

ANNEX 1

Project Design Matrix (PDM 06.2004) for Coal Mining Technology Enhancement Project at Education and Training Unit for Underground Mining in the Republic of Indonesia

Project Name: Coal Mining Technology Enhancement Project at Education and Training Unit for Underground Mining in the Republic of Indonesia
 Project Site: Sawahlunto, West Sumatra, Republic of Indonesia

Duration: April, 1 *2001 – March, 31 * 2006 (5 Years)

Target Group: Coal Underground Mining Supervisor and technician, and mine inspector

Date: June 7,

2004

Overall Goal	Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Underground coal mining technology is enhanced in the Republic of Indonesia. (The technologies transferred to BOTBT are utilized effectively for management (supervision, inspection), operation and planning of the underground coal mines in Indonesia.)	Underground coal mining technology is enhanced in the Republic of Indonesia. (The technologies transferred to BOTBT are utilized effectively for management (supervision, inspection), operation and planning of the underground coal mines in Indonesia.)	<ul style="list-style-type: none"> Status of employment and job category of coal mining supervisor, mine inspector and technician (BOTBT graduate) 	<ul style="list-style-type: none"> Follow-up survey for BOTBT graduate 	<ul style="list-style-type: none"> Smooth progress of Energy Supply & Demand Scheme National Coal Policy should be implemented. Master Plan on Human Resources development will not be shifted.
BDTBT is able to train coal underground mining supervisors and technicians, and mine inspectors	BDTBT is able to train coal underground mining supervisors and technicians, and mine inspectors	<ul style="list-style-type: none"> Number of C/P and qualification of C/P as trainers in BOTBT Number of coal mining supervisors and technicians, and mine inspectors as trainees completed and registered in BOTBT 	<ul style="list-style-type: none"> Statistic of ETC/MCT Statistic of BOTBT 	<ul style="list-style-type: none"> Trained coal mining supervisor continues to engage in activities related to underground mining technology in respective organization. Central and local Governments will support and cooperate with BOTBT.
1. Administrative system of the project is established. 2. Operation and maintenance system of machinery and equipment of the project is established by Counterpart. 3. Preparation for implementation of the five (5)* courses by Counterpart is completed. 4. The five (5)* courses are being implemented at BOTBT	1. Administrative system of the project is established. 2. Operation and maintenance system of machinery and equipment of the project is established by Counterpart. 3. Preparation for implementation of the five (5)* courses by Counterpart is completed. 4. The five (5)* courses are being implemented at BOTBT	<ul style="list-style-type: none"> 1-1 Assignment of C/P and allocation of BOTBT budget 2- Number of courses, classes and trainees planned 2-1 Inventory, maintenance and utilization status of training machinery and equipment 2- C/P operational and maintenance skill for training machinery and equipment 3-1 Curriculum and educational materials of each course 2- Certificate for Trainer required to teach courses 3- The evaluation of the C/P's skill and knowledge by expert and C/Ps themselves 4- Qualification of C/P 4-1 Number of courses, classes and trainees completed 2- Certificate for Trainees required to complete courses 3- Number of Certificate awarded to trainees and graduates 	<ul style="list-style-type: none"> 1-1 Administrative and account report 2- Records of training activity 2-1 Asset list and check list of training machinery and equipment 2- Evaluation report of operational and maintenance skill of C/P 3-1 Guide line for curriculum and training materials 2- Guide line of Certificate for Trainer 3- Degree of achievement in Competency target 4- Certificate status of each C/P 4-1 Records of training activity 2- Guide line of Certificate for Trainee 3- Academic performance record of trainees and graduates 5-1 Record, documents and materials 6. Draft competency standard at DGGMR 	<ul style="list-style-type: none"> Needs for educational opportunities of underground coal mining technology do not change from the Project start date.
5. The usefulness of the courses implemented at BOTBT is known by the mining companies and organizations related to mining in Indonesia. 6. Proposal of competency standard is prepared	5. The usefulness of the courses implemented at BOTBT is known by the mining companies and organizations related to mining in Indonesia. 6. Proposal of competency standard is prepared	<ul style="list-style-type: none"> 5-1 Number of activities (special courses, seminars, brochures) taken by the BDTBT and its content. 6. Number of proposal 		

- Underground Coal Mining Technology Training Course
- Underground Coal Mining Safety Technology Training Course
- Underground Coal Mining Machinery Technology Training Course
- Underground Coal Mining Electricity Technology Training Course
- Underground Coal Mining Environment Technology Training Course

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Activities	Narrative Summary	Inputs	Indonesia side	Important/Assumptions
<p>1-1 Allocate necessary personnel as planned</p> <p>-2 Clarify the division of work</p> <p>-3 Make plans of activity</p> <p>-4 Prepare facilities and equipment for the project</p> <p>-5 Make Annual Plan of Operation</p> <p>2-1 Make a plan for procurement, installment and maintenance of machinery and equipment</p> <p>-2 Procure, install and maintain machinery and equipment</p> <p>-3 Make operation and maintenance manuals of machinery and equipment</p> <p>4 Evaluate operation and maintenance capability of machinery and equipment</p> <p>3-1 Make a plan of each training course</p> <p>-2 Prepare curriculums and materials for each training course</p> <p>-3 Make a recruiting plan of trainees</p> <p>-4 Recruit trainees</p> <p>4-1 Train C/P to acquire necessary knowledge for lecture of each training course and give lectures</p> <p>-2 Train C/P to acquire necessary skills to operate machinery and equipment for exercises of each course and give exercises</p> <p>-3 Evaluate each training course</p> <p>4 Conduct follow-up survey for graduated trainee</p> <p>-5 Train C/P by the OJT at BDTBT facilities and Ombilin mine.</p> <p>5-1 Investigate issues what the mining industries faced.</p> <p>-2 Hold special courses required by coal mining companies and organizations related to mining.</p> <p>-3 Hold the seminars intended for mining companies and organizations related to mining</p> <p>-4 Prepare document useful for the mining companies and organizations related to mining that have intention to develop underground mining.</p> <p>6-1 Survey and consolidate the Japanese competency standard.</p> <p>-2 Prepare competency standard draft</p>	<p>1. Dispatch of Long-term experts (Total 7 fields of expertise)</p> <ul style="list-style-type: none"> • Team Leader Underground Mining Technology • Coordinator • Underground Mining Safety Technology • Underground Machinery/Electricity Technology • Underground Environmental Technology <p>2. Dispatch of Short-term expert</p> <p>3. Counterpart Training in Japan 1-3 people/year</p> <p>4. Provision of education materials and equipment</p> <ul style="list-style-type: none"> • Material and equipment for Underground Mining Technology Training • Material and equipment for Underground Safety Technology Training • Material and equipment for Underground Mechanical Technology Training • Material and equipment for Underground Electrical Technology Training • Material and equipment for Underground Environmental Technology Training • Dummy gallery for training purpose • Administrative materials and audio visual facility • Vehicles for local transport of expert • Others (if necessary Project Center) 	<p>Japanese side</p> <p>1. 1</p> <p>1. 1</p> <p>1. 1</p> <p>1. 1</p> <p>1. 1</p>	<p>Indonesia side</p> <p>1. Assignment of full-time counterparts</p> <p>2. Allocation of local portion of expenditure</p> <p>3. Provision and maintenance of building, facility, laboratory, equipment, etc.</p> <ul style="list-style-type: none"> • Office for Japanese experts • Classroom, Meeting room, Library, Exercise room, Warehouses for equipment, etc. • Dormitory for trainees <p>4. Provision of educational materials and equipment besides Japanese provision</p> <p>5. Privileges for Japanese experts, import tax exemption for provision of educational materials and equipment from Japanese side and carried materials by Japanese Expert</p>	<p>Important/Assumptions</p> <ul style="list-style-type: none"> • Trainee C/P continue to teach and assist courses at BDTBT. • Appropriate number of trainee continuously applies to BDTBT recruitment • Training courses are reviewed and upgraded continuously. <p>Pre-conditions:</p> <ol style="list-style-type: none"> 1. Facilities and Equipment in the Project site should be prepared by Indonesian side before N.O. is made. 2. Ministry of Energy and Mineral Resources should support BDTBT. 3. ET/ACMR should assist the recruiting activity of trainee. 4. Excellent Indonesian lecturer and staff should be prepared for C/P.

Note:

- Certificate for C/P shall be issued by ECTMCT and JICA.
- Certificate for trainees shall be issued by ECTMCT.

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EVALUATION GRID

	Data Needed	Data Sources	Data Collection Methods
The degree of the Overall Coal (Forecast)	<p>1. Are the BDTBT graduates being engaged in the job related to underground coal mining? What kind of job are they being engaged in ?</p> <p>2. Have the technologies trained at BDTBT been utilized by the coal mines and DINAS?</p>	<p>Follow-up survey for BDTBT graduates</p> <p>Follow-up survey for BDTBT graduates Evaluations by coal mines and DINAS</p>	<p>Materials Review Interviews with C/P, long-term experts, mines, DINAS</p> <p>Materials Review Interviews with C/P, long-term experts, mines, DINAS</p>
Achievement of the Plan	<p>1. Have the C/Ps been able to execute the planning, management and training in the field of their expertise for themselves?</p> <p>1. How many supervisors, technicians and mine inspectors were trained at BDTBT?</p> <p>1. Are the BDTBT's training courses estimated to be useful for their supervisors and technicians by the underground coalmines? 2. Are the BDTBT's training courses estimated to be useful for their supervisors and technicians by the coalmines, which were scheduled underground operation? 3. Are the BDTBT's training courses estimated to be useful for their supervisors and technicians by the DINAS? 4. Are the BDTBT's training courses estimated to be useful by the companies and /or organization, which sent trainees?</p>	<p>Evaluation by long-term experts Self evaluation by C/P (Evaluation by C/P----BDTBT's result of questionnaire to the trainees) Training Record of BDTBT</p> <p>Follow-up survey for BDTBT graduates Evaluation by the organizations that dispatched the trainees</p>	<p>Interviews with, and/or questionnaires to the C/Ps, long-term experts, mines and DINAS Materials review</p> <p>Materials review Interviews with, and/or questionnaires to the C/P sand long-term experts</p>
The degree of achievement of the Output	<p>1-1. How many allocation plans are there for C/Ps and Japanese experts prepared by the Project? And as for the plan at the present? • If there are some changes among the plan, what are the reason for changes? • Were the C/Ps and Japanese experts allocated according to each plan? (timing, the number) • Were the C/Ps and Japanese experts (including short-term experts) adequate to their post, both in quality and quantity? • Did bad influences by the defect of the C/P and /or experts allocation arise? • Will the Plan be achieved by the end of the Project? 1-2. • How are local costs, facilities and equipment planned? • Were there big changes in comparison with the original plan? What were the reasons? • Were facilities, equipment and local cost arranged as planned? • Were there any big changes in the original plan itself?</p>	<p>BDTBT's plans and record Monitoring and evaluation report Project Annual report (or Quarterly report)</p>	<p>Materials review Interviews with, and/or questionnaires to the C/P sand long-term experts</p>

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	<ul style="list-style-type: none"> • Are local cost, facilities and equipment adequate both quality and quantity? • Did bad influences by the defect of local cost, facilities and equipment arise? • Will the Plan be achieved by the end of the Project? <p>2-1 • What kind of plan was settled on about the operation and maintenance for equipment every year?</p> <ul style="list-style-type: none"> • Have the equipment been utilized and maintained based on plan? • Have the manuals and records on operation and maintenance of the equipment been prepared? <p>2-2 • Has enough budget for operating and maintaining the equipment been allocated and disbursed?</p> <p>2-3 • How have the technology transfer on operating and maintaining the equipment been transferred?</p> <ul style="list-style-type: none"> • How much knowledge of operating and maintaining the acquired by each C/P? <p>3 • Have the technical transfer progressed according to the original Plan of Operations?</p> <ul style="list-style-type: none"> • Were those sufficient both in quality and quantity? • Were the curriculum prepared? Were the contents sufficient? • Have C/Ps the adequate qualification as trainer? • Were the plans of training made appropriately? <p>4 • Does each C/P utilize the technology transferred adequately?</p> <ul style="list-style-type: none"> • How many training courses were held? • How many trainees did attend the training courses? • Who did dispatch the trainees? • Did the trainees acquire the Certificate? And how much Certificate were given? • OJT carried out outside of BDTBT (Number, Member) <p>5 • Public information activities aimed to get common knowledge on usefulness of BDTBT's training courses. And response from the organization concerned.</p> <p>6 • Proposal of competency standards</p> <ul style="list-style-type: none"> • Number of Proposal and the contents • Adoption or Rejection as standards <ul style="list-style-type: none"> • The number of experts (long-term, short-term) and their expertise. • The number of C/P and their expertise. • Equipment provided and expense. • Local cost. • C/P training in Japan. 	<ul style="list-style-type: none"> • Are local cost, facilities and equipment adequate both quality and quantity? • Did bad influences by the defect of local cost, facilities and equipment arise? • Will the Plan be achieved by the end of the Project? <p>2-1 • What kind of plan was settled on about the operation and maintenance for equipment every year?</p> <ul style="list-style-type: none"> • Have the equipment been utilized and maintained based on plan? • Have the manuals and records on operation and maintenance of the equipment been prepared? <p>2-2 • Has enough budget for operating and maintaining the equipment been allocated and disbursed?</p> <p>2-3 • How have the technology transfer on operating and maintaining the equipment been transferred?</p> <ul style="list-style-type: none"> • How much knowledge of operating and maintaining the acquired by each C/P? <p>3 • Have the technical transfer progressed according to the original Plan of Operations?</p> <ul style="list-style-type: none"> • Were those sufficient both in quality and quantity? • Were the curriculum prepared? 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And response from the organization concerned.</p> <p>6 • Proposal of competency standards</p> <ul style="list-style-type: none"> • Number of Proposal and the contents • Adoption or Rejection as standards <ul style="list-style-type: none"> • The number of experts (long-term, short-term) and their expertise. • The number of C/P and their expertise. • Equipment provided and expense. • Local cost. • C/P training in Japan. 	<p>BDTBT's plans and record</p> <p>Monitoring and evaluation report</p> <p>Project Annual report (or Quarterly report)</p> <p>Manuals</p> <p>BDTBT's plans and record</p> <p>Project Annual report (or Quarterly report)</p> <p>Guideline for curriculum and training materials.</p> <p>BDTBT's plans and record</p> <p>Monitoring and evaluation report</p> <ul style="list-style-type: none"> • BDTBT's Record and materials • Interest of the organizations • Proposals • Opinion of the related person <p>BDTBT's plans and record</p> <p>Monitoring and evaluation report</p> <p>Project Annual report (or Quarterly report)</p>	<p>Materials review</p> <p>Interviews with, and/or questionnaires to the C/Ps and long-term experts</p> <p>Materials review</p> <p>Interviews with, and/or questionnaires to the C/Ps and long-term experts</p> <p>Materials review</p> <p>Interviews with, and/or questionnaires to the C/Ps and long-term experts</p> <p>Materials Review</p> <p>Interviews to C/P, mines, DINAS etc</p> <ul style="list-style-type: none"> • Materials Review • Interviews to the long-term expert and related Directorate <p>Materials review</p> <p>Interviews with the C/Ps and long-term experts</p>
(Achievement of the Plan)					

