

ATTACHED DOCUMENT

1. Name of the Project

Both sides agreed to use "the Mining Environment Research Center Project" as the name of the Project.

2. Implementing Agency of the Project

The Ministry of Sustainable Development and Planning (Ministerio de Desarrollo Sostenible y Planificación, hereinafter referred to as "MDSP") will supervise the Project through the Viceministry of Environment, Natural Resources and Forest Development (Viceministerio de Medio Ambiente, Recursos Naturales y Desarrollo Forestal, hereinafter to as "VMARNDF").

Under supervision of MDSP, Potosi Prefecture government will bear overall responsibility for the implementation of the Project, through the Direction of Natural Resources and Environment.

The present organization charts of VMARNDF, Potosi Prefecture and the Direction of Natural Resources and Environment are shown in ANNEX1, ANNEX2 and ANNEX3, respectively.

The Autonomous Tomas Frias University (hereinafter referred to as "University") will join to the Project as a cooperative organization with agreement between Potosi Prefecture and the University.

The organization of implementing agency will be continued after the project period to spread the outputs of the project in Bolivia.

3. Administration of the Project

The Viceministry of VMARNDF, as the Project Supervisor, will bear responsibility for the coordination and implementation of the actions and proceedings from the viewpoint of national policy.

The Governor of Potosi Prefecture, as the Project Director, will bear overall responsibility for the coordination and implementation of the actions and procedures in order to achieve the general goals of the Project.

The Director of the Mining Environment Research Center (hereinafter referred to as "the Center"), nominated by the Project Supervisor and the Project Director, as the Project Manager, will be responsible for the managerial and technical matters of the Project.

The organization chart of the project is shown in ANNEX4.

4. Duration of the Project

The duration of the technical cooperation for the Project by the Government of Japan will be Five (5) years from the date agreed by both sides in the Record of Discussions (hereinafter referred to as "R/D") to be concluded between JICA and the Bolivian side.

At the tentative schedule, the duration of the technical cooperation for the Project will be July 1, 2002 to June 30, 2007.

5. Site of the Project

The Project will be implemented at the Center, which will be newly established in the premise of Faculty of Mining Engineering of Tomas Frias Autonomous University in Potosi Prefecture.

Address: Av. Villazon esq. Arce, Potosi

The location map of the Project site is as shown in ANNEX5.

6. Master Plan of the Project

(1) Super Goal

Administration and technology to decrease water pollution caused by mining industry, which are established in the Center, are disseminated to other regions in Bolivia.

(2) Overall Goal

Water pollution caused by mining industry in Potosi is decreased and prevented.

(3) Project Purpose

Administration system and technology suitable for Potosi to decrease water pollution caused by mining industry are established.

(4) Outputs

1. The organization of the Center is established.
2. Facilities and equipment necessary for the activities of the Center are procured.
3. Environment chemical analyses are acquired.
4. Environmental situations are researched.
5. Mine-related wastewater treatment technology is developed.
6. Basic technologies of mineral processing are mastered.
7. Public relations and education for environmental conservation targeted Potosi people who works for mining, concentration, and the people relate to the mining activity are conducted

7. Fields, Schedule of Technology Transfer

(1) Fields

Both sides agreed that technology transfer from the Japanese experts to the Bolivian counterparts (hereinafter referred to as "C/P") would be made in the following fields.

1. Environment research
2. Mine-related wastewater treatment
3. Chemical analysis
4. Improvement of mineral processing
5. Mining environment administration

(2) Schedule

The Tentative Schedule of technology transfer, Plan of Operation and Annual Plan of Operation are as shown in ANNEX6, ANNEX7 and ANNEX8.

8. Measures to be taken by the Japanese Side

The Project will be carried out under the framework of Project-Type Technical Cooperation, which is the combination of the following three (3) components:

(1) Dispatch of Japanese Experts

(Long-term experts)

Both sides agreed that long-term experts in the following fields (a), (b), (c) are expected to be dispatched through the project period at the present moment. And long-term experts in the following fields (d), (e) are expected to be dispatched during first 2 years in relation to the fields of technology transfer.

The Team explained to Bolivian side that the following experts would be dispatched based on the schedule mentioned on section 7-2, but some of them would be behind schedule due to follow the necessary procedures in Japan.

- a. Chief Advisor
- b. Coordinator
- c. Wastewater Treatment
- d. Environment Research
- e. Chemical Analysis

(Short-term experts)

Both sides agreed that short-term experts in specific fields would be dispatched in relation to the fields of technology transfer as necessity arises.

At this moment, the experts in the following fields are expected to be dispatched:

- a. Environment Research
- b. Wastewater Treatment
- c. Mining Environment Administration
- d. Environment Chemical Analysis
- e. Improvement of Mineral Processing

The following short-term experts will be dispatched first year period based on the schedule mentioned on section 7-2.

- a. Mining Environmental Administration
- b. Mining Environmental Technology
- c. Improvement of Mineral Processing

The requesting form for dispatch of Japanese experts should be submitted in Form A1 to the Government of Japan by the Bolivian side at least two (2) months prior to the scheduled arrival in the Republic of Bolivia.

The Team request Bolivian side to submit the Form A1 for long-term experts immediately after mutual agreement of R/D to take necessary steps smoothly.

(2) Training of C/P in Japan

Both sides agreed that a certain number of C/P would be accepted for training in Japan during the cooperation period according to the following program:

1. Number : About one (1) or two (2) yearly
2. Term : About a couple of weeks to two (2) month, depending upon the fields as well as the C/P dispatched to Japan

The Team, further, requesting the Bolivian side and the latter agreed that the C/P may apply to other training courses conducted by JICA, however, sufficient consultation should be held between the Japanese experts and the C/P before the application to avoid impeding the smooth implementation of the Project.

The application form for the training program in Japan should be submitted in Form A2-A3 to the Government of Japan by the Bolivian side at least two (2) months prior to the scheduled arrival in Japan.

(3) Provision of Machinery, Equipment and Materials

The Bolivian side requested to the Team the provision of the machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for

technology transfer in the Project as shown list A in ANNEX9.

The Team agreed to convey the request of the Bolivian side to the Japanese authorities concerned, stating that the actual provision will be subject to the budget appropriation of the Government of Japan. The Team explained that the schedule of procurement would depend on the schedule of technical transfer.

Both side agreed that the request of the "Micro-bubble Type Column Flotation Machine (Batch Type and Continuous Type)" at the third preparatory study team deleted from the list by reason of the budget appropriation of Japanese side.

Both side agreed that the request of "Inductively Coupled Plasma Atomic Emission Spectrometer (ICP or ICP-AES)" would be reconsidered as the Equipment under the condition that the Bolivian side secured the necessary cost of maintenance within the project periods and after the project.

The requesting form for provision of machinery should be submitted in Form A4 to the Government of Japan by the Bolivian side.

Japanese side request Bolivian side to submit the Form A4 immediately after mutual agreement of R/D to take necessary steps smoothly.

9. Measures to be taken by the Bolivian Side

(1) Buildings and Facilities for the Project

The Bolivian side through Potosi Prefecture will prepare the building and facilities necessary for the implementation of the Project.

Office space for the Japanese experts which are equipped properly with equipment such as phones, facsimiles, international telephone lines include internet, electric wiring, desks and heaters will be prepared before the Project begins.

The Team requested Bolivian side to report the state of preparation office space and laboratory once a month through JICA Bolivia Office and Japanese side make comments as necessary.

The Team requested Bolivian side to prepare the facilities of laboratory, such as air conditioners, lighting, equipment and plumbing for waste-gas, wastewater, sludge, and power source for the Equipment, etc., until installation work of the Equipment.

The layout of the building and facilities is as shown in ANNEX10.

(2) Long Term Assignment of C/P

For the successful implementation of the Project, the Bolivian side through Potosi Prefecture will provide the full time and part time services of C/P who are listed in ANNEX11 and the administrative personnel.

Bolivian side should communicate to the Japanese experts in case any C/P is thought to be removed. If there are some comments from the Japanese experts, Bolivian side should pay the highest consideration on them when making removal decision. If it is on the removal, Bolivian side through the Potosi Prefecture will immediately take necessary measures to assign adequate C/P.

(3) Machinery, Equipment and Materials

The Bolivian side through Potosi Prefecture will supply at its own expense machinery, equipment, instruments, vehicles, tools, spare parts, consumption articles and any other materials for the implementation of the Project other than those provided by the Government of Japan through JICA.

And the both side agreed that the machinery, equipment and materials in List B, ANNEX9 is the part, which would be prepared by the Bolivian side.

The Team requested Bolivian side to report the state of preparation of these machinery, equipments and materials once a month through JICA Bolivia Office.

(4) Local Costs

The necessary amount of local costs by the Bolivian side through Potosi Prefecture will be indispensable for the successful implementation of the Project.

In this regard, both sides confirmed that the cost necessary for operation of the Project, which is listed below, would be borne by the Bolivian side through Potosi Prefecture.

- a. Transportation for field research and meetings,
- b. Allocation of assistant staff for laboratory experiment, field research, etc.,
- c. Secretary and driver,
- d. Public relations and educational activities,
- e. Workshop and seminar,
- f. Consumable, electricity, etc.,
- g. Maintenance cost for the Equipment,
- h. Expense for vehicles.

