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GOLDBORO PROJECT

FEASIBILITY STUDY

Presented to EXPLORATION OREX INC.

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ST-MICHEL
GÉOCONSEIL $\frac{1}{2}$

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NPV

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MAC

AFFIDAVIT

I, the undersigned, André St-Michel, certify that:

My place of residence is at 165 George Ave., Rouyn-Noranda, Quebec, J9X 1B3

I am a geological engineer, graduated from Laval University, Quebec, class of 1980. I am presently completing a master's degree in project management at the Université du Québec in Abitibi-Témiscamingue.

I am a member of the Ordre des ingénieurs du Québec, of the Canadian Institute of Mining and Metallurgy and the Quebec Prospectors Association.


I have worked as a consulting engineer in geology and mines since June, 1986. My office is located at 209 - 9th Street, Rouyn-Noranda, province of Quebec.

In 1980, I worked as an engineer for Eldorado Nuclear Ltd. in the Labrador Trough. From 1981 to 1986, I took part in all stages of development of mine Yvan Vézina inc. (Dest-Or). The first two years, I was an exploration and mining geologist, and the three other years, I was chief mine geologist, responsible for the exploration of the Destor property and development and production.

This report is based on the study of the public documents brought to my attention and on my own experience in project feasibility.

Included with the present report are all the elements which, to the best of my knowledge and in all good faith, could influence the conclusions and recommendations presented in this report.

Signed in Rouyn-Noranda, the 12th of May, 1989.


André St-Michel, P.Eng.



AFFIDAVIT

I, the undersigned, Johanne Jean, certify that:

My place of residence is at 165 George Ave., Rouyn-Noranda, Quebec, J9X 1B3.

I am a geological engineer, graduated from Laval University, class of 1980 and hold a master's degree in project management, graduated from the UQAT in 1988.

I am a member of the Ordre des ingénieurs du Québec.

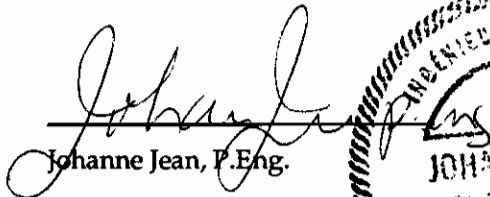
From 1980 to 1987, I was employed by the Université du Québec in Abitibi-Témiscamingue as a research agent. I took part in different research projects in the mining, working place health and safety and education fields. In 1986, I did a feasibility study for the La Vérendrye Regional School Board.

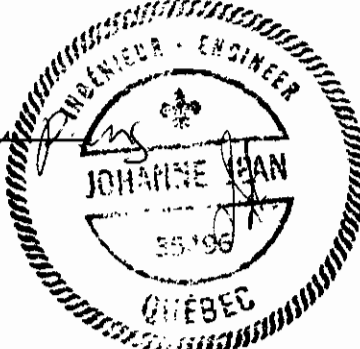
Since 1987, I have been a project manager specializing in feasibility studies, for the firm St-Michel Géoconseil inc., where I am also director and in charge of personnel.

This report is based on the study of the public documents brought to my attention and on my own experience in project feasibility.

Included with the present report are all the elements which, to the best of my knowledge and in all good faith, could influence the conclusions and recommendations presented in this report.

Signed in Rouyn-Noranda, the 12th of May, 1989.


Johanne Jean, P.Eng.



FOREWORD

We would like to thank the following people for their contribution in producing this feasibility study:

- Mr. Guy Parent, M.Sc., geologist;
- Mr. Robert Ethier, geological engineer;
- Mr. Daniel Adam, Ph.D., geologist;
- Mr. André Laplante, Ph.D., metallurgist.

INTRODUCTION

Exploration Orex Inc. was created in July 1987 and was registered for trade on the Montreal Stock Exchange in March 1988. The head office of the company is located at 67 Perreault Street East in Rouyn-Noranda. Exploration Orex Inc. is part of the Société de Gestion Morisco, whose main activities take place in the mining and real estate fields.

Exploration Orex Inc.'s activities consist in acquiring mining properties in order to explore and develop them and eventually bring them into production. The company has several properties in Quebec and Nova Scotia. Its most important project at present is the Goldboro Project, which is the subject of the following feasibility study.

Exploration Orex Inc. has given the mandate to produce a technical and financial feasibility study of the Goldboro project according to three possible scenarios. With the results of this study, Exploration Orex Inc. will be able to obtain a clear image of the Goldboro project on a financial and technical level and thus will be better prepared to deal with any future problems.

1. DESCRIPTION OF THE COMPANY: EXPLORATION OREX INC.

Exploration Orex Inc. was incorporated in 1987 and has since then been actively engaged in mining exploration. The company is part of the Société de Gestion Morisco, whose main activities are in the mining and real estate businesses. Figure 1 shows an organization chart of the Société de Gestion Morisco.

The activities of Exploration Orex Inc. consist mainly in exploring and developing mining properties and bringing them into production.

Thanks to a team of managers who are well up on what is happening in the mining field, the company has been expanding constantly from the very beginning. Exploration Orex Inc. has set several objectives for itself, the first one being to offer its shareholders a high-yield investment. With this in mind, the company bought the Goldboro property, the subject of the following feasibility study. Exploration Orex Inc. also owns several properties in the province of Quebec.

At Exploration Orex Inc., the management team is made up of individuals who have sound experience in business and mining. Presented below is each of the members of the board of directors.

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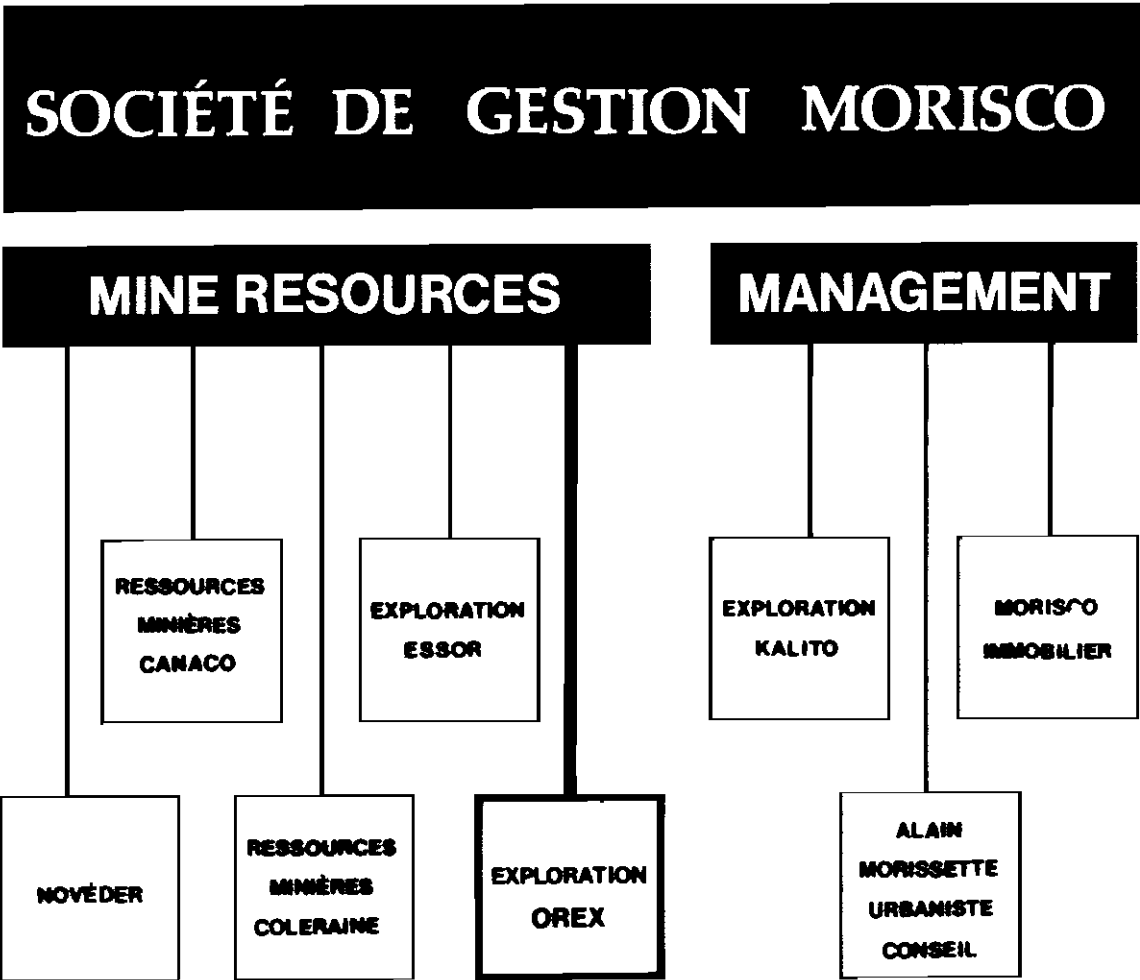
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ORGANIZATION CHART

FIGURE 1



Yves Morissette

Mr. Morissette is president and chief executive officer of Exploration Orex Inc. since its inception. He also act as president of the Société de Gestion Morisco since 1986. He is past president of Rambo Inc, and Kalito Inc. Because of his vast experience of the mining business, Mr. Morissette has acquired a solid reputation in this field.

Michel Roy

Mr. Roy was trained as a geologist graduated from the Université du Québec à Montréal in 1974. He complete presently a Master's degree in project management at the Université du Québec en Abitibi-Témiscamingue. A former vice-president of Exploration, for the Morisco Group, he is also vice-president of Exploration Orex Inc. Before joining the Morisco Group, he was employed by Camchib Mines Inc. and Patino Mines Inc. He also worked on mining exploration projects in the Chibougamau and Abitibi-Temiscamingue regions. Mr. Roy has gained much experience in the management of mining projects.

Jacques Trottier

Mr. Trottier is vice-president, Research and Development, for Exploration Orex Inc. He holds a doctorate in metallogenics from the École Polytechnique of Montreal. Before joining the Morisco Group, Mr. Trottier worked in the mining exploration field in the Chibougamau and Abitibi-Temiscamingue regions.

David O. Jones

Mr. Jones is a geologist B. Sc. degree from the Quenn's University. He acts as administrator for Exploration Orex Inc. Since 1965, Mr. Jones has been a broker; at present, he is employed by the firm McNeil Mantha inc. Mr. Jones' major contribution to the company lies in his experience in business and the stock market.

Michel Perron

Mr. Perron has been a chartered accountant since 1988. He is an associate with Perron, Masson & Associés, C.A., in Montreal.

2. PRESENTATION OF THE GOLDBORO PROJECT¹

2.1 LOCATION AND ACCESS

The Goldboro property is situated on the eastern shore of Nova Scotia, Canada, along the Atlantic Ocean. It is located 180 km northeast of Halifax, approximately 1.6 km north of the village of Goldboro on the eastern shore of the Isaac's Harbour, in Guysborough County.

The villages of Goldboro and Isaac's Harbour offer some essential services. All other services are easily available in the town of Sherbrooke, 50 km by road to the west (figure 2) or the town of Antigonish, 80 km to the north-north-east. The nearest commercial airport is in Halifax.

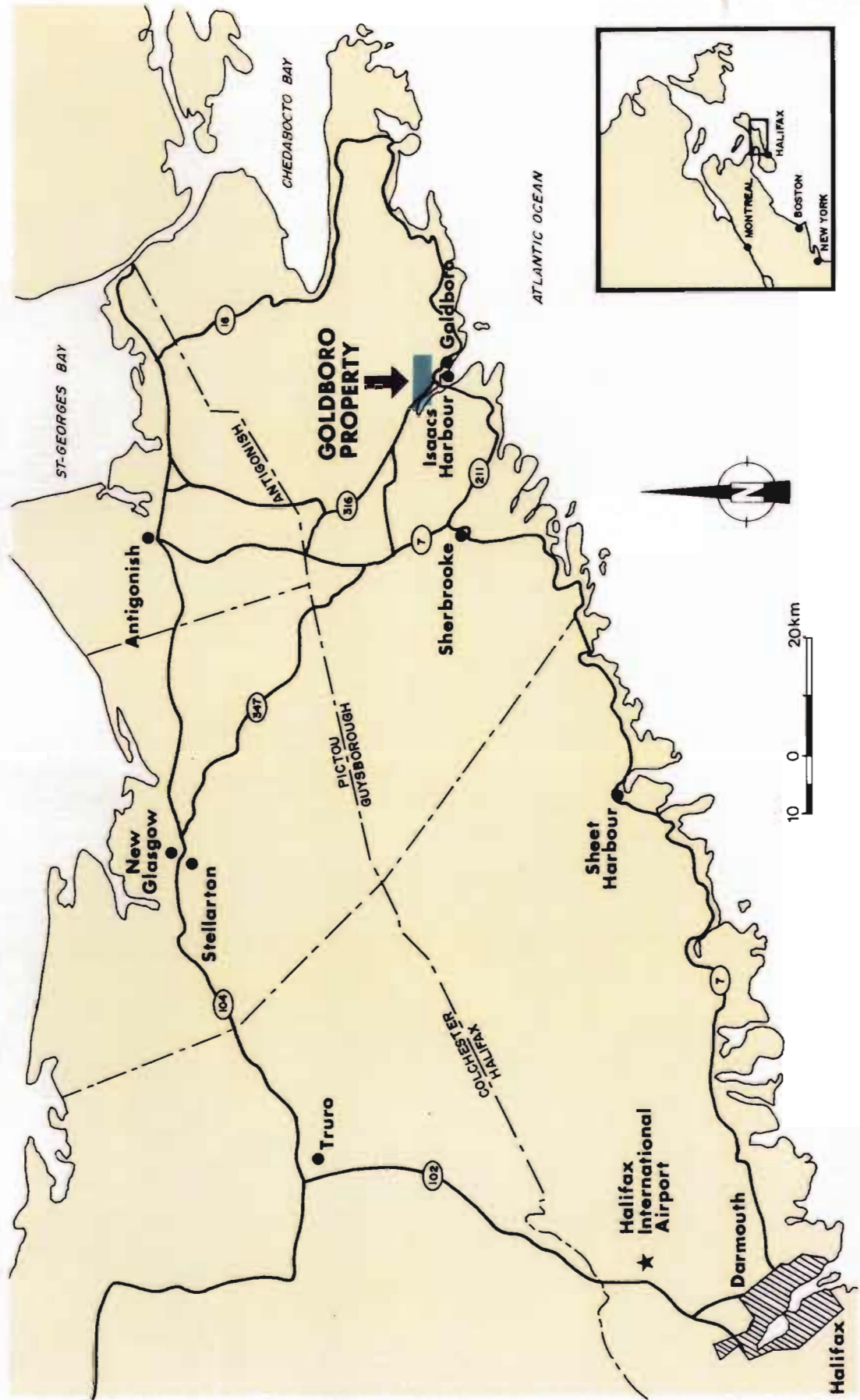
The Goldboro property consists of 37 contiguous claims covering a total area of 1,480 acres. The surface rights are held by various private landowners and by the Nova Scotia Department of Lands and Forests.

The exploration program performed on the Goldboro property was financed by Exploration Orex Inc. This financing was obtained under an option agreement between Exploration Orex Inc., Onitap Resources Inc. and Narex Ore Search Consultants Inc.

1. Taken from: Parent, G., Éthier, R., Final Report on the 1988 Exploration Program and Ore Reserve Calculations, St-Michel Géoconseil inc., 1989, 51 pages.

GOLDBORO PROJECT LOCATION MAP

FIGURE 2



2.2 HISTORY OF THE PROPERTY AND WORK DONE BEFORE 1988

In 1861, gold is discovered in quartz veins in the Isaac's Harbour Anticline. In 1892, Howard Richardson discovers the first gold occurrence in the slate belt (slate and quartz) that will later bear his name. During the same year, the Richardson Gold Mining Company starts development work on the belt.

In 1893, the Richardson Gold Mine is put in operation and the grade of ore averages 0.38 oz/st of gold (50% to 60% of gold recovery). In 1896, the mine runs to its full capacity. In 1897, three shafts give access to the ore at a depth of 195 feet. At the turn of the century, the main shaft is 530 feet deep and selective mining methods are started. At this time, two Wilfley concentrator are operating. In 1901, two additional Wilfley tables are installed. A year later, the vertical shaft is sunk. In 1903, the Boston-Richardson Mining Co. takes over the property and continue the sinking of the vertical shaft to 400 feet (1905). In 1906, a bromo-cyanide plant is erected and the gold recovery goes up to 70%. The year after, the 700 foot level station is reached. Owing to financial difficulties, operations are suspended on August 15, 1908.

In 1909, the New England Mining Company takes over the mine. During the year, 41,425 tons of ore are crushed and yield 5,024 ounces of gold. The next year, the Company proceeds to a final clean-up resulting in a recovery of 1,502 ounces of gold for a total recovery of gold from the Boston-Richardson Mine of 54,871 ounces from 414,887 tons of ore, between 1893 and 1910.

The Dolliver Mountain Mine was mostly active between 1901 and 1905 when underground workings are done. In 1902, the shaft is 190 foot deep and three belts

are intersected, the most important of which measures 32 feet (Partington belt). In 1903, the shaft is deepened to 265 feet and intersects a 22 foot belt (Forge belt).

In 1904, the shaft is deepened to 488 feet. Stopping is done principally on two levels and 205 ounces are recovered from 8,059 tons of ore. In 1905, a hole is drilled from the bottom of the shaft over 500 feet. Several bodies of quartz and slate are intersected but results are unsatisfactory. The mine has remained idle since that time.

In the West Gold Brook Mine, from 1909 to 1910, five belts are identified and a milling test is done on three belts. Results are unsatisfactory and work is abandoned.

Between 1929 and 1931, Locarno Copper Mines Ltd. sinks a shaft west of the previous one (West Gold Brook). It is put down 100 feet in the nugget lead. In 1931, a metallurgical test recovers 1.61 ounces of gold from 1.1 tons of ore.

In 1956, Canso Mining Corporation dewateres the shaft and does some cross-cutting. Work is stopped because of the company's financial difficulties.

The East Gold Brook Mine starts with a shaft sinking in 1907. In 1908, three belts are explored by drifts eastward around the apex (150 foot level). Some rich ore is found in one of these belts, but no other work is done.

Between 1931 and 1934, Renada Mines Ltd. dewateres and samples the shaft. Assays give results of 0.052 to 0.137 oz/st of gold.

After almost 30 years without activity, some exploration work is started in 1981. The property is owned by Patino Mines Ltd., who do some geophysical surveys during the summer. In 1984, a 1,737 foot diamond drill hole is executed down dip from the Boston-Richardson Mine. It reaches the Boston-Richardson belt at an approximate depth of 1,180 feet along the hole on the north limb of the fold.

In 1985, a program of five diamond drill holes is undertaken on the West Gold Brook Mine. A total of 1,279 feet are drilled. Each hole intersects many slate beds, but only few samples are taken.

In 1987, at the beginning of the year, Petromet Resources Ltd and Greenstrike Gold Corporation complete an exploration program of five diamond drill holes for a total of 6,314 feet. Later during the year, Onitap Resources Inc. completes an additional 33 D.D.H., for a total of 38,917 feet. An IP survey is conducted in the central part of the claims and "Aerodat" Limited executes helicopter-borne magnetic and EM-16 surveys.

The aim of the first 1987 campaign was to establish the depth and lateral extension of the Boston-Richardson Belt. Those holes are located in the eastern part of the property. The subsequent D.D.H. campaign was directed not only on the Boston-Richardson Belt but also on the East Gold Brook property and on exploration targets under the Boston-Richardson. Many auriferous belts are present under the Boston-Richardson Belt. The 1987 D.D.H. campaign leads to the detection of a minimum of four belts under the Boston-Richardson Belt (New, Third, Fourth and Fifth) and many impressive gold values over the Boston-Richardson, in the East Gold Brook area. Visible gold is present in almost every

hole. At this time, reserves are estimated at 1,102,036 short tons grading 0.194 oz/st of gold.

2.3 EXPLORATION PROGRAM PERFORMED IN 1988

A total of \$8,200,000 was spent on the 1988 surface and underground exploration program, including the shaft rehabilitation and related technical services.

2.3.1 Surface exploration drilling program

The 1988 surface exploration drilling program was done to cover the western part of the Boston-Richardson Mine area. Its aim was to drill the belts discovered during previous drilling programs under the Boston-Richardson Belt. These are known as the New Belts. A total of 41 holes were drilled along the projected anticlinal of the Upper Seal Harbour fold axis. This 1988 drilling program covered a total of 34,463 feet. It included 10 holes (5,965 feet) that were drilled in the former West Goldbrook Mine area. At the end of the campaign, three (3) supplementary holes (672 ft) were drilled in the vicinity of the underground decline to check the continuity of belts near the surface.

2.3.2 Underground exploration program

On site installations

The provincial gravel road that crosses the property was in good standing and only ditch improvements were necessary to provide proper control of

surface running water. The camp and offices have been set up, the main bunkhouse can accommodate 40 workers. Four other trailers are lined up and constitute offices including the core shack for diamond drill hole campaigns. Power and communication lines are in operation since June 1988. A new settling and polishing pond has been authorized and has a sufficient capacity for the shaft dewatering.

Underground development

An access decline and two levels were developed during the 1988 Exploration program. The decline (5 m X 4 m) was driven for a total length of 1,364 ft from the surface to the 250 ft level, with a slope of 15%. It gives access to two cross-cuts (4 m X 3 m), one at the 125 ft level and another on the 250 ft level. Underground workings helped to confirm the interpretation of drilling data and consequently substantiate the potential of the gold zones.

As the cross-cut and apex drifts were mined, a muck sampling procedure was developed. Mapping and chip sampling of each cross-cut wall was done. An underground drilling program was begun at the 125 level cross-cut. Four holes were drilled for a total length of 768 feet.

2.3.3 Shaft rehabilitation

It was decided to rehabilitate the Boston-Richardson vertical shaft to give direct access to the ore in the eastern part of the new belts. Dewatering started in May 1988. The collar has been reinforced to accept a new 90 foot headframe. The shaft

contains a standard three compartments (6' X 6') and is completely rehabilitated down to the 400 Level.

2.4 REGIONAL GEOLOGY

Nova Scotia, in terms of geology and metallogeny, can be divided into three domains : the Avalon and Meguma domains (Middle Devonian) overlying by the Glooscap domain (Carboniferous and Triassic). Most of the gold produced in Nova Scotia comes from deposits of the Meguma domain described as concordant groups of quartz veins in the oldest and most extensive metasedimentary unit of this domain.

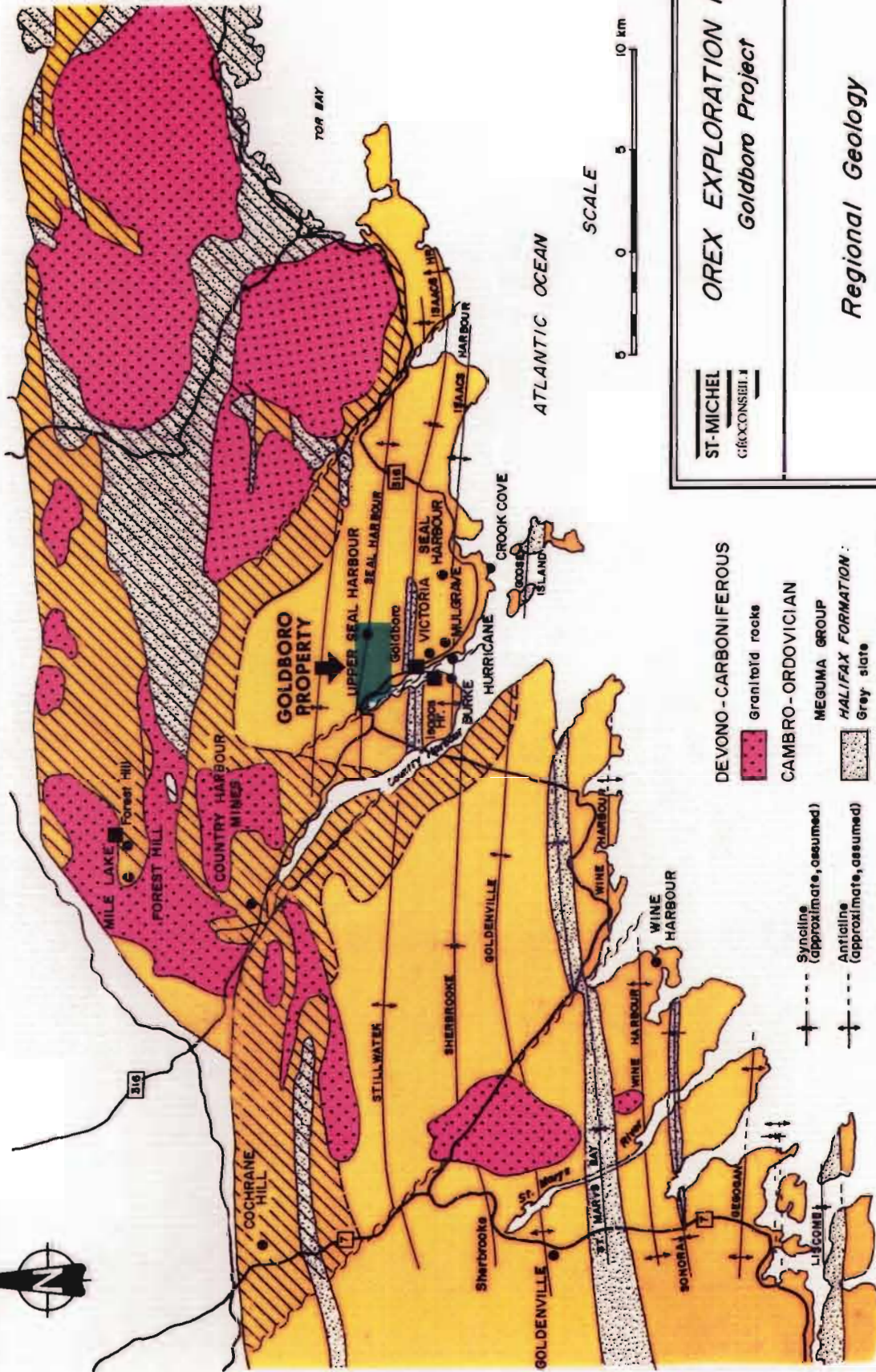
The rocks underlying the property are of the Meguma domain and composed of a thick Cambro-Ordovician metasedimentary sequence (Meguma Group) intruded by Devonian granitoid plutons. The Meguma Group is divided, from the base to the top, into two formations, the Goldenville formation and the Halifax formation.