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	Objective Verification Indicator	Necessary Information Data	Data Collection Methods
Progress condition of the activities	Were activities conducted as planned?	BDTBT's plans and record Monitoring and evaluation report Project Annual report (or Quarterly report)	Materials review Interviews with, and/or questionnaires to the C/P s and long-term experts
The implementation of the project monitoring	<ul style="list-style-type: none"> • Has the structure of the monitoring prepared and being done as planned? • Have the result of the monitoring been transmitted to the whole of the Project? • Have the result of the monitoring been reflected on the activities? Were the PDM and/or the detail activities modified? • How has the Project coped with the change in the Important Assumptions? • Were the lines of communication between the experts and C/Ps established? • How has the Project been coping with the problem between C/Ps and the experts? • Have the result of the meeting improved the project activities? Are there concrete examples? • Do the C/Ps participate in the Project independently and actively? • Do the underground coalmines , coalmines scheduled underground operation and the local government/self-government of the coal mining area understand the contents of the technology transfer? And do they cooperate the Project positively? • Have the executive of the Implementing Agency participate in the Project activities aggressively? • Have the disbursements of the carried out securely? • Has the Implement Agency allocated C/Ps as planned, and attention in such the way to prevent the hindrance for the project management? 	BDTBT's plans and record Monitoring and evaluation report Project Annual report (or Quarterly report)	Materials review Interviews with, and/or questionnaires to the C/P s and long-term experts
Relationship between the experts and C/Ps	<ul style="list-style-type: none"> • Were the lines of communication between the experts and C/Ps established? • How has the Project been coping with the problem between C/Ps and the experts? • Have the result of the meeting improved the project activities? Are there concrete examples? • Do the C/Ps participate in the Project independently and actively? 	The names, substances and frequency of meetings The comment of the C/P and long-term experts.	Interviews with, and/or questionnaires to the C/P s and long-term experts
Were beneficiaries interested in the Project?	<ul style="list-style-type: none"> • Do the underground coalmines , coalmines scheduled underground operation and the local government/self-government of the coal mining area understand the contents of the technology transfer? And do they cooperate the Project positively? 	Needs survey done by BDTBT Investigation report by short-term expert in 2003	Materials review Interviews with the C/P sand long-term experts
Ownership of the project, Indonesia side	<ul style="list-style-type: none"> • Have the executive of the Implementing Agency participate in the Project activities aggressively? • Have the disbursements of the carried out securely? • Has the Implement Agency allocated C/Ps as planned, and attention in such the way to prevent the hindrance for the project management? 	Evaluation by C/P leader and Chief Adviser Monitoring and evaluation report Project Annual report (or Quarterly report)	Materials review Interviews with, and/or questionnaires to the C/P s and long-term experts

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Five Criteria	Evaluation		Basis for Judgment	Data Needed	Data Source	Data Collection Methods
	Main Questions	Sub-questions				
<p>Relevance (Consistency with the needs of the recipient country. Does it have relevance as assistant activities of Japan?)</p>	Is the Overall Goal in line with the national policy of Indonesia?			<ul style="list-style-type: none"> Is there any change in the government strategy which makes mining the key industries of the country? Has the policy (e.g. deregulation) that promotes mining investment been evolved? What is government requesting from this project at present? 	<ul style="list-style-type: none"> National Energy Policy National Coal Policy The policy of MEMR 	<ul style="list-style-type: none"> Materials review Interviews with Executive of MEMR*
	Was the selection of the target group was suitable?	<ul style="list-style-type: none"> Are the needs for the BDTBT's training courses high? Is the scale of the target group adequate? 		<ul style="list-style-type: none"> Perceptions of mines, DINAS and educational institute Perceptions of C/P The ratio the target group compared to the employees related to U/G coal mining Opinion of the involved parties The interest of the mines other than U/G coal mine and educational institute etc to the Project Opinion of the involved parties 	<ul style="list-style-type: none"> Needs survey done by BDTBT Management of mines, DINAS C/P MEMR staff Management of coal mines and DINAS 	<ul style="list-style-type: none"> Materials review Interviews Questionnaires Materials review Interviews Questionnaires
	Can we expect the ripple effect on any people except for the target group?				<ul style="list-style-type: none"> C/P MEMR staff Management of mines and universities 	<ul style="list-style-type: none"> Interviews Questionnaires
	Does the Project Purpose agree in the needs on the Indonesia side?	<ul style="list-style-type: none"> Have the aspirations of the mining industries to develop the underground coalmines been risen? What are the mining industries requiring from the Project to improve the mining technology? 		<ul style="list-style-type: none"> Opinion of the involved parties 	<ul style="list-style-type: none"> MEMR staff C/P and Long-term experts Management of mines and DINAS 	<ul style="list-style-type: none"> Materials review Interviews Questionnaires
	Does it have validity as a Japanese government undertaking?	<ul style="list-style-type: none"> Is it in line with the Japanese assistance policy? Is there comparative predominance of the Japanese technology? 		<ul style="list-style-type: none"> Relevance with the Japanese important assistance field for the Indonesia. Relevance with the Country specific/Project Plan of JICA The technological level of Japan in the field of remote sensing 	<ul style="list-style-type: none"> Assistance policy for Indonesia The Country specific/Project Plan of JICA Long-term experts MEMR staff, universities 	<ul style="list-style-type: none"> Materials Review Interviews

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Five Criteria	Evaluation		Basis for Judgment	Data Needed (as per Performance Table)	Data Source (as per Performance Table)	Data Collection Methods
	Main Questions	Sub-questions				
Effective ness (Can we get expected effect by the execution of the Project? Can we say that the Project is effective?)	Was the Output achieved?	Have the C/P been able to manage their training course?	Expert's evaluation criteria	• The degree of acquirement of knowledge and practice • Opinion of involved parties	Monitoring and evaluation report Documentations of joint Coordinating Committee Project annual report(or Quarterly Report) Self-evaluation by C/P Evaluation by long-term experts	Materials review Interviews Questionnaires
	Is the BDTBT able to train underground supervisors ,and mine technicians ,and mine inspectors ?	Have the organizations that dispatch trainees satisfied the training? Has the equipment been utilized? Have the Japanese technologies utilized in the training courses.				
Have the Project Outputs contributed to the achievement of the Project Purpose?	Have the proposals been utilized for the qualification standard s ? Are there any other contributing factors beside the Project?	Is a numbers of people related to U/G mining getting to know the usefulness of the training?	• Evaluation by the organizations • The Equipment use for the training courses and the frequency of use • Contents of technology transfer and curriculums	• Management of the mines and DINAS • Trainees • Training records • C/P, Experts • Training materials • C/P, Experts	• Interviews • Questionnaires • Materials review • Interviews • Materials review • Interviews	Interviews Questionnaires
		Have the trained C/Ps continue to teach and assist courses at BDTBT? (Is there any change with the external condition?)				
Were there any factors that obstruct the achievement of the Project Purpose?	Are there any other contributing factors beside the Project?	Have the proposals been utilized for the qualification standard s ?	• Opinion of the involved parties • Qualification standard prepared/being discussed	• Qualification standards • MEMR staff • Experts	Materials review Interviews Questionnaires	Materials review Interviews Questionnaires
		Do the trained C/Ps continue to teach and assist courses at BDTBT? (Is there any change with the external condition?)				
Were there any factors that obstruct the achievement of the Project Purpose?	Do the trained C/Ps continue to teach and assist courses at BDTBT? (Is there any change with the external condition?)	Do the trained C/Ps continue to teach and assist courses at BDTBT? (Is there any change with the external condition?)	• Job separation rate • Reasons for job separation	• BDTBT's records • C/P, Experts	Materials review Interviews	Materials review Interviews
		Do the trained C/Ps continue to teach and assist courses at BDTBT? (Is there any change with the external condition?)				

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		<ul style="list-style-type: none"> Have the appropriate number of trainees been applying to BDTBT recruitment? (Is there any change with the external condition?) 		<ul style="list-style-type: none"> Number of training applications 	<ul style="list-style-type: none"> BDTBT's records C/P, Experts 	Materials review
		<ul style="list-style-type: none"> Are there any other influences? 		<ul style="list-style-type: none"> Opinion of involved parties Implementation process information 	<ul style="list-style-type: none"> C/P Monitoring report 	<ul style="list-style-type: none"> Materials review Interviews

*2 MEMR ... Ministry of Energy and Mineral Resources

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	Evaluation Questions		Basis for Judgment	Data Needed	Data Source	Data Collection Method
	Main Questions	Sub-questions				
Efficiency (Was the Project efficient?)	<ul style="list-style-type: none"> Were the timing of the Inputs adequate both in quality and quantity from the viewpoint of achieved Outputs? 	<ul style="list-style-type: none"> Were the number of experts, fields of expertise and the periods of dispatch adequate? Were the number and type of equipment, and the timing of setting adequate? 	As for the actual results, comparison between the plan and results is done	<ul style="list-style-type: none"> Actual results of dispatch Level of knowledge and technology The degree of effort and enthusiasm to transfer the technologies. The opinion of persons/parties concerned Actual results of equipment Condition of equipment utilization The opinion of persons/parties concerned 	<ul style="list-style-type: none"> Actual result table C/Ps Experts 	<ul style="list-style-type: none"> Materials Review Questionnaire Interviews
		<ul style="list-style-type: none"> As for the C/P training in Japan, were the number of trainees, and field, contents, period and timing of training adequate? As for the C/Ps, number, are the arrangement and competence for the task adequate? 				
In comparison with similar project, were the cost adequate?	As for the building and facilities, were there any problems with quality, size or convenience? Was the size of Project cost adequate?	As for the actual results, comparison between the plan and results is done Comparison with the similar project	<ul style="list-style-type: none"> The budget and actual results of local cost in each year The opinion of persons/parties concerned. 	<ul style="list-style-type: none"> Equipment location map. C/Ps Experts 	<ul style="list-style-type: none"> Direct observation Materials Review Questionnaire Interviews 	
	<ul style="list-style-type: none"> Were the total cost input adequate? 					<ul style="list-style-type: none"> Total cost input The item of Outputs, number of beneficiaries

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	Were there any factors that obstruct the efficiency?			<ul style="list-style-type: none"> • The opinion of persons/parties concerned 	<ul style="list-style-type: none"> • Monitoring and Evaluation Report • Project performance report • C/Ps, Experts 	<ul style="list-style-type: none"> • Materials Review • Questionnaire • Interviews
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	Evaluation Questions		Basis for Judgment	Data Needed	Data Source	Data Collection Method
	Main questions	Sub-questions				
Impact (Is there indirect or ripple effect by the project execution?)	Will the Overall Goal be achievable?	Will the technologies transferred be utilized at U/G coal mines and DINAS? Are there any requests for the training contents and/or courses?		• Opinion of Involved Parties	• Management of mines and DINAS • C/P	• Interviews • Questionnaires
	Are there other ripple effects?	Are there any requests for the training contents and/or courses?		• Request by the involved parties	• Management of mines and DINAS • C/P	• Interviews • Questionnaires
		Has the contents and/or methods of BDTBT's training been introduced to the training carried out mines and/or DINAS. Do the other mining-training centers and/or educational institutes introduced the training contents or methods of BDTBT?		• Situation of the technical training carried out mines and DINAS	• MEMR staff • Management of mines and DINAS • C/P	• Interviews
		Are the researches and development in U/G coal mining technologies progressed at the universities or research institute?		• Situation of the technical training and instructions at the other institutes.	• MEMR staff • Universities • C/P	Interviews
	Does the Project contribute highly to the Impact produced?	Is there demarcation line with respect to other related institutes, and are there synergy effects? How do the former trainees and their organizations the effects of the training?		• Situation of researches and development in U/G coal mining technologies • Role of related institutes • Opinion of involved parties	• MEMR staff • Universities • C/P • Experts	Interviews
	Are there unexpected positive and/or influence those are not written in the PDM?			• Evaluation by involved parties	• Former trainees • Management of mines and DINAS • C/P	Interviews Questionnaires
				• Opinion of involved parties	• MEMR staff • C/P, Experts	Interviews