The Bolivian side submits the annual budgetary plan for these costs through the project periods, and the Team requests to secure the budgets certainly. The annual budgetary plan is as shown in Annex12.

(5) Privileges, Exemptions and Benefits to the Japanese Experts

In accordance with the provisions of Article V and VI of the Agreement on Technical

Cooperation between the Government of Japan and the Government of the Republic of Bolivia, signed in La Paz on March, 22, 1978, the Government of the Republic of Bolivia will grant in the Republic of Bolivia, privileges, exemptions and benefits to the Japanese experts and their families.

(6) Sustainability of the Project

The Bolivian side, above all MDSP and Potosi Prefecture, will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of the Japanese technical cooperation, through the full and active involvement in the Project of all related authorities, beneficiary groups and institutions so that the technologies and knowledge acquired by the counterpart personnel through the Project should ultimately contribute to the economic and social development of the Republic of Bolivia.

Both sides agreed to make the articles of the center, which is mentioned about the purpose, organizational role in the mining environmental sector, to secure the sustainability of the activities through the project periods and after the project. The article will be drawn up promptly and should be obtained Joint Coordinating Committee approval. Bolivian side will take necessary administrative procedure to register juridical institution. The article describes the role of center, which is substitute for administrative function of mining environment, as well as self-sustained activities such as the support the administration body related to mining environmental management and the mining enterprise in accordance with the mining environmental policy.

10. Project Cycle Management

(1) Application of Project Cycle Management Method

Both sides confirmed that project planning, monitoring and evaluating method entitled Project Cycle Management (hereinafter referred to as "PCM") would be applied to the Project to monitor and evaluate the level of the achievement and enhance the communication for its smooth implementation.

(2) Project Design Matrix

The Team explained and the Bolivian side agreed that the Project Design Matrix (hereinafter referred to as "PDM") ought to be designed at the planning stage of the Project, as a framework clarifying the multi-level chain of cause-to-effect such as input to output, output to project purpose, and project purpose to overall goal.

Then, both sides drew up the draft of PDM as shown in ANNEX13 and confirmed the following:

- (a) After necessary revision, the first version of PDM will be finalized and attached to the Minutes of Meeting of Record of Discussion.

- (b) The C/P and the Japanese experts should examine the indicators in the planning stage of the Project, which is scheduled in the first year of the cooperation period, so that indicators and/or targets for project purpose and outputs should be as objectively verifiable as possible.
- (c) PDM should continue to be reviewed and revised if necessary, which further discussion between both sides.

(3) Monitoring

The Team explained and the Bolivian side agreed the following:

- (a) Based on PDM, regular monitoring on the achievement of the Project should be implemented primarily by C/P and the experts, in order to grasp the progress and the achievement of the Project and to modify the plan if necessary.
- (b) Within the first 6 months after the commencement of the Project, the monitoring system should be established by the C/P and Japanese experts, and every 6 months thereafter, monitoring should be done and the results should be distributed to the organization and/or personnel concerned with the Project.

(4) Evaluation

The Team explained and the Bolivian side agreed the following:

- (a) Evaluation of the Project is to be conducted, based on the five basic evaluation components as shown in ANNEX14.
- (b) The midterm evaluation will be conducted jointly by both sides in the middle of the cooperation period, in order to examine the achievement of the Project and modify the plan if necessary.
- (c) The final evaluation of the Project will be conducted jointly by both sides, approximately 6 months before the termination of the cooperation period, in order to examine of the Project.

11. Project Document

The Team explained to the Bolivian side about the background and contents of the Project Document, which is necessary to attach to the Minutes of Meeting of Implementation Study Team finally.

The both sides agreed that the Team would send to the Bolivian side the draft of Project Document until the early part of February 2002, and then the Bolivian side would submit comments to JICA Bolivia office during February 2002.

12. Joint Coordinating Committee of the Project

For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are

described in ANNEX15.

Both side agreed that practical regular meeting should be established to facilitate smooth conduct of the project, after the commencement of the project.

13. Common Language

Both sides confirmed that the common language used in formal documents of the Project should be English. Bolivian side requested the Team that the language used in the technology transfer activities of the Project should be Spanish, and the Team stated that Japanese side would take it into consideration in the process of assignment of the experts as much as possible.

14. Activity Report

Both side agreed that the project would make activity report and submit to VMARNDF monthly. After the report obtained VMARNDF approval, the report should be submitted to JICA Bolivia office and JICA HQ.

15. Draft of Record of Discussion

The both sides agreed the contents of R/D. The draft of R/D is as shown in ANNEX16.

16. Schedule hereafter

Both sides agreed that the items mentioned above 1 to 15 are still provisional and will be discussed further along with other necessary matters in further study held hereafter, and will be finalized at meeting for R/D. The Team explained that, at this moment, the meeting for Record of Discussion is scheduled on March 2002 between JICA Bolivia Office and Bolivian related organization.

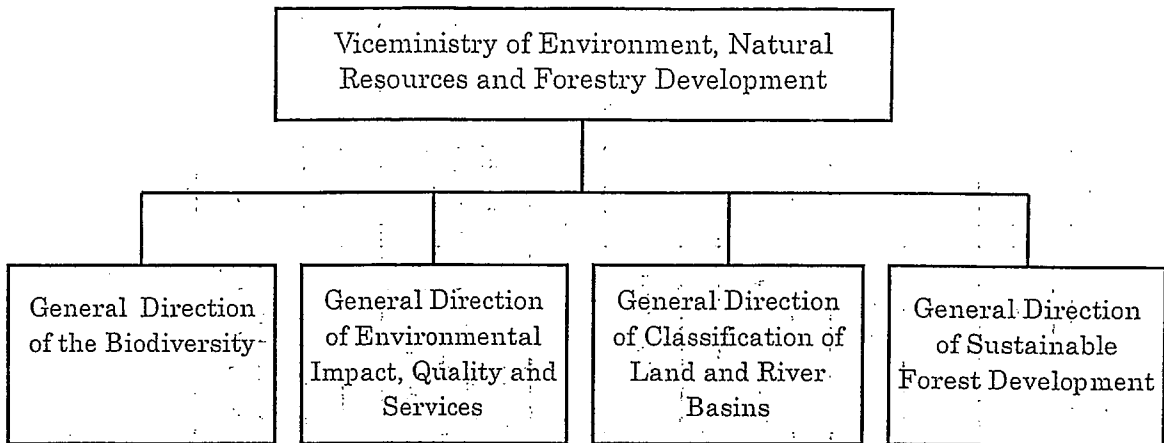
17. Attendants at Meetings

The list of attendants at the meetings is as shown in ANNEX17.