The Goldenville formation underlies the entire property (see figure 3). Amalgamated sandstone units and both partial and complete bouma sequences are present and indicate a turbiditic origin.

2.5 STRUCTURAL GEOLOGY

The Meguma domain has been the site of at least four episodes of superimposed deformations starting earlier than the Acadian deformation and ending with the Hercinian shear zones following the granitoid Batholith intrusions.





ATLANTIC OCEAN



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OREX EXPLORATION INC.
Goldboro Project

Regional Geology

FIGURE 3

Drawn by: J.SY-G.
Approved by: G.P.

March 1989

FROM: HAYNES, S.J., 1983

The Upper Seal Harbour anticline, which is the host of the Goldboro auriferous mineralization, can be traced for 40 km west to east from St-Mary River to New Harbour (figure 3). This major fold system is mainly from the Acadian Age (Guysborough deformation). Its direction is roughly 95° and the surface axial trace is slightly wavy.

2.6 ECONOMIC GEOLOGY

2.6.1 The Meguma domain

The Meguma group contained most of the 35,130 kg of gold produced in Nova Scotia since the early 1860's. The gold occurs mostly in concordant groups of quartz-carbonate-arsenopyrite veins in the Cambro-Ordovician metapelites of the Meguma Group of southern Nova Scotia.

2.6.2 The Goldboro gold mineralization

On the Goldboro property, one producer: the Boston-Richardson Mine, three old mines: Dolliver Mountain, West Gold Brook and East Gold Brook, one exploration ramp (Orex Exploration Inc.) and more than 86 holes have enabled us to characterize gold occurrences in the Cambro-Ordovician turbidite sequence. Information is distributed in the fold axis corridor over more than 3 km in length.

In the Boston-Richardson Mine, 100% of the ore material comes from the only shale unit present between big piles of greywackes and arenites. Vein

material occupies variable volume in the shale unit, from almost nothing to nearly 100%.

The information obtained during the last exploration campaign on pelitic units under the Boston-Richardson belt indicates the occurrence of a minimum of 14 pregnant auriferous shale beds moderately spaced by greywackes and arenite beds.

Gold occurs in association with ore minerals (arsenopyrite, pyrite) or in a free state in quartz veins or in the wall rock (shale units). Most of the belts contain visible gold.

Our interpretation suggests that many shale units are lensoid in form, but continue for impressive lateral distances along the same stratigraphic horizon (with variable thicknesses). This could be similar to the Cochrane Hill Mine where lensoid shale units have been recognized in the open pit. The great continuity of lateral shale units is exemplified by the well-known Boston-Richardson belt.

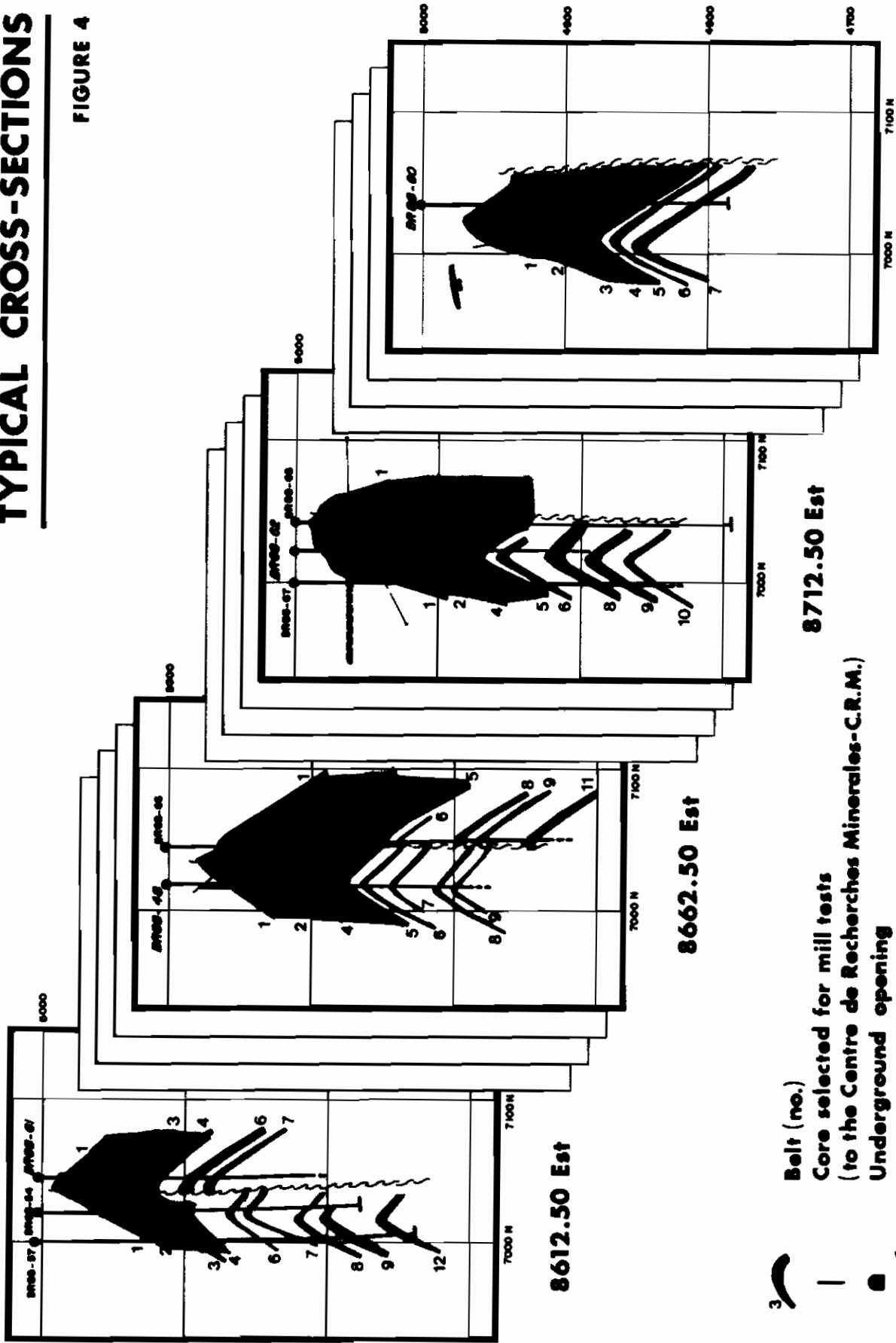
On the Goldboro project, where we have defined new belts under the Boston-Richardson, D.D.H. data suggest the distribution of black shale (with a variable percentage of quartz) to be centered on the apex zone for a maximum perpendicular distance of 50 meters each side of the axial plane (figure 4). With a fold amplitude of over 2 km wide, we can consider 100 meters to be the axial zone (representing 5% of the fold amplitude).

In our view, the most important fact for the potential of this project is that shale units as a whole can be considered auriferous and not only the quartz veins in those units. The consequence is the high potential of large-volume low-grade orebodies containing many shale beds, as is the case here.

We want to mention that visible gold has often been observed in intercalated arenite units in cross-cutting quartz veins, in the fold axial zone.

GOLDBORO PROJECT TYPICAL CROSS-SECTIONS

FIGURE 4



3. JUSTIFICATION FOR THE CHOICE OF VARIABLES

Two important variables must be taken into consideration in the present feasibility study: the grade in gold of the ore deposit and the price of gold chosen to evaluate the revenue generated by the project. Presented below are the parameters on which are based our choices for these two variables.

3.1 THE GRADE

We chose a grade of 3.0 grams per metric ton for purposes of evaluating the orebody as a whole. This choice of grade is based in the results obtained on 376,383 mt of ore extracted from the former Boston-Richardson Mine. The grade of this ore was of 4.53 g/mt (Mines Report) and the level of recovery at the mill varied between 70% and 80%. Consequently, the grade at the head of the mill can be estimated at 6.0 g/mt. Considering the correlation to be made between the type of ore studied over the past months and results of the former Boston-Richardson, we fixed the grade to 6 g/mt for each of the mineralized belts studied (N1 to N12). To compensate for sections of arenites between the mineralized belts, a 100% waste dilution factor (0.0 g/mt) was applied to the 6 g/mt grade, which results in a grade of 3 g/mt, or half the grade obtained in the past.

3.2 THE MARKET AND THE EVOLUTION OF THE PRICE OF GOLD²

Supply

Two thirds of the gold which enters the world markets each year is produced in mines. In 1987, the world production reached 54,480,000 ounces (50.9 million in 1986). This increase is mainly due to American, Australian, Canadian and Brazilian producers. South African production dropped by one million ounces between 1986 and 1987 (19.5 million ounces), but it still accounts for 34% of the world production. Soviet production has been stable over the past few years and Chinese production appears to be increasing.

The rest of the gold which appears on the market (37%) comes from recycling (20%), from sales of gold by countries with a planned centralized economy (U.S.S.R., China), and from the sale of gold reserves controlled by central banks and government agencies (1%).

Demand

Jewelry, medals and coins:

These sectors account for over 70% of the demand for gold in 1987. Gold coins are considered a better investment than jewelry. Sales of gold in these sectors are very price-sensitive, particularly jewelry sales. In 1987, all prices progressed despite an \$80 US increase in the price of gold. The average rate of increase of the demand is 0.99 million ounces per year in the developing countries and 0.26 million ounces in the

2. Taken from Gold Situation 1988, Metal Market Consultant Inc.

industrialized nations. The projected demand for the year 2000 is 59 million ounces, an increase of 15 million ounces over the present demand.

Investment:

Investment demand includes gold hoarded by individuals, institutions other than governments and official purchases by central banks or government agencies. In 1987, this sector represented 18% of the total demand (11.1 million ounces). Gold hoarding seems to be most common in the emerging-economy nations. Japan, for example, showed important gold hoarding in 1986. This rate has increased steadily over the past fifteen years, and if this trend continues, it should reach almost 19 million ounces by the year 2000.

Industry:

Industrial needs come from the electronics industry, dentistry and decorative applications. Industrial demand accounts for less than 12% of the total demand (7.4 million ounces). Gold sold on the industrial market is not supposed to reappear on the market for a number of years. Technological advances have produced a decrease in the quantities used in electronics and gold-leaf. The demand in dentistry is declining because of advances in ceramics. The industrial demand for gold should, however, remain stable. It represents only a small part of the total demand, and the gold market should not be seriously affected by industrial changes.

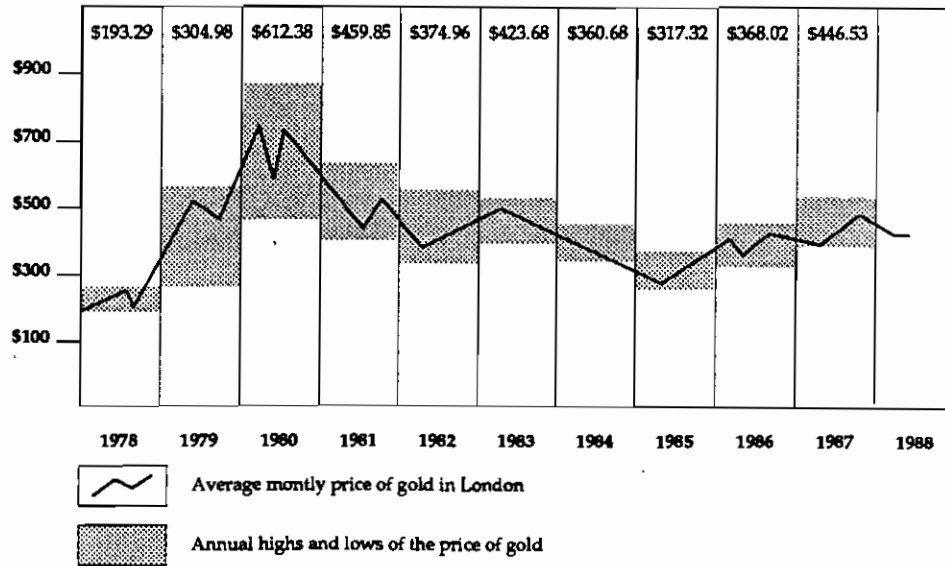
The price of gold

The gold market has now reached maturity, and though it will continue to evolve, it will be less inconsistent. Inflation is no longer considered to be the determining factor in variations of the price of gold. Markets now consider gold to be immune to the pressures of supply and demand, mainly because of the gold futures market. The foremost factor influencing the price of gold in market economy countries is the commercial volume of advance purchases and sales. Nowadays, most producers negotiate part of their production on the futures market. This is considered a commercial strategy destined to maintain the price levels while increasing market participation. One factor which few analysts have mentioned but which requires careful consideration is the commercial psychology of traders, which explains why commercial behaviour is not necessarily logical, as we saw on Black Monday, for instance.

According to two models used by Metal Market Consultant Inc., the price of gold should continue to keep pace with inflation and reach a price of about \$800 US in the year 2000. For information purposes, the following figure shows the evolution of the price of gold over the past decade.

FIGURE 5

Evolution of the Price of Gold in the Past Decade (\$CAN)



Source: Gold 1988, Consolidated Gold Fields PLC
 Excerpt from: Le magazine Affaires +, September 1988

Despite the predicted price increases announced by different agencies, we chose to remain conservative and use a gold price of \$450 per ounce for the present feasibility study. This price is in application for the entire duration of the project.

4. DESCRIPTION OF POSSIBLE SCENARIOS

Three possible scenarios for the Goldboro project were established for this feasibility study. Each scenario presents different, specific objectives. All scenarios are based on a presumed life-span of ten years. Figure 6 shows the mining works planned on the Goldboro property.

4.1 SCENARIO 1

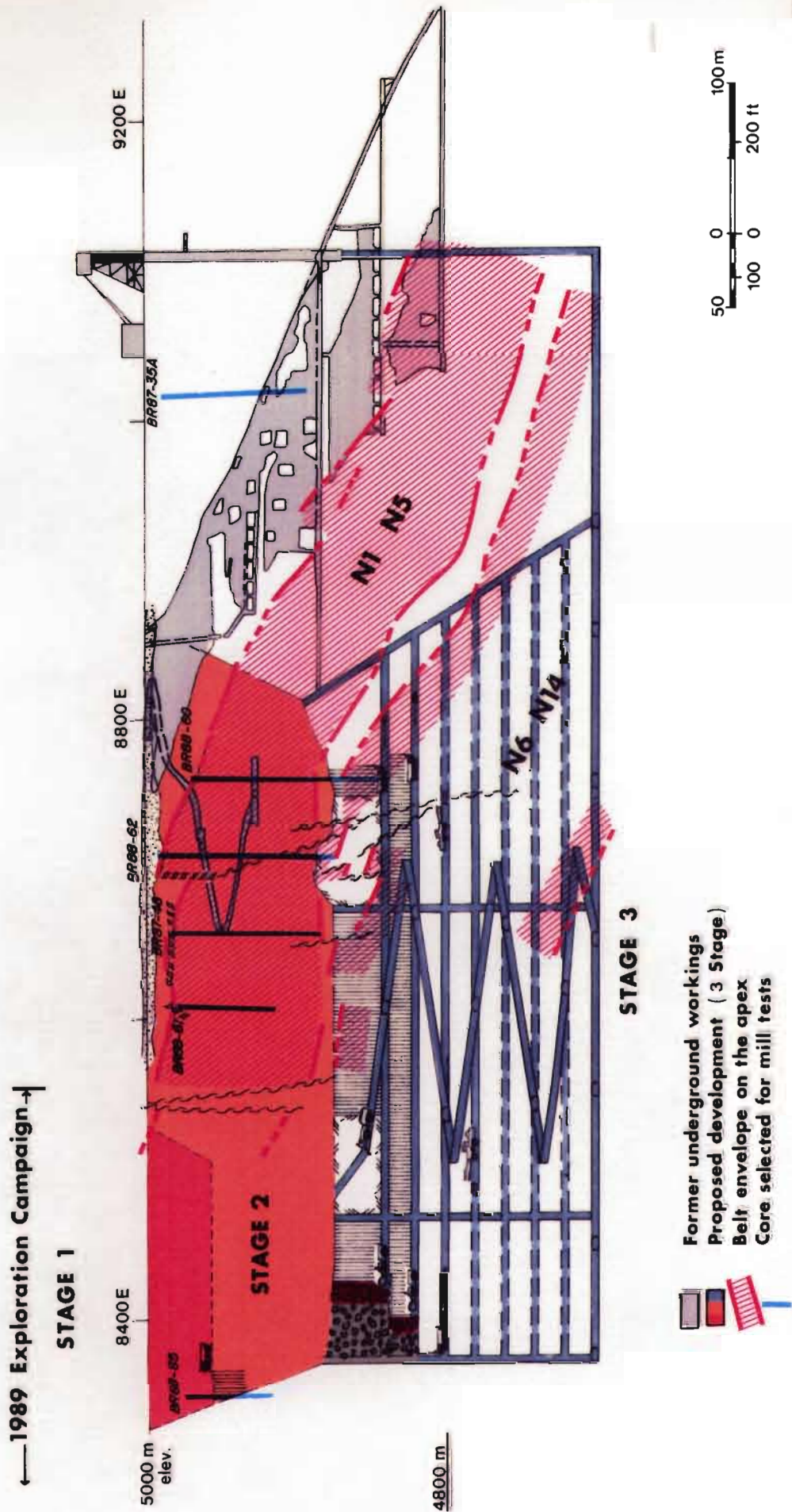
The first scenario is based mainly on the use of a semi-portable processing plant with a capacity of 500 metric tons per day. The plant would be in production as early as April 1990. A total of 175,000 metric tons of ore would be processed each year. All ore would be extracted by the open-pit mining method.

The mill would use a gravitational concentrator and the flotation process, with the concentrate being cyanized at the mill itself. It is important to point out, however, that a maximum of 5% of the daily tonnage would be cyanized, for a total of 25 metric tons per day or 8,750 metric tons per year.

In scenario 1, the ore would be extracted from the mineralized zones of outcropping belts N1 to N5. These belts have an average width of 60 meters. Because of the relatively small quantity of ore milled (175,000 mt per year), a proportion of one ton of waste to one ton of ore would be realistic for years 1990 to 1992. From year 1993 on, the ratio would be two tons of waste to one ton of ore. Finally, for years 1994 to 1999, the ratio would probably rise to three tons of waste to one ton of ore.

GOLDBORO PROJECT VERTICAL PROJECTION

FIGURE 6



The main attraction of this scenario lies in the fact that revenues would be generated as early as the first year. Of course, because of the low tonnage processed each year, the actual duration of the project would be much longer than the ten-year period used for all three scenarios.

4.2 SCENARIO 2

Scenario 2 is based on the consecutive use of a semi-portable processing plant with a capacity of 500 metric tons per day and a plant having a daily capacity of 5,000 metric tons. The semi-portable plant would be in operation from April 1990 to April 1992. During this period, the other, larger plant, would be built and could be in operation as early as May 1992. The use of the semi-portable plant would generate revenues from the project during the construction of the main plant.

The 500 mt per day plant would process 306,250 mt of ore over a 24-month period. As for the 5,000 mt per day plant, it would process a total of 11,150,000 mt of ore from the open-pit mining and 2,624,593 mt from the underground operations. Underground mining would use the sub-level retreat method, mainly on the apex of the mineralized belts and over a thickness of about 60 meters.

For years 1990 and 1991, the waste-ore ratio would be one ton of waste to one ton of ore. After the opening of the 5,000 mt/day plant, the ratio would rise to four tons of waste to one ton of ore.

4.3 SCENARIO 3

Scenario 3 uses a different approach from the two first scenarios. As in scenario 2, it would allow for the extraction of 11,150,000 mt of ore by open-pit mining. In addition, underground mining by the sub-level retreat method would extract 7,000,000 mt of ore. This scenario is based on a mixed treatment method, by heap leaching for the period from October 1989 to May 1992 and a 5,000 mt/day plant for the rest of the duration of the project. Tests are being done at the Centre de recherches minérales du Québec in order to improve and maximize the heap leaching process.

5. TECHNICAL FEASIBILITY OF THE PROJECT

Three possible scenarios for the Goldboro project are examined in this feasibility study. Each scenario is divided into two main phases: pre-production and production. The pre-production phase includes all work to be done before beginning the actual production phase. The production phase will begin when tons of ore are extracted from Goldboro project.

5.1 REVENUE GENERATED BY THE PROJECT

Revenues generated by each of the three scenarios were calculated using a recovery rate of 95%. This recovery rate is based on the results of the flotation tests done at the Centre de recherches minérales du Québec over the past months and on visits made to gold processing plants in Nova Scotia which process ore similar to that of the Goldboro project.

Here are the calculation parameters used for estimating the revenues for each of the scenarios:

<u>Variables:</u>	grade	3.0 g /mt of gold
	price of gold	\$450 per ounce
	recovery rate	95%
	conversion factor	31,1035 grams per ounce of gold

Calculation of revenues

Revenue = milled tons x grade x recovery x price of gold + conversion factor

The average revenues would be of the order of \$7,215,828 for scenario 1 and \$72,158,278 for scenarios 2 and 3. Tables 1 to 3 show the total revenue generated by each scenario for the total duration of the project.

	YEAR 1989	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999	TOTAL
PRODUCTION REVENUE												
EXTRACT TONS												
Open pit	0	350,000	350,000	350,000	525,000	700,000	700,000	700,000	700,000	700,000	700,000	5,775,000
MILLING TONS												
Open pit	0	131,250	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	
Open pit cumulative	0	131,250	306,250	481,250	656,250	831,250	1,006,250	1,181,250	1,356,250	1,531,250	1,706,250	
PRODUCTION REVENUES TOTAL	0 \$	5,411,871 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	70,354,321 \$

TABLE 1

Revenue Generated by Scenario 1

	YEAR 1989	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999	TOTAL
PRODUCTION REVENUE												
EXTRACT TONS												
Open pit	0	350,000	350,000	3,596,667	8,750,000	8,750,000	8,750,000	8,750,000	8,750,000	4,377,085	0	52,423,752
Underground	0	0	0	0	0	0	0	0	0	874,583	1,750,000	2,624,583
MILLING TONS												
Open pit	0	131,250	175,000	1,218,333	1,750,000	1,750,000	1,750,000	1,750,000	1,750,000	875,417	0	
Open pit cumulative	0	131,250	306,250	1,524,583	3,274,583	5,024,583	6,774,583	8,524,583	10,274,583	11,150,000	11,150,000	
Underground	0	0	0	0	0	0	0	0	0	874,583	1,750,000	
Underground cumulative	0	0	0	0	0	0	0	0	0	874,583	2,624,583	
PRODUCTION REVENUE TOTAL	0 \$	5,411,871 \$	7,215,828 \$	90,235,892 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	567,871,537 \$

TABLE 2

Revenue Generated by Scenario 2

	YEAR 1989	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999	TOTAL
PRODUCTION REVENUE												
EXTRACT TONS												
Open pit	1,200,000	4,200,000	8,750,000	8,750,000	8,750,000	8,750,000	8,750,000	0	0	0	0	48,150,000
Underground	0	0	0	0	0	0	0	1,750,000	1,750,000	1,750,000	1,750,000	7,000,000
MILLING TONS												
Open pit	450,000	1,950,000	1,750,000	1,750,000	1,750,000	1,750,000	1,750,000	0	0	0	0	
Open pit cumulative	450,000	2,400,000	4,150,000	5,900,000	7,650,000	9,400,000	11,150,000	11,150,000	11,150,000	11,150,000	11,150,000	
Underground	0	0	0	0	0	0	0	1,750,000	1,750,000	1,750,000	1,750,000	
Underground cumulative	0	0	0	0	0	0	0	1,750,000	3,500,000	5,250,000	7,000,000	
PRODUCTION REVENUE TOTAL	13,672,095 \$	59,245,744 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	722,342,342 \$

TABLE 3
Revenue Generated by Scenario 3

5.2 PRE-PRODUCTION COSTS

Pre-production costs correspond to the expenses generated before the project goes into production. For scenarios 1 and 3, the pre-production phase is broken down over the two first years of the project, which corresponds to the construction of the 500 mt/day and 5,000 mt/day plants. For scenario 2, the pre-production phase would last four years, the time it would take to install the semi-portable plant during 1989 and the preparations for and construction of the 5,000 mt per day plant over the following three years. The pre-production costs have been divided into nine parts, including:

- the studies done for the planning and evaluation of the project;
- pre-construction activities;
- construction activities related to the semi-portable 500 ton per day or 5,000 ton per day plant and/or heap leaching;
- the creation of tailings and ore pads;
- the establishment of services, including the material infrastructures needed for the project and the preparation of a pit;
- contingencies, estimated at 5% of the total of pre-production costs;
- engineering services for the mill;
- supervision and engineering work, evaluated at 7% of the total pre-production costs;
- administration costs, evaluated at 6% of the total pre-production costs.

