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UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION



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UNITED NATIONS DEVELOPMENT PROGRAMME
(SPECIAL FUND),

PLAN OF OPERATION.

Country: BOLIVIA.

Title of Project: EXPERIMENTAL PRODUCTION PLANT FOR
ASBESTOS PROCESSING, COCHABAMBA.

id.69-5798

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards even though the best possible copy was used for preparing the master fiche.

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UNITED NATIONS
DEVELOPMENT PROGRAMME
(SPECIAL FUND)

PLAN OF OPERATION

Country: Bolivia
Title of Project: Experimental Production Plant for Asbestos Processing,
Cochabamba

Summary data

Special Fund allocation	US\$536,500
Consisting of:	
Special Fund Contribution	US\$516,100
Government contribution towards local operating costs	US\$ 20,400
Government counterpart contribution in kind.	US\$238,200

Durations:	Two years
Participating and Executing Agency:	United Nations Industrial Development Organisation
Co-operating Government Agency:	Corporación Boliviana de Fomento

PREAMBLE

For the purpose of Experimental Production Plant for Asbestos Processing, Cochabamba, to be undertaken by the Government of Bolivia (hereafter referred to as the "Government") with the assistance of the United Nations Development Programme (Special Fund) hereafter referred to as "UNDP", for which the United Nations Industrial Development Organisation shall act as Participating and Executing Agency (hereafter referred to as "Executing Agency"), this Plan of Operation shall be the Plan of Operation provided for in Article I, paragraph 2, of the Agreement signed on 9 February 1960 by the Government of Bolivia and the United Nations Development Programme (Special Fund). It has been established in three original copies in both English and Spanish, it being agreed and understood that the English and Spanish texts shall be considered equally authentic.

I. PURPOSE AND DESCRIPTION

- Paragraph 1.1 The purpose of the project, the duration of which is two years is to assist the Government of Bolivia in developing the country's asbestos industry. In order to reach this objective the project will:
- (a) assist in the establishment of an experimental production plant for asbestos processing in Cochabamba to develop the necessary economic processing and sizing techniques for Bolivian crocidolite asbestos ore;
 - (b) develop the national and export markets for asbestos and asbestos by-products; and
 - (c) stimulate investment by providing financial and technical assistance for developing and modernizing the exploitation of asbestos deposits as well as developing new industries requiring processed asbestos as raw material.
- Paragraph 1.2 The experimental plant will be located in Cochabamba. It will be administered through an autonomous organization to be established by the Government in accordance with paragraph 2.1(f) of this Plan of Operation. The Government will be responsible for the construction of buildings as stipulated in paragraph 3.18 while the UNDP will supply the plant as stipulated in Appendix I. The plant will have a capacity sufficient to process about 20,000 tons of asbestos ore per year, operating on one shift of eight hours. The process flowsheet (Table IV) and the tentative plant layout (Table V) have been established as a result of preliminary studies. Ore deposits from the Alto Chapare region about 150 kilometers from Cochabamba will provide supplies of raw material.
- Paragraph 1.3 The Government through the Banco Minero and the Corporación Boliviana de Fomento, will supply the necessary credits and expertise to improve the exploitation of the asbestos deposits. Once the plant is in operation, market development activities will be carried out by supplying the

appropriate consultant services. As a result of this activity, the Government expects that the operation of this experimental production plant will provide technical, economic and marketing information which may lead to the design and operation of an expanded industrial enterprise.

Paragraph 1.4 The activities of this Project will be co-ordinated with those currently undertaken in Bolivia under bilateral and multilateral assistance programmes, particularly those concerned with the promotion of the transport system and mining finance.

II. PRIOR OBLIGATIONS

Paragraph 2.1 As pre-requisite for the commencement, or continuation as appropriate, of project operations, the Government shall:

- (a) Put at the disposal of the experimental production plant a site of land with appropriate services for the construction and operation of the plant, an estimate of which is given in Table II.
- (b) Negotiate the necessary agreements between the Corporación Boliviana de Fomento, the Banco Minero and the Producers establishing policies, prices and providing assistance to miners to assure an adequate supply of ore for the continuing operations of the plant.
- (c) Provide a marketing plan for the products of the plant. The plan will include letters of intent from potential buyers to purchase a sufficient quantity of the production to warrant the plant's operation.
- (d) Provide through the Corporación Boliviana de Fomento the working capital as specified in Paragraph 3.3(j) for the operation of the plant.
- (e) Arrange for the appointment of a senior official of the Corporación Boliviana de Fomento as Government Project

Representative for the project during its construction phase. Prior to completion of this phase, the Government will extend the appointment of the Government Project Representative of the operational phase, or will appoint another Government Project Representative qualified to participate in the production and marketing operation phase of the project.

(f) Present a plan providing for an autonomous organization to operate the asbestos processing enterprise. The plan will include action to be initiated for obtaining specific legal status to enable the enterprise to carry out transactions in its own name, to have a Board of Directors to determine and implement policy and to be endowed with all the necessary financial resources required for the operation of the plan and the marketing of its production.

III. WORK PLAN

A. Participation and Contribution of the UNDP.

Paragraph 3.1

The UNDP shall provide the following through the Executing Agency:

(a) Experts

A total of 64 man-months of expert service as detailed in Appendix I. Within the total of 64 man-months of expert service, minor adjustments of individual post assignments may be made by the Executing Agency in consultation with the Government if this is found to be in the best interest of the project.

