.78	107 / -7	170.7	153.5	115.3
1997	-10.4	51.2	-5.6	-19.1	1.35	0.25	0.58	117 / -17	169.2	159.3	141.0
1998	-10.0	33.0	-5.3	-18.4	1.34	0.25	0.59	129 / -29	166.6	158.7	138.4
1999	-9.6	24.1	-5.1	-17.7	1.34	0.25	0.61	146 / -46	164.0	158.1	135.8
2000	-9.3	18.8	-4.9	-17.0	0.99	0.18	0.63	171 / -71	161.5	157.5	133.2
2001	-9.5	16.2	-5.1	-17.5	0.70	0.13	0.60	214 / **	163.3	157.9	135.1
2002	-10.2	14.8	-5.4	-18.7	0.53	0.10	0.54	307 / **	167.7	158.9	139.5
2003	-11.0	13.7	-5.9	-20.1	0.41	0.08	0.46	666 / **	173.0	160.1	144.8
2004	-12.0	13.0	-6.4	-21.9	0.33	0.06	0.37	** / **	179.4	161.5	151.2
2005	-13.1	12.5	-7.0	-24.0	0.27	0.05	0.26	** / 385	187.0	163.3	158.8
AVERAGE1	-12.0	-92.9	-5.7	-19.5	3.70	0.67	0.71	39 / 61	273.7	158.3	172.9
AVERAGE2	-11.4	41.7	-5.3	-18.3	0.84	0.16	0.64	122 / -22			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)  
 \* NOTE FOR (9)(10)(11)  
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE  
 OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

\*\*\* SINGLE SUPER PHOSPHATE PROJECT, ZAMBIA \*\*\*  
 FINANCIAL RATE OF RETURN (IN CONSTANT PRICE)  
 - LOW INTEREST CASE - (USD 1000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN (1) WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN (2)	GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW (2)-(1)	(5) AFT-TAX NET IN-FLOW (4)-(3)
1989	2426.	0.	2426.	0.	0.	0.	0.	-2426.	-2426.
1990	10865.	0.	10865.	0.	0.	0.	0.	-10865.	-10865.
1991	2328.	525.	2853.	-311.	533.	222.	0.	-2631.	-2631.
1992	0.	496.	496.	-581.	1067.	486.	0.	-11.	-11.
1993	0.	-22.	-22.	-505.	1067.	561.	0.	583.	583.
1994	0.	-18.	-18.	-379.	1067.	687.	0.	705.	705.
1995	0.	-1.	-1.	-357.	1067.	710.	0.	710.	710.
1996	0.	-1.	-1.	-352.	1067.	715.	0.	716.	716.
1997	0.	-1.	-1.	-346.	1067.	720.	0.	721.	721.
1998	0.	-1.	-1.	-341.	1067.	726.	0.	726.	726.
1999	0.	-1.	-1.	-336.	1067.	731.	0.	732.	732.
2000	0.	-1.	-1.	-330.	1067.	736.	0.	737.	737.
2001	0.	-1.	-1.	-325.	1067.	742.	0.	742.	742.
2002	0.	-1.	-1.	-320.	1067.	747.	0.	748.	748.
2003	0.	-1.	-1.	-314.	1067.	752.	0.	753.	753.
2004	0.	-1.	-1.	-309.	1067.	758.	0.	758.	758.
2005	-631.	-976.	-1608.	-304.	1067.	763.	0.	2371.	2371.
	14988.	-0.	14988.	-5413.	15470.	10058.	0.	-4930.	-4930.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -3.53 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -3.53 PER CENT

Annex IV-1 PROJECT FINANCIAL ANALYSIS DETAILS (4/5)

Financial Analysis Data

Project Title : Phosphate Mining and Concentrate Project and  
Fused Magnesium Phosphate Project

Project Location: Chilembwe and Kafue, Zambia

1. Base Case (Interest Rate: 12%/Year)

- Production and Sales Plan
- Production Cost Statements
- Income Statements
- Funds Flow Statements
- Balance Sheet
- Profitability and Financial Indicators
  - Profit Ratio
    - Sales Revenue
    - Share Holder Equity
  - Investment
  - Share Capital
  - Current Ratio (Assets/Liability)
  - Quick Ratio (Cash + Receivable)/(Liability)
  - Debt Service Ratio (Depreciation + Interest + Net Profit)/(Repayment + Interest)
  - Long Term Debt to Share Holder Equity
  - Break Even Point
    - Profit/Capacity Utilization
    - Cash/Capacity Utilization
    - Cash/Sales Price
- Financial Rate of Return by Discounted Cash Flow (in terms of constant prices)
  - Return on Investment, FIRROI
    - Before Tax
    - After Tax
- Sensitivity Analysis
  - Product Price
  - Investment Cost
  - Raw Material Cost
  - Utility and Transport Cost

2. Low Interest Rate Case (Interest Rate: 4%/Year)

- Funds Flow Statements
- Profitability and Financial Indicators
- Financial Rate of Return (In Terms of Constant Price)





\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 PRODUCTION COST STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
PRODUCTION (VOLUME)	0.	0.	17640.	40320.	45360.	50400.	50400.	50400.	50400.	50400.
RAW MATERIAL COST	0.	0.	1238.	2830.	3184.	3538.	3538.	3538.	3538.	3538.
RAW ORE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SERPENTINE, DRY	0.	0.	309.	706.	795.	883.	883.	883.	883.	883.
CALCIUM HYDROXIDE	0.	0.	6.	13.	14.	16.	16.	16.	16.	16.
ELECTRODE	0.	0.	352.	806.	906.	1007.	1007.	1007.	1007.	1007.
CATALYST/CHEMICALS	0.	0.	265.	605.	680.	756.	756.	756.	756.	756.
PACKAGING	0.	0.	307.	701.	788.	876.	876.	876.	876.	876.
UTILITIES COST	0.	0.	1255.	2870.	3228.	3587.	3587.	3587.	3587.	3587.
RAW WATER	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TRANSPORT CHARGES	0.	0.	905.	2069.	2327.	2586.	2586.	2586.	2586.	2586.
FUEL/DIESEL OIL	0.	0.	132.	303.	341.	378.	378.	378.	378.	378.
ELECTRICITY	0.	0.	218.	498.	560.	623.	623.	623.	623.	623.
VARIABLE COST	0.	0.	2494.	5700.	6413.	7125.	7125.	7125.	7125.	7125.
EMPLOYMENT COST	0.	0.	205.	410.	410.	410.	410.	410.	410.	410.
LABOUR COST	0.	0.	158.	315.	315.	315.	315.	315.	315.	315.
OVERHEAD	0.	0.	47.	95.	95.	95.	95.	95.	95.	95.
MAINTENANCE COST	0.	0.	250.	500.	500.	500.	500.	500.	500.	500.
INSURANCE/PROPERTY TAX	0.	0.	81.	151.	140.	117.	117.	106.	95.	84.
DIRECT FIXED COST	0.	0.	536.	1061.	1050.	1038.	1027.	1016.	1005.	994.
CASH FACTORY COST	0.	0.	3030.	6761.	7462.	8164.	8153.	8142.	8130.	8119.
DEPRECIABLE ASSETS(PLANTS)	0.	0.	981.	1963.	1963.	1963.	1963.	1963.	1963.	1963.
DEPRECIABLE ASSETS(PRE-OPE)	0.	0.	22.	44.	44.	44.	44.	44.	44.	44.
INTEREST DURING CONSTRUCTION	0.	0.	100.	201.	201.	201.	201.	201.	201.	201.
DEPRECIATION AND AMORTIZATION	0.	0.	1103.	2207.	2207.	2207.	2207.	2207.	2207.	2207.
TOTAL FACTORY COST	0.	0.	4133.	8968.	9669.	10371.	10360.	10349.	10337.	10326.
UNIT FACTORY COST	0.0	0.0	0.2343	0.2224	0.2132	0.2058	0.2055	0.2053	0.2051	0.2049
SALES EXPENSES	0.	0.	60.	151.	181.	201.	201.	201.	201.	201.
OPERATING EXPENSES	0.	0.	4193.	9119.	9850.	10572.	10561.	10550.	10539.	10528.
INTEREST ON LONG TERM DEBT	0.	0.	1380.	3139.	2923.	2706.	2490.	2273.	2057.	1840.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	9.	1031.	2079.	3255.	4622.	6216.	8083.
TOTAL PRODUCTION COST	0.0	0.0	5574.	12267.	13805.	15357.	16306.	17445.	18811.	20451.
UNIT PRODUCTION COST	0.0	0.0	0.3160	0.3042	0.3043	0.3047	0.3235	0.3461	0.3732	0.4058

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 PRODUCTION COST STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
PRODUCTION (VOLUME)	50400.	50400.	50400.	50400.	50400.	50400.	50400.
RAW MATERIAL COST	3538.	3538.	3538.	3538.	3538.	3538.	3538.
RAW ORE	0.	0.	0.	0.	0.	0.	0.
SERPENTINE, DRY	883.	883.	883.	883.	883.	883.	883.
CALCIUM HYDROXIDE	16.	16.	16.	16.	16.	16.	16.
ELECTRODE	1007.	1007.	1007.	1007.	1007.	1007.	1007.
CATALYST/CHEMICALS	756.	756.	756.	756.	756.	756.	756.
PACKAGING	876.	876.	876.	876.	876.	876.	876.
UTILITIES COST	3587.	3587.	3587.	3587.	3587.	3587.	3587.
RAW WATER	0.	0.	0.	0.	0.	0.	0.
TRANSPORT CHARGES	2586.	2586.	2586.	2586.	2586.	2586.	2586.
FUEL/DIESEL OIL	378.	378.	378.	378.	378.	378.	378.
ELECTRICITY	623.	623.	623.	623.	623.	623.	623.
VARIABLE COST	7125.	7125.	7125.	7125.	7125.	7125.	7125.
EMPLOYMENT COST	410.	410.	410.	410.	410.	410.	410.
LABOUR COST	315.	315.	315.	315.	315.	315.	315.
OVERHEAD	95.	95.	95.	95.	95.	95.	95.
MAINTENANCE COST	500.	500.	500.	500.	500.	500.	500.
INSURANCE/PROPERTY TAX	73.	62.	51.	40.	29.	18.	7.
DIRECT FIXED COST	983.	972.	961.	950.	939.	928.	917.
CASH FACTORY COST	8108.	8097.	8086.	8075.	8064.	8053.	8042.
DEPRECIABLE ASSETS(PLANTS)	1963.	1963.	1963.	1963.	1963.	1963.	1963.
DEPRECIABLE ASSETS(PRE-ORE)	44.	44.	44.	44.	44.	44.	44.
INTEREST DURING CONSTRUCTION	201.	201.	201.	201.	201.	201.	201.
DEPRECIATION AND AMORTIZATION	2207.	2207.	2207.	2207.	2207.	2207.	2207.
TOTAL FACTORY COST	10315.	10304.	10293.	10282.	10271.	10260.	10249.
UNIT FACTORY COST	0.2047	0.2045	0.2042	0.2040	0.2038	0.2036	0.2034
SALES EXPENSES	201.	201.	201.	201.	201.	201.	201.
OPERATING EXPENSES	10517.	10506.	10495.	10484.	10473.	10462.	10451.
INTEREST ON LONG TERM DEBT	1624.	1407.	1191.	974.	758.	541.	325.
INTEREST ON SHORT TERM DEBT	10278.	12867.	15928.	19556.	23863.	28987.	35090.
TOTAL PRODUCTION COST	22419.	24780.	27613.	31013.	35094.	39990.	45865.
UNIT PRODUCTION COST	0.4448	0.4917	0.5479	0.6153	0.6963	0.7935	0.9100

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
OPERATING INCOME	0.	0.	2722.	6804.	8165.	9072.	9072.	9072.	9872.	9072.
TOTAL SALES REVENUE	0.	0.	2722.	6804.	8165.	9072.	9072.	9072.	9072.	9072.
COST OF SALES	0.	0.	3543.	8437.	9716.	10408.	10361.	10350.	10339.	10328.
VARIABLE COST	0.	0.	2494.	5700.	6413.	7125.	7125.	7125.	7125.	7125.
DIRECT FIXED COST	0.	0.	536.	1061.	1050.	1038.	1027.	1016.	1005.	994.
DEPRECIATION AND AMORTIZATION	0.	0.	1103.	2207.	2207.	2207.	2207.	2207.	2207.	2207.
INC. IN PRODUCT INVENTORY	0.	0.	590.	531.	-47.	-37.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	0.	0.	-821.	-1633.	-1551.	-1336.	-1289.	-1278.	-1267.	-1256.
SALES EXPENSES	0.	0.	60.	151.	181.	201.	201.	201.	201.	201.
OPERATING PROFIT	0.	0.	-881.	-1784.	-1732.	-1537.	-1490.	-1479.	-1468.	-1457.
NON-OPERATING EXPENSES	0.	0.	1380.	3149.	3954.	4785.	5745.	6895.	8272.	9923.
INTEREST ON LONG TERM DEBT	0.	0.	1380.	3139.	2923.	2706.	2490.	2273.	2057.	1840.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	9.	1031.	2079.	3255.	4622.	6216.	8083.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	-2262.	-4933.	-5686.	-6322.	-7235.	-8374.	-9740.	-11380.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	-2262.	-4933.	-5686.	-6322.	-7235.	-8374.	-9740.	-11380.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	0.	0.	-2262.	-4933.	-5686.	-6322.	-7235.	-8374.	-9740.	-11380.

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -

(USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
OPERATING INCOME	9072.	9072.	9072.	9072.	9072.	9072.	9072.
TOTAL SALES REVENUE	9072.	9072.	9072.	9072.	9072.	9072.	9072.
COST OF SALES	10316.	10305.	10294.	10283.	10272.	10261.	10250.
VARIABLE COST	7125.	7125.	7125.	7125.	7125.	7125.	7125.
DIRECT FIXED COST	983.	972.	961.	950.	939.	928.	917.
DEPRECIATION AND AMORTIZATION	2207.	2207.	2207.	2207.	2207.	2207.	2207.
INC. IN PRODUCT INVENTORY	-1.	-1.	-1.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	-1244.	-1233.	-1222.	-1211.	-1200.	-1189.	-1178.
SALES EXPENSES	201.	201.	201.	201.	201.	201.	201.
OPERATING PROFIT	-1446.	-1435.	-1424.	-1413.	-1402.	-1391.	-1380.
NON-OPERATING EXPENSES	11902.	14274.	17119.	20530.	24621.	29528.	35415.
INTEREST ON LONG TERM DEBT	1624.	1407.	1191.	974.	758.	541.	325.
INTEREST ON SHORT TERM DEBT	10278.	12867.	15928.	19556.	23863.	28987.	35090.
NET PROFIT OR (LOSS) BEFORE TAX	-13348.	-15709.	-18542.	-21943.	-26023.	-30919.	-36794.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	-13348.	-15709.	-18542.	-21943.	-26023.	-30919.	-36794.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	-13348.	-15709.	-18542.	-21943.	-26023.	-30919.	-36794.