Tables 4 to 6 give a summary of the total pre-production costs for each scenario.

5.2.1 Pre-production studies

This item includes the production of different studies required for preliminary planning and evaluation of the Goldboro project. The total costs for scenarios 1, 2 and 3 respectively would be \$917,036, \$1,267,036 and \$1,267,036.

- Progress report and compilation:

This report covers the compiling and processing of data gathered during the 1988 exploration program. The cost of this study is estimated at \$80,000 for each of the three scenarios.

- Reserve calculations:

New reserve calculations including 1988 data were begun in January 1989. The total cost is estimated at \$75,000 for each of the three scenarios.

- Core sampling and assaying:

This includes the analysis of the core produced during the 1988 exploration program and the performance of eight metallurgical tests. These assays will help to determine the grade, ideal processing method for gold recovery, best method for heap leaching and design of the semi-autogenous grinding. The cost is estimated at \$250,000 for each of the three scenarios.

- Pre-feasibility:

The pre-feasibility study will establish a preliminary recovery rate for the Goldboro project. Following the initial results, a presentation document will be produced and a decision will be made to continue with the project. The total cost is \$17,960 for each of the three scenarios.

- Financial and technical feasibility:

A complete technical and financial feasibility study of Goldboro project will be made (i.e. this report). The cost is \$194,076.

- Preliminary mill design:

This corresponds to a draft of the plans and specifications of the 5,000 ton per day plant. A percentage of the total cost of the mill is calculated for this item, amounting to \$350,000 for each of scenarios 2 and 3. For scenario 1, no costs are expected, since the 500 mt plant will be acquired from the firm Oracon, who would take care of all the details.

- Preliminary pit design:

This study includes the preliminary design of the pit, taking into account all the data available. The cost of this item is included in the cost of the technical and financial feasibility study of the project.

- Hiring:

The cost of this item is included in the supervision costs. Over 160 employees will be hired over a six-month period.

- Environmental feasibility:

An environmental impact study will be done on the Goldboro project. A total cost of \$300,000 is expected for this study for each of the three scenarios. This cost also includes obtaining the required certificates and permits. Note that the environmental follow-up is included in the milling cost.

5.2.2 Pre-construction

The pre-construction phase consists in setting up all the infrastructures required before proceeding with the mill construction. The total costs for this item are \$300,000 each for scenarios 1 and 2, and \$342,500 for scenario 3.

- Land purchases:

Plans include the acquisition of land surrounding the Goldboro project. This land belongs at present to private landowners, and the acquisition costs are estimated at \$100,000. In addition, surface rights on the Goldboro property evaluated at 6% now belong to Mr. McMillan and would cost an estimated \$100,000 to buy back. The total cost of land purchases is therefore \$200,000 for each of the three scenarios.

- Mining lease:

The cost of obtaining a mining lease, estimated at \$25,000, is included in the engineering and supervision costs.

- 70 Kv electric line:

The project will require 69 Kv of electrical energy. At present, this energy is available at 20 km from the site of the project. A cost of \$100,000/km is estimated for the installation of infrastructures required for the transportation of this energy, for a total of \$2,000,000 for scenarios 2 and 3. A 25 to 600 Kv sub-station has been installed on the site of the project for the moment. A second 25 to 3,000 Kv sub-station located near the shaft is nearing completion. This second sub-station is expected to get its electricity from Country Arbour. The 69 Kv line will be constructed from the same location. The two sub-stations already on the site could satisfy the construction needs and would be sufficient to go into production. Note that for scenario 1, no further electrical energy would be required.

- Definition drilling:

A definition drilling program is planned for 1989. This campaign will be held on the area west of section 8,600 E, on either side of the axis of the anticlinal. This would cost an estimated \$400,000 for each of the three scenarios.

- Equipment research:

Following preliminary design of the pit and mill, research must be done on the equipment required. The cost of this activity is included in the engineering and supervision costs.

- Preliminary geotechnical studies:

This first geotechnical study would lead to the creation of a preliminary design of the mill and pit. This geotechnical study is not included in scenario 1. Note that other geotechnical studies are planned for going into production. The cost of this study would be as follows for scenarios 2 and 3:

Five 50-foot drill holes @ \$50 per foot	\$ 12,500
Laboratory costs	\$ 5,000
Processing and report	<u>\$ 25,000</u>
Total	\$ 42,500

- Final design of the open-pit mine:

The final design of the pit will be done by computer model which will optimize the shape of the pit, the position of the ramp and the ore/waste ratio. The expected cost for this item, which is included in the engineering and supervision costs, is \$50,000.

- Purchase of mining equipment:

No purchases of equipment for the operation of the open-pit mine are planned in this study. The open-pit operations as a whole will be undertaken by a mining contractor.

5.2.3 Mill construction

This third pre-production phase includes three sets of activities: the construction (everything included) of a 500 ton per day mill, the construction of a 5,000 ton per day plant and finally, the establishment of heaps for the heap leaching process.

- **Slashing:**

Approximately 16 acres will have to be slashed before the mill can be built. The cost is estimated at \$1,500 per acre, or a total of \$24,000 for each of the three scenarios.

- **Geotechnical studies:**

This item includes all geotechnical work required for the construction of the 500 mt and 5,000 mt mills and the heap leaching. The work is broken down as follows for each of the three scenarios:

Seven 50-foot drill holes @ \$50 per foot	\$ 17,500
Assays	\$ 7,200
Report	<u>\$ 10,000</u>
Total	\$ 34,700

- **Construction of the 500 mt per day mill:**

The construction of a 500 mt per day is planned for scenarios 1 and 2. Contacts have already been made with the firm Oracon for the

construction of the mill. This firm offers an all-inclusive type contract, with the breakdown of costs as follows:

Operating costs	\$ 15.20/mt
Capital pay-back	<u>\$ 15.55/mt</u>
Total	\$ 30.75/mt

The total cost for this mill would be \$6,500,000 inclusively. An initial deposit (down payment) of \$1,734,000 is planned to ensure the start-up of the Oracon contract, as follows:

Total cost of the mill	\$ 6,500,000	
Less down payment:		
Mobilization	\$ 500,000	
Installation of foundation and building	\$ 784,000	
Electricity	\$ 350,000	
General expenses	\$ 100,000	
Sub-total	<u>\$ 1,734,000</u>	<u>\$ 1,734,000</u>
Total	\$ 4,766,000	

Financing required for the mill is therefore of \$4,766,000. Oracon would finance the mill for a period of 24 months at an annual interest rate of 13%. This corresponds to annual payments of \$2,719,012 for the milling of 175,000 metric tons of ore, or \$15.55/mt.

- Construction of the 5,000 ton per day mill:

The construction of a 5,000 ton per day mill is planned for scenarios 2 and 3.

Site preparation:

The preparation of the site for the construction of this mill and related units includes excavation or backfill, installation of aqueducts and septic tanks and the construction of roads. The cost of preparing the site was calculated according to the O'Hara formula³, which applies a 12% factor (corresponding to the slightly wavy terrain) to the mill equipment cost of \$7,840,608 (see Appendix 1). The result is an estimated cost of \$950,000 for site preparation.

Foundations:

The total cost for the foundations is estimated at \$1,032,000, of which \$393,000 is set aside for the crusher building, \$15,000 for the screening area, \$240,000 for the ore bins and \$154,000 for the rest of the plant.

Purchase and installation of machines:

The cost of machinery is estimated at \$7,840,608. The cost of installing this equipment is estimated at about 55% of the total

3. Mining and Mineral Processing Equipment Costs and Preliminary Capital Cost Estimations, 1980.

purchase cost⁴, i.e., \$4,312,336. The total cost of purchasing and installing mechanical equipment is \$12,152,944.

Mechanical finishing work and plumbing:

The cost of mechanical finishing work and plumbing is estimated at 20%⁵ of the total equipment cost (\$7,840,608). This would amount to \$2,076,888 for this item.

Building structures:

The cost of the building structures for the mill complex is estimated at \$1,594,500, of which \$125,000 would be for the crusher building, \$1,075,000 for the bins, \$353,500 for the mill and \$41,000 for the screening area.

Electricity:

According to Chemical Engineering Plant Design, the electrical costs for the instruments and communications related to the mill, the crushing, screening and bins are estimated at 40%⁶ of the equipment cost, or in this case, \$3,136,246. The electrical installations and the controls are estimated at 10%⁷ of the equipment cost, or \$1,038,443. In addition, we estimate that the cost of the outdoor electrical lines will amount to \$519,221 (about 5% according to the same reference) and the cost of lighting will

4. Ibid.
5. Ibid.
6. Ibid.
7. Ibid.

amount to \$191,000. The total estimated cost for the mill complex is therefore of \$4,884,907.

Services:

The cost for drinking water is estimated at \$37,000, of which \$8,000 will be for the crusher building, \$4,000 for the screening area and \$25,000 for the mill.

Covering:

The cost for covering and finishing the mill buildings is estimated at \$528,500: \$116,000 for the crusher building, \$42,500 for the screening area and \$370,000 for the mill.

- Heap leaching:

Heap leaching operations are required under scenario 3. The installation of the required infrastructures is broken down as follows.

Preparation of heap leaching sites:

For the heap leaching, it is expected that 500,000 metric tons of ore will be contained in each 300 meter by 100 meter heap. The installation cost is \$12/m², as follows:

$$300 \text{ m} \times 100 \text{ m} = 30,000 \text{ m}^2$$

$$30,000 \text{ m}^2 \times \$12/\text{m}^2 = \$360,000/\text{heap}$$

Only one heap would be needed for the first year of operation and four heaps for the second year. It represents a total investment of \$1,800,000.

Purchase of activated charcoal equipment:

The activated charcoal equipment will be installed on the 5,000 mt mill site for the heap leaching and ore recovery at the mill. This equipment can be broken down as follows:

Building	\$	110,000
Equipment	\$	100,000
Installation	\$	45,000
Plumbing	\$	20,000
Electricity	\$	<u>25,000</u>
Total	\$	300,000

Preparation of the three basins:

Three basins will be used for gold recovery and cyanide treatment. The cost of building these three basins is estimated at \$12/m². They cover an area of 30,000 m² and represent a total investment of \$360,000.

Installation of the cyanide treatment plant:

The preliminary decision calls for treating the cyanide with lime and peroxyde. Note that a detailed study will have to be done to determine the best method to follow. The cost of installing such a mill is estimated at \$500,000. Monthly operating costs will add another \$8,5000 to the installation cost.

5.2.4 Installation of ore and waste pads

The installation costs for the waste and ore pads amount to a total of \$2,003,501 for scenarios 2 and 3, and \$972,999 for scenario 1.

- Slashing:

For scenarios 2 and 3, a total area of 16,500,000 m² will have to be slashed before the pads are built. About 413 acres will therefore have to be cut at a cost of \$1,000 per acre, for a total of \$413,000. For scenario 1, only 50 acres will have to be slashed, for a total of \$50,000.

- Geotechnical studies:

For scenarios 1 and 2, geotechnical work for the installation of ore pads will require drilling six 50-foot holes at a cost of \$50/ft (\$15,000), as well as data analysis and report preparation (\$25,000). The total cost is estimated at \$40,000. For scenario 1, a single geotechnical drill hole is required, in addition to report preparation, for a total of \$4,000.

- Dike and road construction:

The total cost for the construction of dikes and roads related to the ore and waste pads is estimated at \$1,262,285 for scenarios 2 and 3. Of this total, \$262,285 will be for dike construction and \$1,000,000 for the purchase of geotextiles. For scenario 1, a total cost of \$631,322 is expected for the combined use of geotextiles and compacted silt.

- Installation of wastewater drainage:

Wastewater drainage canals will be about 2,300 meters long. The purchase cost is estimated at \$6 per foot, for a total of \$45,276. The installation of the drainage canals will cost about \$54,901. The cost of acquiring and installing wastewater drainage for each of the three scenarios is therefore of a total of \$100,177.

- Electricity:

Each of the three scenarios calls for the erection of an electrical line for the ore pads. The expected length would be 1.5 km. The cost is estimated at \$25,000/km, for a total of \$37,500.

- Overflow station:

An amount of \$150,000 is projected in all three scenarios for the installation and putting into operation of an overflow station for the ore pads.

5.2.5 Services complex

The services complex for the pit will cost \$896,800, \$1,600,000 and \$2,496,800 for scenarios 1, 2 and 3 respectively.

- Slashing for the pit:

The cost of the slashing needed for the pit is estimated at \$50,000 for each of the three scenarios. The wooded area covers 50 acres, with an average cost of \$1,000 per acre.

- Geotechnical studies for the pit:

Geotechnical work will be required for the 300 meters of pit which will be over 100 meters deep. This will require an investment of approximately \$146,800 for each of the three scenarios. The cost can be broken down as follows:

Four 400' holes (NQ, triple tube)	\$ 80,000
Six 400' piezometers (\$3,000/250' x 400' x 6 piez.)	\$ 28,800
Pumping test	\$ 15,000
Sampling and laboratory tests (150 tests @ \$100 each)	\$ 15,000
Data processing and material	<u>\$ 8,000</u>
Total	\$ 146,800

- Preliminary overburden stripping (2,000,000 mt):

Nearly 2,000,000 metric tons of material will be removed. The cost of the preliminary overburden stripping for scenarios 2 and 3 is estimated at \$1,200,000, or 60¢ per metric ton. For scenario 1, 1,300,000 metric tons will be stripped at a cost of \$200,000.

- Settling pond, waste pad:

The cost of building a settling pond for the waste pad run-off will be about \$100,000 for each of the three scenarios. This cost includes three 50-foot drill holes at \$50 per foot and the geotechnical studies necessary to ensure the stability of the overburden and waste pad design.

- Inventory:

An inventory of approximately \$1,000,000 for scenarios 2 and 3 and of about \$400,000 for scenario 1 will be kept on the site to ensure that equipment remains operational.

5.2.6 Other costs

- Contingency fund:

A reserve amounting to 5% of the total pre-production costs for the three scenarios is added to the estimates to cover contingencies related to the project.

- Engineering:

Mill engineering costs for scenarios 2 and 3 include an estimated 120 sheets, at a cost of \$2,700 per sheet, for a total of \$324,000.

- Engineering supervision:

The cost of engineering supervision is estimated at 6.5% of the total pre-production costs for the three scenarios.

- Supervision:

The cost for supervision is estimated at 6% of the total pre-production costs for each of the three scenarios.

5.3 OPERATING EXPENSES

Operating expenses correspond to the expenses generated once the mine is under production. Depending on the scenario chosen, these costs cover the operations of the 500 mt/day and 5,000 mt/day plants, the heap leaching, the cost of open-pit mining and underground operations. Tables 7 to 9 give an annual breakdown of the operating expenses of for each of the scenarios for the Goldboro project. Appendix 2 presents, for information purposes, the same tables, but with a monthly breakdown of costs for years 1989 and 1990.

	COST PER TON	YEAR 1989	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999	TOTAL
OPERATING EXPENSES													
MILLING													
Milling (for 500 mt; financing and operation)	30.75 \$	0 \$	4,035,938 \$	5,381,250 \$	1,345,313 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	10,762,500 \$
Milling (for 500 mt; operation)	15.20 \$	0 \$	0 \$	0 \$	1,995,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	20,615,000 \$
Sub-total		0 \$	4,035,938 \$	5,381,250 \$	3,340,313 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	31,377,500 \$
OPERATING COSTS													
General expenses (Orex)		720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	7,920,000 \$
Expenses for mining contractor	3.00 \$	0 \$	1,050,000 \$	1,050,000 \$	1,050,000 \$	1,575,000 \$	2,100,000 \$	2,100,000 \$	2,100,000 \$	2,100,000 \$	2,100,000 \$	2,100,000 \$	17,325,000 \$
Sub-total		720,000 \$	1,770,000 \$	1,770,000 \$	1,770,000 \$	2,295,000 \$	2,820,000 \$	2,820,000 \$	2,820,000 \$	2,820,000 \$	2,820,000 \$	2,820,000 \$	25,245,000 \$
OPERATING EXPENSES TOTAL													
Operating Expenses Total		720,000 \$	5,805,938 \$	7,151,250 \$	5,110,313 \$	4,955,000 \$	5,480,000 \$	5,480,000 \$	5,480,000 \$	5,480,000 \$	5,480,000 \$	5,480,000 \$	56,622,500 \$
Contingencies (5%)		36,000 \$	290,297 \$	357,563 \$	255,516 \$	247,750 \$	274,000 \$	274,000 \$	274,000 \$	274,000 \$	274,000 \$	274,000 \$	2,831,123 \$
Engineering (7%)		50,400 \$	406,416 \$	500,588 \$	357,722 \$	346,850 \$	383,600 \$	383,600 \$	383,600 \$	383,600 \$	383,600 \$	383,600 \$	3,963,573 \$
Supervision (6%)		43,200 \$	348,356 \$	429,075 \$	306,619 \$	297,300 \$	328,800 \$	328,800 \$	328,800 \$	328,800 \$	328,800 \$	328,800 \$	3,397,350 \$
GRAND TOTAL		849,600 \$	6,851,006 \$	8,438,473 \$	6,030,169 \$	5,846,900 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	66,814,550 \$
GROSS OPERATING PROFITS													
		-849,600 \$	-1,439,133 \$	-1,222,647 \$	1,185,659 \$	1,368,928 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	3,339,771 \$

TABLE 7

Operating Costs for Scenario 1

	YEAR 1989	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999	TOTAL	
OPERATING EXPENSES													
MILLING													
Milling (500 mt: financing and operating)	30.75 \$	0 \$	4,035,938 \$	5,381,250 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,417,188 \$	
Milling (500 mt: operating)	15.80 \$	0 \$	0 \$	0 \$	229,100 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	229,100 \$	
Milling (for 5,000 mt)	7.00 \$	0 \$	8,120,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	6,122,083 \$	12,250,000 \$	87,742,083 \$	
Sub-total	0 \$	0 \$	4,035,938 \$	5,381,250 \$	8,120,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	6,122,083 \$	12,250,000 \$	97,159,271 \$	
OPERATING COSTS													
General expenses (Ores)		720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	7,920,000 \$	
Expenses for mining contractor	3.00 \$	0 \$	1,050,000 \$	1,050,000 \$	10,790,001 \$	26,250,000 \$	26,250,000 \$	26,250,000 \$	26,250,000 \$	13,131,255 \$	0 \$	157,271,256 \$	
Sub-total		720,000 \$	1,770,000 \$	1,770,000 \$	11,510,001 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	13,851,255 \$	720,000 \$	165,191,256 \$	
UNDERGROUND DEVELOPMENT													
Ramp	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	6,000,000 \$	0 \$	0 \$	0 \$	6,000,000 \$	
Levels and sub-levels	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	6,240,000 \$	3,280,004 \$	0 \$	9,520,004 \$	
Cross-cut	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	1,365,000 \$	0 \$	0 \$	0 \$	1,365,000 \$	
Level 8	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	2,060,000 \$	0 \$	0 \$	0 \$	2,060,000 \$	
Definition drilling	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	187,500 \$	2,250,000 \$	0 \$	0 \$	2,437,500 \$	
Ventilation raise	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	1,200,000 \$	0 \$	0 \$	1,200,000 \$	
Exit raise	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	534,000 \$	0 \$	0 \$	0 \$	534,000 \$	
Sub-total	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	10,146,500 \$	9,690,000 \$	3,280,004 \$	0 \$	23,116,504 \$	
UNDERGROUND OPERATING													
Personnel for 5,000 mt/day	2.17 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	1,899,174 \$	3,800,160 \$	5,699,334 \$	
Mucking	0.34 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	296,589 \$	593,460 \$	890,049 \$	
Haulage	1.87 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	1,637,219 \$	3,274,000 \$	6,913,219 \$	
Drill	0.07 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	62,970 \$	126,000 \$	189,970 \$	
Blasting	0.21 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	272,870 \$	546,000 \$	818,870 \$	
Ventilation and other costs	0.24 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	209,900 \$	420,000 \$	629,900 \$	
Maintenance	0.24 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	209,900 \$	420,000 \$	629,900 \$	
Sub-total	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	4,588,622 \$	9,161,620 \$	13,770,242 \$	
SUB-TOTAL FOR EXPENSES													
		720,000 \$	5,805,938 \$	7,151,250 \$	19,630,001 \$	39,220,000 \$	39,220,000 \$	39,220,000 \$	49,346,500 \$	48,910,000 \$	27,841,964 \$	22,151,620 \$	299,227,273 \$
Contingencies(5%)		36,000 \$	290,297 \$	357,563 \$	981,500 \$	1,961,000 \$	1,961,000 \$	1,961,000 \$	2,448,325 \$	2,445,500 \$	1,392,098 \$	1,107,581 \$	14,961,864 \$
Engineering (7%)		50,400 \$	406,416 \$	500,588 \$	1,374,100 \$	2,745,400 \$	2,745,400 \$	2,745,400 \$	3,435,655 \$	3,423,700 \$	1,948,937 \$	1,530,613 \$	20,946,609 \$
Supervision (6%)		43,200 \$	348,356 \$	429,075 \$	1,177,800 \$	2,353,200 \$	2,353,200 \$	2,353,200 \$	2,961,990 \$	2,934,600 \$	1,670,518 \$	1,329,097 \$	17,854,236 \$
OPERATING EXPENSES TOTAL	849,600 \$	6,851,008 \$	8,438,475 \$	23,143,481 \$	44,279,600 \$	46,279,600 \$	46,279,600 \$	58,232,470 \$	57,713,800 \$	32,833,318 \$	26,138,912 \$	353,099,982 \$	
GROSS OPERATING PROFITS													
	-849,600 \$	-1,439,135 \$	-1,222,647 \$	27,072,491 \$	25,878,678 \$	25,878,678 \$	25,878,678 \$	13,905,808 \$	14,444,478 \$	39,304,740 \$	46,019,366 \$	214,871,555 \$	

TABLE 8

Operating Costs for Scenario 2

	YEAR 1989	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999	TOTAL
DÉPENSES D'OPÉRATION												
MILLING												
Heap leaching	5.00 \$	2,250,000 \$	9,750,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	12,000,000 \$
Milling (for 5000 mt)	7.00 \$	0 \$	0 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	110,250,000 \$
Sub-total		2,250,000 \$	9,750,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	122,250,000 \$
OPERATING COST												
General expenses (Orex)		720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	7,920,000 \$
Expenses for mining contractor	3.00 \$	3,600,000 \$	12,600,000 \$	26,250,000 \$	26,250,000 \$	26,250,000 \$	26,250,000 \$	26,250,000 \$	0 \$	0 \$	0 \$	147,450,000 \$
Sub-total		4,320,000 \$	13,320,000 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	720,000 \$	720,000 \$	720,000 \$	155,370,000 \$
UNDERGROUND DEVELOPMENT												
Ramp	0 \$	0 \$	0 \$	0 \$	0 \$	6,000,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	6,000,000 \$
Levels and sub-levels	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	6,240,000 \$	3,280,004 \$	0 \$	0 \$	0 \$	9,520,004 \$
Cross-cut	0 \$	0 \$	0 \$	0 \$	0 \$	1,365,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	1,365,000 \$
Level 6	0 \$	0 \$	0 \$	0 \$	0 \$	2,060,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	2,060,000 \$
Definition drilling	0 \$	0 \$	0 \$	0 \$	0 \$	187,500 \$	2,250,000 \$	0 \$	0 \$	0 \$	0 \$	2,437,500 \$
Ventilation raise	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	1,200,000 \$	0 \$	0 \$	0 \$	0 \$	1,200,000 \$
Exit raise	0 \$	0 \$	0 \$	0 \$	0 \$	534,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	534,000 \$
Sub-total	0 \$	0 \$	0 \$	0 \$	0 \$	10,146,500 \$	9,690,000 \$	3,280,004 \$	0 \$	0 \$	0 \$	23,116,504 \$
UNDERGROUND OPERATING												
Personnel for 5000 mt/day	2.17 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	3,800,160 \$	3,800,160 \$	3,800,160 \$	3,800,160 \$	15,200,640 \$
Mucking	0.34 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	593,460 \$	593,460 \$	593,460 \$	593,460 \$	2,373,840 \$
Haulage	1.87 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	3,276,000 \$	3,276,000 \$	3,276,000 \$	3,276,000 \$	13,104,000 \$
Drill	0.07 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	126,000 \$	126,000 \$	126,000 \$	126,000 \$	504,000 \$
Blasting	0.31 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	546,000 \$	546,000 \$	546,000 \$	546,000 \$	2,184,000 \$
Ventilation and other costs	0.24 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	420,000 \$	420,000 \$	420,000 \$	420,000 \$	1,680,000 \$
Maintenance	0.24 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	420,000 \$	420,000 \$	420,000 \$	420,000 \$	1,680,000 \$
Sub-total	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,181,620 \$	9,181,620 \$	9,181,620 \$	9,181,620 \$	36,776,400 \$
SUB-TOTAL FOR EXPENSES												
		6,570,000 \$	23,070,000 \$	39,220,000 \$	39,220,000 \$	39,220,000 \$	49,366,500 \$	48,910,000 \$	25,431,624 \$	22,151,620 \$	22,151,620 \$	337,462,964 \$
Contingencies(5%)		328,500 \$	1,153,500 \$	1,961,000 \$	1,961,000 \$	1,961,000 \$	2,468,325 \$	2,445,500 \$	1,271,581 \$	1,107,581 \$	1,107,581 \$	16,873,149 \$
Engineering 7%		459,900 \$	1,614,900 \$	2,745,400 \$	2,745,400 \$	2,745,400 \$	3,455,635 \$	3,423,700 \$	1,780,214 \$	1,550,613 \$	1,550,613 \$	23,622,409 \$
Supervision (6%)		394,200 \$	1,384,200 \$	2,353,200 \$	2,353,200 \$	2,353,200 \$	2,961,990 \$	2,934,600 \$	1,525,897 \$	1,329,097 \$	1,329,097 \$	20,247,779 \$
OPERATING EXPENSES TOTAL		7,752,600 \$	27,222,600 \$	44,279,600 \$	44,279,600 \$	44,279,600 \$	58,232,470 \$	57,713,800 \$	30,009,316 \$	26,138,912 \$	26,138,912 \$	398,206,322 \$
GROSS OPERATING PROFITS												
		5,919,495 \$	32,023,144 \$	23,878,678 \$	23,878,678 \$	23,878,678 \$	13,905,808 \$	14,444,478 \$	42,148,962 \$	44,019,366 \$	44,019,366 \$	324,136,020 \$

TABLE 9

Operating Costs for Scenario 3

5.3.1 Milling of 500 mt/day

The milling cost for the 500 mt/day mill is estimated at \$15.20/mt, including manpower and supplies (see page 40). After checking with similar mills in Rouyn-Noranda and Val d'Or, this cost seems reasonable.