(b) Fellowships

Fellowships of total duration of 18 man-months, at an estimated cost of US\$10,000. Fellowships awarded under this Plan of Operation shall be administered in accordance with the fellowship regulations of the

Executing Agency. Within the total allocation of US \$10,000 minor adjustments of individual fellowships may be made if this is found to be in the best interest of the project.

(c) Equipment and supplies

Equipment and supplies at a cost not exceeding US\$295,000.

(d) Sub-contracts

Sub-contracts at a cost not exceeding US\$30,000.

(e) Miscellaneous local operating costs

Miscellaneous services and facilities, falling under local operating costs, at an estimated cost of US\$7,700.

Paragraph 3.2

The services and facilities summarized in Paragraph 3.1 are detailed in Appendix I. The Executing Agency may, in consultation with the Government, execute part or all of the project by sub-contract. The selection of sub-contractors shall be made, after consultation with the Government, in accordance with the Executing Agency's procedures.

B. Participation and Contribution of the Government

i. Counterpart Contribution

Paragraph 3.3

The Government shall provide the following as a counterpart contribution in kind:

(a) Personal services

Professional staff. A total of 26 man-months of professional staff service. Within the total of 26 man-months of professional staff service minor adjustments of individual post assignments may be made by the Government, in consultation with the Executing Agency, if this is found to be in the best interest of the project.

Non-professional staff, An estimated total of 42 man-months of non-professional staff service.

(b) Fellowships

Local salary for professional staff awarded UNDP fellowships while in fellowship status.

Student allowance at an estimated cost of \$ N.A.

(c) Land and buildings

Land and buildings at an estimated cost of 720,000 pesos bolivianos.

(d) Equipment and supplies

Equipment and supplies, including installation and maintenance of equipment provided by the UNDP , at an estimated cost of 360,000 pesos bolivianos.

(e) Sub-contracts

Sub-contracts at an estimated cost of 144,000 pesos bolivianos.

(f) Miscellaneous

Miscellaneous services and facilities at an estimated cost of 215,350 pesos bolivianos

(g) Cost of transporting and handling of equipment at a cost of 156,000 pesos bolivianos. The cost of import and customs clearance of project equipment; its transportation, handling, storage and related expenses within the country; its safe custody, insurance, and replacement if necessary after delivery to the project site.

(h) Records and information

The Government shall make available to the project all existing published and unpublished records and information necessary to its implementation. This will include reports, maps, records and other data which, in the opinion of the Executing Agency, would facilitate the operation of the project.

(i) Housing

The Government undertakes to assist project personnel in finding suitable housing accommodation at reasonable rents whenever such assistance is required.

(3)

- 7 -

(j) Working capital

During the course of the construction phase of the project and at a time designated in the Work Plan (Appendix IV), the Government and the Executing Agency will jointly prepare the operating budget for the first full year of operation of the plant. To provide for the initial three months of operation the Government will make available funds estimated at 1,154,300 pesos bolivianos to provide the working capital expenses of the project included under Appendix II B, Operating Phase. These funds will be deposited to the credit of the (account to be opened in the name of asbestos plant)

Account No _____ with the Bank _____
_____ in _____

in accordance with the following schedule:

pesos bolivianos 280,000 on signature of the
Plan of Operation

pesos bolivianos 280,000 on 30 April 1970

pesos bolivianos 594,300 one month before start up
experimental operation plant.

Disbursements against these funds shall be made, in consultation with the Project Manager, by the Project Co-Manager and the Project Administrative Officer, who shall be jointly responsible for the management of the account subject to administrative control of Corporación Boliviana de Fomento.

It is expected that the balance of the operating budget for the full year operation will be met from the sales of the plant's production. Should the income from these sales not be sufficient to cover these expenses, the Government will make funds available to the project in accordance with the agreed operating budget.

Paragraph 3.4 The services and facilities summarized in Paragraph 3.3. above are detailed in Appendix II and Table II.

Paragraph 3.5 The estimated cost of the counterpart contribution as detailed in Appendix II is based on the most realistic information available at the time of drafting this Plan of Operation. It is understood that price fluctuations during the period of execution of the project may necessitate an adjustment of said contribution in monetary terms; the latter shall at all times be determined by the value of the services and facilities required for the proper execution of the project.

ii. Local Operating Costs

Paragraph 3.6 With reference to the payments to be made by the Government under Article V, paragraph I (a) to (d) of the Agreement referred to in the preamble to this Plan of Operation, excepting the cost within the country for transportation of project supplies and equipment, which is a counterpart contribution, the Government shall pay to the U N D P in local currency the equivalent of US\$20,400 as a contribution towards local operating costs. This amount represents 15 per cent of the total estimated cost to the UNDP of foreign project personnel, including cost of foreign personnel of sub-contractors.