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	5413.	25259.	5681.	5580.	10869.	16946.	23825.	31806.	41153.	52140.
CASH GENERATED	0.	0.	222.	423.	475.	670.	717.	728.	739.	750.
PROFIT AFT. TAX; BFR INT.	0.	0.	-881.	-1784.	-1732.	-1537.	-1490.	-1479.	-1468.	-1457.
DEPRECIATION AND AMORTIZATION	0.	0.	1103.	2207.	2207.	2207.	2207.	2207.	2207.	2207.
FINANCIAL RESOURCES	5413.	25259.	5459.	5157.	10394.	16277.	23108.	31078.	40414.	51390.
SHARE CAPITAL	1353.	6315.	1353.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	4059.	18944.	4059.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	47.	5157.	10394.	16277.	23108.	31078.	40414.	51390.
USES OF FUNDS	5291.	23173.	7889.	5580.	10869.	16946.	23825.	31806.	41153.	52140.
FIXED CAPITAL EXPENDITURE	5291.	23173.	4966.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	325.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	4515.	21068.	4515.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	451.	2106.	451.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	640.	581.	-47.	-37.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	2282.	5000.	10916.	16984.	23826.	31807.	41154.	52141.
REPAYMENT OF LONG TERM DEBT	0.	0.	902.	1804.	1804.	1804.	1804.	1804.	1804.	1804.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	47.	5157.	10394.	16277.	23108.	31078.	40414.
INTEREST ON LONG TERM DEBT	0.	0.	1380.	3139.	2923.	2706.	2490.	2273.	2057.	1840.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	9.	1031.	2079.	3255.	4622.	6216.	8083.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	122.	2085.	-2207.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
BEGINNING CASH BALANCE	0.	122.	2207.	0.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	122.	2207.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	65095.	80411.	98561.	120110.	145740.	176266.	212668.
CASH GENERATED	761.	772.	783.	794.	805.	816.	827.
PROFIT AFT. TAX, BFR INT.	-1446.	-1435.	-1424.	-1413.	-1402.	-1391.	-1380.
DEPRECIATION AND AMORTIZATION	2207.	2207.	2207.	2207.	2207.	2207.	2207.
FINANCIAL RESOURCES	64334.	79639.	97778.	119316.	144935.	175450.	211841.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	64334.	79639.	97778.	119316.	144935.	175450.	211841.
USES OF FUNDS	65095.	80411.	98561.	120110.	145740.	176266.	212668.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	65096.	80412.	98562.	120112.	145741.	176268.	212669.
REPAYMENT OF LONG TERM DEBT	1804.	1804.	1804.	1804.	1804.	1804.	1804.
REPAYMENT OF SHORT TERM DEBT	5190.	64334.	79639.	97778.	119316.	144935.	175450.
INTEREST ON LONG TERM DEBT	1624.	1407.	1191.	974.	758.	541.	325.
INTEREST ON SHORT TERM DEBT	10278.	12867.	15928.	19556.	23863.	28987.	35090.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	-0.	0.	-0.	-0.	-0.	-0.	0.
BEGINNING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ASSETS	5413.	30671.	33017.	31440.	29187.	26943.	24734.	22526.	20318.	18110.
CURRENT ASSETS	0.	0.	690.	1321.	1274.	1237.	1236.	1235.	1234.	1233.
OPERATING CASH	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	0.	0.	590.	1121.	1074.	1037.	1036.	1035.	1034.	1033.
ACC. EXCESS CASH	122.	2207.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	5291.	28464.	32326.	30119.	27912.	25705.	23498.	21291.	19084.	16878.
INVESTMENT	5291.	28464.	33430.	33430.	33430.	33430.	33430.	33430.	33430.	33430.
NON-DEPR. ASSETS	325.	325.	325.	325.	325.	325.	325.	325.	325.	325.
DEPRECIABLE ASSETS	4515.	25582.	30097.	30097.	30097.	30097.	30097.	30097.	30097.	30097.
INTEREST DRG CONSTR.	451.	2557.	3008.	3008.	3008.	3008.	3008.	3008.	3008.	3008.
LESS: ACC. DEPRECIATION	0.	0.	1103.	3310.	5517.	7724.	9931.	12138.	14345.	16552.
LIABILITIES	4059.	23004.	26258.	29614.	33047.	37125.	42152.	48318.	55850.	65022.
CURRENT LIABILITIES	0.	902.	1901.	7061.	12298.	18181.	25012.	32982.	42318.	53294.
ACCOUNT PAYABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	0.	902.	1804.	1804.	1804.	1804.	1804.	1804.	1804.	1804.
SHORT TERM DEBT	0.	0.	47.	5157.	10394.	16277.	23108.	31078.	40414.	51390.
FIXED LIABILITIES	4059.	22101.	24357.	22552.	20748.	18944.	17140.	15336.	13531.	11727.
LONG TERM DEBT BALANCE	4059.	22101.	24357.	22552.	20748.	18944.	17140.	15336.	13531.	11727.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	1353.	7668.	6759.	1827.	-3860.	-10182.	-17417.	-25791.	-35532.	-46912.
SHARE CAPITAL	1353.	7668.	9021.	9021.	9021.	9021.	9021.	9021.	9021.	9021.
ACC. RETAINED EARNINGS	0.	0.	-2262.	-7194.	-12881.	-19203.	-26438.	-34812.	-44553.	-55933.
LIABILITIES & S/H EQUITY	5413.	30671.	33017.	31440.	29187.	26943.	24734.	22526.	20318.	18110.



\*\*\* PHOSPHATE MINING; CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
ASSETS	15902.	13694.	11486.	9278.	7070.	4862.	2653.
CURRENT ASSETS	1232.	1230.	1229.	1228.	1227.	1226.	1225.
OPERATING CASH	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	1032.	1030.	1029.	1028.	1027.	1026.	1025.
ACC. EXCESS CASH	-0.	-0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	14671.	12464.	10257.	8050.	5843.	3636.	1429.
INVESTMENT	33430.	33430.	33430.	33430.	33430.	33430.	33430.
NON-DEPR. ASSETS	325.	325.	325.	325.	325.	325.	325.
DEPRECIABLE ASSETS	30097.	30097.	30097.	30097.	30097.	30097.	30097.
INTEREST DRG CONSTR.	3008.	3008.	3008.	3008.	3008.	3008.	3008.
LESS: ACC. DEPRECIATION	18759.	20966.	23173.	25380.	27587.	29794.	32001.
LIABILITIES	76161.	89662.	105996.	125731.	149546.	178256.	212843.
CURRENT LIABILITIES	66238.	81543.	99682.	121220.	146839.	177354.	212843.
ACCOUNT PAYABLE	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	1804.	1804.	1804.	1804.	1804.	1804.	902.
SHORT TERM DEBT	64334.	79639.	97778.	119316.	144935.	175450.	211841.
FIXED LIABILITIES	9923.	8119.	6315.	4511.	2706.	902.	0.
LONG TERM DEBT BALANCE	9923.	8119.	6315.	4511.	2706.	902.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	-60259.	-75968.	-94511.	-116453.	-142476.	-173395.	-210189.
SHARE CAPITAL	9021.	9021.	9021.	9021.	9021.	9021.	9021.
ACC. RETAINED EARNINGS	-69280.	-84989.	-103532.	-125474.	-151497.	-182416.	-219210.
LIABILITIES & S/H EQUITY	15902.	13694.	11486.	9278.	7070.	4862.	2653.

\*\*\* PHOSPHATE MINING CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 LONG TERM DEBT  
 - BASE CASE - (USD 1000)

YEAR	SER. NO	PRINCIPAL	INTEREST	DEBT SERVICE	BALANCE AFT. PAYMENT
1989	1	0.	0.	0.	4059.
1990	2	0.	0.	0.	23004.
1991	3	902.	1380.	2282.	26161.
1992	4	1804.	3139.	4944.	24357.
1993	5	1804.	2923.	4727.	22552.
1994	6	1804.	2706.	4510.	20748.
1995	7	1804.	2490.	4294.	18944.
1996	8	1804.	2273.	4077.	17140.
1997	9	1804.	2057.	3861.	15336.
1998	10	1804.	1840.	3644.	13531.
1999	11	1804.	1624.	3428.	11727.
2000	12	1804.	1407.	3211.	9923.
2001	13	1804.	1191.	2995.	8119.
2002	14	1804.	974.	2778.	6315.
2003	15	1804.	758.	2562.	4510.
2004	16	1804.	541.	2345.	2706.
2005	17	1804.	325.	2129.	902.
TOTAL		26161.	25629.	51789.	902.

\*\*\* PHOSPHATE MINING CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 (USD 1000)  
 - BASE CASE -

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(4) AFT TAX PROFIT -TO- S/CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-83.1	-33.5	-6.8	-25.1	0.36	0.05	0.10	78 / 22	473.2	355.3	442.2
1992	-72.5	-270.1	-14.8	-54.7	0.19	0.03	0.08	93 / 7	475.9	313.9	446.7
1993	-69.6	147.3	-17.0	-63.0	0.10	0.02	-0.12	123 / -23	379.7	295.5	359.0
1994	-69.7	62.1	-18.9	-70.1	0.07	0.01	-0.31	216 / **	422.8	296.7	402.1
1995	-79.8	41.5	-21.6	-80.2	0.05	0.01	-0.59	** / **	471.6	315.5	450.9
1996	-92.3	32.5	-25.0	-92.8	0.04	0.01	-0.95	** / 247	530.1	338.1	509.4
1997	-107.4	27.4	-29.1	-108.0	0.03	0.00	-1.42	-62 / 162	600.2	365.2	579.6
1998	-125.4	24.3	-34.0	-126.2	0.02	0.00	-2.01	-33 / 133	684.5	397.8	663.8
1999	-147.1	22.2	-39.9	-148.0	0.02	0.00	-2.78	-20 / 120	785.5	436.8	764.8
2000	-173.2	20.7	-47.0	-174.1	0.02	0.00	-3.77	-12 / 112	906.8	483.7	886.1
2001	-204.4	19.6	-55.5	-205.5	0.01	0.00	-5.06	-7 / 107	1052.3	539.9	1031.7
2002	-241.9	18.8	-65.6	-243.2	0.01	0.00	-6.75	-4 / 104	1227.0	607.4	1206.3
2003	-286.8	18.3	-77.8	-288.5	0.01	0.00	-9.00	-2 / 102	1436.6	688.3	1415.9
2004	-340.8	17.8	-92.5	-342.7	0.01	0.00	-12.01	-1 / 101	1688.1	785.5	1667.4
2005	-405.6	17.5	-110.1	-407.9	0.01	0.00	-16.09	-0 / 100	1989.8	902.0	1969.2
AVERAGE1	-166.6	11.1	-43.7	-162.0	0.06	0.01	-4.05	** / 497	874.9	474.8	853.0
AVERAGE2	-173.2	22.0	-41.0	-151.9	0.02	0.00	-3.12	-26 / 126			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)

(AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)

WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 FINANCIAL RATE OF RETURN (IN CONSTANT PRICE)  
 - BASE CASE - (USD 1000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	(1) GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	(2) GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW	(5) AFT-TAX NET IN-FLOW
							(2)-(1)	(4)-(3)	
1989	4840.	0.	4840.	0.	0.	0.	0.	-4840.	-4840.
1990	21068.	0.	21068.	0.	0.	0.	0.	-21068.	-21068.
1991	4515.	640.	5155.	-881.	1103.	222.	0.	-4933.	-4933.
1992	0.	581.	581.	-1784.	2207.	423.	0.	-158.	-158.
1993	0.	-47.	-47.	-1732.	2207.	475.	0.	521.	521.
1994	0.	-37.	-37.	-1537.	2207.	670.	0.	707.	707.
1995	0.	-1.	-1.	-1490.	2207.	717.	0.	718.	718.
1996	0.	-1.	-1.	-1479.	2207.	728.	0.	729.	729.
1997	0.	-1.	-1.	-1468.	2207.	739.	0.	740.	740.
1998	0.	-1.	-1.	-1457.	2207.	750.	0.	751.	751.
1999	0.	-1.	-1.	-1446.	2207.	761.	0.	762.	762.
2000	0.	-1.	-1.	-1435.	2207.	772.	0.	773.	773.
2001	0.	-1.	-1.	-1424.	2207.	783.	0.	784.	784.
2002	0.	-1.	-1.	-1413.	2207.	794.	0.	795.	795.
2003	0.	-1.	-1.	-1402.	2207.	805.	0.	806.	806.
2004	0.	-1.	-1.	-1391.	2207.	816.	0.	817.	817.
2005	-1429.	-1126.	-2555.	-1380.	2207.	827.	0.	3382.	3382.
	28993.	-0.	28993.	-21718.	32001.	10283.	0.	-18710.	-18710.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -8.00 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -8.00 PER CENT

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 FUNDS FLOW STATEMENTS  
 -- LOW INTEREST CASE -- (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	5103.	23812.	5319.	424.	486.	837.	1209.	2239.	4075.	6215.
CASH GENERATED	0.	0.	216.	424.	486.	679.	724.	735.	745.	755.
PROFIT AFT. TAX, BFR INT.	0.	0.	-818.	-1645.	-1584.	-1390.	-1345.	-1335.	-1324.	-1314.
DEPRECIATION AND AMORTIZATION	0.	0.	1035.	2069.	2069.	2069.	2069.	2069.	2069.	2069.
FINANCIAL RESOURCES	5103.	23812.	5103.	0.	0.	158.	485.	1504.	3330.	5459.
SHARE CAPITAL	1276.	5953.	1276.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	3827.	17859.	3827.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	158.	485.	1504.	3330.	5459.
USES OF FUNDS	4981.	21727.	5719.	1593.	976.	985.	1209.	2239.	4075.	6215.
FIXED CAPITAL EXPENDITURE	4981.	21727.	4656.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	325.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	4515.	21068.	4515.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	141.	659.	141.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	630.	573.	-44.	-36.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	434.	1021.	1021.	1021.	1210.	2240.	4076.	6216.
REPAYMENT OF LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.	638.	1276.	1276.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	158.	485.	1504.	3330.
INTEREST ON LONG TERM DEBT	0.	0.	434.	1021.	1021.	1021.	1021.	1021.	995.	944.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	32.	97.	301.	666.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	122.	2085.	-400.	-1169.	-490.	-148.	0.	0.	0.	0.
BEGINNING CASH BALANCE	0.	122.	2207.	1807.	638.	148.	0.	0.	0.	0.
ENDING CASH BALANCE	122.	2207.	1807.	638.	148.	0.	0.	0.	0.	0.

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*

FUNDS FLOW STATEMENTS

- LOW INTEREST CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	8719.	11660.	15126.	19223.	24075.	29833.	36681.
CASH GENERATED	766.	776.	786.	797.	807.	817.	828.
PROFIT AFT. TAX; BFR INT.	-1304.	-1293.	-1283.	-1273.	-1262.	-1252.	-1241.
DEPRECIATION AND AMORTIZATION	2069.	2069.	2069.	2069.	2069.	2069.	2069.
FINANCIAL RESOURCES	7953.	10884.	14340.	18426.	23268.	29016.	35853.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	7953.	10884.	14340.	18426.	23268.	29016.	35853.
USES OF FUNDS	8719.	11660.	15126.	19223.	24075.	29833.	36681.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	8720.	11661.	15128.	19224.	24076.	29835.	36682.
REPAYMENT OF LONG TERM DEBT	1276.	1276.	1276.	1276.	1276.	1276.	1276.
REPAYMENT OF SHORT TERM DEBT	5459.	7953.	10884.	14340.	18426.	23268.	29016.
INTEREST ON LONG TERM DEBT	893.	842.	791.	740.	689.	638.	587.
INTEREST ON SHORT TERM DEBT	1092.	1591.	2177.	2868.	3685.	4654.	5803.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	-0.	-0.	-0.	-0.	-0.	-0.	-0.
BEGINNING CASH BALANCE	0.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-46.0	-17.3	-4.0	-14.7	13.60	2.00	0.50	78 / 22	316.4	232.7	157.5
1992	-39.2	-58.1	-8.5	-31.3	13.03	2.00	0.42	85 / 15	311.0	209.6	161.1
1993	-31.9	-131.3	-8.3	-30.6	12.58	2.00	0.48	93 / 7	221.5	190.8	115.2
1994	-26.6	563.9	-7.7	-28.3	4.74	0.78	0.67	102 / -2	222.0	186.1	115.7
1995	-26.4	84.9	-7.6	-28.2	1.00	0.16	0.68	113 / -13	223.1	186.5	116.8
1996	-27.0	46.5	-7.8	-28.8	0.42	0.07	0.38	129 / -29	225.9	200.2	152.4
1997	-28.9	33.2	-8.4	-30.8	0.26	0.04	0.20	155 / -55	234.5	216.2	193.8
1998	-32.2	27.0	-9.3	-34.4	0.18	0.03	0.04	206 / **	250.1	222.2	209.4
1999	-36.2	23.3	-10.5	-38.7	0.13	0.02	-0.15	349 / **	268.8	229.5	228.1
2000	-41.1	20.9	-11.9	-43.8	0.10	0.02	-0.38	** / **	291.3	238.2	250.6
2001	-46.9	19.2	-13.6	-50.0	0.08	0.01	-0.67	** / 454	318.3	248.6	277.5
2002	-53.8	18.1	-15.6	-57.4	0.06	0.01	-1.03	** / 245	350.6	261.1	309.9
2003	-62.1	17.3	-18.0	-66.3	0.05	0.01	-1.47	-82 / 182	389.4	276.1	348.7
2004	-72.1	16.7	-20.9	-76.9	0.04	0.01	-2.00	-52 / 152	436.0	294.1	395.3
2005	-84.1	16.3	-24.3	-89.7	0.03	0.01	-2.67	-35 / 135	491.9	315.7	451.2
AVERAGE1	-43.6	45.4	-11.8	-43.3	3.09	0.48	-0.33	229 / **	303.4	233.8	232.2
AVERAGE2	-43.7	27.0	-11.0	-40.6	0.11	0.02	-0.51	261 / **			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)  
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE  
 OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

\*\*\* PHOSPHATE MINING, CONCENTRATION & FUSED MAGNESIUM PHOSPHATE \*\*\*  
 FINANCIAL RATE OF RETURN (IN CONSTANT PRICE)  
 - LOW INTEREST CASE - (USD 1000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	GROSS CASH IN-FLOW	INCOME TAX	BFR-TAX NET IN-FLOW	AFT-TAX NET IN-FLOW
			(1)	(2)	(3)	(4)	(5)	(2)-(1)	(4)-(3)
1989	4840.	0.	4840.	0.	0.	0.	0.	-4840.	-4840.
1990	21068.	0.	21068.	0.	0.	0.	0.	-21068.	-21068.
1991	4515.	630.	5144.	-818.	1035.	216.	0.	-4928.	-4928.
1992	0.	573.	573.	-1645.	2069.	424.	0.	-148.	-148.
1993	0.	-44.	-44.	-1584.	2069.	486.	0.	530.	530.
1994	0.	-36.	-36.	-1390.	2069.	679.	0.	715.	715.
1995	0.	-1.	-1.	-1345.	2069.	724.	0.	725.	725.
1996	0.	-1.	-1.	-1335.	2069.	735.	0.	736.	736.
1997	0.	-1.	-1.	-1324.	2069.	745.	0.	746.	746.
1998	0.	-1.	-1.	-1314.	2069.	755.	0.	756.	756.
1999	0.	-1.	-1.	-1304.	2069.	766.	0.	767.	767.
2000	0.	-1.	-1.	-1293.	2069.	776.	0.	777.	777.
2001	0.	-1.	-1.	-1283.	2069.	786.	0.	787.	787.
2002	0.	-1.	-1.	-1273.	2069.	797.	0.	798.	798.
2003	0.	-1.	-1.	-1262.	2069.	807.	0.	808.	808.
2004	0.	-1.	-1.	-1252.	2069.	817.	0.	818.	818.
2005	-1360.	-112.	-2472.	-1241.	2069.	828.	0.	3299.	3299.
	29062.	-0.	29062.	-19662.	30003.	10342.	0.	-18721.	-18721.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -8.04 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -8.04 PER CENT