ANNEX 2

	Evaluation Questions		Basis for Judgment	Data Needed	Data Source	Data Collection Method
	Main Questions	Sub-Questions				
Sustainability (Does the effect last after cooperation is finished?)	Is the positioning of the BDTBT as the U/G mining technology training center clear?	Government support for organization and systems (forecast).		<ul style="list-style-type: none"> The current situation of the policy for promoting the underground mining The promotion of establishing the qualification standard Role of the BDTBT Opinion of involved parties 	<ul style="list-style-type: none"> National coal policy MEMR executives 	<ul style="list-style-type: none"> Materials Review Interviews
	Does the organization has the ability to maintain the project?	<p>The support/cooperation of the related organization and/or industries.</p> <p>Will the U/G mines increase?</p> <p>Do they has management ability</p>		<ul style="list-style-type: none"> Situation of study on the development of new U/G mines Opinion of involved Parties Is the function of each division define? Is the arrangement of C/Ps proper to carry out activities smoothly? Will the C/Ps be able to work continuously, after the project completion? Have the results of project monitoring reflected in the Project? Opinion of involved part 	<ul style="list-style-type: none"> MEMR executives DINAS executives Management of mines Long-term coal supply plan MEMR staff Management of mines and DINAS Management Plan Monitoring Report C/P Experts 	Interviews
The fixity of the technology, and the structure of diffusion.	Are the financial conditions sufficient?	Are the financial conditions sufficient?		<ul style="list-style-type: none"> Will the budget which is appropriate for carrying out the Project activities smoothly be secured Will the Agency or the Government continue financial support after the completion of the Project Opinion of involved parties Independence source of revenue securing plan. 	<ul style="list-style-type: none"> Table of the budget MEMR executive C/Ps Experts Long term financial plan MEMR, C/Ps, Experts 	<ul style="list-style-type: none"> Materials Review Interviews
	Does Agency examine the method which creates fund and leads the Project to achieve the Overall Goal? Have the C/Ps been able to carry out their courses of training?	<ul style="list-style-type: none"> Does Agency examine the method which creates fund and leads the Project to achieve the Overall Goal? Have the C/Ps been able to carry out their courses of training? 	<ul style="list-style-type: none"> Comparison with before and after 	<ul style="list-style-type: none"> Evaluation by the Experts. Self evaluation by C/Ps 	<ul style="list-style-type: none"> Monitoring and Evaluation Report Experts, C/Ps 	<ul style="list-style-type: none"> Materials Review Interviews

ANNEX 2

				<ul style="list-style-type: none"> • Existence of mutual training within the Agency • Opinion of involved parties 	<ul style="list-style-type: none"> • MEMR executives, C/P leader 	<ul style="list-style-type: none"> • Materials Review • Interviews
	Does transferred technology be extended within the Implementing Agency?			<ul style="list-style-type: none"> • Opinion on management and maintenance • Is the structure of the replacement and/or expansion of facilities and equipment examined 	<ul style="list-style-type: none"> • C/Ps, Experts • MEMR executives, C/P leader 	<ul style="list-style-type: none"> • Questionnaire • Interviews
	Have the equipment been managed and maintained adequately?			(The factor that obstruct the Sustainability which becomes clear in the investigation process)	—	—
	Others					

<Long Term Expert>

No	Name	Technical Field	Assigned Term
1	Hiroaki TATSUNO	Team Leader	01 04/01 - 04 03/31
2	Masahiro TSUTSUI	Project Coordinator	01 04/01 - 03 06/30
3	Hiroshi KIZAKI	Underground Coal Mainlining	01 04/01 - 03 03/31
4	Tsuyoshi KAKITA	Underground Coal Mining Safety	01 04/01 - 06 03/31
5	Ryoji MURASE	Underground Coal Mining Machinery	01 04/24 - 03 04/23
6	Koji HISADOMI	Underground Coal Mining Electricity	01 06/01 - 06 03/31
7	Yoshihisa SHIMODA	Underground Coal Mining Environment	02 04/01 - 06 03/31
8	Katsuhiko SEO	Underground Coal Mining / Team Leader	03 04/01 - 06 03/31
9	Mamoru IZUMI	Project Coordinator	03 06/14 - 05 03/31

<Short Term Expert>

No	Name	Technical Field	Assigned Term
1	Tadashi SUZUKI	Safety (Gas and coal dust explosion experiment)	01 11/26 - 11/30
2	Fumio KIMURA	Safety (Oxygen berating apparatus)	01 12/06 - 12/11
3	Hajime NOBATA	Mining (Underground coal mining design)	02 01/21 - 02/08
4	Masao HOTTA	Safety (Gas chromatograph operation)	02 02/19 - 02/27
5	Hisao TORITSUKA	Mining (Side dump operation)	02 03/05 - 03/08
6	Mitsuaki ABE	Mining (Boring machine operation)	02 03/12 - 03/15
7	Tsunemori CHITOSI	Safety (Centralized monitoring system technology)	02 03/18 - 04/09
8	Masafumi UEHARA	General (Management and mining law, qualification System for U/G coal mine)	02 09/08 - 11/08
9	Toshiharu ISHII	Machinery (Preservation-maintenance technique)	02 09/16 - 09/26
10	Masahiro HIROTA	Safety (Mine fast-aid)	02 11/09 - 11/23
11	Osamu SUZUKI	Safety (Dust measurement technology)	03 01/18 - 01/26
12	Kagemi UCHIDA	Mining (Mine site management technology)	03 01/25 - 02/02
13	Kazuhiko FURUKAWA	Safety / Mining (Development and utilization of coal seam gas)	03 02/02 - 02/09
14	Koichi TAKAYA	General (Mine inspector technology)	03 02/15 - 02/23
15	Nobuhiro KOYANAGA	Environment (Preparation plant system and water treatment model)	03 03/09 - 03/22
16	Akitoshi SAITO	Environment (Coal analyzing technology)	03 07/14 - 07/17
17	Mitsuo YAMASHITA	Safety (Mine rescue training)	03 09/08 - 09/18
18	Ken GOTO	Mining (Gas and rock burst)	04 02/09 - 02/13
19	Kiyofumi OKADA	Environment (Coal utilization)	04 02/24 - 02/26
20	Hiroshi TAKAMOTO	Mining (Feasibility study technology)	04 08/09 - 08/18
21	Yoshiya SHIBATA	Mining (Geological analysis and survey technology)	04 08/31 - 09/08
22	Tetsuro ESAKI	Environment (Mine pollution technology)	04 10/25 - 10/29
23	Kikuo MATSUI	Environment (Subsidence)	04 12/21 - 12/23
24	Yuji OGATA	Safety (Technology of explosion proof examination)	05 01/29 - 02/04
25	Masakatsu MIZUNO	Safety (Underground safety and human error)	05 02/12 - 02/17
26	Hideaki NAKAGAWA	Environment (Abandoned mine use)	05 03/03 - 03/08
27	Yoshiya SHIBATA	Mining (Geological construction analysis and mapping technology)	05 06/05 - 06/18
28	Katsusuke SAKAI	Safety (Mine inspection technology)	05 08/27 - 09/03
29	Masahide MURAKA	Electricity (Monitoring and control technique)	05 09/05 - 09/11
30	Hirifumi NAGATSUKI	Environment (Mineral processing technique)	05 09/26 - 10/03
31	Takashi IRIE	Machinery (Transportation facilities planning)	05 10/03 - 10/09
32	Hiroshi TAKAMOTO	Mining (Mine design technology for new coal mine)	05 11/12 - 11/22
33	Kikuo MATSUI	Mining (Rock mechanism and supporting technology)	05 11/19 - 11/26
34	Tetsuro ESAKI	Environment (Pollution prevention technique)	05 11/27 - 12/03

EQUIPMENT LIST (More than JP Yen 1,600,000 Purchased in Japan)

ANNEX 4

No.	Year	Name of equipment	Maker	Quantity	Unit Price	Total Price
1	2001	MINI-PLANT FOR COAL SELECTION (COMPOSITION)	Kobutsu Kaiseki Kenkyusho	1	6,900,000	6,900,000
		FEED HOPPER		1	PCE	
		FEED CONVEYOR		1	PCE	
		JIG SEPARATOR		1	PCE	
		AIR ROTARY VALVE		1	PCE	
		AIR BLOWER		1	PCE	
		RECEIVER TANK		1	PCE	
		PRODUCT HOPPER		1	PCE	
		CIRCULATE WATER TANK		1	PCE	
		CIRCULATE WATER PUMP		1	PCE	
		OPERATION CONTROL PANEL		1	PCE	
		SPARE PARTS, CONSUMABLES		1	PCE	
2		Monitoring system Consist of:	Matsushita Electronic	1	7,580,000	7,580,000
		Control center minces		2	PCS	
		Crt monitor RDS 17x		3	PCS	
		Computer 2647-4 EE		1	PCE	
		Computer 6579- TAJ		1	PCE	
		Printer BJF- 6600		1	PCE	
		Connector for coaxial cable		1	PCE	
		Software		1	SET	
3		ITV monitoring system Consist of:	Matsushita Electronic	1	1,880,000	1,880,000
		CRT monitor for ITV CM-1472		2	PCS	
		Color camera MIVCA-941		1	PCE	
		Color camera MIVCA- 011		1	PCE	
4		Local control panel	Matsushita Electronic	2	1,890,000	3,780,000
5		Sensor Consist of :		1	1,880,000	1,880,000
		CH4 sensor MIIE-CH4		2	PCS	
		CO sensor MIIE-CO		2	PCS	
		Sensor for smoke MIIE-FD		1	PCE	
		Speed sensor for belt conveyor		2	PCS	
		MIIE-PS2		1	SET	
6		VIDEO TAPE (SAFETY No.1 & No.2)		1	4,200,000	4,200,000
7		Gas Roof-Falls Combustion	Experiment Unit L10M	1	2,881,000	#VALUE!
8		Dust Monitor	LD-1E	1	2,158,000	2,158,000
9		(KOKEN BORING MACHINE) FS-30 (III) Boring Machine Power unit for FS-30 Boring Machine (MITSUI MIIKE MACHINERY)	Koken	1	4,000,000	4,000,000
				1	1,700,000	1,700,000
10		MHP Long wall Plant (Scale Model)		1	2,265,000	2,265,000
11		Road Header (Scale Model)		1	1,887,000	1,887,000
12		Axial Fan	MFA-60P1-SG32	1	2,137,000	2,137,000
13		Axial Fan	MFA-60P1-SG4	1	2,719,000	2,719,000
14		Hoist	MEH-F20	1	8,560,000	8,560,000
15		Side Dump Loader	1 Model : EIMCO 612 H	1	34,127,500	34,127,500
		Overall length- bucket in roll-back position	3578 mm			
		Overall length- bucket in roll-back position	3578 mm			
		Wheel Base	2186 mm			
		Width Over Track-230 mm(9") pads	914 mm			
		Width - centre to bucket discharger lip	711mm			
		Width - centre to bucket side plate	533 mm			
		Reach - maximum forward dump position	1156 mm			
		Height-caging	1403 mm			
		Height - Maximum-bucker level	3578 mm			
		Discharge height-maximum-forward	20123 mm			
		Discharge height -at maximum forward tip	1829 mm			
		Headroom 45 bucket side tip	3112 mm			
		Height over bucket - rolled back position	937 mm			
		Height over bucket-floor position	797 mm			
		Lowest position of bucket	356 mm			
		Ground clearance	127 mm			
		Operating weight : 4382 Kg	4382 Kg			
		Bucket Type : Side Dump Type				
		Bucket Capacity	340 L			
		Hydraulic Fluid Pressure :				
		Traction : 12.4 Mpa Services : 11.0 Mpa				
		Hydraulic fluid : Suitable for fire resistant fluids				
		Traction motors	5 cylinder radial			
		Speed of machine	3.86 km/h			
		Breakout force at bucket tip	2176 Kg			
		Motor (Pressure- resistant & flameproof type:	30 kw			
		CONTROL BOX				
		Magnetic switch box				
		Model : Pressure- resistant & flameproof type (Flameproof for coal mine)				
		Power :	AC 380 V 50 Hz 3 Phase			
		Control switch box				
		Model : Certificated product of welding standard & structure for flameproof switch box				
		Power :	AC 380 V 50 Hz 3 Phase			
		Cab tire cable standard :				
		Insulator & sheath material standard :	Accordance with PNCT			
		Structure standard	Accordance with 3 class			
		Phase conductor	22 mm x 3 pcs			
		Earth conductor	3 mm x 3 pcs			
		Cable length	100 m			
		Power	AC380V 50 Hz 3 Phase			
		Inspected electronic & safety device				
		Accessories				
		Operation manual (English Japanese)	3 set each			
		part catalog	3 sets			
		Additional Special Tools				
		Grease gun	SE035/575 (1 pcs)			
		Monkey wrench	SE035/278 (1 pcs)			
		Pipe wrench	SE035/272 (1 pcs)			
		Pliers	SE035/273 (1 pcs)			
		Screwdriver (minus)	SE035/274 (1 pcs)			

EQUIPMENT LIST (Less than JP Yen 1,500,000 more than 100,000 Purchased in Japan)