Paragraph 3.7 The contribution towards local operating costs, the equivalent of US\$20,400 shall be deposited by the Government in local currency to the credit of the UNDP Contribution account No. P-C-12 with the Banco Central de Bolivia, Departamento Monetario Sucursal No. 1, La Paz, Bolivia, in accordance with the following schedule:

Equivalent of US\$10,500 on signature of the Plan of
Operation

Equivalent of US\$9,900 on 1 April 1970

The amount payable in each instalment is determined on the basis of the United Nations operating rate of exchange in effect at the date the payment falls due or at the

date payment is made whichever is later. Payment of the above amounts on or before the dates specified is a prerequisite to operation.

iii. Privileges and Immunities

Paragraph 3.8

The Executing Agency's contractors and their personnel (except Government nationals employed locally) shall have the right to the following:

- (a) Immunity from legal process in respect of all acts performed by them in their official capacity in the execution of the project;
- (b) Immunity from national service obligations;
- (c) Immunity from immigration restrictions;
- (d) The privilege of bringing into the country reasonable amounts of foreign currency for the purpose of the project or for personal use of such personnel, and of withdrawing any such amounts brought into the country, or, in accordance with the relevant foreign exchange regulations, such amounts as may be earned therein by such personnel in the execution of the project; and
- (e) The same repatriation facilities in the event of international crises as diplomatic envoys.

Paragraph 3.9

All personnel of the Executing Agency's contractors shall enjoy inviolability for all papers and documents relating to the project.

Paragraph 3.10

The Government shall either exempt from, or bear the cost of, any taxes, duties, fees or levies which it may impose on any foreign firm or organisation which may be retained by the Executing Agency and on the foreign personnel of any such firm or organization in respect of:

- (a) The salaries or wages earned by such personnel in the execution of the project;
- (b) Any equipment, materials and supplies brought into the country for the purposes of the project, or which

after having been brought into the country may be subsequently withdrawn therefrom; and
(c) As in the case of concessions currently granted to the United Nations experts, any property brought, including one privately owned automobile per employee, by the firm or organization or its personnel for their personal use or consumption or which, after having been brought into the country, may subsequently be withdrawn therefrom upon departure of such personnel.

Paragraph 3.11

The privileges and immunities to which such firm or organization and its personnel may be entitled referred to in paragraphs 3.8 to 3.10 of this Plan of Operation may be waived by the Executing Agency where, in its opinion or in the opinion of the UNDP, the immunity would impede the course of justice and can be waived without prejudice to the successful completion of the project or to the interest of the Special Fund or the Executing Agency.

C. Management of Proceeds from Sale of the Products of the Experimental Production Plant

Paragraph 3.12

The income derived from the sale, by or on behalf of the enterprise, of the products produced as a result of the plant operations conducted in the project's installations shall be deposited in a general account in the name of the experimental plant's management organization (Paragraph 2.1(f)) at the Banco Central de Bolivia in _____

The monies thus received may be utilized by the Government to supplement or offset that part of the counterpart contribution detailed in Appendix II, for the purpose of the project, subject to prior agreement with UNDP. These monies shall be applied

first to cover the plant's operating expenses which shall include marketing and financial expenses of the enterprise (Paragraph 2.1(f)). The distribution of the balance of the earnings credited to the above-mentioned general account shall be decided annually by the Board of Directors after making the appropriate necessary deductions to cover a set depreciation on a rate schedule to be established by the Board.

D. Organization

- Paragraph 3.13 The Government, the UNDP and the Executing Agency shall jointly undertake responsibility for execution of the project and the realization of the project objectives as described in Article I of the Plan of Operation.
- Paragraph 3.14 The Government in this capacity shall provide to the project the national project personnel, training opportunities, land, buildings, equipment and other required services and facilities, and designate the Corporación Boliviana de Fomento as the Government Co-operating Agency to be directly responsible for implementing its contribution to project operations.
- Paragraph 3.15 The UNDP undertakes to complement and supplement the Government's participation in the project, and through the Executing Agency, which shall be directly responsible for the UNDP's participation in the project, will provide the required expert services, training, equipment and other services within the limit of the funds available to the project.
- Paragraph 3.16 Overall responsibility for the organization and execution of the project, including any portion which may be sub-contracted, rests with the Executing Agency which will plan and direct operations through the Project Manager. With regard to any portion of the project to be sub-contracted, the sub-contracting firm or firms will be selected in accordance with the relevant regulations of the Executing Agency, in consultation with the Government.

- Paragraph 3.17 Equipment to be provided by the UNDP will be recommended by the Executing Agency and approved by the Government before accepted for installation.
- Paragraph 3.18 Plant buildings will be constructed by the Government based on specifications supplied by the Executing Agency and approved by the Government.
- Paragraph 3.19 The Executing Agency will recommend the production process to be employed in the plant and the Government will approve the process before construction of the buildings and installation of the equipment.
- Paragraph 3.20 Project Manager
Overall responsibility for the organisation and execution of the project, including any portion which may be sub-contracted, rests with the Executing Agency, which will plan and direct operations through the Project Manager. The latter will, together with the international experts and consultants, be assigned to the project in consultation with the Government by the Executing Agency, to which he shall report directly.
- Paragraph 3.21 With regard to any portion of the project to be sub-contracted, the sub-contracting firm or firms will be selected in accordance with the relevant regulations of the Executing Agency from a panel of firms or organisations agreed with the Government.
- Paragraph 3.22 In the discharge of his duties the Project Manager shall work together and in close collaboration with the Government Project Representative, and shall:
- (a) be responsible for the planning and execution of the project, including timing;
 - (b) prepare budgeting of the various operations;
 - (c) advise on the selection of project counterpart personnel and auxiliary staff and on the nomination of fellows and counterpart personnel;
 - (d) supervise the work of experts and the counterpart personnel assigned to the project;

- (e) determine training standards and supervise the local training of counterpart staff;
- (f) be responsible to the Executing Agency for all material and equipment pertaining to the project;
- (g) be responsible to the Executing Agency for the handling and local disbursement of any funds furnished to the project through the Executing Agency,
- (h) control the use of land, buildings, equipment and materials, supplies and other property belonging to the UNDP or assigned to the project by the Government; and
- (i) co-ordinate the work of project personnel with that of any other projects in case such activities have a bearing on this project.