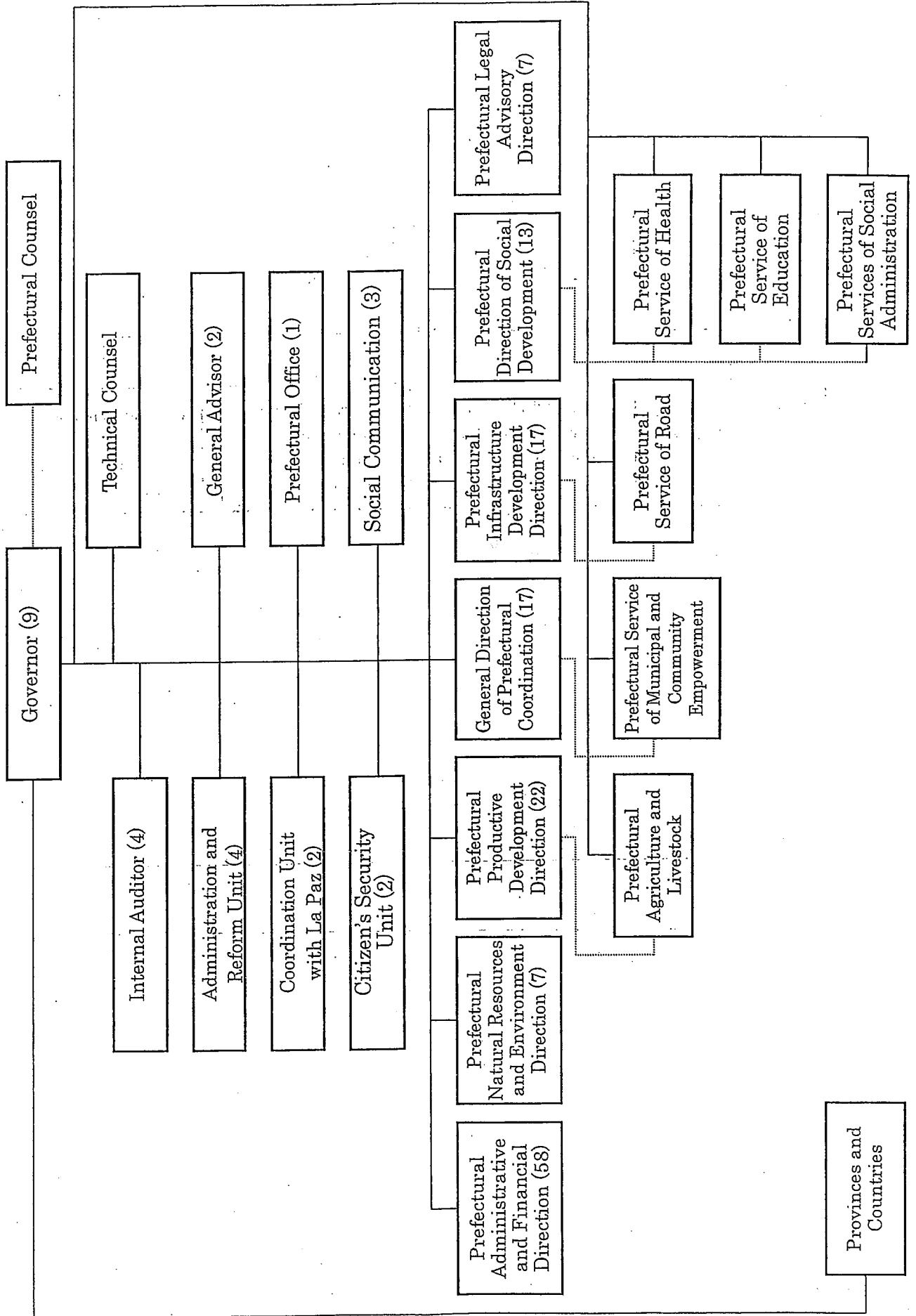
LIST OF ANNEXES

- ANNEX 1 Present organization chart of VMARNDF
- ANNEX 2 Present organization chart of Potosi Prefecture
- ANNEX 3 Provisional organization chart of the Direction of Natural Resources and Environment
- ANNEX 4 Organization chart of Project
- ANNEX 5 Location map of the Project site
- ANNEX 6 Tentative Schedule of Implementation (TSI)
- ANNEX 7 Plan of Operation (PO)
- ANNEX 8 Annual Plan of Operation (APO) for FY2002
- ANNEX 9 Machinery, Equipment and Materials necessary for Technology Transfer in the Project
- ANNEX 10 Layout plan of the new building and rooms
- ANNEX 11 List of Fulltime Counterparts
- ANNEX 12 Annual budgetary plan of local cost
- ANNEX 13 Project Design Matrix (PDM)
- ANNEX 14 Five basic evaluation components
- ANNEX 15 Joint Coordinating Committee (JCC)
- ANNEX 16 Draft of Record of Discussion
- ANNEX 17 List of attendants at the meeting

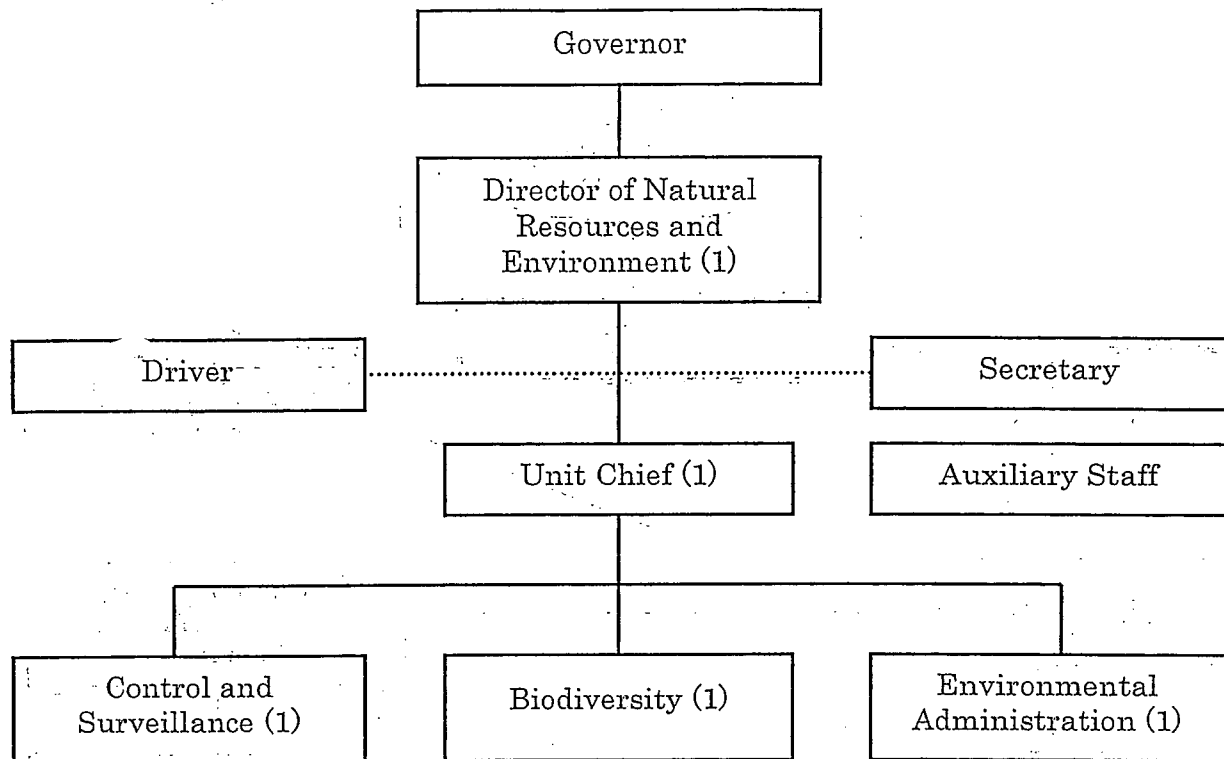
Present Organization Chart of
the Viceministry of Environment, Natural Resources
and Forestry Development (VMARNDF)



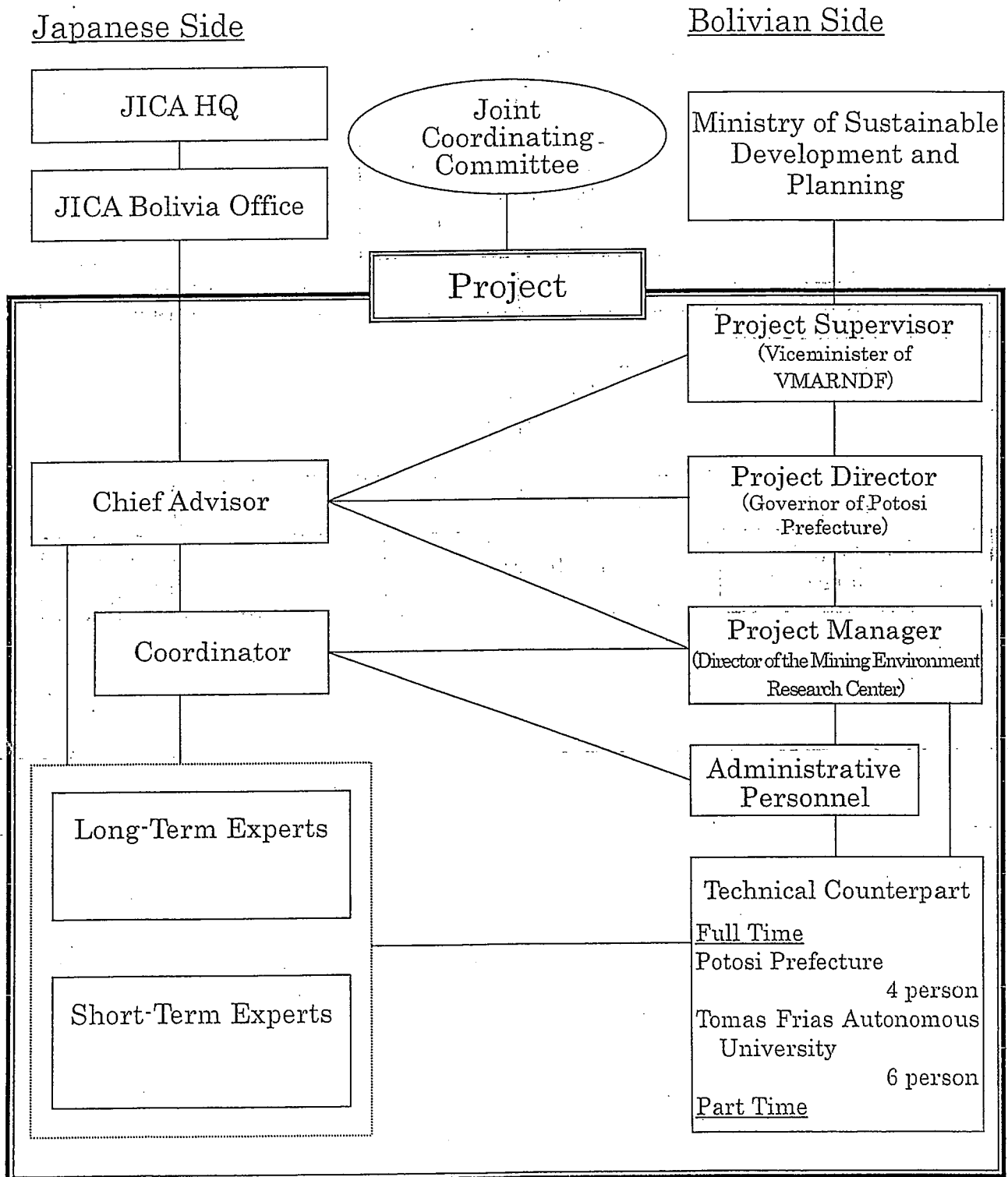
Present Organization Chart of Potosi Prefecture