No.	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price
1	2001	DIGITIZER (COMPOSITION) KD 5000 AO SIZE DIGITIZER KD 5000 MAIN UNIT 4 BUTTON CURSOR 2 BUTTON STYLERS PEN SETUP MENU SHEET CURSOR HOLDER POWER CABLE STAND RS-232C CABLE	Graftec	1 SET 1 PCE 1 PCE 1 PCE 1 PCE 1 PCE 1 PCE 1 PCE 1 PCE	725,000	725,000
2		PLOTTER (COMPOSITION) JC 800 PLOTTER MAIN UNIT STAND FOR JC 800 EXPANSION MEMORY (8MB) RS-232C CABLE	Graftec	1 SET 1 PCE 1 PCE 1 PCE 1 PCE	448,000	448,000
3		LEG HAMMER (COMPOSITION) 322D(W) X 22H X 108 LEG HAMMER	Furukawa	5 SET	224,000	1,120,000
4		AIR AUGER (COMPOSITION) AA1 AIR AUGER	Furukawa	5 SET	139,000	695,000
5		AIR FLOW DISTRIBUTION ANALYSIS SYSTEM (COMPOSITION) KAZEMARU P733/64/20/W9/17 WINDOWS 98 SECOND EDITION OFFICE 2000 STANDARD OA TAP TRANSFORMER LBP 1810 PRINTER	Ex Japan	1 SET 1 PCE 1 PCE 1 PCE 1 PCE 1 PCE 1 PCE 1 SET	730,000	730,000
6		MOVABLE FIRE PUMP MODEL : P440M	Rabbit	1 SET	189,000	189,000
7		OXYGEN BREATHING APPARATUS OXY.GEM-11	Kawasaki	10 PCS	479,000	4,790,000
8		HIGH PRESSURE OXYGEN CYLINDER		5 PCS	104,000	520,000
9		MANUAL TYPE BOOSTER PUMP (MODEL 200B-1)		1 PCE	1,523,000	1,523,000
10		MODEL-3 TESTER		1 SET	112,000	112,000
11		Back up power supply Mcoups-2K	Mitsushima	1 SET	1,405,000	1,405,000
12		Local control panel MING-011	Ex Japan	1 SET	1,595,000	1,595,000
13		Network cable Consist of : Optical fiber cable(100m) Paired cable (300m) Coaxial cable (250m) Control cable (300m) Tool Cable wire manufacturing Document		1 SET 2 PCS 1 PCE 1 PCE 1 PCE 1 SET 1 SET 1 SET	880,000	880,000
14		Explosive and detonator model	Nippon Kayaku	1 SET	218,000	218,000
15		Air chain block TCR-3000P		1 SET	593,000	593,000
16		SCHMT Hammer	Proceq	1 SET	258,400	258,400
17		Rod set RR 18		2 SETS	103,700	207,400
18		Roof bolter 21250/700 BRLP	Water Air	1 SET	604,000	604,000
19		Gas Detector R-7	Toka	3 SETS	270,000	810,000
20		Automatic Gas Alarm System TC-10M-1	Toka	1 SET	731,500	731,500
21		Grout Boring Pump GP-5	YBM	1 SET	728,000	728,000
22		Manekin 310055	Laerdal	1 SET	388,000	388,000
23		Liquid Crystal Projector VPL-CS2	Sony	1 SET	357,000	357,000
24		Digital Video Camera DCR-PC5E	Sony	1 SET	283,000	283,000
25		Copy Board BF-030S Main Body	Plus	1 SET	123,000	123,000
26		Personal Computer FMV- Bibro NE7/75	Fujitsu	3 SETS	275,000	825,000
27		Gas Explosion Experiment Unit L2M	Ex Japan	1 SET	1,047,600	1,047,600
28		Gas Explosion Experiment Unit L5M	Ex Japan	1 SET	1,134,900	#VALUE!
29		Automatic Level C30 Main Body	Sokkia	2 SETS	127,000	254,000
30		Theodolite DT14F	Sokkia	1 SET	454,000	454,000
31		Total Station SET500s Main Body APS11 (S) Reflect Prism	Sokkia	1 SET 1 SET	1,135,000 128,000	1,135,000 128,000
32		Portable Gas Detector Model : 18 (CH4,0 ~ 10 %)	Riken	2 SETS	218,000	436,000
33		Portable Gas Detector Model : 18 (CH4,0 ~ 100 %)	Riken	1 SET	235,000	235,000
34		Gas Detector RI-85 CO2 Gas Monitor	Ex Japan	2 SETS	218,000	436,000
45		Gas Detector GP-322	Ex Japan	2 SETS	261,900	523,800
36		Gas Detector GX-86A	Ex Japan	1 SET	248,000	248,000
37		Gas Chromatograph Gc-14BPTF Main Body C-R8A Data Processing Unit 676-12138 Oilless Air Compressor Standard Gas (10L) FLM-2 Flame Monitor GC Parts Set	Shimatzu	1 SET 1 SET 1 SET 1 SET 1 SET 1 SET	1,478,400 325,600 158,400 144,000 131,000 114,400	1,478,400 325,600
38		Special Accessories for Dust Monitor. MDM-2 Interface		1 SET	120,000	120,000
39		Dust Collector Sampler PS-43 Main Body	Ex Japan	3 SETS	140,800	422,400
40		Electronic Balance AW-220	Shimatzu	1 SET	251,400	251,400
41		Anemometer ISA-80JA	Sibata	2 SETS	192,000	384,000
42		Barometer PA-1D	Vaisala	1 SET	288,000	288,000
43		Smoke Detector & Relay UHHSD-2184-4	Ueno	1 SET	1,096,000	1,096,000
44		Solenoid Valve Consist of : B-10UTB Cylinder Valve M15DG-8-AE12PRS-M Solenoid Valve		1 SET	104,700	104,700
45		Incoming Panel WP-300	Maeda Electric	1 SET	771,000	771,000
46		Distribution Panel WP-300B	Maeda Electric	1 SET	763,970	763,970
47		Low Voltage Breaker MBX-M40	Maeda Electric	4 SETS	470,250	1,881,000
48		Low Voltage Breaker PCBX-20PV	Maeda Electric	5 SETS	386,800	1,934,000
49		Low Voltage Breaker PCBX-5M-1	Maeda Electric	1 SET	204,000	204,000
50		Low Voltage Breaker PCBX-5M-3	Maeda Electric	7 SETS	124,800	873,600
51		Magnetic Switch MSX	Maeda Electric	2 SETS	563,000	1,126,000
52		Magnetic Switch MSX-Y125	Maeda Electric	1 SET	348,000	348,000
53		Magnetic Switch MX-M60N	Maeda Electric	2 SETS	432,600	865,200
54		Magnetic Switch UHMPMS-50FL	Maeda Electric	1 SET	483,000	483,000
55		SWITCH PRS-6D11	Maeda Electric	2 SETS	196,000	392,000
56		Down Transformer PCT-2N	Maeda Electric	3 SETS	532,500	1,597,500
57		Electrical Cable 600V CVTAZV 400 m		1 SET	777,600	777,600

EQUIPMENT LIST (Less than JP Yen 1,600,000 more than 100,000 Purchased in Japan)

No.	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price
58		Electrical Cable 600V 4PNCT 4C X 50SQ 100 m		1 SET	663.000	663.000
59		Electrical Cable 600V 4PNCT 4C X 38SQ 100 m		1 SET	584.000	584.000
60		Electrical Cable 600V 4PNCT 4C X 8SQ 100 m		1 SET	170.000	170.000
61		Electrical Cable 600V VCT 4C X 5.5SQ 300 m		1 SET	334.000	334.000
62		Electrical Cable 600V VCT 3.5SQ 600 m		1 SET	198.000	198.000
63		Relay Box MSX-Y71	Maeda Electric	5 SETS	120.000	
64		Fluorescent Lamp UPPL-55-1L		3 SETS	192.000	
65		Battery Charger Set YL5240-20N		1 SET	493.000	493.000
66		Hydraulic hoist for Wire Line (Assembling in FS-30)		1 PCE	100.000	100.000
67		MG-15HFVM Drilling Pump	Koken	1 UNIT	987.530	987.530
68		Wire line core barrel assay (H) Inner tube assay (H)		1 PCE	242.000	242.000
				2 PCE	161.000	322.000
69		Submersible Pump EH-1010X	Mitsui	1 SET	1,282.500	1,282.500
70		Hydraulic Support MSP-HH21		20 SET	177.000	3,540.000
71		High Pressure Hose (MITSUI MIJKE MACHINERY) WP350-19X5m		20 PCE	130.000	2,600.000
72		Shield Support (Scale Model) MAM-1	Mitsui	1 SET	1,227.000	1,227.000
73		Axial Fan MFA-60P1-SG42	Mitsui	1 SET	1,505.000	1,505.000
74		TIP RAM SERVICE KIT				
		Coupling (driving) 412B0038		1 PCE	126.000	126.000
		Push button station 627A011		1 PCE	757.000	757.000
		Temperature controller 823A3950		1 PCE	843.000	843.000
		Switich 712A588		2 PCE	168.000	336.000
		Emergency Stop Switch 613A295		1 PCE	522.000	522.000
		Traction Valve 613A296		1 PCE	777.000	777.000
		Service valve 613B1128		1 PCE	555.000	555.000
		Dump Valve 230M (19mm/60mm)		1 PCE	510.158	510.158
75		Socket Wrench MMA-1		1 SET	102.240	102.240
76		Barometer 225-0001	Paulins	1 SET	480.000	480.000
77		Hanging Compass 5 inch X-PLAN460F	Ex Japan	1 PCE	120.000	120.000
78		Planimeter with printer Model : D-25E	Ushikata	1 SET	260.000	260.000
79		pH Meter Model :F-21	Horiba	1 SET	191.000	191.000
80		pH Meter Model : D-25E	Horiba	1 SET	102.600	102.600
81		Turbidity Meter TR-22	Kasaha	1 SET	330.000	330.000
82		Vacuum Pump KTM Mini Pump with Down Transformer	Kaburagi Kagaku	1 SET	112.000	112.000
83		Jar Tester consisting of : AR-234S Main Unit with Tool and Cover	Ashahi	1 SET	400.000	400.000
84		Drying oven ST-120	ALP	1 SET	1,150.000	1,150.000
85		Roll Jaw Crusher 132-D	Ogawa	1 SET	1,111.000	1,111.000
86		Double Roll Crusher 1022-AO	Yosida	1 SET	1,207.500	1,207.500
87		Horizontal Type Brown Crusher 1025-A	Yosida	1 SET	837.500	837.500
88		Platform Scale 250 kg 501-1454	Tanaka	1 SET	160.000	160.000
89		Electric table balance with Down Transformer Model :AF R220	Shinko	1 SET	188.000	188.000
90		Temperature Control Chamber Model :MOV -112P	Sanyo	1 SET	275.000	275.000
91		Electric Muffle Furnace (with IPC Controller) Model :iMKM	SGR	1 SET	980.000	980.000
92		Electric Melting pot furnace with IPC Controller Model : ICKV	SGR	1 SET	950.000	950.000
93		Transportation System consisting of : M type course socket M type course socket Stand Wire	Falheiyu	1 SET		384.000
				2 PCS		
				2 PCS		
				3 PCS		
				1 PCS		
94		Drainage system consisting of : PS type portable pump Air hose Water hose Hose band Hose band Hemp rope Victulic gate valve Stop valve	Mitsui Mining Engi	1 SET		311.000
				1 PCS		
				1 PCS		
				1 PCS		
				2 PCS		
				2 PCS		
				1 PCS		
				4 PCS		
				4 PCS		
95		Survival aspirator with goggle Model:EBA-30		5 SET	135.000	675.000
					Total	#VALUE!

EQUIPMENT LIST (Less than JP Yen 100,000 Purchased in Japan)

No.	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price
1		OPTIONAL ACCESSORIES of Computer aided system		1	SET	23,000
2		OPTIONAL ACCESSORIES of DIGITIZER		1	SET	23,000
				1	SET	18,000
				1	SET	4,500
3		SPARE PART & CONSUMABLE of PLOTTER		5	PCS	43,000
				2	PCS	17,200
				2	PCS	17,200
				2	PCS	17,200
				10	PCS	14,000
				5	PCS	10,000
				5	PCS	10,000
				5	PCS	10,000
				3	PCS	22,200
				3	PCS	9,600
				10	PCS	80,000
4		LEG HAMMER ACCESSORIES		5	PCS	290,000
				10	PCS	55,000
				10	PCS	65,000
				10	PCS	140,000
				10	PCS	160,000
5		AIR AUGER ACCESSORIES		5	PCS	21,500
				5	PCS	37,500
				5	PCS	14,000
				5	PCS	22,500
				20	PCS	46,000
				20	PCS	300,000
				20	PCS	340,000
6		PICK HAMMER (COMPOSITION)	Furukawa	5	PCS	230,000
				10	PCS	2,300
7		AIR FLOW DISTRIBUTION ANALYSIS SYSTEM		1	SET	4,000
		CONSUMABLE		1	SET	28,000
				8	PCS	258,000
				10	PCS	44,000
8		FIRE HOSE		5	SETS	190,000
9		NOZZLE		1	SET	30,000
10		NOZZLE		1	SET	9,600
11		COUPLING		1	SET	9,500
12		SUCTION HOSE		1	SET	93,000
13		BASKET		1	SET	13,000
14		WALVE		3	SET	45,000
15		COUPLING		1	PCS	10,000
16		MINI-PLANT FOR COAL SELECTION (COMPOSITION)		3	PCS	48,000
				1	PCS	53,000
				1	PCS	84,000
				2	PCS	2,400
				2	PCS	2,400
				2	PCS	22,000
				4	PCS	13,200
				1	PCS	11,000
				4	PCS	6,000
				1	PCS	16,000
				5	PCS	37,500
				5	PCS	190,000
17		CO2 SCRUBBER CANISTER		10	PCS	123,000
18		CARBON DIOXIDE ABSORBENT	(KA-LIME)	5	PCS	118,500
19		FACE PIECE		5	PCS	890
20		HARDNESS		10	PCS	3,000
21		O-RING		2	PCS	17,900
22		PRESSURE INDICATOR		2	PCS	100
23		GASKET		5	PCS	1,800
24		CAP		5	PCS	35,800
25		BREATHING TUBE		5	PCS	22,500
26		EXHALATION TUBE		5	PCS	22,500
27		INHALATION TUBE		10	PCS	650
28		VALVE		10	PCS	3,000
29		O-RING		20	PCS	6,000
30		O-RING		5	PCS	35,800
31		BREATHING BAG		2	SETS	28,800
32		POSITIVE PRESSURE SPRINGS		10	PCS	27,000
33		ANTI-FOGGING LIQUID		5	SETS	20,600
34		ICE MAKER		4	PCS	300
35		SPARE PART / CONSUMABLE FOR MANUAL TYPE BOOSTER PUMP		32	PCS	57,600
36		REIGN SPONGE		20	SETS	258,000
37		V-SHAPE PACKING		20	SETS	246,000
38		STEEL TUBE WITH FLANGE	SGP 50A 5000L	20	SETS	26,500
39		STEEL TUBE WITH FLANGE	SGP 100A 5000L	30	SETS	25,600
40		STEEL TUBE	SGP 100A 5000L	40	SETS	2,070
41		CROWN JOINT	N-O TYPE JIS 10K 50 A	80	SETS	2,750
42		CROWN JOINT	N-O TYPE JIS 10 X 100A	3	SETS	13,500
43		T-JOINT	FSGP TEE 50A	1	SET	26,700
44		T-JOINT	FSGP TEE 100 A	1	SET	8,300
45		90 BRANCH	FSGP 90 EL 50 A	1	SET	9,100
46		90 BRANCH WITH FLANGE	FSGP 90 EL 100A	2	SETS	18,000
47		90 BRANCH WITH FLANGE	SGP 50A 2000L	5	PIPES	44,000
48		ADJUSTING PIPES	SGP 100 A 2000 L	5	SETS	21,700
49		ADJUSTING PIPES WITH FLANGE	SGP 100 A 300 L	5	SETS	8,900
50		ADJUSTING PIPES WITH FLANGE	SGP 100 A 300 L	5	SETS	18,400
51		FIRE HYDRANT	FC JIS 10 K	5	SETS	40,300
52		SLUICE VALVE	FC200 TRM-BC6	5	SETS	27,000
53		SLUICE VALVE	FC200 TRM-BC6	5	SETS	56,000
54		VHS COPY		5	UNIT	20,000
55		Reading Clock meter	S-100	2	SETS	26,200
56		Continuity checker		10	SETS	870
57		Lever block	LB015	2	SETS	36,900
		Lever block	LB030	2	SETS	56,300
		Chain block	CB015	2	SETS	36,000
		Chain block	CB-30	2	SETS	56,500
		Air hose	12x100m	5	SETS	22,000
		Air hose	19x100m	5	SETS	28,200
		Air hose	25x 100m	5	SETS	44,800
58		Rock bolt		100	PCS	1,500
59		Plate	Butt 300 butterfly plate	100	PCS	230
		Consist of :	D1D1D136 dome plate	100	PCS	230
61		Resin	Mis lockfast resin capsule	50	SETS	310
62		Cable tie		2	SETS	8,500
63		Tell latex	TT-10	20	SETS	5,300