5.3.2 Heap leaching

The heap leaching cost estimate is based on the following factors:

- A two-month period is required to recover 70% of the gold contained in the ore;
- The grade chosen is 3.0 g/mt;
- The heaps measure 200 feet by 1,000 feet;
- Operations will cover 200 'x 200' x 20' units at a time, or one-fifth of a heap;
- Processing costs include crushing, agglomeration and heaping for cyanization;
- Crushing reaches 100% over 1/4 inch;
- Agglomeration will be done with Portland cement;
- Heaping will be done with a bulldozer which will push from the bottom upwards in order to prevent excessive compacting;
- Each heap is made up of three 20-foot thick layers, containing (from the bottom to the top):

1st layer	225,000 mt
2nd layer	165,000 mt
3rd layer	110,000 mt

Considering the above factors, the estimated cost is \$5 per metric ton.

5.3.3 Milling 5,000 mt/day

The O'Hara method⁸ was used to calculate the milling costs, which can be broken down as follows:

	Base metals	Precious metals
Manpower:	$C_{31} = 127.5T^{.5} \times \text{act rate}$	$154.6T^{.5} \times \text{act rate}$
Supplies:	$C_{32} = 26.6T^{.7} \times \text{act rate}$	$21.5T^{.7} \times \text{act rate}$
Milling costs:	$C_3 = C_{31} + C_{32} \text{ \$/day}$	

- where:
- T=short tons milled per day
 - The actualization rate decided upon was calculated in the following manner: according to the formula, for 1980, the rate is equal to 800, or equivalent to a 9.5% increase per year between 1972 and 1982; for 1989, the same progression was used and results in an actualization rate of 1,130;
 - C₃₁ is used for flotation and C₃₂ for cyanization.

We therefore obtain the following calculations for the milling costs:

Manpower: $C_{31} = 154.6 \times (5,512)^{.5} \times 1,130/800 = \$16,213$

Supplies: $C_{32} = ((26.6 \times (5,512)^{.7} + (21.5 \times (264)^{.7})) \times 1,130/800 = \$17,129$

Milling costs: $C_3 = C_{31} + C_{32} = \$33,342 \text{ for } 5,000 \text{ tons, or } \$ 6.67/\text{mt}$

Contingency: 5% \$ 0.33/mt

Total \$ 7.00/mt

8. Ibid.

5.3.4 Operating Costs

Operating costs include all costs related to the work performed by Exploration Orex Inc., plus the contractor's operating costs.

- **General costs:**

An amount of \$720,000 per year is set aside for geology, surveying and mining engineering work done by Exploration Orex Inc. for each of the three scenarios. Note that the total operating costs for the plant and the mine include manpower costs.

- **Contractor's operating costs:**

It was decided to hire a mining contractor to do the open-pit mining for the project. In order to produce an estimate for this item, a preliminary estimate was requested from two such contractors in Rouyn-Noranda. According to the information supplied by these contractors, it appears reasonable to estimate a price of \$3.00/mt. This price is comparable to those presented as guidelines in the Canadian Mining Journal. It is applied for each of the three scenarios.

5.3.5 Underground development

Underground development of the mine is planned for the last years of scenarios 2 and 3. Consequently, the following costs apply only to these two scenarios.

- Driving the ramp:

According to the preliminary plans, it will be necessary to drive 4,000 feet of ramp to develop 500 vertical feet in the apex zone with an average width of 150 feet. The cost estimated for driving the ramp is \$1,500 per foot including plumbing, drawing, blasting, drilling and manpower. The ramp is planned in such a way as to allow circulation of vehicles carrying 40 mt of ore. This ramp would measure 25 by 15 feet, with a 15% incline. The total cost of driving the ramp is estimated at \$6,000,000.

- Sub-levels and levels:

According to initial estimates, 1,700 feet of drifts would be needed per level and sub-level. The estimated cost is \$800 per foot all included, for a total of \$9,520,000.

- Cross-cut:

The ramp will be located at least 300 feet from the center of the fold, which explains the need for a cross-cut for each sub-level, or:

$$7 \text{ cross-cuts} \times 300 \text{ feet} \times \$650 \text{ per foot} = \$1,365,000$$

- Level 8:

This level will open up under the Boston-Richardson shaft. It will reach a total length of 2,575 feet. The cost is estimated at \$800 per foot, for a total of \$2,060,000.

- Definition drilling:

Definition drilling is planned mainly under level 8. The drill chapels will be horizontal to sub-vertical. Two drills will be required. A total of 97,500 feet of drilling over a 25-meter grid will be required between section 8350E and 8850E. The estimated cost is \$25 per foot for a total of \$2,437,500.

- Production raises:

For this item, four production raises are planned, two at each end of sections 8350E and 8850E and two in the centre of these sections to facilitate the creation of pillars. Each raise will be 500 feet long and will be sub-vertical. An alimak will be used for the drilling. Unit cost is \$600 per foot, for a total of \$1,200,000.

- Emergency exit raises and ventilation raises:

This item includes the purchase and installation of ventilators near the Boston-Richardson shaft. The shafts will be used for fresh air and heating. The estimated cost is \$150,000. In addition, a 10 x 6-foot raise will be driven from level 8 using two side by side alimaks. The estimated cost of this raise is \$700 per foot over a total length of 540 feet. The total is therefore as follows:

Purchase and installation of ventilators	\$ 156,000
Raise: \$700 x 540 feet	\$ <u>378,000</u>
Total	\$ 534,000

5.3.6 Underground mining operations

This will include drawing, hauling, drilling, blasting, ventilation and manpower related to the underground mining operations. Note that this work will take place during the last two years of scenarios 2 and 3 only. Underground mining operations will be done by a contractor. The total cost for underground mining operations is \$5.24/mt, broken down as follows:

Manpower	\$ 2.17/mt
Drawing	\$ 0.34/mt
Hauling	\$ 1.87/mt
Drilling	\$ 0.07/mt
Blasting	\$ 0.31/mt
Ventilation and other	\$ 0.24/mt
Maintenance	<u>\$ 0.24/mt</u>
Total	\$ 5.24/mt

• Manpower for 5,000 mt per day:

Manpower costs are estimated on a basis of one 8-hour shift per day, or:

Hauling	18 men @ \$29/hr	\$ 522/hr
Blasting	8 men @ \$29/hr	\$ 232/hr
Drawing	4 men @ 29/hr	\$ 116/hr
Drilling	6 men @ \$26/hr	\$ 156/hr
Supervision	2 men @ \$32/hr	\$ 64/hr
Superintendent	1 man @ \$35/hr	<u>\$ 35/hr</u>
Total per hour		\$ 1,125/hr

Total per shift	\$ 9,000/day
Contractor's profit (20%)	\$ 1,800/day
Grand total	\$ 10,800/day

For an 8-hour workday, the underground mining operations would therefore cost \$10,800. This corresponds to a cost of \$2.16 per metric ton.

Details of the cost estimate for drawing are presented in Appendix 3. The cost for drawing with a seven yard loader is \$70.65 per hour. If we transform this cost to a cost per metric ton, using the following variables:

- 80% efficiency for drawing, or 80% of 2 500 mt, or 2,000 mt per shift;
- 20% profit for the contractor.

The cost would be \$0.34 per metric ton, as follows:

$$\$70.65/\text{hr} \times 8 \text{ hours} + 2,000 \text{ mt} \times 1.2 = \$0.34/\text{mt}$$

- Hauling:

Details of the cost estimate for hauling are presented in Appendix 4. The hourly cost estimate for hauling is \$48.75. If this cost is transformed to a cost per metric ton, using the following variables:

- 250 mt per shift;
- 20% profit for the contractor;

The cost would be \$1.87 per metric ton, as follows:

$$\$48.75/\text{hr} \times 8 \text{ hours} + 250 \text{ mt} \times 1.2 = \$1.87/\text{mt}$$

- Drilling:

Details of the drilling cost estimates are presented in Appendix 5.

The estimated cost per metric ton is \$0.06. The contractor's profit of \$0.01/mt must be added to this estimate, which gives us a total of \$0.07 for drilling activities related to the underground operations.

- Blasting:

Details of the blasting cost estimates are presented in Appendix 6.

The estimated cost is \$0.26 per metric ton. The contractor's profit of \$0.05/mt must be added to this amount, for a total of \$0.31/mt for underground blasting.

- Ventilation and other costs:

Five percent of the total estimated cost for underground operations, or \$0.24/mt, are expected for ventilation and other costs.

- Maintenance:

Five percent of the total estimated cost of underground operations, or \$0.24/mt, are expected for maintenance work.

5.3.7 Other operating costs

- Contingency fund:

Contingency costs are estimated at 5% of the total operating costs for the Goldboro project.

- Engineering:

Engineering costs are estimated at 7% of the total operating costs for the Goldboro project.

- Supervision:

Supervision costs are estimated at 6% of the total operating costs of the Goldboro project. This includes accounting, cost control, general management, etc.

6. FINANCIAL FEASIBILITY OF THE PROJECT

The financial evaluation of the project is calculated over a 10-year lifespan, which in turn is based on the present calculated reserves for the Goldboro project. All estimates take into account a maximum tonnage of 20,000,000 metric tons with an average grade of 3.0 g gold per metric ton. The price of gold is set at \$450. The following section presents the results of the financial analysis of the three possible scenarios for the Goldboro project.

For this financial analysis of the Goldboro project, we chose to use the present net value (PNV) and internal rate of return (IRR) methods instead of the recovery period. This latter method calculates the number of years required to recover an initial investment but does not take into account the profit-making potential of a project. In an investment context, the objective is not to recover the amount invested, but rather to make profit on the project. The PNV and IRR methods are used to calculate the return on investment.

The PNV of a project is calculated by comparing the present value of the income with the present value of expenditures over the lifespan of a project⁹. We chose 15% as an actualization rate for the project. This means that based on the risk involved in the project, we require a minimum return on investment of 15%.

9.
$$NPV = \sum_{t=1}^n \frac{Cf_t}{(1+k)^t} - C_0 = \sum_{t=1}^n \frac{Cf_t}{(1+IRR)^t} - C_0 = NPV = 0$$

Cf_t = Positive or negative cash flow after taxes at time t
 C_0 = Initial investment
 k = Actualisation rate required according to risks of project
 TRI = Internal rate of return
 VAN = Net present value

The internal rate of return of the project corresponds to an actualization rate where the net present value of the income is equal to the net present value of the expenditures. In other words, the internal rate of return is obtained when the net present value equals zero.

6.1 AMORTIZATION CATEGORIES

The amortization categories for the different types of equipment and acquisitions required for the project are presented in tables 10 to 12. The description of the amortization categories is taken from the Canadian Income Tax Law and Regulations, 1988, 17th edition.

Described below are the amortization categories for the project:

- Class 2 (6%): Electrical material, including production or distribution equipment;
- Class 3 (5%): Buildings and structures;
- Class 10 (30%): All motor driven equipment; crushers, conveyors, train engines, as well as buildings directly related to the operations, whether or not they are located on the mine site;
- Class 12 (100%): Service and production shafts, drifts and other underground workings;
- Class 28 (30%): Waste and ore pads.

Equipment	Amortization rate	Amor. 1989	Amor. 1990	Amor. 1991	Amor. 1992	Amor. 1993	Amor. 1994	Amor. 1995	Amor. 1996	Amor. 1997	Amor. 1998	Amor. 1999	Book value in 10 years	Resale price
Class 2: electrical equipment, ...	6%													
Balance to be amortized		0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Annual amortization		0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$		
Class 3: building, structure, ...	5%													
Balance to be amortized		0 \$	100,000 \$	97,500 \$	92,625 \$	87,994 \$	83,594 \$	79,414 \$	75,444 \$	71,671 \$	68,088 \$	64,683 \$	61,449 \$	65,000 \$
Annual amortization		0 \$	2,500 \$	4,875 \$	4,631 \$	4,400 \$	4,180 \$	3,971 \$	3,772 \$	3,584 \$	3,404 \$	3,234 \$		
Class 10: mill, equipment, ...	30%													
Balance to be amortized		1,795,400 \$	1,256,780 \$	879,746 \$	615,822 \$	431,076 \$	301,753 \$	211,227 \$	147,859 \$	103,501 \$	72,451 \$	50,716 \$	35,501 \$	40,000 \$
Annual amortization		538,620 \$	377,034 \$	263,924 \$	184,747 \$	129,323 \$	90,526 \$	63,368 \$	44,358 \$	31,050 \$	21,735 \$	15,215 \$		
Class 12: mine development, shaft, ...	100%													
Balance to be amortized		200,000 \$	300,000 \$	100,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Annual amortization		100,000 \$	200,000 \$	100,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$		
Class 28: ore dump, ...	30%													
Balance to be amortized		91,500 \$	959,274 \$	1,641,719 \$	1,467,403 \$	1,027,182 \$	719,028 \$	503,319 \$	352,324 \$	246,626 \$	172,639 \$	120,847 \$	84,593 \$	100,000 \$
Annual amortization		13,725 \$	155,557 \$	366,815 \$	440,221 \$	308,155 \$	215,708 \$	150,996 \$	105,697 \$	73,988 \$	51,792 \$	36,254 \$		
Total annual amortization		652,345 \$	735,091 \$	735,614 \$	629,599 \$	441,877 \$	310,414 \$	218,335 \$	153,827 \$	108,622 \$	76,931 \$	54,703 \$	181,543 \$	205,000 \$

TABLE 10

Amortization Table for Goldboro Project; scenario 1

Equipment	Amortization rate	Amor. 1989	Amor. 1990	Amor. 1991	Amor. 1992	Amor. 1993	Amor. 1994	Amor. 1995	Amor. 1996	Amor. 1997	Amor. 1998	Amor. 1999	Book value in 10 years	Resale price
Class 2: electrical equipment, ...	6%													
Balance to be amortized		0 \$	0 \$	200,000 \$	1,994,000 \$	1,928,360 \$	1,812,658 \$	1,703,899 \$	1,601,665 \$	1,505,565 \$	1,415,231 \$	1,330,317 \$	1,250,498 \$	1,500,000 \$
Annual amortization		0 \$	0 \$	6,000 \$	65,640 \$	115,702 \$	108,760 \$	102,234 \$	96,100 \$	90,334 \$	84,914 \$	79,819 \$		
Class 3: building, structure, ...	5%													
Balance to be amortized		0 \$	100,000 \$	97,500 \$	92,625 \$	87,994 \$	83,594 \$	79,414 \$	75,444 \$	71,671 \$	68,088 \$	64,683 \$	61,449 \$	75,000 \$
Annual amortization		0 \$	2,500 \$	4,875 \$	4,631 \$	4,400 \$	4,180 \$	3,971 \$	3,772 \$	3,584 \$	3,404 \$	3,234 \$		
Class 10: mill, equipment, ...	30%													
Balance to be amortized		1,795,400 \$	1,526,090 \$	18,221,830 \$	11,201,663 \$	5,612,693 \$	3,928,885 \$	2,750,219 \$	1,925,154 \$	1,347,608 \$	943,325 \$	660,328 \$	462,229 \$	650,000 \$
Annual amortization		269,310 \$	457,827 \$	2,893,514 \$	5,588,970 \$	1,683,808 \$	1,178,665 \$	825,066 \$	577,546 \$	404,282 \$	282,998 \$	198,098 \$		
Class 12: mine development, shaft, ...	100%													
Balance to be amortized		200,000 \$	300,000 \$	100,000 \$	0 \$	0 \$	0 \$	0 \$	10,146,500 \$	14,763,250 \$	8,125,004 \$	1,640,002 \$	0 \$	0 \$
Annual amortization		100,000 \$	200,000 \$	100,000 \$	0 \$	0 \$	0 \$	0 \$	5,073,250 \$	9,918,250 \$	6,485,002 \$	1,640,002 \$		
Class 28: ore dump, ...	30%													
Balance to be amortized		91,500 \$	959,274 \$	1,641,719 \$	1,467,403 \$	1,027,182 \$	719,028 \$	503,319 \$	352,324 \$	246,626 \$	172,639 \$	120,847 \$	84,593 \$	120,000 \$
Annual amortization		13,725 \$	155,557 \$	366,815 \$	440,221 \$	308,155 \$	215,708 \$	150,996 \$	105,697 \$	73,988 \$	51,792 \$	36,254 \$		
Total annual amortization		383,035 \$	815,884 \$	3,371,204 \$	6,099,462 \$	2,112,064 \$	1,507,313 \$	1,082,266 \$	5,856,365 \$	10,490,438 \$	6,908,109 \$	1,957,408 \$	1,858,770 \$	2,345,000 \$

TABLE 11

Amortization Table for Goldboro Project; scenario 2

Equipment	Amortization rate	Amor. 1989	Amor. 1990	Amor. 1991	Amor. 1992	Amor. 1993	Amor. 1994	Amor. 1995	Amor. 1996	Amor. 1997	Amor. 1998	Amor. 1999	Book value in 10 years	Resale price
Class 2: electrical equipment, ...	6%													
Balance to be amortized		0 \$	2,000,000 \$	1,940,000 \$	1,823,600 \$	1,714,184 \$	1,611,333 \$	1,514,653 \$	1,423,774 \$	1,338,347 \$	1,258,047 \$	1,182,564 \$	1,111,610 \$	1,100,000 \$
Annual amortization		0 \$	60,000 \$	116,400 \$	109,416 \$	102,851 \$	96,680 \$	90,879 \$	85,426 \$	80,301 \$	75,483 \$	70,954 \$		
Class 3: building, structure, ...	5%													
Balance to be amortized		0 \$	100,000 \$	97,500 \$	92,625 \$	87,994 \$	83,594 \$	79,414 \$	75,444 \$	71,671 \$	68,088 \$	64,683 \$	61,449 \$	60,000 \$
Annual amortization		0 \$	2,500 \$	4,875 \$	4,631 \$	4,400 \$	4,180 \$	3,971 \$	3,772 \$	3,584 \$	3,404 \$	3,234 \$		
Class 10: mill, equipment, ...	30%													
Balance to be amortized		1,198,400 \$	25,457,376 \$	21,485,974 \$	15,040,182 \$	10,528,127 \$	7,369,689 \$	5,158,782 \$	3,611,148 \$	2,527,803 \$	1,769,462 \$	1,238,624 \$	867,037 \$	900,000 \$
Annual amortization		179,760 \$	3,971,402 \$	6,445,792 \$	4,512,054 \$	3,158,438 \$	2,210,907 \$	1,547,635 \$	1,083,344 \$	758,341 \$	530,839 \$	371,587 \$		
Class 12: mine development, shaft, ...	100%													
Balance to be amortized		200,000 \$	300,000 \$	100,000 \$	0 \$	0 \$	10,146,500 \$	14,763,250 \$	8,125,004 \$	1,640,002 \$	0 \$	0 \$	0 \$	0 \$
Annual amortization		100,000 \$	200,000 \$	100,000 \$	0 \$	0 \$	5,073,250 \$	9,918,250 \$	6,485,002 \$	1,640,002 \$	0 \$	0 \$		
Class 28: ore dump, ...	30%													
Balance to be amortized		284,000 \$	1,960,901 \$	1,630,556 \$	1,141,389 \$	798,972 \$	559,281 \$	391,496 \$	274,048 \$	191,833 \$	134,283 \$	93,998 \$	65,799 \$	40,000 \$
Annual amortization		42,600 \$	330,345 \$	489,167 \$	342,417 \$	239,692 \$	167,784 \$	117,449 \$	82,214 \$	57,550 \$	40,285 \$	28,199 \$		
Total annual amortization		322,360 \$	4,564,248 \$	7,156,234 \$	4,968,518 \$	3,505,381 \$	7,552,801 \$	11,678,184 \$	7,739,759 \$	2,539,777 \$	650,011 \$	473,975 \$	2,105,895 \$	2,100,000 \$

TABLE 12

Amortization Table for Goldboro Project; scenario 3

6.2 HYPOTHESES AND ANALYSIS METHOD CHOSEN

Numerous technical and financial variables and hypotheses were used to analyse the rate of return for the Goldboro project. The variables and hypotheses set out below apply to all three scenarios.

- Revenue calculations are based on an average grade of 3.0 g/mt Au. A mill recovery rate of 95% and a heap leaching recovery rate of 70% are also applied to this grade.
- Forecasts are based on a maximum milled tonnage of 20,000,000 metric tons.
- The ten-year lifespan of the project is based on known reserves.
- Expenditures are calculated according to the parameters established during the technical feasibility study.
- All costs are in Canadian dollars.
- The average tax rate is set at 46%.
- Net annual losses are spread over seven years.
- Amortization classes are taken from the Canadian Income Tax Law and Regulations, 1988, 17th edition.

- Amortization calculations take into account the fact that half of the amortization admissible for acquisitions effected during the year is considered as an expense under fiscal law.
- Assets will be sold at the end of the project and proceeds will immediately be reinvested in order to satisfy environmental requirements.
- Payments are made at the end of each period.
- The actualization rate decided upon is 15%. This nominal rate corresponds to an actual rate of 20% including yearly inflation of about 4.5%.

6.3 FINANCIAL EVALUATION OF SCENARIO 1

As mentioned above, scenario 1 is built around a 500 metric ton per day processing plant. For this scenario, pre-production expenses are estimated at a total \$6,148,722. Operating revenues would be approximately \$7,215,828 per year, with operating expenses of \$6,466,400. Table 13 shows the pro-forma revenue and expenditure budget for scenario 1 for the entire life-span of the project. Appendix 7 shows the same tables with a monthly breakdown for years 1989 and 1990.

The main advantage of this scenario is that it would generate income very rapidly. On the other hand, the profitability of the project would be compromised by the low tonnage mined each year over the ten-year life-span, as shown by the results obtained for the PNV (-\$6,674,637). A relatively low total of 1,706,250 of ore would be milled. To ensure the success of this scenario, equity financing of the order of \$9,000,000 would be required. Table 14 shows the cash flow variations for scenario 1.