Paragraph 3.23 Government Project Representative

The Government shall designate a senior official of the Corporación Boliviana de Fomento to act as the Government Project Representative and Co-Director. He shall be responsible for assuring all necessary technical and administrative support to the project, for obtaining the co-operation of other agencies participating in the project and for assuring the co-operation of the Government required by this Plan of Operation and shall have authority, on behalf of the Government, to make decisions required under its provisions.

He shall take all appropriate measures in respect to the performance by the Government of the prior and subsequent obligations set forth in paragraph 2.1 above. The appointment shall be made in consultation with the Executing Agency.

The attributes, duties and responsibilities of the Project Co-Director in consultation with the Project Manager shall be as follows:

- (a) maintain adequate liaison with the respective

entities in order to assist in all phases of the Government's participation in the project, including ensuring that Government contributions are made as scheduled, and that buildings, equipment, services and other facilities listed as counterpart contributions in kind in this Plan of Operation are available as required.

- (b) Submission for appointment or approval by the Government of candidates for counterpart and auxiliary staff posts and for the fellowships previously agreed with the Project Manager.
- (c) Assistance to the Project Manager in co-ordinating project activities with the activities of other Government Agencies and projects in fields of work related to the project.
- (d) Make convenient technical and economic suggestions to the Project Manager in accordance with the direction of the Government.
- (e) Make arrangements for administrative services in Cochabamba.
- (f) Prepare a yearly budget for the operation of the plant and submit it for approval to the Board of Directors mentioned in paragraph 2.1(f) above.
- (g) Submit to the Board periodic reports on the operations of the plant as well as a yearly financial statement.
- (h) Be responsible to the Board of Directors for the administrative and commercial management of the plant including marketing.
- (i) Shall oversee the assistance to the miners in order to assure an adequate supply of raw material to the plant.

Paragraph 3.24 Consultative Council

A Consultative Council will be established to advise on the co-ordination of efforts towards achieving the project's objectives. The Consultative Council is an organism for

consultation and supervision within the project activities for the duration of the U N D P project, whereas the Board of Directors (paragraph 2.1(f)), which will be established prior to the start of plant operations, will be the organisation responsible for management of the asbestos processing plant and will continue after the U N D P project has been completed.

The Consultative Council will meet at least once every three months or whenever required at the request of the Project Manager or the Project Co-ordinator.

The following will constitute the Council:

- (a) The President of the Corporación Boliviana de Fomento, or his representative, as Chairman of the Council;
- (b) A representative of the Banco Minero;
- (c) The President of the Mining Chamber, Cochabamba, or his representative;
- (d) The Government Project Representative;
- (e) The UNDP Resident Representative (non-voting);
- (f) The Project Manager (non-voting).

Paragraph 3.25

The Consultative Council will assist in co-ordinating the activities of the Government services related to the project; take the necessary steps to ensure that the Government's counterpart contribution, as specified in this Plan of Operation, is available as needed; inform Government authorities about the progress of the project; accept and approve budgets during the construction phase; make recommendations to the Government and the Executing Agency concerning the composition, powers and timing for establishing the Board of Directors and the autonomous operating entity described in Paragraph 2.1(f) above.

E. Sequence of Operations

- Paragraph 3.26 The Executing Agency shall commence execution of the project upon receipt of written authorisation to do so from the Administrator.
- Paragraph 3.27 Not including the period of active pre-operational planning at the project site by the Executing Agency and Government project personnel, field operations are planned to commence in May 1969 and to continue for approximately two years thereafter.
- Paragraph 3.28 The planned sequence of operations for the project is set out in some detail in Appendix IV, Schedule of Operations.

IV. BUDGET

- Paragraph 4.1 The estimated cost of the services and facilities to be provided for the project is detailed in the Plan of Expenditure appended to this Plan of Operation. Funds will be provided by the UNDP and the Government as indicated below:
1. Allocation by the Special Fund . . . US\$536,500
Consisting of:
Special Fund contribution . . . US\$516,100
Government contribution towards
local operating costs..... . . US\$ 20,400
 2. Counterpart contribution in kind
by the Government US\$238,200

V. REPORTS

- Paragraph 5.1 The Executing Agency shall submit periodic progress reports to the UNDP on the implementation of the project. Such reports shall, as appropriate, include an up-to-date Schedule of Operations. The timing and frequency of these reports are determined in operating procedures agreed upon by the UNDP and Executing Agency.

Paragraph 5.2 The Executing Agency and the Government shall exchange reports, the content and timing of which shall be agreed by correspondence.

Paragraph 5.3 The Executing Agency and the Government shall, at the end of each calendar year, submit to the U N D P a joint certified inventory of project equipment purchased from the U N D P allocation and for which title remains with the U N D P.