Annex IV-1 PROJECT FINANCIAL ANALYSIS DETAILS (5/5)

Financial Analysis Data

Project Title : Phosphate Mining and Concentrate Project and  
Single Super Phosphate Project

Project Location: Chilembwe and Kafue, Zambia

1. Base Case (Interest Rate: 12%/Year)

- Production and Sales Plan
- Production Cost Statements
- Income Statements
- Funds Flow Statements
- Balance Sheet
- Profitability and Financial Indicators
  - Profit Ratio
    - Sales Revenue
    - Investment
    - Share Holder Equity
    - Share Capital
  - Current Ratio (Assets/Liability)
  - Quick Ratio (Cash + Receivable)/(Liability)
  - Debt Service Ratio (Depreciation + Interest + Net Profit)/(Repayment + Interest)
  - Long Term Debt to Share Holder Equity
  - Break Even Point
    - Profit/Capacity Utilization
    - Cash/Capacity Utilization
    - Cash/Sales Price
- Financial Rate of Return by Discounted Cash Flow (in terms of constant prices)
  - Return on Investment, FIRR/ROI
    - Before Tax
    - After Tax
- Sensitivity Analysis
  - Product Price
  - Investment Cost
  - Raw Material Cost
  - Utility and Transport Cost

2. Low Interest Rate Case (Interest Rate: 4%/Year)

- Funds Flow Statements
- Profitability and Financial Indicators
- Financial Rate of Return (In Terms of Constant Price)

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
RATED CAPACITY	0.	0.	57205.	57205.	57205.	57205.	57205.	57205.	57205.	57205.
CAPACITY UTILIZATION	0.0	0.0	0.350	0.800	0.900	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	0.	0.	20022.	45764.	51484.	57205.	57205.	57205.	57205.	57205.
INCREASE IN INVENTORY	0.	0.	2860.	2860.	0.	0.	0.	0.	0.	0.
SALES VOLUME	0.0	0.0	17162.	42904.	51484.	57205.	57205.	57205.	57205.	57205.
UNIT SALES PRICE	0.0	0.0	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500
SALES REVENUE	0.	0.	2574.	6436.	7723.	8581.	8581.	8581.	8581.	8581.
TOTAL SALES REVENUE	0.	0.	2574.	6436.	7723.	8581.	8581.	8581.	8581.	8581.

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
RATED CAPACITY	57205.	57205.	57205.	57205.	57205.	57205.	57205.
CAPACITY UTILIZATION	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	57205.	57205.	57205.	57205.	57205.	57205.	57205.
INCREASE IN INVENTORY	0.	0.	0.	0.	0.	0.	0.
SALES VOLUME	57205.	57205.	57205.	57205.	57205.	57205.	57205.
UNIT SALES PRICE	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500
SALES REVENUE	8581.	8581.	8581.	8581.	8581.	8581.	8581.
TOTAL SALES REVENUE	8581.	8581.	8581.	8581.	8581.	8581.	8581.

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 PRODUCTION COST STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
PRODUCTION (VOLUME)	0.	0.	20022.	45764.	51484.	57205.	57205.	57205.	57205.	57205.
RAW MATERIAL COST	0.	0.	1165.	2663.	2996.	3329.	3329.	3329.	3329.	3329.
RAW ORE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SULFURIC ACID, 100% H2SO4	0.	0.	894.	2043.	2299.	2554.	2554.	2554.	2554.	2554.
CALEIUM HYDROXIDE	0.	0.	6.	14.	16.	18.	18.	18.	18.	18.
CATALYST/CHEMICALS	0.	0.	265.	606.	681.	757.	757.	757.	757.	757.
UTILITIES COST	0.	0.	998.	2282.	2567.	2852.	2852.	2852.	2852.	2852.
RAW WATER	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TRANSPORT CHARGES	0.	0.	905.	2069.	2327.	2586.	2586.	2586.	2586.	2586.
FUEL OIL	0.	0.	60.	138.	155.	172.	172.	172.	172.	172.
ELECTRICITY	0.	0.	33.	75.	85.	94.	94.	94.	94.	94.
VARIABLE COST	0.	0.	2163.	4945.	5563.	6181.	6181.	6181.	6181.	6181.
EMPLOYMENT COST	0.	0.	198.	397.	397.	397.	397.	397.	397.	397.
LABOUR COST	0.	0.	153.	305.	305.	305.	305.	305.	305.	305.
OVERHEAD	0.	0.	46.	92.	92.	92.	92.	92.	92.	92.
MAINTENANCE COST	0.	0.	229.	459.	459.	459.	459.	459.	459.	459.
INSURANCE/PROPERTY TAX	0.	0.	75.	140.	129.	119.	109.	99.	88.	78.
DIRECT FIXED COST	0.	0.	502.	995.	984.	974.	964.	954.	943.	933.
CASH FACTORY COST	0.	0.	2666.	5939.	6547.	7155.	7145.	7135.	7125.	7114.
DEPRECIABLE ASSETS(PLANTS)	0.	0.	899.	1798.	1798.	1798.	1798.	1798.	1798.	1798.
DEPRECIABLE ASSETS(PRE-OPE)	0.	0.	31.	63.	63.	63.	63.	63.	63.	63.
INTEREST DURING CONSTRUCTION	0.	0.	93.	186.	186.	186.	186.	186.	186.	186.
DEPRECIATION AND AMORTIZATION	0.	0.	1023.	2047.	2047.	2047.	2047.	2047.	2047.	2047.
TOTAL FACTORY COST	0.	0.	3689.	7986.	8594.	9202.	9192.	9182.	9171.	9161.
UNIT FACTORY COST	0.0	0.0	0.1843	0.1745	0.1669	0.1609	0.1607	0.1605	0.1603	0.1601
SALES EXPENSES	0.	0.	57.	142.	171.	190.	190.	190.	190.	190.
OPERATING EXPENSES	0.	0.	3746.	8128.	8765.	9392.	9381.	9371.	9361.	9351.
INTEREST ON LONG TERM DEBT	0.	0.	1314.	2989.	2783.	2577.	2371.	2165.	1958.	1752.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	681.	1516.	2431.	3486.	4709.	6132.
TOTAL PRODUCTION COST	0.0	0.0	5060.	11118.	12229.	13485.	14184.	15022.	16028.	17235.
UNIT PRODUCTION COST	0.0	0.0	0.2527	0.2429	0.2375	0.2357	0.2479	0.2626	0.2802	0.3013

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 PRODUCTION COST STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
PRODUCTION (VOLUME)	57205.	57205.	57205.	57205.	57205.	57205.	57205.
RAW MATERIAL COST	3329.	3329.	3329.	3329.	3329.	3329.	3329.
RAW ORE	0.	0.	0.	0.	0.	0.	0.
SULFURIC ACID:100% H2SO4	2554.	2554.	2554.	2554.	2554.	2554.	2554.
CALEIUM HYDROXIDE	18.	18.	18.	18.	18.	18.	18.
CATALYST/CHEMICALS	757.	757.	757.	757.	757.	757.	757.
UTILITIES COST	2852.	2852.	2852.	2852.	2852.	2852.	2852.
RAW WATER	0.	0.	0.	0.	0.	0.	0.
TRANSPORT CHARGES	2586.	2586.	2586.	2586.	2586.	2586.	2586.
FUEL OIL	172.	172.	172.	172.	172.	172.	172.
ELECTRICITY	94.	94.	94.	94.	94.	94.	94.
VARIABLE COST	6181.	6181.	6181.	6181.	6181.	6181.	6181.
EMPLOYMENT COST	397.	397.	397.	397.	397.	397.	397.
LABOUR COST	305.	305.	305.	305.	305.	305.	305.
OVERHEAD	92.	92.	92.	92.	92.	92.	92.
MAINTENANCE COST	459.	459.	459.	459.	459.	459.	459.
INSURANCE/PROPERTY TAX	68.	58.	47.	37.	27.	17.	7.
DIRECT FIXED COST	923.	913.	982.	892.	882.	872.	862.
CASH FACTORY COST	7104.	7094.	7084.	7073.	7063.	7053.	7043.
DEPRECIABLE ASSETS(PLANTS)	1798.	1798.	1798.	1798.	1798.	1798.	1798.
DEPRECIABLE ASSETS(PRE-OPE)	63.	63.	63.	63.	63.	63.	63.
INTEREST DURING CONSTRUCTION	186.	186.	186.	186.	186.	186.	186.
DEPRECIATION AND AMORTIZATION	2047.	2047.	2047.	2047.	2047.	2047.	2047.
TOTAL FACTORY COST	9151.	9141.	9130.	9120.	9110.	9100.	9089.
UNIT FACTORY COST	0.1600	0.1598	0.1596	0.1594	0.1592	0.1591	0.1589
SALES EXPENSES	190.	190.	190.	190.	190.	190.	190.
OPERATING EXPENSES	9340.	9330.	9320.	9310.	9300.	9289.	9279.
INTEREST ON LONG TERM DEBT	1546.	1340.	1134.	928.	722.	515.	309.
INTEREST ON SHORT TERM DEBT	7798.	9752.	12055.	14775.	17996.	21817.	26359.
TOTAL PRODUCTION COST	18684.	20423.	22509.	25012.	28017.	31622.	35948.
UNIT PRODUCTION COST	0.3266	0.3570	0.3935	0.4372	0.4898	0.5528	0.6284

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
OPERATING INCOME	0.	0.	2574.	6436.	7723.	8581.	8581.	8581.	8581.	8581.
TOTAL SALES REVENUE	0.	0.	2574.	6436.	7723.	8581.	8581.	8581.	8581.	8581.
COST OF SALES	0.	0.	3162.	7515.	8637.	9237.	9193.	9183.	9172.	9162.
VARIABLE COST	0.	0.	2163.	4945.	5563.	6181.	6181.	6181.	6181.	6181.
DIRECT FIXED COST	0.	0.	502.	995.	984.	974.	964.	954.	943.	933.
DEPRECIATION AND AMORTIZATION	0.	0.	1023.	2047.	2047.	2047.	2047.	2047.	2047.	2047.
INC. IN PRODUCT INVENTORY	0.	0.	527.	471.	-43.	-35.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	0.	0.	-588.	-1079.	-915.	-656.	-612.	-602.	-592.	-581.
SALES EXPENSES	0.	0.	57.	142.	171.	190.	190.	190.	190.	190.
OPERATING PROFIT	0.	0.	-645.	-1222.	-1085.	-846.	-802.	-791.	-781.	-771.
NON-OPERATING EXPENSES	0.	0.	1314.	2989.	3464.	4093.	4802.	5651.	6667.	7885.
INTEREST ON LONG TERM DEBT	0.	0.	1314.	2989.	2783.	2577.	2371.	2165.	1958.	1752.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	681.	1516.	2431.	3486.	4709.	6132.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	-1959.	-4211.	-4549.	-4939.	-5604.	-6442.	-7448.	-8656.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	-1959.	-4211.	-4549.	-4939.	-5604.	-6442.	-7448.	-8656.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	0.	0.	-1959.	-4211.	-4549.	-4939.	-5604.	-6442.	-7448.	-8656.

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
OPERATING INCOME	8581.	8581.	8581.	8581.	8581.	8581.	8581.
TOTAL SALES REVENUE	8581.	8581.	8581.	8581.	8581.	8581.	8581.
COST OF SALES	9152.	9142.	9131.	9121.	9111.	9101.	9090.
VARIABLE COST	6181.	6181.	6181.	6181.	6181.	6181.	6181.
DIRECT FIXED COST	923.	913.	902.	892.	882.	872.	862.
DEPRECIATION AND AMORTIZATION	2047.	2047.	2047.	2047.	2047.	2047.	2047.
INC. IN PRODUCT INVENTORY	-1.	-1.	-1.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	-571.	-561.	-551.	-540.	-530.	-520.	-510.
SALES EXPENSES	190.	190.	190.	190.	190.	190.	190.
OPERATING PROFIT	-761.	-750.	-740.	-730.	-720.	-710.	-699.
NON-OPERATING EXPENSES	9344.	11092.	13189.	15703.	18717.	22332.	26668.
INTEREST ON LONG TERM DEBT	1546.	1348.	1134.	928.	722.	515.	309.
INTEREST ON SHORT TERM DEBT	7798.	9752.	12055.	14775.	17996.	21817.	26359.
NET PROFIT OR (LOSS) BEFORE TAX	-10104.	-11843.	-13929.	-16433.	-19437.	-23042.	-27368.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	-10104.	-11843.	-13929.	-16433.	-19437.	-23042.	-27368.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	-10104.	-11843.	-13929.	-16433.	-19437.	-23042.	-27368.

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	5154.	24051.	5532.	4230.	8543.	13358.	18676.	24799.	31928.	40264.
CASH GENERATED	0.	0.	379.	825.	961.	1201.	1245.	1255.	1266.	1276.
PROFIT AFT. TAX, BFR INT. DEPRECIATION AND AMORTIZATION	0.	0.	-645.	-1222.	-1085.	-846.	-802.	-791.	-781.	-771.
FINANCIAL RESOURCES	5154.	24051.	5154.	3405.	7582.	12157.	17431.	23544.	30662.	38988.
SHARE CAPITAL	1288.	6013.	1288.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	3865.	18038.	3865.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	3405.	7582.	12157.	17431.	23544.	30662.	38988.
USES OF FUNDS	4892.	21491.	7355.	5228.	8543.	13358.	18676.	24799.	31928.	40264.
FIXED CAPITAL EXPENDITURE	4892.	21491.	4605.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	287.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	4187.	19539.	4187.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	418.	1952.	418.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	577.	521.	-43.	-35.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	2173.	4707.	8587.	13393.	18677.	24800.	31929.	40265.
REPAYMENT OF LONG TERM DEBT	0.	0.	859.	1718.	1718.	1718.	1718.	1718.	1718.	1718.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	3405.	7582.	12157.	17431.	23544.	30662.
INTEREST ON LONG TERM DEBT	0.	0.	1314.	2989.	2783.	2577.	2371.	2165.	1958.	1752.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	681.	1516.	2431.	3486.	4709.	6132.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	262.	2560.	-1823.	-998.	-0.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	0.	262.	2821.	998.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	262.	2821.	998.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	50048.	61572.	75181.	91294.	110411.	133134.	160182.
CASH GENERATED	1286.	1296.	1306.	1317.	1327.	1337.	1347.
PROFIT AFT. TAX, BFR INT.	-761.	-750.	-740.	-730.	-720.	-710.	-699.
DEPRECIATION AND AMORTIZATION	2047.	2047.	2047.	2047.	2047.	2047.	2047.
FINANCIAL RESOURCES	48762.	60275.	73875.	89978.	109084.	131796.	158834.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	48762.	60275.	73875.	89978.	109084.	131796.	158834.
USES OF FUNDS	50048.	61572.	75181.	91294.	110411.	133134.	160182.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	50049.	61573.	75182.	91295.	110412.	133135.	160183.
REPAYMENT OF LONG TERM DEBT	1718.	1718.	1718.	1718.	1718.	1718.	1718.
REPAYMENT OF SHORT TERM DEBT	38988.	48762.	60275.	73875.	89978.	109084.	131796.
INTEREST ON LONG TERM DEBT	1546.	1340.	1134.	928.	722.	515.	309.
INTEREST ON SHORT TERM DEBT	7798.	9752.	12055.	14775.	17996.	21817.	26359.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	0.	0.	-0.	-0.	-0.	-0.	-0.
BEGINNING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.