EQUIPMENT LIST (Less than JP Yen 100,000 Purchased in Japan)

No.	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price				
64		Spare part of Roof Boiler	101- 2LP Piston ring	4	SETS	6,500	26,000			
			101-3 Bearing	4	SETS	3,000	12,000			
			108- 2 Bearing	4	SETS	3,000	12,000			
			109-4 O- Ring	4	SETS	500	2,000			
			111-1P Pinion	1	SET	15,000	15,000			
			111-2 Circlip	1	SET	16,500	16,500			
			112-1 BR relay valve	1	SET	89,000	89,000			
			113-1C Motor Liner	1	SET	75,000	75,000			
			113- 2 Circlip	1	SET	16,000	16,000			
			113-3 Bearing	2	SETS	3,000	6,000			
			113 - 8 O - ring	4	SETS	500	2,000			
			113 - 7 O - ring	4	SETS	500	2,000			
			113 - 8 O - ring	4	SETS	450	1,800			
			115 -1M Chuck	1	SET	8,000	8,000			
			115 -2 N Mechanical Carbon Seat	1	SET	25,000	25,000			
			116 - 2 Seal	2	SETS	250	500			
			116 - 2 M Seal	2	SETS	350	700			
			118 -1 Water Pin	1	SET	5,000	5,000			
			124 - 2 M Bearing	1	SET	3,000	3,000			
			129 -1 Bush	2	SETS	2,000	4,000			
			129 - 2 Bush	2	SETS	2,000	4,000			
			131- 3 O - ring	48	PCS	250	12,000			
			133- 1 Bush	2	SETS	2,000	4,000			
			134-1 O - Ring	4	SETS	300	1,200			
			134 -4LM SEAL	2	SETS	300	600			
			136 - 10 Roll pin	4	SETS	1,200	4,800			
			138 - 2 O - Ring	4	SETS	400	1,600			
			138 - 9 O - Ring	4	SETS	400	1,600			
			139 - 3 LP Liner	4	SETS	1,500	6,000			
			143 - 8 LP O - Ring	1	SET	500	500			
			146 - 2 Handle Grip Assy	1	SET	3,200	3,200			
			148 - 1L Control Knob	2	SETS	2,700	5,400			
			148 - 3 Roll Pin	2	SETS	1,500	3,000			
			148 -4 Roll Pin	2	SETS	1,500	3,000			
			148 - 5 Spring	2	SETS	2,500	5,000			
			149 - 2 Spring	2	SETS	2,500	5,000			
			160 - 10 Piston Seal	4	SETS	1,200	4,800			
			160 - 14 Piston Seal	4	SETS	1,200	4,800			
			160 - 15 Wiper Seal	4	SETS	1,500	6,000			
			160 - 5 Wiper Seal	4	SETS	1,500	6,000			
			160 - 2 Wiper Seal	4	SETS	1,500	6,000			
			160 - 8 Piston Seal	4	SETS	1,200	4,800			
			240 - 2W Seal	2	SETS	2,000	4,000			
			65		ROD		1	SET	93,000	93,000
			66	Spanner	SPZ/25150		1	PCE	4,700	4,700
					SPZ/25150 Tightening Spanner		1	PCE	4,700	4,700
			67	BIT	D4MB -1827 -28 XX		1	PCS	32,700	32,700
D4MB-1827 -28 XX		5			PCS					
68	Dual Respirator	DR -77 -C4		50	SETS	2,200	110,000			
		Spare Filter Q 1 AH		750	SETS	410	102,500			
69		Dual - Proof Goggles		50	SETS	1,440	72,000			
70	Spare Parts of Grout Boring Pump:	Break-Up Tool		1	SET	18,000	18,000			
		Piston Rod Assy		6	SETS	12,000	72,000			
		68 mm Piston Assy		6	SETS	10,000	60,000			
		CP 306810 Piston Rubber		24	SETS	2,500	60,000			
		h-18 V Packing		60	SETS	250	15,000			
		Cylinder Liner		6	SETS	15,000	90,000			
		Valve Seat		12	SETS	1,200	14,400			
		1-1/2 Inch Steel Ball		12	SETS	1,000	12,000			
		Packing Gland		2	SETS	5,200	10,400			
		Lantern Ring		2	SETS	5,600	11,200			
		Packing Guide		2	SETS	980	1,960			
		O- Ring P- 18		4	PCS	80	320			
		O - Ring P-38		8	PCS	100	800			
		O - Ring P - 45		4	PCS	120	480			
		O - Ring G - 60		16	PCS	120	1,920			
		O - Ring G - 65		4	PCS	160	640			
		O - Ring G - 85		6	PCS	180	1,080			
		O - Ring G - 90		4	PCS	250	1,000			
		Lube Sight		1	SET	3,000	3,000			
		Gauge Protect Cover		1	SET	600	600			
V - Belt		2	SETS	1,500	3,000					
71		Manikin		1	SET	388,000	388,000			
72	Consumable part of Manikin:	152200 Disposable Airway	Laerdal	1	SETS	25,300	25,300			
		152400 Manikin Wipe		8	SETS	1,750	14,000			
		315050 Chart Paper		4	SETS	2,450	9,800			
73		Stretcher		1	SET	17,500	17,500			
74		Spare Part of Liquid Crystal Projector:		1	PCE	39,800	39,800			
75		Special Accessories of Digital Camera:		20	SETS	1,600	32,000			
76	Spare Part of Copy Board:	Paper (30 m)		5	PCS	1,100	5,500			
		Board Marker (Black)		5	PCS	90	450			
		Board Marker (Blue)		5	PCS	90	450			
		Board Marker (Red)		5	PCS	90	450			
77		Video Cassette Recorder	Panasonic	1	SET	47,100	47,100			
78		Digital Camera	Olympus	1	SET	51,000	51,000			
79		Scanner	Epson	1	SET	23,000	23,000			
80	Special Accessories :	Trans 22110V 100VA		1	SET	6,300	6,300			
		UPCS-GLX LAN CARD		3	SETS	5,000	15,000			
81	Global Positioning System	MAP410 GPS Receiver	Magellan	2	SETS	66,400	132,800			
		Outer Antenna		2	SETS	20,900	41,800			
		Outlet Power Supply Data Cable		2	SETS	7,700	15,400			
		PC Cable		2	SETS	9,600	19,200			
		PC Reading Soft Data Track		1	SET	14,400	14,400			
82	Global Positioning System	GPS 315 RECEIVER	Magellan	1	SET	34,000	34,000			
		Outlet Power Supply Data Cable		1	SET	3,000	3,000			
		PC Cable		1	SET	6,500	6,500			
		Carrying Case		1	SET	9,800	9,800			
83	Special Accessories of Automatic Level :	Metal Tripod PF A1		2	SETS	21,800	43,600			
		PFA1 Metal Tripod		1	SET	21,800	21,800			
84	Special Accessories of Theodolite:	BC25A Battery Pack		2	SETS	17,000	34,000			
		PFA2 TRIPOD		1	SET	30,000	30,000			
		PFA2 TRIPOD		1	SET	21,800	21,800			
85	Special Accessories of Total Station:	APS11 (S) Reflect Prism		1	SET	128,000	128,000			
		BDC48 Battery		2	SETS	13,000	26,000			
				5	SETS	12,900	64,500			
				5	SETS	2,200	11,000			
86	Transceiver	USC-3 No.122292 Carrying Case		5	SETS	2,200	11,000			
		UPB-1 No.122292 Battery Pack		5	SETS	2,500	12,500			
				5	SETS	8,700	43,500			
87		Consumable Item for Portable Gas Detector:		2	SETS	17,500	35,000			
88		Special Accessories for Portable Gas Detector:		1	SETS	37,100	37,100			
89		Additional Item for Gas Detector		1	SETS	37,100	37,100			
90	Gas Detector	ES-81 CO Sensor		2	SETS	85,500	171,000			
		ES-82 Puckel able Gas Monitor	Ex Japan	3	SETS	43,600	130,800			
		Special Accessories :		1	SETS	37,100	37,100			
		Ni-CD Battery (5 pcs)		1	SETS	37,100	37,100			

EQUIPMENT LIST (Less than JP Yen 100,000 Purchased in Japan)

No	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price			
91		Gas Detector	Ex Japan	2	85,500	171,000			
		Spare Part :		3	43,600	130,800			
		NI-CD Battery (5 pcs)		1	37,100	37,100			
92		Spare Parts of Gas Detector:		2	30,500	61,000			
93		Spare Part of Gas Detector:		1	43,600	43,600			
		EW-07A Sulphuric Hydrogen Sensor		1	13,000	13,000			
		HW-0244 Flammable Gas Sensor		1	37,100	37,100			
94		Battery Charger		3	4,300	12,900			
95		Gas Detector	Komet	2	17,400	34,800			
		126SH		5	1,400	7,000			
		126SA		2	1,400	2,800			
		126SH		2	1,400	2,800			
		126SA		5	1,400	7,000			
		126SA		3	1,400	4,200			
		126S		3	1,400	4,200			
		120SH		2	1,400	2,800			
		120SF		2	1,400	2,800			
		96			Gas Chromatograph		1	81,600	81,600
Shin carbon	2		88,000		176,000				
Calmmolecular Sieve	2		76,800		153,600				
Trans For Compressor	1		43,200		43,200				
Hydrogen Gas (47L)	1		77,600		77,600				
Helium Gas (47L)	1		83,200		83,200				
Carrier Gas Pipe	1		11,700		11,700				
Hydrogen Gas Pipe	1		11,700		11,700				
Fid Drive Parts Set	1		83,600		83,600				
14B Rotor Meter Unit	2		25,800		51,600				
MG5-4GasSampler	2		70,400		140,800				
14B Gas Sampler MGS Attachment	2		7,500		15,000				
Syringe (5ml)	3		8,200		24,600				
Syringe (10ml)	3		9,200		27,600				
Syringe (25ml)	1		12,700		12,700				
Soap Film Flow Meter	1		10,800		10,800				
Soap Film Flow Meter Stand	1		12,500		12,500				
C-RBA Chart Paper	5		15,500		77,500				
Septum Cap	3		1,100		3,300				
Needle Guide	10		480		4,800				
Septum Loop Lead Type	10		5,000		50,000				
Quartz Wool	1		1,900		1,900				
97			Spare Parts for Dust Monitor:				20	2,200	44,000
98			Dust Collector Sampler				5	36,700	183,500
			Spare Parts :				5	18,300	91,500
		Consumable :	5	9,500		47,500			
99		Birm's Anemometer		3	36,000	108,000			
100		Smoke Tester	Sibata	5	7,200	36,000			
		Consumable :		10	4,400	44,000			
101		Psychrometer		1	89,800	89,800			
102		Hygrometer		1	30,500	30,500			
103		Anemometer		2	10,600	21,200			
104		Barometer	Regulus	1	1,400	1,400			
		CD220-01 Down Trans		3	14,000	42,000			
		Plug C		2	8,000	16,000			
105		Barometer	Regulus	3	56,100	168,300			
		BR-48		3	1,400	4,200			
		CD220-01 Down Trans		3	14,000	42,000			
106		Incoming Panel		Arrestor	2	8,000	16,000		
		Fuse		6	4,000	24,000			
		Indicator Lamp		2	18,000	36,000			
		Fluorescent Tube		1	12,000	12,000			
107		Distribution Panel		Indicator Lamp	6	18,000	108,000		
		Fluorescent Tube		1	12,000	12,000			
108		Low Voltage Breaker consumable part		4	3,000	12,000			
109		Low Voltage Breaker consumable part		5	3,000	15,000			
110		Low Voltage Breaker consumable part		2	3,000	6,000			
111		Magnetic Switch consumable part		Electronic Switch	1	88,000	88,000		
		Fuse		6	3,000	18,000			
		Indicator Lamp		4	18,000	72,000			
		Fuse		4	3,000	12,000			
112		Magnetic Switch consumable part		Electronic Switch	1	8,000	8,000		
		Fuse		8	3,000	24,000			
		Indicator Lamp		3	18,000	54,000			
		Electrode		1	8,000	8,000			
		Electrode Holder		1	4,500	4,500			
		Assist Relay		4	3,000	12,000			
		Fuse		4	3,000	12,000			
113		Magnetic Switch consumable part		Indicator Lamp	4	18,000	72,000		
		Fuse		4	3,000	12,000			
		Assist Relay		4	3,000	12,000			
		BLA-003 FUSE LINK		2	8,000	16,000			
		HH52P Relay		10	8,000	80,000			
		RHB Thermal		10	7,300	73,000			
		SH-4 Assist Relay		5	12,000	60,000			
Level Switch Board	1	45,000	45,000						
115		LIMIT SWITCH		2	37,500	75,000			
116		SWITCH		2	27,000	54,000			
117		SWITCH		5	31,400	157,000			
118		Down Transformer		3	27,000	81,000			
119		BELL	Betz	FUSE	6	3,000	18,000		
		Indicator Lamp		3	18,000	54,000			
		BELX		3	31,400	94,200			
120		Electrical Cable		1	62,000	62,000			
121		Consumable item for relay box:		10	12,000	120,000			
122		Consumable item for Fluorescent Lamp:		20	9,400	188,000			
123		Signal Light		PHFK-50	3	82,500	247,500		
		Consumable :		8	3,000	24,000			
		Light (Red)		8	3,000	24,000			
124		Head Lamp		YL2150J	20	45,000	900,000		
		Consumable :		1	11,000	11,000			
		YL3150JA Battery Pack		4	29,000	116,000			
		YL3000 Special Driver		4	4,400	17,600			