Paragraph 5.4 As soon as possible following the conclusion of project operations and not later than three months from that date, the Executing Agency shall submit a final comprehensive report on the project to the Administrator for presentation to the Government.

VI. CHANGES IN THE PLAN OF OPERATION

Paragraph 6.1 On the basis of periodic reviews of project activities the three parties to the project shall, as appropriate, confer to determine if any modifications to the Plan of Operations be required. All agreed modifications shall be reflected in Adjustments or Amendments to the Plan of Operation.

VII. STEPS TO BE TAKEN AT THE COMPLETION OF SPECIAL FUND ASSISTANCE TO THE PROJECT

Paragraph 7.1 Within three months of receiving the final report the Government shall submit to the Executing Agency and the U N D P a report on the benefits derived from the project and the actions planned by the Government to implement the recommendations contained in the final report.

Paragraph 7.2 At the successful conclusion of the project the Government, the Executing Agency and the U N D P shall consult with a view to transferring title to the Government, or to an Agency nominated by the Government, of that part of the equipment provided by the U N D P which is essential for the continued operation of the project or for activities following directly from the project.

Agreed, on behalf of the Parties, by the undersigned:

.....5.May.1961..... (date)10.Sept.1961..... (date)15.Sept.1961..... (date)
.....

Government of Bolivia

United Nations Development Programme (Special Fund)

United Nations Industrial Development Organisation

.....Luis de la Cruz.....
Ministry of Foreign Affairs

.....Luis Perez-Arrieta.....

.....Luis Perez-Arrieta.....
(Participating and Executing Agency)

.....Luis de la Cruz.....
Ministry of Finance

.....Luis de la Cruz.....
President of CBF

APPENDIX I

Country: Bolivia
Title of Project: Experimental Production Plant for Asbestos
Processing, Cochabamba

Plan of Expenditure
Special Fund Allocation
(in US dollars)

	Total man-months	Total project costs	Estimated cash disbursement		
			1968	1969	1970
1. Experts					
Project Manager	24	52,500	13,800	25,800	12,900
Plant Manager	12	25,800	-	12,900	12,900
Mining Engineer *	12	25,800	-	12,900	12,900
Short-term consultants	12	24,000	-	6,000	18,000
Workers Training	4	8,000	-	-	8,000
Sub-total	64	136,100	13,800	57,600	64,700

Paragraph 7.2 At the successful conclusion of the project the Government, the Executing Agency and the U N D P shall consult with a view to transferring title to the Government, or to an Agency nominated by the Government, of that part of the equipment provided by the U N D P which is essential for the continued operation of the project or for activities following directly from the project.

Agreed, on behalf of the Parties, by the undersigned:

.....15. Sept. 1961..... (date)19. Sept. 1961..... (date)15. Sept. 1961..... (date)

Government of Bolivia
.....
Ministry of Foreign Affairs

United Nations Development Programme (Special Fund)
..... Luis Perez-Arrieta

United Nations Industrial Development Organization
..... Luis Perez-Arrieta

.....
Ministry of Finance

.....
President of CBF

APPENDIX I

Country: Bolivia
Title of Project: Experimental Production Plant for Asbestos
Processing, Cochabamba

Plan of Expenditure
Special Fund Allocation
(in US dollars)

	Total man-months	Total project costs	Estimated 1968	cash 1969	disbursement 1970
1. Experts					
Project Manager	24	52,500	13,800	25,800	12,900
Plant Manager	12	25,800	-	12,900	12,900
Mining Engineer *	12	25,800	-	12,900	12,900
Short-term consultants	12	24,000	-	6,000	18,000
Workers Training	4	8,000	-	-	8,000
Sub-total	64	136,100	13,800	57,600	64,700

APPENDIX I (continued)

	Total man-months	Total project costs	Estimated cash disbursement		
			1968	1969	1970
2. Fellowships					
Mining and Geology	6	3,300	-	3,300	-
Processing of mineral Industrial Application (weaving, asbest-cement and others)	6	3,300	-	3,300	-
	6	3,400	-	3,400	-
Sub-total	18	10,000	-	10,000	-
3. Equipment					
Major items and categories (for detail see Table I):					
Laboratory		50,000	-	37,000	13,000
Processing Plant		200,000	-	166,000	34,000
Spare Parts		25,000	-	21,000	4,000
Trucks (2), cap. 15 tons		10,000	-	10,000	-
Truck (1), cap. 1 ton		5,000	-	5,000	-
Final report		5,000	-	-	5,000
Sub-total		295,000	-	239,000	56,000
4. Sub-contracts					
Design of plant and laboratory testing		30,000	-	25,000	5,000
Sub-total		30,000	-	25,000	5,000

	Total project costs	Estimated cash disbursements		
		1968	1969	1970
5. Miscellaneous local operating costs				
Administrative, postal and communications expenses and contingencies	<u>7,700</u>	<u>100</u>	<u>4,000</u>	<u>3,600</u>
Sub-total	7,700	100	4,000	3,600
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL GROSS PROJECT COSTS	478,000	13,900	335,600	129,300
	<hr/>	<hr/>	<hr/>	<hr/>
6. Executing Agency overhead costs	52,700	1,600	36,500	14,600
7. Special Fund direct costs	<u>5,000</u>	<u>800</u>	<u>-</u>	<u>4,200</u>
	<hr/>	<hr/>	<hr/>	<hr/>
SPECIAL FUND ALLOCATION	536,500	16,300	372,100	148,100
	<hr/>	<hr/>	<hr/>	<hr/>