REVENUES	YEAR 1989	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999	TOTAL
PRODUCTION REVENUE	0 \$	5,411,871 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	70,354,321 \$
PRE-PRODUCTION EXPENSES	3,682,820 \$	2,465,902 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	6,148,722 \$
PRODUCTION EXPENSES												
MILLING	0 \$	4,035,938 \$	5,381,250 \$	3,340,313 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	2,660,000 \$	31,377,500 \$
OPERATING COSTS	720,000 \$	1,770,000 \$	1,770,000 \$	1,770,000 \$	2,295,000 \$	2,820,000 \$	2,820,000 \$	2,820,000 \$	2,820,000 \$	2,820,000 \$	2,820,000 \$	25,245,000 \$
CONTINGENCIES, ENGINEERING, SUPERVISION	129,600 \$	1,045,069 \$	1,287,225 \$	919,856 \$	891,900 \$	986,400 \$	986,400 \$	986,400 \$	986,400 \$	986,400 \$	986,400 \$	10,192,050 \$
TOTAL PRODUCTION EXPENSES	849,600 \$	6,851,006 \$	8,438,475 \$	6,030,169 \$	5,846,900 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	66,814,550 \$
TOTAL PRE-PRODUCTION AND PRODUCTION EXPENSES	4,532,420 \$	9,316,908 \$	8,438,475 \$	6,030,169 \$	5,846,900 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	72,963,272 \$
GROSS PROFITS	-4,532,420 \$	-3,905,037 \$	-1,222,647 \$	1,185,659 \$	1,368,928 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	-2,608,951 \$

TABLE 13

Pro-forma Statement of Revenues and Expenditures; Scenario 1

Description	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
Production revenue	0 \$	5,411,871 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	7,215,828 \$	70,354,321 \$
Less operating expenses	849,600 \$	6,851,006 \$	8,438,475 \$	6,030,169 \$	5,846,900 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	6,466,400 \$	66,814,550 \$
Less pre-production expenses	3,682,820 \$	2,465,902 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	6,148,722 \$
Less total interest expense on loan	0 \$	0 \$	388,369 \$	278,662 \$	153,812 \$	26,733 \$	0 \$	0 \$	0 \$	0 \$	0 \$	847,576 \$
Net profit before taxes and amortization	-4,532,420 \$	-3,905,037 \$	-1,611,016 \$	906,997 \$	1,215,116 \$	722,695 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	-3,456,527 \$
Annual amortization	652,345 \$	1,387,436 \$	2,123,050 \$	2,752,649 \$	2,287,529 \$	1,382,827 \$	878,467 \$	282,866 \$	108,622 \$	76,931 \$	54,703 \$	
Less amortization used	0 \$	0 \$	0 \$	906,997 \$	1,215,116 \$	722,695 \$	749,428 \$	282,866 \$	108,622 \$	76,931 \$	54,703 \$	4,117,358 \$
Cumulative amortization available	652,345 \$	1,387,436 \$	2,123,050 \$	1,845,652 \$	1,072,414 \$	660,133 \$	129,039 \$	0 \$	0 \$	0 \$	0 \$	
Net taxable revenue	-4,532,420 \$	-3,905,037 \$	-1,611,016 \$	0 \$	0 \$	0 \$	0 \$	466,561 \$	640,806 \$	672,497 \$	694,725 \$	-7,573,885 \$
Income tax (46%)	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	319,573 \$	0 \$
Net profit after taxes and amortization	-4,532,420 \$	-3,905,037 \$	-1,611,016 \$	906,997 \$	1,215,116 \$	722,695 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	429,854 \$	-3,456,527 \$
Plus debt	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less debt pay-back	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Plus equity	9,000,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,000,000 \$
Increase or decrease of cash balance	4,467,580 \$	-3,905,037 \$	-1,611,016 \$	906,997 \$	1,215,116 \$	722,695 \$	749,428 \$	749,428 \$	749,428 \$	749,428 \$	429,854 \$	5,543,473 \$
Balance, beginning	500,000 \$	4,967,580 \$	1,062,543 \$	-548,473 \$	358,524 \$	1,573,639 \$	2,296,334 \$	3,045,762 \$	3,795,190 \$	4,544,618 \$	5,294,045 \$	500,000 \$
Balance, ending	4,967,580 \$	1,062,543 \$	-548,473 \$	358,524 \$	1,573,639 \$	2,296,334 \$	3,045,762 \$	3,795,190 \$	4,544,618 \$	5,294,045 \$	5,723,900 \$	5,723,900 \$
NET PRESENT VALUE	-6,674,637 \$											
ACTUALIZATION RATE	15%											
INTERNAL RATE OF RETURN	0%											

TABLE14

Cash Flow for Scenario 1

6.4 FINANCIAL EVALUATION OF SCENARIO 2

Scenario 2 is based on the consecutive use of a 500 mt/day mill and a 5,000 mt/day mill, with over 12,000,000 mt of ore being milled in all. This scenario would generate total revenues of \$567,971,537 with operating expenditures of \$353,099,982. Pre-production expenses are estimated at \$40,068,751. Scenario 2 includes the construction of a 500 mt/day and a 5,000 mt per day mill. Table 15 shows the pro-forma budget for this scenario. Appendix 8 shows the same tables with a monthly breakdown for years 1989 and 1990.

The main interest of this scenario lies in the great capacity of the 5,000 mt/day mill and secondly, from the revenue generated by the initial 500 mt/day mill during the construction of the other mill. Scenario 2 gives a IRR of 43% and a PNV of \$29,051,406. An equity financing of \$9,000,000 would be required to ensure project start-up and permit the construction of the 5,000 mt/day mill. During 1991, debt financing on the construction of the large mill is planned. The working hypothesis here is that the payback period on this loan would be 5 years at an annual rate of interest of 13%. Table 16 presents the cash flow variations for scenario 2.

REVENUES	YEAR 1989	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999	TOTAL
PRODUCTION REVENUE	0 \$	5,411,871 \$	7,215,828 \$	50,235,892 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	567,971,537 \$
PRE-PRODUCTION EXPENSES	3,682,820 \$	3,297,723 \$	21,228,348 \$	11,859,860 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	40,068,751 \$
PRODUCTION EXPENSES												
MILLING	0 \$	4,035,938 \$	5,381,250 \$	8,120,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	6,122,083 \$	12,250,000 \$	97,159,271 \$
OPERATING COSTS	720,000 \$	1,770,000 \$	1,770,000 \$	11,510,001 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	13,851,255 \$	720,000 \$	165,191,256 \$
UNDERGROUND DEVELOPMENT	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	10,146,500 \$	9,690,000 \$	3,280,004 \$	0 \$	23,116,504 \$
UNDERGROUND OPERATING	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	4,588,622 \$	9,181,620 \$	13,770,242 \$
CONTINGENCIES, ENGINEERING, SUPERVISION	129,600 \$	1,045,069 \$	1,287,225 \$	3,533,400 \$	7,059,600 \$	7,059,600 \$	7,059,600 \$	8,885,970 \$	8,803,800 \$	5,011,554 \$	3,987,292 \$	53,862,709 \$
TOTAL PRODUCTION EXPENSES	849,600 \$	6,851,006 \$	8,438,475 \$	23,163,401 \$	46,279,600 \$	46,279,600 \$	46,279,600 \$	58,252,470 \$	57,713,800 \$	32,853,518 \$	26,138,912 \$	353,099,982 \$
TOTAL PRE-PRODUCTION AND PRODUCTION EXPENSES	4,532,420 \$	10,148,729 \$	29,666,823 \$	35,023,261 \$	46,279,600 \$	46,279,600 \$	46,279,600 \$	58,252,470 \$	57,713,800 \$	32,853,518 \$	26,138,912 \$	393,168,733 \$
GROSS PROFITS	-4,532,420 \$	-4,736,858 \$	-22,450,995 \$	15,212,631 \$	25,878,678 \$	25,878,678 \$	25,878,678 \$	13,905,808 \$	14,444,478 \$	39,304,760 \$	46,019,366 \$	174,802,804 \$

TABLE 15

Pro-forma Statement of Revenues and Expenditures; Scenario 2

Description	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
Production revenue	0 \$	5,411,871 \$	7,215,828 \$	50,235,892 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	567,971,537 \$
Less operating expenses	849,600 \$	6,851,006 \$	8,438,475 \$	23,163,401 \$	46,279,600 \$	46,279,600 \$	46,279,600 \$	58,252,470 \$	57,713,800 \$	32,853,518 \$	26,138,912 \$	353,099,982 \$
Less pre-production expenses	3,682,820 \$	3,297,723 \$	21,228,348 \$	11,859,860 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	40,068,751 \$
Less total interest expense on loan	0 \$	0 \$	3,513,697 \$	3,176,420 \$	2,430,839 \$	1,582,343 \$	616,728 \$	0 \$	0 \$	0 \$	0 \$	11,320,027 \$
Net profit before taxes and amortization	-4,532,420 \$	-4,736,858 \$	-25,964,692 \$	12,036,211 \$	23,447,839 \$	24,296,335 \$	25,261,950 \$	13,905,808 \$	14,444,478 \$	39,304,760 \$	46,019,366 \$	163,482,777 \$
Annual amortization	383,035 \$	1,198,919 \$	4,570,124 \$	10,669,586 \$	2,112,064 \$	1,507,313 \$	1,082,266 \$	5,856,365 \$	10,490,438 \$	6,908,109 \$	1,957,408 \$	
Less amortization used	0 \$	0 \$	0 \$	10,669,586 \$	2,112,064 \$	1,507,313 \$	1,082,266 \$	5,856,365 \$	10,490,438 \$	6,908,109 \$	1,957,408 \$	40,583,549 \$
Cumulative amortization available	383,035 \$	1,198,919 \$	4,570,124 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	
Net taxable revenue	-4,532,420 \$	-4,736,858 \$	-25,964,692 \$	1,366,625 \$	21,335,775 \$	22,789,022 \$	24,179,684 \$	8,049,443 \$	3,954,040 \$	32,396,651 \$	44,061,959 \$	122,899,228 \$
Income tax (46%)	0 \$	0 \$	0 \$	0 \$	0 \$	4,718,428 \$	11,122,655 \$	3,702,744 \$	1,818,859 \$	14,902,459 \$	20,268,501 \$	4,718,428 \$
Net profit after taxes and amortization	-4,532,420 \$	-4,736,858 \$	-25,964,692 \$	12,036,211 \$	23,447,839 \$	19,577,907 \$	14,139,296 \$	10,203,064 \$	12,625,619 \$	24,402,301 \$	25,750,865 \$	158,764,350 \$
Plus debt	0 \$	0 \$	29,000,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	29,000,000 \$
Less debt pay-back	0 \$	0 \$	4,404,371 \$	5,401,488 \$	6,147,069 \$	6,995,564 \$	7,961,179 \$	0 \$	0 \$	0 \$	0 \$	30,909,671 \$
Plus equity	9,000,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,000,000 \$
Increase or decrease of cash balance	4,467,580 \$	-4,736,858 \$	-1,369,063 \$	6,634,723 \$	17,300,770 \$	12,582,343 \$	6,178,117 \$	10,203,064 \$	12,625,619 \$	24,402,301 \$	25,750,865 \$	165,854,679 \$
Balance, beginning	500,000 \$	4,967,580 \$	230,722 \$	-1,138,341 \$	5,496,381 \$	22,797,151 \$	35,379,495 \$	41,557,611 \$	51,760,675 \$	64,386,295 \$	88,788,596 \$	1,000,000 \$
Balance, ending	4,967,580 \$	230,722 \$	-1,138,341 \$	5,496,381 \$	22,797,151 \$	35,379,495 \$	41,557,611 \$	51,760,675 \$	64,386,295 \$	88,788,596 \$	114,539,461 \$	114,539,461 \$

NET PRESENT VALUE	29,051,406 \$
ACTUALIZATION RATE	15%
INTERNAL RATE OF RETURN	43%

TABLE 16
Cash Flow for Scenario 2

6.5 FINANCIAL EVALUATION OF SCENARIO 3

This scenario follows a different approach from the other two scenarios by combining a conventional milling method with heap leaching. During the first two years of the project, over 2.4 million tons of ore would be treated by heap leaching. Over \$72,000,000 worth of revenue would be generated during 1989 and 1990, which in itself would ensure the financing of a 5,000 mt/day mill. This project would generate total revenues of \$722,342,341 and operating expenses of \$398,206,321. The total cost of the pre-production phase is \$41,664,593. Table 17 shows the pro-forma budget for scenario 3. Appendix 9 shows the same tables with a monthly breakdown for years 1989 and 1990.

Because of the revenues generated by the heap leaching process, only \$9,000,000 worth of equity financing would be required to ensure the success of scenario 3. This amount would cover the financial needs of the heap leaching operation and project start-up. For scenario 3, the IRR is of 97% and the PNV is of \$65,977,555. Table 18 shows the cash flow variations for scenario 3.

REVENUES	YEAR 1989	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999	TOTAL
PRODUCTION REVENUE	13,672,095 \$	59,243,744 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	722,342,341 \$
PRE-PRODUCTION EXPENSES	5,098,755 \$	36,565,838 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	41,664,593 \$
PRODUCTION EXPENSES												
MILLING	2,250,000 \$	9,750,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	12,250,000 \$	122,250,000 \$
OPERATING COSTS	4,320,000 \$	13,320,000 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	26,970,000 \$	720,000 \$	720,000 \$	720,000 \$	720,000 \$	155,370,000 \$
UNDERGROUND DEVELOPMENT	0 \$	0 \$	0 \$	0 \$	0 \$	10,146,500 \$	9,690,000 \$	3,280,004 \$	0 \$	0 \$	0 \$	23,116,504 \$
UNDERGROUND OPERATING	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,181,620 \$	9,181,620 \$	9,181,620 \$	9,181,620 \$	36,726,480 \$
CONTINGENCIES, ENGINEERING, SUPERVISION	1,182,600 \$	4,152,600 \$	7,059,600 \$	7,059,600 \$	7,059,600 \$	8,885,970 \$	8,803,800 \$	4,577,692 \$	3,987,292 \$	3,987,292 \$	3,987,292 \$	
TOTAL PRODUCTION EXPENSES	7,752,600 \$	27,222,600 \$	46,279,600 \$	46,279,600 \$	46,279,600 \$	58,252,470 \$	57,713,800 \$	30,009,316 \$	26,138,912 \$	26,138,912 \$	26,138,912 \$	398,206,321 \$
TOTAL PRE-PRODUCTION AND PRODUCTION EXPENSES	12,851,355 \$	63,788,438 \$	46,279,600 \$	46,279,600 \$	46,279,600 \$	58,252,470 \$	57,713,800 \$	30,009,316 \$	26,138,912 \$	26,138,912 \$	26,138,912 \$	439,870,915 \$
GROSS PROFITS	820,740 \$	-4,542,694 \$	25,878,678 \$	25,878,678 \$	25,878,678 \$	13,903,808 \$	14,444,478 \$	42,148,962 \$	46,019,366 \$	46,019,366 \$	46,019,366 \$	282,471,426 \$

TABLE 17

Pro-forma Statement of Revenues and Expenditures; Scenario 3

Description	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
Production revenue	13,672,095 \$	59,245,744 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	72,158,278 \$	722,342,341 \$
Less operating expenses	7,752,600 \$	27,222,600 \$	46,279,600 \$	46,279,600 \$	46,279,600 \$	58,252,470 \$	57,713,800 \$	30,009,316 \$	26,138,912 \$	26,138,912 \$	26,138,912 \$	398,206,321 \$
Less pre-production expenses	5,098,755 \$	36,565,838 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	41,664,593 \$
Less total interest expense on loan	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit before taxes and amortization	820,740 \$	-4,542,694 \$	25,878,678 \$	25,878,678 \$	25,878,678 \$	13,905,808 \$	14,444,478 \$	42,148,962 \$	46,019,366 \$	46,019,366 \$	46,019,366 \$	282,471,426 \$
Annual amortization	322,360 \$	4,564,248 \$	11,720,481 \$	4,968,518 \$	3,505,381 \$	7,552,801 \$	11,678,184 \$	7,739,759 \$	2,539,777 \$	650,011 \$	473,975 \$	
Less amortization used	322,360 \$	0 \$	11,720,481 \$	4,968,518 \$	3,505,381 \$	7,552,801 \$	11,678,184 \$	7,739,759 \$	2,539,777 \$	650,011 \$	473,975 \$	51,151,246 \$
Cumulative amortization available	0 \$	4,564,248 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	
Net taxable revenue	498,380 \$	-4,542,694 \$	14,158,197 \$	20,910,160 \$	22,373,297 \$	6,353,007 \$	2,766,294 \$	34,409,203 \$	43,479,589 \$	45,369,356 \$	45,545,392 \$	231,320,180 \$
Income tax (46%)	229,255 \$	0 \$	1,970,076 \$	9,618,673 \$	10,291,717 \$	2,922,383 \$	1,272,495 \$	15,828,233 \$	20,000,611 \$	20,869,904 \$	20,950,880 \$	25,032,105 \$
Net profit after taxes and amortization	591,485 \$	-4,542,694 \$	23,908,602 \$	16,260,005 \$	15,586,961 \$	10,983,425 \$	13,171,983 \$	26,320,729 \$	26,018,755 \$	25,149,463 \$	25,068,486 \$	257,439,322 \$
Plus debt	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less debt pay-back	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Plus equity	9,000,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,000,000 \$
Increase or decrease of cash balance	9,591,485 \$	-4,542,694 \$	23,908,602 \$	16,260,005 \$	15,586,961 \$	10,983,425 \$	13,171,983 \$	26,320,729 \$	26,018,755 \$	25,149,463 \$	25,068,486 \$	266,439,322 \$
Balance, beginning	500,000 \$	10,091,485 \$	5,548,791 \$	29,457,392 \$	45,717,397 \$	61,304,358 \$	72,287,783 \$	85,459,765 \$	111,780,494 \$	137,799,249 \$	162,948,712 \$	500,000 \$
Balance, ending	10,091,485 \$	5,548,791 \$	29,457,392 \$	45,717,397 \$	61,304,358 \$	72,287,783 \$	85,459,765 \$	111,780,494 \$	137,799,249 \$	162,948,712 \$	188,017,198 \$	188,017,198 \$

NET PRESENT VALUE	65,977,555 \$
ACTUALIZATION RATE	15%
INTERNAL RATE OF RETURN	97%

TABLE 18
Cash Flow for Scenario 3

7. SENSITIVITY ANALYSIS OF THE PROJECT

In order to do a sensitivity analysis of the Goldboro project, we thought it would be pertinent to study the effects of the following variables:

- the gold content of the ore;
- the market price of gold.

Mining projects are among the highest risk investments open to investors. Variables such as the grade, metal prices and the geological interpretation are never absolutely certain and it is important to analyse the effects of these variables on expected returns from the project.

The following figures show the variation of the net present value and the internal rate of return in relation to the grade and price of gold for each of the three scenarios.

It appears that scenario 1 is very sensitive to a decrease in the price of gold or the grade. As shown above, the profit threshold of this scenario is obtained with a minimum grade of 3.0 g/mt. On the other hand, scenarios 2 and 3 are much less sensitive to these variables because of the large volumes mined under these scenarios. The following figures illustrate the results of grade and price of gold variations on the profit-making potential of the project.