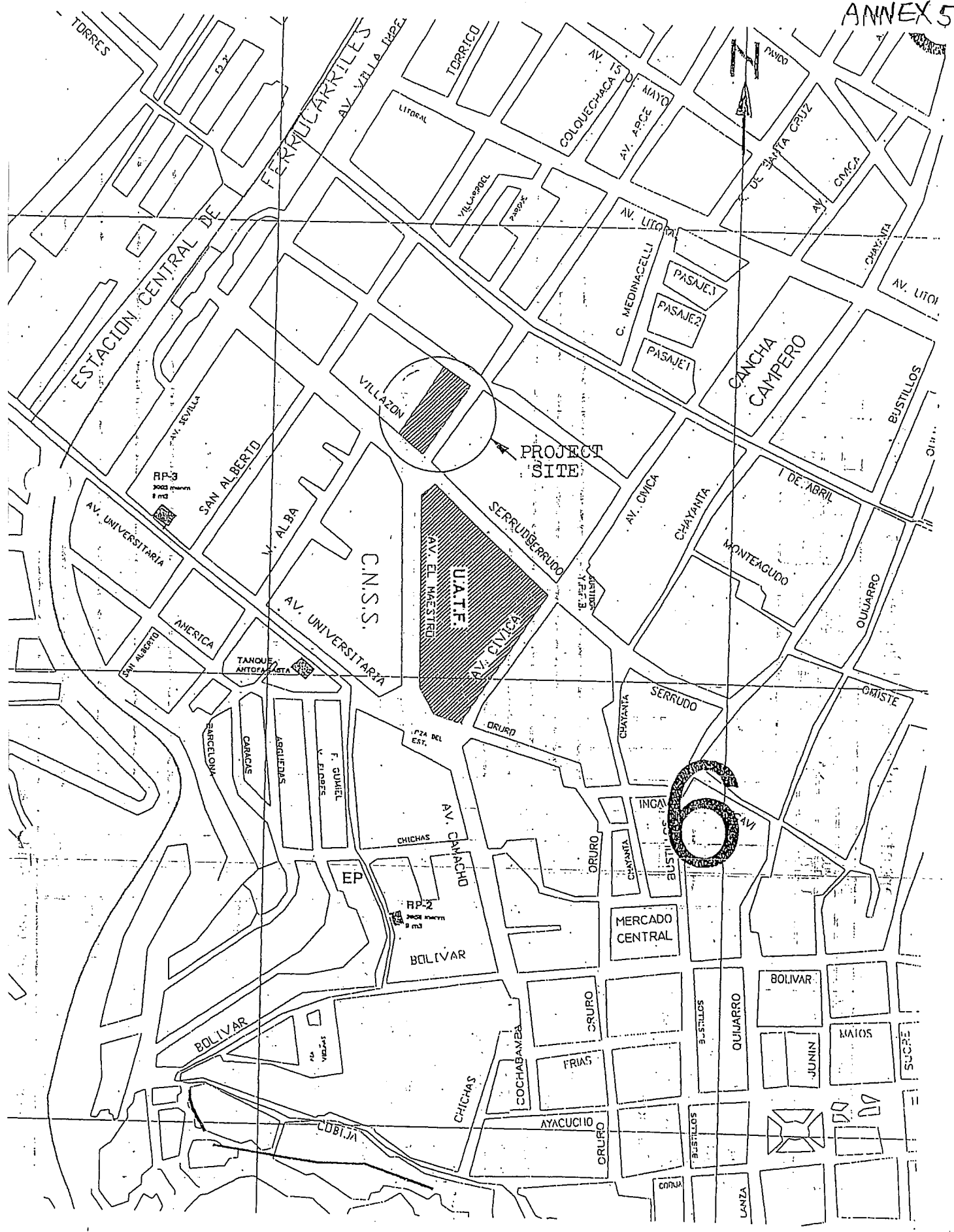


Present Organization Chart of
the Direction of Natural Resources and Environment
of Potosi Prefecture



Provisional Organization Chart of
the Mining Environmental Research Center Project





Tentative Schedule of Implementation (TSI)

Calaendar Year	2001				2002				2003				2004				2005				2006				2007							
	Japanese Fiscal Year				Japanese Fiscal Year				Japanese Fiscal Year				Japanese Fiscal Year				Japanese Fiscal Year				Japanese Fiscal Year				Japanese Fiscal Year							
	II	III	IV	I	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
Term of Technical Cooperation																																
Japanese Side																																
1. Dispatch of Mission																																
(1) Preliminary Study																																
(2) Implementation Study																																
(3) Evaluation																																
2. Dispatch of Long-Term Experts																																
(1) Chief Advisor																																
(2) Coordinator																																
(3) Waste Water Treatment																																
(4) Environmental Research																																
(5) Environment Chemical Analysis																																
3. Dispatch of Short Term Experts																																
(1) Environment Research																																
(2) Waste Water Treatment																																
(3) Mining Environment Administration																																
(4) Environment Chemical Analysis																																
(5) Mineral Processing																																
4. Training of C/P in Japan																																
5. Provision of Machinery and Equipment																																
Bolivian Side																																
1. Building and Facilities																																
2. Machinery and Equipment																																
3. Allocation of C/P and Administrative																																
4. Budgetary Allocation																																

Short-term experts on specific fields will be dispatched, if necessary

A certain number of C/P will be accepted in Japan Annually

Note: Japanese fiscal year starts in April and ends in March

Plan of Operation "Mining Environment Research Center"

Output	Activities	Person in charge		Schedule					Post project			
		Bolivian side	Japanese side	1st year	2nd year	3rd year	4th year	5th year	Short term	Middle term	Long term	
1 The establishment of the organization	a) Study and establish organization and institutional arrangement											
	b) Assign researchers and engineers											
2 The Procurement of facilities and equipment	a) Procure equipment and materials.											
	b) Install the equipment											
3 Environment, Chem. Analysis	a) Analyze the precision by the reference material.		CA									
	b) Investigate the pollution level.		ER									
4 The environment situation research	a) Compare the investigation result with the environmental quality standards.		ER									
	b) Make monitoring plan.		ER									
5 Mine wastewater treatment	a) Overview of the basic technology for mining pollution prevention.		WT, MEA									
	b) Explain the technology and regulations for mining pollution and prevention in Japan.		WT									
6 Implementation of the plants	a) Make the master plan technical and for the measures against the mining wastewater.		WT									
	b) Decide the applicable technology.		WT									
7 Public information and education toward Potosi mining people	a) The issue of the public information journal.		PP									
	b) Holding of the seminar.		PP									

AUTF: Autonomous University Tomas Frías PP: Potosi Prefecture KIW: The German Development Bank ER: Environment Research WT: Wastewater treatment MEA: Mining Environment Administration CA: Chemical Analysis MP: Mineral Processing

Annual Plan of Operation of Year 2002(APO)

Output 1. The Establishment of the Organization.

Activities	Target	Japanese Fiscal Year 2002												Responsible Person in the project		Input	Remarks			
		2002												Bolivia	Japan					
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar							
1-1. Study and establish organization and institutional arrangement	Secure the suitable organization and institutional arrangement of MERC															PP AUTF	LE			
1-2. Allocation of the Staff of MERC as planned	Secure the necessary number of C/P																			
1-2-1. Review of the Staff allocation plan.																	PP AUTF	LE		
1-2-2. Assignment of the staff																	PP AUTF	LE		
1-3. Confirmation of the Job Description at MERC	Secure the responsibility of the staff																PP AUTF	LE		
1-4. Formulation of the Work Plan of MERC	Secure the implementation of the project as planned.																			
1-4-1. Preparation of the work plan of MERC																	PP AUTF	LE		
1-4-2. Review of the work plan half-yearly																	PP AUTF	LE		
1-4-3. Discussion on and preparation of the APO for the next year (2003)																	PP AUTF	LE		
1-5. Formulation of the budget plan of MERC	Secure the necessary budget for smooth implementation of the project.																			
1-5-1. Execution of the budget plan for 2002																	PP AUTF	LE		
1-5-2. Discussion on and formulation of the budget plan for the next year (2003)																	PP AUTF	LE		
1-6. Joint Coordinating Committee																	PP AUTF	LE		
1-7. Opening Ceremony of MERC																	PP AUTF	LE		

AUTF: Autonomous University Tomas Frías PP: Potosí Prefecture Kfy: The German Development Bank ER: Environment Research WT: Wastewater Treatment MEA: Mining Environment Administration CA: Chemical Analysis. MP: Mineral Processing SE: Short Term Expert LE: Long Term Expert C/P: Counterpart Personnel MERC: Mining Environment Research Center

Annual Plan of Operation (APO)

Output 2. The Procurement of Facilities and Equipment

Activities	Target	Japanese Fiscal Year 2002												Responsible Person in the project		Input	Remarks	
		2002												Bolivia	Japan			
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar					
2-1. Formulation of the preparation, procurement & maintenance plans of the equipment and the appropriate measures for	Secure the necessary tools for technology transfer																	
2-1-1. Preparation of the procurement plan of facilities and equipment																		
2-1-2. Procurement of facilities and equipment																		
2-1-3. Preparation of laboratory utilities, air conditioner and exhaust gas treatment																		
2-1-4. Planning of the measures for maintenance																		
2-2. Implementation of the installation, operation guidance & maintenance of the equipment	Secure the smooth operation & maintenance of the equipment																	
2-2-1. Installation of the equipment																		
2-2-2. Guidance on the operation of the equipment																		
2-2-3. Guidance on the maintenance of the equipment																		
2-3. Formulation of the manuals on maintenance of the equipment	Secure the smooth maintenance of the equipment																	After April 2003
2-3-1. Preparation of the manuals in English																		
2-3-2. Preparation of the manuals in Spanish																		
2-4. Ceremony for hand over the equipment																		