APPENDIX II

Country: Bolivia
 Title of project: Experimental Production Plant for
 Asbestos Processing, Cochabamba

Plan of Expenditure

Government Counterpart Contribution
 (in Bolivian pesos)

(Government's financial year begins 1 January and
 ends 31 December)

	Total man-months	Total project costs	Estimated cash disbursement	
			1969	1970
A. Construction phase				
1. Personal services				
a. Professional staff				
Co-director	8	24,000	24,000	-
Mining and Geology	6	12,000	12,000	-
Mineral Processing	6	12,000	12,000	-
Industrial Applications	6	12,000	12,000	-
Sub-total	26	60,000	60,000	-
b. Other staff				
Accountant	6	9,500	9,500	-
Two Secretaries	12	8,400	8,400	-
Storekeeper	6	1,200	1,200	-
Two Drivers	12	3,750	3,750	-
Watchman	6	1,800	1,800	-
Sub-total	42	24,650	24,650	-
Sub-total for all personal services	68	84,650	84,650	-
2. Fellowships (local salary of counterpart fellowship holders)			Included under item 1a. of this Appendix	
3. Land and Buildings (for detail see Table II)				
a. land (15,000 sq.meters)		120,000	120,000	
buildings (including engineering and super- vision)		600,000	600,000	
Sub-total		720,000	720,000	

	Total Project costs	Estimated cash disbursement	
		1969	1970
4. Equipment and supplies			
a. All equipment required for providing the plant with electric power, water supply and sewer systems	180,000	100,000	80,000
b. Plant erection	180,000	140,000	40,000
Sub-total	<u>360,000</u>	<u>240,000</u>	<u>120,000</u>
5. Sub-contracts (for geological studies and feasibility study	144,000	144,000	-
Sub-total	<u>144,000</u>	<u>144,000</u>	<u>-</u>
6. Miscellaneous pre-operational expenses	215,350	150,000	65,350
Sub-total	<u>215,350</u>	<u>150,000</u>	<u>65,350</u>
7. Local transport and handling of equipment, import and customs clearance, transport, handling storage and related expenses; insurance until delivery to the project site	156,000	100,000	56,000
Sub-total	<u>156,000</u>	<u>100,000</u>	<u>56,000</u>
8. Records and information	pour memoire		
9. Housing	pour memoire		
Total Counterpart Contribution in the construction phase	<u>1,680,000</u>	<u>1,438,650</u>	<u>241,350</u>

Total project costs	Estimated cash disbursements	
	1969	1970

B. Operational Phase (for detail see Table III)

Working capital to cover total operational expenses of the plant for a three-month period, as follows:

1. Personal services (including salaries, wages, social security and fringe benefits)	72,000	-	72,000
2. Raw material (purchases of asbestos ore for processing)	350,000	-	350,000
3. Maintenance and services costs (including power, water, supply, oil, etc)	92,000	-	92,000
4. Two-month stock of processed asbestos, i.e. approximately 250 tons	640,300	-	640,900
	1,154,300	-	1,154,300
Total Working Capital	1,154,300	-	1,154,300
Total Government Counterpart Contribution	2,834,300	1,438,650	1,395,650

APPENDIX III

Country: Bolivia
Title of Project: Experimental Production Plant for
Asbestos Processing, Cochabamba

TOTAL GOVERNMENT CONTRIBUTION

	Total	Equivalent in US dollars		
		1968	1969	1970
Counterpart contribution in cash <u>1/</u>				
Counterpart contribution in kind <u>2/</u>	238,200	-	120,900	117,300
Contribution towards local operating costs <u>3/</u>	20,400	-	10,500	9,900
Total Government Contribution	<u>258,600</u>	<u>-</u>	<u>131,400</u>	<u>127,200</u>

1/ The dollar equivalent of any amounts covered by the counterpart contribution in cash will automatically be adjusted in case of any change in the United Nations operating rate of exchange of the peso boliviano.

2/ These amounts have been calculated at the prevailing United Nations operating rate of exchange of one US dollar = 11.9 pesos bolivianos.

3/ These amounts are payable in local currency at the United Nations operating rate of exchange (which is based on the most favourable legal rate of exchange available to the Special Fund), which at the present time is one US dollar = 11.9 pesos bolivianos.

APPENDIX IV

Country: Bolivia
 Title of Project: Experimental Production Plant for Asbestos Processing, Cochabamba

SCHEDULE OF OPERATIONS

I. Brief description of work programme, including planned timing of major operations.

	<u>Month</u>	<u>Year</u>
1. Preliminary market study	-	1967
2. Appointment of Project Manager and study of preliminary offers	July	1968
3. Field evaluation by the Project Manager to determine site, with the Bolivian authorities and the asbestos miners	Dec.	1968
4. Final drafting of the Plan of Operation and the specifications for the sub-contract (Vienna and New York)	Jan./April	1969
5. Signature of Plan of Operation	May	1969
6. Calling of tenders for the sub-contract or the construction, supply, erection and placing into operation of plant	May	1969
7. Award of sub-contract to supply equipment and building	July	1969
8. Preparation of plant site and execution of the building foundations (by the Government)	September	1969
9. Preparation of the Plant's Operating Budget as called for in paragraph 3.3 (J), which will be the subject of an Adjustment Advice.	September	1969
10. Delivery of the industrial equipment and other equipment supplied by the Special Fund	Sept./Dec.	1969
11. Initiation of construction by the Government of the steelwork for the industrial buildings	September	1969
12. Completion of construction by the Government of the industrial buildings	Dec.	1969
13. The fellowships for the counterpart personnel are to be awarded during the second half of 1969		
14. The year 1969 is considered as the period of construction. The period commencing in 1970 is considered as the period of operations, even though some counterpart personnel will also participate in the erection of the plant		
15. Erection of the plant	Jan/March	1970
16. Installation of the laboratories	January	1970