FIGURE 7

NPV in Relation to the Price of Gold and the Grade; Scenario 1

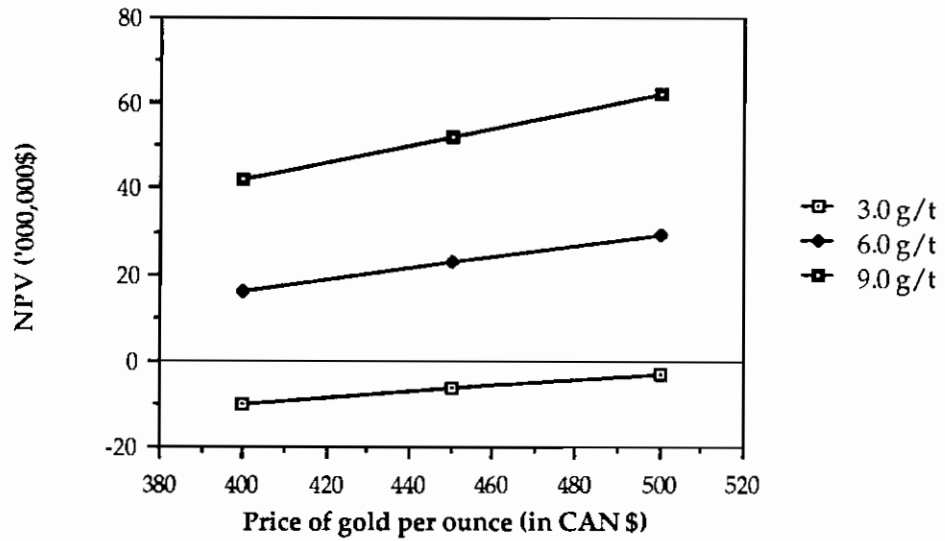


FIGURE 8

IRR Depenning on the Price of Gold and the Grade; Scenario 1

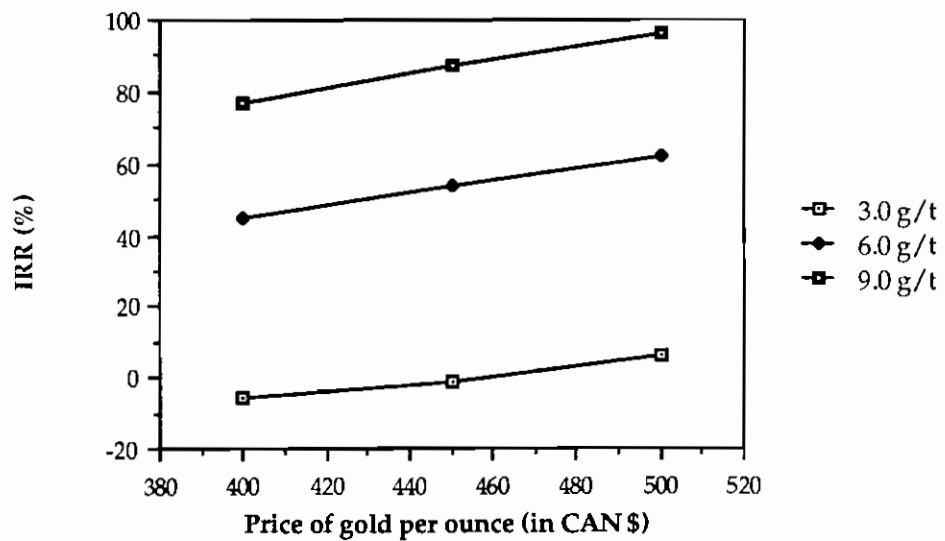


FIGURE 9

NPV in Relation to the Price of Gold and the Grade; Scenario 2

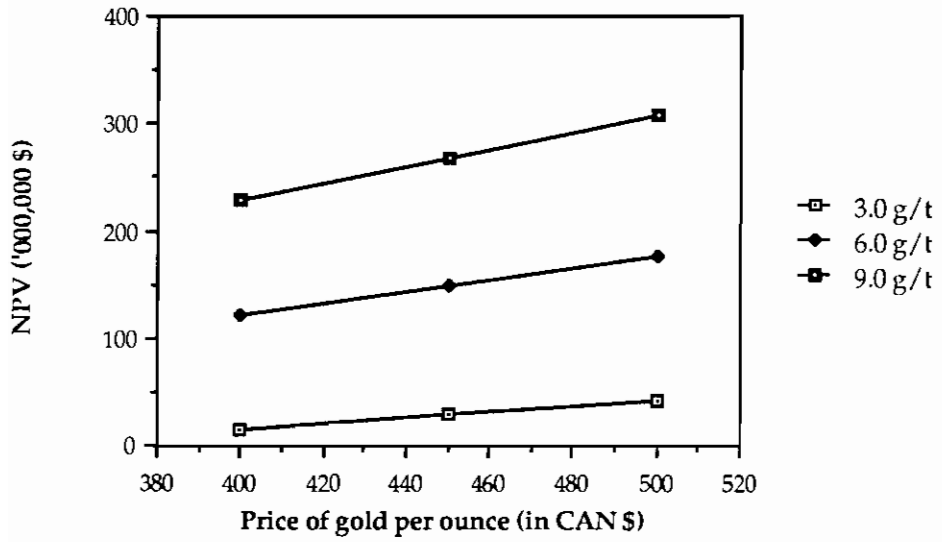


FIGURE 10

IRR in Relation to the Price of Gold and the Grade; Scenario 2

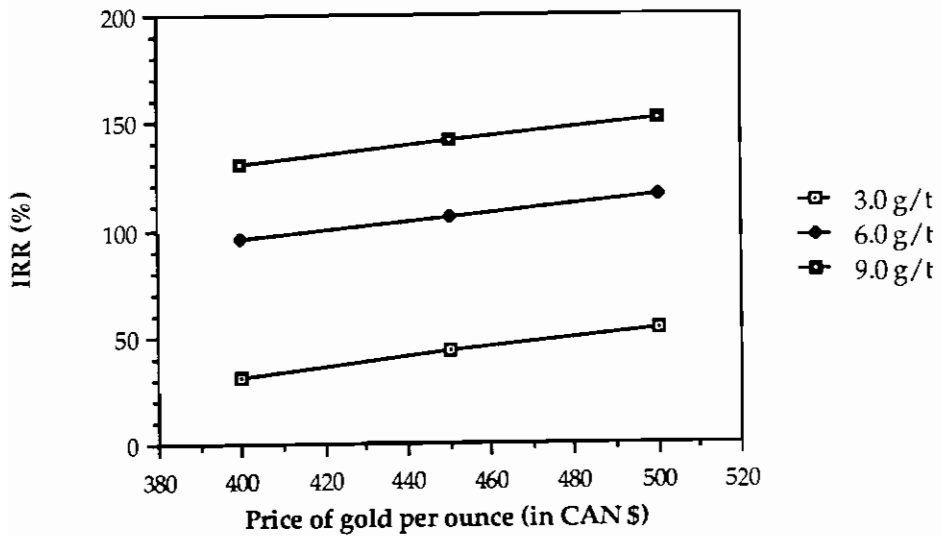


FIGURE 11

NPV in Relation to the Price of Gold and the Grade; Scenario 3

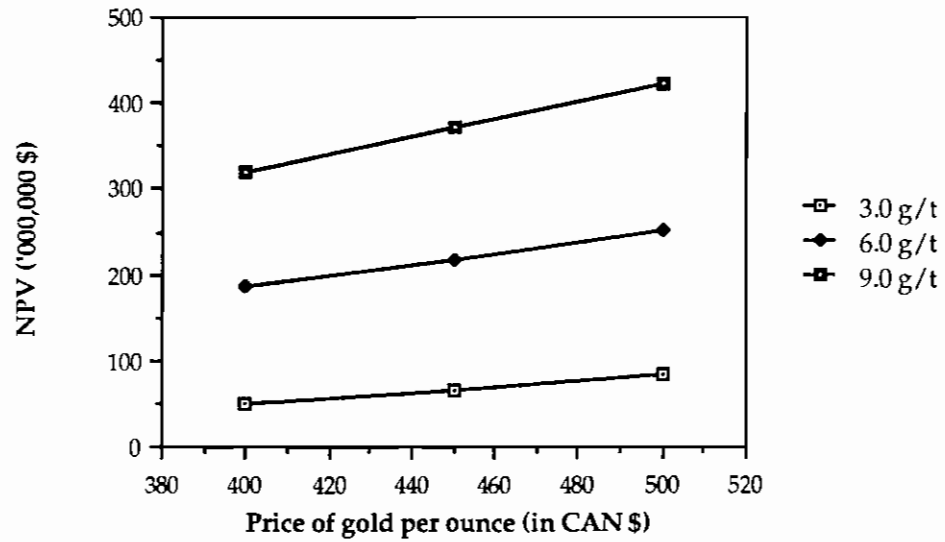
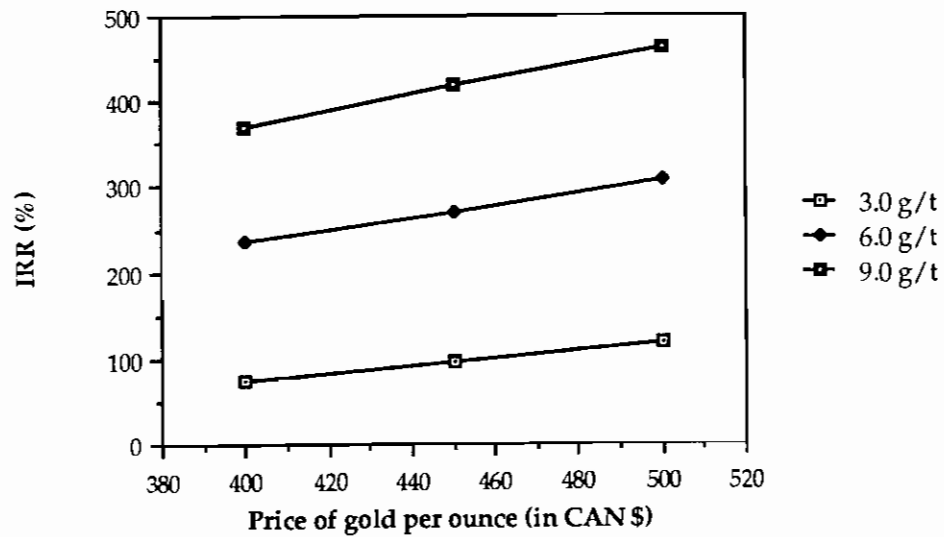


FIGURE 12

IRR in Relation to the Price of Gold and the Grade; Scenario 3




CONCLUSION

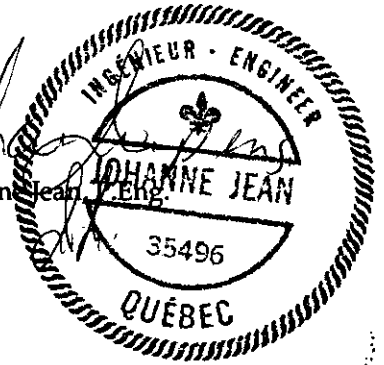
According to the results of this feasibility study, scenario 3 shows the most profit-making potential of the three. Its appeal is due to the fact that it generates income very early in the project, income which will cover the cost of constructing a 5,000 mt per day mill. This scenario presents very few draw-backs, except maybe the heap leaching, a technique which is rarely used in Quebec and Nova Scotia. It is, however, a tried and true method for processing gold.

Scenario 2 also shows promising results. The combined use of the 500 mt per day and 5,000 mt per day mills would generate income from the very beginning of the project, thus maintaining the cash balance. The construction of the 5,000 mt mill would require debt financing, but the PNV (\$29,051,406) and IRR (43%) show beyond doubt that such financing would be profitable for the enterprise as well as investors. Moreover, the low sensitivity to the fluctuations in the grade and price of gold make it a very advantageous investment.

Scenario 1 appears to be the least profitable of the three scenarios. This is due to the low tonnage mined (175,000 mt per year), which would generate very little income. Considering the large reserves of the Goldboro project, this scenario does not seem appropriate, a fact which is confirmed by the sensitivity of scenario 1 to the grade and price of gold.

The present study shows that the Goldboro project is indeed profitable. In light of the results of this feasibility study, the level of confidence in the Goldboro project remain very high.

André St-Michel
André St-Michel, Eng.
The seal is circular with a double-line border. The top arc contains the word "INGÉNIEUR". The bottom arc contains "QUÉBEC". In the center, there is a fleur-de-lis symbol above the name "ANDRÉ ST-MICHEL". Below the name is the number "36554".

Johanne Jean
Johanne Jean, Eng.
The seal is circular with a double-line border. The top arc contains the words "INGÉNIEUR - ENGINEER". The bottom arc contains "QUÉBEC". In the center, there is a fleur-de-lis symbol above the name "JOHANNE JEAN". Below the name is the number "35496".

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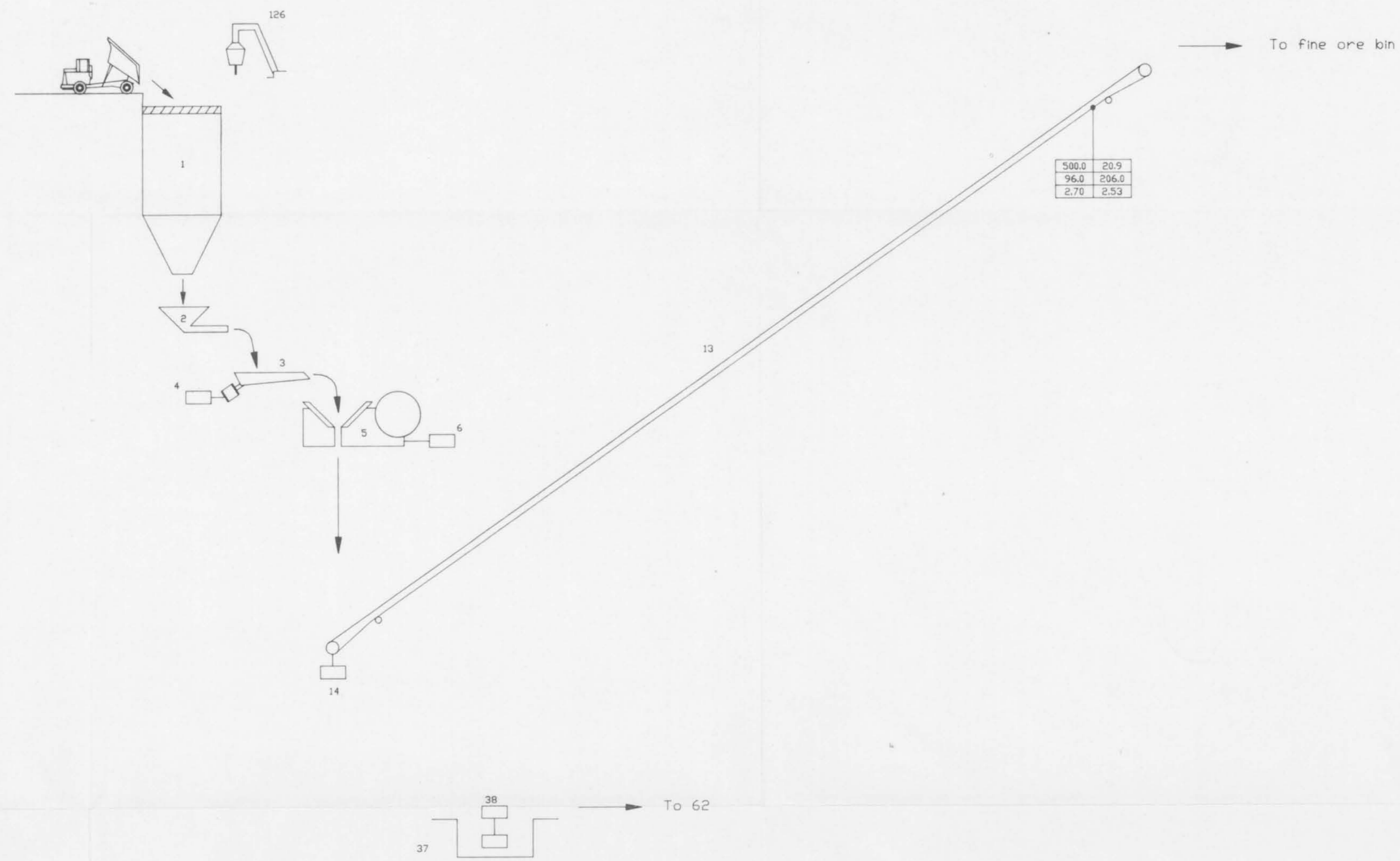
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APPENDIX 1

Flow Sheet for Mill (5,000 mt/day)



PRELIMINARY

FLOW LEGEND

Solids t/h	Solution m ³ /h
% Solids	Slurry m ³ /h
S.G. Solids	S.G. Slurry

- 1- Ore bin 400t/grizzly
- 2- Reciprocating feeder
- 3- Vibrating grizzly
- 4- Motor 40 H.P.
- 5- Jaw crusher
- 6- Motor 200 H.P.
- 13- Conveyor 1.5m/60m
- 14- Motor 200 H.P.
- 37- Sump 1.5m x 1.5m x 1.5m
- 38- Pump 10 H.P.
- 126- Hydraulic ram

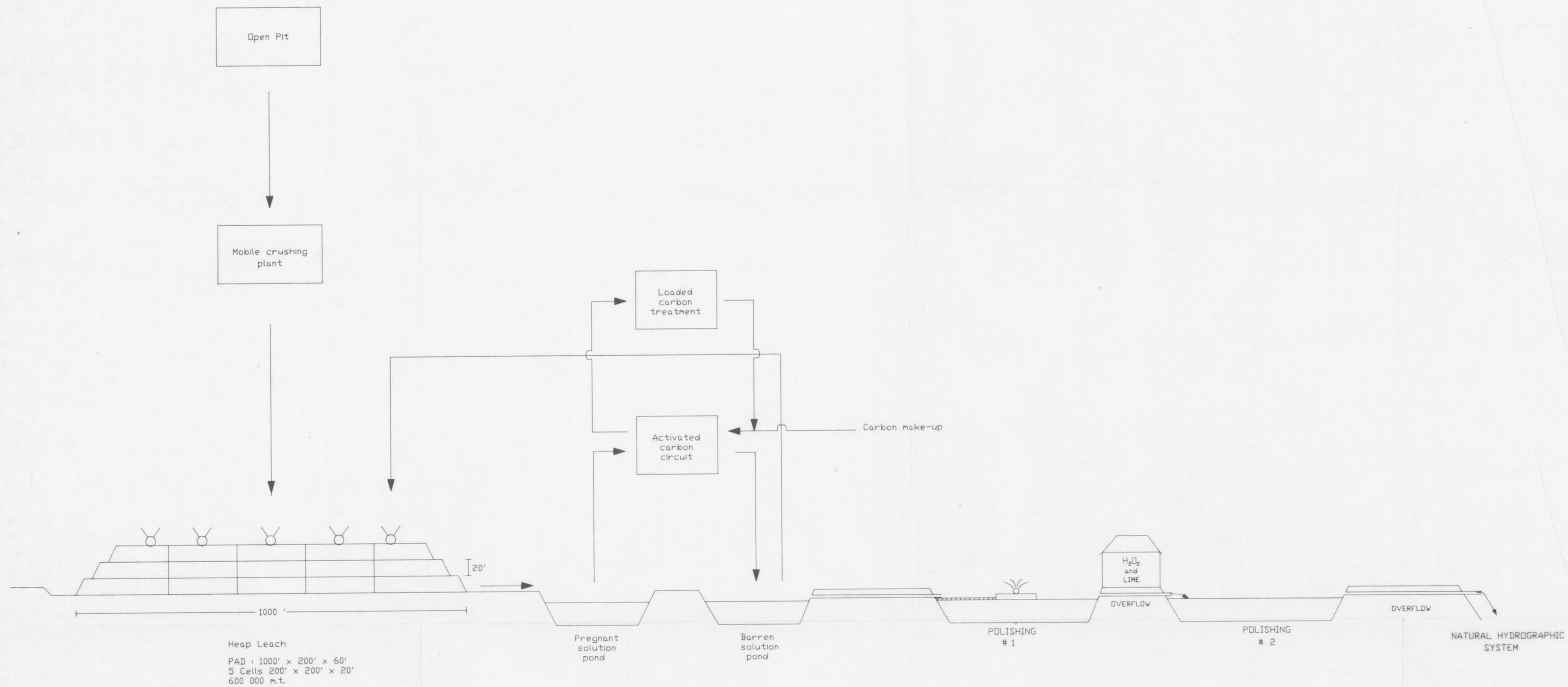
PR89-005

ST-MICHEL
GEOCONSEIL

OREX EXPLORATION INC.
GOLDBORD Project

FLOW SHEET #1
Comminution Circuits
SECOND ALTERNATIVE: Three stage crushing & Ball milling

Drawn by: JSt-G.	Scale: None
Verified by: AL.	Date: May 1989
Approved by:	Plan No.:



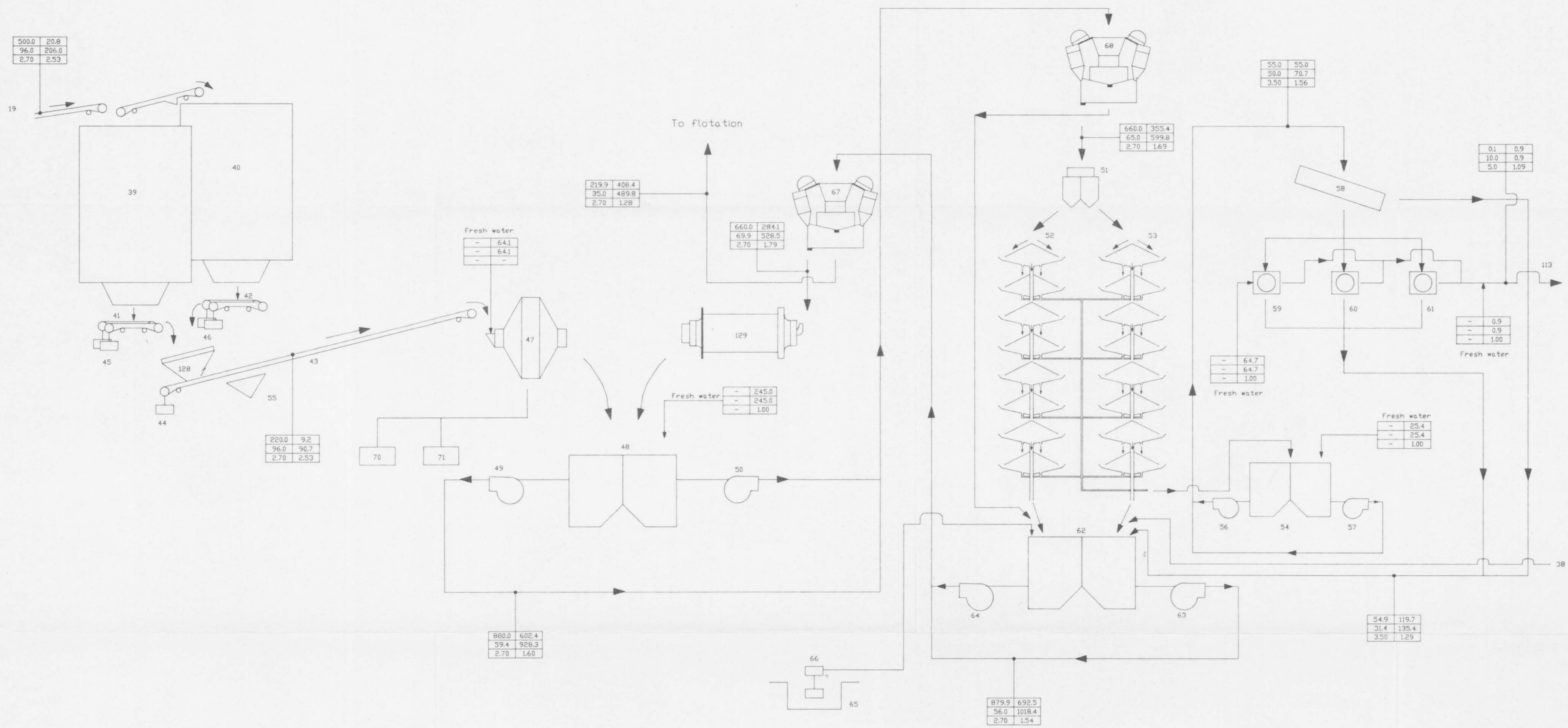
PRELIMINARY

PR 89 - 005

ST-MICHEL GECOMSEIL DREX EXPLORATION INC. GOLDBORO Project

FLOW SHEET #1 (Serie #3)
 Heap Leaching

Drawn by: JSt-G	Scale: None
Verified by: AL	Date: May 1989
Approved by:	Plan No.: Serie #3



500.0	20.8
96.0	206.0
2.70	2.53

220.0	9.2
96.0	90.7
2.70	2.53

Fresh water	-	64.1
	-	64.1
	-	-

219.9	408.4
35.0	489.8
2.70	1.28

Fresh water	-	245.0
	-	245.0
	-	1.00

890.0	602.4
39.4	928.3
2.70	1.60

879.9	692.5
56.0	1018.4
2.70	1.54

660.0	355.4
65.0	599.8
2.70	1.69

55.0	55.0
50.0	70.7
3.50	1.56

0.1	0.9
10.0	0.9
5.0	1.09

Fresh water	-	64.7
	-	64.7
	-	1.00

Fresh water	-	25.4
	-	25.4
	-	1.00

54.9	119.7
31.4	135.4
3.50	1.29

FLOW LEGEND

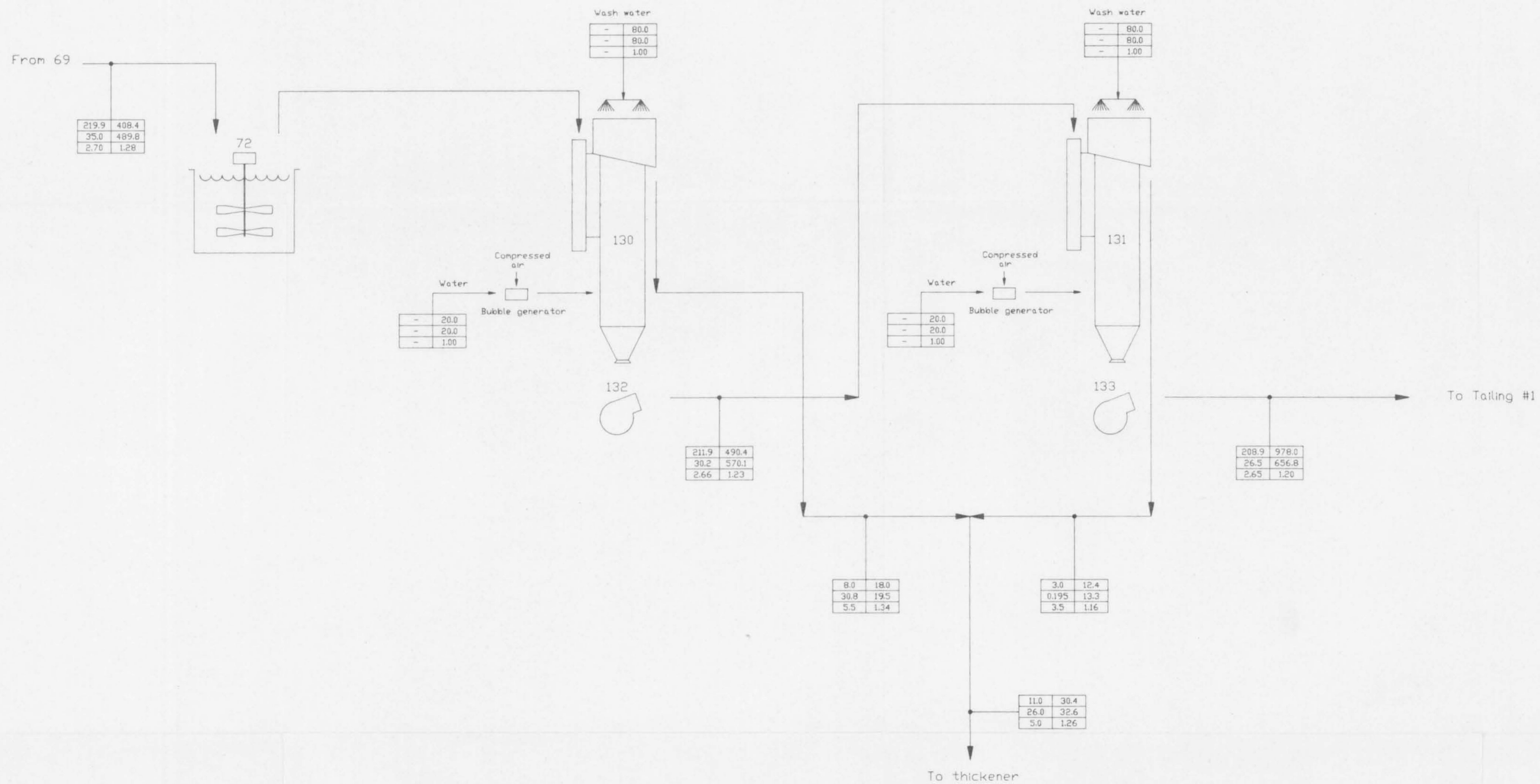
Solids t/h	Solution m ³ /h
% Solids	Slurry m ³ /h
S.G. Solids	S.G. Slurry

- 39- Fine ore bin /2500 t.m.
- 40- Fine ore bin /2500 t.m.
- 41- 2 Conveyors 90cm/10m
- 42- 2 Conveyors 90cm/10m
- 43- Conveyor 110cm/10cm
- 44- Motor 100 H.P.
- 45- 2 Motors 15 H.P./variable speed
- 46- 2 Motors 15 H.P./variable speed
- 47- Ball mill 5.2m φ x5.2m
- 48- Double pump box 3m x4m (metal)
- 49- Pump 100 H.P.
- 50- Pump 100 H.P.
- 51- Double feeder metal
- 52- Riechert cone 3.5m φ x17m
- 53- Riechert cone 3.5m φ x17m
- 54- Double feeder (metal)
- 55- Scale
- 56- Pump 100 H.P.
- 57- Pump 100 H.P.
- 58- Screen 10 mesh 1.7m
- 59- Knelson 76cm φ /5 H.P.
- 60- Knelson 76cm φ /5 H.P.
- 61- Knelson 76cm φ /5 H.P.
- 62- Double pump box (metal)
- 63- Pump 100 H.P.
- 64- Pump 100 H.P.
- 65- Sump pump 1.5m x1.5m x1.5m (concrete)
- 66- Pump 10 H.P.
- 67- Cyclopak 38cm φ
- 68- Cyclopak 38cm φ
- 70- Motor ball mill/3000 H.P.
- 71- Box Lubrification ball mill
- 128- Chino chute
- 129- Ball mill