AUTF: Autonomous University Tomas Frias PP: Potosi Prefecture KfW: The German Development Bank ER: Environment Research WI: Wastewater Treatment MEA: Mining Environment Administration CA: Chemical Analysis MP: Mineral Processing SE: Short Term Expert LE: Long Term Expert C/P: Counterpart Personnel MERC: Mining Environment Research Center

Annual Plan of Operation (APO)

Output 3. Environmental Chemical Analysis

Activities	Target	Japanese Fiscal Year 2002												Responsible Person in the project		Input	Remarks		
		2002												Bolivia	Japan				
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar						
3-1.Introduction of the analytical equipments																			
3-1-1.Installation and trial run of equipments																			
3-1-2.Instruction of basic operation																			
3-1-3.Preparation of the manuals																			
3-2.Lecture of chemical analysis																			
3-2-1.Outline of chemical analysis																			
3-2-2.Decomposition method for the samples																			
3-2-3.Separation and concentration method for analytical equipments																			
3-2-4.Measuring method for each equipment																			
3-3.Technical transfer of analytical operation																			
3-3-1.Investigation of current technical situation																			
3-3-2.Instruction of basic operation of analysis																			
3-3-3.Instruction of preparation of standard solutions																			
3-3-4.Instruction of samples decomposition technique																			
3-3-5.Instruction of separation and concentration technique of analytical elements																			
3-3-6.Instruction of separation and concentration technique of analytical elements																			
3-3-7.Precision check by analysis of reference materials																			
3-3-8.Chemical analysis of actual..... environmental samples																			

AUTF: Autonomous University Tomas Frias PP: Potosi Prefecture Kfvr: The German Development Bank ER: Environment Research WT: Wastewater Treatment MEA: Mining Environment Administration CA: Chemical Analysis MP: Mineral Processing SE: Short Term Expert LE: Long Term Expert C/P: Counterpart Personnel MERC: Mining Environment Research Center

Annual Plan of Operation (APO)

Output 4. The Environment Situation Research

Activities	Target	Japanese Fiscal Year 2002												Responsible Person in the project		Input	Remarks	
		2002						2003						Bolivia	Japan			
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar					
4-1. Investigation of current situations	Clarify the current situation of mining water pollution in Potosi																	
4-1-1. Investigate the origin of pollution																		Until Japanese fiscal year 2004
4-1-2. Investigate the pollution level																		Until Japanese fiscal year 2004
4-1-3. Analyze the pollution mechanism																		Until Japanese fiscal year 2003
4-1-4. Compare the investigation results with the environmental quality standards																		Until Japanese fiscal year 2003
4-1-5. Survey the effect of the pollution																		
4-2. Water pollution monitoring plan	Formulate monitoring plan																	
4-2-1. Make monitoring plan																		Until Japanese fiscal year 2004
4-2-2. Examine water quality analysis program																		Starts Japanese fiscal year 2003
4-2-3. Simulate water quality analysis																		Starts Japanese fiscal year 2005

AUTF: Autonomous University Tomas Frias PP: Potosi Prefecture Kfw: The German Development Bank ER: Environment Research WF: Wastewater Treatment MEA: Mining Environment Administration CA: Chemical Analysis MP: Mineral Processing SE: Short Term Expert LE: Long Term Expert G/P: Counterpart Personnel MERC: Mining Environment Research Center

Annual Plan of Operation (APO)

Output 6. Basic Technology of Mineral Processing

Activities	Target	Japanese Fiscal Year 2002												Responsible Person in the project		Input	Remarks		
		2002						2003						Bolivia	Japan				
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar						
6-1. Measures against tailing and waste water	Design practical waste water treatment system in Potosi																		
6-1-1. Construct tailing dam and tailing transportation system																			KFW
6-1-2. Examine the technology for neutralization with mine waste water																	AUTF	WT	Starts in Japanese fiscal year 2003
6-2. Guideline for improving mineral processing productivity to deal with the environmental cost.	Secure the smooth and efficient waste water treatment in Potosi																		
6-2-1. Investigate the process and efficiency of existing ingenious																	AUTF	SE	
6-2-2. Grasp the problems of existing ingenious																	AUTF	SE	
6-2-3. Examine the measures to improve productivity																	PP AUTF	SE	
6-2-4. Make and disseminate the guideline																	PP AUTF	SE	Japanese fiscal year 2003

AUTF: Autonomous University Tomas Frías; PP: Potosí Prefecture; KfW: The German Development Bank; ER: Environment Research; WT: Wastewater Treatment; MEA: Mining Environment Administration; CA: Chemical Analysis; MP: Mineral Processing; SE: Short Term Expert; C/P: Counterpart Personnel; MERC: Mining Environment Research Center.

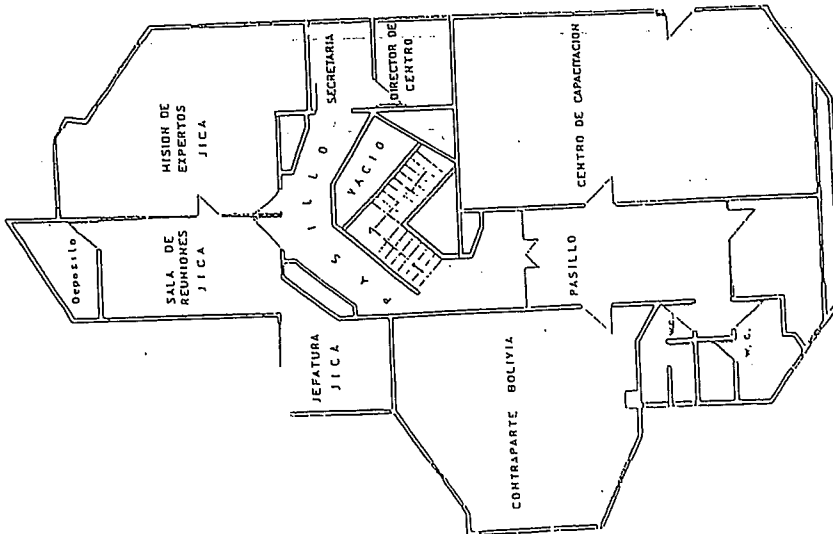
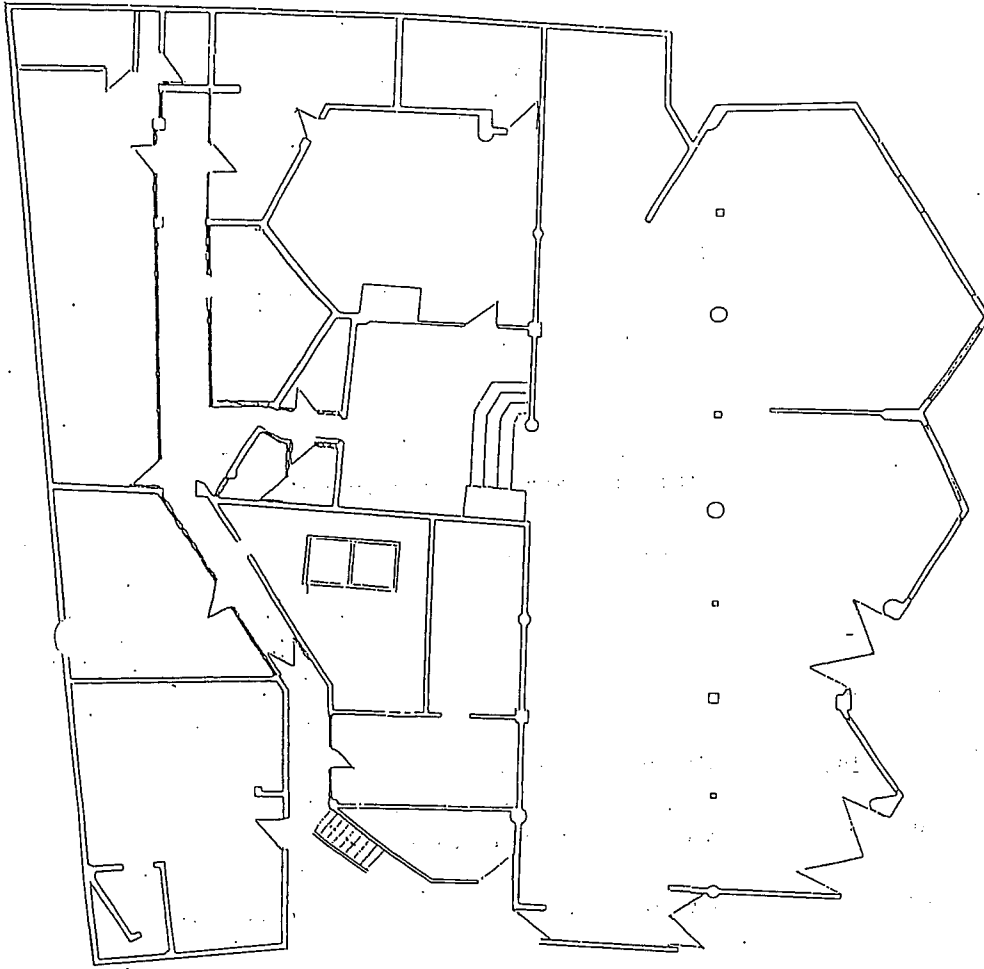
Machinery, Equipment and Other Materials necessary for Technology Transfer in the Project