	<u>Month</u>	<u>Year</u>
17. Placing the plant in operation with intensive training of counterpart personnel		
18. Start of steady operation	March/May	1970
19. Establishment, to be decided by Government, of the organisation which is to have overall management responsibility for the plant	June	1970
20. Transfer of the plant to the Government	January project's completion	1970

II. Manning table for professional staff and timing of fellowships

	Months of service	1968	1969	1970
<u>Internationally recruited experts</u>				
a) Project Manager	24	6	12	6
b) Plant Manager	12	-	6	6
c) Mining Engineer	12	-	6	6
d) Consultants	12	-	3	9
e) Workers training	4	-	-	4
Total	64	6	27	31
<u>Counterpart staff</u>				
a) Co-Director *	8	-	8	-
b) Mining and Geology	6	-	6	-
c) Mineral Processing	6	-	6	-
d) Industrial Applications	6	-	6	-
Total	26	-	26	-
<u>Fellowships</u>				
a) Mining and Geology	6	-	6	-
b) Mineral Processing	6	-	6	-
c) Industrial Application	6	-	6	-
Total	18	-	18	-

*The provision of services of the Co-Director for the remainder of the project is included in the working capital.

APPENDIX IV (continued)

III. Other services and facilities (continued)

3. <u>Equipment</u>	To be made available	
	<u>Month</u>	<u>Year</u>
A. <u>To be provided by the Special Fund</u>		
1. <u>Plant</u>		
Crushing	Sept/Dec	1969
Drying	Sept/Dec	1969
Recrushing in stages	Sept/Dec	1969
Screening	Sept/Dec	1969
Air separation	Sept/Dec	1969
Clearing	Sept/Dec	1969
Classifying	Sept/Dec	1969
2. Laboratory	Sept/Dec	1969
3. Spare parts	Sept/Dec	1969
4. Truck (1)	July	1969
5. Truck (1)	Sept.	1969
6. Pick-up truck	July	1969
B. <u>To be provided by the Government</u>		

The Government will provide all the necessary equipment and facilities required for the operation of the plant and which is not included in the list of equipment to be provided by the Special Fund. The tentative list of equipment to be provided by the Government includes, inter alia:

Electric power line, including transformer, circuit breakers etc., water supply tank and water piping, repair shop, including tools and accessories, etc.	Sept./Dec.	1969
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TABLE I

Country: Bolivia
Title of project: Experimental Production Plant for Asbestos Processing, Cochabamba

Tentative list of Equipment, to be provided by the UNDP

1. Laboratory

a) dry-testing section

- Quebec Standard Asbestos Testing machine (or Canadian Box Tester)
- The Blaine Dyoekernoff (or similar) air permeability
- the Rigden Air Permeability Tester
- a laboratory fibre mill
- a fibre sorting bench
- the Rotap Testing Sieve Shaker complete with automatic timer
- the Tyler Standard Mesh Sieves
- two weighing scales, capacity up to 5 kg., scale both in kg. and lb., with sub-divisions to gm. and oz; a small pan scale, capacity up to 200 gm.
- Marchioli apparatus
- the Suter-Webb comb sorter (length sorting of asbestos textile fibre)

b) A wet-testing section

- the Bauer McNett classifier
- the reinforcing value test equipment, filtration and wet volume testing equipment
- a mechanical inverter for wet volume test
- the Standard Filtration tester
- Board making apparatus
- two weighingscales: a small pan scale, capacity up to 500 gm.; a laboratory balance, accurate to 1/100 gm.

TABLE (continued)

II. Processing plant

- Bins
- Vibrating grizzly
- Conveyor belt elevator
- Impact crusher, capacity 2-4 t/h
- Dryer complete
- Screen trommels, inclination 8° , capacity 1-2 t/h
- Air separators, capacity 1-2 t/h
- Cyclon collectors
- Fibezzer, capacity 1-2 t/h
- Dust filter complete
- Bauer separator 1-2 t/h
- Pipes and ducts, lights
- Miscellaneous

III. Spare parts for processing plant

IV. Trucks (2)

- V. Small truck (1) capacity 1 ton

VI. Final report

TABLE II

Country: **Bolivia**
Title of Project: **Experimental Production Plant for Asbestos Processing, Cochabamba**

Tentative list of Land and Buildings to be provided by the Government of Bolivia

1. Land	15,000 square meters		
2. Processing plant	600	"	"
3. Laboratory	60	"	"
4. Receiving cre bins	300	"	"
5. Workshop	90	"	"
6. Stores	25	"	"
7. Fuel oil storage tanks			
8. Product warehouse	100	"	"
9. Garage	40	"	"
10. Water tank			
11. Electrical sub-station, including transformer			
12. Administration building	140	"	"
13. Cafeteria and locker room	50	"	"
14. Landscaping			

Note: The provision of services such as power, water supply, sewers, etc. is the responsibility of the Government.