EQUIPMENT LIST (Less than JP Yen 100,000 Purchased in Japan)

No.	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price		
125		For FS-30 Boring Machine		8	4,000	32,000		
		Hydraulic hose (PA21045m)		1	4,300	4,300		
		Hydraulic hose (PA21065m)		2	5,000	10,000		
		Hydraulic hose (PA21125m)		2	5,300	10,600		
		Wire Line Cable (5mm x 150 m)		1	45,000	45,000		
		Instruction Manual (English, Japanese)		2	880	1,760		
		Disassembling tool for FS-30		1				
		Monkey wrench (200 mm)		1	1,820	1,820		
		Double side spanner (12x14)		1	300	300		
		Double side spanner (17x19)		1	390	390		
		One side spanner (12)		1	300	300		
		Pipe Wrench (450)		1	6,480	6,480		
		Socket wrench set (9-32mm)		1	14,300	14,300		
		Pench (200mm)		1	4,150	4,150		
		Driver (-100)		1	620	620		
		Driver (+100)		1	640	640		
		Hammer (1 kg)		1	1,650	1,650		
		Wire brush		1	150	150		
		KH-120 Grease Pump		1	3,000	3,000		
		Oil Jack (3L)		1	1,500	1,500		
		Oil Jack (4L)		1	1,680	1,680		
		Clippers (210 mm)		1	7,630	7,630		
		Hammer (1 inch)		1	1,280	1,280		
		Spare Parts for ES-30 :						
		O-Ring (G250)		1	400	400		
		O-Ring (G75)		1	200	200		
		O-Ring (P200 with BUR1)		1	320	320		
		O-Ring (P225 with BUR1)		1	440	440		
		O-Ring (P220 with BUR1)		1	400	400		
		O-Ring (P12.5 with BUR1)		1	200	200		
		O-Ring (P125)		1	280	280		
		Chuck Spring (F48178)		1	4,800	4,800		
		Grease nipple (A-PT178)		3	60	180		
		Bearing (86026)		1	5,440	5,440		
		Bearing (86028)		1	5,800	5,800		
		Bearing (881228)		1	7,600	7,600		
		Bearing (881130)		1	8,400	8,400		
		Bearing (8221228)		1	6,000	6,000		
		Bearing (SL01-4814)		2	7,000	14,000		
		Bearing (851130)		1	3,600	3,600		
		Oil seal (TB 130 160 14)		1	400	400		
		Oil Seal (TB 170 200 15)		1	460	460		
		Dust Seal (DS1 125 138 7 9.5)		1	360	360		
		Dust Seal (DS1 220 233 7 9.5)		1	400	400		
		126		For MG-15HFVM Drilling Pump :		1	28,000	28,000
Suction hose (with HC1, HB2)	(65mm x 4.5m)			1	5,300	5,300		
Foot valve (with needle)	(65mm)			1	29,700	29,700		
Delivery hose (with #1005 +1011)	(38mm x 5m)			1	19,700	19,700		
Intermediate hose (with #1005 +1009)	(38mm x 5m)			1	12,790	12,790		
Return hose (with # 1005+1009)	(38mm x 5m)			1	13,000	13,000		
By-pass Asayai Gout cock	(38mm)			2	880	1,760		
Instruction Manual (English, Japanese)				2				
Disassembling tools for MG-15:								
Valve seat puller (Asayai) (P39-0790)				1	4,950	4,950		
Cylinder liner puller (Asayai) (P39-0786)				1	3,000	3,000		
Piston puller (Asayai) (P39-0787)				1	3,450	3,450		
T-type wrench(3/4, T-32)				1	1,640	1,640		
Bolt (W3/8x65)				1	50	50		
Bolt (W3/8x70)				1	120	120		
Bolt (W1/2x65)				1	120	120		
Double Side Spanner (32x35)				1	2,630	2,630		
Double Side Spanner (10x14)				1	390	390		
Double Side Spanner (17x21)				1	540	540		
Double Side Spanner (28x32)				1	1,250	1,250		
Double Side Spanner (41x48)				1	4,430	4,430		
Double Side Wrench (32x35)				1	3,240	3,240		
Hexagonal wrench (5/16)				1	270	270		
Hexagonal wrench (1/2)				1	270	270		
Snap ring pryer (30mm)				1	2,400	2,400		
Snap ring pryer (40mm)				1	4,530	4,530		
Pipe wrench (450mm)				1	6,480	6,480		
Monkey wrench (200 mm)				1	18,000	18,000		
Monkey wrench (300 mm)				1	1,820	1,820		
Monkey wrench (300 mm)				1	3,850	3,850		
Driver (-100)				1	620	620		
Driver (+100)				1	640	640		
Hammer (1kg)				1	1,480	1,480		
Oil Jack (3L)				1	1,500	1,500		
Oil Jack (4L)				1	1,680	1,680		
Pench (200mm)				1	4,150	4,150		
Hammer (1 inch)				1	1,280	1,280		
Clippers (210 mm)				1	7,630	7,630		
Wire brush				1	150	150		
Socket wrench set (1850 M)				1	7,250	7,250		
Spare parts for MG-15 :								
Cylinder liner (88)	P40131			2	25,600	51,200		
Valve insert (TAG)	P40153			8	300	2,400		
Valve Spring (TAG)	P40148			8	300	2,400		
Cylinder liner packing	P40139			2	800	1,600		
Cover guide packing	P40143			2	500	1,000		
Piston rod	P32280			2	10,840	21,680		
V packing	P40389			14	150	2,100		
Clump bolt packing	P40670			2	600	1,200		
127				Drilling tools :				
				Drilling tools for surface				
				Casing rod (O.D. 105mm I.D.90mm x 1m)		5	28,000	130,000
				Casing metal bit	107mm	3	28,000	84,000
				Casing swivel	105xKNQ	1	7,500	7,500
				Casing head	105mm	1	7,500	7,500
				Drilling tools for coring :				
				Wire line rod	KNQ x 3m	17	20,600	350,200
				Wire line rod	KNQ x 1.5m	2	14,400	28,800
				Over shot assay (H)	KNQ	1	78,700	78,700
				Water swivel assay's	KNQ	1	97,500	97,500
				Metal bit	KNQ	8	11,100	88,800
				Metal reamer	KNQ	3	25,800	76,800
				Spare Parts for Core Barrel				
				Core filter KNQ	T45230	1	7,880	7,880
				Core filter case KNQ	T45231	1	9,530	9,530
		Bearing	CS1305	1	2,400	2,400		
		Bearing	CS1204	1	1,700	1,700		
		Chuck piece (KNQ/70)	F30-0515	3	10,000	30,000		
		Chump piece (KNQ/70)	F30-0518	2	18,800	37,600		
		Paranally wrench	KNQ/27 inner	2	35,200	70,400		
		Protector cap	KNQ	1	360	360		
		Guide bush (KNQ/70)	F40-0588	1	28,000	28,000		
		Upper rod guide (KNQ/70)	F30-0517	1	31,000	31,000		
		Lower guide (KNQ/70)	F30-0518	1	31,000	31,000		
		Drilling tools for Non-Coring:						
		Water swivel (HW-5xKNQ)	T20147	1	46,000	46,000		
		Sub for HW-5	T44841	1	20,000	20,000		
		Spare Parts for HW-5						
		Bearing	CS287	2	1,140	2,280		
		Oil seal	SB45619	1	640	640		
		O seal	SB355511	1	560	560		
		Spindle	T42849-A	1	10,120	10,120		
		U Packing	U-35	2	1,200	2,400		
		3-cone bit (for medium) 3-3/8"	H31HF-R	1	57,500	57,500		
		Bit sub for 3-cone	S0JIS-NQ	1	35,000	35,000		
		Cross bit for soft rock	3-3/8"	1	70,000	70,000		
		Cross bit for clay	3-3/8"	3	75,000	225,000		
		Bit sub for cross both	S0JIS-NQ	1	35,000	35,000		
		Rod inside tap R	T30880-A-R-NQ	1	18,200	18,200		
		Working Tools						
		Pipe wrench	1200MM	2	31,000	62,000		
		Pipe wrench	900MM	2	15,400	30,800		
		Pipe wrench	600MM	2	8,750	17,500		
		Super long	ST-2	2	23,000	46,000		
		Super long	ST-3	2	56,000	112,000		
		Chain for ST-2		2	7,400	14,800		
		Chain for ST-2		2	9,340	18,680		
		Tool box with key	L-530	1	12,900	12,900		
		Hydraulic Support and Piping System (Details Are as follows)						

EQUIPMENT LIST (Leas than JP Yen 100,000 Purchased in Japan)

No.	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price
128		Piping Supplement Materials (Metal beam)	DJBI-1200	20	pcs	21,200 424,000
129		Piping Supplement Materials (Steel Gun)	MHG-13	5	pcs	35,600 178,000
130		Chamber for valve	WJ908824	5	pcs	35,600 178,000
131		Operating Valve	312750	10	pcs	28,800 288,000
132		High Pressure Hose	WP350-9X5m	10	pcs	18,100 181,000
133		Strapfit Joint	S81 1001 501 0100	20	pcs	6,700 134,000
134		Toolset	S81 1003 521 0100	10	pcs	9,100 91,000
135		SIDE DUMP LOADER				
		Spare Parts				
		hose	613A743/2	1	pcs	9,200 9,200
		hose	613A743/6	2	pcs	27,400 54,800
		hose	613A743/1	1	pcs	7,400 7,400
		hose	613A743/3	1	pcs	16,800 16,800
		Hose Clip	P105FHB	8	pcs	680 4,080
		Hose Clip	P85FHB	2	pcs	680 1,360
		Hose Clip	P12FHB	6	pcs	680 4,080
		Hose Assembly	623D2584/310	2	pcs	8,300 16,600
		Hose Assembly	623D2584/81	2	pcs	7,000 14,000
		Hose Assembly	623D2584/145	2	pcs	9,410 18,820
		Hose Assembly	623D2584/283	2	pcs	4,200 8,400
		Hose Assembly	623D2584/291	2	pcs	5,400 10,800
		Hose Assembly	623D2584/184	2	pcs	13,440 26,880
		hose	623A2404/7	3	pcs	4,930 14,790
		Hose Assembly	623D2584/37	2	pcs	10,800 21,600
		Hose Assembly	623D2584/60	4	pcs	6,720 26,880
		Hose Assembly	623D2584/177	4	pcs	20,000 80,000
		Hose Assembly	623D2584/28	2	pcs	7,840 15,680
		Hose Assembly	623D2584/33	2	pcs	9,200 18,400
		Hose Assembly	623D2584/175	2	pcs	18,600 37,200
		Hose Assembly	623D2584/172	2	pcs	16,600 33,200
		Hose Assembly	623D2584/170	2	pcs	15,300 30,600
		Hose Assembly	623D2584/163	2	pcs	13,300 26,600
		Hose Assembly	623D2584/181	2	pcs	12,800 25,600
		Hose Assembly	623D2584/184	2	pcs	13,440 26,880
		Hose Assembly	623D2584/7	2	pcs	16,600 33,200
		Hose Assembly	623D2584/9	2	pcs	16,000 32,000
		Hose Assembly	623D2584/34	2	pcs	9,640 19,280
		Hose Assembly	623D2584/23	2	pcs	9,200 18,400
		Hose Assembly	623D2584/4	2	pcs	4,480 8,960
		Hose Assembly	623D2584/329	2	pcs	15,456 30,912
		Hose Assembly	623D2584/324	2	pcs	13,700 27,400
		LIFT RAM SERVICE KIT				
		D.A. Seal	SB118011	2	pcs	13,440 26,880
		O-ring	SEG 1075	2	pcs	450 900
		Wiper Seal	SB122011	2	pcs	6,050 12,100
		O-ring	SEG 1128	2	pcs	900 1,800
		Dust Connection Meter				
		ROLL BACK RAM SERVICE KIT				
		D.A. Seal	SB1181009	4	pcs	8,070 32,280
		O-ring	SEG 101	4	pcs	230 920
		S.A. Seal	SB123010	4	pcs	6,500 26,000
		O-ring	SEG 1124	4	pcs	680 2,720
		Wiper Seal	SB122010	4	pcs	2,920 11,680
		TIP RAM SERVICE KIT				
		D.A. Seal	SB118005	2	pcs	4,040 8,080
		O-ring	SEG 1042	2	pcs	900 1,800
		O-ring	SEG 1078	2	pcs	230 460
		S.A. Seal	SB123005	2	pcs	7,400 14,800
		Wiper Seal	SB122005	2	pcs	3,810 7,620
		Coupling (driving)	613B278	1	pcs	34,800 34,800
		Optional Spare Parts				
		Special Tools Box	1 Set			
		consisting of:				
		Extension	SEO35/006	1	pcs	10,000 10,000
		Sliding head	SEO35/008	1	pcs	39,500 39,500
		Tommy-bar	SEO35/012	1	pcs	15,000 15,000
		Socket	SEO35/013	1	pcs	10,000 10,000
		Socket	SEO35/014	1	pcs	10,000 10,000
		Socket	SEO35/016	1	pcs	10,000 10,000
		Socket	SEO35/018	1	pcs	10,000 10,000
		Socket	SEO35/085	1	pcs	10,000 10,000
		Spanner	SEO35/091	1	pcs	15,000 15,000
		Spanner	SEO35/092	1	pcs	15,000 15,000
		Spanner	SEO35/096	1	pcs	15,000 15,000
		Spanner	SEO35/119	1	pcs	15,000 15,000
		Spanner	SEO35/121	1	pcs	15,000 15,000
		Ring Spanner	SEO35/184	1	pcs	16,000 16,000
		Hexagonal Wrench	SEO35/238	1	pcs	3,000 3,000
		Hexagonal Wrench	SEO35/239	1	pcs	3,000 3,000
		Hexagonal Wrench	SEO35/241	1	pcs	3,000 3,000
		Hexagonal Wrench	SEO35/242	1	pcs	3,000 3,000
		Hexagonal Wrench	SEO35/243	1	pcs	3,000 3,000
		Hexagonal Wrench	SEO35/244	1	pcs	3,000 3,000
		Hexagonal Wrench	SEO35/245	1	pcs	3,000 3,000
		T-bar	SEO35/245	1	pcs	13,000 13,000
		Tool Box	SEO35/279	1	pcs	30,000 30,000
		Measuring Instruments & Tools for Electric Works	1 set			
		Tester for insulation resistance (Megastester)				
		Electric Tester				
		Electric Clamp Meter				
		Clamping Tools (Hand work type) (2,5,5,8,14 mm)	AK-19	1	pcs	16,580 16,580
		Clamping Tools (Hydraulic work type) (14,22,38,60 mm)	AKH-60 N	1	pcs	11,200 11,200
		Cable Cutter (50mm)	CC-0303	1	pcs	90,400 90,400
		Knife for Electric Works	DKN	1	pcs	38,080 38,080
		Pliers	P-225PP	1	pcs	24,000 24,000
		Tools Set	700AP	1	set	3,980 3,980
		Hexagonal Wrenches for inch size	BLX12	1	set	73,400 73,400
		Hexagonal Wrenches for millimeter	BLX9	1	set	6,160 6,160
		Precision Screwdriver	208	1	set	5,480 5,480
		Precision Screwdriver (minus)	207	1	set	1,450 1,450
		Precision Screwdriver (minus)	100-B-150	1	set	1,450 1,450
		Precision Screwdriver (minus)	100-G-100	1	set	1,320 1,320
		Precision Screwdriver (Plus)	100-3-150	1	set	910 910
		Precision Screwdriver (Plus)	100-2-100	1	set	1,360 1,360
		Socket Wrench	1570M (9.5mm/24mm)	1	set	930 930
		Socket Wrench	(12.5mm/32mm)	1	set	19,500 19,500
						22,000