\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ASSETS	5154.	29204.	31590.	29116.	27026.	24945.	22897.	20849.	18801.	16754.
CURRENT ASSETS	0.	0.	627.	1198.	1155.	1120.	1119.	1118.	1117.	1116.
OPERATING CASH	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	0.	0.	527.	998.	955.	920.	919.	918.	917.	916.
ACC. EXCESS CASH	262.	2821.	998.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	4892.	26383.	29965.	27918.	25871.	23824.	21778.	19731.	17684.	15638.
INVESTMENT	4892.	26383.	30988.	30988.	30988.	30988.	30988.	30988.	30988.	30988.
NON-DEPR. ASSETS	287.	287.	287.	287.	287.	287.	287.	287.	287.	287.
DEPRECIABLE ASSETS	4187.	23726.	27913.	27913.	27913.	27913.	27913.	27913.	27913.	27913.
INTEREST DRG CONSTR.	418.	2370.	2788.	2788.	2788.	2788.	2788.	2788.	2788.	2788.
LESS: ACC. DEPRECIATION	0.	0.	1023.	3070.	5117.	7164.	9210.	11257.	13304.	15350.
LIABILITIES	3865.	21903.	24960.	26696.	29156.	32013.	35569.	39964.	45364.	51972.
CURRENT LIABILITIES	0.	859.	1768.	5223.	9400.	13975.	19249.	25362.	32480.	40806.
ACCOUNT PAYABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	0.	859.	1718.	1718.	1718.	1718.	1718.	1718.	1718.	1718.
SHORT TERM DEBT	0.	0.	0.	3405.	7582.	12157.	17431.	23544.	30662.	38988.
FIXED LIABILITIES	3865.	21044.	23192.	21474.	19756.	18038.	16320.	14602.	12884.	11166.
LONG TERM DEBT BALANCE	3865.	21044.	23192.	21474.	19756.	18038.	16320.	14602.	12884.	11166.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	1288.	7301.	6630.	2420.	-2130.	-7069.	-12672.	-19115.	-26563.	-35219.
SHARE CAPITAL	1288.	7301.	8589.	8589.	8589.	8589.	8589.	8589.	8589.	8589.
ACC. RETAINED EARNINGS	0.	0.	-1959.	-6170.	-10719.	-15658.	-21262.	-27704.	-35152.	-43808.
LIABILITIES & S/H EQUITY	5154.	29204.	31590.	29116.	27026.	24945.	22897.	20849.	18801.	16754.

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
ASSETS	14706.	12658.	10610.	8563.	6515.	4467.	2419.
CURRENT ASSETS	1115.	1114.	1113.	1112.	1111.	1110.	1109.
OPERATING CASH	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	915.	914.	913.	912.	911.	910.	909.
ACC. EXCESS CASH	-0.	-0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	13591.	11544.	9497.	7451.	5404.	3357.	1310.
INVESTMENT	30988.	30988.	30988.	30988.	30988.	30988.	30988.
NON-DEPR. ASSETS	287.	287.	287.	287.	287.	287.	287.
DEPRECIABLE ASSETS	27913.	27913.	27913.	27913.	27913.	27913.	27913.
INTEREST DRG CONSTR.	2788.	2788.	2788.	2788.	2788.	2788.	2788.
LESS: ACC. DEPRECIATION	17397.	19444.	21491.	23537.	25584.	27631.	29678.
LIABILITIES	60029.	69824.	81705.	96090.	113479.	134473.	159793.
CURRENT LIABILITIES	50580.	62093.	75693.	91795.	110902.	133614.	159793.
ACCOUNT PAYABLE	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	1718.	1718.	1718.	1718.	1718.	1718.	859.
SHORT TERM DEBT	48762.	60275.	73875.	89978.	109084.	131796.	158834.
FIXED LIABILITIES	9448.	7731.	6013.	4295.	2577.	859.	0.
LONG TERM DEBT BALANCE	9448.	7731.	6013.	4295.	2577.	859.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	-45323.	-57166.	-71095.	-87528.	-106964.	-130006.	-157374.
SHARE CAPITAL	8589.	8589.	8589.	8589.	8589.	8589.	8589.
ACC. RETAINED EARNINGS	-53912.	-65755.	-79684.	-96117.	-115554.	-138596.	-165964.
LIABILITIES & S/H EQUITY	14706.	12658.	10610.	8563.	6515.	4467.	2419.

\*\*\* PHOSPHATE MINING CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 LONG TERM DEBT  
 - BASE CASE - (USD 1000)

YEAR	SER.NO	PRINCIPAL	INTEREST	DEBT SERVICE	BALANCE AFT. PAYMENT
1989	1	0.	0.	0.	3865.
1990	2	0.	0.	0.	21903.
1991	3	859.	1314.	2173.	24910.
1992	4	1718.	2989.	4707.	23192.
1993	5	1718.	2783.	4501.	21474.
1994	6	1718.	2577.	4295.	19756.
1995	7	1718.	2371.	4089.	18038.
1996	8	1718.	2165.	3882.	16320.
1997	9	1718.	1958.	3676.	14602.
1998	10	1718.	1752.	3470.	12884.
1999	11	1718.	1546.	3264.	11166.
2000	12	1718.	1340.	3058.	9448.
2001	13	1718.	1134.	2852.	7731.
2002	14	1718.	928.	2646.	6013.
2003	15	1718.	722.	2439.	4295.
2004	16	1718.	515.	2233.	2577.
2005	17	1718.	309.	2027.	859.
TOTAL		24910.	24403.	49312.	859.

AMOUNT OF DEBT 25768.

INTEREST RATE 12.000 PER CENT/YEAR

REPAYMENT 15 YEAR-EQUAL-INSTALLMENT-REPAYMENT (ANNUAL REPAYMENT)

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - BASE CASE -  
 (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-76.1	-29.5	-6.3	-22.8	0.35	0.06	0.17	78 / 22	246.8	285.3	232.8
1992	-65.4	-174.0	-13.6	-49.0	0.23	0.04	0.18	90 / 10	331.3	251.5	313.6
1993	-58.9	213.6	-14.7	-53.0	0.12	0.02	0.06	112 / -12	277.8	231.1	264.1
1994	-57.6	69.9	-15.9	-57.5	0.08	0.01	-0.07	164 / -64	304.4	230.0	290.7
1995	-65.3	44.2	-18.1	-65.2	0.06	0.01	-0.29	447 / **	333.5	242.2	319.8
1996	-75.1	33.7	-20.8	-75.0	0.04	0.01	-0.57	** / 424	368.4	256.9	354.7
1997	-86.8	28.0	-24.0	-86.7	0.03	0.01	-0.94	-94 / 194	410.4	274.4	396.6
1998	-100.9	24.6	-27.9	-100.8	0.03	0.00	-1.40	-46 / 146	460.7	295.5	447.0
1999	-117.8	22.3	-32.6	-117.6	0.02	0.00	-1.99	-26 / 126	521.0	320.9	507.3
2000	-138.0	20.7	-38.2	-137.9	0.02	0.00	-2.77	-16 / 116	593.5	351.3	579.8
2001	-162.3	19.6	-45.0	-162.2	0.01	0.00	-3.77	-9 / 109	680.4	387.7	666.7
2002	-191.5	18.8	-53.0	-191.3	0.01	0.00	-5.09	-5 / 105	784.8	431.5	771.1
2003	-226.5	18.2	-62.7	-226.3	0.01	0.00	-6.83	-2 / 102	909.9	484.0	896.2
2004	-268.5	17.7	-74.4	-268.3	0.01	0.00	-9.17	-1 / 101	1060.2	547.0	1046.5
2005	-318.9	17.4	-88.3	-318.6	0.01	0.00	-12.34	-0 / 100	1240.5	622.7	1226.8
AVERAGE1	-134.0	23.0	-35.7	-128.8	0.07	0.01	-2.99	25 / 75	568.2	347.5	554.2
AVERAGE2	-138.6	22.4	-33.5	-120.8	0.02	0.00	-2.27	-35 / 135			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)

WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 FINANCIAL RATE OF RETURN (IN CURRENT PRICE)  
 - BASE CASE -  
 (USD 1000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN (1) WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATION	GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW	(5) AFT-TAX NET IN-FLOW
							(2)-(1)	(4)-(3)	(5)-(3)
1989	4474.	0.	4474.	0.	0.	0.	-4474.	-4474.	-4474.
1990	19539.	0.	19539.	0.	0.	0.	-19539.	-19539.	-19539.
1991	4187.	577.	4764.	-645.	1023.	379.	-4385.	-4385.	-4385.
1992	0.	521.	521.	-1222.	2047.	825.	304.	304.	304.
1993	0.	-43.	-43.	-1085.	2047.	961.	1005.	1005.	1005.
1994	0.	-35.	-35.	-846.	2047.	1201.	1236.	1236.	1236.
1995	0.	-1.	-1.	-802.	2047.	1245.	1246.	1246.	1246.
1996	0.	-1.	-1.	-791.	2047.	1255.	1256.	1256.	1256.
1997	0.	-1.	-1.	-781.	2047.	1266.	1267.	1267.	1267.
1998	0.	-1.	-1.	-771.	2047.	1276.	1277.	1277.	1277.
1999	0.	-1.	-1.	-761.	2047.	1286.	1287.	1287.	1287.
2000	0.	-1.	-1.	-750.	2047.	1296.	1297.	1297.	1297.
2001	0.	-1.	-1.	-740.	2047.	1306.	1308.	1308.	1308.
2002	0.	-1.	-1.	-730.	2047.	1317.	1318.	1318.	1318.
2003	0.	-1.	-1.	-720.	2047.	1327.	1328.	1328.	1328.
2004	0.	-1.	-1.	-710.	2047.	1337.	1338.	1338.	1338.
2005	-1310.	-1010.	-2320.	-699.	2047.	1347.	3668.	3668.	3668.
	26890.	-0.	26890.	-12053.	29678.	17625.	-9265.	-9265.	-9265.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -3.84 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -3.84 PER CENT

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 FUNDS FLOW STATEMENTS  
 - LOW INTEREST CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	4866.	22709.	5240.	826.	971.	1210.	1252.	1261.	1271.	1281.
CASH GENERATED	0.	0.	373.	826.	971.	1210.	1252.	1261.	1271.	1281.
PROFIT AFT. TAX, BFR INT. DEPRECIATION AND AMORTIZATION	0.	0.	-586.	-1093.	-948.	-709.	-667.	-658.	-648.	-638.
FINANCIAL RESOURCES	4866.	22709.	4866.	1919.	1919.	1919.	1919.	1919.	1919.	1919.
SHARE CAPITAL	1217.	5677.	1217.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	3650.	17032.	3650.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS	4605.	20149.	5299.	1487.	932.	940.	972.	1581.	2165.	2116.
FIXED CAPITAL EXPENDITURE	4605.	20149.	4318.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	287.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	4187.	19539.	4187.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	131.	610.	131.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	567.	514.	-41.	-33.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	414.	973.	973.	973.	973.	1582.	2166.	2117.
REPAYMENT OF LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.	608.	1217.	1217.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON LONG TERM DEBT	0.	0.	414.	973.	973.	973.	973.	973.	949.	900.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	262.	2560.	-59.	-661.	39.	270.	280.	-319.	-894.	-835.
BEGINNING CASH BALANCE	0.	262.	2821.	2763.	2102.	2141.	2411.	2691.	2371.	1478.
ENDING CASH BALANCE	262.	2821.	2763.	2102.	2141.	2411.	2691.	2371.	1478.	643.

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 FUNDS FLOW STATEMENTS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS							
CASH GENERATED	1425.	2180.	3026.	3981.	5067.	6310.	7741.
	1290.	1300.	1309.	1319.	1329.	1338.	1348.
PROFIT AFT. TAX, BFR INT.	-629.	-619.	-610.	-600.	-590.	-581.	-571.
DEPRECIATION AND AMORTIZATION	1919.	1919.	1919.	1919.	1919.	1919.	1919.
FINANCIAL RESOURCES	134.	880.	1716.	2662.	3738.	4971.	6393.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	134.	880.	1716.	2662.	3738.	4971.	6393.
USES OF FUNDS							
FIXED CAPITAL EXPENDITURE	2067.	2180.	3026.	3981.	5067.	6310.	7741.
	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	2068.	2181.	3027.	3982.	5068.	6311.	7742.
	1217.	1217.	1217.	1217.	1217.	1217.	1217.
REPAYMENT OF LONG TERM DEBT	0.	134.	880.	1716.	2662.	3738.	4971.
REPAYMENT OF SHORT TERM DEBT	852.	803.	754.	706.	657.	608.	560.
INTEREST ON LONG TERM DEBT	0.	27.	176.	343.	532.	748.	994.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	-643.	0.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	643.	0.	0.	0.	0.	0.	0.
ENDING CASH BALANCE	0.	0.	0.	0.	0.	0.	0.

\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - LOW INTEREST CASE -  
 (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-38.8	-14.1	-3.4	-12.3	12.34	2.00	0.90	77 / 23	164.2	182.5	82.5
1992	-32.1	-40.9	-7.1	-25.5	11.81	2.00	0.85	83 / 17	215.8	164.2	112.8
1993	-24.9	-61.5	-6.6	-23.7	11.40	2.00	1.00	89 / 11	168.3	149.2	88.4
1994	-19.6	-116.7	-5.8	-20.7	11.07	2.00	1.24	94 / 6	168.7	145.3	88.8
1995	-19.1	825.7	-5.6	-20.2	1.56	0.28	1.29	101 / -1	168.3	145.1	88.4
1996	-19.0	89.1	-5.6	-20.1	0.84	0.15	0.80	109 / -9	167.9	155.6	113.3
1997	-18.6	46.6	-5.5	-19.7	0.84	0.15	0.59	119 / -19	166.5	165.6	137.2
1998	-17.9	31.0	-5.3	-19.0	0.84	0.15	0.60	133 / -33	164.1	164.6	134.8
1999	-17.3	23.0	-5.1	-18.3	0.76	0.14	0.62	152 / -52	161.7	163.6	132.4
2000	-16.9	18.4	-5.0	-17.9	0.50	0.09	0.63	181 / -81	160.3	163.0	131.1
2001	-17.9	16.3	-5.3	-17.0	0.36	0.07	0.58	235 / **	164.1	164.6	134.9
2002	-19.2	14.9	-5.7	-20.3	0.28	0.05	0.51	369 / **	168.7	166.5	139.4
2003	-20.7	13.8	-6.1	-21.9	0.22	0.04	0.43	** / **	174.1	168.8	144.9
2004	-22.6	13.1	-6.7	-23.9	0.17	0.03	0.32	** / 731	180.7	171.6	151.4
2005	-24.8	12.6	-7.3	-26.2	0.14	0.03	0.20	** / 315	188.5	174.9	159.2
AVERAGE1	-22.0	58.1	-5.7	-20.6	3.54	0.61	0.70	142 / -42	172.1	163.0	122.6
AVERAGE2	-20.9	38.5	-5.4	-19.3	0.47	0.08	0.63	126 / -26			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)  
 \* NOTE FOR (9)(10)(11)

WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.



\*\*\* PHOSPHATE MINING, CONCENTRATION & SINGLE SUPER PHOSPHATE \*\*\*  
 FINANCIAL RATE OF RETURN  
 - LOW INTEREST CASE - (US\$ 1000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	(1) GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	(2) GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW (2)-(1)	(5) AFT-TAX NET IN-FLOW (4)-(3)
1989	4474.	0.	4474.	0.	0.	0.	0.	-4474.	-4474.
1990	19539.	0.	19539.	0.	0.	0.	0.	-19539.	-19539.
1991	4187.	567.	4754.	-586.	959.	373.	0.	-4381.	-4381.
1992	0.	514.	514.	-1093.	1919.	826.	0.	312.	312.
1993	0.	-41.	-41.	-948.	1919.	971.	0.	1013.	1013.
1994	0.	-33.	-33.	-709.	1919.	1210.	0.	1243.	1243.
1995	0.	-1.	-1.	-667.	1919.	1252.	0.	1253.	1253.
1996	0.	-1.	-1.	-658.	1919.	1261.	0.	1262.	1262.
1997	0.	-1.	-1.	-648.	1919.	1271.	0.	1272.	1272.
1998	0.	-1.	-1.	-638.	1919.	1281.	0.	1282.	1282.
1999	0.	-1.	-1.	-629.	1919.	1290.	0.	1291.	1291.
2000	0.	-1.	-1.	-619.	1919.	1300.	0.	1301.	1301.
2001	0.	-1.	-1.	-610.	1919.	1309.	0.	1310.	1310.
2002	0.	-1.	-1.	-600.	1919.	1319.	0.	1320.	1320.
2003	0.	-1.	-1.	-590.	1919.	1329.	0.	1330.	1330.
2004	0.	-1.	-1.	-581.	1919.	1338.	0.	1339.	1339.
2005	-1247.	-997.	-2244.	-571.	1919.	1348.	0.	3591.	3591.
	26953.	-0.	26953.	-10146.	27825.	17679.	0.	-9274.	-9274.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -3.85 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -3.85 PER CENT



Annex IV-2 PROJECT ECONOMIC ANALYSIS DETAILS (1/2)

Economic Analysis Data

Project Title : Phosphate Mining and Concentrate Project and  
Fused Magnesium Phosphate Project

Project Location: Chilembwe and Kafue, Zambia

1. Base Case (Interest Rate: 12%/Year)

- Production and Sales Plan
- Production Cost Statements
- Income Statements
- Funds Flow Statements
- Balance Sheet
- Profitability and Financial Indicators
  - Profit Ratio
    - Sales Revenue
    - Investment
    - Share Holder Equity
    - Share Capital
  - Current Ratio (Assets/Liability)
  - Quick Ratio (Cash + Receivable)/(Liability)
  - Debt Service Ratio (Depreciation + Interest + Net Profit)/(Repayment + Interest)
  - Long Term Debt to Share Holder Equity
  - Break Even Point
    - Profit/Capacity Utilization
    - Cash/Capacity Utilization
    - Cash/Sales Price
- Economic Rate of Return by Discounted Cash Flow  
(in terms of constant prices)
  - Return on Investment

2. Low Interest Rate Case (Interest Rate: 4%/Year)

- Funds Flow Statements
- Profitability and Financial Indicators
- Economic Rate of Return (In Terms of Constant Price)

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
RATED CAPACITY	0.	0.	50400.	50400.	50400.	50400.	50400.	50400.	50400.	50400.
CAPACITY UTILIZATION	0.0	0.0	0.350	0.800	0.900	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	0.	0.	17640.	40320.	45360.	50400.	50400.	50400.	50400.	50400.
INCREASE IN INVENTORY	0.	0.	2520.	2520.	0.	0.	0.	0.	0.	0.
SALES VOLUME	0.	0.	15120.	37800.	45360.	50400.	50400.	50400.	50400.	50400.
UNIT SALES PRICE	0.0	0.0	0.1440	0.1440	0.1440	0.1440	0.1440	0.1440	0.1440	0.1440
SALES REVENUE	0.	0.	2177.	5443.	6532.	7258.	7258.	7258.	7258.	7258.
TOTAL SALES REVENUE	0.	0.	2177.	5443.	6532.	7258.	7258.	7258.	7258.	7258.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -

YEAR	1999	2000	2001	2002	2003	2004	2005
RATED CAPACITY	50400.	50400.	50400.	50400.	50400.	50400.	50400.
CAPACITY UTILIZATION	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	50400.	50400.	50400.	50400.	50400.	50400.	50400.
INCREASE IN INVENTORY	0.	0.	0.	0.	0.	0.	0.
SALES VOLUME	50400.	50400.	50400.	50400.	50400.	50400.	50400.
UNIT SALES PRICE	0.1440	0.1440	0.1440	0.1440	0.1440	0.1440	0.1440
SALES REVENUE	7258.	7258.	7258.	7258.	7258.	7258.	7258.
TOTAL SALES REVENUE	7258.	7258.	7258.	7258.	7258.	7258.	7258.