TABLE III

Country: Bolivia
Title of Project: Experimental Production Plant for Asbestos Processing,
Cochabamba

Description of the Government's counterpart contribution for the operational phase of the project.

<u>1. Personal services</u>	Total man-months (per year)
a) Professional staff	
Co-Director	12
Mechanical engineer	12
Mechanic supervisor	12
Industrial supervisor	12
Administrative officer	12
	<hr/>
Sub-total	60
b) Other staff	
Mechanic	12
Electrician	12
Carpenter	12
Accountant	12
Secretaries (2)	24
Cashier	12
Canteen supervisor	12
Storekeeper	12
Drivers (3)	36
Watchman	12
Labourers (5)	60
	<hr/>
Sub-total	216
Total salaries and wages	
Social security and fringe benefits (approximately .52 %)	
Total personal services	276

2. Raw material

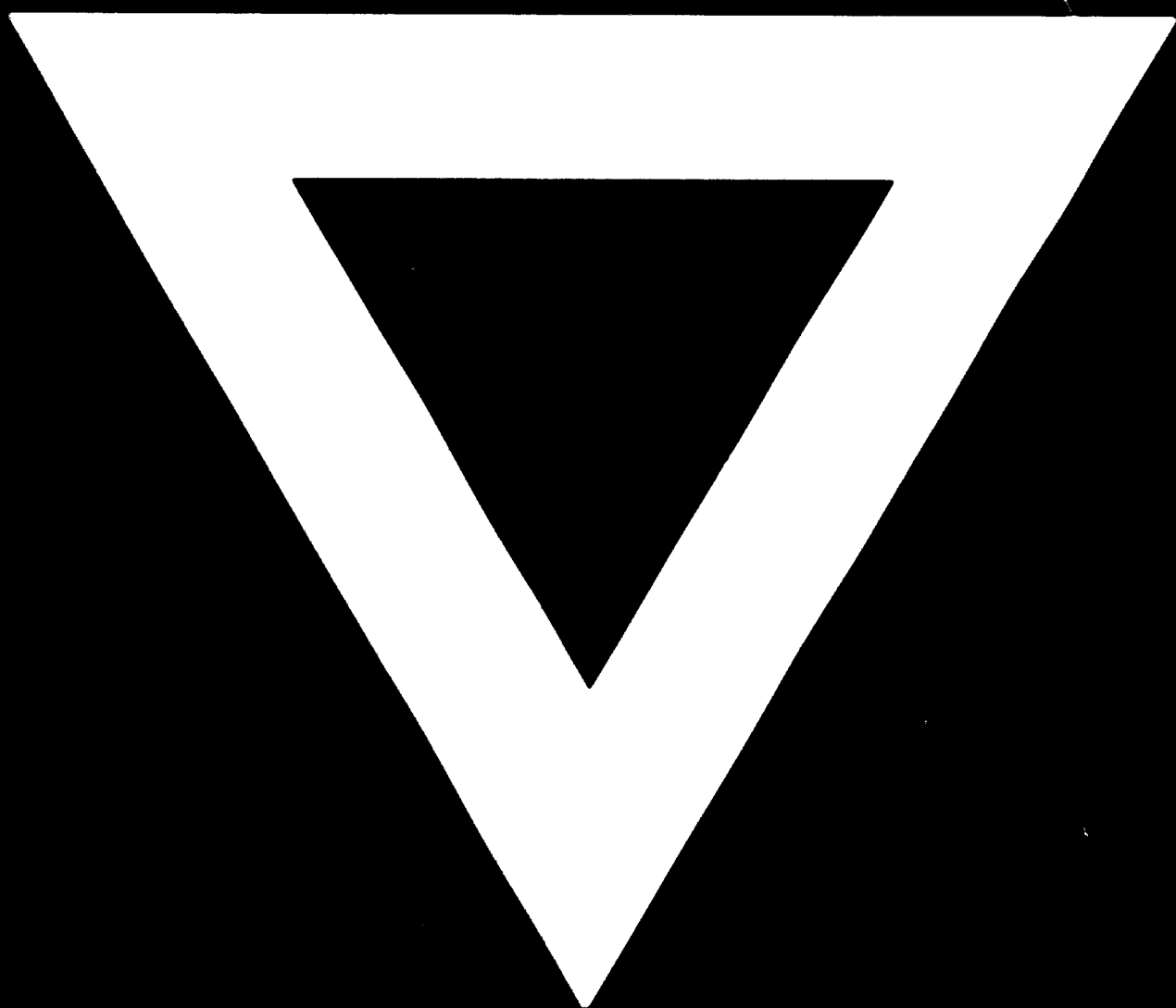
Purchase of asbestos ore for the annual operation of the plant at the rate of approximately 1,500 tons per month.

TABLE III (continued)

3. Inventory of asbestos fibre of approximately 250 tons to be kept in stock.

NOTE: The above indicated operational costs will be financed from the working capital as indicated in Appendix II, which covers a three-month period of operation of the plant. This Table shall be revised in September 1969 when the plant's operating budget for 1970 will be submitted as indicated in Appendix IV, Schedule of Operations.





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