EQUIPMENT LIST (Less than JP Yen 100,000 Purchased in Japan)

No.	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price	
136		Compass	BC360	5	15,000	75,000	
137		Hand Level with Leather case Altitude : 90	271-3523	5	5,000	25,000	
138		Hand Level with Leather case Altitude : 90, Telescope : 5x	271-3524	2	20,000	40,000	
139		Sketch Board	4471-2	5	20,000	100,000	
140		Compass for Sketch Board	4471-B	5	7,000	35,000	
141		Pocket Compass with Tripod	S-25	2	94,000	188,000	
142		Chief Hammer with Leather case	278-2291	5	9,700	48,500	
143		Survey Box	4473-1	5	8,000	40,000	
144		Sub Rucksack	4480-1	2	12,000	24,000	
145		Measuring Tape 50m	211-1853	2	6,000	12,000	
146		Convex Ruler 3.5m	230-4402	3	1,500	4,500	
147		Laser Range Finder 1/1000		1	98,500	98,500	
148		Field Notebook 4472 water proof type		50	900	45,000	
149		Magnifying Glass	HMA15-20	5	4,500	22,500	
150		Sealing Protector 1/200,1/500		20	900	18,000	
151		Altimeter 6000m	271-3581	1	47,000	47,000	
152		Template S-10(1), S-5(1), S-10(1), S-40(1) S-1(1), S-4(1), S-2(1), S-5(1), S-20(1), S-50(1) S-10(1), S-2(1), S-10(1), S-40(1)		2	12,000	24,000	
153		Drawing Pen Set	No. 151913	2	23,000	46,000	
154		Drawing Paper	C-A14 (100 sheets)	2	3,500	7,000	
155		Drawing Paper	C-A34 (100 sheets)	1	10,000	10,000	
156		Triangle Scale	G-2530 G-2525	1	2,500	2,500	
157		Section Paper A-4	100 sheets	1	10,000	10,000	
158		Bolt Fastener 003007 No.660 10x10 Spline for Fastener 003008 No.660 Pin for Fastener 003005 No.660 Stand for Fastener 003008	100 pcs	5 5 10 1	8,000 2,000 700 65,000	40,000 10,000 7,000 65,000	
159		pH Electrode Instruction Manual (Japanese)	Accessories : 9810-100	1	31,800	31,800	
160		pH meter accessories : pH Electrode 9810-100 ORP Electrode E300-100 DO Electrode 9550-100 Instruction Manual (Japanese) Spare parts : Standard Solution pH 500mL Standard Solution pH 500mL KCl Solution 250 mL		2 2 2 1 3 3 3	27,000 18,800 70,000 5,000 2,300 2,300 1,200	54,000 37,600 140,000 5,000 6,900 6,900 3,600	
161		pH Indicator Papers pH-14 100 Sheets		10	2,650	26,500	
162		Filter Holder Separato SS ZS Consisting of : SS-C Cup SS-B Base for Unifreon Filter SS-Bc Base for Glass fiber Filter SS-C Cup VKU-500 Absorber FZA-55 Unifreon Filter GF 3-55 Glass fiber Filter	NRK	1 1 1 1 1 10 20	68,200	68,200	
163		Transparency Meter 1m	Jar Tester accessories :	1	19,000	19,000	
164		Lamp Slitting Blade		4 4	3,800 2,200	15,200 8,800	
165		Magnetic Stirrer with Down Transformer	MS-1	1	75,000	75,000	
166		Filter	GS-25/55 (100 sheets)	5	3,250	16,250	
167		Stainless Vat	SK-08-21	20	1,000	20,000	
168		Heater Mortar with pestle Stand for above for Temperature Chamber Spare parts for Electric Muffle Furnace (with IPC Controller)	Model : HD-3 Model : JMO-50T	2 2 1	7,000 33,900 42,000	14,000 67,800 42,000	
171		Heater Fuse Z3A,1A each		1 1	70,000 1,000	70,000 1,000	
172		Heater Unit Fuse Z3A,1A each	Spare Parts for Electric Melting pot furnace	1	49,000	49,000	
173		Inchreading Block		1	1,000	1,000	
174		Melting pot A-1 with cap	CB-05 (50 pcs/box)	20	5,000	100,000	
175		Evaporation dish No.2		50	100	5,000	
176		Dedicator FPC-240		10	1,100	11,000	
177		Sieve set 500g Sieve 200mm 50mm Sieve 200mm 25mm Sieve 200mm 13.2mm Sieve 200mm 4.75mm Sieve 200mm 2.00mm Sieve 200mm 500m Sieve 200mm 150m Sieve 200mm 75 m Sieve 200mm 45 m Sieve 200mm 38m		3 2 2 2 2 2 2 2 2 2 2	9,500 9,800 9,100 9,600 10,200 13,400 13,000 13,900 17,500 23,800 35,000	28,500 18,200 19,200 20,400 26,800 28,800 28,000 27,800 35,000 47,800 70,000	
178		Beaker Beaker Beaker Beaker	1000BK100 1000BK200 1000BK500 1000BK1000	5 10 10 10	330 380 700 1,320	1,650 3,800 7,000 13,200	
179		Measuring Cylinder Measuring Cylinder Measuring Cylinder	3022CYL100S 3022CYL200S 3022CYL500S	5 10 10	1,930 2,400 4,420	9,650 24,000 44,200	
180		Graduated Pipette Graduated Pipette Graduated Pipette Graduated Pipette	M-PIPET1S M-PIPET5S M-PIPET10S M-PIPET20S	5 10 10 10	9,440 420 540 580	47,200 4,200 5,400 5,800	
181		Graduated Pipette Beaker	M-PIPET50S Y-100	10 2	13,200 60,200	132,000 120,400	
182		Consumable for calorimeter 1013-H Sample tray Ignition wire Rice paper Benzoic acid O-ring for altimer O-ring for bone		20 2 2 2 2 2 10	PCS PCS PCS PCS PCS PCS PCS	1,800 12,000 16,000 45,000 2,100 380	36,000 24,000 32,000 90,000 4,200 380
183		Consumable for water treatment system Iron sulfate Aluminum sulfate Polycrylamide Caustic soda Spare hose Spare hose Spare hose	FeSO4.7H2O Al2(SO4)3 NaOH φ 10x18m φ 15x20m φ 25x30m	12 12 30 24 1 1 2	PCS PCS PCS PCS PCE PCE PCS	3,750 3,750 24,000 3,750 10,000 10,000 5,000	45,000 45,000 720,000 90,000 10,000 10,000 10,000
						Total	26,692,352

EQUIPMENT LIST (More than JP Yen 1,600,000 Purchased in Indonesia)

No.	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price
1	2001	Auto mobile	KUDA	1 UNIT	Rp 128,450,000	Rp 128,450,000
2		Micro Bus FB2WG	Model:FB2WG	1 UNIT	\$35,650,00	\$35,650,00
3	2002	Mining Software	ECSI/MINEX	1 SET	\$31,00	\$31,000,00
4		Guidance Radio	SUN	1 SET	\$27,990,00	\$27,990,00
5	2005	Sulfur Analyzer S-144DR	Model:S-144DR	1 SET	\$33,277,00	\$33,277,00

EQUIPMENT LIST (More than JP Yen 1,00,000 Less than 1,600,000 Purchased in Indonesia)

No.	Year	Name of Equipment	Maker	Quantity	Unit Price	Total Price
1	2001	Copy Machine	Model:NP-6241	2 SET	\$7,935	\$15,870
2		Monitor TV	J29MF8S	2 SET	\$800	\$1,600
3		Computer	Model:NETVIST N2Q	2 SET	\$1,600	\$3,200
4		Computer	Model:NETVIST N2Q	8 SET	\$1,475	\$11,800
5		Printer	Laser Jet 4050N	3 SET	\$1,925	\$5,775
6		Printer	Disk Jet 1220C	1 SET	\$955	\$955
7	2002	Rubber velt	FR-300J	1 SET	\$8,305	\$8,305
8		Transformer	200KVA	1 SET	\$3,273	\$3,273
9		Internal Telecommunication System	KX-T308 and others	1 SET	\$3,101	\$3,101
10		Copy Machine	DE400DC	1 SET	Rp 75,924,000	Rp 75,924,000
11		LAN System	8472-62X	2 SET	\$2,660,00	\$5,320,00
12		Computer for LAN	NET VISTA M41	2 SET	\$1,144,00	\$2,288,00
13		Scanner for LAN	1640X	1 SET	\$3,100,00	\$3,100,00
14	2003	Water volume measurement system	50DS5.4S	1 UNIT	\$11,900,00	\$11,900,00
15		Air compressor	Model:TUF	1 SET	\$6,200,00	\$6,200,00
16		Air Dryer	Model:RDA-SEE	2 SET	\$26,00	\$5,200,00

ANNEX 5

Conterpert Training in Japan (By JICA)

No	Year	Name	Field	Origin	Period
1	2001	Zul Ichwan, ME	Safety	P3TMB	01 10/15 - 11/16
2		Drs. Asmara Karma	Machinery	UPO	
3		Drs. Sumantri,MT	Machinery	UNP	
4	2002	Drs. Bambang heriyadi,MT	Mining	UNP	02 08/18 - 09/20
5		Gusti A Wahyudi,SE	Electricity	UPO	
6		Alexander Tomasoa	Machinery	UPO	
7	2003	Drs. Tasman Sihombing,B.Sc	Mining	P3TMB/BDTBT	03 11/24 - 12/25
8		Drs. Ichsan E Nasution,BE	Environment	P3TMB/BDTBT	
9		Asep Suryana,ST	Safety	P3TMB/BDTBT	
10	2004	Drs. Yunasril, M.Si	Environment	UNP	05 01/10 - 02/15
11		Yones Simanjuntak	Machinery	UPO	
12	2005	Uun Machrun,BE	Electricity	BDTBT	05 09/12 - 10/14
13		Ir. Andrey Zubir	Safety	BDTBT	
14		Ir. Landung Kadaryanto	Mining	BDTBT	