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
PRODUCTION (VOLUME)	0.	0.	17640.	40320.	45360.	50400.	50400.	50400.	50400.	50400.
RAW MATERIAL COST	0.	0.	1036.	2369.	2665.	2961.	2961.	2961.	2961.	2961.
RAW ORE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SERPENTINE, DRY	0.	0.	241.	551.	620.	689.	689.	689.	689.	689.
CALCIUM HYDROXIDE	0.	0.	5.	10.	12.	13.	13.	13.	13.	13.
ELECTRODE	0.	0.	265.	606.	681.	757.	757.	757.	757.	757.
CATALYST/CHEMICALS	0.	0.	251.	574.	646.	718.	718.	718.	718.	718.
PACKAGING	0.	0.	274.	627.	706.	784.	784.	784.	784.	784.
UTILITIES COST	0.	0.	992.	2267.	2551.	2834.	2834.	2834.	2834.	2834.
RAW WATER	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TRANSPORT CHARGES	0.	0.	686.	1572.	1768.	1965.	1965.	1965.	1965.	1965.
FUEL/DIESEL OIL	0.	0.	115.	262.	295.	328.	328.	328.	328.	328.
ELECTRICITY	0.	0.	189.	433.	487.	541.	541.	541.	541.	541.
VARIABLE COST	0.	0.	2028.	4636.	5216.	5795.	5795.	5795.	5795.	5795.
EMPLOYMENT COST	0.	0.	143.	286.	286.	286.	286.	286.	286.	286.
LABOUR COST	0.	0.	110.	220.	220.	220.	220.	220.	220.	220.
OVERHEAD	0.	0.	33.	66.	66.	66.	66.	66.	66.	66.
MAINTENANCE COST	0.	0.	225.	450.	450.	450.	450.	450.	450.	450.
INSURANCE/PROPERTY TAX	0.	0.	65.	122.	113.	104.	95.	86.	77.	68.
DIRECT FIXED COST	0.	0.	434.	858.	849.	840.	831.	822.	813.	804.
CASH FACTORY COST	0.	0.	2462.	5494.	6065.	6635.	6626.	6617.	6608.	6599.
DEPRECIABLE ASSETS (PLANTS)	0.	0.	883.	1766.	1766.	1766.	1766.	1766.	1766.	1766.
DEPRECIABLE ASSETS (PRE-OPE)	0.	0.	20.	40.	40.	40.	40.	40.	40.	40.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	0.	0.	903.	1806.	1806.	1806.	1806.	1806.	1806.	1806.
TOTAL FACTORY COST	0.0	0.0	3365.	7300.	7870.	8441.	8432.	8423.	8414.	8405.
UNIT FACTORY COST	0.0	0.0	0.1907	0.1810	0.1735	0.1675	0.1673	0.1671	0.1669	0.1668
SALES EXPENSES	0.	0.	48.	121.	145.	161.	161.	161.	161.	161.
OPERATING EXPENSES	0.	0.	3413.	7421.	8015.	8602.	8593.	8584.	8575.	8566.
INTEREST ON LONG TERM DEBT	0.	0.	1127.	2564.	2387.	2211.	2034.	1857.	1680.	1503.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	824.	1696.	2680.	3823.	5158.	6723.
TOTAL PRODUCTION COST	0.0	0.0	4540.	9985.	11226.	12509.	13307.	14264.	15413.	16792.
UNIT PRODUCTION COST	0.0	0.0	0.2574	0.2476	0.2475	0.2482	0.2640	0.2830	0.3058	0.3332

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 PRODUCTION COST STATEMENTS  
 -- BASE CASE -- (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
PRODUCTION (VOLUME)	50400.	50400.	50400.	50400.	50400.	50400.	50400.
RAW MATERIAL COST	2961.	2961.	2961.	2961.	2961.	2961.	2961.
RAW ORE	0.	0.	0.	0.	0.	0.	0.
SERPENTINE, DRY	689.	689.	689.	689.	689.	689.	689.
CALCIUM HYDROXIDE	13.	13.	13.	13.	13.	13.	13.
ELECTRODE	757.	757.	757.	757.	757.	757.	757.
CATALYST/CHEMICALS	718.	718.	718.	718.	718.	718.	718.
PACKAGING	784.	784.	784.	784.	784.	784.	784.
UTILITIES COST	2834.	2834.	2834.	2834.	2834.	2834.	2834.
RAW WATER	0.	0.	0.	0.	0.	0.	0.
TRANSPORT CHARGES	1965.	1965.	1965.	1965.	1965.	1965.	1965.
FUEL/DIESEL OIL	328.	328.	328.	328.	328.	328.	328.
ELECTRICITY	541.	541.	541.	541.	541.	541.	541.
VARIABLE COST	5795.	5795.	5795.	5795.	5795.	5795.	5795.
EMPLOYMENT COST	286.	286.	286.	286.	286.	286.	286.
LABOUR COST	220.	220.	220.	220.	220.	220.	220.
OVERHEAD	66.	66.	66.	66.	66.	66.	66.
MAINTENANCE COST	450.	450.	450.	450.	450.	450.	450.
INSURANCE/PROPERTY TAX	59.	50.	41.	32.	23.	14.	5.
DIRECT FIXED COST	795.	786.	777.	768.	759.	750.	741.
CASH FACTORY COST	6590.	6581.	6572.	6563.	6554.	6545.	6536.
DEPRECIABLE ASSETS (PLANTS)	1766.	1766.	1766.	1766.	1766.	1766.	1766.
DEPRECIABLE ASSETS (PRE-OPE)	40.	40.	40.	40.	40.	40.	40.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	1806.	1806.	1806.	1806.	1806.	1806.	1806.
TOTAL FACTORY COST	8396.	8387.	8378.	8369.	8360.	8351.	8341.
UNIT FACTORY COST	0.1666	0.1664	0.1662	0.1660	0.1659	0.1657	0.1655
SALES EXPENSES	161.	161.	161.	161.	161.	161.	161.
OPERATING EXPENSES	8557.	8548.	8539.	8530.	8521.	8512.	8503.
INTEREST ON LONG TERM DEBT	1326.	1149.	973.	796.	619.	442.	265.
INTEREST ON SHORT TERM DEBT	8563.	10735.	13303.	16348.	19965.	24268.	29395.
TOTAL PRODUCTION COST	18447.	20432.	22815.	25674.	29105.	33222.	38163.
UNIT PRODUCTION COST	0.3660	0.4054	0.4527	0.5094	0.5775	0.6592	0.7572

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
OPERATING INCOME	0.	0.	2177.	5443.	6532.	7258.	7258.	7258.	7258.	7258.
TOTAL SALES REVENUE	0.	0.	2177.	5443.	6532.	7258.	7258.	7258.	7258.	7258.
COST OF SALES	0.	0.	2884.	6868.	7908.	8471.	8433.	8424.	8415.	8406.
VARIABLE COST	0.	0.	2028.	4636.	5216.	5795.	5795.	5795.	5795.	5795.
DIRECT FIXED COST	0.	0.	434.	858.	849.	840.	831.	822.	813.	804.
DEPRECIATION AND AMORTIZATION	0.	0.	903.	1806.	1806.	1806.	1806.	1806.	1806.	1806.
INC. IN PRODUCT INVENTORY	0.	0.	481.	432.	-38.	-30.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	0.	0.	-707.	-1425.	-1376.	-1214.	-1175.	-1166.	-1157.	-1148.
SALES EXPENSES	0.	0.	48.	121.	145.	161.	161.	161.	161.	161.
OPERATING PROFIT	0.	0.	-755.	-1546.	-1521.	-1375.	-1336.	-1327.	-1318.	-1309.
NON-OPERATING EXPENSES	0.	0.	1127.	2564.	3211.	3907.	4714.	5680.	6838.	8226.
INTEREST ON LONG TERM DEBT	0.	0.	1127.	2564.	2387.	2211.	2034.	1857.	1680.	1503.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	824.	1696.	2680.	3823.	5158.	6723.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	-1882.	-4110.	-4732.	-5281.	-6050.	-7007.	-8156.	-9535.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	-1882.	-4110.	-4732.	-5281.	-6050.	-7007.	-8156.	-9535.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	0.	0.	-1882.	-4110.	-4732.	-5281.	-6050.	-7007.	-8156.	-9535.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
OPERATING INCOME	7258.	7258.	7258.	7258.	7258.	7258.	7258.
TOTAL SALES REVENUE	7258.	7258.	7258.	7258.	7258.	7258.	7258.
COST OF SALES	8397.	8388.	8379.	8369.	8360.	8351.	8342.
VARIABLE COST	5795.	5795.	5795.	5795.	5795.	5795.	5795.
DIRECT FIXED COST	795.	786.	777.	768.	759.	750.	741.
DEPRECIATION AND AMORTIZATION	1806.	1806.	1806.	1806.	1806.	1806.	1806.
INC. IN PRODUCT INVENTORY	-1.	-1.	-1.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	-1139.	-1130.	-1121.	-1112.	-1103.	-1094.	-1085.
SALES EXPENSES	161.	161.	161.	161.	161.	161.	161.
OPERATING PROFIT	-1300.	-1291.	-1282.	-1273.	-1264.	-1255.	-1246.
NON-OPERATING EXPENSES	9890.	11884.	14276.	17144.	20584.	24711.	29660.
INTEREST ON LONG TERM DEBT	1326.	1149.	973.	796.	619.	442.	265.
INTEREST ON SHORT TERM DEBT	8563.	10735.	13303.	16348.	19965.	24268.	29395.
NET PROFIT OR (LOSS) BEFORE TAX	-11190.	-13175.	-15558.	-18417.	-21848.	-25965.	-30906.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	-11190.	-13175.	-15558.	-18417.	-21848.	-25965.	-30906.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	-11190.	-13175.	-15558.	-18417.	-21848.	-25965.	-30906.



(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*

FUNDS FLOW STATEMENTS

(USD 1000)

- BASE CASE -

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	4424.	20632.	4569.	4378.	8765.	13831.	19586.	26270.	34102.	43314.
CASH GENERATED	0.	0.	148.	260.	284.	431.	469.	478.	487.	496.
PROFIT AFT. TAX, BFR INT.	0.	0.	-755.	-1546.	-1521.	-1375.	-1336.	-1327.	-1318.	-1309.
DEPRECIATION AND AMORTIZATION	0.	0.	903.	1806.	1806.	1806.	1806.	1806.	1806.	1806.
FINANCIAL RESOURCES	4421.	20632.	4421.	4118.	8481.	13400.	19117.	25791.	33615.	42817.
SHARE CAPITAL	1105.	5158.	1105.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	3316.	15474.	3316.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	4118.	8481.	13400.	19117.	25791.	33615.	42817.
USES OF FUNDS	4064.	18959.	6457.	4520.	8765.	13831.	19586.	26270.	34102.	43314.
FIXED CAPITAL EXPENDITURE	4064.	18959.	4063.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	4062.	18958.	4062.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	531.	482.	-38.	-30.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	1864.	4038.	8803.	13861.	19587.	26271.	34103.	43315.
REPAYMENT OF LONG TERM DEBT	0.	0.	737.	1474.	1474.	1474.	1474.	1474.	1474.	1474.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	4118.	8481.	13400.	19117.	25791.	33615.
INTEREST ON LONG TERM DEBT	0.	0.	1127.	2564.	2387.	2211.	2034.	1857.	1680.	1503.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	824.	1695.	2680.	3823.	5158.	6723.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	357.	1673.	-1889.	-142.	-0.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	0.	357.	2030.	142.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	357.	2030.	142.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	54180.	67031.	82266.	100359.	121884.	147525.	178108.
CASH GENERATED	506.	515.	524.	533.	542.	551.	560.
PROFIT AFT. TAX, BFR INT.	-1300.	-1291.	-1282.	-1273.	-1264.	-1255.	-1246.
DEPRECIATION AND AMORTIZATION	1806.	1806.	1806.	1806.	1806.	1806.	1806.
FINANCIAL RESOURCES	53674.	66517.	81742.	99827.	121342.	146975.	177548.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	53674.	66517.	81742.	99827.	121342.	146975.	177548.
USES OF FUNDS	54180.	67031.	82266.	100359.	121884.	147525.	178108.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	54181.	67032.	82267.	100360.	121885.	147526.	178109.
REPAYMENT OF LONG TERM DEBT	1474.	1474.	1474.	1474.	1474.	1474.	1474.
REPAYMENT OF SHORT TERM DEBT	42817.	53674.	66517.	81742.	99827.	121342.	146975.
INTEREST ON LONG TERM DEBT	1326.	1149.	973.	796.	619.	442.	265.
INTEREST ON SHORT TERM DEBT	8563.	10735.	13303.	16348.	19965.	24268.	29395.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	0.	0.	-0.	-0.	-0.	-0.	0.
BEGINNING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ASSETS	4421.	25053.	26905.	25489.	23645.	21809.	20003.	18196.	16390.	14583.
CURRENT ASSETS	0.	0.	581.	1112.	1074.	1044.	1043.	1042.	1041.	1040.
OPERATING CASH	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	0.	0.	481.	912.	874.	844.	843.	842.	841.	840.
ACC. EXCESS CASH	357.	2030.	142.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	4064.	23022.	26182.	24377.	22571.	20765.	18960.	17154.	15349.	13543.
INVESTMENT	4064.	23022.	27085.	27085.	27085.	27085.	27085.	27085.	27085.	27085.
NON-DEPR. ASSETS	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
DEPRECIABLE ASSETS	4062.	23021.	27083.	27083.	27083.	27083.	27083.	27083.	27083.	27083.
INTEREST DRG CONSTR.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.
LESS: ACC. DEPRECIATION	0.	0.	903.	2708.	4514.	6320.	8125.	9931.	11736.	13542.
LIABILITIES	3316.	18790.	21419.	24113.	27002.	30447.	34691.	39891.	46241.	53970.
CURRENT LIABILITIES	0.	737.	1524.	5692.	10054.	14973.	20690.	27365.	35189.	44391.
ACCOUNT PAYABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	0.	737.	1474.	1474.	1474.	1474.	1474.	1474.	1474.	1474.
SHORT TERM DEBT	0.	0.	0.	4118.	8481.	13400.	19117.	25791.	33615.	42817.
FIXED LIABILITIES	3316.	18053.	19895.	18421.	16948.	15474.	14000.	12526.	11053.	9579.
LONG TERM DEBT BALANCE	3316.	18053.	19895.	18421.	16948.	15474.	14000.	12526.	11053.	9579.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	1105.	6263.	5486.	1376.	-3356.	-8638.	-14688.	-21695.	-29851.	-39387.
SHARE CAPITAL	1105.	6263.	7368.	7368.	7368.	7368.	7368.	7368.	7368.	7368.
ACC. RETAINED EARNINGS	0.	0.	-1882.	-5992.	-10725.	-16006.	-22056.	-29063.	-37220.	-46755.
LIABILITIES & S/H EQUITY	4421.	25053.	26905.	25489.	23645.	21809.	20003.	18196.	16390.	14583.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
ASSETS	12777.	10970.	9164.	7357.	5551.	3744.	1938.
CURRENT ASSETS	1040.	1039.	1038.	1037.	1036.	1035.	1034.
OPERATING CASH	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	840.	839.	838.	837.	836.	835.	834.
ACC. EXCESS CASH	-0.	-0.	-0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	11737.	9932.	8126.	6321.	4515.	2709.	904.
INVESTMENT	27085.	27085.	27085.	27085.	27085.	27085.	27085.
NON-DEPR. ASSETS	1.	1.	1.	1.	1.	1.	1.
DEPRECIABLE ASSETS	27083.	27083.	27083.	27083.	27083.	27083.	27083.
INTEREST ORG CONSTR.	1.	1.	1.	1.	1.	1.	1.
LESS: ACC. DEPRECIATION	15348.	17153.	18959.	20764.	22570.	24376.	26181.
LIABILITIES	63353.	74722.	88474.	105085.	125126.	149285.	178385.
CURRENT LIABILITIES	55248.	68091.	83316.	101400.	122916.	148548.	178385.
ACCOUNT PAYABLE	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	1474.	1474.	1474.	1474.	1474.	1474.	737.
SHORT TERM DEBT	53674.	66517.	81742.	99827.	121342.	146975.	177548.
FIXED LIABILITIES	8105.	6632.	5158.	3684.	2211.	737.	0.
LONG TERM DEBT BALANCE	8105.	6632.	5158.	3684.	2211.	737.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	-50576.	-63752.	-79310.	-97727.	-119575.	-145541.	-178447.
SHARE CAPITAL	7368.	7368.	7368.	7368.	7368.	7368.	7368.
ACC. RETAINED EARNINGS	-57945.	-71120.	-86678.	-105096.	-126944.	-152909.	-183815.
LIABILITIES & S/H EQUITY	12777.	10970.	9164.	7357.	5551.	3744.	1938.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 LONG TERM DEBT  
 - BASE CASE - (USD 1000)