(List A) List of Machinery, Equipment and other materials requested by the Bolivian Side

	Equipment	
1.Environment Research	1	Four-wheel Drive Vehicle (×2)
	2	Sampler for Water and Soil/Sedimentation of River
	3	Portable Water Quality Tester
	4	Rainfall Measuring Instrument
2.Wastewater Treatment	1	Neutralization Test Equipment (Batch Type)
	2	Neutralization Test Equipment (Continuous Type)
	3	Laboratory Wastewater/Sludge treatment equipment
3.Chemical Analysis	1	X-Ray Diffractometer (XRD or XD)
	2	Atomic Absorption Spectrophotometer (AA or AAS) with As/Hg analyzer
	3	Inductively Coupled Plasma Atomic Emission Spectrometer (ICP or ICP-AES)
	4	Ultraviolet and Visible Spectrometer (UV-VIS)
	5	Ion Chromatograph
	6	Ion Selective Electrode Type Concentration Measuring Instrument
	7	Photoelectric Photometer and Colorimeter
	8	Cyanide (CN) Analyzer
	9	Chemical Oxygen Demand (COD) Meter
	10	Biochemical Oxygen Demand (BOD) Meter
	11	Leaching Test Shaker
	12	Precision Electronic Analytical Balance
	13	Precision Distillation Water Apparatus
	14	Draft
4.Others	1	Office Equipment, in addition to "2.others" of List B, if necessary

(List B) List of Machinery, Equipment and other Materials prepared by the Bolivian Side

	Equipment	
1.Chemical Analysis	1	Distillation Water Apparatus
	2	Air Conditioner
	3	Laboratory Exhaust Gas Treatment Equipment
	4	Laboratory Wastewater Treatment Equipment
2.Others	1	Whiteboard
	2	Overhead Projector
	3	Liquid Crystal Display (LCD) Projector
	4	Slide Projector
	5	Personal Computer
	6	Printer
	7	Copy Machine
	8	Facsimile
	9	Experiment Instrument
	10	Consumable Supplies



SEGUNDO PISO

CENTRO DE INVESTIGACIONES MINERO AMBIENTAL

UNIVERSIDAD AUTONOMA TOMAS FRIA:	
FACULTAD DE MINAS	
SEGUNDO PISO	
Superficie	8° V°
Sup. = 305,23 m ²	
Sup. incluyendo pilas = 352,65 m ²	
JULIO 2000	ESCALA: 1:100

List of Full-time Counterparts

(Potosi Prefecture)

1. Mr. Noel Mercado R.....Director of the Center
2. Mr. Primo Choque CruzAgricultural Engineer
3. Mr. Rolando Torres R.Chemical Engineer
4. Mr. Jorge VenegasMineral Processing Engineer
5. Mr. Carlos Delgado M.Mining Engineer

(Tomas Frias Autonomous University)

1. M. Sc. Ing. Freddy S. Llanos LopezMining Engineer
2. Ing. Franz F. Mamani YucraEnvironmental Engineer
3. M. Sc. Ing. Javier Flores Delgado.....Mining & Mineral Processing Engineer
4. Ing. Heman Rios MonteroGeologist
5. M. Sc. Ing. Carlos Salas CasadoMetallurgist
6. Ing. Waldo Aramaryo EscarayChemical Engineer

COSTOS DE OPERACIÓN DEL PROYECTO

(en miles de dólares)

ITEM	Año 2002	Año 2003	Año 2004	Año 2005	Año 2006	Año 2007
SALARIOS	72851	145703	145703	145703	145703	72851
MATERIALES Y REACTIVOS	13397	26801	26797	26797	26797	13397
MANTENIMIENTO	41300	41300	41300	41300	41300	41300
ADUANA		30000				
INSTALACION		30000				
INFRAESTRUCTURA	30000					
SUBTOTAL	157548	273804	213800	213800	213800	127548
TOTAL	1200300					1200300

Project Design Matrix (Ver.0.2)
 Duration : 2002.7.1~2007.6.30 (5 years)

Project Name : Mining Environment Research Center Project

Project Area : Potosi Prefecture Target group : The inhabitants of the lower reaches of rivers in Potosi mining area.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Supérgoál Administration and technology to decrease water pollution caused by mining industry, which are established in the Center, are disseminated to other regions in Bolivia.</p>	<p>1. Monitoring plan, mine wastewater treatment master plan are adopted in Potosi environmental administration 2. Guideline and technology of the mine wastewater treatment are applied in Potosi mining sector. 3. The role of the center is established in Bolivia mining environmental sector.</p>	<p>1. The number of application to the mining environmental administration in Potosi 2. The number of inquiry from mining sector</p>	<p>The mining environment policy is not changed drastically. The research result of the center is incorporated in mining environmental administration. The tailing dam is to work properly.</p>
<p>ÖvéralGóál Water pollution caused by mining industry in Potosi is decrease and prevented.</p>	<p>1.1. Counterparts, administrative personnel are arranged continuously within project period. 1.2. Local cost is allocated in each quarter of the year without delay. 1.3. Regular meeting hold continuously every 3 month with related organization include VMARNDF. 1.4. The article of the center and sustainable development plan are draw up within 1 year.</p>	<p>1.1. Number of Counterpart 1.2. Quarterly report 1.3. Regular meeting report 1.4. Article of the center, sustainable development plan</p>	<p>C/Ps continue working for the Center</p>
<p>ÉnyéálÉpítés Administration system and technology suitable for Potosi to decrease water pollution caused by mining industry are established.</p>	<p>2.1. Equipment and test working is done within 3 months after procured. 2.2. Maintenance cost for equipment is allocated without delay. 2.3. Manuals are prepared for the equipment within 6 months after installation. 2.4. Operation and maintenance of equipment can be done by C/Ps within 1 year after installation. 3.1. Knowledge and method of chemical analysis is acquired within 2 years. 3.2. Sample of mine-related wastewater are analyzed. 4.1. The environmental map of Potosi is made within 3 years. 4.2. The water monitoring plan of Potosi is made within 3 years. 5.1. The mine waste water master plan (administration, technology) is made within 2 years. 5.2. Conceptual plan of wastewater treatment are made within 5 years. 6.1. Knowledge and method of wastewater treatment is acquired within 2 years. 6.2. Guideline for improving mineral processing productivity is made. 7.1. The seminar is held more than one time in each year. 7.2. The press release is made more than one time in each year. 7.3. Contract research of government and private sector can be undertaken.</p>	<p>2.1. Installation, assembling, adjustment report. 2.2. Manual, daily report, (maintenance, measure) 2.3. Manuals of equipment 2.4. Monitoring sheet of technical transfer 3.1. Monitoring sheet of technical transfer 3.2. Number of report of analysis. 4.1. Environmental map 4.2. Monitoring plan 5.1. Mine wastewater master plan (administration, technology) 5.2. Conceptual plan 6.1. Monitoring sheet of technical transfer 6.2. Guideline of mineral processing 7.1. The number of seminar 7.2. The number of press release 7.3. The number of contract research, Number of examination of FA, MA</p>	<p>C/Ps continue working for the Center Necessary information is provided by related organization. Customs clearance and transport procedure is not delayed.</p>
<p>Ölétítés 1. The organization of the Center is established. 2. Facilities and equipment necessary for the activities of the Center are procured. 3. Environment chemical analyses are acquired. 4. Environmental situations are researched. 5. Mine-related wastewater treatment technology developed. 6. Basic technologies of mineral processing are mastered. 7. Public relations and education for environmental conservation targeted Potosi people who works for mining, concentration, and the people relate to the mining activity are conducted</p>	<p>Bolivian Side 1. Building and the facilities for the Project, Machinery, Equipment and other materials 2. The arrangement of the 10 C/Ps (fulltime) administrative people and others 3. Local cost (Transportation for field research and meetings, Allocation of assistance staff for laboratory experiment, field researches, etc., Secretary and drivers, Public relations and educational activities, Workshop and seminar, Consumable, electricity, etc., Expenses for vehicles) Japanese side 1. Experts (Long-term experts (Chief advisor, Coordinator, Wastewater Treatment, Environment Research, Chemical Analysis) and Short-term experts) 2. C/Ps training in Japan (One or two person(s) yearly, and a couple of weeks to two months). 3. Provision of Machinery, Equipment, and Materials (Car, Environmental research equipment, Neutralization Equipment, X-Ray Diffractometer, Atomic Absorption Spectrophotometer, Ion Chromatograph, etc.)</p>	<p>C/Ps continue working for the Center Necessary information is provided by related organization. Customs clearance and transport procedure is not delayed.</p>	<p>Preconditions Mining industries and inhabitants are cooperative for the investigation activities of the center</p>
<p>Activities See next page</p>			