Allocation of Counterpart Personnel

ANNEX 6

Field	Name	Origin	Duration
Mining	Drs. Tasman Sihombin, B.Sc	P3TMB	01 04 - 04 12
	Dadan M. Hamdani, ST	P3TMB	01 04 - 04 03
	Drs. Bambang Heriyadi, MT	UNP	01 04 -
	Handoko Setiadji, ST	P3TMB/BDTBT	03 04 -
	Ade Hidayat, ST	BDTBT	04 11-
	Ir. Landung Kadaryanto	BDTBT	04 11-
	Achmad Saipillah, ST	BDTBT	04 04-
	Nendi Rohaendi, ST	BDTBT	05 04-
	Sihar M. Siregar, ST	BDTBT	05 04-
Safety	Ir. Dadzui Ismail	UPO	01 04 - 02 03
	Ir. Moh Zulfahmi Kafrawi	UPO	01 04 - 02 06
	Zul Ichwan, ME	P3TMB	01 04 - 02 03
	Asep Suryana, MT	P3TMB	01 04 - 04 10
	Drs. Rijal Abdulah, MT	UNP	01 04 -
	Harry Wibawa, ST	P3TMB/BDTBT	03 04 -
	Yudiana Hadiyat, ST	P3TMB/BDTBT	03 04 -
	Ir. Andrey Zubir	BDTBT	04 11-
	Darius Agung Prata, ST	BDTBT	05 04-
	Wasis Sriyadi, ST	BDTBT	05 04
Machinery	Drs. Asmara Karma	UPO	01 04 - 02 06
	Alexander Tomaso	UPO	01 04 - 03 02
	Yones Simanjuntak	UPO	01 04 -
	Drs. Sumantri, MT	UNP	01 04 -
	Marbun Sirait	UPO	01 04 -
	Bayu Nugroho, ST	BDTBT	05 04-
Electricity	Uun Machrun, BE	P3TMB/BDTBT	01 04 -
	Drs. Muryanto	UPO	01 04 - 03 02
	Gusti A Wahyudi, SE	UPO	01 04 - 03 02
	Marsudi, BE	UPO	01 04 - 02 06
	H. Arfin, MB	UPO	03 04- 04 09
	Sudarmanto	UPO	03 04-
	M.N. Haramaini, ST	BDTBT	05 04-
	Ali Basrah Pulungan, ST	BDTBT	04 11- 05 05
Environment	Drs. Ichsan E Nasution, BE	P3TMB/BDTBT	01 05 -
	Drs. Yunasril, M. Si	UNP	03 01 -
	Drs. Paulus P Siboro, BE	P3TMB/BDTBT	03 10 -
	Ahmad Helmi, ST	P3TMB/BDTBT	03 04 -
	Novian Fathurachman, ST	BDTBT	04 04-
	Desrizal, A. Md	BDTBT	04 01-
	Drs. Hermen	BDTBT	05 02-
	Indra Syahputra Lubis, ST	BDTBT	05 04-

ANNEX 8
Plan of Operation (PO)
Coal Mining Enhancement Project at Education and Training Unit for Underground Mining (BDTBT)

as of Nov 2005

Duration of Project	Calendar Year												Project relation responsibility	Input	Remark															
	2000			2001			2002			2003						2004			2005			2006								
Dispatch of study team to Indonesia	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV		
Administrative system of the project established	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△		
1-1 Allocate necessary personnel as planned																													PM/DPM,TL,C	CP,LE
1-2 Clarify the division work																													PM/DPM,TL,C	CP,LE
1-3 Make a plan of activity																													PM/DPM,TL,C	
1-4 Prepare facilities and equipment for the project																													PM/DPM,TL,C	CP,LE
1-5 Make annual plan of operation																													PM/DPM,TL,C	CP,LE
2 Operation and maintenance system of machinery and equipment of the project is established by counterparts																														
2-1 Make a plan for procurement, installation and maintenance of machinery and equipment																													PM/DPM,TL	CP,LE,SE
2-2 Procure, install and maintain machinery and equipment																													PM/DPM,TL	CP,LE,SE
2-3 Make operational and maintenance manuals of machinery and equipment																													PM/DPM,TL	CP,LE,SE
2-4 Evaluate operation and maintenance capability of machinery and equipment																													PM/DPM,TL	CP,LE,SE
3 Preparation for implementation of five (5)* training courses by counterpart is completed																														
3-1 Make a plan of training course																													PM/DPM,TL	CP,LE
3-2 Prepare curriculums and materials for training																													PM/DPM,TL	CP,LE
3-3 Make a recruiting plan of trainees																													PM/DPM,TL,C	CP,LE
3-4 Recruit trainees																													PM/DPM,TL,C	CP,LE

Training Course

ANNEX 9

Year	Title of Course	Period	Participants
2002	U/G Coal Mine Safety Technology	02 06/16-06/26	20
	U/G Coal Mine Mining Technology	"	20
	U/G Coal Mine Technology for Civil Servant	02 08/14-08/27	20
	U/G Coal Mine Electricity Technology	02 09/23-10/03	20
	U/G Coal Mine Machinery Technology	"	20
	U/G Coal Mine Safety Technology	02 10/21-11/01	20
	U/G Coal Mine Mining Technology	"	20
2003	U/G Coal Mine Mining Technology	03 05/20-06/03	20
	U/G Coal Mine Safety Technology	"	20
	U/G Coal Mine Electricity Technology	03 06/24-07/08	17
	U/G Coal Mine Machinery Technology	"	20
	U/G Coal Mine Environment Technology	03 08/26-09/06	20
	U/G Coal Mine Mining Technology	"	20
	U/G Coal Mine Safety Technology	03 09/16-09/30	19
	U/G Coal Mine Machinery Technology	"	18
	U/G Coal Mine Environment Technology	03 10/06-10/20	18
U/G Coal Mine Electricity Technology	"	15	
2004	Standard Competency Training for Counterpart	04 05/10-05/29	15
	U/G Coal Mine Mining Technology	04 06/15-06/29	20
	U/G Coal Mine Machinery Technology	"	20
	Introduction to U/G Coal Mine Technology	04 07/20-08/03	15
	U/G Coal Mine Electricity Technology	04 09/06-09/21	20
	U/G Coal Mine Design Technology	04 09/27-10/02	15
	U/G Coal Mine Fire Prevention Technology	04 10/04-10/09	15
	U/G Coal Mine Environment Technology	"	15
	U/G Coal Mine Environment Technology	04 11/30-12/14	20
	U/G Coal Mine Safety Technology	"	20
2005	U/G Coal Mining and Safety Technology for Mine Compan	05 01/17-01/29	21
	U/G Coal Mine Electricity Technology	05 05/17-05/31	18
	U/G Coal Mine Safety Technology	"	16
	U/G Coal Mine Mining Technology	05 06/14-06/28	20
	U/G Coal Mine Environment Technology	"	20
	Mine Rescue Training	05 07/25-07/30	10
	U/G Coal Mine Environmental Management	"	13
	U/G Coal Mine Machinery Technology	05 08/23-09/06	20
	U/G Coal Mine Planning	"	20
	Application of Computer System for U/G Coal Mining	05 09/13-09/27	14
	Total 36 times	674	

Participant List

	2002	2003	2004	2005
Civil Servant (Local Government	74	65	91	75
Educational Institution	15	23	46	29
Mining Company	51	99	38	68
Total	140	187	175	172

Special Training

Year	Name of Training	Period	Participant	Remark
2003	Practical Training	03 04/08-04/11	132	Bandung Islamic University
	New Employee Training	03 06/02-06/06	66	PT. Alied Indo Coal
	Mine Safety Manager Training	03 06/09-06/12	25	Sumatra area trainee
	Practical Training	03 06/10	28	Sawalunto High School
	Mine Rescue Training	03 09/08-09/16	13	Arutmin, AIC, UPO, C/P
	Practical Training and Visitation	04 01/21-01/22	68	High School Students from Riau
	Mine Rescue Training	04 02/24-02/28	10	AIC, UPO, C/P
2004	New Employee Training	04 03/01-03/03	25	PT. Alied Indo Coal
	Practical Training	04 03/29-04/02	26	UNP
	Practical Training for Graduation	04 06/09-06/12	4	UNP
	Practical Training and Visitation	04 06/20	200	Medan Tebing Tinggi High School
	Practical Training and Visitation	04 08/20	2	ITB
	Practical Training and Visitation	05 01/13	20	ITB
	Practical Training	05 03/14-03/17	22	UNP
2005	Practical Training	05 03/21-03/24	24	UNP
	Practical Training	05 03/28-03/31	19	UNP
	Practical Training and Visitation	05 08/5	14	University of Andalas
	Practical training	05 09/26-09/30	20	UNP

Coal Mine Study and Project Promotion

ANNEX10

Year	Visited Place	Participant	Period
2001	PT. Kitadin	5 Experts	01 06/17-06/23
	PT. Fajar Bumi Sakuti	4 C/P	
	PT. Tanint Harum		
	Dinas Samarinda, East Kalimantan		
2002	PT. Padang Cement	All members	01 09/12
	PT. Adora Indonesia	4 Experts	02 02/25-03/01
	PT. Kideco Jaya Agung	3 C/P	
	Dinas Banjarmasin, South Kalimantan		
CEPU Oil and Gas Training Center	4 Experts 6 C/P		
2003	PT. BA Tanjung Enim	4 Experts 6 C/P	03 02/25-02/27
	PT. Arutmin	5 Experts	03 04/23-04/25
	Dinas south Kalimantan	4 C/P	
	Dinas Bengkulu	All members	03 10/01-10/03
	PT. Bukit Sunur		
	PT. Danu Mas Hitam		
2004	PT. Kitadin	2 Experts 5 C/P	04 03/01-03/05
	PT. Kaltim Prima Coal	3 Experts 7 C/P	04 03/16-03/19
	West Sumatra	1 Experts	04 04/29
	Bonjor Gold Mine	4 C/P	
	PT. BA Tanjung Enim	3 Experts 17 C/P	04 5/24-5/25
	PT. Suyamas Abadi Jambi	1 Experts 10 C/P	04 07/29-07/30
	tekMIRA	4 Experts	04 09/26-09/30
	UNISBA, ITB		
	Dinas south Kalimantan	5 C/P	04 10/12-10/15
	PT. Tanjung Alam Jaya		
PT. Baramarta			
Dinas Riau	1 Experts	04 11/13	
Dinas Jambi	4 C/P		
West Jawa PT. Aneka Tambang	10 C/P	04 11/22-11/26	
2005	Dinas South Sumatera	5 C/P	05 04/04-04/07
	PT. BA Tanjung Enim		
	Dinas Jambi	4 C/P	05 04/04-04/07
	PT. Tamian Palum Indah		
	Sawahlunto Sijunjung PT. KHU	4 C/P	05 04/08
	Dinas Riau	3 C/P	05 04/11-04/14
	Dinas Bengkulu	4 C/P	
	PT. Intipara Perdana		
	Dinas East Kalimantan	3 C/P	05 04/18-04/22
	PT. FBS		
	Dinas West Kalimantan	1 Expert	05 05/02-05/06
	West Kalimantan Province Training Center	3 C/P	
	Dinas South Kalimantan	3 C/P	05 05/02-05/06
	PT. Adaro		
	Dinas Central Kalimantan	1 Expert 3 C/P	05 05/02-05/06
	Mining Expo at Jakarta	2 C/P	
	Dinas Palembang	1 Expert	05 10/09-10/11
	University of Sri Wijaya	3 C/P	
	Institute Technology of Medan	1 Expert	05 10/10-10/12
	Institute Science and Technology of T.D Rardede	3 C/P	
	Dinas East Kalimantan	2 Experts	05/10/10-10/13
	University of Mulawarman	3 C/P	
	PT. KITADIN		
Dinas Banjarbaru	1 Expert	05 10/17-10/19	
University of Lambung Mangkurat	3 C/P		
UPN Veteran Yogyakarta	1 Expert	05 10/17-10/19	
University of Gaja Mada	3 C/P		
University of Hasanuddin South Sulawesi	1 Expert	05 10/17-10/20	
University of Veteran Republic Indonesia	4 C/P		
Dinas South Sulawesi			

Lecture and Seminar at out of BDTBT

Year	Title	Place	Period	In charge
2001	Safety	Yogyakarta University of Veteran	01 11/30	Expert
	Safety	UNP	02 01/24	Expert
2002	Safety	Bandung Islamic University	02 11/25	Expert
	Mining	Bandung Islamic University	03 02/11	Expert
	Safety	UNP	03 03/06	Expert
	Mining	UNP	03 03/06	Expert
	Safety	Bandung Islamic University	03 03/07	Expert
2003	Coal Tech 2003	Balikpapan	03 09/15-09/17	Expert
2004	Safety	South Sumatra Sri Wijaya University	04 06/10	Expert
	Safety	Bandung Islamic University	04 07/19	Expert
	Competency seminar	ESDM	04 07/22	Ex and C/P
	Waste Water Treatment Seminar	South Sumatra	04 08/02-08/06	C/P, Expert
	Environmental Management	P3TMB	04 08/03-08/13	C/P, Expert
	AMDAL Environmental Assessment	Padang	04 08/23-09/02	C/P
2005	NEDO seminar	P3TMB	04 09/26	Experts
	National Seminar on Mining	Sawahlunto	05 06/11	C/P, Expert
	Safety	Geological Academe	05 07/13	Expert
	Seminar on Coal mining	UNP	05 09/24	Expert
	Safety	University of Tri Sakuti Jakarta	05 09/29	

On the Job Training (OJT) and Special Lecture, Training for Counterparts

Year	Title	Period	Participant	By
2001	Lecture on Geology	01 07/09-07/12	Mining	Dr. Bukin (MTRDC)
	Lecture on Rock Mechanism	02 01/30	Mining, Safety	Dr. Matsui
	Lecture on Coal Combustion	02 03/08	Mining, Environment	Dr. Naruse
2002				
2003				
2004	Gas Chromatograph	04 05/4-05/07	Environment	Ministry of industry
	Atmosphere measurement training	04 08/09-08/12	Environment	Ministry of industry
	Belt Conveyer	04 10/18-10/22	Machinery, Electricity	PT. Bando
	Wire Rope	ditto		PT. Langgeng Bajapramata
	Gas turbine plant observation training	04 12/22	Machinery, Electricity	PLN Pauh Limo
	Mining OJT	05 01/30-02/10	Mining	PT. KITADIN
2005	Safety OJT	05 03/12-0325	Safety	PT. KITADIN
	Atmosphere measurement training	05 06/07-06/10	Environment	Ministry of Industry
	Drainage measurement training	05 06/27-06/30	Environment	Ministry of Industry
	Asahan Dam observation training	05 07/20-07/23	Electricity, Machinery	Asahan
	Electricity plant observation training	05 08/01-08/04	Electricity, Machinery	DENYO, OMRON

Budget Allocation (JICA)

Year	Rp
2001	710.385.475
2002	768.994.747
2003	513.979.200
2004	1.147.196.222
2005	1.225.725.000
Total	4.366.280.644