PRELIMINARY

PR89-005

<p>ST-MICHEL GEOCONSEIL</p>	<p>DREX EXPLORATION INC. GOLDBORO Project</p>
<p>FLOW SHEET #2 Grinding and Gravity</p> <p style="font-size: small;">SECOND ALTERNATIVE: Jaw crushing/SAG/Ball Milling</p>	
<p>Drawn by: JSt-G</p>	<p>Scale: None</p>
<p>Verified by: AL</p>	<p>Date: May 1989</p>
<p>Approved by:</p>	<p>Plan No.:</p>



PRELIMINARY

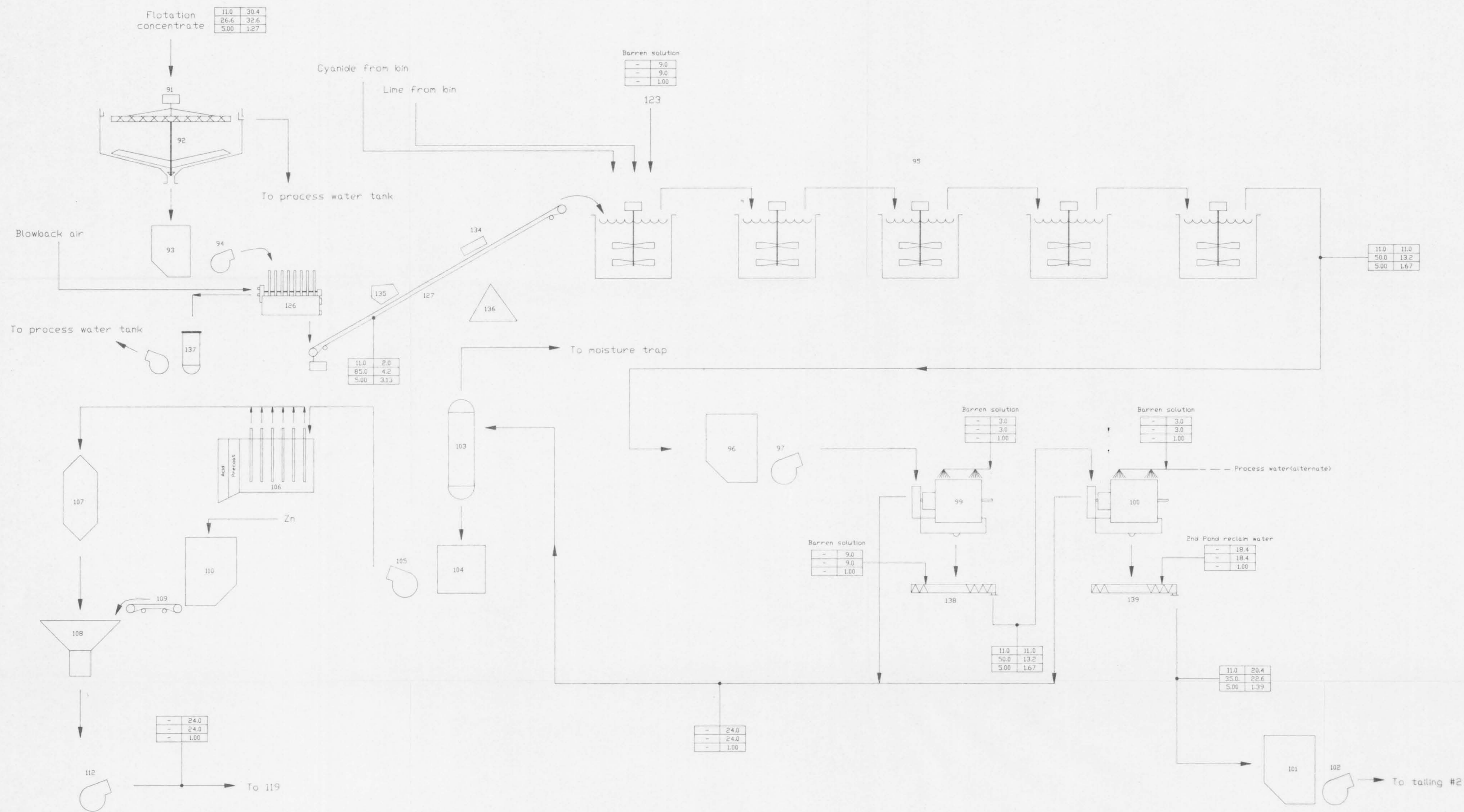
PR89-005

ST-MICHEL GEOCONSEIL	OREX EXPLORATION INC. GOLDBORO Project
FLOW SHEET #3 Flotation OPTION 2 Column Flotation	
Drawn by: JSt-G	Scale: None
Verified by: AL	Date: May 1989
Approved by:	Plan No.:

FLOW LEGEND

Solids t/h	Solution m ³ /h
% Solids	Slurry m ³ /h
S.G. Solids	S.G. Slurry

- 72- Conditioning tank
400m³
with 2 impellers
- 130- 2 Rougher flotation
columns
2.5m φ x 12m
- 131- 2 Scavenger flotation
Columns
2.5m φ x 12m
- 132- Pump
- 133- Pump



- 91- Motor 5 H.P.
- 92- Thickener 6m ϕ x25m
- 93- Pump box (metal)
- 94- Pump 10 H.P.
- 95- 5 Cyanide tanks
2500 USG/each
- 96- Pump box (metal)
- 97- Pump 20 H.P.
- 99- Filter drum 244cmx305cm
- 100- Filter drum 244cmx305cm
- 101- Pump box (metal)
- 102- Pump 50 H.P.
- 103- Filtrate receiver
- 104- Pregnant solution tank
- 105- Pump 10 H.P.
- 107- Crowe tower
- 108- Zn precipitator
- 109- Zn feeder
- 110- Zn bin
- 112- Pump 10 H.P.
- 126- Disk filter
- 127- Conveyor
- 134- Plow discharge
- 135- Loading chute
- 136- Stockpile
- 137- Filtrate receiver
- 138- Repulper
- 139- Repulper

FLOW LEGEND

Solids t/h	Solution m ³ /h
% Solids	Slurry m ³ /h
S.G. Solids	S.G. Slurry

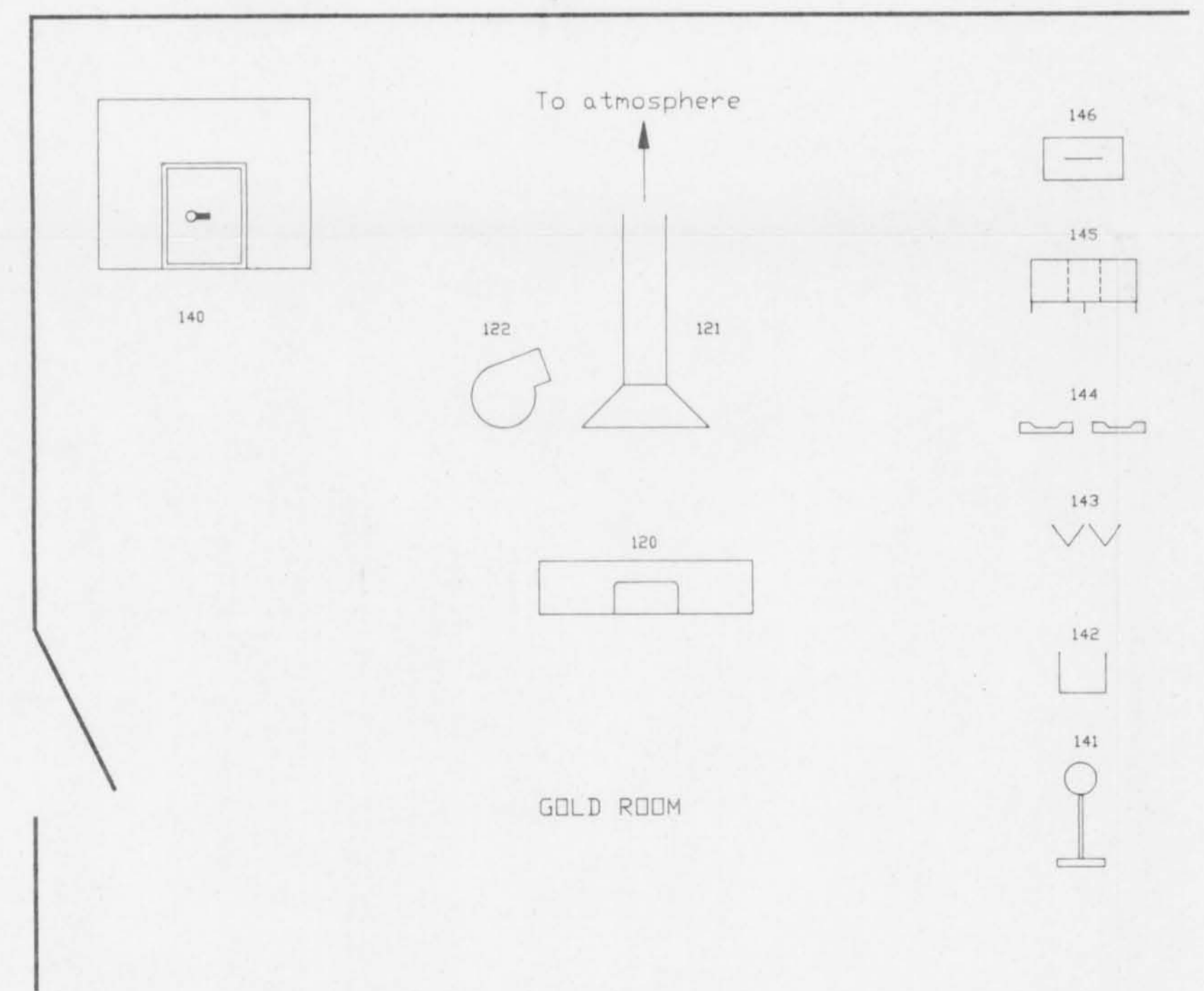
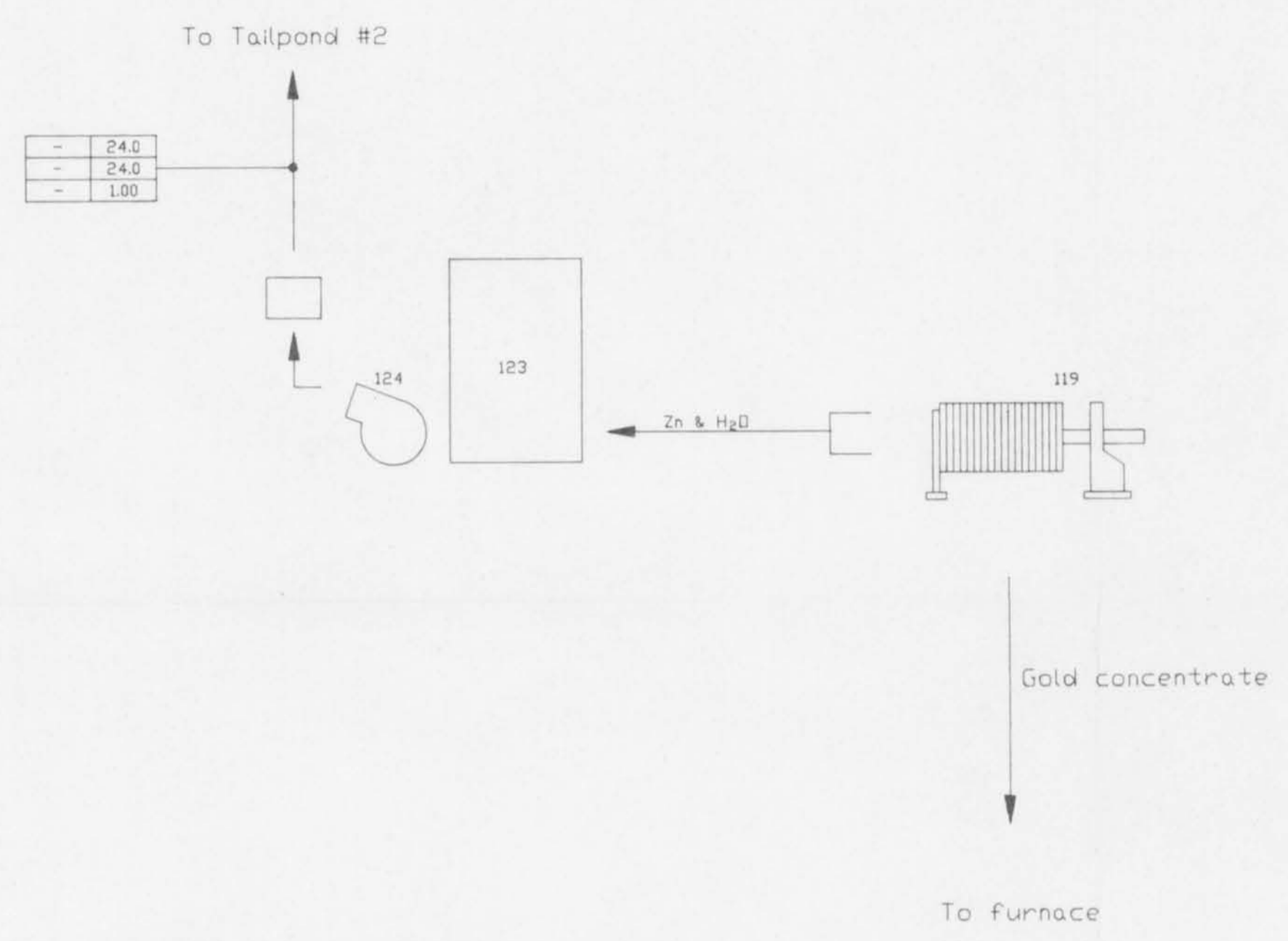
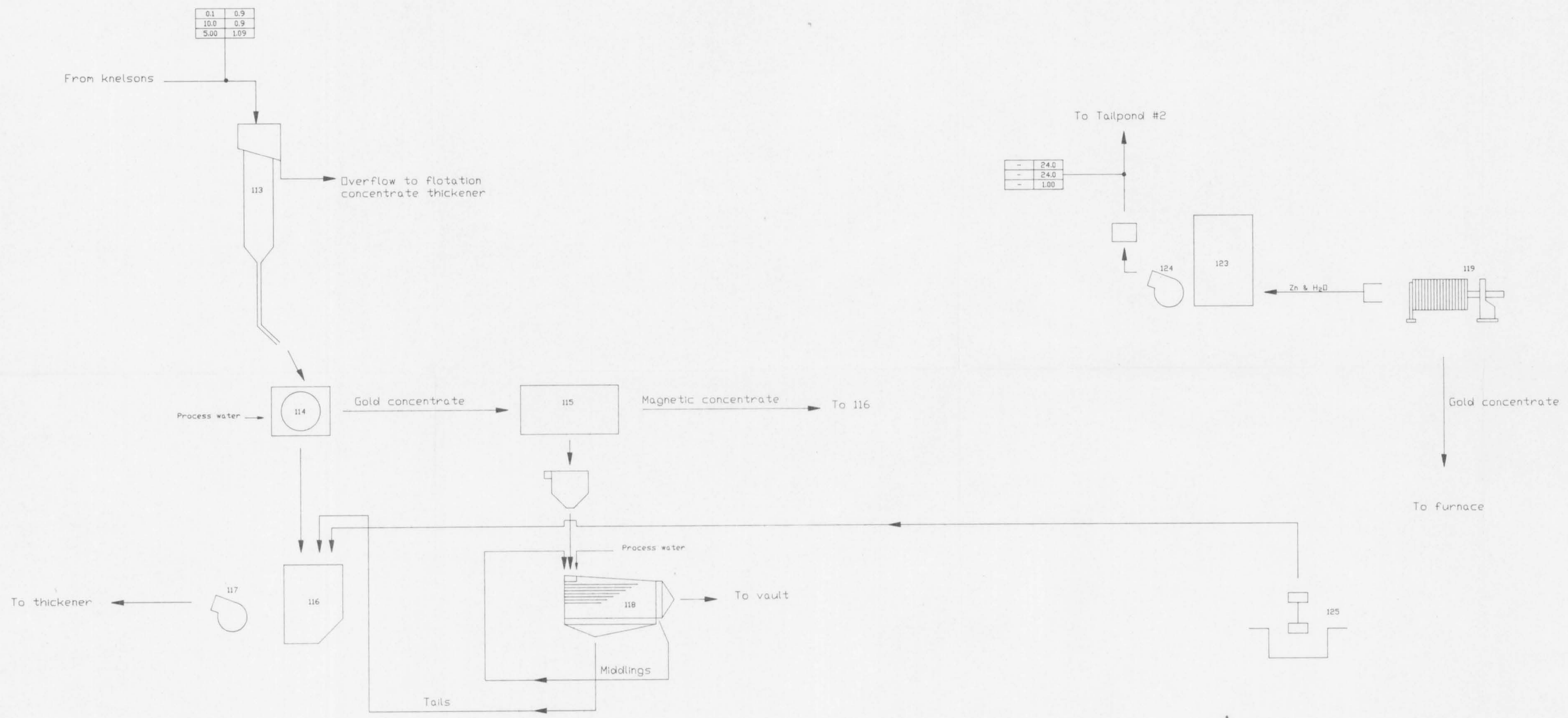
PRELIMINARY

PR89-005

ST-MICHEL GEDCONSEIL DREX EXPLORATION INC. GOLDBORO Project

FLOW SHEET #4
Cyanide

Drawn by: JSt-G.	Scale: None
Verified by: AL.	Date: May 1989
Approved by:	Plan No.:



- 113- Bin 3 t.
- 114- Knelson 30cm/2 H.P.
- 115- Demagnetizer /5 H.P.
- 116- Pump box (metal)
- 117- Pump 10 H.P.
- 118- Shaking table
- 119- Gold press
- 120- Furnace
- 121- Dust collector
- 122- Ventilator 15 H.P.
- 123- Barren tank 40m³
- 124- Pump H.P.
- 125- Sump pump 10 H.P.
- 140- Vault
- 141- Charge scale
- 142- Box for precipitates
- 143- Slag pots
- 144- Bullion moulds
- 145- Flux bins
- 146- Bullion scale

FLOW LEGEND

Solids t/h	Solution m ³ /h
%Solids	Slurry m ³ /h
S.G. Solids	S.G. Slurry

PRELIMINARY

PR89-005

ST-MICHEL
GEOCONSULT

DREX EXPLORATION INC.
GOLDBORO Project

FLOW SHEET #5
Refinery

Drawn by: JST-G	Scale: None
Verified by: AL	Date: May 1989
Approved by:	Plan No.:

APPENDIX 2

Operating Costs for Years 1989 and 1990; Scenarios 1, 2 and 3

	COST PER TON	January 1989	February 1989	March 1989	April 1989	May 1989	June 1989	July 1989	August 1989	September 1989	October 1989	November 1989	December 1989	TOTAL YEAR 1989
OPERATING EXPENSES														
MILLING														
Milling (for 500 mt with financing)	30.75 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Sub-total		0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
OPERATING COST														
General expenses (Orex)		60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	720,000 \$
Expenses for mining contractor	3.00 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Sub-total		60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	720,000 \$
OPERATING EXPENSES TOTAL														
Contingencies (5%)		3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	36,000 \$
Engineering (7%)		4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	50,400 \$
Supervision (6%)		3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	43,200 \$
GRAND TOTAL		70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	849,600 \$
GROSS OPERATING PROFITS														
		-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-849,600 \$

	COST PER TON	January 1990	February 1990	March 1990	April 1990	May 1990	June 1990	July 1990	August 1990	September 1990	October 1990	November 1990	December 1990	TOTAL YEAR 1990
OPERATING EXPENSES														
MILLING														
Milling (for 500 mt with financing)	30.75 \$	0 \$	0 \$	0 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	4,035,938 \$
Sub-total		0 \$	0 \$	0 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	4,035,938 \$
OPERATING COST														
General expenses (Orex)		60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	720,000 \$
Expenses for mining contractor	3.00 \$	0 \$	0 \$	0 \$	1,050,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	1,050,000 \$
Sub-total	0.00 \$	60,000 \$	60,000 \$	60,000 \$	1,110,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	1,770,000 \$
OPERATING EXPENSES TOTAL														
Contingencies (5%)		3,000 \$	3,000 \$	3,000 \$	77,922 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	290,297 \$
Engineering (7%)		4,200 \$	4,200 \$	4,200 \$	109,091 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	406,416 \$
Supervision (6%)		3,600 \$	3,600 \$	3,600 \$	93,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	348,356 \$
GRAND TOTAL		70,800 \$	70,800 \$	70,800 \$	1,838,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	6,851,006 \$
GROSS OPERATING PROFITS														
		-70,800 \$	-70,800 \$	-70,800 \$	-1,237,637 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	-1,439,135 \$

	COST PER TON	January 1989	February 1989	March 1989	April 1989	May 1989	June 1989	July 1989	August 1989	September 1989	October 1989	November 1989	December 1989	TOTAL YEAR 1989
OPERATING EXPENSES														
MILLING														
Milling (for 500 mt with financing)	30.75 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Milling (for 5,000 mt)	7.00 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Sub-total		0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
OPERATING COST														
General expenses (Orex)		60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	720,000 \$
Expenses for mining contractor	3.00 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Sub-total	0.00 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	720,000 \$
OPERATING EXPENSES TOTAL														
Contingencies (5%)		3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	36,000 \$
Engineering (7%)		4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	50,400 \$
Supervision (6%)		3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	43,200 \$
GRAND TOTAL		70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	849,600 \$
GROSS OPERATING PROFITS														
		-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-849,600 \$

	COST PER TON	January 1990	February 1990	March 1990	April 1990	May 1990	June 1990	July 1990	August 1990	September 1990	October 1990	November 1990	December 1990	TOTAL YEAR 1990
OPERATING EXPENSES														
MILLING														
Milling (for 500 mt with financing)	30.75 \$	0 \$	0 \$	0 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	4,035,938 \$
Milling (for 5,000 mt)	7.00 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Sub-total		0 \$	0 \$	0 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	448,438 \$	4,035,938 \$
OPERATING COSTS														
General expenses (Orex)		60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	720,000 \$
Expenses for mining contractor	3.00 \$	0 \$	0 \$	0 \$	1,050,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	1,050,000 \$
Sub-total	0.00 \$	60,000 \$	60,000 \$	60,000 \$	1,110,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	1,770,000 \$
OPERATING EXPENSES TOTAL														
Contingencies (5%)		3,000 \$	3,000 \$	3,000 \$	77,922 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	25,422 \$	290,297 \$
Engineering (7%)		4,200 \$	4,200 \$	4,200 \$	109,091 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	35,591 \$	406,416 \$
Supervision (6%)		3,600 \$	3,600 \$	3,600 \$	93,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	30,506 \$	348,356 \$
GRAND TOTAL		70,800 \$	70,800 \$	70,800 \$	1,838,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	6,851,006 \$
GROSS OPERATING PROFITS														
		-70,800 \$	-70,800 \$	-70,800 \$	-1,237,637 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	-1,439,135 \$

	COST PER TON	January 1989	February 1989	March 1989	April 1989	May 1989	June 1989	July 1989	August 1989	September 1989	October 1989	November 1989	December 1989	TOTAL YEAR 1989
OPERATION EXPENSES														
MILLING														
Heap leaching	5.00 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	750,000 \$	750,000 \$	750,000 \$	2,250,000 \$
Milling (for 5,000 mt)	7.00 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Sub-total		0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	750,000 \$	750,000 \$	750,000 \$	2,250,000 \$
OPERATING COST														
General expenses (Orex)		60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	720,000 \$
Expenses for mining contractor	3.00 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	3,600,000 \$	0 \$	0 \$	3,600,000 \$
Sub-total	0.00 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	3,660,000 \$	60,000 \$	60,000 \$	4,320,000 \$
OPERATING EXPENSES TOTAL														
Contingencies (5%)		3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	3,000 \$	220,500 \$	40,500 \$	40,500 \$	328,500 \$
Engineering (7%)		4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	4,200 \$	308,700 \$	56,700 \$	56,700 \$	459,900 \$
Supervision (6%)		3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	3,600 \$	264,600 \$	48,600 \$	48,600 \$	394,200 \$
GRAND TOTAL		70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	5,203,800 \$	955,800 \$	955,800 \$	7,752,600 \$
GROSS OPERATING PROFITS														
		-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-70,800 \$	-646,435 \$	3,601,565 \$	3,601,565 \$	5,919,495 \$