<p>1 The establishment of the organization.</p>	<p>a. Study and establish organization and institutional arrangement. b. Assign researchers and engineers. c. Secure the budget.</p>
<p>2. The procurement of facilities and equipment.</p>	<p>a. Procure equipment and materials. b. Install the equipment c. Learn the equipment operation. d. Carry out the equipment maintenance.</p>
<p>3. An environment chemical analysis is acquired.</p>	<p>1) Basic Technology 2) Sample analysis</p>
<p>4. The environment situation research</p>	<p>1) Investigation of current situations a. The analysis of the standard sample. The confirmation of the precision by the reference materials. a. Investigate the origin of the pollution. b. Investigate the pollution level. c. Analyze the pollution mechanism d. Compare the investigation result with the environmental quality standards. e. Survey the effect of the pollution. → Environmental mapping.</p>
<p>2) Water pollution monitoring plans are made.</p>	<p>a. Make monitoring plan b. Examine water quality analysis models. c. Simulate water quality analysis. → Simulate selected area.</p>
<p>5. Mine wastewater treatment</p>	<p>1) Introduction of mining environment administration a. Best practice environmental management in mining b. Importance of mining pollution prevention administration for sustainable production c. Role of the national and/or local governments (introduction of legal system, inspection, etc.) d. Support by government (introduction of subsidy and financing). e. Measures against the shutdown or abandoned mines (introduction of the law for special measures against metal mining pollution)</p> <p>2) Introduction of mining pollution prevention technology. a. Overview the basic technology and regulations for mining pollution and preventions in Japan.</p> <p>3) Master Plan. a. Make a master plan (technical and for the measures against the mining wastewater) → The master plan of the Potosi area is settled on and reviewed every year.</p>
<p>4) Development of wastewater treatment</p>	<p>a. Overview of the basic technology b. Decide the applicable technology. c. Research and develop the technology. d. Experiment in the laboratory. sources through the test.</p> <p>→ Main pollution sources are selected, and put the</p>
<p>5) Plan for introduction of the technology</p>	<p>a. Design the wastewater treatment total system. b. Examine the most suitable treatment condition for each origin of the pollution. c. Estimate cost for the treatment. d. Sum up the environmental impact. e. Examine how to implement the treatment (e.g. participation of national and/or local government, financial measures such as reserve fund, subsidy, donation, maintenance system) f. Make the conceptual design of the treatment plant(s). → Concept design toward the worst pollution source.</p>
<p>6. Basic technologies of mineral processing</p>	<p>1) Measures against tailing and wastewater a. Examine the technology for neutralization with mine wastewater</p>
<p>2) Environmental chemical analysis</p>	<p>a. Conduct environmental chemical analysis</p>
<p>3) Guideline for improving mineral processing productivity to deal with the environmental cost.</p>	<p>a. Investigate the process and efficiency of the existing ingenios. b. Grasp the problems of the existing ingenios. c. Examine the measures to improve productivity d. Make and disseminate the guideline.</p>
<p>7. Public relations and education for environmental conservation targeted Potosi people who works for mining, concentration, and the people relate to the mining activity are conducted</p>	<p>a. The issue of public information manual. b. Holding of the seminar. c. Press release.</p>

Five (5) Basic Evaluation Components

1. Five(5) Basic Evaluation Components

The five basic components defined by JICA as mentioned below are in line with those used for the evaluation works by DAC and other international assistance organization. Introduction of these components has enabled a consistent, well-balanced evaluation, which minimizes evaluator bias. Further, it allows us to share the results, knowledge and lessons with other aid organizations, since we are using common components and can discuss with them from same viewpoints.

(1) Efficiency

Evaluate the method, procedure, term and cost of the project with a view to productivity.

(2) Effectiveness

Evaluate the results in comparison with the goals (or revised ones) defined at the initial or intermediate stage, and evaluate the attributes (factor and conditions) of the results.

(3) Impact

Evaluate the positive and negative effects of the project, extent of the effects and beneficiaries.

(4) Relevance

Preliminary evaluate whether the needs in the country have been correctly identified, and whether the design is consistent with the national and/or master plan.

(5) Sustainability

Evaluate the autonomy and sustainability of the project after the termination of cooperation, from the perspective of operation, management, economy, finance and technology.

2. Relation between Five Basic Components and PDM

The following five components are used for the evaluation and a selection of a project.

(1) Efficiency

(2) Effectiveness

(3) Impact

(4) Relevance

(5) Sustainability

These components are directly connected to the elements of PDM as shown in the Figure in the following page.

The component "Efficiency" is a measure to qualitatively and quantitatively compares all resource (input) to the results (output) of the project in order to evaluate the economic efficiency or conversion from input to output.

The parameter "Effectiveness" is a measure to evaluate whether the purpose has been achieved or not, or to evaluate how much the outputs contributed to the achievement of the purpose, or to evaluate whether or not the characteristics of the outputs were as expected.

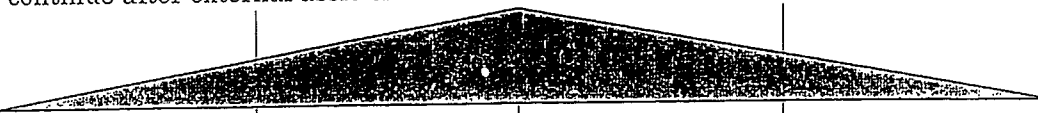




The parameter "Impact" is a foreseeable or unforeseeable, and a favorable or adverse effect of the project society. To evaluate impact, both the goal and project purpose should be referred to in beginning of the evaluation. Evaluation with this component could lead to more than the confirmation as whether or not the goals have been obtained. Evaluation with this component requires comprehensive surveys in many cases.

The parameter "Relevance" is to comprehensively evaluate whether or not the project meets the overall goals, politics of both the donor and recipient, local needs and given priority levels, in order to decide whether the project should be continued, reformulated or terminated.

The parameter "Sustainability" is to comprehensively evaluate how long the favorable effect as a result of the project can continue after the project has been terminated. Evaluation with this component is required to decide how much the local resources should continue to be used for the project, and to evaluate how much the country receiving the assistance has been considering important. According to OECD(1989), "Sustainability" is a component to be used for the final test of the success of a development project.

All five components are essential for any of the projects and programs. The five components give necessary information to the direction maker so that he/she can decide how to approach the next step. Since each of the five components build on the intervention strategy, they also lay the foundation for standardization in monitoring and information handling within and among organizations and agencies.

In practice, each of the five parameters should also contain project-specific information.

<p>Sustainability: Evaluate the extent to which the positive effect as a result of the project will still continue after external assistance has been concluded.</p> 
<p>Relevance: Evaluate the degree to which the project can still be justified in relation to the national and regional priority levels given to the theme.</p> 
<p>Impact: Foreseeable or unforeseeable, and favorable or adverse effect of the project upon the target groups and persons possibly affected by the project.</p> 
<p>Effectiveness: Evaluate the extent to which the purpose has been achieved or not, and whether the project purpose can be expected to happen on the basis of the outputs of the project.</p> 
<p>Efficiency: Evaluate how the results stand in relation to the efforts and resources, how economically the resources were converted to the outputs, and whether the same results could have been achieved by other better methods.</p> 

Input	Output	Project Purpose	Overall Goals
-------	--------	-----------------	---------------

Function and Composition of Joint Coordinating Committee (Plan)

1. Function

The Joint Coordinating Committee (JCC) will be held at least once a year and whenever necessity arises. Its functions are as follows:

- (1) To settle on the Annual Plan of Operation (APO) of the Project in line with the Tentative Schedule of Implementation (TSI) and the Plan of Operation formulated under the framework of the Record of Discussions;
- (2) To coordinate necessary actions to be taken by both sides;
- (3) To review the overall progress of the project;
- (4) To exchange views on major issues arising from or in connection with the PO

2. Composition

(1) Chairperson

Project Supervisor (Viceminister of Environment, Natural Resources and Forest Development)

(2) Members

(Bolivian Side)

- (a) Project Director (Governor of Potosi Prefecture)
- (b) Viceminister of the Mining and Metallurgy
- (c) Project Manager (Director of the Mining Environment Research Center)
- (d) Counterparts of Long-term Experts designated by Project Director
- (e) President of Tomas Frias Autonomous University
- (f) Other personnel concerned to be decided by Project Director, if necessary

(Japanese Side)

- (a) Chief Advisor
- (b) Coordinator
- (c) Other Japanese Experts designated by the Chief Advisor
- (d) Representative(s) of JICA Office in the Republic of Bolivia
- (e) Other personnel concerned to be decided and dispatched by JICA, if necessary

—Note: Official(s) of the Embassy of Japan may attend the Joint Coordinating Committee meeting as observer(s).

(Draft)

RECORD OF DISCUSSIONS BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE REPUBLIC OF BOLIVIA
ON JAPANESE TECHNICAL COOPERATION
FOR THE MINING ENVIRONMENT RESEARCH CENTER PROJECT

The Japanese Project Design Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Kazuo Nagai, had meetings with related organization for the purpose of working out the details of the technical cooperation program concerning the Mining Environmental Research Center Project in the Republic of Bolivia.

During the meetings in the Republic of Bolivia, the Team exchanged views and had a series of discussions with the Bolivian authorities concerned with respect to desirable measures to be taken by both Governments for the successful implementation of the above-mentioned Project.