AMOUNT OF DEBT	22105.				
INTEREST RATE	12.000 PER CENT/YEAR				
REPAYMENT	15 YEAR-EQUAL-INSTALLMENT-REPAYMENT (ANNUAL REPAYMENT)				
YEAR	SER.NO	PRINCIPAL	INTEREST	DEBT SERVICE	BALANCE AFT. PAYMENT
1989	1	0.	0.	0.	3316.
1990	2	0.	0.	0.	18790.
1991	3	737.	1127.	1864.	21369.
1992	4	1474.	2564.	4038.	19895.
1993	5	1474.	2387.	3661.	18421.
1994	6	1474.	2211.	3684.	16948.
1995	7	1474.	2034.	3507.	15474.
1996	8	1474.	1857.	3331.	14000.
1997	9	1474.	1680.	3154.	12526.
1998	10	1474.	1503.	2977.	11053.
1999	11	1474.	1326.	2800.	9579.
2000	12	1474.	1149.	2623.	8105.
2001	13	1474.	973.	2446.	6632.
2002	14	1474.	796.	2269.	5158.
2003	15	1474.	619.	2093.	3684.
2004	16	1474.	442.	1916.	2211.
2005	17	1474.	265.	1739.	737.
TOTAL		21369.	20934.	42302.	737.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - BASE CASE - (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT (PCT)	(4) AFT TAX PROFIT -TO- S/CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-86.5	-34.3	-7.0	-25.5	0.38	0.07	0.08	78 / 22	590.0	289.3	551.1
1992	-75.5	-298.7	-15.2	-55.8	0.20	0.04	0.06	93 / 7	530.1	255.4	497.2
1993	-72.5	141.0	-17.5	-64.2	0.11	0.02	-0.14	125 / -25	411.0	240.2	388.3
1994	-72.8	61.1	-19.5	-71.7	0.07	0.01	-0.34	226 / **	459.0	241.6	436.3
1995	-83.4	41.2	-22.3	-82.1	0.05	0.01	-0.63	** / **	513.6	257.4	490.9
1996	-96.6	32.3	-25.9	-95.1	0.04	0.01	-1.00	** / 237	579.1	276.4	556.4
1997	-112.4	27.3	-30.1	-110.7	0.03	0.01	-1.48	-59 / 159	657.6	299.2	634.9
1998	-131.4	24.2	-35.2	-129.4	0.02	0.00	-2.09	-32 / 132	751.9	326.6	729.2
1999	-154.2	22.1	-41.3	-151.9	0.02	0.00	-2.88	-19 / 119	865.0	359.4	842.3
2000	-181.5	20.7	-48.6	-178.8	0.02	0.00	-3.90	-12 / 112	1000.8	398.8	978.1
2001	-214.4	19.6	-57.4	-211.1	0.01	0.00	-5.22	-7 / 107	1163.7	446.1	1141.0
2002	-253.8	18.8	-68.0	-249.9	0.01	0.00	-6.97	-4 / 104	1359.2	502.8	1336.5
2003	-301.0	18.3	-80.7	-296.5	0.01	0.00	-9.28	-2 / 102	1593.8	570.9	1571.1
2004	-357.8	17.8	-95.9	-352.4	0.01	0.00	-12.38	-1 / 101	1875.3	652.6	1852.6
2005	-425.8	17.5	-114.1	-419.4	0.01	0.00	-16.58	-0 / 100	2213.1	750.6	2190.4
AVERAGE1	-174.6	8.6	-45.2	-166.3	0.06	0.01	-4.18	** / 219	970.9	391.2	946.4
AVERAGE2	-181.6	22.0	-42.4	-155.9	0.02	0.00	-3.23	-25 / 125			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)  
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE  
 OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

YEAR	(ECONOMIC) *** PHOSPHATE MINING, CONCENTRATION & FMP *** ECONOMIC RATE OF RETURN					(USD 1000)				
	FIXED CAPITAL EXPEND.	CHANGE IN (1) GROSS WORKING CAPITAL	GROSS CAPITAL EXPENDIT	OPERATING PROFIT	DEPRECIATN (2) GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW	(5) AFT-TAX NET IN-FLOW	(2)-(1)	(4)-(3)
1989	4063.	0.	4063.	0.	0.	0.	-4063.	-4063.	0.	0.
1990	18958.	0.	18958.	0.	0.	0.	-18958.	-18958.	0.	0.
1991	4062.	531.	4593.	-755.	903.	148.	-4445.	-4445.	0.	0.
1992	0.	482.	482.	-1546.	1806.	260.	-222.	-222.	0.	0.
1993	0.	-38.	-38.	-1521.	1806.	284.	322.	322.	0.	0.
1994	0.	-30.	-30.	-1375.	1806.	431.	461.	461.	0.	0.
1995	0.	-1.	-1.	-1336.	1806.	469.	470.	470.	0.	0.
1996	0.	-1.	-1.	-1327.	1806.	478.	479.	479.	0.	0.
1997	0.	-1.	-1.	-1318.	1806.	487.	488.	488.	0.	0.
1998	0.	-1.	-1.	-1309.	1806.	496.	497.	497.	0.	0.
1999	0.	-1.	-1.	-1300.	1806.	506.	506.	506.	0.	0.
2000	0.	-1.	-1.	-1291.	1806.	515.	515.	515.	0.	0.
2001	0.	-1.	-1.	-1282.	1806.	524.	524.	524.	0.	0.
2002	0.	-1.	-1.	-1273.	1806.	533.	534.	534.	0.	0.
2003	0.	-1.	-1.	-1264.	1806.	542.	543.	543.	0.	0.
2004	0.	-1.	-1.	-1255.	1806.	551.	552.	552.	0.	0.
2005	-904.	-935.	-1839.	-1246.	1806.	560.	2399.	2399.	0.	0.
	26180.	-0.	26180.	-19399.	26181.	6783.	-19398.	-19398.	0.	0.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -10.07 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -10.07 PER CENT

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 FUNDS FLOW STATEMENTS  
 -- LOW INTEREST CASE --  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	4421.	20632.	4569.	260.	322.	899.	1445.	2607.	4521.	6763.
CASH GENERATED	0.	0.	148.	260.	284.	431.	469.	478.	487.	496.
PROFIT AFT. TAX, BFR INT.	0.	0.	-755.	-1546.	-1521.	-1375.	-1336.	-1327.	-1318.	-1309.
DEPRECIATION AND AMORTIZATION	0.	0.	903.	1806.	1806.	1806.	1806.	1806.	1806.	1806.
FINANCIAL RESOURCES	4421.	20632.	4421.	0.	38.	468.	976.	2129.	4034.	6266.
SHARE CAPITAL	1105.	5158.	1105.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	3316.	15474.	3316.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	38.	468.	976.	2129.	4034.	6266.
USES OF FUNDS	4064.	18959.	4969.	1366.	846.	899.	1445.	2607.	4521.	6763.
FIXED CAPITAL EXPENDITURE	4064.	18959.	4063.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	4062.	18958.	4062.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	531.	482.	-38.	-30.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	376.	884.	884.	930.	1446.	2608.	4522.	6764.
REPAYMENT OF LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.	553.	1105.	1105.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	38.	468.	976.	2129.	4034.
INTEREST ON LONG TERM DEBT	0.	0.	376.	884.	884.	884.	884.	884.	882.	818.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	8.	94.	195.	426.	807.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	357.	1673.	-400.	-1106.	-524.	0.	0.	0.	0.	-0.
BEGINNING CASH BALANCE	0.	357.	2030.	1630.	524.	0.	0.	0.	0.	0.
ENDING CASH BALANCE	357.	2030.	1630.	524.	0.	0.	0.	0.	0.	0.



(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 FUNDS FLOW STATEMENTS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	9397.	12504.	16177.	20530.	25698.	31844.	39165.
CASH GENERATED	506.	515.	524.	533.	542.	551.	560.
PROFIT AFT. TAX, BFR INT.	-1300.	-1291.	-1282.	-1273.	-1264.	-1255.	-1246.
DEPRECIATION AND AMORTIZATION	1806.	1806.	1806.	1806.	1806.	1806.	1806.
FINANCIAL RESOURCES	8892.	11990.	15654.	19997.	25156.	31294.	38606.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	8892.	11990.	15654.	19997.	25156.	31294.	38606.
USES OF FUNDS	9397.	12504.	16177.	20530.	25698.	31844.	39165.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	9398.	12505.	16178.	20531.	25699.	31845.	39166.
REPAYMENT OF LONG TERM DEBT	1105.	1105.	1105.	1105.	1105.	1105.	1105.
REPAYMENT OF SHORT TERM DEBT	6266.	8892.	11990.	15654.	19997.	25156.	31294.
INTEREST ON LONG TERM DEBT	774.	729.	685.	641.	597.	553.	508.
INTEREST ON SHORT TERM DEBT	1253.	1778.	2398.	3131.	3999.	5031.	6259.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	-0.	-0.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	0.	-0.	-0.	-0.	-0.	-0.	-0.
ENDING CASH BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & FMP \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - LOW INTEREST CASE -  
 (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(4) AFT TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-51.9	-18.1	-4.2	-15.3	11.61	2.00	0.39	78 / 22	413.5	190.9	201.5
1992	-44.6	-63.8	-9.0	-33.0	11.12	2.00	0.29	85 / 15	363.6	171.9	184.7
1993	-36.8	-171.6	-8.9	-32.6	7.79	1.45	0.32	94 / 6	251.9	156.4	128.4
1994	-31.2	262.2	-8.4	-30.8	1.84	0.35	0.48	104 / -4	252.9	152.5	129.4
1995	-31.9	72.8	-8.5	-31.4	0.64	0.12	0.42	117 / -17	258.2	154.1	134.7
1996	-33.2	43.1	-8.9	-32.7	0.31	0.06	0.20	138 / -38	264.5	166.9	178.8
1997	-35.9	31.8	-9.6	-35.4	0.20	0.04	0.03	173 / -73	278.1	181.8	230.2
1998	-40.4	26.4	-10.8	-39.8	0.14	0.03	-0.16	256 / **	300.5	188.3	252.6
1999	-45.8	23.0	-12.3	-45.2	0.10	0.02	-0.40	639 / **	327.4	196.1	279.5
2000	-52.3	20.8	-14.0	-51.6	0.08	0.02	-0.69	** / 820	359.7	205.5	311.8
2001	-60.1	19.3	-16.1	-59.2	0.06	0.01	-1.05	** / 294	398.4	216.7	350.5
2002	-69.5	18.2	-18.6	-68.5	0.05	0.01	-1.49	** / 200	444.9	230.2	397.0
2003	-80.7	17.5	-21.6	-79.5	0.04	0.01	-2.03	-61 / 161	500.6	246.4	452.7
2004	-94.2	16.9	-25.2	-92.8	0.03	0.01	-2.70	-40 / 140	567.5	265.8	519.6
2005	-110.4	16.6	-29.6	-108.7	0.03	0.01	-3.53	-28 / 128	647.8	289.1	599.9
AVERAGE1	-54.6	21.0	-13.7	-50.4	2.27	0.41	-0.66	36 / 64	375.3	200.8	290.1
AVERAGE2	-55.1	25.9	-12.9	-47.3	0.09	0.02	-0.87	401 / **			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)  
 \* NOTE FOR (9)(10)(11)

WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

(ECONOMIC) *** PHOSPHATE MINING, CONCENTRATION & FMP ***		ECONOMIC RATE OF RETURN					- LOW INTEREST CASE -		(USD 1000)	
YEAR	FIXED CAPITAL EXPEND.	CHANGE IN (1) WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW (2)-(1)	(5) AFT-TAX NET IN-FLOW (4)-(3)	
1989	4063.	0.	4063.	0.	0.	0.	0.	-4063.	-4063.	
1990	18958.	0.	18958.	0.	0.	0.	0.	-18958.	-18958.	
1991	4062.	531.	4593.	-755.	903.	148.	0.	-4445.	-4445.	
1992	0.	482.	482.	-1546.	1806.	260.	0.	-222.	-222.	
1993	0.	-38.	-38.	-1521.	1806.	284.	0.	322.	322.	
1994	0.	-30.	-30.	-1375.	1806.	431.	0.	461.	461.	
1995	0.	-1.	-1.	-1336.	1806.	469.	0.	470.	470.	
1996	0.	-1.	-1.	-1327.	1806.	478.	0.	479.	479.	
1997	0.	-1.	-1.	-1318.	1806.	487.	0.	488.	488.	
1998	0.	-1.	-1.	-1309.	1806.	496.	0.	497.	497.	
1999	0.	-1.	-1.	-1300.	1806.	506.	0.	506.	506.	
2000	0.	-1.	-1.	-1291.	1806.	515.	0.	515.	515.	
2001	0.	-1.	-1.	-1282.	1806.	524.	0.	524.	524.	
2002	0.	-1.	-1.	-1273.	1806.	533.	0.	534.	534.	
2003	0.	-1.	-1.	-1264.	1806.	542.	0.	543.	543.	
2004	0.	-1.	-1.	-1255.	1806.	551.	0.	552.	552.	
2005	-904.	-935.	-1839.	-1246.	1806.	560.	0.	2399.	2399.	
	26180.	-0.	26180.	-19399.	26181.	6783.	0.	-19398.	-19398.	

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -10.07 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -10.07 PER CENT

Annex IV-2 PROJECT ECONOMIC ANALYSIS DETAILS (2/2)

Economic Analysis Data

Project Title : Phosphate Mining and Concentrate Project and  
Single Super Phosphate Project

Project Location: Chilembwe and Kafue, Zambia

1. Base Case (Interest Rate: 12%/Year)

- Production and Sales Plan
- Production Cost Statements
- Income Statements
- Funds Flow Statements
- Balance Sheet
- Profitability and Financial Indicators
  - Profit Ratio
    - Sales Revenue
    - Investment
    - Share Holder Equity
    - Share Capital
  - Current Ratio (Assets/Liability)
  - Quick Ratio (Cash + Receivable)/(Liability)
  - Debt Service Ratio (Depreciation + Interest  
+ Net Profit)/(Repayment + Interest)
  - Long Term Debt to Share Holder Equity
  - Break Even Point
    - Profit/Capacity Utilization
    - Cash/Capacity Utilization
    - Cash/Sales Price
- Economic Rate of Return by Discounted Cash Flow  
(in terms of constant prices)
  - Return on Investment

2. Low Interest Rate Case (Interest Rate: 4%/Year)

- Funds Flow Statements
- Profitability and Financial Indicators
- Economic Rate of Return (In Terms of Constant Price)