	COST PER TON	January 1990	February 1990	March 1990	April 1990	May 1990	June 1990	July 1990	August 1990	September 1990	October 1990	November 1990	December 1990	TOTAL YEAR 1990
DÉPENSES D'OPÉRATION														
MILLING														
Heap leaching	5.00 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	1,500,000 \$	9,750,000 \$
Milling (for 5,000 mt)	7.00 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Sub-total		750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	750,000 \$	1,500,000 \$	9,750,000 \$
OPERATING COST														
General expenses (Orex)		60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000 \$	720,000 \$
Expenses for mining contractor	3.00 \$	3,600,000 \$	0 \$	0 \$	3,600,000 \$	0 \$	0 \$	0 \$	3,600,000 \$	1,800,000 \$	0 \$	0 \$	0 \$	12,600,000 \$
Sub-total	0.00 \$	3,660,000 \$	60,000 \$	60,000 \$	3,660,000 \$	60,000 \$	60,000 \$	60,000 \$	3,660,000 \$	1,860,000 \$	60,000 \$	60,000 \$	60,000 \$	13,320,000 \$
OPERATING EXPENSES TOTAL														
		4,410,000 \$	810,000 \$	810,000 \$	4,410,000 \$	810,000 \$	810,000 \$	810,000 \$	4,410,000 \$	2,610,000 \$	810,000 \$	810,000 \$	1,560,000 \$	23,070,000 \$
Contingencies (5%)		220,500 \$	40,500 \$	40,500 \$	220,500 \$	40,500 \$	40,500 \$	40,500 \$	220,500 \$	130,500 \$	40,500 \$	40,500 \$	78,000 \$	1,153,500 \$
Engineering (7%)		308,700 \$	56,700 \$	56,700 \$	308,700 \$	56,700 \$	56,700 \$	56,700 \$	308,700 \$	182,700 \$	56,700 \$	56,700 \$	109,200 \$	1,614,900 \$
Supervision (6%)		264,600 \$	48,600 \$	48,600 \$	264,600 \$	48,600 \$	48,600 \$	48,600 \$	264,600 \$	156,600 \$	48,600 \$	48,600 \$	93,600 \$	1,384,200 \$
GRAND TOTAL		5,203,800 \$	955,800 \$	955,800 \$	5,203,800 \$	955,800 \$	955,800 \$	955,800 \$	5,203,800 \$	3,079,800 \$	955,800 \$	955,800 \$	1,840,800 \$	27,222,600 \$
GROSS OPERATING PROFITS														
		-646,435 \$	3,601,565 \$	3,601,565 \$	-646,435 \$	3,601,565 \$	3,601,565 \$	3,601,565 \$	-646,435 \$	1,477,565 \$	3,601,565 \$	3,601,565 \$	7,273,930 \$	32,023,144 \$

APPENDIX 3

Loading and Hauling Operating Cost Estimate (Highway Trucks)

LOADING AND HAULING OPERATING COST ESTIMATE

Machine Designation	Off-Highway Trucks 35 TONS
Estimated Ownership Period (Years)	5
Effective Operating Hours Per Day	16
Operating Days Per Year	350
Estimated Usage (Hours/Year)	5,600
Ownership Usage (Total Hours)	28,000

HOURLY OPERATING COST

Model: 773B

				\$/hour
a. Fuel	Unit price (\$/liter)	0.51		
	Consumption (liter/hour)	36	(a)	18.36
b. Lube oils, filters and grease				
	<u>Lube Oils</u>	<u>Unit price</u>	<u>Consumption</u>	<u>Hourly Cost</u>
		<u>(\$/liter)</u>	<u>(liter/hour)</u>	<u>(\$/hour)</u>
	Crankcase	1.75	0.322	0.56
	Transmission	2.00	0.095	0.19
	Final Drives	2.80	0.166	0.46
	Hydraulic	2.80	0.253	0.71
		<u>Unit price</u>	<u>Quantity</u>	<u>Hourly Cost</u>
		<u>(\$/unit)</u>	<u>(unit/2000h)</u>	<u>(\$/hour)</u>
	Oil Changes	300.00	16	2.40
	Grease Fitting	2.10	1172	1.23
	Main Oil Ch.	1000.00	2	1.00
			(b)	6.56
c. Tires				
		<u>Replacement</u>	<u>Estimated</u>	<u>Hourly Cost</u>
		<u>Cost (\$)</u>	<u>Life (hours)</u>	<u>(\$/hour)</u>
	Front	8,000	4,000	2.00
	Rear	8,000	4,000	2.00
			(c)	4.00
d. Repairs				
	Extended-Life Multiplier			1.1
	Basic Factor (\$/hour)			9.00
	US\$ exchange rate			1.20
			(d)	11.88
e. Special Items (estimated to 40% of the Repairs)			(e)	4.75
f. Insurance				
	Factor			0.00001
	Delivered Price (\$)			320,000
			(f)	3.20
g. Operator's hourly wage (including fringe benefits)			(g)	
h. TOTAL HOURLY OPERATING COST			(h)	48.75

APPENDIX 4

Loading and Hauling Operating Cost Estimate (Muck Machine)

LOADING AND HAULING OPERATING COST ESTIMATE

Machine Designation	7 VERGES
Estimated Ownership Period (Years)	5
Effective Operating Hours Per Day	16
Operating Days Per Year	350
Estimated Usage (Hours/Year)	5,600
Ownership Usage (Total Hours)	28,000

HOURLY OPERATING COST

Model: 988B

				\$/hour
a. Fuel	Unit price (\$/liter)	0.51		
	Consumption (liter/hour)	60	(a)	30.60
b. Lube oils, filters and grease				
	<u>Lube Oils</u>	<u>Unit price</u>	<u>Consumption</u>	<u>Hourly Cost</u>
		<u>(\$/liter)</u>	<u>(liter/hour)</u>	<u>(\$/hour)</u>
	Crankcase	1.75	0.209	0.37
	Transmission	2.00	0.076	0.15
	Final Drives	2.80	0.117	0.33
	Hydraulic	2.80	0.169	0.47
		<u>Unit price</u>	<u>Quantity</u>	<u>Hourly Cost</u>
		<u>(\$/unit)</u>	<u>(unit/2000h)</u>	<u>(\$/hour)</u>
	Oil Changes	300.00	12	1.80
	Grease Fitting	2.10	820	0.86
	Main Oil Ch.	1000.00	2	1.00
			(b)	4.98
c. Tires				
		<u>Replacement</u>	<u>Estimated</u>	<u>Hourly Cost</u>
		<u>Cost (\$)</u>	<u>Life (hours)</u>	<u>(\$/hour)</u>
	Front	8,000	2,500	3.20
	Rear	8,000	3,000	2.67
			(c)	5.87
d. Repairs				
	Extended-Life Multiplier			1.3
	Basic Factor (\$/hour)			12.00
	US\$ exchange rate			1.20
			(d)	18.72
e. Special Items (estimated to 40% of the Repairs)			(e)	7.49
f. Insurance				
	Factor			0.00001
	Delivered Price (\$)			300,000
			(f)	3.00
g. Operator's hourly wage (including fringe benefits)			(g)	0.00
h. TOTAL HOURLY OPERATING COST			(h)	70.65

APPENDIX 5

Production Drilling

PRODUCTION DRILLING

hole size (mm) 127

Technical data		Operating cost (based on 25,000 tpd)				
Rock type	Shale & Arenite	Unit price \$/hr, \$/ea	Life (m)	Quantity (hr & unit)	Cost per day	Cost per ton
Density (mt/bank cubic meter)	2.80					
Daily production (Metric Tons)	5,000					
Daily production (Bank Cubic Meter)	1,786	Labor				
Hole size (mm)	127	Drill operator		20.0	0 \$	0.00 \$
Burden (m)	3.81	Mechanics		20.0	0 \$	0.00 \$
Spacing (m)	4.76	Consumable parts				
Bench height (m)	9.53	Drill bits	350.00	0.3	174 \$	0.03 \$
Underdrilling (m)	1.14	Drill steel	600.00	0.2	87 \$	0.02 \$
Hole depth (m)	11.20	Coupling	500.00	0.2	19 \$	0.00 \$
Volume of rock per hole (Bank Cubic Meter)	172.8	Equipment rental				
Hole density (drill meter/bank cubic meter)	0.065	- Hydraulic crawler drill		1.0	0 \$	0.00 \$
Daily drill meter required (m)	116	- Rock drill		2.0		
Shift of 8 hours per day	2					
Job Efficiency Factor (40min/60min)	0.67					
Effective operating time per day (hours)	10.7					
Estimated production required (m/hour)	10.9					
Tons per foot drilled	13.2	Cost per ton				0.06 \$
Equipment required		Cost per foot drilled			0.73 \$	
Estimated drilling capacity (meters/hour)	27					
Crawler drill required	1					
Rock drills required	2					
Manpower required						
Drill operator	2					
Mechanics	2					

APPENDIX 6

Blasting

BLASTING						
Technical data		Operating cost (based on 25,000 tpd)				
			Unit price \$/hr,\$/kg	Quantity (hr & kg)	Cost per day	Cost per ton
Stemming (m)	3.81					
Column charge (m)	3.58					
Bottom charge (m)	3.81	Labour	0.00	80	0 \$	0.00 \$
Total charge (m)	7.39	Consumable parts				
		- Aquamex	2.80	225	629 \$	0.13 \$
Charge per meter (kg/m)	12.66	- Amex	0.82	690	566 \$	0.11 \$
Amex (kg/m)	10.63	- Nonel, primer, etc	4.00	21	83 \$	0.02 \$
Aquamex (kg/m)	19.62					
% Amex	85					
% Aquamex	15					
Amex charge (kg)	66.8					
Aquamex charge (kg)	21.8					
Total charge (kg)	88.6					
Tons per hole (tons)	483.9					
Powder factor (kg/ton)	0.18					
Powder factor (lb/ton)	0.20					
		Cost per ton				0.26 \$
Equipment required						
Service vehicle	1					
Manpower required						
Blast operator	8					

APPENDIX 7

Pro Forma Revenue and Expenditure Budget for Year 1989; Scenario 1

Pro Forma Revenue and Expenditure Budget for Year 1990; Scenario 1

	January 1989	February 1989	March 1989	April 1989	May 1989	June 1989	July 1989	August 1989	September 1989	October 1989	November 1989	December 1989	TOTAL YEAR 1989
Production revenue	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less operating expenses	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	849,600 \$
Less pre-production expenses	284,758 \$	150,731 \$	219,503 \$	231,368 \$	261,030 \$	310,151 \$	59,325 \$	0 \$	0 \$	2,165,956 \$	0 \$	0 \$	3,682,820 \$
Less total interest expense on loan	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit before taxes and amortization	-355,558 \$	-221,531 \$	-290,303 \$	-302,168 \$	-331,830 \$	-380,951 \$	-130,125 \$	-70,800 \$	-70,800 \$	-2,236,756 \$	-70,800 \$	-70,800 \$	-4,532,420 \$
Less amortization	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net taxable revenue	-355,558 \$	-221,531 \$	-290,303 \$	-302,168 \$	-331,830 \$	-380,951 \$	-130,125 \$	-70,800 \$	-70,800 \$	-2,236,756 \$	-70,800 \$	-70,800 \$	-4,532,420 \$
Income tax (46%)	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit after taxes and amortization	-355,558 \$	-221,531 \$	-290,303 \$	-302,168 \$	-331,830 \$	-380,951 \$	-130,125 \$	-70,800 \$	-70,800 \$	-2,236,756 \$	-70,800 \$	-70,800 \$	-4,532,420 \$
Plus debt	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less debt pay-back	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Plus equity	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,000,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,000,000 \$
Increase or decrease of cash balance	-355,558 \$	-221,531 \$	-290,303 \$	-302,168 \$	-331,830 \$	-380,951 \$	8,869,875 \$	-70,800 \$	-70,800 \$	-2,236,756 \$	-70,800 \$	-70,800 \$	
Balance, beginning	500,000 \$	144,442 \$	-77,088 \$	-367,391 \$	-669,558 \$	-1,001,388 \$	-1,382,339 \$	7,487,536 \$	7,416,736 \$	7,345,936 \$	5,109,180 \$	5,038,380 \$	500,000 \$
Balance, ending	144,442 \$	-77,088 \$	-367,391 \$	-669,558 \$	-1,001,388 \$	-1,382,339 \$	7,487,536 \$	7,416,736 \$	7,345,936 \$	5,109,180 \$	5,038,380 \$	4,967,580 \$	4,967,580 \$

	January 1990	February 1990	March 1990	April 1990	May 1990	June 1990	July 1990	August 1990	September 1990	October 1990	November 1990	December 1990	TOTAL YEAR 1990
Production revenue	0 \$	0 \$	0 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	5,411,871 \$
Less operating expenses	70,800 \$	70,800 \$	70,800 \$	1,838,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	6,851,006 \$
Less pre-production expenses	0 \$	429,953 \$	1,039,184 \$	356,055 \$	344,085 \$	177,975 \$	0 \$	118,650 \$	0 \$	0 \$	0 \$	0 \$	2,465,902 \$
Less total interest expense on loan	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit before taxes and amortization	-70,800 \$	-500,753 \$	-1,109,984 \$	-1,593,692 \$	-342,722 \$	-176,612 \$	1,363 \$	-117,287 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	-3,905,037 \$
Less amortization	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net taxable revenue	-70,800 \$	-500,753 \$	-1,109,984 \$	-1,593,692 \$	-342,722 \$	-176,612 \$	1,363 \$	-117,287 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	-3,905,037 \$
Income tax (46%)	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit after taxes and amortization	-70,800 \$	-500,753 \$	-1,109,984 \$	-1,593,692 \$	-342,722 \$	-176,612 \$	1,363 \$	-117,287 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	-3,905,037 \$
Plus debt	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less debt pay-back	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Plus equity	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Increase or decrease of cash balance	-70,800 \$	-500,753 \$	-1,109,984 \$	-1,593,692 \$	-342,722 \$	-176,612 \$	1,363 \$	-117,287 \$	1,363 \$	1,363 \$	1,363 \$	1,363 \$	
Balance, beginning	4,967,580 \$	4,896,780 \$	4,396,027 \$	3,286,043 \$	1,692,351 \$	1,349,629 \$	1,173,016 \$	1,174,379 \$	1,057,092 \$	1,058,455 \$	1,059,817 \$	1,061,180 \$	4,967,580 \$
Balance, ending	4,896,780 \$	4,396,027 \$	3,286,043 \$	1,692,351 \$	1,349,629 \$	1,173,016 \$	1,174,379 \$	1,057,092 \$	1,058,455 \$	1,059,817 \$	1,061,180 \$	1,062,543 \$	1,062,543 \$

APPENDIX 8

Pro Forma Revenue and Expenditure Budget for Year 1989; Scenario 2

Pro Forma Revenue and Expenditure Budget for Year 1990; Scenario 2

	January 1989	February 1989	March 1989	April 1989	May 1989	June 1989	July 1989	August 1989	September 1989	October 1989	November 1989	December 1989	TOTAL YEAR 1989
Production revenue	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less operating expenses	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	849,600 \$
Less pre-production expenses	284,758 \$	150,731 \$	219,503 \$	231,368 \$	261,030 \$	310,151 \$	59,325 \$	0 \$	0 \$	2,165,956 \$	0 \$	0 \$	3,682,820 \$
Less total interest expense on loan	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit before taxes and amortization	-355,558 \$	-221,531 \$	-290,303 \$	-302,168 \$	-331,830 \$	-380,951 \$	-130,125 \$	-70,800 \$	-70,800 \$	-2,236,756 \$	-70,800 \$	-70,800 \$	-4,532,420 \$
Less amortization	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net taxable revenue	-355,558 \$	-221,531 \$	-290,303 \$	-302,168 \$	-331,830 \$	-380,951 \$	-130,125 \$	-70,800 \$	-70,800 \$	-2,236,756 \$	-70,800 \$	-70,800 \$	-4,532,420 \$
Income tax (46%)	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit after taxes and amortization	-355,558 \$	-221,531 \$	-290,303 \$	-302,168 \$	-331,830 \$	-380,951 \$	-130,125 \$	-70,800 \$	-70,800 \$	-2,236,756 \$	-70,800 \$	-70,800 \$	-4,532,420 \$
Plus debt	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less debt pay-back	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Plus equity	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,000,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,000,000 \$
Increase or decrease of cash balance	-355,558 \$	-221,531 \$	-290,303 \$	-302,168 \$	-331,830 \$	-380,951 \$	8,869,875 \$	-70,800 \$	-70,800 \$	-2,236,756 \$	-70,800 \$	-70,800 \$	4,467,580 \$
Balance, beginning	500,000 \$	144,442 \$	-77,088 \$	-367,391 \$	-669,558 \$	-1,001,388 \$	-1,382,339 \$	7,487,536 \$	7,416,736 \$	7,345,936 \$	5,109,180 \$	5,038,380 \$	500,000 \$
Balance, ending	144,442 \$	-77,088 \$	-367,391 \$	-669,558 \$	-1,001,388 \$	-1,382,339 \$	7,487,536 \$	7,416,736 \$	7,345,936 \$	5,109,180 \$	5,038,380 \$	4,967,580 \$	4,967,580 \$

	January 1990	February 1990	March 1990	April 1990	May 1990	June 1990	July 1990	August 1990	September 1990	October 1990	November 1990	December 1990	TOTAL YEAR 1989
Production revenue	0 \$	0 \$	0 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	601,319 \$	5,411,871 \$
Less operating expenses	70,800 \$	70,800 \$	70,800 \$	1,838,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	599,956 \$	6,851,006 \$
Less pre-production expenses	0 \$	429,953 \$	1,039,184 \$	356,055 \$	344,085 \$	177,975 \$	0 \$	240,690 \$	380,104 \$	329,678 \$	0 \$	0 \$	3,297,723 \$
Less total interest expense on loan	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit before taxes and amortization	-70,800 \$	-500,753 \$	-1,109,984 \$	-1,593,692 \$	-342,722 \$	-176,612 \$	1,363 \$	-239,327 \$	-378,741 \$	-328,315 \$	1,363 \$	1,363 \$	-4,736,858 \$
Less amortization	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net taxable revenue	-70,800 \$	-500,753 \$	-1,109,984 \$	-1,593,692 \$	-342,722 \$	-176,612 \$	1,363 \$	-239,327 \$	-378,741 \$	-328,315 \$	1,363 \$	1,363 \$	-4,736,858 \$
Income tax (46%)	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit after taxes and amortization	-70,800 \$	-500,753 \$	-1,109,984 \$	-1,593,692 \$	-342,722 \$	-176,612 \$	1,363 \$	-239,327 \$	-378,741 \$	-328,315 \$	1,363 \$	1,363 \$	-4,736,858 \$
Plus debt	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less debt pay-back	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Plus equity	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Increase or decrease of cash balance	-70,800 \$	-500,753 \$	-1,109,984 \$	-1,593,692 \$	-342,722 \$	-176,612 \$	1,363 \$	-239,327 \$	-378,741 \$	-328,315 \$	1,363 \$	1,363 \$	
Balance, beginning	4,967,580 \$	4,896,780 \$	4,396,027 \$	3,286,043 \$	1,692,351 \$	1,349,629 \$	1,173,016 \$	1,174,379 \$	935,052 \$	556,311 \$	227,996 \$	229,359 \$	4,967,580 \$
Balance, ending	4,896,780 \$	4,396,027 \$	3,286,043 \$	1,692,351 \$	1,349,629 \$	1,173,016 \$	1,174,379 \$	935,052 \$	556,311 \$	227,996 \$	229,359 \$	230,722 \$	230,722 \$

APPENDIX 9

Pro Forma Revenue and Expenditure Budget for Year 1989; Scenario 3

Pro Forma Revenue and Expenditure Budget for Year 1990; Scenario 3

	January 1990	February 1990	March 1990	April 1990	May 1990	June 1990	July 1990	August 1990	September 1990	October 1990	November 1990	December 1990	TOTAL YEAR 1989
Production revenue	4,557,365 \$	4,557,365 \$	4,557,365 \$	4,557,365 \$	4,557,365 \$	4,557,365 \$	4,557,365 \$	4,557,365 \$	4,557,365 \$	4,557,365 \$	4,557,365 \$	9,114,730 \$	59,245,744 \$
Less operating expenses	5,203,800 \$	955,800 \$	955,800 \$	5,203,800 \$	955,800 \$	955,800 \$	955,800 \$	5,203,800 \$	3,079,800 \$	955,800 \$	955,800 \$	1,840,800 \$	27,222,600 \$
Less pre-production expenses	916,571 \$	11,496,720 \$	2,695,828 \$	2,131,647 \$	2,723,222 \$	2,157,262 \$	1,055,330 \$	2,885,935 \$	2,767,285 \$	2,340,145 \$	1,965,507 \$	3,430,387 \$	36,565,838 \$
Less total interest expense on loan	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit before taxes and amortization	-1,563,006 \$	-7,895,155 \$	905,737 \$	-2,778,082 \$	878,343 \$	1,444,303 \$	2,546,235 \$	-3,532,370 \$	-1,289,720 \$	1,261,420 \$	1,636,058 \$	3,843,543 \$	-4,542,694 \$
Less amortization	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net taxable revenue	-1,563,006 \$	-7,895,155 \$	905,737 \$	-2,778,082 \$	878,343 \$	1,444,303 \$	2,546,235 \$	-3,532,370 \$	-1,289,720 \$	1,261,420 \$	1,636,058 \$	3,843,543 \$	-4,542,694 \$
Income tax (46%)	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit after taxes and amortization	-1,563,006 \$	-7,895,155 \$	905,737 \$	-2,778,082 \$	878,343 \$	1,444,303 \$	2,546,235 \$	-3,532,370 \$	-1,289,720 \$	1,261,420 \$	1,636,058 \$	3,843,543 \$	-4,542,694 \$
Plus debt	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less debt pay-back	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Plus equity	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Increase or decrease of cash balance	-1,563,006 \$	-7,895,155 \$	905,737 \$	-2,778,082 \$	878,343 \$	1,444,303 \$	2,546,235 \$	-3,532,370 \$	-1,289,720 \$	1,261,420 \$	1,636,058 \$	3,843,543 \$	
Balance, beginning	10,091,485 \$	8,528,479 \$	633,324 \$	1,539,061 \$	-1,239,021 \$	-360,678 \$	1,083,625 \$	3,629,860 \$	97,490 \$	-1,192,231 \$	69,189 \$	1,705,248 \$	10,091,485 \$
Balance, ending	8,528,479 \$	633,324 \$	1,539,061 \$	-1,239,021 \$	-360,678 \$	1,083,625 \$	3,629,860 \$	97,490 \$	-1,192,231 \$	69,189 \$	1,705,248 \$	5,548,791 \$	5,548,791 \$

	January 1989	February 1989	March 1989	April 1989	May 1989	June 1989	July 1989	August 1989	September 1989	October 1989	November 1989	December 1989	TOTAL YEAR 1989
Production revenue	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	4,557,365 \$	4,557,365 \$	4,557,365 \$	13,672,095 \$
Less operating expenses	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	70,800 \$	5,203,800 \$	955,800 \$	955,800 \$	7,752,600 \$
Less pre-production expenses	492,395 \$	358,368 \$	219,503 \$	231,368 \$	383,070 \$	538,146 \$	300,015 \$	177,975 \$	237,300 \$	2,140,446 \$	10,085 \$	10,085 \$	5,098,755 \$
Less total interest expense on loan	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Net profit before taxes and amortization	-563,195 \$	-429,168 \$	-290,303 \$	-302,168 \$	-453,870 \$	-608,946 \$	-370,815 \$	-248,775 \$	-308,100 \$	-2,786,881 \$	3,591,480 \$	3,591,480 \$	820,740 \$
Less amortization	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	322,360 \$	322,360 \$
Net taxable revenue	-563,195 \$	-429,168 \$	-290,303 \$	-302,168 \$	-453,870 \$	-608,946 \$	-370,815 \$	-248,775 \$	-308,100 \$	-2,786,881 \$	3,591,480 \$	3,269,120 \$	498,380 \$
Income tax (46%)	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	229,255 \$	229,255 \$
Net profit after taxes and amortization	-563,195 \$	-429,168 \$	-290,303 \$	-302,168 \$	-453,870 \$	-608,946 \$	-370,815 \$	-248,775 \$	-308,100 \$	-2,786,881 \$	3,591,480 \$	3,362,225 \$	591,485 \$
Plus debt	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Less debt pay-back	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$
Plus equity	0 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,000,000 \$	0 \$	0 \$	0 \$	0 \$	0 \$	9,000,000 \$
Increase or decrease of cash balance	-563,195 \$	-429,168 \$	-290,303 \$	-302,168 \$	-453,870 \$	-608,946 \$	8,629,185 \$	-248,775 \$	-308,100 \$	-2,786,881 \$	3,591,480 \$	3,362,225 \$	9,591,485 \$
Balance, beginning	500,000 \$	-63,195 \$	-492,363 \$	-782,666 \$	-1,084,833 \$	-1,538,703 \$	-2,147,649 \$	6,481,536 \$	6,232,761 \$	5,924,661 \$	3,137,780 \$	6,729,260 \$	500,000 \$
Balance, ending	-63,195 \$	-492,363 \$	-782,666 \$	-1,084,833 \$	-1,538,703 \$	-2,147,649 \$	6,481,536 \$	6,232,761 \$	5,924,661 \$	3,137,780 \$	6,729,260 \$	10,091,485 \$	10,091,485 \$