As a result of the discussions, and in accordance with the provisions of the Agreement on Technical Cooperation between the Government of Japan and the Government of the Republic of Bolivia, signed in La Paz on * * * * (hereinafter referred to as "the Agreement"), the Team and the Bolivian authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

La Paz, March * *, 2002

Mr. Kazuo Nagai
Resident Representative
Bolivia Office
Japan International Cooperation Agency
Japan

Mr. Sergio Medinaceli S.
Governor
Potosi Prefecture
Republic of Bolivia

Mr. Bernardo Requena B.
Viceminister of Public Investment
and External Finance
Ministry of Finance
Republic of Bolivia

Mr. Hernan S. Cabrera F.
Viceminister of Environment, Natural
Resources, and Forest Development
Ministry of Sustainable Development
and Planning
Republic of Bolivia

—THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of the Republic of Bolivia will implement the Mining Environmental Research Center Project (hereinafter referred to as "the Project") in cooperation with the Government of Japan.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY THE GOVERNMENT OF JAPAN

In accordance with the laws and regulations in force in Japan and the provisions of Article II of the Agreement, the Government of Japan will take, at its own expense, the following measures through JICA according to the normal procedures of its technical cooperation scheme.

1. DISPATCH OF JAPANESE EXPERTS

The Government of Japan will provide the services of the Japanese experts as listed in Annex II. The provision of Article VIII of the Agreement will be applied to the above-mentioned experts.

2. PROVISION OF MACHINERY AND EQUIPMENT

The Government of Japan will provide such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III. The provision of Article IX-1 of the Agreement will be applied to the Equipment.

3. TRAINING OF BOLIVIAN PERSONNEL IN JAPAN

The Government of Japan will receive the Bolivian personnel connected with the Project for technical training in Japan.

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE REPUBLIC OF BOLIVIA

1. The Government of the Republic of Bolivia will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and

after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.

2. In accordance with the provision of Article IV of the Agreement, the Government of the Republic of Bolivia will ensure that the technologies and knowledge acquired by the Bolivian nationals as a result of the Japanese technical cooperation will contribute to the economic and social development of the Republic of Bolivia.
3. In accordance with the provisions of Article V and VI of the Agreement, the Government of the Republic of Bolivia will grant in the Republic of Bolivia privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families.
4. In accordance with the provisions of Article IX of the Agreement, the Government of the Republic of Bolivia will take the measures necessary to receive and use the Equipment provided through JICA under II-2 above and equipment, machinery and materials carried in by the Japanese experts referred to in II-1 above.
5. The Government of the Republic of Bolivia will take necessary measures to ensure that the knowledge and experience acquired by the Bolivian personnel from technical training in Japan will be utilized effectively in the implementation of the Project.
6. In accordance with the provision of Article V-1-(b) of the Agreement, the Government of the Republic of Bolivia will provide the services of the Bolivian counterpart personnel and administrative personnel as listed in Annex IV.
7. In accordance with the provision of Article V-1-(a) of the Agreement, the Government of the Republic of Bolivia will provide the buildings and facilities as listed in Annex V.
8. In accordance with the laws and regulations in force in the Republic of Bolivia, the Government of the Republic of Bolivia will take necessary measures to supply or replace at its own expense machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided through JICA under II-2 above.

9. In accordance with the laws and regulations in force in the Republic of Bolivia, the Government of the Republic of Bolivia will take necessary measures to meet the running expenses necessary for the implementation of the Project.

IV. ADMINISTRATION OF THE PROJECT

1. The Viceminister of Viceministry of Environment, Natural Resources and Forest Development, as the Project Supervisor, will bear responsibility for the coordination and implementation of the actions and proceedings from the viewpoint of national policy.
2. The Governor of Potosi Prefecture, as the Project Director, will bear overall responsibility for the administration and implementation of the Project.
3. The Director of the Mining Environmental Research Center, as the Project Manager, will be responsible for the managerial and technical matters of the Project.
4. The Japanese Team Leader (Chief Advisor) will provide necessary recommendations and advice to the Project Supervisor, the Project Director and the Project Manager on any matters pertaining to the implementation of the Project.
5. The Japanese experts will give necessary technical guidance and advice to the Bolivian counterpart personnel on technical matters pertaining to the implementation of the Project.
6. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are described in Annex VI.

V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by the two Governments through JICA and the Bolivian authorities concerned, at the middle and during the last six months of the cooperation term in order to examine the level of achievement.

VI. CLAIMS AGAINST JAPANESE EXPERTS

In accordance with the provision of Article VII of the Agreement, the Government of the Republic of Bolivia undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Republic of Bolivia except for those arising from the willful misconduct or gross negligence of the Japanese experts.

VII. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any major issues arising from, or in connection with this Attached Document.

VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

For the purpose of promoting support for the Project among the people of the Republic of Bolivia, the Government of the Republic of Bolivia will take appropriate measures to make the Project widely known to the people of the Republic of Bolivia.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be 5 years from 2002.7.1.

- ANNEX I MASTER PLAN
- ANNEX II LIST OF JAPANESE EXPERTS
- ANNEX III LIST OF MACHINERY AND EQUIPMENT
- ANNEX IV LIST OF BOLIVIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL
- ANNEX V LIST OF BUILDINGS AND FACILITIES
- ANNEX VI JOINT COORDINATING COMMITTEE

List of Attendants at the Meetings

Bolivian Side

(1) Ministry of Sustainable Development and Planning

Mr. Hernan Cabrera Francidakiz	Viceminister of Environment, Natural Resources, and Forest Development (VMARNDF)
Mr. Marcelo Pinto Sanzetenea	Director General of Environmental Impact, Quality and Services, Viceministry of Environment, Natural Resources, and Forest Development (VMARNDF)
Ms. Maria Alejandra Galarza Coca	Chief of Prevention and Environmental Control Unit, Viceminister of Environment, Natural Resources, and Forest Development (VMARNDF)

(2) Viceministry of Mining and Metallurgy

Mr. Epifanio Mamani A.	Viceminister of Mining and Metallurgy
Mr. Carlos Feraudi	Consultor Mining and Metallurgy Unit

(3) Potosi Prefecture

Mr. Sergio Medinaceli S.	Governor
Mr. Raul Garcia Balderrama	Director of Natural Resources and Environment
Mr. Noel Mercado Rodriguez	Unit Chief, Direction of Natural Resources and Environment
Mr. Rolando Torrez Romero	Technician Direction of Natural Resources and Environment

(4) Tomas Frias (University)

Mr. German Lizarazu Pantaja	President, Tomas Frias University
Mr. Edwin Bejarano M.	Dean, Faculty of Mining Engineering
Mr. Freddy Llanos	Professor, Faculty of Mining Engineering
Mr. Waldo Aramayo	Professor, Faculty of Chemical Engineering

Japanese Side

(1) Fourth Preparatory Study Team

Mr. Masaaki Kato	Leader
Mr. Kenji Ito	Mineral Processing / Wastewater Treatment
Mr. Hiroyuki Nagamoto	Chemical Analysis
Mr. Makoto Iwase	Project Cooperation Planning

(2) JICA Bolivia Office

Mr. Tatsuaki Inoue	Assistant Resident Representative
--------------------	-----------------------------------

MINUTES OF MEETING
BETWEEN THE JAPANESE FOURTH PREPARATORY STUDY TEAM
AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT
OF THE REPUBLIC OF BOLIVIA
ON THE JAPANESE TECHNICAL COOPERATION
FOR THE MINING ENVIRONMENT RESEARCH CENTER PROJECT
IN THE REPUBLIC OF BOLIVIA

The Japanese Fourth Preparatory Study Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") visited the Republic of Bolivia from January 11, 2002 to January 22, 2002 for the purpose of clarifying the background of the project proposal made by the authorities concerned of the Government of the Republic of Bolivia (hereinafter referred to as "the Bolivian side"), discussing the concept and scope of the Japanese Project-Type Technical Cooperation for the Mining Environment Research Center Project (hereinafter referred to as "the Project").

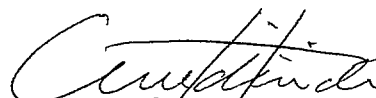
During its stay in the Republic of Bolivia, the Team exchanged views and had a series of meetings on the Project with the Bolivian side.

As a result of the meetings, both sides reached common understandings concerning the matters referred to the documents attached hereto.

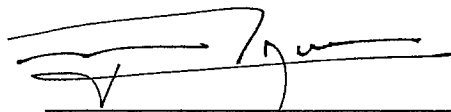
La Paz, January 21, 2002



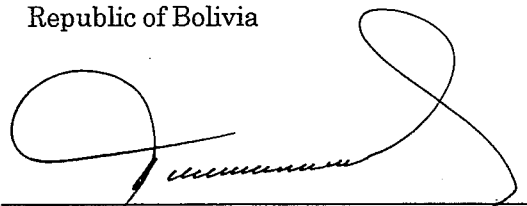
Mr. Masaaki Kato
Leader
Fourth Preparatory Study Team
Japan International Cooperation Agency
Japan



Mr. Sergio Medinaçeli S.
Governor
Potosi Prefecture
Republic of Bolivia



Mr. Bernardo Requena B.
Viceminister of Public Investment
and External Finance
Ministry of Finance
Republic of Bolivia



Mr. Hernan S. Cabrera F.
Viceminister of Environment, Natural
Resources, and Forest Development
Ministry of Sustainable Development
and Planning
Republic of Bolivia