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
RATED CAPACITY	0.	0.	57205.	57205.	57205.	57205.	57205.	57205.	57205.	57205.
CAPACITY UTILIZATION	0.0	0.0	0.350	0.800	0.900	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	0.	0.	20022.	45764.	51484.	57205.	57205.	57205.	57205.	57205.
INCREASE IN INVENTORY	0.	0.	2860.	2860.	0.	0.	0.	0.	0.	0.
SALES VOLUME	0.	0.	17162.	42904.	51484.	57205.	57205.	57205.	57205.	57205.
UNIT SALES PRICE	0.0	0.0	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200
SALES REVENUE	0.	0.	2059.	5148.	6178.	6865.	6865.	6865.	6865.	6865.
TOTAL SALES REVENUE	0.	0.	2059.	5148.	6178.	6865.	6865.	6865.	6865.	6865.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 PRODUCTION AND SALES PLAN  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
RATED CAPACITY	57205.	57205.	57205.	57205.	57205.	57205.	57205.
CAPACITY UTILIZATION	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PRODUCTION (VOLUME)	57205.	57205.	57205.	57205.	57205.	57205.	57205.
INCREASE IN INVENTORY	0.	0.	0.	0.	0.	0.	0.
SALES VOLUME	57205.	57205.	57205.	57205.	57205.	57205.	57205.
UNIT SALES PRICE	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200
SALES REVENUE	6865.	6865.	6865.	6865.	6865.	6865.	6865.
TOTAL SALES REVENUE	6865.	6865.	6865.	6865.	6865.	6865.	6865.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 PRODUCTION COST STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
PRODUCTION (VOLUME)	0.	0.	20022.	45764.	51484.	57205.	57205.	57205.	57205.	57205.
RAW MATERIAL COST										
RAW ORE	0.	0.	954.	2181.	2453.	2726.	2726.	2726.	2726.	2726.
SULFURIC ACID:100% H2SO4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CALEIUM HYDROXIDE	0.	0.	697.	1594.	1793.	1992.	1992.	1992.	1992.	1992.
CATALYST/CHEMICALS	0.	0.	5.	12.	13.	15.	15.	15.	15.	15.
UTILITIES COST	0.	0.	252.	575.	647.	719.	719.	719.	719.	719.
RAW WATER	0.	0.	777.	1775.	1997.	2219.	2219.	2219.	2219.	2219.
TRANSPORT CHARGES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FUEL OIL	0.	0.	688.	1572.	1768.	1965.	1965.	1965.	1965.	1965.
ELECTRICITY	0.	0.	60.	138.	155.	172.	172.	172.	172.	172.
VARIABLE COST	0.	0.	29.	66.	74.	82.	82.	82.	82.	82.
	0.	0.	1731.	3956.	4450.	4945.	4945.	4945.	4945.	4945.
EMPLOYMENT COST										
LABOUR COST	0.	0.	139.	278.	278.	278.	278.	278.	278.	278.
OVERHEAD	0.	0.	107.	214.	214.	214.	214.	214.	214.	214.
MAINTENANCE COST	0.	0.	32.	64.	64.	64.	64.	64.	64.	64.
INSURANCE/PROPERTY TAX	0.	0.	206.	413.	413.	413.	413.	413.	413.	413.
DIRECT FIXED COST	0.	0.	61.	113.	105.	96.	88.	80.	71.	63.
	0.	0.	406.	804.	796.	787.	779.	770.	762.	754.
CASH FACTORY COST	0.	0.	2137.	4760.	5246.	5732.	5724.	5715.	5707.	5699.
DEPRECIABLE ASSETS (PLANTS)										
DEPRECIABLE ASSETS (PRE-OPE)	0.	0.	809.	1618.	1618.	1618.	1618.	1618.	1618.	1618.
INTEREST DURING CONSTRUCTION	0.	0.	28.	57.	57.	57.	57.	57.	57.	57.
DEPRECIATION AND AMORTIZATION	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	837.	1675.	1675.	1675.	1675.	1675.	1675.	1675.
TOTAL FACTORY COST	0.	0.	2974.	6435.	6921.	7407.	7399.	7390.	7382.	7374.
UNIT FACTORY COST	0.0	0.0	0.1486	0.1406	0.1344	0.1295	0.1293	0.1292	0.1290	0.1289
SALES EXPENSES	0.	0.	46.	114.	137.	152.	152.	152.	152.	152.
OPERATING EXPENSES	0.	0.	3020.	6549.	7057.	7559.	7550.	7542.	7534.	7525.
INTEREST ON LONG TERM DEBT	0.	0.	1077.	2450.	2281.	2112.	1943.	1774.	1605.	1436.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	511.	1191.	1938.	2797.	3794.	4954.
TOTAL PRODUCTION COST	0.0	0.0	4097.	8998.	9849.	10862.	11431.	12113.	12932.	13715.
UNIT PRODUCTION COST	0.0	0.0	0.2046	0.1966	0.1913	0.1899	0.1998	0.2118	0.2261	0.2432

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 PRODUCTION COST STATEMENTS  
 -- BASE CASE --  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
PRODUCTION (VOLUME)	57205.	57205.	57205.	57205.	57205.	57205.	57205.
RAW MATERIAL COST	2726.	2726.	2726.	2726.	2726.	2726.	2726.
RAW ORE	0.	0.	0.	0.	0.	0.	0.
SULFURIC ACID, 100% H2SO4	1992.	1992.	1992.	1992.	1992.	1992.	1992.
CALCIUM HYDROXIDE	15.	15.	15.	15.	15.	15.	15.
CATALYST/CHEMICALS	719.	719.	719.	719.	719.	719.	719.
UTILITIES COST	2219.	2219.	2219.	2219.	2219.	2219.	2219.
RAW WATER	0.	0.	0.	0.	0.	0.	0.
TRANSPORT CHARGES	1965.	1965.	1965.	1965.	1965.	1965.	1965.
FUEL OIL	172.	172.	172.	172.	172.	172.	172.
ELECTRICITY	82.	82.	82.	82.	82.	82.	82.
VARIABLE COST	4945.	4945.	4945.	4945.	4945.	4945.	4945.
EMPLOYMENT COST	278.	278.	278.	278.	278.	278.	278.
LABOUR COST	214.	214.	214.	214.	214.	214.	214.
OVERHEAD	64.	64.	64.	64.	64.	64.	64.
MAINTENANCE COST	413.	413.	413.	413.	413.	413.	413.
INSURANCE/PROPERTY TAX	54.	46.	38.	29.	21.	13.	4.
DIRECT FIXED COST	745.	737.	729.	720.	712.	703.	695.
CASH FACTORY COST	5690.	5682.	5674.	5665.	5657.	5648.	5640.
DEPRECIABLE ASSETS (PLANTS)	1618.	1618.	1618.	1618.	1618.	1618.	1618.
DEPRECIABLE ASSETS (PRE-OPE)	57.	57.	57.	57.	57.	57.	57.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	1675.	1675.	1675.	1675.	1675.	1675.	1675.
TOTAL FACTORY COST	7365.	7357.	7348.	7340.	7332.	7323.	7315.
UNIT FACTORY COST	0.1287	0.1286	0.1285	0.1283	0.1282	0.1280	0.1279
SALES EXPENSES	152.	152.	152.	152.	152.	152.	152.
OPERATING EXPENSES	7517.	7508.	7500.	7492.	7483.	7475.	7467.
INTEREST ON LONG TERM DEBT	1267.	1098.	929.	760.	591.	422.	253.
INTEREST ON SHORT TERM DEBT	6310.	7903.	9779.	11994.	14617.	17729.	21428.
TOTAL PRODUCTION COST	15094.	16510.	18208.	20246.	22691.	25626.	29148.
UNIT PRODUCTION COST	0.2639	0.2886	0.3183	0.3539	0.3967	0.4480	0.5095

INCOME STATEMENTS  
 -- BASE CASE --  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
OPERATING INCOME	0.	0.	2059.	5148.	6178.	6865.	6865.	6865.	6865.	6865.
TOTAL SALES REVENUE	0.	0.	2059.	5148.	6178.	6865.	6865.	6865.	6865.	6865.
COST OF SALES	0.	0.	2549.	6055.	6956.	7435.	7399.	7391.	7383.	7374.
VARIABLE COST	0.	0.	1731.	3956.	4450.	4945.	4945.	4945.	4945.	4945.
DIRECT FIXED COST	0.	0.	406.	804.	796.	787.	779.	770.	762.	754.
DEPRECIATION AND AMORTIZATION	0.	0.	837.	1675.	1675.	1675.	1675.	1675.	1675.	1675.
INC. IN PRODUCT INVENTORY	0.	0.	425.	379.	-35.	-28.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	0.	0.	-490.	-907.	-778.	-571.	-535.	-526.	-518.	-510.
SALES EXPENSES	0.	0.	46.	114.	137.	152.	152.	152.	152.	152.
OPERATING PROFIT	0.	0.	-536.	-1021.	-915.	-722.	-687.	-678.	-670.	-661.
NON-OPERATING EXPENSES	0.	0.	1077.	2450.	2791.	3303.	3880.	4571.	5399.	6390.
INTEREST ON LONG TERM DEBT	0.	0.	1077.	2450.	2281.	2112.	1943.	1774.	1605.	1436.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	511.	1191.	1938.	2797.	3794.	4954.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	-1613.	-3470.	-3706.	-4026.	-4567.	-5249.	-6068.	-7051.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	-1613.	-3470.	-3706.	-4026.	-4567.	-5249.	-6068.	-7051.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	0.	0.	-1613.	-3470.	-3706.	-4026.	-4567.	-5249.	-6068.	-7051.



(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 INCOME STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
OPERATING INCOME	6865.	6865.	6865.	6865.	6865.	6865.	6865.
TOTAL SALES REVENUE	6865.	6865.	6865.	6865.	6865.	6865.	6865.
COST OF SALES	7366.	7358.	7349.	7341.	7332.	7324.	7316.
VARIABLE COST	4945.	4945.	4945.	4945.	4945.	4945.	4945.
DIRECT FIXED COST	745.	737.	729.	720.	712.	703.	695.
DEPRECIATION AND AMORTIZATION	1675.	1675.	1675.	1675.	1675.	1675.	1675.
INC. IN PRODUCT INVENTORY	-1.	-1.	-1.	-1.	-1.	-1.	-1.
GROSS PROFIT ON SALES	-501.	-493.	-485.	-476.	-468.	-459.	-451.
SALES EXPENSES	152.	152.	152.	152.	152.	152.	152.
OPERATING PROFIT	-653.	-645.	-636.	-628.	-620.	-611.	-603.
NON-OPERATING EXPENSES	7578.	9001.	10708.	12754.	15208.	18151.	21681.
INTEREST ON LONG TERM DEBT	1267.	1098.	929.	760.	591.	422.	253.
INTEREST ON SHORT TERM DEBT	6310.	7903.	9779.	11994.	14617.	17729.	21428.
NET PROFIT OR (LOSS) BEFORE TAX	-8231.	-9646.	-11344.	-13382.	-15828.	-18762.	-22284.
INCOME TAX	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) AFTER TAX	-8231.	-9646.	-11344.	-13382.	-15828.	-18762.	-22284.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
RETAINED EARNINGS	-8231.	-9646.	-11344.	-13382.	-15828.	-18762.	-22284.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	4224.	19710.	4525.	3208.	6718.	10640.	14975.	19965.	25774.	32566.
CASH GENERATED	0.	0.	302.	654.	760.	952.	988.	997.	1005.	1013.
PROFIT AFT. TAX, BFR INT.	0.	0.	-536.	-1021.	-915.	-722.	-687.	-678.	-670.	-661.
DEPRECIATION AND AMORTIZATION	0.	0.	837.	1675.	1675.	1675.	1675.	1675.	1675.	1675.
FINANCIAL RESOURCES	4224.	19710.	4224.	2554.	5957.	9688.	13987.	18968.	24769.	31552.
SHARE CAPITAL	1056.	4927.	1056.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	3168.	14782.	3168.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	2554.	5957.	9688.	13987.	18968.	24769.	31552.
USES OF FUNDS	3769.	17586.	6024.	4287.	6718.	10640.	14975.	19965.	25774.	32566.
FIXED CAPITAL EXPENDITURE	3769.	17586.	3768.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	3768.	17585.	3768.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	475.	429.	-35.	-28.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	1781.	3858.	6753.	10669.	14976.	19966.	25775.	32567.
REPAYMENT OF LONG TERM DEBT	0.	0.	704.	1408.	1408.	1408.	1408.	1408.	1408.	1408.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	2554.	5957.	9688.	13987.	18968.	24769.
INTEREST ON LONG TERM DEBT	0.	0.	1077.	2450.	2281.	2112.	1943.	1774.	1605.	1436.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	511.	1191.	1938.	2797.	3794.	4954.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	454.	2124.	-1499.	-1079.	0.	0.	0.	0.	0.	0.
BEGINNING CASH BALANCE	0.	454.	2578.	1079.	0.	0.	0.	0.	0.	0.
ENDING CASH BALANCE	454.	2578.	1079.	0.	0.	0.	0.	0.	0.	0.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 FUNDS FLOW STATEMENTS  
 - BASE CASE -  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	40537.	49923.	61008.	74131.	89699.	108202.	130226.
CASH GENERATED	1022.	1030.	1039.	1047.	1055.	1064.	1072.
PROFIT AFT. TAX, BFR INT.	-653.	-645.	-636.	-628.	-620.	-611.	-603.
DEPRECIATION AND AMORTIZATION	1675.	1675.	1675.	1675.	1675.	1675.	1675.
FINANCIAL RESOURCES	39515.	48893.	59970.	73084.	88644.	107138.	129154.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	39515.	48893.	59970.	73084.	88644.	107138.	129154.
USES OF FUNDS	40537.	49923.	61008.	74131.	89699.	108202.	130226.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	40538.	49924.	61009.	74132.	89700.	108203.	130227.
REPAYMENT OF LONG TERM DEBT	1408.	1408.	1408.	1408.	1408.	1408.	1408.
REPAYMENT OF SHORT TERM DEBT	31552.	39515.	48893.	59970.	73084.	88644.	107138.
INTEREST ON LONG TERM DEBT	1267.	1098.	929.	760.	591.	422.	253.
INTEREST ON SHORT TERM DEBT	6310.	7903.	9779.	11994.	14617.	17729.	21428.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	0.	0.	0.	-0.	0.	0.	-0.
BEGINNING CASH BALANCE	0.	0.	0.	0.	-0.	-0.	-0.
ENDING CASH BALANCE	0.	0.	0.	-0.	-0.	-0.	-0.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 BALANCE SHEET  
 - BASE CASE -  
 (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ASSETS	4224.	23933.	25891.	23616.	21906.	20203.	18527.	16851.	15176.	13580.
CURRENT ASSETS	0.	0.	525.	1004.	969.	941.	940.	939.	938.	937.
OPERATING CASH	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	0.	0.	425.	804.	769.	741.	740.	739.	738.	737.
ACC. EXCESS CASH	454.	2578.	1079.	0.	0.	0.	0.	0.	0.	0.
NET FIXED ASSETS	3769.	21356.	24287.	22612.	20937.	19262.	17587.	15912.	14237.	12563.
INVESTMENT	3769.	21356.	25124.	25124.	25124.	25124.	25124.	25124.	25124.	25124.
NON-DEPR. ASSETS	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
DEPRECIABLE ASSETS	3768.	21354.	25122.	25122.	25122.	25122.	25122.	25122.	25122.	25122.
INTEREST DRG CONSTR.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.
LESS: ACC. DEPRECIATION	0.	0.	837.	2512.	4187.	5862.	7537.	9212.	10887.	12561.
LIABILITIES	3168.	17950.	20464.	21660.	23656.	25978.	28869.	32443.	36836.	42211.
CURRENT LIABILITIES	0.	704.	1458.	4062.	7465.	11196.	15495.	20476.	26277.	33060.
ACCOUNT PAYABLE	0.	0.	50.	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	0.	704.	1408.	1408.	1408.	1408.	1408.	1408.	1408.	1408.
SHORT TERM DEBT	0.	0.	0.	2554.	5957.	9688.	13987.	18968.	24769.	31552.
FIXED LIABILITIES	3168.	17246.	19006.	17598.	16190.	14782.	13375.	11967.	10559.	9151.
LONG TERM DEBT BALANCE	3168.	17246.	19006.	17598.	16190.	14782.	13375.	11967.	10559.	9151.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	1056.	5983.	5427.	1956.	-1750.	-5775.	-10342.	-15592.	-21660.	-28712.
SHARE CAPITAL	1056.	5983.	7039.	7039.	7039.	7039.	7039.	7039.	7039.	7039.
ACC. RETAINED EARNINGS	0.	0.	-1613.	-5083.	-8789.	-12815.	-17362.	-22631.	-28699.	-35751.
LIABILITIES & S/H EQUITY	4224.	23933.	25891.	23616.	21906.	20203.	18527.	16851.	15176.	13500.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 BALANCE SHEET  
 -- BASE CASE --  
 (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
ASSETS	11824.	10148.	8473.	6797.	5121.	3446.	1770.
CURRENT ASSETS	937.	936.	935.	934.	933.	932.	931.
OPERATING CASH	100.	100.	100.	100.	100.	100.	100.
ACCOUNT RECEIVABLE	100.	100.	100.	100.	100.	100.	100.
INVENTORIES	737.	736.	735.	734.	733.	732.	731.
ACC. EXCESS CASH	0.	0.	0.	-0.	-0.	-0.	-0.
NET FIXED ASSETS	10868.	9213.	7538.	5863.	4188.	2513.	838.
INVESTMENT	25124.	25124.	25124.	25124.	25124.	25124.	25124.
NON-DEPR. ASSETS	1.	1.	1.	1.	1.	1.	1.
DEPRECIABLE ASSETS	25122.	25122.	25122.	25122.	25122.	25122.	25122.
INTEREST DRG CONSTR.	1.	1.	1.	1.	1.	1.	1.
LESS: ACC. DEPRECIATION	14236.	15911.	17586.	19261.	20936.	22611.	24286.
LIABILITIES	48766.	56736.	66405.	78111.	92263.	109350.	129958.
CURRENT LIABILITIES	41023.	50401.	61477.	74592.	90151.	108646.	129958.
ACCOUNT PAYABLE	100.	100.	100.	100.	100.	100.	100.
CURRENT PORTION OF L/T DEBT	1408.	1408.	1408.	1408.	1408.	1408.	704.
SHORT TERM DEBT	39515.	48693.	59970.	73084.	88644.	107138.	129154.
FIXED LIABILITIES	7743.	6335.	4927.	3520.	2112.	704.	0.
LONG TERM DEBT BALANCE	7743.	6335.	4927.	3520.	2112.	704.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	-36942.	-46588.	-57932.	-71314.	-87142.	-105904.	-128188.
SHARE CAPITAL	7039.	7039.	7039.	7039.	7039.	7039.	7039.
ACC. RETAINED EARNINGS	-43981.	-53627.	-64971.	-78354.	-94181.	-112943.	-135227.
LIABILITIES & S/H EQUITY	11824.	10148.	8473.	6797.	5121.	3446.	1770.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 LONG TERM DEBT  
 -- BASE CASE -- (USD 1000)

AMOUNT OF DEBT		12.000 PER CENT/YEAR		15 YEAR-EQUAL-INSTALLMENT-REPAYMENT (ANNUAL REPAYMENT)	
YEAR	SER.NO	PRINCIPAL	INTEREST	DEBT SERVICE	BALANCE AFT. PAYMENT
1989	1	0.	0.	0.	3168.
1990	2	0.	0.	0.	17950.
1991	3	704.	1077.	1781.	20414.
1992	4	1408.	2450.	3858.	19006.
1993	5	1408.	2281.	3689.	17598.
1994	6	1408.	2112.	3520.	16190.
1995	7	1408.	1943.	3351.	14782.
1996	8	1408.	1774.	3182.	13375.
1997	9	1408.	1605.	3013.	11967.
1998	10	1408.	1436.	2844.	10559.
1999	11	1408.	1267.	2675.	9151.
2000	12	1408.	1098.	2506.	7743.
2001	13	1408.	929.	2337.	6335.
2002	14	1408.	760.	2168.	4927.
2003	15	1408.	591.	1999.	3520.
2004	16	1408.	422.	1830.	2112.
2005	17	1408.	253.	1661.	704.
TOTAL		20414.	19998.	40412.	704.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 -- BASE CASE -- (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV (PCT)	(2) AFT TAX PROFIT -TO- S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-78.3	-29.7	-6.4	-22.9	0.36	0.07	0.17	78 / 22	252.0	230.9	237.8
1992	-67.4	-177.4	-13.8	-49.3	0.25	0.05	0.17	90 / 10	338.3	203.5	320.4
1993	-60.0	211.8	-14.8	-52.6	0.13	0.03	0.07	112 / -12	281.2	186.1	267.3
1994	-58.6	69.7	-16.0	-57.2	0.08	0.02	-0.07	164 / -64	308.2	185.2	294.3
1995	-66.5	44.2	-18.2	-64.9	0.06	0.01	-0.28	441 / **	337.9	195.2	324.0
1996	-76.5	33.7	-20.9	-74.6	0.05	0.01	-0.57	** / 430	373.4	207.1	359.5
1997	-102.7	28.0	-24.2	-86.2	0.04	0.01	-0.93	-95 / 195	416.1	221.4	402.2
1998	-119.9	24.6	-28.1	-100.2	0.03	0.01	-1.39	-47 / 147	467.3	238.6	453.4
1999	-140.5	22.3	-32.8	-116.9	0.02	0.00	-1.98	-27 / 127	528.7	259.2	514.8
2000	-165.3	20.7	-38.4	-137.0	0.02	0.00	-2.74	-16 / 116	602.4	283.9	568.5
2001	-194.9	19.6	-45.2	-161.2	0.02	0.00	-3.74	-9 / 109	690.9	313.6	677.0
2002	-230.6	18.8	-53.3	-190.1	0.01	0.00	-5.05	-5 / 105	797.1	349.2	783.2
2003	-273.3	17.7	-63.0	-224.8	0.01	0.00	-6.78	-2 / 102	924.5	392.0	910.6
2004	-324.6	17.4	-74.7	-266.5	0.01	0.00	-9.11	-1 / 101	1077.3	443.3	1063.4
2005			-88.7	-316.6	0.01	0.00	-12.25	-0 / 100	1260.8	504.9	1246.9
AVERAGE1	-136.5	22.6	-35.9	-128.1	0.07	0.01	-2.96	24 / 76	577.1	280.9	562.9
AVERAGE2	-141.2	22.4	-33.6	-120.1	0.02	0.00	-2.25	-36 / 136			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9),(10),(11)  
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE  
 OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

YEAR	(ECONOMIC) *** PHOSPHATE MINING, CONCENTRATION & SSP *** ECONOMIC RATE OF RETURN - BASE CASE - (USD 1000)					
	FIXED CAPITAL EXPEND.	CHANGE IN (1) GROSS WORKING CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN (2) GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX (5) AFT-TAX NET IN-FLOW NET IN-FLOW (2)-(1) (4)-(3)
1989	3769.	0.	0.	0.	0.	-3769.
1990	17585.	0.	0.	0.	0.	-17585.
1991	3768.	475.	-536.	837.	0.	-3941.
1992	0.	429.	-1021.	1675.	0.	225.
1993	0.	-35.	-915.	1675.	0.	796.
1994	0.	-28.	-722.	1675.	0.	981.
1995	0.	-1.	-687.	1675.	0.	989.
1996	0.	-1.	-678.	1675.	0.	998.
1997	0.	-1.	-670.	1675.	0.	1006.
1998	0.	-1.	-661.	1675.	0.	1014.
1999	0.	-1.	-653.	1675.	0.	1023.
2000	0.	-1.	-645.	1675.	0.	1031.
2001	0.	-1.	-636.	1675.	0.	1039.
2002	0.	-1.	-628.	1675.	0.	1048.
2003	0.	-1.	-620.	1675.	0.	1056.
2004	0.	-1.	-611.	1675.	0.	1064.
2005	-838.	-832.	-603.	1675.	0.	2743.
	24285.	-0.	-10285.	24286.	0.	-10284.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -5.02 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -5.02 PER CENT



(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\* PAGE 1  
 FUNDS FLOW STATEMENTS  
 -- LOW INTEREST CASE -- (USD 1000)

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
SOURCE OF FUNDS	4224.	19710.	4525.	654.	760.	952.	988.	997.	1005.	1013.
CASH GENERATED	0.	0.	302.	654.	760.	952.	988.	997.	1005.	1013.
PROFIT AFT. TAX, BFR INT.	0.	0.	-536.	-1021.	-915.	-722.	-687.	-678.	-670.	-661.
DEPRECIATION AND AMORTIZATION	0.	0.	837.	1675.	1675.	1675.	1675.	1675.	1675.	1675.
FINANCIAL RESOURCES	4224.	19710.	4224.	0.	0.	0.	0.	0.	0.	0.
SHARE CAPITAL	1056.	4927.	1056.	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	3168.	14782.	3168.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS	3769.	17586.	4602.	1274.	809.	816.	844.	1372.	1879.	1836.
FIXED CAPITAL EXPENDITURE	3769.	17586.	3768.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	3768.	17585.	3768.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	475.	429.	-35.	-28.	-1.	-1.	-1.	-1.
DEBT SERVICES	0.	0.	359.	845.	845.	845.	845.	1373.	1879.	1837.
REPAYMENT OF LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.	528.	1056.	1056.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON LONG TERM DEBT	0.	0.	359.	845.	845.	845.	845.	845.	824.	781.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	454.	2124.	-77.	-620.	-49.	136.	144.	-375.	-874.	-823.
BEGINNING CASH BALANCE	0.	454.	2578.	2501.	1881.	1832.	1968.	2112.	1737.	864.
ENDING CASH BALANCE	454.	2578.	2501.	1881.	1832.	1968.	2112.	1737.	864.	41.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 FUNDS FLOW STATEMENTS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	1999	2000	2001	2002	2003	2004	2005
SOURCE OF FUNDS	1754.	2630.	3630.	4777.	6101.	7638.	9430.
CASH GENERATED	1022.	1030.	1039.	1047.	1055.	1064.	1072.
PROFIT AFT. TAX, BFR INT.	-653.	-645.	-636.	-628.	-620.	-611.	-603.
DEPRECIATION AND AMORTIZATION	1675.	1675.	1675.	1675.	1675.	1675.	1675.
FINANCIAL RESOURCES	732.	1600.	2591.	3730.	5046.	6574.	8358.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
LONG TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	732.	1600.	2591.	3730.	5046.	6574.	8358.
USES OF FUNDS	1794.	2630.	3630.	4777.	6101.	7638.	9430.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	-1.	-1.	-1.	-1.	-1.	-1.	-1.
DEBT SERVICES	1795.	2631.	3630.	4778.	6102.	7639.	9431.
REPAYMENT OF LONG TERM DEBT	1056.	1056.	1056.	1056.	1056.	1056.	1056.
REPAYMENT OF SHORT TERM DEBT	0.	732.	1600.	2591.	3730.	5046.	6574.
INTEREST ON LONG TERM DEBT	739.	697.	655.	612.	570.	528.	486.
INTEREST ON SHORT TERM DEBT	0.	146.	320.	518.	746.	1009.	1315.
DIVIDENDS	0.	0.	0.	0.	0.	0.	0.
CASH INCREASE OR (DECREASE)	-41.	0.	0.	0.	0.	0.	-0.
BEGINNING CASH BALANCE	41.	0.	0.	0.	0.	0.	0.
ENDING CASH BALANCE	0.	0.	0.	0.	0.	0.	-0.

(ECONOMIC) \*\*\* PHOSPHATE MINING, CONCENTRATION & SSP \*\*\*  
 PROFITABILITY AND FINANCIAL INDICATORS  
 - LOW INTEREST CASE - (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV (PCT)	(2) AFT TAX PROFIT -TO- S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/ (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1991	-43.4	-14.6	-3.6	-12.7	10.50	2.00	0.84	77 / 23	175.5	148.1	86.3
1992	-36.2	-43.6	-7.4	-26.5	10.04	2.00	0.77	83 / 17	230.6	133.3	118.2
1993	-28.5	-49.8	-7.0	-25.0	9.69	2.00	0.90	89 / 11	179.8	121.0	92.6
1994	-22.8	-164.5	-6.2	-22.3	9.41	2.00	1.13	96 / 4	180.2	117.6	92.9
1995	-22.3	264.7	-6.1	-21.8	1.50	0.32	1.17	103 / -3	179.7	117.5	92.5
1996	-22.2	72.5	-6.1	-21.6	0.81	0.17	0.73	112 / -12	179.3	126.6	119.5
1997	-21.8	41.5	-5.9	-21.2	0.81	0.17	0.53	124 / -24	177.8	135.3	145.9
1998	-21.0	28.6	-5.7	-20.5	0.81	0.17	0.55	141 / -41	175.1	134.4	142.9
1999	-20.3	21.7	-5.5	-19.8	0.50	0.11	0.57	165 / -65	172.5	133.5	140.2
2000	-21.7	18.8	-5.9	-21.1	0.34	0.07	0.50	207 / **	177.5	135.2	145.2
2001	-23.5	16.9	-6.4	-22.9	0.25	0.05	0.42	302 / **	183.9	137.3	151.6
2002	-25.6	15.6	-7.0	-25.0	0.19	0.04	0.32	691 / **	191.6	139.9	159.3
2003	-28.2	14.6	-7.7	-27.5	0.15	0.03	0.19	** / **	200.8	143.0	168.5
2004	-31.3	14.0	-8.6	-30.5	0.12	0.03	0.03	** / 359	211.9	146.7	179.6
2005	-35.0	13.5	-9.6	-34.1	0.10	0.02	-0.16	** / 230	225.2	151.2	192.9
AVERAGE1	-26.9	15.3	-6.6	-23.5	3.01	0.61	0.57	45 / 55	189.4	134.7	135.2
AVERAGE2	-25.9	34.5	-6.2	-22.0	0.33	0.07	0.49	136 / -36			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)  
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

\* NOTE FOR (9)(10)(11)  
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE  
 OF CAPACITY UTILIZATION; ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

YEAR	(ECONOMIC) *** PHOSPHATE MINING, CONCENTRATION & SSP ***					(USD 1000)
	ECONOMIC RATE OF RETURN - LOW INTEREST CASE -					
	CHANGE IN (1) GROSS WORKING CAPITAL EXPEND.	OPERATING PROFIT	DEPRECIATION (2) GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW (2)-(1)	(5) AFT-TAX NET IN-FLOW (4)-(3)
1989	3769.	0.	0.	0.	0.	-3769.
1990	17585.	0.	0.	0.	0.	-17585.
1991	3768.	475.	837.	302.	0.	-3941.
1992	0.	429.	1675.	654.	0.	225.
1993	0.	-35.	-915.	760.	0.	796.
1994	0.	-28.	-722.	952.	0.	981.
1995	0.	-1.	-687.	988.	0.	989.
1996	0.	-1.	-678.	997.	0.	998.
1997	0.	-1.	-670.	1005.	0.	1006.
1998	0.	-1.	-661.	1013.	0.	1014.
1999	0.	-1.	-653.	1022.	0.	1023.
2000	0.	-1.	-645.	1030.	0.	1031.
2001	0.	-1.	-636.	1039.	0.	1039.
2002	0.	-1.	-628.	1047.	0.	1048.
2003	0.	-1.	-620.	1055.	0.	1056.
2004	0.	-1.	-611.	1064.	0.	1064.
2005	-832.	-1671.	-603.	1072.	0.	2743.
	24285.	-0.	-10285.	24286.	0.	-10284.

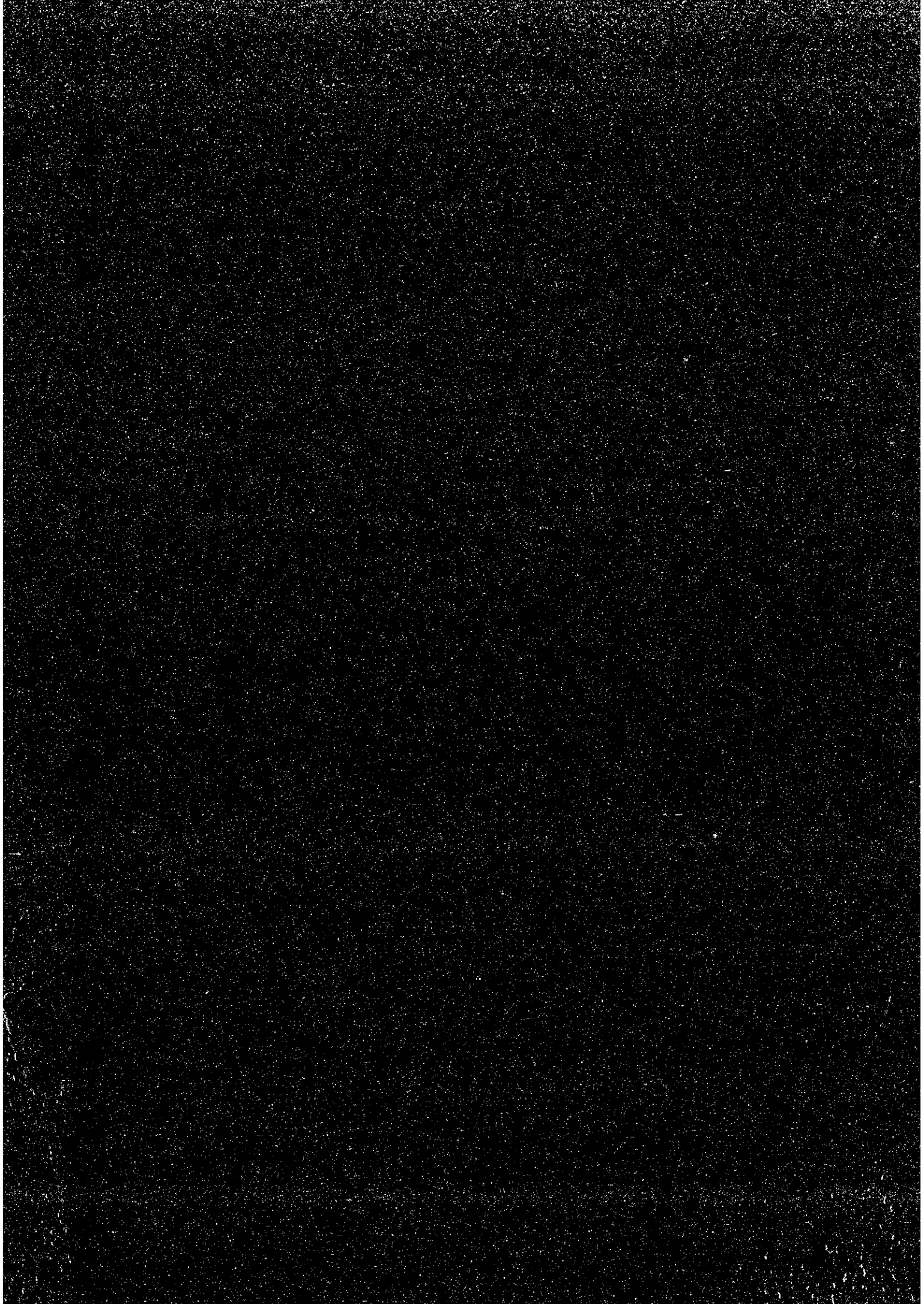
INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1) -5.02 PER CENT

ON (5) AFT-TAX NET IN-FLOW (4)-(3) -5.02 PER CENT







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